Facilitators, barriers and implications of immediate skin-to-skin contact after caesarean section: An ethnographic study

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Dedication

I would like to dedicate this thesis to all the birthing women throughout the world. My desire is that you will birth in a world where you are empowered to speak up and have the physically and emotionally safe birth that you desire.

I would also like to dedicate this thesis to my young men, Jean-Luc, Nathanael, William and Christian. Never underestimate yourself. Open doors. You can make a difference.
Acknowledgements

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I would like to express my gratitude for the ongoing supervision and mentorship during this research from Professor Hannah Dahlen, Professor Virginia Schmied and Dr Elaine Burns. These supervisors have been an amazing constant support. They have always made themselves available whenever I have needed their knowledge and support, whilst at the same time giving me the space to grow as a researcher and grow in my own identity. I would especially like to thank Professor Hannah Dahlen for introducing me to the world of social media. It has been the perfect platform to disseminate my research and find new passions.

Thank you to all the women and their support people and the health professionals that were involved in this research. The women and their support people in this research generously let me explore a pivotal time in their life so that their experience can empower women in the future. Your generosity has and will continue to make a difference.

Thank you to all the health professionals and the health institution who participated in this study for allowing me to observe practice and gain insight into how to improve the care provided to women after a caesarean. You have shown me that you strive to do the best for women and you have revealed gems that will improve practice in the future.

I would like to thank my fellow Western Sydney University research friends who have tirelessly listened to my passion and have inspired me to do further research. There are so many interesting topics to cover!
The biggest thank you goes out to my newly found Skin-to-Skin forever buddies from around the world that are just as passionate about Skin-to-Skin Contact as I am. These include Val Finigan, Kajsa Brimdyr, Karin Cadwell and Jenny Clarke (Jenny the M). You are all so inspiring. I hope we have many collaborative moments in the future.

There are so many other enthusiastic researchers and breastfeeding friends that I would like to thank. These include all the team from the Healthy Children’s Centre for Breastfeeding, including Anna Cadwell Blair, Cindy Turner-Maffei and Barbara O’Connor and closer to home friends Michelle Simmons, Lisa White and Kylie-Anne Winter. You always inspire me to be better.

I would like to thank my family on both sides for their support and encouragement throughout all my learning years. I hope to see a lot more of you now!

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I would particularly like to thank Chris. Oh my, where do I start? I had never thought about going to University until the end of my final pregnancy, 16 years ago. I remember thinking at an antenatal visit that it would be cool to be a midwife. I mentioned this to my husband, Chris, who said, ‘why don’t you do it?’ This got me thinking, is this something that I could do? Since then he has supported me through a nursing degree, nursing research honours, a
midwifery diploma, a lactation consultant course, and my PhD. I know it has not been easy. He has given me the freedom to find myself. I now know who I am. I couldn’t have done it without you babe. I love you so much.

Every one of you have encouraged me to grow to be the strong woman that I am today. I never thought I could say this; however I can now acknowledge that I am a feminist, and I’m proud of it. I am a woman that has a voice and it will be heard.
Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

Jeni Stevens
Publications

**Peer Reviewed:**

The first four papers where I am first author are in the thesis. The collaborative paper (last one) where I am a co-author is in the appendix.


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(Appendix A, page 145)

**Non-Peer Reviewed:**

These papers are in the appendix.


(Appendix B, page 160)


(Appendix C, page 161)
Presentations

Overall I have presented twenty-one times on the research I have undertaken for this thesis.

Online Conferences:

- ‘Skin-to-Skin Algorithm’ – Joint presentation with Kajsa Brimdyr and Karin Cadwell. iLactation Free Online Presentation 12/2017
- ‘Facilitating Skin-to-Skin Contact after Caesareans’ – iLactation Online Conference 03/2017
- ‘Providing Skin-to-Skin Contact after Caesareans’ – Royal College of Midwives (RCM) Webinar 12/2016
- ‘Facilitating Skin-to-Skin Contact after Caesareans’ – Lactation Consultants of Australia and New Zealand (LCANZ) Webinar 10/2016
- ‘How to facilitate immediate skin to skin post a caesarean section: Increasing breastfeeding success’ – GOLD Lactation Online Conference 04/2015

International Conferences:

- ‘Who Owns the Baby? Skin-to-Skin Contact after a Caesarean Section’ – The Healthy Children Project, Inc Center for Breastfeeding & The University of Central Lancashire Maternal and Infant Nutrition and Nurture Unit (MAINN) Conference (Deerfield Beach Florida, USA) 01/2018
Joint Workshop with Kajsa Brimdyr ‘Implementing Skin-to-Skin Contact in the Operating Theatre’ – The Healthy Children Project, Inc Center for Breastfeeding & The University of Central Lancashire Maternal and Infant Nutrition and Nurture Unit (MAINN) Conference (Deerfield Beach, Florida USA) 01/2018

‘Providing Skin-to-Skin Contact Immediately after a Caesarean Section’ – 31st International College of Midwives Triennial Congress Conference (Toronto, Canada) 06/2017

Joint Workshop with Kajsa Brimdyr, Karin Cadwell and Jenny Clarke ‘Skin-to-Skin Contact in the Operating Theatre’ – Maternal, Infant and Child Nutrition and Nurture: Relational, Bio-cultural and Spatial Perspectives Conference (Grange-over-Sands, United Kingdom) 06/2017

‘Who Owns the Baby? Skin-to-Skin Contact after a Caesarean Section’ – Normal Labour and Birth Conference. (Sydney, Australia) 10/2016

‘Mother's Perceptions of the Provision of Skin-to-Skin Contact after a Caesarean Section’ – Normal Labour and Birth (Grange-over-Sands, United Kingdom) 06/2015

‘Facilitators and barriers to providing skin-to-skin contact after a caesarean section’ – Maternal, Infant and Child Nutrition and Nurture: Relational, Bio-cultural and Spatial Perspectives Conference (Grange-over-Sands, United Kingdom) 06/2015

Pecha Kucha ‘Who Owns the Baby? Caesarean Section’ – Normal Labour and Birth Conference (Grange-over-Sands, United Kingdom) 06/2015

‘Facilitating skin-to-skin contact immediately after caesarean section: The benefits and challenges of using ethnographic methods’ – Maternal, Infant and Child Nutrition and Nurture: Relational, Bio-cultural and Spatial Perspectives (Parramatta, Australia) 11/2014
National Conferences:

- Joint Workshop with Allison Teate ‘Working with Media in Midwifery Practice and Research’ – The Australian College of Midwives 19th Biennial Conference (Gold Coast, Australia) 10/2015
- ‘The ‘super’ midwife provides skin-to-skin contact immediately after a caesarean section’ – The Australian College of Midwives 19th Biennial Conference (Gold Coast, Australia) 10/2015

State Conference:

- ‘Midwifery Bordering on Change: Immediate skin-to-skin post caesarean’ – The Australian College of Midwives NSW Annual State Conference (Tweed Heads, Australia) 08/2013

Local Conferences:

- ‘Providing Skin-to-Skin Contact Immediately after a Caesarean Section’ – Nepean Blue Mountains Local Health District Nursing and Midwifery Research Practice Development Conference. 05/2017
- ‘Providing Skin-to-Skin Contact Immediately after a Caesarean Section’ – Westmead Women’s and Newborn Health Conference. Westmead Hospital. 05/2017
- ‘Providing Skin-to-Skin Contact Immediately after a Caesarean Section’ – Annual Nepean Research Day. University of Sydney and Nepean Blue Mountains Local Health District. 10/2016
• ‘Skin-to-Skin Post Caesarean Section’ – Nepean Hospital Midwifery Conference 03/2014

Poster Presentation:

• ‘Who ‘owns’ the baby after a Caesarean Section? Midwives initiating skin-to-skin contact’ – 31st International College of Midwives Triennial Congress Conference (Toronto, Canada) 06/2017
Awards

- Best Senior Presentation:
  3 Minute Thesis ‘Immediate Skin-to-Skin Post Caesarean Section’ – Western Sydney University Research Futures Forum 09/2017

- Best Oral Presentation in the Field of Nursing and Midwifery:
  ‘Providing Skin-to-Skin Contact Immediately after a Caesarean Section’ – Annual Nepean Research Day. University of Sydney and Nepean Blue Mountains Local Health District. 10/2016

- Best Senior Presentation:
  ‘Who Owns the Baby? Caesarean Section’ – Western Sydney University Research Futures Forum 06/2016

- Second Prize:
  3 Minute Thesis ‘Immediate Skin-to-Skin Contact after a Caesarean Section’ – University of Western Sydney Research Futures Forum 07/2015
Scholarships

- 2012 Australian Postgraduate Award with Western Sydney University Top-Up:
  Awarded to complete this research

- 2015 Australian College of Midwives NSW Scholarship:
  Scholarship to attend and present at the Maternal, Infant and Child Nutrition and
  Nurture: Relational, Bio-cultural and Spatial Perspectives Conference and the
  International Normal Labour and Birth Conference in June 2015
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Ethics

Ethics approval for this study was provided by the hospital on the 22\textsuperscript{nd} October 2013 in a letter from the Local Health District Human Research Ethics Committee (Hospital Human Research Ethics Committee, 2013) (Appendix D). The Human Research Ethics Committee reference number assigned to this research was Study 13/47-HREC/13/XXX/102.

This research was subsequently approved by the Western Sydney University (formerly University of Western Sydney) on the 11th of December, 2013 in a letter from Western Sydney University Human Research Ethics (Appendix E). The protocol number assigned to this research was H10482.

Once the hospital ethics board signed approval, the paperwork was sent to get site specific approval, which was approved on the 3\textsuperscript{rd} February, 2014 (Appendix F). The Site Specific Approval reference number assigned to this research was SSA/13/XXX/150.

Further approval was sought for changes in email addresses and for permission for doctors and midwives in the antenatal clinic to hand out the recruitment advertisements on the 19th February 2014 (Appendix G). Approval was granted on the 26th February, 2014 (Appendix H).
Glossary and Abbreviations

BFHI: Baby Friendly Health Initiative - a global initiative developed by the WHO and UNICEF that presents ten steps to protect, promote and support breastfeeding

Caseload Midwifery: Midwives that provide continuity-of-care within a small group of midwives. They provide care to their clients antenatally, intrapartum (including the operating theatre and recovery) and during the postnatal period

CS: Caesarean Section

Charité CS: Charité caesarean - where a baby is ‘walked out’ of the abdomen, the cord is cut by the partner, the baby is examined by the obstetrician and then the baby is placed in skin-to-skin contact with his/her mother

Maternal Assisted Caesarean Section: A caesarean section where the mother helps lift her own baby from her abdomen during surgery and then places the baby on her chest

Natural SSC CS: Natural skin-to-skin contact caesarean section – A caesarean where the surgical drape is lowered so that the parents can observe the slow delivery of their baby and then the baby is passed directly to the mother to enable immediate skin-to-skin contact

NICU: Neonatal Intensive Care Unit

NSW: New South Wales

OT: Operating Theatre

Recovery: Where a patient is moved immediately after surgery for close observation

SSC: Skin-to-skin contact - where a naked baby (sometimes with a nappy on) is placed prone on the bare chest of another person
Standard Midwifery Care: A birth unit midwife cares for the newborn in the operating theatre and then a postnatal midwife takes over the care of the newborn in recovery.

Different nurses look after the mother in the operating theatre and recovery

UNICEF: United Nations Children’s Fund

WHO: World Health Organization
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Abstract

Background:

Skin-to-skin contact immediately after a normal birth has been shown to provide many benefits for babies and mothers. In addition to keeping newborns physiologically stable, encouraging early initiation of breastfeeding, improving breastfeeding outcomes and helping contract the mother’s uterus, skin-to-skin contact is also known to reduce the stress of birth and increase bonding between the mother and newborn. Less is known about skin-to-skin contact following a caesarean section. A literature review revealed that there were only seven papers that discussed the outcomes of providing immediate or early skin-to-skin contact after a caesarean section. Since completing the literature review, a further 19 papers have provided evidence about immediate or early skin-to-skin contact after a caesarean section. Current evidence shows that immediate or early skin-to-skin contact after a caesarean section can potentially improve maternal and newborn emotional wellbeing and physiological stability, reduce maternal pain, improve parent/newborn communication and improve newborn feeding outcomes. The review highlighted that immediate and early skin-to-skin contact in the operating theatre can potentially decrease the immediate post-operative time in recovery, the time admitted in the postnatal ward and can decrease Neonatal Intensive Care Unit admissions, therefore potentially decreasing organisational workload and expenditure. The findings also provide evidence that employing quality improvement programs is a successful way to implement safe skin-to-skin contact after caesarean section. Despite the increasing evidence of the benefits of immediate or early skin-to-skin contact, it is still something many mothers and babies do not experience.
Aim:

The aim of this study was to determine the facilitators and barriers of providing skin-to-skin contact between a mother and baby in the first two hours after an elective caesarean section. The study also aimed to capture women’s experience of skin-to-skin contact and explore the contact they want with their baby within the first two hours after birth.

Participants:

A total of 21 women who were having a repeat planned caesarean section, and 26 of their support people, and over 125 health professionals, were involved in the research. The 21 women were also involved in an interview around 6 weeks postpartum. A further 43 health professionals were involved in individual interviews or focus groups.

Methodology:

A video ethnographic methodology was chosen for this study as it would allow the researcher to gain an in-depth understanding of human interaction and how the organisational and workplace culture and environment influence interactions. Video footage, researcher observations and field notes were utilised to capture the contact between 21 mothers, their babies, and their support people, from the moment of the caesarean section until after the first breastfeed, or until two hours after the caesarean section. This data was used to capture the barriers and facilitators of providing skin-to-skin contact in this time frame. Individual interviews were conducted with the same women around six weeks postpartum, to explore the women’s experience of contact, or absence of, after a caesarean section. Focus groups and individual interviews with health professionals were also conducted to help determine their knowledge of skin-to-skin contact, their understanding of the World Health Organizations recommendations for skin-to-skin contact and their perception of skin-to-skin contact.
contact immediately after a caesarean section. The focus groups and interviews also provided the opportunity to explore what health professionals perceived as barriers to immediate skin-to-skin contact after a caesarean and their ideas on how to overcome those barriers.

Audio transcripts of interviews, focus groups and video recordings were entered into NVivo10. The data was then examined and coded using ethnographic technique, highlighting the relationship between human responses in the physical and socio-cultural environment of the operating theatre and recovery room. Analysis involved examining the environment, space, equipment, the actors, dialog, activities and the sequencing of events. Whilst coding in NVivo10, themes started to emerge from the data, however further clarification was needed. This clarification was achieved during meetings with the broader research team. The codes were then organised under the identified themes.

**Results:**

The study findings exposed institutional, maternal and implementation barriers to providing immediate skin-to-skin contact after a caesarean section, however health professionals revealed ways to overcome these barriers. The overarching theme for this research was ‘Who Owns the Baby – The Juxtaposition of Birth and Surgery’. The complex operating theatre, and recovery, environment and the hospital system impacted on mother-infant contact in the first two hours after birth. In this environment the baby was often distanced from the mother and viewed as a separate, independent being who was not ‘owned’ by the mother. There was a juxtaposition between birth and surgery. Mothers were physically and emotionally separated in the operating theatre and were perceived as separate entities from their babies. Health professionals behaved as if they owned the woman and baby - obstetricians owning the lower half of women, anaesthetists owning the top half and midwives owning the baby.
The women also recognised that the operating theatre and recovery were complex environments, however they wanted to retain the bond with their baby within this space. They recalled their preceding births and how they felt disconnected from their newborn. In this study some women identified that they struggle to have the desired connection with their baby immediately following the birth. The women verbalised the need to visualise their newborn to determine if they were physically perfect. They desired to stay with their baby and have skin-to-skin contact, commenting that this ‘felt right’. Some of the women voiced their concern about the safety of the baby when providing skin-to-skin contact, however they still wanted skin-to-skin contact. Several health professionals found ways to manipulate the system to safeguard the mother-baby connection. These health professionals were observed to facilitate the mother to ‘own’ her baby by listening to her requests, encouraging skin-to-skin contact and avoiding maternal and infant separation.

**Conclusion:**

Providing skin-to-skin contact in the medicalised environment of the operating theatre and recovery can be challenging. Individual staff members have the power to enable or hinder skin-to-skin contact in this environment. Skin-to-skin contact in the operating theatre and recovery can be successfully implemented when staff members give input and adjust existing care. Providing this care is important because women want it and it enables them to ‘own’ their own baby.
1 Chapter One: Introduction

The birth of a baby is one of the most anticipated events in a woman’s life. Most women expect to have a normal birth and breastfeed with minimal complications; however, this is not every woman’s story. For many women, their birth memories are of fear, emergency surgery, separation from their baby and physical and emotional pain. Some women are traumatised by the experience many years later (Bayes, Fenwick, & Hauck, 2012; Greenfield, Jomeen, & Glover, 2016).

Some years ago, in the hospital where I worked, skin-to-skin contact (SSC) started to be offered to women having a planned caesarean section (CS). Women had the opportunity to have SSC with their baby whilst in the recovery ward, immediately following surgery. After this practice change, I observed a change in the faces of women returning from the operating theatre (OT) to the postnatal ward. Women no longer had blank, detached looks on their faces. Instead they looked elated and in love with their newborn. Women regularly commented on how wonderful it was that they could stay with their baby and have SSC in recovery. They made comparisons with their previous caesarean/s and described how much better it was for them this time. Midwives also started talking about the change in women with the implementation of SSC in recovery and openly discussed their personal stories of birth trauma. Midwives associated the separation from their own baby during their CS to their own difficulty in initiating a bond with their child. These experiences spiked my interest in SSC after a CS. It made me wonder if these traumatic births could be changed into experiences that mothers can feel positive and powerful about. The question I asked myself was: is SSC the answer to improving the outcomes for mothers and babies who undergo a CS?
1.1 Current caesarean section rates

In Australia in 2015, 101,370 (33%) of birthing women had a CS (Australian Institute of Health and Welfare, 2017). In NSW during the same period of time, 30,810 (32.4%) birthing women had a CS (NSW Ministry of Health, 2016). This is important because it shows that research on SSC after a CS could impact over 100,000 women and babies in Australia every year, and even more worldwide.

1.2 Definition of skin-to-skin contact

Skin-to-skin contact is the placement of an almost naked infant - occasionally with a nappy or a cap on, on the bare skin of his/her mother between the breasts in an upright position, with the back covered by a blanket or the maternal clothes (Crenshaw et al., 2012; World Health Organization, 2003). Fathers or others can also provide SSC, however it is recommended that mothers provide SSC immediately after birth because it encourages the baby to go through the stages of SSC which facilitates the first breastfeeding (Crenshaw et al., 2012; Widström et al., 2011). Skin-to-skin contact can be provided for any length of time and this can be immediately after birth or any time thereafter. The World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF) have developed specific recommendations related to the provision of SSC (World Health Organization, 2017).

1.3 Recommendations for skin-to-skin contact

The Baby Friendly Health/Hospital Initiative (BFHI), a global initiative developed by the WHO and UNICEF in 1991, provided ten steps to help health facilities to significantly improve the health of mothers and babies by protecting, promoting and supporting breastfeeding, because the WHO and UNICEF know the important role that health facilities
have in helping new mothers breastfeed (Australian College of Midwives, 2016b; World Health Organization, 2017). Step four of the BFHI recommends that all babies should have immediate SSC following birth (Australian College of Midwives, 2016b). This SSC should continue until after the first breastfeed, and health professional routines should not disturb it (Nyqvist et al., 2010; Overfield, Ryan, Spangler, & Tully, 2005; Widström et al., 2011). The Australian College of Midwives oversees BFHI accreditation in Australia. Step four from the Australian BFHI Handbook for Maternity Facilities states:

“Place babies in skin-to-skin contact with their mother immediately following birth for at least an hour and encourage mothers to recognise when their babies are ready to breastfeed, offering help if needed” (Australian College of Midwives, 2016b, p. 22)

Skin-to-skin contact is recommended as soon as the mother is alert and active after a CS. The handbook states that the optimum practice after a CS birth is:

“The baby is placed skin-to-skin on the mother’s chest whilst she is on the theatre table, immediately after or within 5 minutes” (Australian College of Midwives, 2016b, p. 22)

Skin-to-skin contact is also recommended after a general anaesthetic:

“Her baby is on her chest in skin-to-skin contact within 10 minutes of being able to respond to her baby, unless evidence can be provided that the mother’s or baby’s condition prevent this” (Australian College of Midwives, 2016b, p. 22).

1.4 The physiological impact of skin-to-skin contact

SSC stimulates the release of oxytocin (Buckley, 2015; Crenshaw, 2014; Johnson, 2013). Oxytocin is a neuropeptide that facilitates feelings of love, calmness and mother-infant bonding (Johnson, 2013; Riem et al., 2011). Oxytocin also improves maternal
responsiveness to their crying newborn by reducing the neural circuitry activation of anxiety and aversion and by increasing empathy (Riem et al., 2011). Serum oxytocin levels were significantly higher in a group of mothers who had immediate SSC after their CS when compared to those who were encouraged to breastfeed their baby an hour after the CS was completed (Yuksel et al., 2015). SSC is especially important after a planned CS because a planned CS can reduce, or deny, the natural oxytocin surge that is triggered with labour (Buckley, 2015). This surge is important for breastfeeding and in reducing postpartum haemorrhage (Buckley, 2015).

1.5 The benefits of skin-to-skin contact

The right environment for a newborn is being in SSC on their mother’s body (Bergman & Bergman, 2013). The mother’s body is the source of their physiologic and biological needs of body regulation and stabilisation, food and bonding (Bergman & Bergman, 2013). The first hours of life are the sensitive period for the newborn and any separation will make self-attachment at the breast and bonding with the mother more difficult (Bergman & Bergman, 2013).

Both mothers and their newborns benefit from SSC. SSC improves the bonding between the mother and baby (Hewitt, Watts, Robertson, & Haddow, 2005; Overfield et al., 2005). It helps babies transition from the womb by helping stabilise their temperature and maintaining their blood glucose levels (Ferber & Makhoul, 2004; Gabriel et al., 2010; Hewitt et al., 2005; Mercer, Erickson-Owens, Graves, & Haley, 2007; Moore, Bergman, Anderson, & Medley, 2016; Overfield et al., 2005; Walters, Boggs, Ludington-Hoe, Price, & Morrison, 2007). It also helps the mother by increasing uterine contractions, reducing the time to the birth of the
placenta and reducing the risk of postpartum haemorrhage (Gabriel et al., 2010; Overfield et al., 2005; Saxton, Fahy, Rolfe, Skinner, & Hastie, 2015).

1.6 Skin-to-skin contact and breastfeeding

The WHO states that women should aim to exclusively breastfeed for six months and then continue to breastfeed for two years or more (World Health Organization, 2012). There is evidence that women who give birth by CS are less likely to initiate breastfeeding and report more difficulties while establishing breastfeeding (Hauck, Fenwick, Dhaliwal, & Butt, 2011). Furthermore, elective surgery itself could potentially impact breastfeeding due to a reduction in prelabour oxytocin and prolactin receptor peaks (Buckley, 2015). If mothers and babies are kept together and have unlimited opportunities for SSC, their breastfeeding outcomes improve, and subsequently the risk of short and long-term illnesses and mortality is reduced (Crenshaw, 2014). SSC facilitates the baby to demonstrate their innate behaviours to crawl to the breast and breastfeed (Widström et al., 2011). Early SSC is known to improve breastfeeding initiation, effectiveness and duration following a normal vaginal birth (Moore et al., 2016; Overfield et al., 2005; Walters et al., 2007). It is important to determine whether this is also true following a CS (Moore et al., 2016).

Babies who are placed in immediate SSC are given the opportunity to crawl to the breast and breastfeed (Crenshaw, 2014). There are nine distinct infant behaviours seen when a mother provides SSC (Widström et al., 2011, p. 80). These include:

1. Birth cry – where the baby cries and takes their first breath
2. Relaxation – where the baby rests and there is no activity seen
3. Awakening – where the baby makes small movements of the head, limbs and shoulders
4 Activity – where the baby moves his/her limbs and head and roots, however does not move their position
5 Crawling – where the baby pushes and moves towards the breast
6 Resting – where the baby rests, however may have some mouth activity. This can happen at any time though these stages
7 Familiarisation – where the baby learns how to attach to the breast. They lick and touch the areola and nipple, salivate, suck their hand and attempt to attach
8 Suckling – where the baby has attached to the breast and has his/her first breastfeed
9 Sleeping – where the baby closes their eyes and sleeps after the first breastfeed

1.7 Prevalence of skin-to-skin contact after caesarean section
Not all women in Australia have the opportunity to have SSC after their birth. It is reported that 20% of Australian birth facilities are now BFHI accredited (World Health Organization, 2017). Many other facilities, that are not BFHI accredited, provide SSC after a normal birth; however, providing this care is more challenging after a CS. The WHO recognises this is a challenge for many facilities (World Health Organization, 2017); however implementing the BFHI and providing SSC after a CS could potentially positively impact large numbers of women and their babies who undergo a CS.

1.8 Thesis structure
This thesis consists of seven chapters and contains four papers that have been published in peer-reviewed journals.
Chapter two presents a published literature review titled *Immediate or early skin-to-skin contact after a caesarean section: A review of the literature* and an update including literature published since the review.

Chapter three presents the publication *Video ethnography during and after caesarean sections: Methodological challenges* which describes the methodology and methods used in the study.

Chapter four presents the first publication reporting the findings of the study *A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery*. This paper provides insight into the facilitators and barriers of providing SSC in the OT and recovery.

Chapter five presents the publication titled *Who owns the baby? A video ethnography of skin-to-skin contact after a caesarean section* which examines the impact of health professionals’ practice on SSC.

Chapter six presents findings from the analysis of women’s interviews about what they want in the first few hours after their CS birth. The data reported in chapter six was considered vital for the thesis, however it has not been published. This data will be published following submission of the thesis.

Chapter seven is the discussion and synthesises of the findings in relation to other relevant data.

In the Appendices a further three papers are presented. The first is a collaborative paper titled *An implementation algorithm to improve skin-to-skin practice in the first hour after birth* (Appendix A). This paper presents the ‘Healthy Children Project’s Skin-to-Skin Implementation Algorithm’ which can be used to highlight possible areas for improvement.
related to SSC after birth. The last two papers were written for a non-peer reviewed midwifery journal. The first titled *Providing skin-to-skin in the operating theatre* (Appendix B) discussed tips on providing SSC in the OT and the second titled *Maternal Assisted Caesarean Section* (Appendix C) discussed the process of providing a ‘Maternal Assisted Caesarean Section’.
Chapter Two: Literature review

2.1 Introduction

Chapter two presents the findings from published literature that discussed evidence on the facilitation of immediate (within minutes of birth) or early (within one hour of birth) SSC after CS and associated maternal and newborn outcomes. The publication: 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): 456-473 (page 10) is a literature review of papers that were published in the preceding 10 years. As of July 2018, this paper had an Altmetric Score of 75 and was in the top 5% of all research outputs scored by Altmetric (Wiley Online Library, 2018a), and it had been cited 78 times in four years. The latest citing was in the newest version of the World Health Organisation and UNICEF Baby Friendly Hospital Initiative implementation guidance (World Health Organization & UNICEF, 2018). The seven papers identified in the review were critiqued using the appropriate Critical Appraisal Skills Programme tool (Appendix I & J). The papers focused on programs that promoted SSC immediately or soon after a CS; the lived experience of early SSC; parent/infant interaction; and infant outcomes. In this chapter, an updated review of the literature is also presented synthesizing the findings from additional papers published since the literature review paper.
2.2 Publication: Immediate or early skin-to-skin contact after a caesarean section: A review of the literature

Review Article

Immediate or early skin-to-skin contact after a Caesarean section: a review of the literature

Jeni Stevens, Virginia Schmied, Elaine Burns and Hannah Dahlen
School of Nursing and Midwifery, University of Western Sydney, Penrith, New South Wales, Australia

Abstract

The World Health Organization and the United Nations International Children’s Emergency Fund recommends that mothers and newborns have skin-to-skin contact immediately after a vaginal birth, and as soon as the mother is alert and responsive after a Caesarean section. Skin-to-skin contact can be defined as placing a naked infant onto the bare chest of the mother. Caesarean birth is known to reduce initiation of breastfeeding, increase the length of time before the first breastfeed, reduce the incidence of exclusive breastfeeding, significantly delay the onset of lactation and increase the likelihood of supplementation. The aim of this review is to evaluate evidence on the facilitation of immediate (within minutes) or early (within 1 h) skin-to-skin contact following Caesarean section for healthy mothers and their healthy term newborns, and identify facilitators, barriers and associated maternal and newborn outcomes. A range of electronic databases were searched for papers reporting research findings published in English between January 2003 and October 2013. Seven papers met the criteria. This review has provided some evidence that with appropriate collaboration skin-to-skin contact during Caesarean surgery can be implemented. Further evidence was provided, albeit limited, that immediate or early skin-to-skin contact after a Caesarean section may increase breastfeeding initiation, decrease time to the first breastfeed, reduce formula supplementation in hospital, increase bonding and maternal satisfaction, maintain the temperature of newborns and reduce newborn stress.

Keywords: skin-to-skin contact (SSC), kangaroo care (KC), Caesarean/Caesarean section, Baby Friendly Health Initiative (BFHI), breastfeeding, operating theatre, operating room.

Introduction

Skin-to-skin contact (SSC) describes the placement of a naked infant, occasionally with a nappy or a cap on, on the mothers bare skin, and the exposed side/back of the infant covered by blankets or towels (UNICEF 2011). The term kangaroo care (KC) is generally discussed in relation to SSC with premature infants and care provided in Neonatal Intensive Care Units (UNICEF 2010). SSC is more generalised, as it includes care for healthy term infants. SSC is recommended immediately after birth for at least 1 h for all women, or until after the first breastfeed, and if breastfeeding, SSC should continue until after the first breastfeed; however, it is also recommended to be implemented anytime thereafter, and can be provided for any length of time (Overfield et al. 2005; UNICEF 2011).

The Baby Friendly Health Initiative (BFHI), developed by the World Health Organization (WHO) and
UNICEF, recommends that all babies should have access to immediate SSC contact following vaginal birth, and as soon as the mother is alert and responsive after a Caesarean section (World Health Organization & UNICEF 2009; Baby Friendly Health Initiative 2012). Immediate SSC after a Caesarean using spinal or epidural anaesthetic is achievable because the mother remains alert; however, after a general anaesthetic, the newborn should be placed skin-to-skin as soon as the mother is alert and responsive (World Health Organization & UNICEF 2009). It is recommended that SSC be facilitated immediately after birth, as this is the time when the newborn is most likely to follow his/her natural instincts to find and attach to the breast and then breastfeed (World Health Organization & UNICEF 2009; Baby Friendly Health Initiative 2012). Health professional routines should not disturb SSC (Overfield et al. 2005; World Health Organization & UNICEF 2009; Widstrom et al. 2011), in order to facilitate the newborn to follow nine distinct natural behaviours (Widstrom et al. 2011; Crenshaw et al. 2012). These behaviours include the birth cry, relaxation, awakening, activity, crawling, resting, familiarisation, sucking and sleeping (Widstrom et al. 2011; Table 1).

### Benefits of SSC

There are many advantages associated with SSC provided soon after birth. SSC helps maintain newborn thermoregulation (Hewitt et al. 2005; Overfield et al. 2005; Mercer et al. 2007; Walters et al. 2007; Gabriel et al. 2010) and blood glucose levels (Hewitt et al. 2005; Overfield et al. 2005; Walters et al. 2007); decreases the risk of jaundice (Overfield et al. 2005); reduces the stress of birth (Farber & Makhoul 2004); encourages bonding between the mother and newborn (Overfield et al. 2005; Mercer et al. 2007); and encourages longer duration of breastfeeding (Overfield et al. 2005; Mercer et al. 2007; Gabriel et al. 2010).

