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Challenges in achieving immediate skin-to-skin contact following birth by elective caesarean section: a narrative review of the literature

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ORIGINAL

Abstract

Background: The benefits of immediate safe, observed, skin-to-skin contact following birth are well documented and established best practice following vaginal birth in the United Kingdom (UK). However, women who deliver their babies by caesarean section are less likely to achieve skin-to-skin contact within one hour of birth. This narrative literature review aims to identify and appraise current evidence of factors which influence why women are not facilitated to achieve skin-to-skin contact in theatre following an elective caesarean section birth.

Methods: A total of 19 sources of evidence from national and international policy, best practice, expert opinion and research were thematically synthesised. Recurrent themes were identified and summarised under the headings: benefits of skin-to-skin contact; policy and guidelines and barriers and enablers to skin-to-skin contact.

Results: The narrative literature review clearly highlights numerous benefits of skin-to-skin contact for both the mother and baby and importantly establishes no additional risks associated with safe, observed, skin-to-skin contact when a mother is alert and responsive following an elective caesarean birth. However, immediate skin-to-skin contact continues to be less likely to be achieved by families having a caesarean birth compared with those having a vaginal birth. This review highlights a lack of understanding of how skin-to-skin contact can be achieved safely within the theatre setting.

Conclusion: Overall, further education and exploration on how skin-to-skin contact can be improved within the theatre setting is recommended.

Keywords: skin-to-skin contact, caesarean section, elective, narrative review

Introduction

Skin-to-skin contact is when a new-born baby is dried and placed onto the maternal or paternal bare chest, covered with a warmed towel or blanket, a hat placed on and they are left undisturbed but observed for at least an hour, or until the first breastfeed has occurred (UNICEF UK 2019).

Across the globe the benefits of immediate safe, observed, skin-to-skin contact following birth are well-documented and are established practice following vaginal birth (UNICEF UK 2019, World Health Organization (WHO) 2019). Despite these benefits, what is unclear is why women who deliver their babies by caesarean section are less likely to achieve skin-to-skin contact within one hour of birth in the majority of Scottish hospitals (Scottish Government 2018).

Stevens et al (2014) suggest there are many factors which influence why women, or their birth partners, are not facilitated to achieve skin-to-skin contact in theatre following a caesarean birth. This narrative literature review aims to review this gap in knowledge by identifying and appraising current evidence on the factors which influence why families may not be facilitated to achieve immediate (within 10 minutes) skin-to-skin contact in theatre following birth by elective caesarean section. This is especially interesting considering that women who have elected to have a caesarean birth provide a more controlled group, as they and their babies are not fatigued by labour. It is, of course, important to ensure that any skin-to-skin contact is safe and closely observed (Healthcare Safety Investigation Branch 2020).

Although the benefits of safe, observed, skin-to-skin contact are well-documented and inform evidence-

based midwifery care (Nursing and Midwifery Council (NMC) 2019), women who deliver their babies by caesarean section in Scotland are less likely to achieve skin-to-skin contact within one hour of birth (Scottish Government 2018). National Services Scotland (2018) expose that, worryingly, in line with the rest of the Western world, the number of babies being born by caesarean section continues to rise. Scottish figures for 2017/18 show that 32 per cent of singleton pregnancies were delivered by caesarean section, an increase from 25 per cent recorded in 2008/09 (National Services Scotland 2018). Denham et al (2019) suggest that the rate of women opting for an elective caesarean in Scotland ranges from 9.2 per cent to 18.7 per cent, depending on geographical area and individual hospitals.

These figures focus on Scotland as no English or UK-wide figures can be accessed. UK-wide statistics were decommissioned in 2010; NHS trusts in England report them individually. However, the last UK-wide infant feeding survey, in 2010, reported that 81 per cent of respondents had skin-to-skin contact with their baby within an hour of birth, showing little change in the figures over the last decade (NHS Digital 2012). At this time, only 61 per cent of families delivering by caesarean section achieved skin-to-skin contact with their baby within an hour of birth (NHS Digital 2012).

Elective caesarean section is the planned operative delivery of a baby, which is conducted before labour starts (National Services Scotland 2018). As has been highlighted, women delivering babies by caesarean section are less likely to achieve skin-to-skin, despite clear benefits, and with the number of caesarean sections increasing markedly year on year it is important to explore the current evidence base to identify the factors that are preventing immediate skin-to-skin contact.