Moore et al. (2012), in a systematic review, shows that early SSC increases breastfeeding duration following a normal vaginal birth. It is important to determine whether this is also true following a Caesarean section (Moore et al. 2012). There is evidence that women who give birth by Caesarean section are less likely to initiate breastfeeding and report more difficulties while establishing breastfeeding (Hanck et al. 2011). Hospitals generally do not provide SSC between the mother and newborn immediately after a Caesarean section. Implementing policies that promote mother/newborn contact will benefit the mother and newborn (Spear 2006). More staff may be

### Table 1. Nine instinctive newborn behaviours

<table>
<thead>
<tr>
<th>Phases</th>
<th>Behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Birthcry</td>
<td>The cry immediately after birth</td>
</tr>
<tr>
<td>2. Relaxation</td>
<td>Resting, no activity</td>
</tr>
<tr>
<td>3. Awakening</td>
<td>Begins to make small movements offhead and shoulders</td>
</tr>
<tr>
<td>4. Activity</td>
<td>Starts rooting, pushing with limbs</td>
</tr>
<tr>
<td>5. Crawling</td>
<td>Starts moving on the mother's chest, approaching the breast</td>
</tr>
<tr>
<td>6. Resting</td>
<td>Resting, may move mouth and suck hands (at anytime)</td>
</tr>
<tr>
<td>7. Familiarisation</td>
<td>Licking and the nipple and areola</td>
</tr>
<tr>
<td>8. Sucking</td>
<td>Sucking at the breast</td>
</tr>
<tr>
<td>9. Sleeping</td>
<td>Resting, with eyes closed</td>
</tr>
</tbody>
</table>

Adapted from Crenshaw et al. (2012) and Widstrom et al. (2011).
needed to facilitate SSC in the operating room and in recovery (Dabrowski 2007); however, one medical centre discovered that when they implemented immediate SSC, it reduced staff workload because of mothers having fewer breastfeeding challenges during their hospital stay (McKeever & Fleur 2012).

Potential risk of skin-to-skin care

Moore et al. (2012) state there are no known negative effects of SSC contact. Authors have presented cases where healthy term newborns have needed to be resuscitated because of apnoea and hypotonia while having SSC, and in some, very rare, circumstances, newborns have even died (Dageville et al. 2008; Nakamura & Sano 2008; Andres et al. 2011; Poets et al. 2011; Fleming 2012; Gnigler et al. 2013; Pejovic & Herlenius 2013); Andres et al. (2011) and Poets et al. (2011) estimated that in the first day of life, between 2.5 and 2.6 healthy term newborns out of 100 000 births have apparent life-threatening events, and between 1.1 and 1.7 newborns out of 100 000 births die because of these events. The majority of these incidents occur within 4 h after birth (Gnigler et al. 2013). Some of these events may have been caused by the obstruction of the newborns airway, associated with SSC and the newborn being in a prone position (Dageville et al. 2008; Andres et al. 2011; Gnigler et al. 2013; Pejovic & Herlenius 2013). Staff should ensure safe newborn positioning during SSC, for example, making sure the newborns nares are visible and monitor the baby frequently in the first few hours after birth (Nakamura & Sano 2008; Andres et al. 2011; Poets et al. 2011; Gnigler et al. 2013; Pejovic & Herlenius 2013). Authors also recommend that all mothers of newborns should be educated about the importance of letting staff know if there are any changes in their newborns (Poets et al. 2011; Gnigler et al. 2013; Pejovic & Herlenius 2013). Caution is also advised after a Caesarean section because of the newborns having a significant increased risk of lower Apgar scores, respiratory problems and hypoglycaemia soon after birth (Karlstrom et al. 2013). Despite this risk, SSC between mother and child after birth is highly recommended because of its many benefits (Dageville et al. 2008; Andres et al. 2011; Fleming 2012; Gnigler et al. 2013; Pejovic & Herlenius 2013). The aim of this review is to evaluate existing evidence on the facilitation of immediate or early (within 1 h) SSC following Caesarean section for healthy term newborns and identify facilitators, barriers and associated maternal and newborn outcomes.

Method

Search strategy

A detailed search was performed using the following databases: CINAHL (EBSCOhost), Health Collection (Informit, RMIT), PubMed (NCBI, US National Library of Medicine), Embase (Ovid, Wiley Online Library (John Wiley & Sons), Medline (OvidSP, Wolters Kluwer), Cochrane, Health Source, Scopus, Wiley, Health & Medical Complete (ProQuest) and Joanna Briggs Institute. The search terms in the title, abstract or keywords included skin-to-skin and birth, skin-to-skin and Caesarean/Caesarean, skin-to-skin and breastfeeding, kangaroo care and birth, kangaroo care and caesarean/caesarean, kangaroo care and breastfeeding, breastfeeding and caesarean/caesarean. To obtain more recent studies, included papers were published in the last decade (January 2003 and October 2013), published in English and peer reviewed. Opinion pieces, case studies, poster presentations and abstracts were excluded.

Selection process

During the first search, 6746 papers were identified (Fig. 1). After removing duplicates, 2106 papers remained. A further 1730 were removed after reading the titles and several abstracts because they were not relevant to the research topic (e.g. discussed cancer care, skin diseases), they were not available in English, only the abstracts were accessible, or they were not a research paper. The remaining 376 papers were specifically reviewed in relation to SSC. For the purpose of this literature review, immediate SSC was defined as SSC provided in the first few minutes after a Caesarean section and early SSC was defined as SSC provided within 1 h after a Caesarean section.
The abstracts of the remaining papers were read, and several of these papers were read in full, to determine if SSC was implemented, and if it was immediate or early. There were 137 papers excluded as they did not discuss the implementation of SSC, and 156 papers were excluded because although SSC was implemented it was not immediate or early after birth. The remaining 83 papers were read in full to determine if they specifically discussed immediate or early SSC with the birth mother after a Caesarean section. The majority (71) were excluded because they discussed vaginal births only, SSC with the father only or SSC with preterm and NICU newborns. Of the 12 papers remaining, five papers were excluded because SSC was not implemented immediately or soon after Caesarean sections, or, even though they provided immediate SSC, they did not report on findings specifically related to Caesarean section. Seven papers were found examining immediate or early SSC after a Caesarean section for term healthy newborns (Tables 2.3).

Quality assessment

Seven papers were critiqued using questions from two Critical Appraisal Skills Programme (CASP) tools focused on qualitative research (Critical Appraisal Skills Programme International Network 2013a) and randomised controlled trials (Critical Appraisal Skills Programme International Network 2013b). Each study was read multiple times, and was specifically analysed using the CASP questions (Tables 2.3). If the research article met the required criteria, a point is given. The qualitative research articles have the potential to reach 10 points because there are 10 qualitative research CASP score questions (Critical Appraisal Skills Programme International Network 2013a), while the randomised controlled trials have the potential to reach 11 points because there are 11 randomised controlled CASP questions (Critical Appraisal Skills Programme International Network 2013b). The CASP questions focus on finding out what the results of the research are, discovering if the results are valid and determining if the results are relevant to the broader community (Critical Appraisal Skills Programme International Network 2013a,b).

All of the papers, except Hung & Berg (2011), had high CASP scores (Tables 2.3). The research methods and designs were clear and appropriate, and the research was conducted ethically. Finigan & Davies (2004) and Crenshaw et al (2012) achieved the highest possible CASP scores (Table 3). A couple of the CASP questions for randomised controlled trials
Table 2. Summary of quantitative papers included in the review

<table>
<thead>
<tr>
<th>Reference location</th>
<th>Participants study design</th>
<th>Aim</th>
<th>Inclusion criteria</th>
<th>SSC data/outcomes</th>
<th>Other outcomes</th>
<th>Randomised controlled trial CASP score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gouchon et al. (2010) Italy, Torino Pinerolo Hospital</td>
<td>n = 34 mother/newborn pairs after an ECS</td>
<td>To assess the safety and compare mothers’ and newborns’ temperatures with or without SSC and the benefits of SSC on BF and satisfaction</td>
<td>Mother: ECS Local-regional anaesthesia Primiparous or multiparous Newborn: Full term, Apgars at 1 and 5 min 27</td>
<td>Initiation in SSC group Early initiation, within 1 h after birth if not contraindicated Duration in SSC group 1x newborn = nil SSC 4 x newborns ≤ 30 min 2 x newborns = 30-60 min 10 x newborns ≥ 120 min Mean: 2.9 min Interrupted: Not recorded</td>
<td>• SSC within 1 h after a ECS did not place the newborns at risk of hypothermia • SSC group attached to the breast average 21 min earlier than control group • BF at discharge ○ SSC: 9 exclusive, 3 predominant ○ Control: 9 exclusive, 2 predominant • BF at 3 months: ○ SSC: 3 exclusive, 3 predominant ○ Control: 3 exclusive, 3 predominant • SSC group were satisfied with their care • All the BF newborns sucked well at the first BF • There were no significant changes in maternal perception of their birth, pain scores and anxiety levels • Newborn temperature at 1 h were significantly higher in the NIMS group (P &lt; 0.05) — no other results were significant • Newborn respiratory rates from birth to discharge from the PACU were significantly lower in the NIMS group (P ≤ 0.05) — no other results were significant • Newborn salivary cortisol levels were higher in the NIMS group on admission to the PACU • Time to first BF: NIMS mean 50 min, control mean 112 min • BF initiation: NIMS 21/25 = 84%, control 15/25 = 60% • BF at discharge (of those who initiated): NIMS 19/21 = 90%, control 13/15 = 87% • BF rates at 4 weeks after discharge (of those who initiated): NIMS 16/21 = 76%, control 8/15 = 53%</td>
<td>Randomised controlled trial CASP score: 9/11 5 = lowest quality, 11 = highest quality</td>
</tr>
<tr>
<td>Nolan &amp; Lawrence (2009) United States, Florida Hospital</td>
<td>n = 30 mother/newborn pairs after an ECS</td>
<td>To pilot test a NIMS protocol which aimed to minimise maternal-newborn separation after a CS</td>
<td>Mother: Repeat ECS Regional anaesthesia No signs of spontaneous labour Multiparous Newborn: Singleton, Term, Live birth</td>
<td>Initiation in NIMS group Early SSC. No actual time recorded — stated that the actual time to the first breastfeed was 40-60 min after birth. SSC was performed before this, however, only 21 out of the 25 babies breastfed. Duration in NIMS group Mean duration: 33 min Interrupted: Not recorded</td>
<td></td>
<td>Randomised controlled trial CASP score: 8/11 5 = lowest quality, 11 = highest quality</td>
</tr>
<tr>
<td>Reference location</td>
<td>Participants study design</td>
<td>Aim</td>
<td>Inclusion criteria</td>
<td>SSC data/outcomes</td>
<td>Randomised controlled trial</td>
<td>Randomised controlled trial CASP score</td>
</tr>
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</table>
| Sweden, Stockholm Hospital | n = 37 parent/newborn pairs after a planned CS:  
- n = 17 SSC with their mother (15 men control)  
- n = 20 SSC with their father (20 women control)  
Part of a larger randomised controlled trial  
- Audio/video recorded | To explore and compare parent/newborn vocalisation when the newborn is placed SSC after a planned CS | Mothers: Planned CS,  
Willing to provide SSC, Healthy, Uncomplicated pregnancy, Primiparous  
Fathers:  
Willing to provide SSC Newborns: Term, Healthy  
Apgar ≥ 7 at 1 min | Initiation: Mothers: Immediate SSC  
Fathers: Immediate SSC  
Duration: Mothers: 30 min  
Fathers:  
- 5 min with mother  
- Then 25 min with the father  
Interrupted: Mothers: Not interrupted  
Fathers: Interrupted  
Initiation | Newborn solicitation increased over time (P = 0.32).  
Significant differences:  
- The parent that had SSC vocalised more that if they did not have SSC  
- Newborns cried less and relaxed earlier if they had SSC with their father  
- Newborns ‘whined’ less if they had SSC with their mother | Randomised controlled trial CASP score:  
9/11  
0 = lowest quality  
11 = highest quality |
| Sweden, Stockholm Hospital | n = 37 parent/newborn pairs after a planned CS:  
- n = 17 SSC with their mother (15 men control)  
- n = 20 SSC with their father (20 women control)  
Part of a larger randomised controlled trial  
- Audio/video recorded | To investigate differences of breast-seeking and nursing behaviours between male and female newborns in SSC contact with their mother or father after a CS. | Mothers: Planned CS,  
Willing to provide SSC, Healthy, Uncomplicated pregnancy, Primiparous  
Fathers:  
Willing to provide SSC Newborns: Term, Healthy  
Apgar ≥ 7 at 1 min | Initiation: Mothers: Immediate SSC  
Fathers: Immediate SSC  
Duration: Mothers: 30 min  
Fathers:  
- 5 min with mother  
- Then 25 min with the father  
Interrupted: Mothers: Not interrupted  
Fathers: Interrupted | Significant differences:  
- Females started rooting and showing breast massage movements earlier than males  
- Newborns started to BF earlier if they had continual SSC with the mothers  
- Females cried more than males in SSC with either parent  
- Mothers used more touching behaviour towards their newborn compared with fathers and touched females less than males  
- Fathers directed less speech towards females compared with males | Randomised controlled trial CASP score:  
9/11  
0 = lowest quality  
11 = highest quality |

BF, breastfeed/breastfed; CASP, Critical Appraisal Skills Programme; CS, Caesarean section; ECS, elective Caesarean section; IBAT, Infant Breastfeeding Assessment Tool; LATCH scores, Latch, Audible swallowing, Type of nipple, Comfort, Hold (positioning), NMS, obstetric nursing intervention protocol aimed to minimise maternal-infant separation); OT, operating theatre; PACU, post-anesthesia care unit; PRECESS Method, Practice, Reflection, Education and training, Combined with Ethnography for Sustainable Success; SSC, skin-to-skin care; VB, vaginal birth. 0/0, number of participants involved total number of participants (e.g. 5/6 BF = five participants BF out of six total participants).
<table>
<thead>
<tr>
<th>Reference location</th>
<th>Participants study design</th>
<th>Aim</th>
<th>Inclusion criteria</th>
<th>SSC data outcomes</th>
<th>Other outcomes</th>
<th>Qualitative CASP score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crenshaw et al. (2012) United States, Southwest Medical Centre</td>
<td>Staff (no numbers) N = 11 mother newborn pairs: • N = 5 SSBC • N = 6 VB PRECESS method – descriptive observational Analysis of SSC rates – review of hospital records Stage 2: SSC n = 500 mother newborn pairs: • N = 100 SSBC • N = 100 VB BF, n = 200 mother newborn pairs: Comparison: Monthly SSC and exclusive BF in the first six months – review of hospital records</td>
<td>To use a programme to improve BF rate and describe the rate of SSC and exclusive BF at hospital discharge</td>
<td>Stage 1: Staff: Working in the medical centre Mothers: English speaking, &gt; 18 year old, not already breastfed Peers: Participant or multiple peers CS: Elective Neonates: Healthy Stage 2: Mothers: Excluded if indicated they did not want BF</td>
<td>Stage 1: Initiation: VB: 6-61% 100% immediate SSC ECS: 4-5% 85% same day SSC 1.5-2.5% early SSC Duration in CS group: Mean 82 min Interrupted: 91-2-7% interrupted Stage 1: Initiation: Pre-programme: All participants: PB: 35-60% 53% Percent 250-000 = 85% P &lt; 0.000 PB: PB: 28-39-9% Past 100-120 = 93% no difference CS: PB: 7-50-23% Past 110-150 = 77% P &lt; 0.000 Time initiated not recorded Duration not recorded Interrupted: not recorded</td>
<td>Stage 1: VE patients: • 48 planned to BF • 3/4 – 75% of those that planned to BF exclusively BF at discharge ECS patients: • All planned to BF • 3/4 – 65% exclusively BF at discharge Stage 1: Exclusively breast milk fed post programme: All participants: PB: 104-373 = 52% Past 200 1203 = 51% no difference Barriers to SSC: Lack of staff</td>
<td>Observational method CASP score 10/10 0 = poorest quality 10 = highest quality</td>
</tr>
<tr>
<td>Fingan &amp; Davies (2004) UK, England</td>
<td>N = 8 mother newborn pairs: • N = 4 SSBC • N = 4 VB van Meijer’s interpretative phenomenology research method Audio-taped data Interviews Staff (no numbers) N = 32 mother newborn pairs after a CS:</td>
<td>To explore the women’s lived experiences of SSC shortly after birth</td>
<td>To explore the women’s lived experiences of SSC shortly after birth</td>
<td>Had to have SSC within 30 min of birth, SSC lasting 1 hr Peers: Participant or multiple peers 21-36 years old</td>
<td>Initiation: CS:立即initiate in the operating theatre VB: Immediate to early SSC, initiated SSC within 20 min of birth Duration 2 hr. Not interrupted Not initiated</td>
<td>Five themes: • Immediate feelings of bonding • Touching and holding the baby • Eyes on eye contact and getting to know the newborn • Natural, instinctive behaviour • Not wanting to let go</td>
</tr>
<tr>
<td>Hung &amp; Berg (2010) United States, California Hospital</td>
<td>Staff (no numbers) N = 22 mother newborn pairs after a CS:</td>
<td>To describe a quality improvement project that promotes early SSC in the operating theatre, website aims to increase success of BF initiation after a CS</td>
<td>Staff Working in the Hospital Mothers: These who had a CS Neonates: Good respiratory effort at birth, EEC &gt; 100 beats per min, pink lips andLOUD, good muscle tone</td>
<td>Initiation: Pre-project: Early SSC 0-10 min: 54% 10-30 min: 25% 30-60 min: 45% Post-project: Immediate or early SSC Fift 3 months after project • SSC 0-10 min: 45% • SSC 10-30 min: 25% • SSC 30-60 min: 25% • 90 50-20 min: 35% • FFT 3 months after project • SSC in the OT 69% • SSC 199 min 70% Duration: Not recorded Interrupted: Not recorded</td>
<td>First 3 months post project: • LBCH scores (ranges 0–10, lengths) • SSC in OT: Score 8.0 • SSC &gt; 90 min: Score 7.7 • SSC &gt; 120 min: Score 7.0 • Breastfeeding nutrition • SSC in OT: 10% supplemented • SSC &lt; 90 min, not in OT: 41% supplemented • SSC &gt; 90 min, not in SSC: 78% supplemented • Maternal positive feedback Challenges: • Staff initially reluctant, fearful • Staff assignment</td>
<td>Qualitative improvement project CASP score 10/10 0 = poorest quality 10 = highest quality</td>
</tr>
</tbody>
</table>

BF: breastfeeding; BSBC: Breastfeeding Support and Breastfeeding Club; ECS: exclusive Breastfeeding Support Club; IBAT: Infant Breastfeeding Assessment Tool; LBCH: Late Breastfeeding Assessment Tool; SSC: breastfeeding; VL: vaginal birth; 50%: number of participants involved total number of participants (n.BF = five participants BF out of six total participants).
are ‘Were the patients, health workers and study personnel “blind” to treatment?’ and ‘Can the results be applied to the local population?’ (Critical Appraisal Skills Programme International Network 2013b). The randomised controlled trials in this review did not score a point for either of these questions because the participants and some researchers were not blind to the treatment (SSC), and the results cannot reliably be applied to other populations, because of the small sample sizes (Nolan & Lawrence 2009; Gouchon et al. 2010; Velandia et al. 2010, 2012; Table 2). Nolan & Lawrence (2009) also received a lower score because the groups that were studied were not similar – the newborns in the intervention group had a significantly higher birthweight than the control group (Table 2). The lowest CASP score was given to Hung & Berg (2011) because there was insufficient information on the quality improvement programme to conduct a full CASP analysis; however, the method and design were clear and appropriate, and there was a clear statement of findings (Table 3).

Limitations of the papers reviewed

The limitations of the included papers are the small sample sizes and missing data in the quantitative studies. There was a lack of consistency across the papers. It is also important to note that Hung & Berg (2011) stated that their aim was to demonstrate the progress of the implemented programme, not show an association between immediate or early SSC and breastfeeding. Nolan & Lawrence (2009) stated that their research was significantly underpowered because of the number of participants. Furthermore, SSC was not always provided as recommended by the WHO and UNICEF, and there were differences in time to initiation and length of SSC in the analysed papers.

Findings

The included papers focused on programmes that implemented SSC immediately or soon after a Caesarean section, and reported on either the experience of immediate or early SSC, parent/newborn interaction or newborn outcomes following Caesarean sections. Out of the seven papers, four papers discussed the provision of immediate SSC in the operating theatre (Finigan & Davies 2004; Velandia et al. 2010, 2012; Crenshaw et al. 2012). Hung & Berg (2011) indicated that 9 months after the implementation of their project, the majority of mothers and newborns had immediate or early SSC within 30 min in the operating theatre. Gouchon et al. (2010) reported that newborns in the intervention group had brief contact with their mother at birth, then were taken away for routine care; however, they were reunited with the mother in recovery within 1 h from birth for early SSC. Nolan & Lawrence (2009) stated that they only provided cheek-to-cheek contact for a short period of time in the operating theatre; however, they did encourage early SSC within the first hour after birth in the post-anaesthetic care unit (PACU). Three studies focused on the implementation and/or outcomes of programmes that promoted immediate or early SSC after a Caesarean section (Nolan & Lawrence 2009; Hung & Berg 2011; Crenshaw et al. 2012). Finigan & Davies (2004) study focused on mother’s lived experiences of immediate or early SSC. Gouchon et al. (2010) compared mothers and newborns’ temperatures with or without early SSC after a Caesarean section. The other two research papers, by the same authors, specifically explored parent/newborn vocalisation during immediate SSC after a Caesarean section (Velandia et al. 2010) and the differences between male and female newborns with breast-seeking behaviour and crying (Velandia et al. 2012).

The seven papers included in this review used varying methods and designs. The four papers that reported on randomised controlled trials included a pilot study by Nolan & Lawrence (2009), two Velandia et al. (2010, 2012) papers, which reported on data from the same randomised controlled trial, and an experimental non-inferiority trial by Gouchon et al. (2010), which was used to help establish if a new treatment is similar to or no worse than a current treatment (Scott 2009). Crenshaw et al. (2012) utilised a qualitative descriptive observational method using video-ethnography and interaction analysis. Finigan & Davies (2004) used a qualitative approach informed by van Manen’s Interpretive Phenomenol-


In some cases, only the appropriate sections of individual papers were included in the review. For example, of the six participants in the Finigan & Davies (2004) study, there was only one that had a Caesarean section; therefore, only quotes from that participant were included.

Description of SSC in the included papers

SSC was described in all the papers in this review (except the Nolan & Lawrence 2009 study) as: the placement of a newborn in a chest-to-chest, SSC position with the mother. Nolan & Lawrence (2009) defined SSC in a chest-to-chest position, in the under-arm position or in the cradle position. Velandia et al. (2010, 2012) included SSC with the father. All of the papers stated that either blankets or towels, which were sometimes warmed, covered the exposed side/back of the newborn. Some studies mentioned there was the option to put on a nappy (Nolan & Lawrence 2009; Goucher et al. 2010), or a cap, on the newborn's head (Nolan & Lawrence 2009; Goucher et al. 2010; Hung & Berg 2011; Crenshaw et al. 2012). The papers had varying time to initiation and duration of SSC (Tables 2,3).

The implementation of immediate or early SSC in the operating theatre

Two studies evaluated programmes to help implement immediate or early SSC in the operating theatre. Hung & Berg (2011) evaluated a Plan, Do, Study, Act (PDSA) Model and Crenshaw et al. (2012) evaluated Practice Reflection, Education and training. Combined with Ethnography for Sustainable Success (PRECESS) Immersion Method. Nolan & Lawrence (2009) evaluated a nursing intervention protocol designed to minimise maternal-infant separation (NIMS), which implemented early SSC in PACU, not the operating theatre; however, it encouraged staff to keep the newborn in contact with the mother or within sight of the mother intra-operatively and post-operatively. The PDSA model involved consulting staff about barriers and solutions to providing early SSC, observing SSC in the operating theatre in another hospital, developing a flow chart, piloting SSC in the operating theatre, making relevant adjustments to the flow chart where needed, educating and encouraging staff in providing SSC and collecting data to monitor improvements (Hung & Berg 2011). Crenshaw et al's (2012) PRECESS method involved educating staff about the nine instinctive stages during immediate SSC, staff mentoring, sharing video recordings of mothers and newborns when having SSC, reflection on and analysis of these recordings and reviewing medical records to see if there were any changes in immediate SSC rates.

Hung & Berg (2011) and Crenshaw et al. (2012) compared SSC data pre and post the implementation of their programmes. Hung & Berg (2011) reported that SSC rates in the operating theatre, within 30 min of the Caesarean section, increased from zero per month to 45% at 3 months and 60% at 9 months after the implementation of the PDSA model; however, these statistics were collected from a small sample size – there was only an average of 22 Caesarean births per month where the programme was implemented. Crenshaw et al. (2012) reported that after the implementation of their programme, 80% of women had immediate SSC in the operating theatre in stage 1 of their research; however, they did not report on SSC initiation time in stage 2 of their research. Nevertheless, they did confirm a significant increase in SSC initiation, from 23% to 77%, for those who had a Caesarean section.

Four studies reported on the challenges of providing immediate or early SSC in the operating theatre (Nolan & Lawrence 2009; Goucher et al. 2010; Hung & Berg 2011; Crenshaw et al. 2012). The main challenge focused around staff such as fear of change and a lack of sufficient staff. Hung & Berg (2011) noted that the staff were initially reluctant, and resistant to change, however, became more positive after education. They stated that educating all staff was a challenge (Hung & Berg 2011). Two studies noted that it was hard to implement immediate or early SSC in the operating theatre because of a shortage of staff (Nolan & Lawrence 2009; Crenshaw et al. 2012). Goucher et al. (2010) stated that they did not need any extra
Table 4. Recommendations for implementation of immediate skin-to-skin contact in the operating theatre

Pre-implementation:
- Write a protocol with the collaborative effort of staff including midwives, managers, doctors, anaesthetists, paediatricians and other operating theatre/recovery staff
- Education of staff

Antenatal period
- Education for mothers and their support people

Prior to commencement of the Caesarean section:
- Discuss with operating theatre staff and the mother the potential of having SSC
- Confirm with the mother whether she wants SSC and where (in the operating theatre, in recovery, on the ward)
- Have one nurse/midwife for the mother, and one midwife/nurse for the newborn
- Assess the operating theatre and determine if equipment needs to be moved to provide room for SSC
- Has the mother’s gown been undone, arms removed from the sleeves?
- Be aware of the placement of equipment: IV lines, oxygen saturation probe

After the newborn is delivered:
- Does the newborn appear to be responding appropriately? If so, commence SSC
- The newborn is placed in a transverse position on the mother’s bare chest
- The newborn is dried
- Warm blankets cover the newborn
- Agger observations made
- Teach the father how to help support the newborn
- Continually observe the newborn to determine if the newborns airway is patent – Are the newborns ears visible? Is the newborn centrally pink? Is the newborns respiratory rate stable?

In recovery:
- Remember if injections are to be given to the newborn, ensure these are given while having SSC

Adapted from Hung & Berg (2011) and Crenshaw et al. (2012).

Staff to implement early SSC after a Caesarean section, and there was no need for extra resources. However, SSC in the operating theatre was not always possible in this study because of the distance of the operating theatre from the obstetrics department. Crenshaw et al. (2012) further stated that it is important to address safety concerns before implementing immediate SSC in the operating theatre.

The safe implementation of immediate or early SSC in the operating theatre was described in two of the seven papers (Hung & Berg 2011; Crenshaw et al. 2012; Table 4).

Immediate or early SSC and mother/newborn emotional well-being

The emotional well-being of mothers and their newborns was discussed in all of the reviewed papers. There was a focus on bonding, the newborn’s relaxed state and stress levels, and maternal satisfaction with care.

Following Caesarean sections, mothers perceived that immediate or early SSC helped them bond with their babies. Finigan & Davies (2004) revealed that immediate or early SSC helped mothers feel an immediate bond with their newborn. One mother described believing that immediate SSC after her Caesarean section: ‘created a special bond between us’ (Finigan & Davies 2004). In other studies, women’s comments revealed that immediate or early SSC after a Caesarean section helped them feel close to their newborn (Nolan & Lawrence 2009; Gouchon et al. 2010; Hung & Berg 2011).

Women’s perceptions of having immediate or early SSC was documented in four studies (Finigan & Davies 2004; Nolan & Lawrence 2009; Hung & Berg 2011; Crenshaw et al. 2012). Nolan & Lawrence (2009) stated that there was no significant difference in maternal perception of birth or anxiety levels on admission and discharge from the PACU between those who had early SSC or not. Quotes revealed that immediate or early SSC can make a Caesarean birth special, and the majority spoke positively of their experience of having SSC in the operating theatre (Nolan & Lawrence 2009; Hung & Berg 2011; Crenshaw et al. 2012). One mother stated:
I didn’t know that I was going to lift my baby out of my abdomen, but just putting my arms underneath him and lifting up and placing on my chest, I’ll never forget, it was so natural. All I wanted to do was pick him up, nurture him straight away and put him to my breast (Finigan & Davies 2004).

Four papers discussed the relaxed state of the newborn with immediate or early SSC. ‘My baby calms down right away when I put him to my chest. I don’t know if it’s related to holding him skin-to-skin during the cesarean – but I think it is’ (Crenshaw et al. 2012). Newborns were found to relax quicker and cried less when they had immediate SSC with their father after an initial 5 min with their mother compared with having immediate and continuous SSC with the mother; however, there were no significant differences in the time these newborns slept immediately after birth (Velandia et al. 2010). Female newborns were found to have cried more than male newborns (Velandia et al. 2012). Both of these Velandia (Velandia et al. 2010, 2012) papers mention that their results are not conclusive because of their small sample sizes. Nolan & Lawrence (2009) also collected newborn salivary cortisol samples at birth, on admission to the PACU and discharge from the PACU. A study by Gitau et al. (2001) confirmed that that when compared with newborns born by a normal vaginal birth, newborns born by an planned Caesarean section had lower levels of cortisol at birth, and were therefore more susceptible to respiratory distress and transient tachypnoea because the surge of stress hormones at birth helps mediate the clearing of newborns lungs. The newborns that had early SSC in the Nolan & Lawrence (2009) study only had higher cortisol levels on admission to the PACU, but not on discharge. These results need to be viewed with caution because of the small sample size and because of the lack of samples that could be analysed.

Immediate SSC and parent/newborn communication

Velandia et al. (2010, 2012) reported on video recordings and analysis of 37 parent/newborn interactions immediately after a Caesarean section. Mothers and fathers talked significantly more to their newborn during immediate SSC if they were the one providing it, and only after the parent communicated with the newborn did the newborn begin communicating also (Velandia et al. 2010). The newborns communicated, using soliciting calls (short, contact-seeking, ringing sounds p.194), on average 2 min earlier with the father compared with the mother (Velandia et al. 2010). There was no difference between length of communication towards the newborn if they were male or female with SSC mothers; however, SSC fathers talked significantly more to male newborns (Velandia et al. 2012). The authors stated that the results may have been influenced by disturbance of the parent–newborn interaction because of the activities in the operating theatre, and the observer was not blinded to the SSC (Velandia et al. 2010, 2012). No other studies were found that discussed parent and newborn communication during or following immediate or early SSC.

Immediate or early SSC and maternal pain

Three studies in the review addressed the issue of maternal pain (Nolan & Lawrence 2009; Hung & Berg 2011; Crenshaw et al. 2012). Nolan & Lawrence (2009) recorded women’s pain scores using a 0–10 numeric pain rating scale and compared the early SSC group with the non-SSC group at 1, 2 and 4 h after birth. The women in the early SSC group reported lower pain scores at all points in time after birth; however, overall difference between the groups was not significant (P = 0.493). The authors stated that this may be due to data missing and the small sample size of the study (Nolan & Lawrence 2009). Hung & Berg (2011) quoted a mother who described her experience, after the anaesthesia started wearing off, of forgetting about the pain of the Caesarean section because she was so happy having SSC with her newborn. Crenshaw et al. (2012) quoted a nurse anaesthetist: ‘This mother focused on her baby instead of on surgery. Maybe mothers need fewer medications during the repair when they hold their baby skin-to-skin’. Further research is needed to determine if immediate or early SSC has an impact on the level of pain experienced by women.
Early SSC and maternal/newborn physiological stability

Two studies analysed maternal and newborn physiological stability after a Caesarean section (Nolan & Lawrence 2009; Gouchon et al. 2010). One study reported that there were no significant differences between the early SSC and control groups in maternal temperature while holding the newborn for 2 h (Gouchon et al. 2010). Two studies reported newborn physiological stability, including thermoregulation and respiratory rates (Nolan & Lawrence 2009; Gouchon et al. 2010). The differences in newborn temperatures within the first 2–3 h between the early SSC groups and the non-SSC groups were not significant in either study (Nolan & Lawrence 2009; Gouchon et al. 2010). However, Nolan & Lawrence (2009) found the newborns that had early SSC had significantly lower respiratory rates compared with the control group when the data was combined from birth to the PACU ward discharge. The early SSC newborns also had significantly higher temperatures 1 h when compared with the control group (Nolan & Lawrence 2009). There were limitations in both of these studies that may have affected the results. Nolan & Lawrence (2009) reported missing data for both of the newborn measures and there was a significant difference in birthweight between the SSC and control groups. The earliest initiation of SSC in the Gouchon et al. (2010) paper was 41 min after the Caesarean.