Narrative literature review methods

Aim

The aim of this narrative literature review was to locate, appraise and synthesise all the available evidence to answer a clearly defined question (International Council of Nurses 2012). This narrative literature review aimed to answer the question: 'Identify factors which influence why families may not be facilitated to achieve immediate (within 10 minutes) skin-to-skin contact in theatre following birth by elective caesarean section'.

Search process

A literature search was conducted using the CINAHL, MEDLINE and Cochrane Database of Systematic Reviews databases and the Google Scholar search engine. Search terms applied included: immediate skin-to-skin contact; early skin-to-skin contact; caesarean section. Combinations of these terms were applied using Boolean operators (Ridley 2012), with search terms truncated for variations in spelling (e.g. Nurs* or Midwif*) and synonyms applied. Additionally, reference lists contained in returned results were hand-checked (the ancestry method) to ensure no literature was missed, minimising the potential for bias (Scottish Intercollegiate Guidelines Network 2014).

While searching for published literature, as described above, it was important to consider and include relevant unpublished or grey literature (Bowling 2014) for example, relevant websites, such as the Scottish Government, WHO, the National Institute for Health and Care Excellence (NICE) and UNICEF. The search for grey literature resulted in 11 sources of grey literature being included in the literature review.

Inclusion and exclusion criteria

Inclusion and exclusion criteria were set to ensure selection of all the relevant sources of evidence. Full-text research designs, best practice statements and policy were included. All returned results were written in English and published in the UK. A broad date range was applied (2009–2020) because the literature on skin-to-skin contact following caesarean section is limited and narrowing the date range would have limited the return of quality evidence.

Data analysis and extraction

A total of 19 sources of evidence from national and international policy (n=9), best practice statements (n=2), and research (n=8) were identified. Thematic synthesis was applied to extract data from these sources. This involved identification of important or recurrent themes (Beecroft et al 2015). The findings are arranged and discussed under the following three key thematic headings:

- Benefits of skin-to-skin contact
- Policy and guidelines
- Barriers and enablers to skin-to-skin contact

Findings and discussion

Benefits of skin-to-skin contact

Mirroring other Western countries, improving breastfeeding rates in Scotland continues to be a priority in public health as the benefits can represent significant long- and short-term cost savings to the NHS by helping to reduce health inequalities (National Services Scotland 2019). There are many health benefits for both mother and baby from exclusive breastfeeding which include, for babies and children, a reduction in gut, ear and chest infections and improved brain development and IQ (UNICEF UK 2012). For mothers, breastfeeding can reduce the risk of breast and ovarian cancer and type 2 diabetes as it promotes a healthy maternal weight (National Services Scotland 2019). When a new-born baby is

placed skin-to-skin and left undisturbed for at least one hour with its mother, and the mother wishes to breastfeed, the baby will follow nine distinctive behaviours which support the initiation of feeding and lead to a more successful first feed (Brimdyr et al 2017).

It is known that the time delay in implementing skin-to-skin contact at caesarean section can impact significantly on the initiation of breastfeeding and lactation (Stevens et al 2014). Beake et al (2016) concluded, as part of a systematic literature review of quantitative and qualitative evidence, that breastfeeding rates for babies born by caesarean section continue to remain lower than those for babies having a vaginal birth. However, a Cochrane systematic review of randomised controlled trials which compared immediate or early skin-to-skin contact with usual hospital care (of baby being dried and wrapped and placed in a cot), found that women who achieved skin-to-skin contact following a caesarean birth were more likely to breastfeed successfully and for longer (Moore et al 2016). Furthermore, the results were not affected by when skin-to-skin was initiated (whether it was immediately or within 10 minutes of birth) but they acknowledge the small sample group of eight studies and suggest further research is required. In contrast to this, a randomised controlled trial by Gregson et al (2016) reported increased breastfeeding rates in the study group of women having elective caesarean sections at term who received immediate skin-to-skin contact in theatre, as compared with the control group who received skin-to-skin contact at the end of the operation.

Even when a mother chooses not to breastfeed, the benefits of skin-to-skin contact remain significant: babies placed skin-to-skin immediately with their mothers make the transition to life outside the womb more effectively, displaying more stable thermoregulation, heart rate and breathing (UNICEF UK 2019). Moore et al's (2016) findings also suggest that babies receiving early skin-to-skin contact displayed higher blood sugar levels, reducing the risk of hypoglycaemia, and that term infants settled and cried less. This, in turn, reduces stress in the baby and the mother, calming and relaxing both (UNICEF UK 2019). Being placed skin-to-skin immediately allows friendly bacteria from the mother's skin to transfer to the baby providing a protection against infection and, for the mother, it stimulates a release of oxytocin which supports feeding, nurturing and maternal behaviours (UNICEF UK 2019).