Immediate or early SSC and newborn feeding outcomes

The majority of the papers provided data on breastfeeding outcomes or formula supplementation (Nolan & Lawrence 2009; Gouchon et al. 2010; Velandia et al. 2010, 2012; Hung & Berg 2011; Crenshaw et al. 2012). Nolan & Lawrence (2009) stated that when compared with the non-SSC group, the immediate or early SSC group had 24% more mothers initiate breastfeeding and they breastfed an hour earlier on average. Gouchon et al. (2010), similarly, found that after the initial separation for a mean of 51 min, babies who had early SSC attached to the breast an average of 21 min earlier. Velandia et al. (2012) found that there were no significant differences between the sex of the newborn with initiation time of breastfeeding; however, female newborns that had immediate SSC with the mother breastfed significantly earlier. According to a LATCH (Latch, Audible Swallowing, Type of Nipple, Comfort and Hold) breastfeeding score in Gouchon et al. (2010), where there were 34 participants, both the early SSC and non-SSC group sucked well at the first breastfeed.

Hung & Berg (2011) found that artificial formula supplementation in the hospital was decreased by 41% when immediate or early SSC was implemented in the operating theatre compared with mother-newborn pairs who did not have SSC by 90 min. However, this study was reporting on the implementation of a programme promoting immediate or early SSC and was not claiming to show an association between SSC and outcomes. (Hung & Berg 2011).

At discharge, Gouchon et al. (2010) found that there were a similar number of participants exclusively and predominantly breastfeeding. Nolan & Lawrence (2009) found that, of those who initiated breastfeeding, 90% in the early SSC group were breastfeeding at discharge compared with 87% of those who did not have SSC. In stage 2 of the Crenshaw et al. (2012) study, where initiation time was not recorded, there was no significant changes in exclusive breastfeeding rates. In stage 1 of the same study, it was found that if the newborn went through all the nine stages of SSC, there was an improvement in exclusive breastfeeding rates at discharge (Crenshaw et al. 2012).

Nolan & Lawrence (2009) found that there was no significant differences in rates between the early SSC and non-SSC groups at 4 weeks after discharge. There was a marginal improvement in longer term breastfeeding rates in Gouchon et al. (2010); however, this was not significant. Despite this, the majority of women in the Gouchon et al. (2010) study indicated that they were convinced that early SSC improved their breastfeeding, and would recommend it to others.

When comparing immediate SSC between the mother and the father after a Caesarean section, Velandia et al. (2010) found that babies reached the father’s breast/nipple in a shorter time frame than
those with their mother. They stated that this may be due to the chlorhexidine that was applied to the mother’s chest before surgery, which confuses the newborn. There were no differences in breast massaging movements if immediate SSC was provided by the mother or father; however, female newborns made massaging movements and rooted significantly earlier than male newborns (Velandia et al. 2012).

**Discussion**

There is evidence that SSC after a normal birth has a positive impact on the mother and her newborn (Berger & Makhoul 2004; Hewitt et al. 2005; Overfield et al. 2005; Mercer et al. 2007; Walters et al. 2007; Gabriel et al. 2010; Moore et al. 2012), and that it can improve breastfeeding outcomes (Moore et al. 2012). The seven papers in this review highlight some of the benefits of providing SSC immediately, or soon after a Caesarean section, including physiological stability and emotional well-being of mothers and their newborns, potential reduction in maternal pain, increase in parent and newborn communication, and an improvement in breastfeeding outcomes (Finigan & Davies 2004; Nolan & Lawrence 2009; Gouchon et al. 2010; Velandia et al. 2010, 2012; Hung & Berg 2011; Crenshaw et al. 2012). Hung & Berg (2011) and Crenshaw et al. (2012) also provided detailed information on how to facilitate immediate or early SSC in the operating theatre. There were no disadvantages of immediate or early SSC after a Caesarean section observed in the review papers, other than the need for more staff to implement it, and the fear of implementing it if no education is given.

An opinion piece by Phillips (2013) supports the finding that immediate SSC following a Caesarean section potentially reduces the mothers perception of pain. This has also been observed after vaginal birth in a study by Walters et al. (2007), who stated that mothers were distracted from the pain with perineal repair when they had SSC, while the results of another study stated that there was no reduction in suturing pain when the mothers had SSC (Gabriel et al. 2010).

This review indicates that early SSC keeps newborns and mothers physiologically stable (Nolan & Lawrence 2009; Gouchon et al. 2010). A recent Cochrane review stated that newborn respiratory rates are more stable when SSC is facilitated after a vaginal birth (Moore et al. 2012). There are many other studies that confirm the finding that SSC keeps newborns warmer, albeit after a vaginal birth in these instances (Bystrova et al. 2007; Mercer et al. 2007; Walters et al. 2007; McCall et al. 2010). Bystrova et al. (2007) examined SSC following vaginal birth, and demonstrated that early SSC can help maintain the mother’s temperature.

A Cochrane review found that SS is likely to improve breastfeeding outcomes after a vaginal birth (Moore et al. 2012). It is important to find ways to improve breastfeeding rates after a Caesarean section because surgical birth is known to reduce initiation of breastfeeding (Dashit et al. 2010; Zanardo et al. 2010; Hauck et al. 2011; Tiu et al. 2012), increase the length of time before the first breastfeed (Ortin et al. 2010; Pandey et al. 2010; Patel et al. 2010; Senarath et al. 2010; Prior et al. 2012; Zanardo et al. 2012; Hazir et al. 2013), reduce the incidence of exclusive breastfeeding (Dashit et al. 2010; Tiu et al. 2012; Zanardo et al. 2012, significantly delay the onset of lactation (Scott et al. 2007)) and increase the likelihood of supplementation (Parry et al. 2013). This review provided some evidence about the benefits of immediate or early SS after a Caesarean section including an increase in initiation, a decreased time to initiation and a reduction of formula supplementation in hospital (Nolan & Lawrence 2009; Gouchon et al. 2010).

The papers in this review revealed that women viewed their immediate or early SSC experience as positive (Finigan & Davies 2004; Nolan & Lawrence 2009; Gouchon et al. 2010; Velandia et al. 2010, 2012; Hung & Berg 2011; Crenshaw et al. 2012). Failure to consider the emotional well-being of mothers and newborns, and provide ways to help promote emotional well-being, leads to poorer health outcomes (Brown & Limley 2000). Women who have had a Caesarean section are significantly less likely to rate their birth as positive, compared with those who have had a vaginal birth (Chalmers et al. 2010), and are more likely to have significantly higher anxiety levels (Paul et al. 2013). There is some evidence that there is a relationship between having a Caesarean section
and depressive symptomatology (Xie et al. 2011; Zainal et al. 2012); however, Sword et al. (2011) provides conflicting evidence. Some research has demonstrated that SSC may reduce depressive feelings in the first few weeks after a vaginal birth (Bigelow et al. 2012), yet Gabriel et al. (2010) does not support this finding. Despite this, it is important to facilitate SSC after any type of birth because mothers enjoy it. In qualitative studies, mothers state that they feel closer to their newborn when they have SSC and that they enjoy having SSC (Finigan & Davies 2004; Byaruhanga et al. 2008; Finigan 2010; Blomqvist & Nyqvist 2011; Thukral et al. 2012).

This review provides evidence that immediate SSC is feasible in the operating theatre. This is supported by other authors who state that with pre-planning, SSC can be successfully provided in the operating theatre (Spear 2006; Senarath et al. 2007; Smith et al. 2008; Spradlin 2009; Elliott-Carter & Harper 2012; Mangan & Mosher 2012; Duffy & Conrad 2013; Phillips 2013). Many authors state that collaboration between all health professionals is required in order to address any issues before implementation of SSC in operating theatre, including the need for extra staff (Spear 2006; Hung & Berg 2011; Elliott-Carter & Harper 2012; Mangan & Mosher 2012). The staff need to be educated and trained on how to implement SSC in the operating theatre (Senarath et al. 2007; Spradlin 2009; Hung & Berg 2011; Crenshaw et al. 2012; Elliott-Carter & Harper 2012; Phillips 2013) and parents need to be educated about SSC so that they can make an informed choice about their care (Smith et al. 2008; Duffy & Conrad 2013). As highlighted by Hung & Berg (2011), newborn safety is important; therefore, newborn need to be observed by parents and staff while having SSC in the first few hours after birth because of the small risk of apnoea when in the prone position during SSC (Poets et al. 2011).

The WHO states that the BFHI should be implemented in all hospitals (World Health Organization 2007). Immediate SSC after a normal birth has been shown to be beneficial for both the mother and the newborn. Considering that women who have a Caesarean section have less circulating oxytocin (Nissen et al. 1996), which aids in the bonding process (Feldman et al. 2007) and are less likely to initiate breastfeeding (Prior et al. 2012), the facilitation of immediate SSC is even more important for this cohort of women (Nissen et al. 1996; Elliott-Carter & Harper 2012; Prior et al. 2012). If maternity services are not able to provide immediate or early SSC following a Caesarean section, more than 30% of women and their newborn from Brazil, the United States, Mexico, Iran, Argentina, Italy, Korea, the Dominican Republic, Australia, Chile, Paraguay, Cuba, Portugal, Uruguay and Malta, may miss out on the potential benefits conferred by SSC because in these countries, Caesarean section rates are greater than 30% (World Health Organization 2010). It is important that hospitals facilitate this option for all women following birth regardless of the mode of birth.

**Conclusion**

It appears that SSC can be provided safely and immediately in the operating theatre with the collaboration and education of staff, mothers and partners. There is some evidence, albeit minimal, demonstrating an increase in maternal and newborn emotional wellbeing, increase in parent/newborn communication, reduction in maternal pain/anxiety, stabilised physiological stability for the mother and newborn and improved breastfeeding outcomes with immediate or early SSC following a Caesarean section. This review highlights the urgent need for further research on facilitators, barriers, outcomes and experiences of immediate SSC during a Caesarean section, so that more evidence can be gathered on how to effectively and safely provide SSC in the operating theatre and to discover the short-term and long-term outcomes of providing it. If maternity services are not able to provide immediate SSC following a Caesarean section, many women and their newborns may miss out on the potential benefits conferred by SSC. To help fill the gap shown in the above literature review, further research regarding immediate SSC is planned.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Contributions

JS, guided by HD, VS and EB, performed the literature search, determined which papers fit the criteria, and compiled the data. All the authors collaborated in writing and critically reviewing the paper.

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World Health Organization & UNICEF (2009) *Baby Friendly Hospital Initiative. Revised Updated and


2.3 Further evidence since publication

Since October 2013 to the 17th February 2018, a further 87 papers were identified through alerts from CINAHL (EBSCO Host), PubMed (NCBI), Embase (Ovid), Cochrane and Scopus. In total nineteen papers discussed outcomes for immediate or early SSC after CS (Figure 1).

Figure 1. Flow chart of search strategy

Of the 19 papers reviewed, eight papers reported findings from quantitative studies, including two randomised controlled trials (Armbrust, Hinkson, von Weizsäcker, & Henrich, 2016; Gregson, Meadows, Teakle, & Blacker, 2016), one pilot randomised controlled trial (Kollmann et al., 2017), a prospective observational study (Bavaro, Mendoza, McCarthy, Toledo, & Bauchat, 2016), a comparative study (Heidarzadeh, Hakimi, Habibelahi, Mohammadi, & Shahrak, 2016), two cohort studies (Guala et al., 2017; Posthuma et al., 2017) and a case controlled study (Yuksel et al., 2015). Three papers reported qualitative
data including one ethnographic study (Frederick, Busen, Engebretson, Hurst, & Schneider, 2016), an explorative study (Koopman, Callaghan-Koru, Alaofin, Argani, & Farzin, 2016) and a pilot study that utilised qualitative interviews (Zwedberg, Blomquist, & Sigerstad, 2014). A further eight papers discussed quality improvement projects (Boyd, 2017; Brady, Bulpitt, & Chiarelli, 2014; de Alba-Romero et al., 2014; Grassley & Jones, 2014; Schneider, Crenshaw, & Gilder, 2017; Schorn, Moore, Spetalnick, & Morad, 2015; Stone, Prater, & Spencer, 2014; Sundin & Mazac, 2015). A summary of these papers can be found in Appendix K.

2.3.1 The implementation of immediate or early skin-to-skin contact in the operating theatre

The WHO and UNICEF recommends that SSC be provided for at least one hour or until after the first breastfeed and state that it should not be interrupted (World Health Organization & United Nations Children's Fund, 2009).

Of the 19 papers, 12 provided specific information about how long SSC lasted, of which only five papers indicated that SSC was provided for longer than an hour. Only eight papers reported whether SSC was interrupted. Of those papers, three stated that SSC was not interrupted; three said that SSC was interrupted, and two papers indicated that SSC was likely interrupted. Only Armbrust et al. (2016) and de Alba-Romero et al. (2014) stated that they provided immediate SSC, that it was provided for greater than one hour and that it was not interrupted. See Appendix K for more details.

All of the quality improvement papers presented data on the implementation of immediate or early SSC, apart from Schneider et al. (2017) who provided retrospective data. In the Brady et al. (2014) study SSC in the OT was increased from 43% at 1 month to >70% at 10 months after the implementation of the Plan Do Study Act (PDSA) quality improvement method. Boyd (2017) and Stone, et al. (2014) implemented the Iowa Model of Evidence-Based...
Practice model which involved selecting a topic, forming a team, retrieving and grading evidence, developing and implementing a protocol and then evaluating the outcomes. Boyd (2017) implemented SSC and achieved 37/50 mothers having SSC within one hour once the model was implemented. Stone, et al. (2014) did not report on the rates of SSC, they focused on determining if they needed to implement changes to their protocol. Grassley and Jones (2014) increased their SSC in the OT rates from infrequent to 80% when they adopted the John Hopkins Nursing Evidence-Based Practice model to synthesize evidence and develop a protocol for SSC after CS. de Alba-Romero et al. (2014) and Sundin and Mazac (2015) both successfully used a multidisciplinary approach to discuss the safe provision of SSC in the OT, develop and implement a protocol, educate staff and evaluate outcomes. de Alba-Romero et al. (2014) increased their SSC in the OT rates to 43.6% of all CS births. Sundin and Mazac (2015) did not report SSC rates but reported on maternal satisfaction and pain medication associated with SSC.

Schorn et al. (2015) took a different approach and based their successful quality improvement project on previously documented model of care initiated by Smith, Plaat and Fisk (2008), a ‘Family-Centered Cesarean Birth’ which involved parent participation in decision making about CS and included delayed cord clamping and SSC in the OT. Their research indicated that SSC increased significantly, however caution is required as they could not confirm that all the caesarean sections were ‘Family-Centred’. In addition to the quality improvement projects, Armbrust et al. (2016) a randomised controlled trial, showed a 72% increase in early SSC when they implemented SSC based on the Smith, Platt and Fisk (Smith et al., 2008) model of care. Posthuma, et al. (2017), who undertook a cohort study, also showed improved outcomes when they implemented the same model.
2.3.2 Facilitators and barriers of skin-to-skin contact in the operating theatre and recovery

Koopman et al. (2016), conducted an exploratory qualitative study, separating the barriers and facilitators of SSC in the OT into institutional, familial-level (maternal) and implementation factors to help explain the findings. The facilitators and barriers noted in Boyd (2017), Frederick et al. (2016), Grassley and Jones (2014), Heidarzadeh et al. (2016), Koopman et al. (2016), Stone et al. (2014) and Zwedberg et al. (2014) papers (Appendix K) are grouped likewise in Table 1 and 2 below. Table 1 discusses the facilitators of SSC as seen in these papers. Table 2 discusses the barriers of SSC as seen in these papers.

Table 1. Facilitators of skin-to-skin contact

<table>
<thead>
<tr>
<th>Institutional Facilitators</th>
<th>Maternal Facilitators</th>
<th>Implementational Facilitators</th>
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</thead>
<tbody>
<tr>
<td>Health professional education (Boyd, 2017; Koopman et al., 2016)</td>
<td>Parental education (Koopman et al., 2016; Zwedberg et al., 2014)</td>
<td>Development of a protocol and flowchart (Koopman et al., 2016; Stone et al., 2014)</td>
</tr>
<tr>
<td>Active support for health professionals (Boyd, 2017)</td>
<td>Parental motivation (Koopman et al., 2016)</td>
<td>Building a network of champions (Stone et al., 2014)</td>
</tr>
<tr>
<td>Positive reinforcement for health professionals (Boyd, 2017)</td>
<td>Maternal demand to hold their baby (Zwedberg et al., 2014)</td>
<td>Simulation of scenarios (Stone et al., 2014)</td>
</tr>
<tr>
<td>Health professional agreement (Koopman et al., 2016)</td>
<td>Mothers and babies responding to each other (Frederick et al., 2016)</td>
<td>Staff preparation (Grassley &amp; Jones, 2014)</td>
</tr>
<tr>
<td>Positive comments about SSC from health professionals, mothers and families (Boyd, 2017; Grassley &amp; Jones, 2014)</td>
<td>Having the father present (Frederick et al., 2016; Zwedberg et al., 2014)</td>
<td>Elective CS due to better staffing (Zwedberg et al., 2014)</td>
</tr>
<tr>
<td>Discussion at prenatal visits (Koopman et al., 2016)</td>
<td>Mothers being able to ignore ’tune-out’ the medicalised environment (Frederick et al., 2016)</td>
<td>Staff contentment (Zwedberg et al., 2014)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observing positive family birth experiences (Boyd, 2017)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creating nursing care (Boyd, 2017)</td>
</tr>
</tbody>
</table>
Table 2. Barriers of skin-to-skin contact

<table>
<thead>
<tr>
<th>Institutional Barriers</th>
<th>Maternal Barriers</th>
<th>Implementational Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of staff (Boyd, 2017; Koopman et al., 2016; Stone et al., 2014; Zwedberg et al., 2014)</td>
<td>Lack of maternal education about the benefits of SSC (Koopman et al., 2016; Zwedberg et al., 2014)</td>
<td>Maternal factors:</td>
</tr>
<tr>
<td>Lack of health professional education (Boyd, 2017; Koopman et al., 2016; Zwedberg et al., 2014)</td>
<td>Mothers not wanting SSC (Zwedberg et al., 2014)</td>
<td>• Need for medical support (Boyd, 2017)</td>
</tr>
<tr>
<td>Lack of health professional experience (Koopman et al., 2016)</td>
<td>Mothers not asking for SSC (Koopman et al., 2016)</td>
<td>• High acuity (Stone et al., 2014)</td>
</tr>
<tr>
<td>Small operating theatres (Koopman et al., 2016)</td>
<td>Mothers wanting their baby to be clean (Koopman et al., 2016)</td>
<td>• Decreased mobility (Zwedberg et al., 2014)</td>
</tr>
<tr>
<td>Lack of time - SSC not being prioritised (Zwedberg et al., 2014)</td>
<td>Mothers lack of confidence in midwives’ advice (Zwedberg et al., 2014)</td>
<td>• Feeling uncomfortable (Koopman et al., 2016)</td>
</tr>
<tr>
<td>Health professional resistance to change (Boyd, 2017; Stone et al., 2014)</td>
<td></td>
<td>• Feeling in pain (Frederick et al., 2016; Heidarzadeh et al., 2016; Zwedberg et al., 2014)</td>
</tr>
<tr>
<td>Health professional negative comments about SSC (Boyd, 2017)</td>
<td></td>
<td>• Feeling nauseous (Grassley &amp; Jones, 2014)</td>
</tr>
<tr>
<td>Competing priorities (Koopman et al., 2016)</td>
<td></td>
<td>• Feeling claustrophobic (Grassley &amp; Jones, 2014)</td>
</tr>
<tr>
<td>Concerns about neonatal health (Koopman et al., 2016)</td>
<td></td>
<td>• Feeling overwhelmed (Frederick et al., 2016)</td>
</tr>
<tr>
<td>Expectation that babies be weighed soon after birth (Koopman et al., 2016)</td>
<td></td>
<td>• Feeling anxious for the well-being of the baby (Frederick et al., 2016)</td>
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<tr>
<td></td>
<td></td>
<td>• Fear of scar dehiscence (Heidarzadeh et al., 2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Feeling like the baby was in the way (Frederick et al., 2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Being environmentally aware (Frederick et al., 2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Feeling of not being in control (Frederick et al., 2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neonatal factors:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need for medical support (Boyd, 2017; Grassley &amp; Jones, 2014)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Difficulties in positioning during surgery (Frederick et al., 2016; Grassley &amp; Jones, 2014; Zwedberg et al., 2014)</td>
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<tr>
<td></td>
<td></td>
<td>• Separation (Frederick et al., 2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health professional factors:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Absence of clear roles (Koopman et al., 2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of communication (Koopman et al., 2016)</td>
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<tr>
<td></td>
<td></td>
<td>• Lack of collaboration (Zwedberg et al., 2014)</td>
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<tr>
<td></td>
<td></td>
<td>Equipment factors:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Equipment problems (Boyd, 2017)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Interruptions by surgical equipment (Frederick et al., 2016)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surgical factors:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Short length of surgery (Grassley &amp; Jones, 2014)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Emergency surgery (Boyd, 2017; Zwedberg et al., 2014)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mother-in-law perception of SSC (Zwedberg et al., 2014)</td>
</tr>
</tbody>
</table>
2.3.3 Outcomes

The outcomes from the additional papers which directly relate to SSC in the OT are documented in Appendix K. This section displays further evidence related to the highlighted topics in the published review and then highlights additional evidence related to organisational outcomes.

2.3.3.1 Maternal/newborn emotional well-being

SSC was reported to improve the women’s CS birthing experience in three papers (Armbrust et al., 2016; Frederick et al., 2016; Sundin & Mazac, 2015). One ethnographic study of 11 women explored mothers’ experiences of holding their baby in SSC in the OT and highlighted that women felt like they had no control and felt helpless in the busy surgical environment (Frederick et al., 2016). To counteract this, the women stated they desired to hold their baby, to determine their condition, to interact with their baby and have their partners involved in interacting with their baby (Frederick et al., 2016). Mothers in Frederick et al. (2016) study commented that SSC felt good and they thought SSC was calming for both themselves and their baby. Alternatively, Gregson et al. (2016) found that there was no differences in parental satisfaction at 10 days following the birth in their RCT, however they note that similar amounts of SSC were provided in both the control and intervention group.

2.3.3.2 Parent/newborn communication

Frederick et al. (2016) found that as soon as SSC was initiated, the mother and baby interacted with each other. The mother and baby used “all their senses as a means of communication” (Frederick et al., 2016, p. 33)

2.3.3.3 Maternal pain

Kollman et al. (2017) showed that there was no difference in maternal pain when comparing standard care (with SSC in the birth suite) to OT care where SSC was provided
intraoperatively. Similarly, another study by Yuksel et al. (2015) found no significant change in maternal pain medications needed with the implementation of immediate SSC in the OT, nevertheless, Sundin and Mazac (2015) found that less pain medication was used, and women perceived less pain, when they had SSC in the OT.

2.3.3.4 Maternal/newborn physiological stability

Newborn health outcomes were reported in many of the papers. Gregson et al. (2016) conducted a RCT and noted that two babies unexpectedly collapsed with SSC in the intervention group. The first had some positive pressure ventilation with no other interventions, whilst the other baby stopped breathing on arrival to the postnatal ward, was later diagnosed with meningitis, and made a full recovery and was discharged 10 days later (Gregson et al., 2016). Despite this, there was no differences between the control and intervention groups with Neonatal Intensive Care Unit (NICU) admissions, and the babies were more settled in the intervention group at 10 days; however it is important to note that the control group received similar amounts of SSC with their babies within the first 24 hours (Gregson et al., 2016). Kollmann et al. (2017) found that there was no difference in neonatal arterial oxygen saturation, heart rate and temperature despite less babies needing supplemental oxygen in the group of babies that had immediate SSC. They also reported there were no differences in neonatal stress levels, however a significant number of the neonatal salivary samples that were used to calculate stress levels were missing and there were small numbers in this pilot study (Kollmann et al., 2017). A quality improvement project reported that all newborns had normal temperatures on the conclusion of immediate SSC (Schorn et al., 2015). Another paper, by Posthuma, et al. (2017) compared outcomes between conventional care and the implemented ‘natural SSC CS’, as described by Smith and colleagues (2008). During a ‘natural SSC CS’ the surgical drape is lowered, parents observe the slow delivery of their baby and then the baby is passed directly to the mother for
immediate SSC (Posthuma et al., 2017). Posthuma, et al. (2017) reported the implemented care did not affect the newborns temperature or rates of hyperbilirubinaemia, hypoglycaemia or neonatal sepsis however it did significantly decrease the rates of suspected neonatal infection and paediatric ward admissions. It is important to note that this research was a retrospective cohort study and the data was taken from clinical conclusions by health professionals in electronic and paper files (Posthuma et al., 2017). Another retrospective study, that analysed the outcomes of a quality improvement project, reported a significantly lower percentage (3.85%) of NICU admissions after the implementation of SSC during CS’s (Schneider et al., 2017).

Several of the studies also reported on maternal outcomes. Posthuma et al. (2017) discovered there were no differences between maternal rates of low haemoglobin after birth, transfusion rates, surgical site and non-surgical site infections and infections with positive blood cultures (Posthuma et al., 2017). Kollmann et al. (2017), an RCT, reported that there was no differences in maternal nausea and there was only one altered maternal stress biomarker in the early SSC group, an increase in maternal salivary alpha-amylase which is a stressor sign related to intensive activation of the sympathetic-adreno-medullary-system. Kollman et al. (2017, p. 11) continued to say that further research is needed to determine if the increase in maternal salivary alpha-amylase has a ‘positive stressor’ or ‘negative stressor’ effect. Yuksel et al. (2015) also reported on stressor signs and noted a reduction in maternal oxidative stress, which they stated has the potential to improve wound healing and decrease post-operative adhesions.

2.3.3.5 Newborn feeding outcomes

An RCT, involving 205 patients, compared routine CS versus a ‘Charité CS’ where a baby was ‘walked out’ of the abdomen, the cord was cut by the partner, the baby was examined by the obstetrician and then the baby was placed in SSC with his/her mother (Armbrust et al.,
2016). They reported that at two to four days postpartum breastfeeding rates were increased by 12% if immediate SSC was provided and there were decreased breastfeeding problems (Armbrust et al., 2016), however these results may not be specifically related to the provision of SSC as they implemented the ‘Charité CS’ also which increases the number of variables impacting.

Heidarzadeh et al. (2016) compared babies born by vaginal birth with CS birth on their ability to ‘breast crawl’, which included SSC and achieving 1-2 sucks at the breast. They found that even with delayed initiation of SSC by 15-20 minutes after a CS, the 11% of babies that did achieve breast crawl completed it in a shorter duration of time than those who were born by vaginal birth. They surmised that this could be related to the newborns being hungrier or more alert at the time when SSC was initiated. Despite this, the ability of the babies to achieve ‘breast crawl’ within 60 minutes was dramatically reduced (11% vs 88%) if a CS was performed (Heidarzadeh et al., 2016).

A hospital in the United States reported an increase in exclusive breastfeeding rates in the hospital from 9% to 19% with the increase of early SSC in the OT (Brady et al., 2014). Likewise, Schorn and colleagues (2015) found that these steps improved exclusive breastfeeding rates on discharge, however acknowledged that these results may have been influenced by other factors. Guala and colleagues (2017) who conducted a cohort study also showed evidence that exclusive BF was significantly improved at hospital discharge, and at three months, when mothers had SSC in the OT, compared to those who had SSC with the father, or no SSC immediately after birth. The rates of exclusive BF were also slightly increased at six months (Guala et al., 2017). Despite the above positive results, Bavaro et al. (2016), found in a prospective observational study, there was no difference between the timing of the first breastfeeds between two cohorts of women, one group with scheduled CS and one with unscheduled, despite higher levels of sedation in the unscheduled CS group.
Similarly, Gregson et al. (2016) conducted a randomised controlled trial with 366 women, and found that there was no difference in breastfeeding rates at one day, two days, ten days and at six weeks when comparing standard CS care (where SSC occurred following the operation) with care that included immediate SSC in the OT. Nevertheless, Gregson et al. (2016) noted that the amount of time that women had SSC with their babies within the first 24 hours increased breastfeeding rates at 48 hours, however reported that these results may not have been specifically related to SSC at birth.

2.3.3.6 Organisational outcomes

Two papers discussed the impact of SSC on the organisation. Posthuma et al. (2017) reported that the mean CS operation time was increased by 4 minutes and 42 seconds if a ‘natural SSC CS’ was provided, however time in recovery was reduced by 14 minutes and 46 seconds. They also reported that there was a significant decrease in the maternal length of admission and prolonged admission for those who had the ‘natural SSC CS’ and it significantly decreased newborn admission to the paediatric ward (Posthuma et al., 2017). Schneider et al. (Schneider et al., 2017) stated that it also reduced NICU admissions by 3.85%. Therefore, immediate or early SSC after a CS has the potential to decrease the organisational workload and expenditure.

Table 3 on the next page summarises the above outcomes, however it is important to remember when reading this table that many of these outcomes may be influenced by other factors, as noted above.
Table 3. Outcomes related to immediate or early skin-to-skin contact

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Positive</th>
<th>No differences</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal/newborn emotional well-being</td>
<td>• It felt good (Frederick et al., 2016)</td>
<td>• Parental satisfaction 10 days post birth (Gregson et al., 2016)</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Calming to both the mother and the newborn (Frederick et al., 2016)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent/newborn communication</td>
<td>• Immediate paternal/newborn interaction (Frederick et al., 2016)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Maternal pain</td>
<td>• Less pain medication was used (Sundin &amp; Mazac, 2015)</td>
<td>• Maternal pain (Kollmann et al., 2017)</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Women perceived less pain (Sundin &amp; Mazac, 2015)</td>
<td>• Maternal pain medication (Yuksel et al., 2015)</td>
<td></td>
</tr>
<tr>
<td>Maternal/newborn physiological stability</td>
<td>• Decreased suspected neonatal infection (Posthuma et al., 2017)</td>
<td>• NICU admissions (Gregson et al., 2016)</td>
<td>• Two babies had an unexpected collapse (Gregson et al., 2016)</td>
</tr>
<tr>
<td></td>
<td>• Decreased paediatric ward admissions (Posthuma et al., 2017)</td>
<td>• Neonatal stress levels (Kollmann et al., 2017)</td>
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<tr>
<td></td>
<td>• Decreased NICU admissions (Schneider, et al., 2017)</td>
<td>• Neonatal temperature (Kollmann et al., 2017; Posthuma et al., 2017; Schorn, et al., 2015)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduction in maternal oxidative stress (Yuksel et al., 2015)</td>
<td>• Neonatal arterial oxygen saturation (Kollmann et al., 2017)</td>
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<tr>
<td></td>
<td></td>
<td>• Neonatal heart rate (Kollmann et al., 2017)</td>
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<td></td>
<td></td>
<td>• Hyperbilirubinaemia (Posthuma et al., 2017)</td>
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<td></td>
<td></td>
<td>• Hypoglycaemia (Posthuma et al., 2017)</td>
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<tr>
<td></td>
<td></td>
<td>• Neonatal sepsis (Posthuma et al., 2017)</td>
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<td></td>
<td></td>
<td>• Maternal low haemoglobin (Posthuma et al., 2017)</td>
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<td></td>
<td></td>
<td>• Maternal blood transfusion (Posthuma et al., 2017)</td>
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<tr>
<td></td>
<td></td>
<td>• Maternal surgical and non-surgical site infections (Posthuma et al., 2017)</td>
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<td></td>
<td></td>
<td>• Maternal infections with positive blood cultures (Posthuma et al., 2017)</td>
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<tr>
<td></td>
<td></td>
<td>• Maternal nausea (Kollmann et al., 2017)</td>
<td></td>
</tr>
<tr>
<td>Newborn feeding outcomes</td>
<td>Maternal stressor signs (one unknown effect increase) (Kollmann et al., 2017)</td>
<td>Maternal factors:</td>
<td>Timing of the first breastfeed (Bavaro et al., 2016)</td>
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<td>--------------------------</td>
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<tr>
<td>Two to four days postpartum, 12% increase in BF rates between</td>
<td>Breastfeeding rates at one, two and ten days and six weeks (Gregson et al., 2016)</td>
<td>Need for medical support</td>
<td>(Kollmann et al., 2017)</td>
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<tr>
<td>(Armbrust et al., 2016)</td>
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<tr>
<td>Shorter duration of</td>
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<tr>
<td>breast crawl</td>
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<td></td>
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<tr>
<td>(Heidarzadeh et al., 2016)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Increase in exclusive BF rates</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(Brady et al., 2014; Guala et al., 2017; Schorn et al., 2015)</td>
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<tr>
<td>Longer duration of SSC in first 24 hours increased BF rates at 48 hours</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(Gregson et al., 2016)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisational outcomes</td>
<td>N/A</td>
<td>CS time increased by 4 minutes and 42 seconds (Posthuma et al., 2017)</td>
<td></td>
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<tr>
<td>Recovery time reduces by 14 minutes and 46 seconds (Posthuma et al., 2017)</td>
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<tr>
<td>Significant decrease in length of admission (Posthuma et al., 2017)</td>
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<tr>
<td>Significant decrease in prolonged admission (Posthuma et al., 2017)</td>
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<tr>
<td>Significant decrease in newborn admission to the paediatric ward (Posthuma et al., 2017)</td>
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<tr>
<td>Significant decrease in NICU admissions (L. Schneider et al., 2017)</td>
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2.4 Chapter conclusion

This chapter presented a literature review of quantitative and qualitative papers published in a paper titled Immediate or early skin-to-skin contact after a Caesarean section: A review of the literature and from a further nineteen papers since its publication. This review showed
that evidence around SSC immediately or soon after a CS is increasing. There is some evidence that this care improves maternal and newborn emotional wellbeing and physiological stability, reduces maternal pain, improves parent/newborn communication and improves newborn feeding outcomes. Further evidence highlighted that immediate and early SSC in the OT decreases immediate post-operative and admission time and decreases NICU admissions, therefore it has the possible impact of decreasing costs related to hospitalization of the mother and newborn. The findings also provide evidence that employing quality improvement programs is a successful way to initiate and implement safe SSC after CS.