Early skin-to-skin contact is equally important with fathers if the mother is unable to provide this, possibly due to obstetric emergency or caesarean section performed under general anaesthetic. Shorey et al (2016) conducted an integrative literature review of quantitative and qualitative research evidence to assess the impact and paternal outcomes for fathers who provided skin-to-skin for their new-born babies. The research found similar outcomes for babies receiving skin-to-skin with fathers with regard to thermoregulation, heart rate, breathing and adaptation to extrauterine life. Shorey et al (2016) also discussed the positive impact of skin-to-skin contact on reducing fathers' stress levels, supporting engagement and interaction with their babies and improving the transition to parenthood. They do, however, acknowledge the limited number of studies to review and recommend further research and exploration in this area (Shorey et al 2016).

Policy and guidelines

In order to address the benefits of skin-to-skin immediately following birth, and in an attempt to reduce health inequalities and maximise child and maternal health outcomes, the UK government, in cooperation with the WHO and UNICEF, committed to supporting the evidence-based standards advocated by the Baby Friendly Initiative to inform policy and guidelines (UNICEF UK 2013). The focus of the initiative is to promote breastfeeding which contributes to giving babies the best start in life. Information on infant nutrition and evidence-based information on weaning is also provided for mothers who choose to formula feed (UNICEF UK 2019).

In addition to advocating and supporting breastfeeding, the initiation of early skin-to-skin contact plays an important role in promoting the health and well-being of mothers and babies by encouraging the development of loving nurturing relationships (UNICEF UK 2013). The evidence and rationale behind the Baby Friendly Initiative standards informed the guidelines *Intrapartum care for healthy women and babies [CG190]* (NICE 2017) and *Postnatal care up to 8 weeks after birth [CG37]* (NICE 2015). The NMC also references the Baby Friendly Initiative standards as best practice for midwives (NMC 2019).

The Scottish Government outlined its commitment to improving health outcomes for mothers and babies, and reducing health inequalities in Scotland, by introducing the national policy *Improving maternal and infant nutrition: a framework for action* which outlined a framework for action for all NHS boards (Scottish Government 2011). As a consequence, all Scottish maternity units are now currently accredited as Baby Friendly (UNICEF UK 2019).

One of the main principles of the Baby Friendly Initiative is the initiation of skin-to-skin contact to support feeding and bonding. Recent figures, reported by the Scottish Maternal and Infant Nutrition Survey 2017, show that in Scottish maternity units 86 per cent of families who responded reported having achieved skin-to-skin contact within one hour of birth. Nevertheless this differed according to delivery method, with 93 per cent of the respondents who had a vaginal delivery reporting achieving skin-to-

skin contact within the first hour following birth compared to only 73 per cent of those responding who had a caesarean delivery (Scottish Government 2018). This does, however, represent an increase on the most recent UK-wide figures from the 2010 Infant Feeding Survey. These reported 81 per cent of families responding as having achieved skin-to-skin contact within the first hour following birth; 88 per cent of vaginal births, in contrast with only 61 per cent of caesarean births achieved this outcome (NHS Digital 2012).

Barriers and enablers to skin-to-skin contact

Despite the well-documented benefits, best practice guidelines and policy advocating the promotion of immediate or early skin-to-skin contact, this practice fails to be promoted or facilitated in operating theatres (Gregson et al 2016).

Unfortunately there is little UK-based evidence to explain this lack of policy promotion. Zwedberg et al (2015) conducted qualitative interviews to gather data from eight midwives at three different hospitals in Stockholm which highlighted potential barriers to engage in safe skin-to-skin contact, including a lack of physical space where both mother and baby can be observed safely and the impact of spinal or epidural anaesthetic on mothers' ability to hold their baby safely. They also cited lack of understanding of the benefits of skin-to-skin contact within the multi-disciplinary team, and parents, as ongoing areas for improvement.

These findings are mirrored by Balatero et al (2019) who also conducted qualitative research using semi-structured interviews with obstetric nurses, and went further to highlight concerns about maintaining the sterile field in the operating theatre and the positioning of IV lines, ECG leads and maternal position (prone) as additional barriers to facilitating safe skin-to-skin contact.

Clinical experience from the author's practice supports the above findings. Gregson et al (2016) suggest that, with adequate training and information for the multi-disciplinary team, close observation of the baby's well-being and information for parents on the benefits of skin-to-skin contact, this practice can be performed easily and safely in theatre following an elective caesarean delivery. The women in this study reported greater satisfaction with their care, enjoyment at receiving immediate skin-to-skin contact with their babies in the operating theatre and a consequent easing into the transition to parenthood (Gregson et al 2016).

Recommendations for practice and future research

The findings from this narrative literature review recommend further training and education for all members of the multi-disciplinary team on the benefits of safe, observed, skin-to-skin contact within practice. Further research is also needed into how skin-to-skin rates can be improved within the theatre setting.

In practice, this could also be supported by enhanced individualised parenthood education and information for families having an elective caesarean birth on the benefits of skin-to-skin contact, whether that is face-to-face or via digital platforms. Providing evidence-based parenthood education that enables families to make informed choices is an essential skill of a registered midwife (NMC 2019).

Conclusion

This narrative literature review clearly highlights the numerous benefits of skin-to-skin contact for both the mother and baby, as advocated as best practice by research, professional bodies and practice guidelines (NICE 2015, NICE 2017, NMC 2019).

More importantly, this narrative literature review established no additional risks associated with safe, observed, skin-to-skin contact provided by an alert and informed parent following the elective caesarean birth of a healthy baby. However, following an elective caesarean birth, skin-to-skin contact continues to be less likely to be achieved compared to a vaginal birth and this highlights a lack of understanding on how skin-to-skin contact can be achieved safely within the theatre setting due to a lack of education and training. Further training and education for all members of the multi-disciplinary team on the benefits of safe observed skin to skin contact is necessary, with future research and exploration of how skin-to-skin rates can be improved within the theatre setting.

Conflict of interest

This article was submitted in part-fulfilment of a BSc Nursing Studies at Edinburgh Napier University.

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References

Balatero J, Spilker A, Mcniesh SG (2019). Barriers to skin-to-skin contact after cesarean birth. *MCN – American Journal of Maternal/Child Nursing* 44(3):137-43.

Beake S, Bick D, Narracott C, Chang Y (2016). Interventions for women who have a caesarean birth to increase uptake and duration of breastfeeding: a systematic review. *Maternal & Child Nutrition* 13(4):e12390. https://onlinelibrary.wiley.com/doi/full/10.1111/mcn.12390 [Accessed 12 March 2020].

Beecroft C, Booth A, Rees A (2015). Finding the evidence. In: Gerrish K, Lathlean J, Cormack D *eds. The research process in nursing*. 7th ed. Oxford: John Wiley & Sons: 89-105.

Bowling A (2014). *Research methods in health: investigating health and health services*. 4th ed. Maidenhead: Open University Press.

Brimdyr K, Cadwell K, Stevens J, Takahashi Y (2017). An implementation algorithm to improve skin-to-skin practice in the first hour after birth. *Maternal & Child Nutrition* 14(2):e12571. https://onlinelibrary.wiley.com/doi/full/10.1111/mcn.12571?af=R [Accessed 1 March 2020].

Denham SH, Humphrey T, deLabrusse C, Dougall N (2019). Mode of birth after caesarean section: individual prediction scores using Scottish population data. *BMC Pregnancy and Childbirth* 19(84). https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-019-2226-6 [Accessed 3 April 2020].

Gregson S, Meadows J, Teakle P, Blacker J (2016). Skin-to-skin contact after elective caesarean section: investigating the effect on breastfeeding rates. *British Journal of Midwifery* 24(1):18-25.

Healthcare Safety Investigation Branch (2020). *National Learning Report. Neonatal collapse alongside skin-to-skin contact*. Healthcare Safety Investigation Branch. https://www.hsib.org.uk/investigations-cases/neonatal-collapse-alongside-skin-skin-contact/national-learning-report/ [Accessed 1 September 2020].

International Council of Nurses (2012). *Closing the gap: from evidence to action*. Geneva: International Council of Nurses. https://www.nursingworld.org/~4aff6a/globalassets/practiceandpolicy/innovation--evidence/ind-kit-2012-for-nnas.pdf [Accessed 1 June 2015].

Moore ER, Bergman N, Anderson G, Medley N (2016). Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Of Systematic Reviews*, Issue 11. Art. No.: CD003519. DOI: 10.1002/14651858.CD003519.pub4. http://www.cochrane.org/Cd003519/Preg_Early-Skin-Skin-Contact-Mothers-And-Their-Healthy-Newborn-Infants [Accessed 1 March 2020].