The following chapter presents details about methodology, ethical considerations, participants, data collection and the analysis of this research.
3 Chapter Three: Methodology

3.1 Introduction

Chapter three outlines the research methodology and the ethical considerations of the research. This chapter also reports on the participants, how data were collected, reflexivity and how the data were analysed.

Furthermore, this chapter presents the publication: Stevens, J., Schmied, V., Burns, E., & Dahlen, H. (2016). Video ethnography during and after caesarean sections: Methodological challenges. *Journal of Clinical Nursing*, 26(13/14): 2083-2092 (page 63). As of July 2018, this paper was cited once. This paper had an Altmetric Score of 11 and was in the top 25% of all research outputs scored by Altemtric (Wiley Online Library, 2018b).

This paper, positioned at the end of the chapter, presents information on selecting the design of the study (ethnography), obtaining ethics approval, recruitment of participants, planning to collect video ethnographic data, collecting the video ethnographic data, reflexivity, attempting to be a ‘fly on the wall’ while collecting data, the role of the ethnographer and implications for video ethnographic research. While there are challenges preparing for and collecting video ethnographic research, this form of data collection provides exceptionally rich data that can provide insight into practices in the hospital environment.

3.2 Knowledge gap

Prior to this research, the extensive literature review that was conducted provided some evidence about the provision of SSC after a CS and outcomes related to its provision (Stevens et al., 2014). The evidence showed that SSC in the operating theatre and recovery can be provided safely, however there were complexities related to its provision. The review
highlighted that there was minimal evidence for SSC in the operating theatre and recovery after a CS. The latest Cochrane review on early SSC by Moore et al. (2016) agreed that there remains a lack of evidence for SSC after a CS, however stated that due to the fact that there was no evidence of harm, SSC should be provided after CS. Further research was needed on the facilitators, barriers and maternal and infant outcomes and experiences of immediate and early SSC after a CS.

### 3.3 Aims and objectives

The aim of this ethnographic study was to understand the complexities in the provision of SSC within the first two hours after a CS.

This study had four objectives:

1) To observe and describe the barriers of providing SSC in the first two hours after a CS
2) To observe and describe the facilitators of providing SSC in the first two hours after a CS
3) To discover what ideas health professionals have to improve the provision of SSC in the first two hours after a CS
4) To discover what contact women would have wanted with their baby in the first two hours after a CS

To be able to achieve these aims and objectives a video ethnographic method was chosen for this research. Video ethnography enables the comprehensive analysis of the environment and real-time events due to the ability to view the footage multiple times, and it facilitates the in-depth understanding of human interactions and organisational and workplace culture (Cluett & Bluff, 2006; DuFon, 2002; Iedema, Long, Forsyth, & Lee, 2006; Neuwirth, Bellows, Jackson, & Price, 2012).
3.4 Setting

This research was conducted in a tertiary public hospital in Sydney, Australia. At the time of the research there were approximately 3,700 births per year. Of these births, approximately 35% were by CS.

The hospital was working towards Baby Friendly Health Initiative accreditation. One of the steps for accreditation included the provision of SSC in the operating theatre and recovery. The provision of SSC in the operating theatre was not formalised at the time, however SSC in recovery was encouraged. Despite this, there was anecdotal evidence that some health care professionals did provide SSC in the operating theatre.

3.5 Research design

3.5.1 Ethnography

Ethnography, a word that means to describe a custom or culture (Schneider, Whitehead, Elliott, Lobiondo-Wood, & Haber, 2007), is the exploration of the ‘what’ and ‘how’ of a cultural group or a phenomenon (Riemer, 2011). It has been described as a holistic form of research as it aims to describe a culture in relation to its setting (Schneider, et al., 2007). Ethnography stems back to Herodotus (484-425BC) who documented the “variety and strangeness” of other cultures (Beanland, Schneider, LoBiondo-Wood, & Haber, 1999, p. 250) and was described as early as 1909 by British anthropologists (Riemer, 2011).

Sociologists adapted anthropological methods to study deviant social groups like gangs (Foley, 2002) and remote communities in the 1920’s (Dykes & Flacking, 2016; Neyland, 2008) so that they could gain a better understanding of the groups. During the civil rights movements of the 1960’s insights on oppressed groups, from ethnographic research, was used.
to fight legal battles (Foley, 2002). Ethnographic research has since expanded to include the study of organisations, locations, technology and social activities (Neyland, 2008).

Ethnographic research is conducted in the natural environment and involves collecting a variety of data, including participant observation and interviews, with the aim to shed light on issues or events that influence or shape beliefs, attitudes, rituals and roles (Hammersley & Atkinson, 2010). Furthermore, critical ethnography, which examines the macro and micro perspectives of the environment, investigates concepts related to culture, symbols and rituals and concepts of power, authority and surveillance that influence the natural environment (Schmied, Burns, & Dahlen, 2016). It highlights Karl Marx’s view that capitalism and economic structures heavily influence society and has the power to oppress people (Castagno, 2011; Cook, 2012). Macro analysis looks at the bigger picture, how broader social forces affect people in a specific environment (Anderson, 1989). Micro analysis enables a close-up view of ‘how the system works’ including an understanding of the local culture, how players acted and felt, where there were/are contradictions, arenas of social conflict and how power is distributed and exercised (Hammersley & Atkinson, 2010).

Ethnography is commonly used by nurses and midwives (Cluett & Bluff, 2006) because it can expose the cultural/organisational context of childbirth (Neyland, 2008). It highlights the contrast between coexisting cultural norms (Newnham, Pincombe, & McKellar, 2013). Examples of ethnography being used can be seen on pages 2084-2085 of the Video ethnography during and after caesarean sections: Methodological challenges paper (page 63).

Ethnography was chosen for this research because it allows the researcher to gain an in-depth understanding of human interactions and culture (Cluett & Bluff, 2006; Neuwirth et al., 2012) in relation to the environment in which they are studied. Childbirth is complex as it is
embedded within its own social context and health professionals are embedded within related medical practices, however they are also influenced by personal social constructs (Thompson, 2004). How we personally see the social world determines how we perceive our actions and how we act (Crotty, 1998; Thompson, 2004). Focusing on this phenomenon helps us to identify how the environment itself and the individuals in the environment influence practice.

3.5.2 Video ethnography

Video ethnography became acceptable with the realisation that it produced data that was more objective than written notes (Pink, 2013). The use of video for research increased dramatically in the 1990’s when the cameras became more affordable and portable (Pink, 2013). Video ethnography is known to provide a channel to discover extra data, and nuances, that would usually be missed (Neuwirth et al., 2012). It shows real people, situations and activities - creating a visible captured record of data (DuFon, 2002; Iedema, Long, Forsyth, & Bonsan Lee, 2006). Video-recorded events and interactions in a natural setting provide a rich source of data for analysis which helps the researcher to find deeper meaning with the added advantage that it can be viewed multiple times.

For this study the researcher personally video-recorded the data because it allowed the researcher to control what is was being filmed (DuFon, 2002) - the interaction between mothers and their infants. Video ethnography offered holistic insight into how the surgical environment of the OT and recovery affect infant and mother interaction and behaviour and what in turn may be affecting the mother infant connection.

3.6 Ethical considerations

Ethics approval was sought to video and collect field notes on mother and support person’s contact with their baby in the OT, recovery and the postnatal ward for up to two hours after
Approval was also sought for audio recorded interviews with the same women six weeks postpartum and for audio recorded health professional interviews and focus groups. Ethics approval was granted from both the health service and university. Ethical standards were adhered to during the research, including when recruiting participants, maintaining the confidentiality and anonymity of the participants, and whilst storing the data. Careful planning ensured that there were no ethical infringements.

3.6.1 Ethics approval process

Before commencing recruitment, Human Research Ethics Committee approval was sought. Initially the researchers were concerned that the HREC would not approve video recording in the medicalised environment of the hospital due to privacy and legal issues (e.g. increasing the vulnerability of health professionals’ due to the risk of inadvertent filming an adverse event), however the hospital HREC had no specific concerns about video recording. Heath (2010) similarly reported that gaining permission to film in the hospital was not challenging. The HREC’s acceptance of the use of video recording may be due to specific inclusions in the Ethics application (Table 4).

Similar to Newman, et al. (2013), the hospital HREC deemed this research ‘high risk’ because it involved recruiting a vulnerable group - pregnant women. Steps taken to ensure that the pregnant women were not coerced into being a participant are reported on pages 2085-2086 of the Video ethnography during and after caesarean sections: Methodological challenges paper (page 63).

The main challenge in getting ethics approval was related to the lack of knowledge about ethnographic research. Instead of being purely an observational study, the ethics committee assumed that the research team wanted to implement a change in practice. This was evidenced by the HREC statement discussing the need to develop a protocol: “There is no
<table>
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<th>Issue</th>
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<th>Researchers’ explanation in the NEAF application</th>
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| What was to be filmed | - Careful consideration was given to what would be recorded due to alleviate concerns about poor professional practice being captured on film  
- Staff were informed that data collection would cease if there were any adverse situations (e.g. baby needing to be resuscitated)  
- Considerations around the sensitivities of filming women’s breasts were addressed | ‘A hand held video camera will be focused directly on the contact between the mother and the infant’  
‘If they (staff) are inadvertently (filmed), further consent will be required before the analysis of the video recording’  
‘If at any time there is an emergency situation ... the researcher will immediately stop what they are doing, and will remove themselves from the area, so that appropriate care can be given’  
‘Skin to skin involves having the naked infant on the mother’s bare chest. The women ... will be informed that they can change their mind about the video recording at any time’ |
| Consent | - Women had the option to choose to not be filmed at any time before or during data collection  
- That staff had the option to not be involved in the research and video recordings | ‘If they decline being video recorded, only field notes will be taken’  
‘If they (staff) decline, no data will be collected in relation to their interactions or care, and no video-recordings’ |
clear protocol for skin to skin contact in the operating theatre... develop a clear and safe protocol for skin to skin” (HREC, August 2013) and to arrange further staff: “The baby also needs to be observed by midwives during skin to skin contact ... This will increase the workload of nursing and medical staff” (HREC, September 2013). This misinterpretation by the ethics committee caused a delay in ethics approval. Newman et al. (2013, p. 127) similarly reported delays in ethics approval related to “difficulty in conveying the rationale and benefit of ethnographic research”. The hospital HREC only approved the research after the head supervisor wrote a letter to the chair of the HREC offering to meet to explain what ethnographic research is and to answer questions.

Hospital and University HREC and hospital Site Specific approval was granted. Details are seen on page vii of this thesis.

3.6.2 Recruitment

Pregnant women, their support people and health professionals were recruited for the research. The approved advertisements (Appendix L-N) were placed in key areas around the hospital. All potential participants were guided through the approved Participant Information Sheets and Consent forms (Appendix O-R) and had the opportunity and time to ask questions. Further information is documented on pages 2085-2087 of the Video ethnography during and after caesarean sections: Methodological challenges paper (page 63).

3.6.3 Data collection

Whilst collecting data I was acutely aware of my responsibility to avoid filming non-consenting health professionals. To reduce this risk, I put ‘Research in Progress’ signs on all the doors entering the OT before each case, and occasionally I stopped video recording to ensure non-consenting health professionals were not videoed. In addition, whilst editing the video footage, I deleted any accidental capture of non-consenting people. Further
information about data collection is documented on pages 2087 of the *Video ethnography during and after caesarean sections: Methodological challenges* paper (page 63).

3.6.4 Maintaining confidentiality and anonymity

To maintain participant confidentiality, participants were informed that all data would be de-identified. Health Professionals were informed that they would be identified by their roles (e.g. managers, doctors, midwives, nurses), and for the women, their support people and their babies, women were requested to choose pseudonyms that would replace their names.

All the transcribed focus groups, interviews and video footage were individually de-identified. The video footage was also extensively reviewed and edited to ensure the anonymity of participants. One section of the video footage was deemed beneficial for conferences and in-services. Advice was sought from the Health District research office to determine what would be needed to gain permission to use the footage. As per the ethical requirements, written consent from everyone present in the footage was required. The Local Health District media consent form was used to enable this, and everyone signed consent for its use.

3.6.5 Storage of data

As per the NEAF, all the hard copy data was stored under key lock in filing cabinets and soft copy data stored on computer with password protection.

3.7 Participants

Women, their support people and health professionals were recruited for this research.
3.7.1 Women

It was determined before ethics submission that around 30 women should provide sufficient data to reach data saturation and to inform the research questions. Of the 35 women who were recruited, a total of 21 women were participants in this research. The remaining 14 potential participants either withdrew from the study or they could not participate at the time of their birth. Details are noted on page 42 of the ‘A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery’ paper (page 74). No further participants were sought because data saturation was reached.

Women were potentially included in the research if they:

- Planned to have an elective CS following a previous CS
- Had a singleton pregnancy
- Planned to breastfeed

Women were excluded from the research if they:

- Were <18 years or >40 years of age
- Were highly dependent on medical care
- Had significant maternal or neonatal pregnancy complications
- Had a significant cognitive impairment, intellectual disability or mental illness
- Could not speak fluent English
- Had the CS <37/40 gestation
- Their partner did not want to be a participant in the study

Only women who had a previous CS were included, so that the differences in CS care and maternal satisfaction could be explored. The exclusion criteria aimed to protect the
participants and to eliminate women with high risk pregnancies that may have less opportunity for SSC.

Demographic information was collected at the time of recruitment (see Appendix T). These details are seen on page 43 of the ‘A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery’ paper (page 74) of the thesis.

3.7.2 Support people
Pregnant women who were interested in being participants were requested to inform their support people about the study to see if they were happy to be involved, because their support person would be inherently involved in the study. Twenty-six people, who were supporting the 21 pregnant women participants, were recruited on the day of the woman’s CS. All the women had their partner involved in the research. Four women had extra support people during data collection. One woman had her sister, two had their mothers and one women had her mother-in-law and father-in-law as support people. These participants signed consent before the CS and indicated if they would allow video footage and/or field notes to be recorded.

3.7.3 Health professionals attending caesarean sections
Recruitment was challenging because many staff were involved in the care of women during a CS in the first two hours after birth, including: obstetricians, paediatricians, anaesthetists, registrars, anaesthetic nurses, scrub nurses, scout nurses, OT educators, recovery nurses, birth unit midwives, postnatal midwives, student midwives, students and managers. The only criteria for participation was that the health professional worked with the women participants in either the OT, recovery or on the postnatal ward. A total of 210 staff members were recruited for potential participation during the caesarean sections, of which more than 125 participated. More details are documented on page 42 of the A juxtaposition of birth and
surgery: Providing skin-to-skin contact in the operating theatre and recovery paper (page 74). Only 21 staff members declined to participate. Details can be found on page 2087 of the Video ethnography during and after caesarean sections: Methodological challenges paper (page 63).

3.7.4 Health professionals for focus groups and interviews

Health professional focus groups and interviews were conducted with individuals who provided care to women during and after CS. Midwives, student midwives, managers, consultants, nurses, anaesthetists, paediatricians/neonatologists and obstetricians were recruited for focus groups and interviews. A total of 30 staff members were involved in five focus groups. Two focus groups were conducted with birth unit and postnatal ward midwives, one with caseload midwives and two with OT staff. A further 13 staff members were involved in individual interviews. Baseline data was collected from all the health professionals involved in the focus groups and individual interviews (see Appendix S). Details of this baseline data is seen on page 42 of the ‘A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery’ paper (page 74).

3.8 Data collection

Video data and field notes were collected in the OT, recovery and postnatal ward. Audio recorded data was collected during maternal postnatal interviews and during health professional focus groups and individual interviews.

3.8.1 Data collection in the operating theatre, recovery and the postnatal ward

The aim of collecting data within the first two hours after a CS was to gain insight into the provision of mother-infant contact in this time frame. More specifically the aim was to observe how the environment and the people (health professionals, the women, their support
people and the baby) influenced the provision of SSC. Video footage and/or field notes were collected. Out of the 21 participants, 16 agreed to video footage being taken. The remaining five participants were observed by the researcher and field notes were written.

3.8.1.1 Collecting video footage

Details about video data collection are described on pages 2087-2089 of the Video ethnography during and after caesarean sections: Methodological challenges paper (page 63). This includes information on collecting video ethnographic data, being a ‘fly on the wall’, and the role of the ethnographer.

3.8.1.2 Collecting field notes - tools

Out of the 21 participants, five participants had field notes collected the whole time and the 16 participants that consented to being video recorded had intermittent field notes collected. Intermittent field notes were taken when the video camera was turned off (e.g. when no mother or support person contact was being achieved; during transfers between areas) and occasionally when the video camera was on a tripod (e.g. something of relevance occurred in the background which was not being filmed).

Prior to data collection, a tool was devised to help inform data collection. The observation tool used by Cantrill (2006, pp. 240-248. Appendix I: "The birthing room observation grid") in her doctoral study highlighted the pertinent events to observe in the environment. This tool was adapted (Appendix U) to encourage the documentation of relevant events for this study.

During data collection, an attempt was made to use this tool, however documenting in the table was unfeasible because it took time to determine where to write, and this hindered observation. Taking conventional, free-flowing field notes produced more data. Despite this,
the foreknowledge of what was to be documented did help direct what data was recorded in field notes, and the tools were also used when analysing the field notes and the video footage.

Overall it was easier to collect the video footage and then write detailed field notes.

Important data may have been missed when collecting field notes, because there was not enough time to document all verbal and visual data. As noted on page 2087 of the *Video ethnography during and after caesarean sections: Methodological challenges* paper (page 63), the field notes were expanded soon after data collection to help reduce this risk.

3.8.2 Interviews with new mothers

Audio recorded in-depth interviews were undertaken with the 21 mothers around six weeks after the birth of their baby at a place of their choice. The interviews lasted between 13 and 56 minutes. The eight interviews conducted in the home went longer on average (41 minutes [range 27-56 minutes]) than the one interview conducted at the hospital (25 minutes) and the 12 interviews via the telephone (average 28 minutes [range 13-49 minutes]). The interviews began with open-ended questions (see Appendix V) which were used to elicit greater insight into the woman’s experience. The aim of the interviews was to determine women’s perception about the contact they had with their baby, their current newborn feeding method and what influenced their decision about how they feed their newborn.

3.8.3 Health professional focus groups and interviews

A total of five focus groups and 13 individual interviews were conducted and audio recorded. The focus groups took on average 45 minutes (range 33-53 minutes) and the interviews were on average 23 minutes (range 11-52 minutes). Focus groups were held in hospital education rooms and the interviews were conducted in the office of the health professional. The aim of the focus groups and interviews was to determine health professional knowledge of SSC, and their perception of the barriers of SSC after CS’s plus strategies to overcome these barriers.
A set of open-ended questions (see Appendix W) guided the focus groups and interviews. All the health professionals were eager to answer questions and elaborate.

3.9 Reflexivity

Reflexivity is crucial in ethnographic research (Aarsand & Forsberg, 2010; Dykes & Flacking, 2016; Guillemin & Gillam, 2004). It increases the rigour and transparency of qualitative research (Bennett, 2011). Reflexivity allows the researcher to become aware of how their personal beliefs, work roles, knowledge, and presence, influences the collection and interpretation of the data (Dykes & Flacking, 2016; Hammersley & Atkinson, 2010). In this research, I recognised that my personal comfort in the hospital where I undertook the research (where I also am an employee) and my roles of mother of four young men, a nurse, a midwife, a lactation consultant and a researcher may have influenced the interpretation, and hence the results, of the data. Like Hugill (2016), I was also aware that the health professionals, the women and their partners knew that I was a staff member and that this may alter their actions. Furthermore, I was aware from Pink (2013), that people are conscious that the camera is there, and that it disturbs the natural environment.

When I started working in maternity wards, SSC was provided after vaginal births, however maternal and infant separation was normal after CS. I did not think that this separation was an issue at the time. This may be because as a mother, I never had a CS. When midwifery consultants started to implement the provision of SSC in recovery after a CS, I recognised that the separation of mothers and babies a negative effect on the mothers. I was shocked that I had not recognised this previously. As a midwife, I knew that it was my role to be an advocate for these women and babies, and this research was one way that I could be an advocate.
I understand that normal birth is the ideal and I also recognise the complexities and dangers of CS. I believed that the 35% CS rate was too high at the hospital, even considering it was a referral hospital where mothers with complications were transferred from other areas. This was backed up by the WHO recommendations which state that a 10-15% CS rate is reasonable, and that rates over 10% do not improve maternal and newborn mortality rates (World Health Organization, 2016).

By the time the research commenced I had a clearer understanding that mothers find it traumatic being separated from their babies after birth. The women who were recruited voiced their despair when reflecting on their previous CS, where separation occurred, and other mothers voiced how birth separation hindered them from bonding with their child.

As a researcher and a midwife I feared, whilst recruiting, that the woman would choose to have a planned CS instead of trying for a vaginal birth after CS just so that they could be involved in the research. On one occasion I was confronted with this scenario. I made sure that the woman knew that making the right personal decision about her birth was important, and that this research should not influence that decision.

To be transparent, I followed steps recommended by O’Reilly (2012) and Flacking and Dykes (2016), including writing reflexive notes during the research and discussing my feelings and observations with my supervisors during regular meetings. Reflexive notes were written within a day after every birth and occasionally these reflexive notes were expanded during transcribing and data analysis, especially during the viewing of video footage. At times my bias was obvious on reflection, especially when my life roles clashed. For example, when collecting the first video footage I was challenged as a mother, midwife and researcher. The baby was born and commenced having SSC with his mother soon after birth. Within a short while the midwife noted that the baby was grunting and had some nasal flaring, so she
suctioned the baby and called a paediatrician. When a paediatrician arrived he stated that the baby was pink and that he was meant to be in another theatre. The midwife asked, “who’s going to review my baby?” (FN Lois). The paediatrician immediately put oxygen on the baby, told the midwife to take the baby to the NICU and then quickly went to the other theatre.

As a midwife, I knew that this doctor did not spend enough time with the baby to make an informed decision about his care. I was shocked about the doctor’s decision because I did not think (as a midwife) that the baby needed to be transferred. Despite this, as a midwife I also recognised that he needed to be elsewhere. As a mother I was angry that the baby was possibly going to the NICU unnecessarily. As a midwife and lactation consultant, I knew this separation would hinder early initiation of breastfeeding and could potentially hinder the longevity of breastfeeding. As a researcher, I was upset that I may have to delete the collected data.

‘All I could think of was to have to delete all this beautiful data. I questioned myself:
Will I have to tell the mum that I had to delete all this data and that they could not see all this beautiful video footage that I had taken? How can I explain this to the mum?
How could I justify this action? It felt sacrilegious, I was very upset. (Reflective Notes Lois)

When I left the environment soon afterwards, I was so upset that I rang my primary supervisor who helped me put this event into perspective. Once I realised that I could still give this un-identified video footage to the mother, because the transfer was directly related to the lack of staff, I felt relieved. My primary supervisor also steered me in what I should do ethically, which involved approaching the mother and asking if she would like to pull out of the study, or would prefer to stay in the study. Lois was eager to continue to be a participant.
I was surprised that the only concern she voiced was “I think dad was upset because he did not get skin-to-skin” (Field Notes Lois).

For more details on how reflexivity was achieved, see pages 2087-2088 of the Video ethnography during and after caesarean sections: Methodological challenges paper (page 63), page 43 in the A Juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery paper (page 74), and in the Who Owns the Baby? A video ethnography of skin-to-skin contact after a caesarean section paper on page 85 of the thesis.

3.10 Data analysis

Data analysis involved editing the video footage, transcribing verbal and visual data, entering the data in NVivo and thematically analysing the data.

3.10.1 Editing the video footage

The video footage was edited twice. Firstly, all the footage was viewed to determine if any non-consenting staff or patients were accidently included in the footage. If so, the footage was either deleted or the visual range was zoomed in so that they would no longer be in the footage. This data was used for analysis.

In separate files, the data was viewed specifically to de-identify health professionals visually and verbally from the footage. This process was time consuming because the health professionals could be potentially identified in many ways, e.g. reflections, badges, visual footage of faces, names being stated. Considering the proximity of the health professionals, a great deal of the data was deleted. After checking the data a few more times, this footage was gifted to the parents in the study.
3.10.2 Transcribing and entering data into NVivo

To reduce the demands on time, the majority of the audio recordings from interviews and focus groups were transcribed by a professional transcribing company. These transcriptions were checked for accuracy. Minimal changes were made.

These transcriptions, and the edited video footage, were placed into NVivo, a data management program that facilitates the analysis of Qualitative data. When the video footage was entered, it was placed into an accurate timeframe, so that time to certain events could be calculated. The video footage was then transcribed verbally in one column in the program and visually in another column in the specific timeframes. The video footage was viewed multiple times during transcription.

3.10.3 Data analysis process

Ethnographic research can be analysed using a thematic approach (Dykes & Flacking, 2016; Grbich, 2013). Thematic analysis facilitates the identification, analysis and reporting of patterns in the data (Braun & Clarke, 2006). In ethnographic research, thematic analysis also facilitates the researcher to explore the links between the workplace culture and the political, social and economic forces that dominate the research setting (Grbich, 2013). Braun and Clarke (2006) recommended following six phases during thematic data analysis. These include:

1. Familiarising yourself with the data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report
I followed this process of analysis. I became familiar with the data collected whilst transcribing it and re-listening to the recordings to ensure that the data was transcribed accurately. Even though I noticed similarities and differences in the data, I decided to use an inductive approach to thematic analysis. This approach is a bottom up approach, which ensures that themes are data driven (Braun & Clarke, 2006). I comprehensively coded all the visual and verbal data for the caesarean sections. This included what was happening in the environment, the use of equipment, what the actors did and how the environment influenced these actions. I also coded all the verbal data from the interviews and focus groups. The majority of sentences/visual events were coded into numerous nodes; for example during Chantale’s six week interview she stated: “That was really exciting to see him in the middle of my breasts and then working his way to one of the nipples and feeling around for it.” This was coded into the nodes: breastfeeding, mother’s comments, positive comments, owns the baby, baby searching. During this I also started ‘clumping’ the NVivo nodes into themes. For example, during analysis I saw many midwives taking the baby to the resuscitaire straight after birth I had this coded into the nodes:

Barriers to SSC

- Equipment
  - Resuscitaire

Other themes were coded under barriers to SSC (e.g. people, environment) as well as other equipment under the associated equipment theme (e.g. O2 finger probe, gown). These themes rapidly expanded during early analysis, so I regularly returned to previous footage/field notes to ensure that all the themes did not miss any relevant data. Taking this iterative approach helped me take control of the data. By the time I coded the tenth
participant’s data, very few new themes were identified and by the sixteenth no more nodes were identified. This indicated that data saturation had been reached.

Whilst writing up the data, I recognised the need for further analysis. I went back and coded any data that was relevant to the data collection method (e.g. being present, looking at the camera). This information informed the data in the ‘Reflexivity’, ‘Fly on the Wall or the Spider’ and the ‘Role of the Ethnographer’ sections, pages 2087-2089, of the Video ethnography during and after caesarean sections: Methodological challenge’ paper (page 63).

I also went back to specifically code what the babies were doing, including their specific body movements, crying, blinking, salivating, licking, breastfeeding etc. These observations were documented to determine the babies’ progress through the SSC phases as visualised in a Brimdyr, Svensson and Widström (2010) DVD, that pictured the ‘Nine Phases of Skin-to-Skin Contact’ as per Widström et al. (2011). Even though these were coded into NVivo, I designed tables in a word document to specifically record the timing of all infant and maternal/support person contact, and the timing of other relevant information (e.g. first suck at the breast, the first breastfeed, crying, etc.).

The overarching themes within the data did not develop until I began to write the findings. These themes were identified during two important processes – mind mapping and discussions with the research supervisors. I spent many days mind mapping, drawing on blank paper, trying to make sense of the data that I had collected. Many potential themes were considered and soon dismissed because they did not accurately represent the data. After many discussions with my supervisors, the overarching themes were identified and confirmed against the data.
3.11 Chapter conclusion

This chapter has offered insight into the aims and objectives of this study, the ethnographic design of the research, ethical considerations, participant details, how data was collected, the reflexive process and how the data was analysed. The methodological paper is appended at the end of this chapter.

The following chapter will present the first of the finding papers ‘A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery’.
3.12 Publication: Video ethnography during and after caesarean sections: Methodological challenges

Jeni Stevens, Virginia Schmied, Elaine Burns and Hannah G Dahlen

Aims and objectives. To describe the challenges of, and steps taken to successfully collect video ethnographic data during and after caesarean sections.

Background. Video ethnographic research uses real-time video footage to study a cultural group or phenomenon in the natural environment. It allows researchers to discover previously undocumented practices, which in-turn provides insight into strengths and weaknesses in practice. This knowledge can be used to translate evidence-based interventions into practice.

Design. Video ethnographic design.

Methods. A video ethnographic approach was used to observe the contact between mothers and babies immediately after elective caesarean sections in a tertiary hospital in Sydney, Australia. Women, their support people and staff participated in the study. Data were collected via video footage and field notes in the operating theatre, recovery and the postnatal ward.

Conclusions. Challenges faced whilst conducting video ethnographic research included attaining ethics approval, recruiting vast numbers of staff members and ‘vulnerable’ pregnant women, and endeavouring to be a ‘fly on the wall’ and a ‘complete observer’. There were disadvantages being an ‘insider’ whilst conducting the research because occasionally staff members requested help with clinical tasks whilst collecting data; however, it was an advantage as it enabled ease of access to the environment and staff members that were to be recruited. Despite the challenges, video ethnographic research enabled the provision of unique data that could not be attained by any other means.

Relevance to clinical practice. Video ethnographic data are beneficial as it provides exceptionally rich data for in-depth analysis of interactions between the environment, equipment and people in the hospital environment. The analysis of this type of data can then be used to inform improvements for future care.

Key words: caesarean section, ethics, ethnography, operating theatre, skin-to-skin contact, video ethnography

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What does this paper contribute to the global clinical community?

- Careful planning and time are necessary to ethically recruit hospital staff members and vulnerable populations to an ethnographic study.
- It is important to determine what will be documented, prepare an equipment checklist and explore the environment before collecting data.
- Be aware of the limitations of your positioning (e.g. complete observer) in the environment and how this affects the data collected.
Introduction

Ethnographic research in healthcare settings allows health professionals and researchers to gain a valuable understanding of patients’ or healthcare consumers’ and clinicians’ ‘everyday’ world. Heath (2010) stated that some of the best ethnographic work has illuminated the culture of healthcare organisations. Video footage is recommended as it provides an unequalled depth of data (Lieg & Schindler 2013), and it allows repeated viewing enabling the microanalysis of collected data (Penn-Edwards 2012).

The results of this research related to the facilitators and barriers of skin to skin following caesarean section are reported elsewhere (Stevens et al. 2016) and in another paper soon to be published. The aim of this study was to discuss the approach taken when collecting video ethnographic data in a hospital setting. The study will examine the challenges and steps taken to address these during the video ethnographic study. In particular, the study will focus on participant recruitment, planning for video recording, techniques of video recording, the effects of being an ‘insider’ and the complexities of researching in the hospital surgical environment.