National Institute for Health and Care Excellence (NICE) (2015). *Postnatal care up to 8 weeks after birth*. Clinical Guideline CG37. London: NICE. http://www.nice.org.uk/Guidance/Cg37 [Accessed 1 March 2020].

National Institute for Health and Care Excellence (NICE) (2017). *Intrapartum care for healthy women and babies*. Clinical Guideline CG190. London: NICE. http://www.nice.org.uk/Guidance/Cg190 [Accessed 1 March 2020].

National Services Scotland (2018). *Births in Scottish Hospitals. Year ending 31 March 2018*. Edinburgh: National Services Scotland. https://www.isdscotland.org/Health-Topics/Maternity-and-Births/Publications/2018-11-27/2018-11-27-Births-Report.pdf [Accessed 1 March 2020].

National Services Scotland (2019). *Infant Feeding Statistics Scotland. Financial Year 2018/19*. Edinburgh: National Services Scotland. http://www.isdscotland.org/Health-Topics/Child-Health/Publications/2019-10-29/2019-10-29-Infant-Feeding-Report.Pdf [Accessed 1 April 2020].

NHS Digital (2012). *Infant Feeding Survey – UK, 2010*. https://digital.nhs.uk/data-and-information/publications/statistical/infant-feeding-survey/infant-feeding-survey-uk-2010 [Accessed 1 March 2020].

Nursing & Midwifery Council (2019). *Standards of proficiency for midwives*. London: NMC. https://www.nmc.org.uk/standards/standards-for-midwives/standards-of-proficiency-for-midwives/ [Accessed 1 March 2020].

Ridley D (2012). *The literature review: a step-by-step guide for students*. London: Sage Publications.

Scottish Government (2011). *Improving maternal and infant nutrition: a framework for action*. Edinburgh: Scottish Government. https://www.gov.scot/publications/improving-maternal-infant-nutrition-framework-action/ [Accessed 1 March 2020].

Scottish Government (2018). *Scottish maternal and infant nutrition survey 2017*. Edinburgh: Scottish Government. https://www.gov.scot/publications/scottish-maternal-infant-nutrition-survey-2017/ [Accessed 1 March 2020].

Scottish Intercollegiate Guidelines Network (SIGN) (2014). *SIGN 50: A guideline developer's handbook*. Edinburgh: SIGN. https://www.sign.ac.uk/assets/sign50_2011.pdf [Accessed 1 November 2015].

Shorey S, Hong-Gu H, Morelius E (2016). Skin-to-skin contact by fathers and the impact on infant and paternal outcomes: an integrative review. *Midwifery* 40:207-17.

Stevens J, Schmied V, Burns E, Dahlen H (2014). Immediate or early skin-to-skin contact after a Caesarean section: a review of the literature. *Maternal & Child Nutrition* 10(4):456-73. https://onlinelibrary.wiley.com/doi/full/10.1111/mcn.12128 [Accessed 1 March 2020].

UNICEF UK (2012). *Preventing disease and saving resources: the potential contribution of increasing breastfeeding rates in the UK*. London: UNICEF UK. https://www.unicef.org.uk/wp-content/uploads/sites/2/2012/11/Preventing_disease_saving_resources.pdf [Accessed 1 April 2020].

UNICEF UK (2013). *The evidence and rationale for the UNICEF UK Baby Friendly Initiative standards*. London: UNICEF UK. https://www.unicef.org.uk/babyfriendly/about/evidence-and-rationale-for-the-baby-friendly-standards/ [Accessed 1 March 2020].

UNICEF UK (2019). *Skin-to-skin contact*. London: UNICEF UK. http://www.unicef.org.uk/Babyfriendly/Baby-Friendly-Resources/Implementing-Standards-Resources/Skin-To-Skin-Contact/ [Accessed 1 March 2020].

World Health Organization (WHO) (2019). *Early initiation of breastfeeding to promote exclusive breastfeeding*. Copenhagen: WHO. https://www.who.int/elena/titles/early_breastfeeding/en/ [Accessed 1 April 2020].

Zwedberg S, Blomquist J, Sigerstad E (2015). Midwives' experiences with mother-infant skin-to-skin contact after a caesarean section: 'fighting an uphill battle'. *Midwifery* 31(1):215-20.

Kelly L, Harper-McDonald B. MIDIRS Midwifery Digest, vol 31, no 1, March 2021, pp 96-100.