Background

Skin-to-skin contact (SSC), where a naked baby is placed on the bare chest of his/her mother, is recommended immediately after vaginal births, and as soon as the mother is alert and responsive after a caesarean section (World Health Organization & UNICEF 2009). Few hospitals have implemented SSC after caesarean sections (Phillips 2013, Gregson et al. 2016, Koopman et al. 2016). Research has highlighted that providing SSC immediately, or soon after caesarean sections can be challenging due to concerns over the safety of the mother and baby, the fear of change and insufficient staffing numbers (Nolan & Lawrence 2009, Gouchon et al. 2010, Hung & Berg 2011, Crenshaw et al. 2012). Despite these challenges, providing SSC after caesarean sections is feasible and is valuable as it improves maternal and infant outcomes and improves maternal satisfaction with birth (Stevens et al. 2014, Sundin & Mazac 2015, Gregson et al. 2016).

Anecdotally, the first author (JS) in her role as a midwife had been told that some midwives facilitate SSC in the operating theatre and in recovery, whilst others do not. This prompted interest in researching the perceived benefits and disadvantages, and the barriers and facilitators of providing immediate SSC after a caesarean section. JS undertook this study as part of a doctoral programme.

Selecting a study design

To comprehend what happens in the surgical environment, the study design required a means to interpret how the environment and culture affects individual actions and interactions in relation to providing immediate SSC after a caesarean section.

Ethnographic research is the systematic study of a specific cultural group or phenomenon in the natural environment (Riimer 2011). The advantage of ethnographic research is that it allows the in-depth description of structures, institutions, customs and traditions and power relations (Atkinson et al. 2001, O’Reilly 2012). Ethnography is increasingly being used in hospital settings (Dykes & Flcking 2016). The researcher can go to where the action is and record what naturally happens, with minimal interference (Knaublahn 2012, Dykes & Flcking 2016). It allows the researcher to examine the relationships between the human experience, the environment, the culture and the inherent power imbalances in the hospital (Mantzoukas & Jasper 2004, Murichison 2010, Bennett 2011, Schmied et al. 2016).

Video footage enhances ethnographic research because it is a natural medium for collecting real-time data (Brindly 2016). It is ideal because it offers an uninterrupted stream of information, with the potential to capture ‘reality’ and hidden ‘truths’ (Pink 2001, Penn-Edwards 2012). The footage allows repeated viewing, enabling the researcher to see more than what they can see at the time of its recording (Penn-Edwards 2012). This additional information produces knowledge which enables the facilitation of changes in practice (Iedema et al. 2006). Despite the benefits of video footage, Schensul and LeCompte (2013) state that it is unfeasible to record everything and it only captures one perspective (viewpoint), the data collector’s perspective; however, Penn-Edwards (2012) state that to get different perspectives, the video footage can be viewed by more than one person.

Video has been successfully used in ethnographic research in the hospital setting. Rindstedt (2014) used video ethnography to study the coping strategies of children with cancer as they interacted with parents and staff. They stated that the collected footage enabled them to extensively analyse and re-analyse the details of the interactions. Neuwirth et al. (2012) used video ethnography to identify patients’ needs, choices, care gaps and effective practices through observing the video footage. The footage was shown to key people across the organisation to demonstrate quality improvement opportunities. Even though they recognised the benefits of video ethnography, they stated that the presence of the video equipment may have affected the participants’ disclosure of...
information. Iedema and Carroll (2011) used video ethnography to improve organisational healthcare processes and communication in an outpatient hospital spinal clinic that treats pressure ulcers. The visual data were edited into themes and presented in ‘reflective feedback’ meetings, which was also filmed to enable the researchers to document the ideas formulated in the meetings. They stated that video ethnography highlighted everyday problems in a complex working environment, allowing the opportunity for reflection and the potential for change. Liu et al (2015) also used video ethnography to study how communication impacts medication errors. They stated that after strategic planning and building clinician confidence, video ethnography highlighted inadequate communication skills and enabled the clinicians to be reflective about their practice. Considering the success of using video in ethnographic studies, it was determined that a video ethnographic design would be the optimal method to provide insight into the challenging operating theatre and recovery environment and the intricacies of what was to be captured.

During this research, video recordings and field notes were used to collect data from the interactions between 21 women, their babies and support people in the first two hours immediately after elective caesarean births at one tertiary hospital in Sydney, Australia. Further audio-recorded face-to-face interviews with the women participants, and interviews and focus groups with a broad range of relevant hospital staff members, were also collected; however, these are not presented in this study.

Obtaining ethics approval

Previous researchers have found it challenging to gain ethics approval for video ethnographic research (Liu et al 2015); however, for this research, the Human Research Ethics Committee (HREC) had no specific concerns about video recording in this study. Despite this acceptance, feedback from the HREC suggested that they misunderstood the fundamentals of ethnographic research. The HREC assumed that the research team wanted to implement a change in practice or test an intervention. HREC approval was received from the hospital six months after submission. Study No. 13/47-HREC/13/...102. Western Sydney University approved the research soon after, Study No. H10482.

Recruitment

Thirty-four low-risk mothers having a repeat caesarean section and 26 support people were recruited. A further 210 staff members were recruited because they potentially would, or did, support these women participants either in operating theatre, recovery or the postnatal ward. Recruiting staff and women in the hospital setting was time-consuming. A great deal of deliberation between the staff and our research team was needed to achieve successful recruitment of pregnant women and their partners.

Recruiting pregnant women and their support people – the Ladybug Strategy

Despite the plan to observe what naturally happens in the operating theatre, the HREC deemed this research ‘high risk’ because it involved recruiting a vulnerable group – pregnant women. It was evident, in our research, that the HREC was focused on making sure that the pregnant women were not coerced into being a participant. The HREC informed our team that we could not approach any pregnant women directly, as it may appear coercive. As a consequence, initial recruitment proved to be a challenge; however, success was achieved through careful planning (Sullivan-Bolyai et al 2007).

Two initial recruitment strategies were unsuccessful. These included advertising and setting up a recruitment stand in the Antenatal Clinic. After reflection and in-depth discussions with the researcher’s supervisors and key hospital staff members, the successful Ladybug Recruitment Strategy (Table 1) was created. This strategy involved employing ladybug stickers as a visual reminder, developing referral slips and a referral slip collection box. Research folders were developed to decrease staff confusion over when to promote a broad range of research projects to women during antenatal visits. Staff members were also educated on how to provide a simple explanation of participants’ involvement in this research.

Of the two women who declined to participate after signing consent, only one provided an explanation stating that her husband did not want to be involved in the research. A further two women declined consent after being informed about the research. Supervisors suggested to the researcher (JS) that she may be hindering recruitment:

due to information overload... I was surprised she said that, however now I think about it, I agree. I tell them every single detail... They probably don’t understand half of what I’m saying. (Reflection Recruitment)

Previous researchers have indicated the importance of seeking advice on how to communicate effectively to potential participants (Hure et al 2008). No women withdrew from the study, unless it was clinically necessary, once
Table 1: The ladybug recruitment strategy. [Colour table can be viewed at wileyonlinelibrary.com]

<table>
<thead>
<tr>
<th>Idea</th>
<th>Description</th>
<th>Benefits</th>
</tr>
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<tbody>
<tr>
<td>Ladybug Stickers</td>
<td>All the advertisements and handouts had a sparkly ladybug sticker on them.</td>
<td>• The ladybug became a visual reminder for the research staff.</td>
</tr>
<tr>
<td>Ladybug Slips and Box</td>
<td>The Ladybug slips allowed women to acknowledge their interest in the research. A Ladybug box was made with a slit in the top of it so that the slips could be placed in it.</td>
<td>• Staff and women related the ladybug to the research.</td>
</tr>
<tr>
<td>Research folders</td>
<td>Research folders were designed and placed in every antenatal clinic room. Each folder had three dividers which had weeks 10–20, 21–30, 31–42 on them. Research projects were placed behind the relevant recruitment time frame</td>
<td>• It reduced the confusion of when to discuss relevant research projects.</td>
</tr>
<tr>
<td>Staff education</td>
<td>The midwives were educated to refer to the divider relevant to the women’s gestation and briefly discuss the related research. If women were interested in finding out more about this study, the midwives were requested to and place the Ladybug slip into the Ladybug box.</td>
<td>• Staff members were more likely to promote research.</td>
</tr>
</tbody>
</table>

adjustments to recruitment were made, which included reducing unnecessary information and allowing more time for questions. Eleven women were withdrawn from the research for clinical reasons due to the development of a medical condition, because they were transferred to a different hospital or gave birth to the baby before the scheduled caesarean. Overall 21 women participated in the research.

Consent was also required from the women’s support people. Support people were likely to have contact with the baby in the two-hour data collection period. Their consent was obtained on the day of the caesarean. As part of their consent, both the woman and her support people were asked to select their own pseudonym to ensure confidentiality. Many chose well-known television character names such as Marge and Homer.

Recruiting staff

Prior to commencing the study, a total of 18 in-services (information sessions) were conducted for midwives, operating theatre staff, doctors and anaesthetists. At these in-services, the staff members were fully informed about the research and were given the opportunity to sign consent forms. The aim was to recruit as many staff as possible to reduce the pressure of consenting on the data collection days.

There were large variations in attendance at the in-services. Occasionally, the staff members were too busy to attend or disregarded requests to attend as the following field note indicates:

I had a hard in-service yesterday. I felt like I had to drag people into the room... People were ignoring me when I told them [about the in-service],... I only got three people. It was very disappointing. (Reflection In-services)

In-services that were attached to scheduled ward or staff meetings had many more attendees than specific in-service information sessions. In-services were also well attended when hospital educators encouraged staff members to attend.

The in-services were beneficial for three reasons. First, familiarity with the researcher facilitated rapport with staff. Second, knowledge about the research spread throughout the maternity unit, the operating theatres and recovery, which in-turn made it easier to recruit people on the day because of prior knowledge. Lastly, the in-services with midwives were beneficial because the midwives became enthusiastic about the study and were eager to discuss the research with potential women participants.

Despite plans to recruit in advance, most staff members were recruited on the day of data collection. To accomplish this, the researcher attended the operating theatre early to
find out which staff had not previously consented. The researcher then informed them about the research and they were given an opportunity to ask any questions before giving written consent. Overall, 210 staff members signed a consent form agreeing to be involved in the research. Two staff members declined to participate in the research. One stated it was because they wanted to see the researcher ‘perform’ their research before they consented, the other stated that they ‘disliked’ SSC being implemented in the operating theatre due to safety concerns. A further 19 staff members declined being filmed, stating that they were either worried about the footage getting into the media or they just did not like being filmed in general. For example, one staff member made comments about previous film accidentally getting on the TV [television] (Reflective Notes Lois).

Planning to collect video ethnographic data
Preparation for data collection involved checking the video equipment and writing an equipment checklist. It also involved exploring the environment and determining what to document.

A video camcorder was chosen to record the data because it was light, compact, easy to use and unobtrusive. The camcorder was tested for picture quality and battery life and a large SIM card purchased to maximise data storage. Heath (2010) recommended synchronising the camcorder’s time and your wristwatch with the operating theatre clock. Synchronising the time reduced potential confusion when analysing the data as it enabled the field notes to be matched with the filmed data.

An extensive checklist of video equipment and stationary was compiled as recommended by Heath (2010). This checklist was instrumental in reducing the stress of preparation before each event.

Before collecting the data, the research team gave careful consideration to what would be video recorded and the feasibility of capturing the data. The team was aware of sensitivities of recording the practice of health professionals, so it was decided that the recording would be focused on the mother and the newborn. Carroll and Messman (2011) recommend further preparation, for example that researchers study the environment before data collection. This proved to be invaluable as the decisions about placement of the camcorder for optimal video footage and minimal interference were made in advance.

Considering the camcorder was focused specifically on the woman and her baby, and to avoid filming staff members and the surgery, it was determined that field notes would be used to record events, interactions, activities and space not captured by the camcorder as they could have an impact on mother and newborn contact. For example, field notes would be used to record the placement of monitoring equipment on the woman before surgery. Field notes were also to be used exclusively with five participants, where women declined being video recorded but agreed to be observed.

Collecting video ethnographic data
During data collection in the operating theatre, the majority of the film footage was captured whilst standing behind the anaesthetic machine at the head of the bed. Collection of the footage was enabled as the camcorder could be propped on top of the anaesthetic machine and it could zoom in directly on the mother baby dyad whilst avoiding filming other staff and support people. One disadvantage was the audio quality was poor due to background noise. Once the mother and newborn were relocated to recovery and the postnatal ward, the head of the bed still offered the best vantage point and a tripod was employed to reduce the movement of the camcorder. The tripod also permitted the researcher the opportunity to look up and observe more than what was being seen through the video camcorder.

Using the camcorder to collect data was easier than collecting field notes. When collecting field notes, documenting everything was unfeasible because it was impossible to observe, listen and write at the same time. It was beneficial to expand on the field notes soon after leaving the research environment, when recall was easy. Field notes are not considered reliable if not expanded on swiftly (Hammersley & Atkinson 2007, Schensul & LeCompte 2013).

Reflexivity
Reflexivity was important to inform the data collection and analysis. Being reflective made the researcher more self-aware about their prejudices and biases and how they may effect the research and the interpretation of the research (Denzin & Lincoln 2011; O’Reilly 2012).

As soon as possible after the event the researcher prepared reflective notes about their reactions and emotions to the events that day, to help reduce their influence on the interpretation of the research. An example of the researchers’ reflective data included the following:

The baby was passed to the student midwife who started to proceed to the resuscitation trolley – the midwife turned her around
stating that the baby was looking well, so they should show the mother first. (Field Notes Sharlene)

I was excited that the baby was shown to the mother first because I had not seen it before in my research. I think the mother would want to see her baby and bond with her baby immediately. Would others think the same way as me? Maybe the mother was worried and preferred that the baby was checked before coming to her. Maybe it unnerved the student midwife. (Reflexive Notes Sharlene)

The researcher was aware that their presence was likely to make changes to the environment. This change was highlighted once when a midwife stated that more midwives were facilitating SSC because of the research:

I thought this was interesting. Was I really affecting how many skin-to-skin midwives were put on? Or was this just her impression? ... I was disappointed to hear that this may have been the case. So even if I wasn’t affecting what midwives were doing at the actual event, I was potentially changing practice because they knew that I was doing this study. (Reflexive Notes Rebecca)

To broaden and confirm the interpretation/s of the data, the researcher also gained feedback from the research team, this included viewing the video recordings with other team members. Despite this iterative and reflective process, the researchers remained aware that the results of the research could be interpreted differently if viewed by other people.

‘Fly on the Wall’ or the ‘Spider’

When conducting ethnographic research, it is important to reduce the impact of ‘being there’ as it naturally changes the environment (Denzin & Lincoln 2011). Being the ‘fly on the wall’, trying to go unnoticed, was challenging. When the researcher had the camcorder, they felt more akin to being a ‘spider’ because the participants were alert to, and occasionally slightly uncomfortable with their presence. During analysis, there were 55 occasions where participants looked directly at the ‘spider’ with the camcorder. If a participant did look at the camcorder, the researcher tried to move out of visual range:

I was in her visual range, so I moved. Sometimes it is hard to know where to position yourself so that you can actually observe, without being a distraction. (Reflection Elise)

There was also another 199 occasions when the ‘spider’ was noticed or mentioned in the data. Participants looked for the researchers’ approval, ‘Am I doing well?’ (Jacob) (Field Notes Belle) and explained why they did certain activities:

‘This is one position I would never leave a baby without someone watching them, because it’s, because they are so buried in their nose, you have just got to be careful’. [Midwife] (Video Britta)

Whist making reflexive notes, the researcher commented how they felt uncomfortable being a ‘spider’:

I told both mum and dad before surgery that I wouldn’t speak to them because I am ‘invisible’. I learnt that I should also tell the midwife. The midwife kept on wanting to talk to me. I felt very uneasy about this. I was meant to be non-invasive, not there. However, obviously they were really aware of my presence. (Reflection Belle)

When the mothers and babies were separated following the caesarean, the mothers’ partners would go up to a room in the postnatal ward with the baby. The room had little equipment and minimal activity. This environment made it impossible for the researcher to be a ‘fly on the wall’; they were very visible. It was obvious that the cameraman was focused on the partners. Partners appeared uncomfortable with the ‘spider’ being present:

It felt like he was uncomfortable that I was filming him... I felt overwhelmingly visible. (Reflection Marge)

At times, the researcher questioned if they should continue to film in this situation:

Should I have stopped filming? I just tried to make it not look so obvious that I was filming him. (Reflection Betty)

To ease the tension, the researcher was tempted to, and occasionally did talk to the partner when they looked uncomfortable. Talking to the participants did make the situation feel more realistic and relaxed. It feels more comfortable talking to him (Reflection Charlotte). There were three times when the researcher felt it was necessary to stop attempting to be the ‘fly on the wall’ to maintain the safety of babies. The researcher felt conflicted, however felt ethically justified changing events in the environment. For example, the researcher alerted the midwife that the father needed education about how to give a bottle:

I was in a bit of a dilemma – I should not be making changes, however the midwife was not watching [the father struggling to give the baby the bottle], she was doing paperwork. It wasn’t life or death – however the baby was having it [formula] due to a low blood sugar level, so he needed to have it, and the baby was getting sleepy. I felt like I had to do something. (Reflection Charlotte)

On another occasion, the researcher was conflicted when forced to step into their midwifery role. A midwife left the
baby in the care of the operating theatre nurse while she took the baby’s cord blood to the Birth Unit to be analysed. During this time, the baby had some respiratory distress. The researcher needed to provide some advice to the operating theatre nurse on how to safely care for the baby.

Despite the challenges of attempting to be a ‘fly on the wall’, participants made comments postfilming like ‘you were good, I hardly even notice that you were there’ [Ruddag] (Field Notes Betty) and ‘Once I saw the baby, I didn’t even know you were there’ [Chantale] (Interview Chantale). This confirmed that the researcher was not always the ‘spider’. They did succeed at being the ‘fly on the wall’ at times.

Role of the ethnographer

Insider ethnography is a term used when the research is undertaken in a familiar setting (O’Reilly 2012). The researcher was an ‘insider’ having worked in the maternity unit. There were some advantages and disadvantages to being an ‘insider’ for this research. One advantage was that it was easier to gain access to the hospital ‘gatekeepers’ because the researcher already knew them and had access to their contact details. As a result, it was easy to set up meetings with the managers to discuss the research and to gain approval to access the study sites:

The meetings went very well and everyone was enthusiastic and helpful and signed the SSA (site approval) with no hesitation. (Personal Email, 2013)

A disadvantage of being an ‘insider’ was role ambiguity (Burns et al. 2012). Staff members instinctively talked to the researcher during filming or when taking field notes. This may have been encouraged because the researcher was dressed in operating theatre attire, they did not look any different to a normal working day. To overcome this, the researcher would state that they were ‘not there’ (Field Notes Chantale). Thus, this led to responses such as:

‘Oh, she’s not there. I’m not talking to... I’m talking about... in her absence’ ‘laugh’. [Doctor] (Video Chantale)

At other times, the researcher was requested by staff members to do minor tasks, including calling staff members and taking photographs:

Can you take a photo? [Midwife] (Field Notes Belle)

Jacob [Dad] had pleading eyes, so I said yes. I took the camera from Jacob and took a couple of photos. I wasn’t sure what I should do - because I was there, just as the researcher. I was meant to be invisible. (Reflection Belle)

This caused an ethical dilemma because whilst trying to be invisible or unobtrusive, the researcher believed it was beneficial for the participant if they complied with the request.

Implications for video ethnographic research

Video footage enhances ethnographic research. It is a powerful tool that allows the world to be observed many times, delivers in-depth access to events which can be scrutinised and provides insight into what is being viewed (Heath 2010, Luff & Heath 2012). Other ethnographic studies have similarly reported that this method has brought insight into cultural norms in the hospital maternity system (Newham et al. 2013). To obtain this data in the hospital setting, there were challenges that needed to be overcome.

Gaining access to the hospital can be time-consuming due to ethics committee’s misunderstanding of ethnographic research. Previous researchers have noted the need to allocate ample time to obtain ethics approval (Hunter 2011). To decrease the time to gain ethics approval, researchers have reported changing their research to make it easier (Bledsoe et al. 2007, Newham et al. 2011) and attended the ethics committee meetings to promote confidence in their research (Simmons 2007). With persistence and continued communication, ethics approval can be achieved.

Recruiting staff members for this research was also time-consuming. As reported by others (Harte et al. 2014), we found that building rapport with the staff members was integral to being able to recruit them. Rapport was fostered because of prior knowledge of the researcher as a respected ‘insider’, through their increased presence in the ward areas and through the increased knowledge of the research during in-services.

Recruitment of women was challenging because the HREC identified the pregnant women as ‘vulnerable’. This perception of vulnerability exists due to previous unethical research being performed on pregnant women. For example, in the 1950s, around 1000 pregnant women were given diethylstilbestrol without consent with the aim to prevent miscarriages. This resulted, however, in a high rate of abnormalities and cancer in their infants (Orb et al. 2001). Exploitation of vulnerable populations, including pregnant women, is unacceptable (Schwenzer 2008). Some say it is insulting to automatically deem pregnant women to be a vulnerable and high-risk group as it suggests that they are incapable of decision-making (Hurst 2008). Hurst (2008) proposed that a person should be identified as vulnerable when there is an increased likelihood of incurring

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2089
additional or great wrong’ p. 195. There is extensive research demonstrating the coercive power that professionals such as doctors, midwives and researchers hold, in contrast to the degree of control that pregnant and labouring women hold in the hospital environment (Newham et al. 2013). In this position of power, professionals and/or researchers may influence women’s decisions regarding participation in research. To ensure that the women were not coerced into being a participant in this research, careful planning was needed. The ‘Ladybug Strategy’, which involved using visual reminders, a specific recruitment plan and the development of an easy way to promote research in the antenatal clinic proved to be successful. Previous researchers have also noted the benefits of developing strategies to improve recruitment (Sullivan-Bolyai et al. 2007).

Preparation before commencing video ethnographic research is essential. Entering the environment prior to data collection as recommended by Carroll and Mesman (2011) was beneficial as it allowed the researcher to discover the optimal positions for the camcorder to collect the desired data. Preparing a comprehensive equipment checklist (Heath 2010) also reduced the stress of preparing to film on the data collection days. Employing both audio recordings and detailed field notes may be an alternative to video recordings if participants refuse to be video recorded. Both data collection methods are recommended because the ambient noise, especially in the operating theatre, could hinder the ability to hear what is being said, therefore would decrease the amount of analyzable data (Hammersley & Atkinson 2010).

If the researcher is a complete observer, ethical and legal requirements may hinder the ability to perform regular activities (Simmons 2007, Burns et al. 2012). Being the desired ‘fly on the wall’, not being noticed, was not always achievable because of ‘insider’ role ambiguity, the inability of the researcher and camcorder to blend into the environment, and the occasional need for the researcher to stop gaining footage to avert the potential harm of participants. Another researcher documented their ethical unease when confronted with the filming of intimate care of older adults, and conflicting unease of needing to gain this key footage for her research (Silverman 2016). To help overcome this dilemma, some ethnographers have reported that they became ‘passive participant observers’ because it offers the flexibility to participate in small tasks (e.g. helping undress a patient) to make it easier to blend in with the environment (Simmons 2007).

Even though the film footage took more time to analyse than field notes, the film footage was really advantageous because it facilitated the comprehensive analysis of the contact between women, their babies and support people, and analysis of how this contact is affected by individual staff members, the environment and the organisation. Video ethnography has provided insight into the facilitators and barriers of providing SSC in the operating theatre and recovery (Stevens et al. 2016), maternal perceptions of the contact they have with their baby after a caesarean section (paper soon to be published) and an unforeseen highlight, how to provide a maternal-assisted caesarean section (Stevens 2015). Furthermore, it has allowed the microanalysis of infant behaviours with or without SSC.

Limitations

This study reports the experience of the first author when conducting an ethnographic study using a camcorder. Not all the points discussed in this study will be relevant to all researchers. Considering this study was conducted in one hospital in the outer metropolitan area in Sydney, the same outcomes may not be extrapolated to other hospitals. Each researcher using video recording for research will encounter unique challenges.

Conclusions

This study has provided insight into and has offered recommendations for gaining access to and preparing to perform video ethnographic data collection in the hospital surgical environment (see Table 2). Challenges that were overcome prior to commencement of data collection were the HREC’s misunderstanding of the method and planning how to recruit a ‘vulnerable’ population, pregnant women. Being a

<table>
<thead>
<tr>
<th>Table 2 Recommendations for video ethnographic research</th>
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<tbody>
<tr>
<td><strong>Recruitment</strong></td>
</tr>
<tr>
<td>- Allow time and be prepared to adjust your recruitment strategies</td>
</tr>
<tr>
<td>- Implement in-services with staff to build rapport and disseminate information</td>
</tr>
<tr>
<td><strong>Be prepared before entering the environment</strong></td>
</tr>
<tr>
<td>- Obtain a reliable, high-quality camcorder with a long-life battery and large Sim card</td>
</tr>
<tr>
<td>- Enter the environment before data collection and determine where the best place to position the camcorder</td>
</tr>
<tr>
<td>- Contemplate what you specifically want to film</td>
</tr>
<tr>
<td>- Write an extensive equipment list</td>
</tr>
<tr>
<td>- Consider what position you will take on as a researcher (complete observer/passive participant observer)</td>
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‘fly on the wall’, a complete observer whilst collecting this data, was not always achievable and it may have influenced changes in participant’s actions when collecting data. It is important to consider what positioning (e.g. a complete observer/passive participant observer) would reduce your influence on the data collected. Entering the environment to discover the optimal positions for filming and observing and preparing an extensive equipment list prior to commencing data collection reduces the stress of data collection. Careful planning is needed to collect video ethnographic data; however, it provides exceptional data for in-depth analysis of observational hospital-based research.

Relevance to clinical practice

Despite the potential challenges of recruiting participants and collecting the data, video ethnographic data provide a valuable source of data that can be analysed in-depth, due to its ability to be visualised limitless. The data promote the ability to visualise strengths and weaknesses in an environment and can therefore be used to facilitate improvements in practice.

Acknowledgements

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Conflict of interests

None declared.

References


video ethnography of patients for quality improvement, such as in shaping better care transitions. Health Affairs 31, 1244-1250.


4 Chapter Four: Facilitators and barriers of providing skin-to-skin contact after a caesarean section

4.1 Introduction

Chapter four presents the publication:


This paper presents data related to the facilitators and barriers of providing SSC in the OT and recovery. This data were retrieved from video recordings, field notes and health professional focus groups and interviews. This paper exposes the juxtaposition of providing birth in a surgical environment. The findings highlight that despite the complex birthing environment, SSC can be achieved when health professionals collaboratively generate ideas and implement the suggested adjustments to existing care.
4.2 Publication: A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery

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A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery

\textbf{a b s t r a c t}

Objective: To provide insight into the facilitators and barriers of providing skin-to-skin contact in the operating theatre and recovery.

Design: Ethnographic study utilizing video recordings, field notes, focus groups and interviews.

Setting: A metropolitan public hospital in Sydney, Australia.

Participants: 21 low-risk mothers having a planned caesarean section, 26 support people, and 125 staff members involved in the care and 43 staff members involved in focus groups/ interviews.

Data collection and analysis: Collecting field notes and field notes for up to two hours post caesarean section births, interviews at six weeks postpartum and staff focus groups/interviews. Data was entered into NVivo 10 and analysed using critical ethnographic techniques.

Findings: Providing skin-to-skin contact in the operating theatre and recovery presents unique challenges due to the juxtaposition of providing social and emotional care in an inherently mechanized setting. Staff members suggest that skin-to-skin contact in this environment can be improved by increasing staff and patient knowledge, writing and implementing a policy, addressing staffing issues, improving staff communication, addressing time constraints, adjusting the placement of equipment in the environment and making small changes to the way equipment is utilized.

Conclusions and implications for practice: Our findings show that skin-to-skin contact can be successfully implemented in the operating theatre and recovery room with staff members input into adjustments to existing care.

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\textbf{Introduction}

Skin-to-skin contact (SSC) is where a newborn baby, sometimes with an amnion on, is placed directly onto the bare chest of its mother or her mother or father [UNICEF, 2011]. Immediate and continuous SSC between the mother and newborn is recommended as long as the mother is alert and responsive (World Health Organization & UNICEF, 2009a; Baby Friendly Health Initiative, 2012). SSC between the mother and newborn is ideal because it is biologically normal and promotes the well-being of the mother and newborn (Berman, 2014). A Cochrane review provided evidence that SSC promotes a longer duration of breast feeding helps keep newborns physiologically stable and potentially improves the maternal and infant early relationship (Moore et al., 2012). A recent review provided some evidence that SSC immediately or soon after a caesarean section promotes newborn physiological stability, breast feeding and emotional well-being and reduces maternal pain and anxiety (Stevens et al., 2014).

Even though immediate SSC can be safely provided after a caesarean section, there are barriers that need to be overcome (Stevens et al., 2014). In Australia, a policy directive called 'Breastfeeding in NSW: Promotion, Protection and Support' (NSW
Department of Health, 2011), states that all NSW hospitals need to comply with the Baby Friendly Health Initiative by June 2016, which includes uninterrupted immediate SSC following birth for a least one hour, if the mother is alert and responsive (World Health Organization & UNICEF, 2009b; Baby Friendly Health Initiative, 2012). These policy imperatives have informed this study. This paper will focus specifically on the organisational and environmental barriers influencing SSC after a caesarean section.

Methodology and methods

Study design

The aim of this study was to determine the facilitators and barriers of providing immediate skin-to-skin contact (SSC) in the operating theatre (OT), to observe variability in the interactions between the mother and support people with the newborn, and to discover what contact women want with their newborn during this time. An ethnographic research methodology was chosen because it allows the researcher to gain an in-depth understanding of human interaction and culture (Quint and Bluff, 2006; Newbith et al., 2012). This methodology informed fieldwork and the gathering of exceptionally rich data to support the comprehensive analysis of both the environment and interactions between health professionals and women in the OT and recovery.

Study setting

This study was conducted at a large metropolitan hospital in Sydney, Australia, with approximately 3700 births per year, of which approximately 35% are caesarean sections. This hospital is working towards Baby Friendly accreditation status. Human Research Ethics Committee (HREC) approval was received from the hospital. Study no. 13/47-HREC/13/.../102 as well as University: Study no. H10482 and all participants provided informed consent.

Standard midwifery care for elective caesarean sections, at this facility, included allocating a birth unit midwife to look after the newborn in the OT and then transfer care to a postnatal ward midwife who would facilitate SSC in recovery. Alternatively, some women had access to a caseload midwife who provided continuity of midwifery care. This model enabled the midwife to look after the newborn in both the OT and recovery.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Staff recruitment for theatre cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>Overall totals</td>
</tr>
<tr>
<td></td>
<td>Staff consented</td>
</tr>
<tr>
<td>Hospital midwife</td>
<td>65</td>
</tr>
<tr>
<td>Caseload midwife</td>
<td>0</td>
</tr>
<tr>
<td>Student midwife</td>
<td>4</td>
</tr>
<tr>
<td>Total midwives</td>
<td>77</td>
</tr>
<tr>
<td>Obstetricians</td>
<td>25</td>
</tr>
<tr>
<td>Neonatologists</td>
<td>7</td>
</tr>
<tr>
<td>Anesthetists</td>
<td>17</td>
</tr>
<tr>
<td>Nurses - operating theatre and recovery</td>
<td>74</td>
</tr>
<tr>
<td>Unknown</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>210</td>
</tr>
</tbody>
</table>

<sup>1</sup>No exact numbers – names were not gathered if staff stated they had previously consented at the in-servives.
women (see Table 3), collecting video footage and field notes from birth until the end of the first breast feed, or up to two hours immediately after elective caesareans, and undertaking audio recorded interviews at six weeks post partum with the women participants. Video footage was not collected for five of the women participants because they declined to be filmed. Filming was focused on documenting the contact the newborn had with the mother or support person. A ‘birth room observation grid’ from Contini (20006) guided the researcher whilst collecting field notes in the OT and recovery. Relevant conversations, actions and pictures of layouts, equipment and newborn positioning were documented. Data collection ceased before two hours for seven participants, one due to newborn respiratory complications and six due to compelling the first breast feed before two hours. The maternal interviews were conducted either at the hospital, their home or via telephone. The interviews were focused on capturing the mother’s feelings about the contact with their newborn in the two hour time frame and its perceived influence on newborn feeding decisions.

A further 13 interviews and four FG were conducted at the hospital with staff members (see Table 2). The interviews and FG were held in the hospital and were audio recorded. Participants were asked about their knowledge about SSC and the related World Health Organization (WHO) recommendations, what they perceived to be barriers of providing this care in the OT and recovery and their suggestions on how to overcome these barriers.

Analysis

The audio transcripts and video recordings were entered into NVivo 10 and coded. NVivo 10 facilitated the transcription of visual data alongside the spoken word and enabled the video footage to be examined frame by frame. The data was analysed using critical ethnographic techniques, which highlights the relationships between human responses in a physical and cultural environment (Castiglione, 2011). Analysis involved examining the environment, space and equipment, the actors, their activities and goals and the sequencing of events, determining themes and investigating deviant cases (Bradley, 1998; Castiglione, 2011). For example, “You could have a room that was designed for a Caesarean” (FG OT Nurse 2), was coded as ‘facilitator’ and ‘space’.

Belonging to the group being studied can have implications for collection and analysis of data. As a midwife, nurse and mother the researcher had an affinity with many participants. In order to recognise and reflect on the impact of this influence, the researcher who undertook the field work (author 1) found it useful to write reflective notes within a day after each event, and aimed to view the data through the eyes of those involved whilst also seeking feedback during regular meetings with the research team.

Findings

Organisational and environmental barriers to the provision of SSC in the OT and recovery were observed and were communicated during FG and interviews. These included the lack of education, staff, time and space and equipment obstacles. Despite this, individual staff members demonstrated and discussed ways to safely overcome these barriers.

What was observed?

The SSC provided in the first two hours following a caesarean section varied greatly. Some women had SSC in the OT (see Table 1), whereas one mother did not have SSC in the first two hours after birth. The mother and newborn SSC was commonly interrupted, and the length of time it was provided over the first two hours varied, from one to 4:62 minutes. Sixteen participants had standard midwifery care, four had caseload midwifery care and one participant experienced the hospital’s first ‘maternal assisted caesarean section’ where the mother helped lift her newborn out of her own abdomen and placed the newborn immediately in SSC.

A juxtaposition of birth and surgery

Birth in the OT environment appeared to challenge some staff members. The majority of the staff recognised that the birth experience is an important social and emotional event for the mother and her partner, however they also recognised that the OT is a complex environment in which is inherently focused on undertaking surgical procedures safely and efficiently. SSC reflects the juxtaposition of these two contrasting facts of birth and surgery which results in internal conflict for staff members. A quote from an anaesthetist demonstrates this conflict:

“Intrinsically, it’s [SSC] the right and natural biological thing to do. It’s what all animals do, why wouldn’t we do it too... It’s that juxtaposition of something that is very human and very

Table 3

Demographics of women participants.

| Age | 25-39 years (median 31) |
| Gavage | 2-14 (median 2) |
| Parity | 1-4 (median 1) |
| Previous births per woman | NHVx 1 (one participant) |
| Reason for previous caesareans | CBx 1 (median 1) |
| Failure to progress x 12 |
| Fetal distress x 5 |
| Breach x 3 |
| Planned x 9 |
| Other x 2 |

| Previously breast fed | Yes x 19 |
| Minimal x 2 |

| Plan to breast feed this time | Yes x 2 |

Table 4

First SSC this birth.

<table>
<thead>
<tr>
<th>First contact</th>
<th>Immediate SSC</th>
<th>Early SSC</th>
<th>Late SSC</th>
<th>Late SSC (4-8 minutes)</th>
<th>SSC with Mum</th>
<th>SSC with Dad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbers</td>
<td>1</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>2 [late]</td>
</tr>
<tr>
<td>Time 1st SSC started</td>
<td>00:29</td>
<td>01:58-08:56 (Av. 6 minutes)</td>
<td>16:36-20:57 (Av. 22 minutes)</td>
<td>46:00-107:00 (Av. 56 minutes)</td>
<td>00:29-07:47 (Av. 16 minutes)</td>
<td>22:00-107:00 (Av. 47 minutes)</td>
</tr>
<tr>
<td>Where 1st SSC started</td>
<td>Operating theatre</td>
<td>Operating theatre</td>
<td>Operating theatre Or Recovery</td>
<td>Operating theatre Or Recovery</td>
<td>Operating theatre Or Recovery</td>
<td></td>
</tr>
<tr>
<td>Length of 1st SSC</td>
<td>33 minutes</td>
<td>9-45 minutes (Av. 19 minutes)</td>
<td>1-33 minutes (Av. 12 minutes)</td>
<td>7-12 minutes (Av. &gt; 30 minutes)</td>
<td>10-22 minutes (Av. &gt; 22 minutes)</td>
<td></td>
</tr>
<tr>
<td>Interrupted</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

00:00:00 N: Hours, Min: SS: Seconds.

4 SSC continued after two hours of data collection.
important in an environment where we’re dealing with very technical, very biological focused process... An operating theatre is not a relaxing place. I’m sorry even if you put down soft lights and music it’s just intrinsically not what it is. It’s a butcher’s work, in the end. That’s what it is. It’s tines and it’s metal. It’s not a birthing suite...

When it happens, ... it’s a beautiful thing. I would not dispute the beauty.

Medical, managerial and nursing staff provided some compelling reasons why SSC was not a priority in the OT. The following examples reflect this ‘It’s a privilege to do that, not a right’ (PG OT Nurse 1); it is ‘conditional on the well-being of the patient’ (Interview Manager 1). Nurses and anaesthetists commented that SSC can be a distraction, that there is danger for both the mother and newborn if they do not focus on their job, and that it can interfere with monitoring. Staff members, including midwives, mentioned that providing SSC in recovery is easier than in the OT and that women do not feel like they are missing out on anything as long as they get SSC at some stage ‘I don’t think the women are thinking that they’ve been gypped or anything’ (FG Caseload Midwives). Despite this, staff members recognised the benefits of SSC for the mother and newborn. They stated that mothers want SSC ‘Some ladies absolutely love it ... it’s changed their whole experience of birth’ (Obstetrician 2) and made comments on maternal physical benefits including: ‘You could that the presence of the infant might decrease the requirement for supplemental analgesics’ (Anaesthetist 1). They acknowledged its positive impact on newborns, including: ‘bonding, colonisation, tactile stimuli and temperature’ (Paediatrician 1). Staff members also recognised that there were personal benefits in providing SSC, for example, improving work satisfaction and reducing workload ‘from that point on our jobs much easier’ (Interview Anaesthetist 2). Even though staff members recognised there were organisational and environmental barriers in providing SSC after a caesarean section, they all considered ways to facilitate it.

Organisational barriers and facilitators

Staff members reported numerous barriers to providing SSC including: a lack of staff knowledge about SSC recommendations and how to implement SSC in the OT, lack of antenatal education, a deficit of staff enabling SSC to be performed, and perceived pressure to complete procedures within specific timeframes. However these participants also demonstrated and recommended ways to overcome organisational barriers to SSC after caesarean sections.

Staff knowledge – global and local recommendations for SSC after a caesarean section

Staff members were asked if they knew the WHO recommendations for SSC after caesarean section and if there were any relevant hospital policies. No one stated that SSC was recommended as soon as the mother was alert and active however, the majority said that they assumed it was recommended and were vaguely aware of anaphylactic shock that discussed the same “I heard there is a policy, it’s a hospital policy or NSW policy or national policy. I have no idea” (Interview Obstetrician 2). One manager stated that “When we implemented skin to skin here [recovery], we did a lot of education” (Interview Manager 3). However, there was no mention of the WHO’s recommendations being presented, or if there was a discussion around a policy. Another manager stated that the organisation did not acknowledge that SSC after a caesarean section is a priority ‘there were some decisions that were made that clearly weren’t with that target in mind.’ (Interview Manager 1). Despite this, a midwifery consultant stated that ‘we’ve been mandated by New South Wales Health to become Baby Friendly’ and that in order to become a Baby Friendly Hospital, women should be offered SSC after all caesarean sections. To improve knowledge, the midwifery consultant recommended familiarising staff with the NSW state government directive (NSW Department of Health, 2011) and provide further education.

Staff knowledge – implementing SSC during a caesarean section

Numerous barriers to the implementation of SSC in the OT were identified. These barriers included emergency and general anaesthetic caesarean sections, communication between staff members and women, maintaining the sterile field, the immediate care of the newborn, transferring the mother and newborn from the OT bed to the ward bed and performing mother and newborn checks and vaccinations. Staff stated that providing immediate SSC after an elective caesarean section or maternal assisted caesarean section is easier than after an emergency caesarean or when another has undergone a general anaesthetic ‘I know with emergencies it’s a staffing issue if they can’t have skin to skin because it’s all of a sudden, but that’s pretty sad isn’t it?’ (PG Midwives 2). ‘If the lady’s had a general then it doesn’t happen!’ (FG Caseload Midwives). Despite this, one caseload midwife stated that she provides SSC in the OT if a woman has had a general anaesthetic ‘Usually I’ve just held the baby on there [SSC] for a few minutes myself’. One obstetrician also suggested that mothers have SSC when they wake up in recovery, if they have had a general anaesthetic.

Communication about SSC was found to be lacking. Organisational time constraints led to limited opportunity for communication about the mother’s wishes in regards to contact, limited communication about the availability of midwifery staff and a general lack of communication in the OT. In standard care, midwives acknowledged that maternal preferences for newborn contact are not communicated to the midwives on duty; however caseload midwives stated that they could customise the woman’s care because the continuity of care facilitates prior knowledge of what women want. To improve communication in standard care, midwives and a manager suggested that midwives ask women what they want on the day ‘On admission it would be ... one of the questions that the midwife asks as part of her admission process’ (Interview Manager 3). There was also no formal way to communicate if a postnatal midwife would meet the birth unit midwife in recovery to facilitate SSC ‘It’s a bit ad hoc, it really is’ (Interview Manager 2). On one occasion, anenoxemia was taken up to the postnatal ward with the father even when amnionitis was allocated to go to recovery to facilitate SSC. To overcome this miscommunication, some midwives rang the postnatal ward to find out if there was a midwife allocated, ‘Do we have a nurse for the little one?’ (Observed phone call).

Medical and managerial staff also recommended that midwives announce that they plan to provide SSC, so that the other staff members can make appropriate changes to facilitate SSC. They also stated they appreciate staff members being polite ‘I just think a little bit of respect there, in that, ‘Do you mind if I move your bed [cardiac monitoring electrode]?’’ (Interview Anaesthetist 1).

Awareness of the sterile field in the OT was identified as an issue by managerial, medical and other OT staff. They noted that midwives need to have a better understanding of the sterile field to help avoid tension between staff members whilst providing SSC in the OT ‘It’s not a major problem but it’s enough of a minor problem that occurs often enough, that it creates slight tension’ (Interview Obstetrician 1). To decrease this tension, a manager and medical
staff member recommended further midwifery education about maintaining the sterile field when providing SSC.

The majority of midwives in the study were observed taking midwives immediately to the resuscitation trolley after birth. Managers stated that this has always been the process in the OT. ‘We do things just because we’ve done that all along’ (Interview Manager 2). One caseload midwife stated that separation was not ‘always’ necessary, midwives could ‘do it [SSC] on the chest the same as for you in the birth unit’. Neonatologists and paediatrician also commented that with improved communication, as long as the newborn is centrally pink and responsive, the newborn could be taken immediately to the mother.

Many staff members stated that they would not transfer the mother and newborn together from the OT bed to the ward bed due to safety concerns, therefore SSC was always interrupted at this time. A manager commented that continuous SSC could occur whilst transferring ‘With most awake Moses, who don’t have other nasty comorbidities, with a team who are working well together, with good communication, a level of support’ (Interview Manager 1). To perform a safe transfer, one midwife stated:

> When I’m with them and they’re rolling side-to-side and transferring, I actually stand right next to them with my hand on baby as well. When they go from one bed to the next, I stand at mum’s head with my hand on baby as well and shift.

FG caseload midwives

Some midwives separated the mother and newborn so they had time to do their newborn checks. On occasions, recovery nurses would not allow the mother to have SSC when they were doing their maternal checks in recovery ‘Gaza is a second’ They then start the curfew (Anne and Lionel Video Transcript). Despite this, other recovery nurses stated that they didn’t mind doing the mother checking when the newborn is in SSC and some midwives defended the need for the mother and newborn to remain in SSC ‘We can check baby skin-to-skin, like with, on mum’ (Lucy and Andrea Video Transcript).

To help implement SSC in the OT, many staff members, including managers, stated that further education about SSC after a caesarean section is needed. Operating theatre staff recommended dissemination of research about SSC, stating that doctors ‘get passionate about studies’ Caseload midwives recommended making small changes gradually to improve the uptake of new procedures ‘Just a gradual change without making them feel like we’re changing everything’. Midwives suggested that a policy be written, however one paediatrician stated policies hinder best practice as it does not allow individualised care: ‘Individualised case by case decision is much more important than having some policies or procedure around which make it difficult’. Nevertheless, midwives recognised that having a policy would provide direction on how to do it and could be used as a platform for education.

Antenatal education about SSC

Operating theatre staff, a doctor and a doctor manager identified that parents had minimal knowledge about SSC in the OT. When asked if they provide antenatal education about SSC, one doctor stated ‘Not really. Not as a doctor, no’ and midwives commented that women should get education in the antenatal clinic; however one midwife stated she provides SSC education in antenatal classes ‘I talk about that in my classes’ (FG Midwives 2). A manager recommended antenatal education because it empowers women ‘if the mother asks for it, no one can refuse it’. Antenatal education about parents maintaining the sterile field in the OT was also recommended. A manager suggested distributing a pamphlet discussing this information.

Staffing to support SSC after a caesarean section

Midwifery and nursing staff shortages made it a challenge to provide SSC. If there was a shortage of nurses in recovery, the new mother would be recovered in the general recovery area, the designated separate and spacious area of recovery designed for privacy. This enabled the recovery nurse to recover more than one patient at a time.

The principle in recovery is that we’re a wide-open area …, so we can see to the patients from, more or less, any point in that room and, because we didn’t have the staff that day, we didn’t have someone that could go around the back section [where caesarean sections mothers were usually recovered] … it must be uncomfortable for them, privacy-wise.

FG OT Nurse 1

Despite the hospital’s intention for continued midwifery care in the OT and recovery, not all women were allocated a postnatal midwife to look after the newborn in recovery, due to a lack of staff on the day, or, due to an inadequate staff skill mix ‘Skill mix seems to be a bit of a problem on the postnatal ward with enrolled nurses and registered nurses still working in those areas … taking one [midwife] away can be detrimental’ (Interview Manager 3). This lack of supervision meant separation of the mother and newborn.

Midwives commented that having one birth unit midwife allocated to look after all the women on a caesarean section list did not facilitate SSC in the OT. Midwives did not feel that they had time to provide SSC because the next woman was waiting for their caesarean section.

If you’ve got four on the list, you can have one midwife who’s just done the caesarean, is out to you (in recovery) to handover, and then literally has to go straight back [in theatre]. They don’t have that time to do the skin to skin in theatres.

FG Midwives 1

Despite these barriers, a doctor stated that there should be no excuse for not providing one-on-one midwifery care during caesarean sections, which would then permit safe SSC.

There should be no excuse why we couldn’t provide midwifery care to these patients. You provide one-on-one midwifery care to the girls in delivery suite for more than twelve hours. You should have ideally the same midwife following them through and doing it on a rotational basis.

Interview Obstetrician 2

Midwives mentioned that SSC could be implemented successfully if there were two midwives alternating between the women on the planned caesarean section list, allowing them to follow the woman and her newborn the whole way from the OT to the postnatal ward. However, postnatal midwives stated that if they were allocated to do this, they would need more time in the OT and recovery ward so that they feel confident providing the care for the woman and her newborn ‘they are too scared to go down and do it’ (FG Midwives 2). Another alternative recommendation was providing caseload midwifery for all women ‘We need one-on-one midwifery care’ (FG Midwives 2). Caseload midwifery was discussed to be ideal because the midwife was not expected to go back to the ward and they were viewed as ‘extra staff’. Caseload midwifery was also acknowledged as a way to provide SSC for women who had an emergency caesarean section or a general anaesthetic. Of the four participants that had caseload midwifery in this research, there was an improvement in maternal SSC and duration of SSC over the two hours (av. 4.64 minutes versus av. 4.51 minutes standard care), however there was no improvement.
in the time of initiation (av. 26 minutes versus av. 20 minutes standard care) or duration in the first hour (av. 14 minutes versus av. 18 minutes standard care). This may be due to the small numbers and one participant declining SIC in the OT. A ‘maternal assisted caesarean section’ was also seen as an excellent way of improving immediate SSC. “When they start to do that [maternal assisted caesarean section], skin-to-skin will probably improve naturally” (FG Caseload Midwives) and the initiation (av 1 minute) and duration rates (one hour - 50 minutes; two hours - 93 minutes) back this up; however only one participant was observed to receive this care.

Completing procedures within specific timeframes

Staff commented that reducing the time in the OT is important: ‘We have to do [it] in a timely fashion’ (FG OT Nurse 1). Operating theatre staff commented that SSC increases the time in the OT and an anaesthetist agreed, stating SSC ‘creates a little bit of a time delay … but most people don’t mind’. In contrast, another anaesthetist stated that SSC reduces their workload because ‘Having the baby there generally settles them [the mother] down’ (Interview Anaesthetist 1). To improve efficiency in the OT, a manager recommended improving education and implementing a regular caesarean section team.

Midwives made comments that they felt uneasy if they made the time to provide SSC in the OT for three reasons. These included: time constraints due to having to attend the next caesarean pressure due to their colleagues needed their assistance in the ward and the suspicion that their colleagues thought they were wasting ‘I think they think you’re sitting there with your feet up reading the magazine’ (FG Midwives 1). Midwives commented that caseload midwives had the benefit of not being allocated ward duties, therefore they can stay and initiate SSC.

Commonly, midwives took the newborn out of the OT before the mother so that they could complete newborn checks and give injections in recovery. ‘We will nick off to recovery, we will weight him and then he will have his konakon, if that is alright!’ (Julie and Andrew Video Transcript). Midwives commented that they felt pressure to complete the checks before the mother came up to the postnatal ward, and used this time to complete it. Weighing the newborn was identified as a major reason for separation and the non-compliance of the paperwork ‘the birth unit want the weight … they can do their computer work’ (FG Midwives 2). Despite this, a manager stated that the paperwork could wait ‘You just need some clear communication. You need to know who’s actually going to be responsible for it [completing newborn weight]’ (Interview Manager 2).

Environments, barriers and facilitators

The environments barriers that were observed and addressed were space and the utilisation of equipment in the environment.

Space in the operating theatre and recovery

Providing SSC in the OT was challenging due to the lack of space at the head of the bed however the space in recovery was well designed. Caesarean sections are unique in the OT because support people are welcome and SSC is implemented ‘Unless no other circumstances [for other operations] would you have another relative or somebody there, even for children’ (Interview Manager 1). It was observed that staff, all the anaesthetic equipment, and the support person, were at the head of the bed, all within arm’s reach of a wall. The support person needed to move away to provide space for the midwife when they placed the baby SSC and moved the newborn.

Discussion

There are known benefits for babies and mothers when they have immediate SIC. This study has demonstrated the challenges of implementing SSC into a completely medicalised environment, that focuses on surgery and treating ill health. Change in any environment can be difficult (Hayes, 2014), however a multidisciplinary approach to facilitating SSC in the OT has proven to be effective (Rizos et al, 2012; Stevens et al, 2014). Heels were addressed in hospital maternity units are increasingly moving from medically dominated to “women-centred” (Lane and Reiper, 2013). There is recognition that health involves not only physical health, but also emotional health. The WHO and UNICEF’s recommendations of immediate and continuous SSC after birth (World Health Organization & UNICEF, 2009b; Baby Friendly Health Initiative, 2012) demonstrates this change in thinking. Despite this, at the grassroots level, the changes are morecontestable, and childbearing women’s care at a caesarean section is still focused on reducing immediate physical risk (Lane and Reiper, 2013).

Multidisciplinary change can be facilitated through education (Steinbohrer and Clarke, 2015). Ambiguity of staff members roles in the OT can cause barriers in effective practice (Niestel and Kidd, 2006). Prior research has shown that staff education around the Baby Friendly Health Initiative, the importance SSC and role-playing can
Table 5

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Barriers</th>
<th>Facilitators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intravenous catheter</td>
<td>Placed in cubital fossa</td>
<td>Using veins on the back of the hand</td>
</tr>
<tr>
<td></td>
<td>Movement and folding of the arm</td>
<td>Using the Radial branch of the Cephalic Vein</td>
</tr>
<tr>
<td></td>
<td>Pulse oximeter</td>
<td>(in line with the thumb above the wrist)</td>
</tr>
<tr>
<td></td>
<td>Barrier in holding the newborn</td>
<td>Encouragement to keep arm straight when blood</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pressure cuff starts to inflate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anaesthetist removing the pulse oximeter when</td>
</tr>
<tr>
<td></td>
<td></td>
<td>it is safe</td>
</tr>
<tr>
<td></td>
<td>Cardiac monitoring electrodes</td>
<td>For pulse oximeter</td>
</tr>
<tr>
<td></td>
<td>Newborn lay on it</td>
<td>Pulse oximeter on a toe in Recovery</td>
</tr>
<tr>
<td></td>
<td>Electrodes placed on the chest centrally</td>
<td>Centralised electrodes placed on the Trapezius</td>
</tr>
<tr>
<td></td>
<td></td>
<td>muscles (shoulder tip area)</td>
</tr>
<tr>
<td></td>
<td>Lowing</td>
<td>Midwife to discuss moving the drape down to</td>
</tr>
<tr>
<td></td>
<td>High on the chest</td>
<td>maximise chest space before surgery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Keeping the drape tight</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Placing the newborn horizontally on the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maternal chest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remove gown prior to surgery commencing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undo the gown and removing one or two arms out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of the gown before surgery commences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lift beechad up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tilt the whole bed head up by 10 cm</td>
</tr>
<tr>
<td>Maternal operating theatre gown</td>
<td>Down lied up</td>
<td></td>
</tr>
<tr>
<td>Handholding SCC</td>
<td>Bedflat</td>
<td></td>
</tr>
<tr>
<td>Operating theatre bed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintaining visualisation of the newborn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increasing discomfort whilst having SCC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resuscitation trolley</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hindering immediate SCC due to staff</td>
<td></td>
</tr>
<tr>
<td></td>
<td>automatically going to it first</td>
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</tr>
<tr>
<td></td>
<td>Decreasing maternal visualisation of the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>newborn</td>
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</tr>
<tr>
<td>Tympanical cord clamp</td>
<td>Using Harrison clip (metal arterial clamp)</td>
<td>Use a plastic tympanical cord clamps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Encourage support person to put the cord whilst</td>
</tr>
<tr>
<td></td>
<td></td>
<td>having SCC with the mother in the operating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>theatre</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Encourage support person to hold warmed towels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to allow the newborn to be dried immediately</td>
</tr>
<tr>
<td></td>
<td></td>
<td>when put SCC and then covered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arrange for the Doctor or A/ward Person to take</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the cold baddie to a midwife on the other side</td>
</tr>
<tr>
<td></td>
<td></td>
<td>for blood gas analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have a blood gas analyser in recovery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Review need for collecting blood gas samples</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support maternal comfort by placing an extra</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pillow/blanket under the arm supporting the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>newborn</td>
</tr>
</tbody>
</table>

improve SCC rates after caesarean sections (Hung and Berg, 2011; Crenshaw et al., 2012; Brady et al., 2014). Improving knowledge about SCC in the OT has been achieved by implementing a policy (Nolan and Lawrence, 2009), implementing a flow chart (Hung and Berg, 2011; Brimdyr et al., 2012; Crenshaw et al., 2012). Educating parents about SCC should also improve SCC (Brady et al., 2014). Maintaining staff numbers and reviewing how staff members are allocated may improve SCC rates in the OT and recovery. Lack of appropriate staff and inadequate time to provide safe SCC has been identified as a barrier to SCC in another study (Crenshaw et al., 2012). Alternating midwives between the postnatal ward and OT on planned caesarean section days, or using continuity of midwifery care models, are strategies that we found may improve SCC in the OT or recovery. Even though there was no evidence in this research, staff indicated that continuity of midwifery care models could potentially increase SCC rates in the OT and recovery. This could be related to the midwives having more opportunity to balance organisational priorities with the emotional needs of the women they care for (Maclellan, 2014). To reduce delays in the OT, Filister and Spiess (2008) agree that employing regular teams may improve efficiency due to increased knowledge of specific duties and Sevdalis et al. (2012) states that effective communication will also improve team effectiveness.

There is no current research on ‘maternal assisted caesarean sections’ however Ambrust et al. (2016) and Smith et al. (2008) discuss similar caesarean sections. Ambrust et al. (2016) provides some evidence that a ‘Chatté’ caesarean section, which included early SCC, can improve maternal satisfaction, breast feeding and maternal/infant interaction. A ‘maternal assisted caesarean section’ may be a positive strategy that needs further exploration.

To facilitate the provision of SCC in the OT, it was recommended that the space required, and the layout of the OT, needs to be reviewed during its design. The design needs to address the requirements of professional care, equipment, traffic, storage and flexibility (AliBenna, 2012). Equipment utilised in the environment to maintain the safety of the woman and newborn can also be adjusted slightly to make SCC less complicated (see Table 5). Other researchers agree that undoing the maternal gown before surgery and considering the best placement of the intravenous cannula and oxygen probe helps midwives provide safe SCC in the OT (Hung and Berg, 2011; Crenshaw et al., 2012).

Limitations

Our study provides information about one metropolitan hospital and has a small number of participants. Each hospital will have its own unique barriers that may not be addressed in this paper.

Conclusion

This paper has provided insight into organisational and environmental barriers to providing SCC in this heavily medicalised environment where surgery and birth are juxtaposed. The findings are important because they show that barriers can be reduced or overcome through simple measures and that staff members can generate their own ideas on how to overcome these barriers.

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improve organisational barriers, staff suggested further education for themselves and support people, utilising apologetic and adjusting how staff are employed. Environmentally, staff recommended being conscious of space, making appropriate changes when possible and modifying the equipment to make providing SSC easier. With these adjustments, providing SSC in the OT and recovery is achievable as recommended by the WHO and UNICEF.

Declaration of conflicting interests
None to declare.

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Acknowledgements
The authors would like to acknowledge the women and staff who participated in the study.

References
4.3 Chapter conclusion

This chapter presented data on the facilitators and barriers of providing SSC in the OT and recovery published in the paper titled *A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery*. The paper described the contact that was observed between the mother and her newborn and what type of midwifery model of care they were under. The findings suggest that health professionals find it challenging meeting the requirements of the health facility, including maintaining safety and being time efficient, as well as enabling maternal-infant SSC in this complex environment, despite knowing the benefits of the latter. Health professionals highlighted the need for further knowledge about the benefits of SSC and how to implement it in the OT and recovery and the need for further client education. Health professionals revealed novel ways to overcome barriers related to the environment and use of equipment. They also came up with ways to ensure that there was enough health professional support to enable safe SSC. The conclusion was that maternal-infant SSC in the OT and recovery is achievable. The following chapter presents findings related to how health professionals impact the provision of SSC in the OT and recovery.
Chapter Five: Health professionals impact on the provision of skin-to-skin contact in the operating theatre and recovery

5.1 Introduction

Chapter five presents the publication:

Stevens, J., Schmied, V., Burns, E. & Dahlen, H. (2017). “Who owns the baby? A video ethnography of skin-to-skin contact after a caesarean section.” Women and Birth WOMBI773 (page 84). This paper was accepted for publication on the 9th February, 2018, and was published online on the 2nd March, 2018. As of July, 2018, this paper had been cited once.

This paper presents data related to how health professionals impact the provision of SSC in the OT and recovery. This data was retrieved from video recordings, field notes, health professional focus groups and interviews and maternal interviews around six weeks after the birth of their baby. The findings highlight that health professional’s facilitation of SSC can be negatively influenced by the surgical environment and health facility regulations. Despite this, health professionals can meet the mothers desire to ‘own’ her baby by viewing them as one entity.
5.2 Publication: Who Owns the Baby? A video ethnography of skin-to-skin contact after a caesarean section

Who owns the baby? A video ethnography of skin-to-skin contact after a caesarean section

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ABSTRACT

Purpose: Providing skin-to-skin contact in the operating theatre and recovery is challenging.
Background: Barriers are reported in the provision of uninterrupted skin-to-skin contact following a caesarean section.
Aims: To explore how health professionals’ practice impacts the facilitation of skin-to-skin contact within the first 2 h following a caesarean section.

Methods: Video ethnographic research was conducted utilising video recordings, observations, field notes, focus groups and interviews.

Findings: The maternal body was divided in the operating theatre and mothers were perceived as ‘separate’ from their baby in the operating theatre and recovery. ‘Mother’s bodies’ were viewed to ‘own’ the lower half of women, and the ‘top half and midwives were viewed to ‘own’ the baby after birth. Midwives’ responsibility for the baby either negatively or positively affected the mother’s ability to ‘own’ her baby, because midwives controlled what maternal-infant contact occurred. Mothers desired closeness with their baby, including skin-to-skin contact; however they realised that ‘owning’ their baby in the surgical environment could be challenging.

Discussion: Health professionals’ actions are influenced by their environment and institutional regulations. Further education can improve the provision of skin-to-skin contact after caesarean sections. Skin-to-skin contact can help women remain with their baby and obtain assurance of control after the caesarean section.

Conclusions: Providing skin-to-skin contact in the first 2 h after caesarean sections has challenges. Despite this, health professionals can meet the mother’s desire to ‘own’ her baby by realising they are one entity, encouraging skin-to-skin contact and avoiding maternal and infant separation.

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Statement of Significance

Issue

Women and babies are often not provided immediate or early skin-to-skin contact after caesarean sections due to barriers in the medical setting.

What is Already Known

Providing immediate or early skin-to-skin contact between mothers and babies after caesarean sections is feasible, important and recommended.

What this Paper Adds

The intense desire of a mother to hold her baby immediately after birth is often forgotten in the surgical environment. The perceptions of the maternal body and the actions and interactions of health professionals including midwives often interfere with the opportunity for mothers to have SBC in operating theatre with their babies. Health professionals can help mothers ‘own’ their baby by recognising barriers and working to facilitate skin-to-skin contact in the operating theatre and recovery.

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1. Introduction

Skin-to-skin contact (SSC) is described as placing an unclothed baby, sometimes with an accessory on, directly onto the bare chest of either their mother or father. SSC with the mother immediately or soon after a caesarean section (CS) may improve breastfeeding initiation, reduce formula supplementation, increase bonding and satisfaction and maintain the baby’s temperature and reduce stress. A recently updated Cochrane review also stated that SSC after CS may improve breastfeeding rates; however, more research is needed. The impact of SSC on breastfeeding is important because breastfeeding not only improves the health of the mother and baby, it also reduces economic costs related to admissions to hospital and environmental costs related to the production of formula and waste related to formula use. SSC after a CS also provides the benefit of strengthening the maternal role by increasing interaction, increasing maternal confidence and by producing a calming effect on both the mother and baby.

The World Health Organisation and the United Nations Children’s Fund in the Baby Friendly Health Initiative recommends uninterrupted immediate SSC after CS for at least 1 h, if the mother is alert and responsive. The Baby Friendly Health Initiative in Australia recommends placing the baby in SSC with the mother in the operating theatre immediately, or within 5 min after birth. However, in Australia only around one quarter of maternity hospitals are Baby Friendly accredited, and there is an increasing rate of CS resulting in many women and babies missing out on having immediate or early SSC and the benefits related to this contact.

The National Institute for Health and Clinical Excellence guideline on CS states that it is the health professionals’ responsibility to “take into account women’s needs and preferences” (p. 6) and that “early skin-to-skin contact between the woman and her baby should be encouraged” (p. 7). Women want immediate SSC after their CS. Women report that SSC is one of the major steps involved when bonding with their baby and they greatly desire this contact. Considering the maternal desire for SSC, and due to a gap in evidence about SSC after CS, the researchers undertook research aimed at discovering the facilitators and barriers of SSC after CS and observing the contact women have with their baby in the first 2 h after a CS.

This paper examines how health professionals’ practice impacts the facilitation of skin-to-skin contact within the first 2 h following a CS. There have been three previous published papers reporting findings from this study. These papers reported on the facilitators and barriers of providing SSC in the operating theatre and recovery, the approach to recruitment and data collection, and the last paper used the data from this study to demonstrate how the ‘Healthy Children Project’s Skin-to-Skin Implementation Algorithm’ can be used to analyse the implementation of skin-to-skin and to reveal areas for improvement.

2. Methods

2.1. Study design

A video ethnographic methodology was chosen for this study as it would allow researchers to gain an in-depth understanding of human interaction and how the culture and environment influences that interaction. Video footage, researcher observations and field notes (FN) were utilised to capture the contact between 21 mothers and babies, and their support people from the moment of the caesarean birth until after the first breastfeeding, or until 2 h after CS. Focus groups and individual interviews with health professionals and individual interviews with women were also undertaken.
transfers, contact with the infant, breastfeeding), could be documented. The analysis also involved documenting the babies' progression through the Widström stages of SSC, as shown in the DVD produced by Birnlyr, Svensson and Widström.

The data was then examined and coded using ethnographic technique, highlighting the relationship between human responses in the physical and socio-cultural environment of the operating theatre and recovery room. Analysis involved examining the environment, space, equipment, the actors, dialogue, activities and the sequencing of events. For example, in Charlotte's interview at six weeks postpartum she stated, "I just wanted to get up [to the postnatal ward]" and see Charlie (baby) when recalling her thoughts whilst she was in recovery and her baby was in the postnatal ward. This quote was coded as 'recovery' and 'transition'. Whilst coding in NVivo, themes started to emerge from the data; however further clarification was needed. This clarification was achieved during meetings with the broader research team. The codes were then arranged under the identified themes. For example, the previous quote from Charlotte's interview was coded as 'owns the baby' and 'separation'.

2.6 Reflexivity

When collecting and analysing data, the first author was aware that belonging to the groups being studied (being a midwife, nurse and mother) could have implications on what they collected and how they analysed the data. The researcher reduced this impact by writing reflexive notes after each event, to attempt to view the data through the eyes of those involved. For example, the following reflexive note was collected after amniocentesis rang the birth unit to determine whether she needed to immediately return once she found out that there was no midwife allocated to observe SSC in recovery:

I was impressed that the midwife took it further by ringing the Birth Unit to see if she would be able to spend more time with the mother and the baby in recovery. I was disappointed that they wanted her back - did they really need her? They probably did.

Birth Unit is usually busy and extra hands are needed (Michelle Reflexive Notes).

The researcher also sought regular feedback from the research team to decrease her individual influence on the findings during data analysis.

3. Findings

Of the 21 women participants, 16 had standard midwifery care, four were cared for by caseload midwife, and one participant had an obstetrician and an anaesthetist managed CS - where the mother helped lift her baby out of her abdomen in theatre and placed the baby directly onto her bare chest in SSC. The mothers were 25–39 years of age, had birthed one to four babies previously and had one to four previous CS. One mother had aprevious normal vaginal birth. The mothers all previously breastfed, however two stated they only breastfed for a short period of time. The six first contacts with the mother and three with the father. Of the 10 mothers that had this first contact, 9 had SSC and six had non-SSC contact, and of these three mothers had non-SSC. The average time for initiation of first SSC or contact was 5.09 min with mothers and 4.07 min with fathers. Eight mothers had SSC (5 min of birth and four between 5

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Table 1: Contact-setting and duration.

<table>
<thead>
<tr>
<th>Babies' alias names</th>
<th>Type of care</th>
<th>Time observed/ filmed (IT)</th>
<th>Mum SIC [% of IT]</th>
<th>Dad SIC [% of IT]</th>
<th>Mum contact [no SIC] [% of IT]</th>
<th>Dad contact [no SIC] [% of IT]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connor</td>
<td>SMC</td>
<td>87.00 ITT 112.00</td>
<td>8.3 (23)</td>
<td>Nil</td>
<td>2.50 (7)</td>
<td>1.46 (38)</td>
</tr>
<tr>
<td>Deakin</td>
<td>SMC</td>
<td>24.10 PH 5.30</td>
<td>Nil</td>
<td>7.09 (6)</td>
<td>12.10 (10)</td>
<td>2.35 (17)</td>
</tr>
<tr>
<td>Barney</td>
<td>CL</td>
<td>53.00 R 7.70</td>
<td>Nil</td>
<td>21.89 (15)</td>
<td>1.50 (10)</td>
<td>2.10 (18)</td>
</tr>
<tr>
<td>Ebenezer</td>
<td>SMC NF</td>
<td>49.00 R 43.00</td>
<td>10.00 (28)</td>
<td>Nil</td>
<td>Nil</td>
<td>29.30 (33)</td>
</tr>
<tr>
<td>Mitchell</td>
<td>PO</td>
<td>39.00 R 81.00</td>
<td>35.24 (79)</td>
<td>Nil</td>
<td>0.24 (5)</td>
<td>2.00 (45)</td>
</tr>
<tr>
<td>Jai</td>
<td>MA</td>
<td>69.00 R 110.00</td>
<td>16.56 (27)</td>
<td>Nil</td>
<td>0.35 (5)</td>
<td>4.16 (43)</td>
</tr>
<tr>
<td>Maggie</td>
<td>SMC</td>
<td>33.00 R 112.00</td>
<td>21.56 (36)</td>
<td>43.53 (56)</td>
<td>6.54 (3)</td>
<td>1.10 (2)</td>
</tr>
<tr>
<td>Sven</td>
<td>SMC</td>
<td>42.00 R 60.00</td>
<td>27.11 (29)</td>
<td>12.27 (13)</td>
<td>31.20 (24)</td>
<td>2.28 (2)</td>
</tr>
<tr>
<td>James</td>
<td>SMC NF</td>
<td>36.00 R 27.00</td>
<td>26.00 (23)</td>
<td>Nil</td>
<td>2.00 (6)</td>
<td>4.00 (40)</td>
</tr>
<tr>
<td>Jann</td>
<td>SMC NF</td>
<td>34.00 R 39.00</td>
<td>2.00 (8)</td>
<td>Nil</td>
<td>4.00 (44)</td>
<td>13.41 (13)</td>
</tr>
<tr>
<td>Kurt</td>
<td>SMC</td>
<td>57.00 R 63.00</td>
<td>44.33 (72)</td>
<td>Nil</td>
<td>0.45 (9)</td>
<td>0.23 (12)</td>
</tr>
<tr>
<td>Khinoles</td>
<td>SMC</td>
<td>33.21 R 56.39</td>
<td>54.52 (30)</td>
<td>Nil</td>
<td>Nil</td>
<td>5.06 (23)</td>
</tr>
<tr>
<td>Marty</td>
<td>SMC</td>
<td>31.08 R 76.12</td>
<td>11.41 (72)</td>
<td>Nil</td>
<td>9.54 (6)</td>
<td>Nil</td>
</tr>
<tr>
<td>Fred</td>
<td>SMC</td>
<td>20.31 R 27.00</td>
<td>6.19 (23)</td>
<td>Nil</td>
<td>Nil</td>
<td>11.40 (45)</td>
</tr>
<tr>
<td>Janet</td>
<td>CL</td>
<td>46.50 R 55.10</td>
<td>42.35 (42)</td>
<td>Nil</td>
<td>27.28 (27)</td>
<td>12.07 (12)</td>
</tr>
<tr>
<td>Kevin</td>
<td>SMC NF</td>
<td>27.00 R 25.00</td>
<td>6.00 (28)</td>
<td>Nil</td>
<td>9.00 (9)</td>
<td>Nil</td>
</tr>
<tr>
<td>Baby N</td>
<td>SMC NF</td>
<td>27.00 R 4.00</td>
<td>21.00 (29)</td>
<td>Nil</td>
<td>4.00 (3)</td>
<td>10.00 (8)</td>
</tr>
<tr>
<td>Fraser</td>
<td>CL</td>
<td>47.55 R 16.98</td>
<td>32.00 (29)</td>
<td>Nil</td>
<td>Nil</td>
<td>7.41 (8)</td>
</tr>
<tr>
<td>Abigail</td>
<td>SMC</td>
<td>25.00 R 97.00</td>
<td>15.07 (13)</td>
<td>Nil</td>
<td>2.38 (2)</td>
<td>1.39 (5)</td>
</tr>
<tr>
<td>Charlie</td>
<td>SMC</td>
<td>39.00 R 61.00</td>
<td>21.07 (18)</td>
<td>Nil</td>
<td>Nil</td>
<td>3.52 (47)</td>
</tr>
<tr>
<td>Lindsay</td>
<td>SMC</td>
<td>18.00 R 64.00</td>
<td>43.20 (51)</td>
<td>33.32 (23)</td>
<td>7.12 (10)</td>
<td>12.17 (10)</td>
</tr>
</tbody>
</table>

**TOTALS**

- [5% of 2287.00 = total all time]
  - 2287.00 Total Time: 147.53 (51)
  - Total: 2287.00
  - [5% of 2287.00 = total all time]
  - 2287.00

**SMC**: standard midwifery care; **CL**: careful midwifery care; **P**: private obstetrician; **MA**: maternal assisted caesarean.

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and 10 min. One mother had non-SSC C5 min of birth, four between 5 and 10 min and one >10 min. All three fathers had non-SSC C5 min of birth. The average duration of the first contact was 18 min. The average duration of first SSC with mothers was 20 min (range 4.19-44.34 min; six >20 min, six <20 min)) and 11 min (range 6.00-16.54 min) with non-SSC. Fathers had an average of 19 min (range 12.17-29.00 min) of non-SSC.

Fifteen of 21 (71%) babies had SSC with their mother in the operating theatre and 14 out of 21 (67%) in recovery (Table 1). Overall, mothers provided more SSC than fathers (41% vs. 8% total time) and fathers had more non-SSC than mothers (20% vs. 6% total time). Babies had no contact with their mother, father or support person for an average of 25% of the time following birth to up to 2 h from birth. SSC was provided 12% (12% mother) of the total time in the operating theatre and 30% of the total time in recovery (27% mother, 3% father).

Five of the 21 babies breastfed within the first hour and 12 breastfed within the first 2 h after birth (Table 2). These 12 babies had from less than 1 min up to 1 h and 20 min of SSC with the mothers before the first breastfeeding and were assisted when attaching to the breast. Seven of the babies that did not breastfeed were taken from their mother and moved to a separate ward. The other two babies were separated whilst the mother’s abdomen was being sutured in the operating theatre and these babies appeared sleepy on the mothers’ arrival to recovery, consequently only irregular suck at the breast were observed.

Two major themes were identified in the qualitative data. The roles that the health professionals played and their responsibilities in these roles meant that ‘the surgical maternal body was divided and separated’ following CS and it also impacted the perception of ‘who owns the baby’.

3.1. The surgical maternal body divided and separated

The maternal body was visualised to be physically and emotionally divided in the operating theatre. The care of the mother was the responsibility of the operating theatre health professionals, not the midwives in the operating theatre and recovery. “Once you get to the theatre the theatre staff will care for you, my primary care is for the baby” (Midwife [Lori FN]). During the surgery, the mothers’ body was also observed to be divided into two distinct parts, separated by the surgical drapes and divided again after birth when she was separated from her baby.

3.1.1. Dividing the maternal body

In the operating theatre it became visually apparent that the maternal body was divided. Obstetricians (surgeons) were viewed as ‘owning’ the mother from the mid abdomen down, whilst anaesthetists were viewed as ‘owning’ the mother from the mid abdomen up, above the sterile drapes (Fig. 1). Disputes over the maternal body only commenced once the baby was born and was placed on the mother’s chest.

Prior to surgery several midwives were witnessed ‘disowning’ the mother. Of the 21 midwives in the operating theatre, six midwives did not talk to the mother and four midwives did not respond to mothers when they appeared distressed before the baby was born. “Second attempt for the spinal anaesthetic… Morge was crying so much her body was shaking… she still wasn’t supported by the midwife” (Marge FN). The anaesthetic nurse took on the comforting role in these instances ‘Anaesthetic Nurse: “Are you alright?” The anaesthetic nurse wiped Tara’s tears’ (Tara FN).

The mother’s chest only became the space after the baby was born. When midwives claimed ‘their space’ conflicts arose. In interviews, operating theatre health professionals voiced their concern “there are too many people at the head of the bed… How could they do what they need to do if there was an emergency” (Nurse [Britta FN]).

One midwife described that some obstetricians did not mind the baby taking up abit of ‘their space’ “I just pushed therape down” (Casebook FG), whilst another midwife commented that obstetricians would say, especially when the baby’s feet got close to the surgical area “I need that space” (Casebook FG). Babies were visualised encroaching on the surgical space during data collection.

On one occasion, ababy was partially placed on the blue drape that separated the surgical space of the obstetrician and the mothers’ chest (Britta video) and on another occasion the obstetrician requested “Can you get all this [the blue drape] up” when the drape was pushed into the surgical site (Michelle FN). An obstetrician noted that having adequate operating space is essential, and that it can be risky to mother with ‘stuff coming into the surgical field’ (Obstetrician 2 Interview).

Midwives understood that the anaesthetists ‘owned’ the chest area of the mother and that priority was the mother, as confirmed by one anaesthetist who stated “Your first priority, obviously is to the patient who’s the mother” (Anaesthetist 2 Interview). One manager (1 Interview) commented that “People take for granted how dangerous surgery is… how dangerous anaesthetics are. One in 10,000 to have an adverse event is not great odds”.

In a focus group, one midwife stated: “A lot of them [anaesthetists] don’t like it [SSC]. They say it is unsafe for the baby to be there. The baby might fall” (Midwives 2 FG).

One midwife remarked during filming that an anaesthetist stated “no, you couldn’t do that, there is not enough room” (Pav Video) when she wanted to place the baby in SSC. An anaesthetist stated “I have to admit that though there are good outcomes, I find from the anaesthetist standpoint, it’s usually more convenient not to have SSC because it interferes with our monitoring” (Anaesthetist 2 Interview).

Despite this perception, many operating theatre staff, including doctors, nurses and anaesthetists visually appeared delighted with the provision of SSC in the operating theatre. On one occasion an anaesthetist was observed being proactive when they suggested and actively enabling SSC and breastfeeding on the operating theatre table (Jane video). “… the anaesthetist was awesome!” (Jane Transcript).

3.1.2. Separation of the mother and baby

Once the baby was born, the mother and baby were separated physically and spatially. Midwives were responsible for the baby, whilst doctors, nurses and anaesthetists had the responsibility to look after the mother. Observation of staff member’s actions in the operating theatre, and recovery, confirmed that they perceived the mother and baby as separate individuals.

3.1.2.1. Separation immediately after birth

Only on two occasions was the baby placed immediately on the mother’s chest after birth. Routine care involved babies being taken to the resuscitation trolley immediately after birth. The baby was given to the mother for a quick kiss… Midwife: “I will take the baby over to the [resuscitation] trolley to keep the baby warm” (Elsa FN). The resuscitation trolley was on the other side of the operating theatre, out of the visual range of the mother (Fig. 2). One midwife stated “Often you hear them calling out, ‘is everything okay?’” (FG Casebook). Of all the babies taken to the resuscitation trolley, only two sounded like they may need to be suctioned due to mucous (Belle FN; Jane Video), two needed stimulation before a good response was seen (Chantelle Video; Pav Video) and one needed to be suctioned and given oxygen.
3.2.2. Separation in recovery. The mother and baby were also viewed as separate entities in recovery. Midwives were observing attending to the babies, and the recovery nurses took care of the mothers. “Recovery nurses focus on the ex-maternity patient which is the Mum, not the baby...they’re now two separate patients and the mother is still important!” (Manager 1 Interview). Recovery nurses were observing asking midwives to remove the baby so that they could do their job “Do you mind just holding baby while I [check out the mother]” (Charlotte Video), however other recovery nurses would not request this separation “I don’t mind too much, provided I can do what I have to do” (FG-Operating Theatre 1). Despite the fact that the mother and baby were perceived as ‘separate’ beings, the majority of mother and baby SSC was provided in recovery (see Table 1).

3.2.3. Disruptions in mother-baby contact. Separation of mothers and babies occurred twenty-seven times when SSC occurred (Table 3). Spatial separation occurred when one baby went to the neonatal intensive care unit for observation and six babies went to the postnatal ward because there was no midwife allocated to observe the baby in recovery:

“I couldn’t keep him with me but there wasn’t enough staff or something...I didn’t like that...I wanted to keep him with me...He’s mine” (Fiona Interview).

Further spatial separation occurred when ten babies were moved to recovery before the mother.

Table 2

<table>
<thead>
<tr>
<th>Babies alias names</th>
<th>Time of first breastfeeding</th>
<th>Maternal SSC prior to the first breastfeeding</th>
<th>Attachment for first breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connor</td>
<td>NA</td>
<td>NA</td>
<td>NA – moved to the Neonatal Intensive Care Ward/Special Care Nursery</td>
</tr>
<tr>
<td>Daisin</td>
<td>NA</td>
<td>NA</td>
<td>NA – moved to the Postnatal Ward</td>
</tr>
<tr>
<td>Barney</td>
<td>59:21</td>
<td>31:34</td>
<td>P: Mw/M/B:SA</td>
</tr>
<tr>
<td>Ebenezer</td>
<td>70:00</td>
<td>22:00</td>
<td>P: Mw/M/B/Pop:1A</td>
</tr>
<tr>
<td>Mitchell</td>
<td>67:42</td>
<td>75:23</td>
<td>P: Mw/M/B:SA</td>
</tr>
<tr>
<td>Carl</td>
<td>75:15</td>
<td>17:52</td>
<td>P: Mw/M/B:SA</td>
</tr>
<tr>
<td>Maggie</td>
<td>NA</td>
<td>NA</td>
<td>NA – moved to the Postnatal Ward</td>
</tr>
<tr>
<td>Sven</td>
<td>67:41</td>
<td>2:25</td>
<td>P: Mw/M/B:SA</td>
</tr>
<tr>
<td>James</td>
<td>NA</td>
<td>NA</td>
<td>NA – moved to the Postnatal Ward</td>
</tr>
<tr>
<td>Sam</td>
<td>59:00</td>
<td>13:00</td>
<td>P: Mw/M/B: M/M/B/1A</td>
</tr>
<tr>
<td>Kurt</td>
<td>107:19</td>
<td>77:33</td>
<td>P: Mw/M/B: M/M/B/1A</td>
</tr>
<tr>
<td>Miracle</td>
<td>59:59</td>
<td>4:35</td>
<td>P: Mw/M/B/Pop:1A</td>
</tr>
<tr>
<td>Marty</td>
<td>49:36</td>
<td>29:19</td>
<td>P: Mw/M/B/Pop:1A</td>
</tr>
<tr>
<td>Fred</td>
<td>NA</td>
<td>NA</td>
<td>NA – irregular sucks of the breast visualised with manipulation.</td>
</tr>
<tr>
<td>Janet</td>
<td>29:29</td>
<td>0:52</td>
<td>P: Mw/M/B/M/B/B/M/B/B/M/B/B/A</td>
</tr>
<tr>
<td>Kevin</td>
<td>56:00</td>
<td>19:00</td>
<td>P: Mw/M/B/Pop:1A</td>
</tr>
<tr>
<td>Baby H</td>
<td>NA</td>
<td>NA</td>
<td>NA – moved to the Postnatal Ward</td>
</tr>
<tr>
<td>Fraser</td>
<td>30:39</td>
<td>26:09</td>
<td>P: Mw/M/B/M/B/M/B/AA/A</td>
</tr>
<tr>
<td>Abel</td>
<td>NA</td>
<td>NA</td>
<td>NA – moved to the Postnatal Ward</td>
</tr>
<tr>
<td>Charlie</td>
<td>NA</td>
<td>NA</td>
<td>NA – irregular sucks of the breast visualised with manipulation.</td>
</tr>
<tr>
<td>Lindsay</td>
<td>NA</td>
<td>NA</td>
<td>NA – irregular sucks of the breast visualised with manipulation.</td>
</tr>
</tbody>
</table>

AA = assisted attachment; NA = not applicable; P = baby positioned near the breast; M = mother; Mw = manipulated the breast to help with attachment; M/B = manipulated the baby to help with attachment; Mw/M/B = manipulated the baby and mother to help with attachment. Time = minutes, seconds.

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### Table 3
Reasons for mother/infant separation whilst having skin-to-skin contact.

<table>
<thead>
<tr>
<th>Baby</th>
<th>1st separation</th>
<th>2nd separation</th>
<th>3rd separation</th>
<th>4th separation</th>
<th>5th separation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SSC with/without</td>
<td>SSC with/without</td>
<td>SSC with/without</td>
<td>SSC with/without</td>
<td>SSC with/without</td>
</tr>
<tr>
<td>Connor</td>
<td>M/17.00</td>
<td>Mw-Observe baby for transient Tachypnoea of the Newborn</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Deakin</td>
<td>-</td>
<td>-</td>
<td>M/67.00</td>
<td>Mw-Concerned about the baby</td>
<td>-</td>
</tr>
<tr>
<td>Ebenezer</td>
<td>M/15.00</td>
<td>Mw-Baby was slipping &amp; Wrap the baby</td>
<td>M/43.56</td>
<td>Mw-Weigh baby</td>
<td>M/100.32</td>
</tr>
<tr>
<td>Mitchell</td>
<td>M/33.24</td>
<td>Mw-Cut the cord &amp; Bed Transfer</td>
<td>Mw-Mental request</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Jai</td>
<td>M/21.16</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maggie</td>
<td>M/23.14</td>
<td>Mw-Mental request</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sven</td>
<td>M/31.00</td>
<td>Mw-Go to Recovery</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>James</td>
<td>M/64.08</td>
<td>Mw-Go to Recovery</td>
<td>M/96.11</td>
<td>D-on mw request</td>
<td>-</td>
</tr>
<tr>
<td>Sarah</td>
<td>M/24.00</td>
<td>D-On Maternal Checks</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fisk</td>
<td>M/29.22</td>
<td>Mw-Go to Postnatal Ward</td>
<td>M/36.59</td>
<td>Mw-Wrap the baby</td>
<td>M/114.34</td>
</tr>
<tr>
<td>Abel</td>
<td>M/17.88</td>
<td>Mw-Weigh baby</td>
<td>M/35.44</td>
<td>D-Maternal check</td>
<td>M/109.09</td>
</tr>
<tr>
<td>Charlie</td>
<td>M/23.44</td>
<td>Mw-Mental request due to nausea</td>
<td>M/35.44</td>
<td>D-Maternal check</td>
<td>-</td>
</tr>
<tr>
<td>Lindsey</td>
<td>M/89.21</td>
<td>Mw-Weigh baby</td>
<td>Mw-Go to Postnatal Ward</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M</td>
<td>Mw</td>
<td>Mw</td>
<td>Mw</td>
<td>Mw</td>
<td>Mw</td>
</tr>
<tr>
<td>D</td>
<td>Maternal</td>
<td>Maternal</td>
<td>Maternal</td>
<td>Maternal</td>
<td>Maternal</td>
</tr>
</tbody>
</table>

M = mum; D = dad; Mw = midwife; Time = minutes, seconds.

On 10 occasions, midwives ‘owned’ the baby when they took the baby out of the operating theatre to recovery. Midwives verbalised they had to complete the paperwork before going up to the postnatal ward “you come up [to the postnatal ward] with the baby, everything is done” (FG-Midwives 2), otherwise “you would be judged” (FG-Midwives 1). This meant that the completion of tasks took precedence over maternal and infant contact.

The benefits of the baby coming out of the operating theatre... is that you get some of your paperwork done, you can get some of your jobs done... you know, it’s a bit of a stress reliever” (FG-Midwives 1). This is a perception of mine that the children seem more peaceful, they seem more settled babies and that’s positive for all mothers having settled babies”. The lactation consultant during an interview that since SSC is mandated that “sacrificing bonding, it helps establish breastfeeding”, babies “maintain temperature”, it “regulates breathing, heart rate”, “settles respiratory distress” and the baby gets the “mum’s body flora”. “The physical presence is reassuring” (Anaesethetist 1 Interview). “When the baby’s born with them, they get about it! That’s going to around them” (Anaesethetist 2 Interview). SSC is “basically the external womb where all the needs are met... the habitus where it [the baby] belongs... for bonding, it’s the most beautiful place... instinct kicks in... babies can usually self-attach and feed” (Lactation Consultant Interview). “Baby is less stressed, you have baby initiating breastfeeding sooner... For the mother you’ve got immediate benefits... physiological oxytocin levels are increasing so therefore mothers feel happier” (Midwifery Manager 1 Interview). And an obstetrician (1 Interview) stated “If there is a perception of mine that the children seem more peaceful, they seem more settled babies and that’s positive for all mothers having settled babies”.

Health professionals respect the maternal “ownership” of their babies.

Health professionals recognised the importance keeping babies together and providing SSC. “If a baby is born by caesarean, it shouldn’t be done in isolation, it’s best practice to keep mother and baby together” (Lactation Consultant Interview). During the case load focus group midwives stated that SSC “improves bonding, it helps establish breastfeeding”, babies “maintain temperature”, they “regulate breathing, heart rate”, “settle respiratory distress” and the baby gets the “mum’s body flora”. “The physical presence is reassuring” (Anaesthetist 1 Interview). “When the baby’s born with them, they get about it! That’s going to around them” (Anaesthetist 2 Interview). SSC is “basically the external womb where all the needs are met... the habitus where it [the baby] belongs... for bonding, it’s the most beautiful place... instinct kicks in... babies can usually self-attach and feed” (Lactation Consultant Interview). “Baby is less stressed, you have baby initiating breastfeeding sooner... For the mother you’ve got immediate benefits... physiological oxytocin levels are increasing so therefore mothers feel happier” (Midwifery Manager 1 Interview). And an obstetrician (1 Interview) stated “If there is a perception of mine that the children seem more peaceful, they seem more settled babies and that’s positive for all mothers having settled babies”.

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If they [recovery health professionals] just casually say, ‘Can you take the baby off the chest?’ you just say, ‘Look; we’re doing skin-to-skin, I’ll take responsibility for the baby’ (FG-Caseload).

Midwives recognised that mothers do not want to be separated “When they come out of theatre, we all go to recovery together” (FG-Caseload). “They [mothers] seem more happy and they seem positive about not being separated” (Midwives FG1).

The provision of continuity of care, either by a midwife or an obstetrician improved the average amount of SSC between mothers and their babies (59% vs. 35%) (Table 1). The increase in SSC is likely attributed to the fact that none of these babies were separated from their mothers and sent to the postnatal ward due to staffing shortages. It also appeared that individual midwives could make a difference, for example, two standard care midwives enabled SSC with the mother for 72% of the time (Table 1).

On two occasions mothers had immediate SSC after the birth of their baby. When a private obstetrician initiated a “maternal assisted CS,” the mother placed her baby immediately on her chest whilst the midwife ensured the safety of the baby. This mother recognised the bond that she formed with her baby when they had SSC immediately after birth “The initial mother and baby relationship can’t be broken. . . that time together and that bonding just establishes and amazing relationship, so very lucky” (Charlside Interview). On the other occasion, the standard care midwife placed the baby immediately in SSC with the mother “She’s very happy there. Because she was so well, I just let her stay with you” (Margie Video). At Margie’s interview she reflected on this SSC and stated “To be able to hold my baby, just to feel . . . if you could just hold that newborn baby smell . . . she was just so gorgeous and smooth”.

3.2.3. Feeling traumatised, disempowered and separated from my baby

Women struggled with the fact that they were having a caesarean section “It was not exactly what I wanted . . . just more disappointment that I could not have a natural birth” (Layla Interview) and that this could interfere with their “ownership” of their baby.

It is very upsetting that all these other people get to have their babies on their chests right away and the people that have a caesarean, they don’t get that opportunity (Layla Interview).

Women voiced that they want to make choices about what contact they have in the operating theatre and recovery, however they recognised that it can be challenging “The first thing you want to do is to cuddle them, but when you’re on the theatre table obviously it’s a bit hard because you are strapped in” (Eva Interview). During interviews women indicated that their positioning on the operating theatre table made it difficult to hold their baby:

It was sort of like Jesus on the cross . . . she was lying across my shoulders. . . I had the blood pressure cuff . . . it was sort of restricting me to be able to hold her (Birta Interview).

Despite these challenges, there was an intense maternal desire to be connected with their infant. One woman voiced her desire to be with her baby as the most exciting thing: “I’m greedy. I want my baby all the time” (Berta Interview), whilst others voiced their concerns about separation from their babies “It didn’t feel natural . . . I needed to be close to him . . . I just needed him with me and he wasn’t there” (Tara Interview) and “You see that baby, that’s something you made. You just want to hold him or her. You don’t want to be separated straight away” (Rox Interview). One mother made her baby’s priority in the setting “they kept saying put your arms straight . . . I don’t care. I’m holding my baby” (Charlside Interview).

Separation also caused maternal trauma:

My first baby, she got taken away . . . I’m like Where’s my baby? . . . just I didn’t feel like I had a bond with her . . . I felt like she (baby) might have got her (midwifery) scent instead of mine . . . It just made me really depressed and sad (Jane Interview).

Continuity of care improved maternal control during CS. Caseload midwives discussed how they support women’s decisions; for example a caseload midwife respected another mother when she requested no SSC in the operating theatre “I just wanted to wait to have that time where there was a lot less people around . . . in recovery” (Betty Interview). Another mother stated that being offered a ‘maternal assisted CS’ by her private obstetrician helped her feel in control “It was really exciting to have him and deliver him the way that I did . . . When I had . . . [other child] he was taken away from me for three or four hours” (Charlside Interview).

4. Discussion

This paper aimed to explore how the practice of health professionals’ impacts on the facilitation of skin-to-skin contact within the first 2 h of CS.

The findings demonstrated that the contact between mothers and their babies after a CS does not resemble the contact after vaginal births. Only nine out of 21 women (43%) had contact with their baby within 5 min, eight out of 21 (38%) had SSC and six out of 21 (29%) held their baby for longer than 20 min. Most importantly, it appeared that other ‘normal’ bodies were ‘divided’ in the operating theatre and viewed as ‘separate’ entities from their baby. In this context, midwives and other health professionals took ownership of the baby.

The World Health Organisation recommends that breastfeeding be initiated within 1 h of birth. The first 2 h of life is a critical period for attachment and the spontaneous onset of breastfeeding. Research has shown that there is a positive correlation between the length of time before the first breastfeed, an increased risk for poor feeding, and also an increased risk for breastfeeding difficulties, if the woman has had a CS. In this study, only five babies breastfed within the first hour and 12 babies within the first 2 h of birth. This physical separation of mothers and babies during this critical period may have negatively impacted on the establishment of breastfeeding. It is important for babies to be provided the time to go through all the stages of SSC, as this improves breastfeeding outcomes.

This lack of attention to Level 1 evidence of the benefits of SSC is also reported by other recent Australian research. Redshaw, Hennegan and Kruise showed 67% of women who had a CS held their baby within 5 min, 48% had SSC and 33% held their baby for longer than 20 min. Yet in the same study, 97% of women who had a normal vaginal birth held their baby within 5 min of birth, 94% had SSC and 64% held their baby for greater than 20 min.

4.1. Disempowerment and caesarean sections

Observations of practice, and analysis of video footage, suggested that the surgical space, the operating theatre, the operating table and the woman’s body, were considered the territory of health professionals. The woman, her body, her baby, and her support person, were strangely peripheral to the activities that occurred. In studies of women’s experience of CS, Bayes et al.21 and Lupton et al.22 similarly reported that the woman’s body is divided by the external drapes that separate the top of her body from the bottom and women reported feeling invisible during CS. Frederick et al.23 emphasised women’s feelings of lack of control during CS. In this disempowering context, the woman’s body is surgically divided by a scarpel and the baby inside her is removed, thereby becoming a separate but unknown other. It is in this disempowered state that women first greet their newborn. In the minutes and hours following the birth, women
again are challenged by not being able to immediately touch their newborn infants, and in this study, and others, women describe feelings of alienation and absence. Mothers are disappointed if they are separated from their baby after birth. There is urgency about a mother’s desire to hold her baby and to confirm that her baby is well. Our research confirmed this intense desire for mothers to hold and remain in contact with their baby.

4.2. Health professionals interface with SSC after caesarean sections

In this study, the mother and baby were viewed as separate entities and were cared for by different health professionals. This mechanistic approach to care meant that health professionals prioritised completing the job, and taking care of the woman’s body took precedence over the emotional health of the mother and baby. Often care decisions appeared to be made to suit hospital routines and avoid criticism by colleagues, rather than to suit the mother and her baby. Previous research describes the underlying fear that health professionals have about not being able to control the medical situations during SSC; there is a perceived lack of time, and a lot of tasks to complete. SSC in the operating theatre can also be hindered by the complexity of the environment which is focused on safety and efficiency and equipment needed to monitor the mother (e.g. blood pressure cuff, oxygen saturation monitor, cardiac monitors). The implementation of SSC is dependent on health professionals, particularly midwives knowledge and attitude about SSC.

The dominant position of health professionals and the institutional decision makers is not unique to the operating theatre environment. Other ethnographic studies of midwifery practice have emphasised that despite midwives’ philosophical commitment to woman-centred care, many midwives, when observed in practice, demonstrate an agreement to the needs of the institution and the broader health care system than they do to the individual women in their care. In an institutional context that demands efficiency, midwives often assume the role of expert, directing care and taking over from the woman. Midwifery participants in a study of birth positioning recognised that they often “inadequately” assess women’s needs in the delivery unit. Other studies reported that midwives and other health professionals prioritise their own agenda and do not have time to ascertain and prioritise the needs of the woman. Despite this, some midwives will do “real midwifery” by rebelling against the system, protecting women from medicalised care and provide woman-centred care. They recognise that not only do women find birth more pleasurable if woman-centred care is provided, they also get more satisfaction in their midwifery role.

4.3. Implications for practice

Immediate SSC should be the default method of care and separation should be recognised as an intervention. Care providers need to understand that their routine practices, including separation of mother and baby, can negatively influence the way a woman feels about the birth experience and how well bonding is established. SSC is biologically normal and provides short term and long term benefits to the mother and baby. To enable immediate SSC, mothers, support people and health professionals need access to evidence based education about SSC, mother and baby friendly protocols should be written and institutional practices need to support midwives by ensuring they have the time to provide woman-centred care, without repercussions.

To facilitate women’s autonomy during CS, women need to have access to information that enables them to make informed choices, including information about SSC. It is the midwife’s responsibility to work in partnership with the woman and baby, actively safeguard their rights to compassionate care and to reduce possible harm. It is also the medical professionals’ responsibility to provide information to the woman about any significant long term physical, or emotional outcomes, prior to performing a CS. Innovative care models can improve the initiation of immediate SSC. In this research, women who were in a continuity care model, either with a midwife or an obstetrician had the power to influence their care and contact they had with their baby. Continuity of midwifery care empowers women to contribute to decision making, have more control, and are more likely to be satisfied with their care.

Women who have this model of care appear more likely to have SSC, remain with their baby, and initiate early breastfeeding, because their passionate desire to remain connected with their baby is respected. Furthermore, if hospitals implemented the BFHI which encourages uninterrupted SSC as soon as the mother is alert and active following a CS, SSC after CS could be improved.

5. Limitations

This research provided information about one metropolitan hospital in Australia, with a small cohort of participants and only reports on elective CS. If repeated, results may differ because each hospital has its own unique culture. Furthermore, being observed may have altered how participants practiced or behaved.

6. Conclusion

This paper has provided insight into women’s birth and the first 2 hours after CS. Mothers were physically and emotionally separated in the operating theatre and were perceived as separate entities from their babies in the operating theatre and in recovery. Health professionals behaved as if they owned the woman and baby — obstetricians owning the lower half of women, anaesthetists owning the top half and midwives owning the baby. Midwives and other health professionals facilitated mothers to ‘own’ their baby by listening to their requests, encouraging SSC and avoiding maternal and infant separation. Mothers recognised that it was challenging to ‘own’ their baby in this medicalised setting, however they intensely desired this and SSC, and they did not want to be separated from their baby.

Future research is recommended to understand care systems that promote the facilitation of SSC post CS and longitudinal research to determine the long-term effects of immediate or early SSC after CS.

Conflict of interest

No known conflicts of interest.

Author’s contribution

Jeni Stevens planned the research, collected and analysed the data and presented the findings as part of her PhD. She had the constant supervision, direction, assistance and feedback by Professor Hannah Dahlen, Professor Virginia Schmied and Dr Elaine Burns.

Ethical statement

Human Research Ethics Committee approval was received from Nepean Hospital, Study No. 13/47-HREC/13/NEPEAN/102 on 22nd October 2013 and Western Sydney University, Study No. H10482 on the 11th December 2013.

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5.3 Chapter conclusion

This chapter presented data related to how health professionals and the broader environment impact the provision of SSC in the OT and recovery in a paper titled *Who owns the baby? A video ethnography of skin-to-skin contact after a caesarean section*. The data showed evidence that the mother was essentially divided into three which were all ‘owned’ by different health professionals. This division inherently aided the physical separation of the mother and baby and facilitated the midwife to gain ‘ownership’ of the baby. Midwives, who were influenced by the environment and external pressures, either facilitated or obstructed maternal-infant contact including SSC. Health professionals enabled mothers to regain the ‘ownership’ of their baby by understanding their desire for and facilitating maternal-infant contact. The next chapter will present the finding’s related to what contact women want with their baby in the first two hours after a caesareans section.
Chapter Six: What women want and what health professionals can do

6.1 Introduction

The published papers in Chapters 2, 3, 4 and 5 presented the literature review, the methodology, and the analysis of the observations and staff interviews/focus groups and some data on the women’s experience. Chapter six reports on data collected in the women’s interviews at around six weeks postpartum. Women recalled how they felt during their preceding caesarean section/s and described their latest birthing experience which was observed for the study. They also highlight what they wanted regarding contact with their baby in the first hours after their CS. This chapter also presents data from the health professionals interviews and focus groups that highlighted their knowledge about SSC and recognition that women wanted to stay with their baby. It also includes observational data where health professionals enabled women to receive the contact they wanted with their baby. The key themes in this section highlight how little control women have over their own baby, their own desire for contact with their baby and how individual health professionals can facilitate this contact. This data will be published as a paper following submission of the thesis.

6.2 Women stated: I wanted my baby

Women in this study made clear that they wanted their baby to stay with them after their CS. They commented that at their preceding births that they felt disconnected from their newborn. Some women highlighted that they still struggled to have the desired connection with their baby during this birth. When their baby was born women stated that it was important that
they got to check out, visualise their newborn to ensure that they were fine, that they were complete. When they had SSC and stayed with their baby they stated, ‘it felt right’. SSC helped them to feel connected with their baby. When providing SSC some women still had concerns about the safety of the baby and occasionally requested the removal of the baby due to feeling unwell, however they still desired SSC. During this research, some health professionals recognised that women wanted to stay with their baby and to have SSC, so they found ways to ‘make it happen’. Individual health professionals stood out in this research. They went outside their normal role to help facilitate SSC.

**Figure 2. What women wanted**

6.2.1 Women stated: I felt disconnected

During the interviews at around six weeks postpartum, the women in this study recalled their caesarean/s preceding this recent CS observed for the study. They described feeling disconnected from what was happening and they also expressed that they struggled to
connect/bond with their baby. This clearly influenced what they wanted to have happen during this birth.

Women stated that they felt ‘out of it’ when they had their preceding caesarean/s. They discussed how this feeling had affected their ability to bond with their baby. Julie, when she had a general anaesthetic during her preceding CS, she stated that she had no idea what was happening “I had the caesar (caesarean section) at 8:30 at night ... I can't remember anything else until the next day... I had no idea she was here” (Julie Interview). Likewise, when Mary had a general anaesthetic during her preceding CS, she stated “I don’t remember a lot” (Mary Interview). Similarly, when the women had a spinal anaesthetic during their preceding CS they also recalled feeling ‘out of it’: “It was literally like, almost an out-of-body experience ... I was gone” (Belle Interview). Women commented that being ‘out of it’ affected their ability to connect with their baby and contributed to them feeling guilty:

“I was so doped up the first time around ... I’d literally probably had about 2-3 hours sleep in 39 hours ... I've always felt a little guilty that I didn't have the mum moment. I didn't have the, 'Oh my god I'm a mum!' You know, instant love, that sort of thing”

(Belle Interview)

And the trauma of their preceding birth affected their ability to bond with the baby:

“I didn’t get to bond with him, because I’d been through a traumatic birth, I didn’t feel that initial connection, so breastfeeding was like more of a chore than a bond”

(Ann Interview)

The delay in the initial contact with their baby during their preceding CS caused the women distress. It took many hours before they got to see their baby:
“It was nearly four hours before I saw my first son ... (I was) stressed, upset and confused. When you’re waking up, you had this thing and then it (the baby) was gone”. (Betty Interview)

Women stated that they felt like they were cheated out of time with their baby during preceding births:

“I was left in recovery by myself ... just felt really isolated from everything ... No one would tell me about the baby.... I felt ripped off. I carried him for nine months, went through 14 hours of labour and then everyone’s upstairs holding my baby and I’m down on a bed by myself ... I didn’t even get to hold him first, I felt like I was being cheated from it” (Lexi Interview)

This separation affected some mother’s ability to bond with their baby after preceding births:

“I had such a hard time boding with them. It was really hard. I would cry. I would get all these mixed emotions. The baby doesn’t love me. Maybe I shouldn’t have been a mum” (Pav Interview)

The women continued to voice their distress over not being the first to cuddle their baby after their preceding birth. Other family members got to hold their baby before they did:

“My mum and my sister got to hold my baby before me ... I was the mother, I had him for 9 months, I wanted that initial contact” (Chantale Interview)

“My first little boy ... they got him wrapped and everything and took him away with my ex-husband, who then let everybody hold him and cuddle him. I hadn’t met him yet ...that was the most traumatic thing I have ever been through in my whole life” (Charlotte Interview)
One mother, Jane, noted her distress that a midwife got to hold her baby before she did during her preceding birth. She described how this affected her bond with her baby:

“When I eventually got up to the room, my family members telling me that another woman, a midwife had already held my baby before I could. That was upsetting, I burst out in tears. I just didn’t feel like I had that bond with her … The midwife picked it (the baby) up and held it in the cradle position, so I felt that she might have got her scent instead of mine… she just wouldn’t take to me… it made me really depressed and sad” (Jane Interview)

6.2.2 Women stated: I struggled for connection

Women commented that during their current birth, the contact with their baby was better; however for some it was not ideal. Similar to Belle, Julie and Mary at their preceding CS, Lois stated that during this CS she felt blank, even when she was having SSC in the OT. Despite this, she still stated that she was happy that she was having SSC:

“felt a bit blank. I was a bit spacey, a bit nowhere … I was happy that he was there, I think I was trying to fight back some tears too because I was just relieved that he was happy and that he was healthy. I don’t know, I feel horrible but I just felt a bit nothing” (Lois Interview)

Lexi talked positively and negatively about the contact she had with her baby. She got to spend time cuddling her baby during this CS in the OT, however she did not have the opportunity for SSC and the midwife took him away to the postnatal ward:

“I still felt like I was missing out. I don’t think that will ever change but it felt a lot better than what it did because I got to see and spend time with him before they took him” (Lexi Interview)
Likewise, Tara, who had SSC in the OT during this birth, described how her baby was taken to the postnatal ward with her partner soon afterwards and in the interview she talked about how she needed her baby to remain with her:

“Just having him with me, it felt natural. But then when he left, it didn’t feel natural. I felt like I was missing him straight away. I needed to be close to him... I felt like I was welling up a bit, but, because I just needed him to be with me, and he wasn’t there” (Tara Interview)

6.2.3  Women stated: I wanted to know everything was fine

There were numerous comments that indicated that mothers wanted to see their baby naked. When asked what they want they stated “Well, to see her naked, that would be a big thing. Just to see what she looks like properly” (Britta Interview). Women didn’t want their baby wrapped during this birth “When they passed him he’s all wrapped up, all I see is his face... it’s good to be there and see everything. Make sure he’s got ten fingers and ten toes” (Lexi Interview). Seeing the baby helped them connect with their baby “His eyes. I kept contact with his eyes straight away. His fat little body. He was gorgeous. As weird as this is going to sound, it’s like I already knew him. It was like I’ve known him forever” (Ann Interview).

Women need to check out their baby and ensure that they are physically perfect during this birth:

Have they got ten fingers and ten toes and everything’s there?” (Elsa Interview)

“Just to know that they’re perfect... the old saying five fingers, five toes to look at. I don’t know there’s something about it” (Charlotte Interview)

“While baby was on me I felt her feed and I felt her hands. I could do it straight away ... I knew she was all together” (Marge Interview)
“This sudden feeling of relief that it’s okay. They’ve got all their fingers and toes and everything’s fine” (Pav Interview).

SSC enabled women to check out their newborn and connect with them during this birth. Michelle stated that this time she could:

“Check him out straight away and see him straight away. That skin-to-skin is just beautiful. He’s spent so long with you and then you finally get to see him. You don’t want to be wheeled away” (Michelle Interview)

6.2.4 Women stated: It felt right

The women interviewed said it felt right when their babies stayed with them and they could have SSC during this birth. Being able to stay with their baby encouraged an instant bond:

“It was actually quite overwhelming. I’d never felt that much love for anybody in my life... It was like my first bond and it was beautiful ... I think (it was) because I got to see him straight away, it was just that initial contact” (Ann Interview)

There was no doubt that women wanted SSC with their baby during this birth. Lois stated that she liked SSC better than the baby being wrapped because “I just like that closeness and I feel like you get that bond straight away ... I think it’s really important ... It’s that energy that you can feel” (Lois Interview). When SSC was initiated in the OT during this CS, women caressed their babies, kissed them and made comments that indicated they were bonding with their baby “It’s so, so nice...I’m so in love ...He’s so beautiful and warm” (Layla Video); “Oh hello beautiful boy ... No one is going to take him away from me now” (Jane Video). Julie stated in her 6 week interview that SSC in the OT during this birth was “good for bonding and also for the mother to prevent them from getting upset or being
traumatized, for some people don’t like caesars (caesarean sections), so it’s nice to have the baby with you”.

SSC increased the sense of togetherness that women craved during this birth:

“You just felt more close, connected ...your bodies are together. There's nothing, there's no barriers in between you. You just feel elated. You've brought this thing, this human into the world and he's yours, he's a part of you. It feels like he's a part of you still” (Betty Interview)

“Everything I could ask for, like having him skin-to-skin in the operating theatre, you know, like made my day.... like couldn’t be any more happy than I am at the moment. I didn’t think it would happen having [him] on my chest ... I’m just overwhelmed and happy about it” (Jane Film)

“It’s just the closeness you get. I don’t think you can get any closer than skin-to-skin and having the baby just feeling you and touching his hands and cuddling his feet, just that closeness. It’s indescribable the feeling that you get, but I think it’s just such an amazing emotional journey that you two can go on and nobody can change that and take it away from me” (Chantale Interview)

Women also felt privileged to be able to have SSC in the OT during this birth “I haven’t heard any stories about skin-to-skin contact inside (the operating theatre), so I feel so lucky that they were like willing to let me do skin-to-skin” (Jane Film). When Mary got SSC in recovery after this CS she stated “I just felt more natural like it gave you that element of bit more control and it gave me the feeling that it was a bit more natural, it wasn’t just clinical like we cut you open, take him away” (Mary Interview).

One woman championed that all women should be able to stay with their baby.
“I think women should be given the right to have their baby straight away. I think that’s an important point and having that skin-to-skin, one-on-one as much time as you possibly can in those first initial moment … that time together and that bonding just established and amazing relationship” (Chantale Interview)

6.2.5 Women stated: I felt apprehensive

When having SSC during this CS, some of the women voiced their concerns about the safety of the baby when they held them. A couple of women were concerned they may drop the baby because their arm was numb during this CS. Lois talked about how she couldn’t feel her arm when she was holding her baby “I was a bit panicked that I might drop him. I think someone must have been holding him as well” (Lois Interview). Others, during this birth, were concerned that they may drop the baby because they were slippery; however, they also knew that the baby was safe because their partner was also holding their baby:

“I was scared I was going to drop him. But I knew Jax was right next to me and would not let me drop him“ (Tara Interview).

“I was just kind of relying that my husband had him or the midwife kind of had him at that point” (Sharlene Interview)

Other women also talked about feeling unwell while having SSC during this CS. When discussing why her baby was moved from her chest, Ann stated “I asked for that to happen. I felt like I was going to be sick” (Ann Interview).

Despite these concerns, most of the women stated that they still wanted SSC during this birth even though they were feeling unwell. Julie talked about how she felt a little claustrophobic “I think it’s just because you feel yucky from the medicine from the Caesar (caesarean section) but it’s nice having them on you than if they were to be taken” (Julie Interview).
Tara stated how she felt that she could not breathe properly during this CS, however she still wanted SSC because “It kept me a lot calmer. It calmed me down while he was with me and then when he left I had to really concentrate on my breathing to stay calm” (Tara Interview).

6.2.6 Health professionals made it happen

When going through the observational data it was observed that many health professionals circumvented the hospital system to provide SSC in the OT, even though at the time of the research it was common for women to have SSC with their newborn in recovery, but not in the OT. Thirteen midwives initiated maternal/newborn SSC in the OT, one obstetrician enabled immediate SSC and one anaesthetist encouraged and facilitated SSC in the OT. Therefore, out of the 21 cases, 15 women had SSC with their baby in the OT, even if it was only for a short period of time.

Health professionals stated in the focus groups and interviews that the benefits of SSC for newborns include the maintenance of their temperature, respiratory and heart rate; that it settles neonatal respiratory distress and it improves the newborns microbiome. They also stated that SSC has benefits for the mother, including improving the bond with their newborn, reducing their anxiety and it helps them establish breastfeeding. There was also a perception that SSC reduces the need for extra maternal medication. An anaesthetist stated that “You could argue that the presence of the infant might decrease the requirement for supplemental analgesics” (Anaesthetic 1 Interview) and related this to the baby distracting the mother from what is happening. Another anaesthetist agreed and went further to say that “Likewise with nausea, they can feel quite eek, and then with the baby there to distract them, often that minimizes the medication you might have to give them for that” (Anaesthetic 2 Interview).

One manager also noted that SSC also reduced “the amount of things like synto (syntocinon) ...., or may not be required as well” (Manager 1 Interview).
Midwives recognised in the focus groups and during observations that mothers wanted to have SSC and that they want their baby to stay with them “They just love it”; “They’ll just burst into tears, ‘I didn’t get that last time. That’s what I was hoping for” (Caseload Focus Group). When Chantale was having SSC in the OT with her baby the midwife stated:

Midwife: “None of this letting your sister have first cuddles this time”

Chantale: Yeah, I got it *laugh* (Chantale Video)

When OT nurses were asked during focus groups if they thought mums want SSC in the theatre they stated:

“I think so, yes, definitely in theatre, straight up” (Nurse, OT 1 Focus Group)

“It’s their new bundle of joy ... so they want to spend as much time with it as they can ... You don’t want to let it go” (Nurse, OT 1 Focus Group)

Nurses that work in the OT and recovery noted that separation of the mother and baby is not reasonable “Why not recover with the baby on top of her... I don’t understand the separation of the baby being taken elsewhere... and the mother going ‘Where’s my baby? When do I see it’ (OT1 Focus Group). Other nurses noted that separation is contradictory to normal maternal instinct “You have this baby for nine months and then all of the sudden it’s taken off you... You feel like you’ve lost .... And then wanting to know the baby’s safe. It must be like a maternal instinct thing to have the baby afterwards” (OT 2 Focus Group). A neonatal doctor mentioned that separation may have a negative impact psychologically “when you separate the baby and there’s not much skin-to-skin contact, then we don’t know the long term psychological things which can happen to the baby ... we go against nature” (Neonatal Doctor 2 Interview). A manager also noted in an interview that keeping mothers and babies
together with SSC can reduce postnatal depression “Postnatal depression and all that reduced... everyone being together, no one is separated” (Manager 2 Interview).

Health professionals in interviews and focus groups also recognised that women want choice and their decisions supported. A manager stated:

“I think it is important that we ask the questions. What do they need for this birth? ... Do they want skin-to-skin? Do they want it in theatre? Do they want it on transfer?” (Manager 3 Interview).

Betty in her interview praised her caseload midwife and the midwives on the ward for respecting her choice “if you said something they would go along with, support you”. One midwife reflected on her practice during a focus group, stating that she could improve supporting women’s choices, even if the care is against normal practice:

“I was reflecting on my practice the other day. We can give them that choice. If you are happy to have baby and you don’t want me to be in the room and you feel safe, then all I have to do is document that you declined [to have the baby taken off them]” (Midwives 1 Focus Group).

Individuals made decisions (consciously or subconsciously) about what care they would provide. In this research three individual health professionals stood out during the observations because they provided care that was deviant or unexpected. The three exemplars below show that an individual health professional can positively make a difference for the people they care for. The exemplars also include reactions to the care in my reflections. Until institutional changes occur, individual health professionals can be an advocate for SSC in the OT and recovery. They can enable mother to ‘own’ their baby in this complex environment.
6.2.6.1 My obstetrician – The maternal assisted caesarean section

“That was really, really exciting to have him and deliver him the way that I did. Within the first, I think it was 5 minutes or so, I was breast feeding, got an opportunity to have that one-on-one contact. I just couldn’t stop looking at him. I was in disbelief a lot of the time. For that experience, I’d treasure forever” (Chantale Interview).

One obstetrician, used his position of power in the system to provide the first ‘maternal assisted caesarean section’ in the hospital for Chantale. This obstetrician made the difference for Chantale, who desperately wanted a normal birth, however could not have it due to complications. Chantale stated that he asked her “What sort of birth do you want? …What do you want to get out of it?” (Chantale Interview). She said that it was the personal contact that she missed, and that her sister and mum got to hold the baby before she did. After that he discussed the option of a ‘maternal assisted caesarean section’. The details of this procedure can be seen in my non-peer reviewed midwifery magazine article titled Maternal Assisted Caesarean Section (Appendix C) (Stevens, 2015). Chantale soon afterwards decided that this was the CS she wanted and it did improve her birth satisfaction.

I was excited to see this care “I felt good when I left – mega excited” (Chantale, Jeni’s reflection). Other health professionals appeared to be excited too:

“I got the impression that the educator was impressed with what happened. I don’t know why. I think it was just the way she was speaking to me – like it was ‘secret girl’s business’. Maybe there was a twinkle in her eye?” (Chantale, Jeni’s reflection)

On reflection the obstetrician stated “If people have a say, they will do better. I believe that’s a core reason why people feel better after maternal assisted caesar (caesarean section), is
that they are a participant in the process” (Obstetrician 1 Interview). This obstetrician was an advocate for Chantale.

6.2.6.2 My midwife – Newborn taken straight to the mother

“For this one they brought my baby round to the side. I saw her full on, not just looking straight up at the genitals. It was lovely. Just having her on me. I can't describe how silky smooth she felt. How delicious she smelt. It was just wonderful.”

(Marge Interview)

One midwife working in standard care, as described on page 42 of A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery (page 74), went outside the normal practice and took the baby straight to the mother, showed her the baby and then placed the baby in SSC. The midwife stated that she will leave the baby there “Because she was so well, I just let her stay with you” (Marge Video). As a midwife and despite knowing the WHO and UNICEF’s recommendation of immediate SSC after a CS if the mother is alert and active, I was pleasantly shocked to see the midwife take the baby to the mother and not the resuscitaire. “I was shocked and excited to see the midwife take the baby directly to Marge. I have never seen this happen before” (Marge, Jeni’s reflection). This midwife was the woman’s advocate and she safely circumvented the system and provided evidence-based care.

6.2.6.3 My anaesthetist – The anaesthetist that initiated SSC

“Because I’ve never had the baby on me before, I thought ‘They’re (not) going to do it because they've wrapped him up and everything like that.’ Then they were like ‘Do you want him on you like skin to skin?’ And I'm like ‘Are you serious?’ I'm like ‘Yeah, of course I want him on me.’ I think this is the best experience I've had. I won't forget it for the rest of my life. Each and every single little moment in there, you know? The
person (the anaesthetist) that was sitting beside me, she’s taking photos of me and my partner and baby being on my chest. I thought that I was just amazing” (Jane Interview)

One anaesthetist in this study went outside normal care and encouraged and facilitated Jane to have SSC and breastfeed on the OT table. She also took photos of this momentous occasion for them. On this occasion Jane’s midwife took the newborn to the resuscitaire immediately after birth and then gave the wrapped newborn to Jane to cuddle. Nearly 10 minutes later after Jane made comments about the baby being hungry the anaesthetist stated:

“There is no reason why you can’t try and breastfeed if you want. You don’t have to, but I can help if you wanted to” (Jane Video). Jane indicated that she would like that, so the anaesthetist and the midwife helped organise Jane and the baby so that SSC could be provided.

This came as a surprise to me, as a researcher and a midwife because many participants in the study stated that anaesthetists don’t like the provision of SSC in the OT “My heart nearly jumped out of my chest. What, the anaesthetist? The anesthetist wanted to start SSC? How exciting! Some anaesthetists love it!” (Jane, Jeni’s reflection). This anaesthetist listened to the woman and was her advocate in the OT.

6.3 Chapter conclusion

Chapter six presented the findings which demonstrate that women want to and enjoy remaining with their baby and believed that having SSC during this CS helped them connect and bond with their baby in the first hours after their CS. Health professionals also recognised that this was important to the birthing experience of the woman, the baby and
their support people. This chapter also highlighted that despite the challenges of providing this care in the OT and recovery, individual health professionals could make a difference by enabling this care. To provide further insight into this data, the above findings are compared to relevant external literature in the next chapter.
7 Chapter Seven: Discussion

7.1 Introduction

In this ethnographic study I aimed to observe and describe the barriers and facilitators of providing immediate or early SSC in the first two hours after a CS. I also aimed to explore the contact women had and wanted with their newborn in the same time frame. To obtain this information, 21 women, their support people and health professionals were filmed and field notes were collected for up to the first two hours after the women’s CS. The same women participated in one-to-one interviews at around six weeks postpartum and health professionals participated in focus groups and one-to-one interviews.

In this chapter I will integrate contemporary literature with results from the analysis, including the main theme ‘Who Owns the Baby - The juxtaposition of birth and surgery’ and further subthemes ‘Skin-to-skin contact is important to mothers’; ‘Organisational power’; and ‘Changing the surgical environment – Connecting birth and surgery’. The strengths and limitations of this research will also be highlighted and finally recommendations for further research will be considered.

7.2 ‘Who Owns the Baby – the juxtaposition of birth and surgery’

The overall theme that emerged from the analysis was ‘Who Owns the Baby – The Juxtaposition of Birth and Surgery’. The complex OT and recovery environments and the hospital system influenced immediate maternal-infant contact and subsequent connection in the first two hours after birth. The OT environment is compact, sterile and there are designated spaces where specific actions are performed. It is a place where safety and efficiency are prioritised. A woman undergoing a CS comes into the theatre as a whole
person, however she was soon divided. The obstetrician ‘owned’ her lower body, the anaesthetist ‘owned’ her upper body and then once the baby was born, the midwife ‘owned’ her baby. The set-up of the OT and ownership of the divided woman made it challenging to encourage maternal-infant closeness and provide SSC. Midwives in this study also felt the burden of having another woman on the CS list that needed to be supported immediately after the CS and staff felt obligated to complete their designated work within specific timeframes, so they could be perceived as efficient, even if it meant separating the mother and her newborn. There was also an underlying awareness of the potential danger in the surgical environment and fear related to the impact SSC could have on providing the essential care needed. Other researchers have noted this juxtaposition, with mothers reporting that they play “two roles—a birthing mother and a surgical patient” (Bayes et al., 2012, p. e903).

In this environment the newborn was often distanced from the mother and was viewed as a separate being who was not ‘owned’ by the mother. Women recognised that the OT and recovery were complex environments, however they wanted to seize this once in a lifetime moment to connect with their newborn within this space. Some health professionals in this research acknowledged this juxtaposition between birth and surgery and several acted to remedy it. If there was a basic connection or rapport between the mother and a health professional, the health professional found ways to manipulate the system to safeguard this maternal-infant connection. They helped the mother ‘own’ her own baby.

This study demonstrated that SSC in the OT and recovery is not as simple as just ‘doing it’. A newly published algorithm, the ‘Healthy Children Project’s Skin-to-Skin Implementation Algorithm’, was developed to highlight if SSC is being implemented as recommended by the WHO and UNICEF (Brimdyr, Cadwell, Stevens, & Takahashi, 2017) (Appendix A). SSC is recommended immediately after a CS when the mother is alert and active, and should occur continuously for at least one hour or until after the first breastfeed (Australian College of
Midwives, 2017; World Health Organization & United Nations Children's Fund, 2009). Data from my research was used in the Brimdyr et al. (2017) paper to demonstrate the effectiveness of the algorithm in highlighting where improvements in hospital practice are needed (Appendix A). The algorithm, when mapped against the participants in this study, showed that none of the participants received the recommended SSC (Brimdyr et al., 2017). Only one newborn was placed in immediate SSC with the mother and seven others had SSC within five minutes of birth. Hospital practices, routine care and lack of staff hindered the recommended length of SSC for seven of the eight newborns who had SSC within five minutes of birth, and the remaining newborn was removed from SSC on maternal request.

This algorithm will be beneficial because SSC is often not provided as recommended by the WHO and UNICEF. This is clearly demonstrated in the ‘SSC data/outcomes’ column in Tables 2-3 of my *Immediate or early skin-to-skin contact after a caesarean section: A review of the literature* publication (page 10) and in ‘SSC after CS Data’ column of Appendix K.

This research has shown that with collaboration and education, SSC can be facilitated in the OT and recovery, which is so important when promoting maternal-infant connection. The juxtaposition of birth and surgery can be reduced by: educating parents and health professionals, writing a protocol, encouraging clear communication, making small adjustments to equipment and providing continuity of care. Implementing these changes can facilitate cultural change and will likely result in more women receiving SSC in the OT and recovery as recommended by the WHO and UNICEF. This will now be discussed in more depth.

7.2.1 Skin-to-skin contact is important for mothers and infants

There are many evidence-based benefits of SSC for mothers and their babies after a normal birth (Moore et al., 2016) and the evidence for the benefits of immediate and early SSC after
a CS are increasing, as seen in Chapter Two of this thesis. The potential benefits of immediate or early SSC after a CS include:

- Physiological stability (Gouchon et al., 2010; Gregson et al., 2016; Kollmann et al., 2017; Nolan & Lawrence, 2009; Posthuma et al., 2017; Schneider et al., 2017; Schorn et al., 2015; Yuksel et al., 2015)

- Reduction in maternal pain (Crenshaw et al., 2012; Hung & Berg, 2011; Sundin & Mazac, 2015)

- Improving parent/newborn communication (Frederick et al., 2016; Velandia, Matthisen, Uvnäs-Moberg, & Nissen, 2010; Velandia, Uvnäs-Moberg, & Nissen, 2012)

- Improving newborn feeding outcomes (Armbrust et al., 2016; Brady et al., 2014; Crenshaw et al., 2012; Gouchon et al., 2010; Gregson et al., 2016; Guala et al., 2017; Heidarzadeh et al., 2016; Hung & Berg, 2011; Nolan & Lawrence, 2009; Schorn et al., 2015; Velandia et al., 2012)

- Improved maternal and newborn emotional wellbeing (Armbrust et al., 2016; Crenshaw et al., 2012; Finigan & Davies, 2004; Frederick et al., 2016; Gouchon et al., 2010; Hung & Berg, 2011; Nolan & Lawrence, 2009; Sundin & Mazac, 2015; Velandia et al., 2010)

- Improved organisation outcomes including a decrease in post-operative and postnatal stay and NICU admissions (Posthuma et al., 2017; Schneider et al., 2017)

This research did not aim to add to the evidence on these outcomes, however it did determine what the women in this study wanted regarding the contact they have with their baby after a CS. It is clear that women want SSC.
Before commencing this research, with the introduction of the provision of SSC in recovery, I noticed that women who received SSC, in theatre or recovery, came back to the postnatal ward with a different look on their faces. They appeared to be infatuated with their newborn. It was only when I saw this that I realised women who did not have their newborn with them arrived on the postnatal ward with ‘blank’ faces. Women in this research discussed how they felt ‘blank’ and ‘out of it’, they felt disconnected from the birth of their baby, and emphasised that they related this feeling to their inability to connect/bond with their baby. As discussed in the introduction, SSC triggers oxytocin and if the SSC is provided soon after a CS, the levels are significantly higher (Yuksel et al., 2015). Oxytocin also improves maternal responsiveness and bonding (Riem et al., 2011). This may explain why, when babies are removed from their mothers for an hour after planned CS, some women feel disengaged from their baby and appear indifferent to their cries (Bayes et al., 2012), hence the ‘blank’ look on their faces. Bayes et al. (2012) relates this dissociation to peritraumatic dissociation. Peritraumatic dissociation is a feature of post-traumatic stress disorder, and is identified as a failure to synthesise internal and external stimuli even when cognitive perceptual tools remain intact (Mattos, Pedrini, Fiks, & de Mello, 2016). Peritraumatic dissociation can occur at the time of the traumatic event and in the immediate (non-defined) period of time thereafter (Mattos et al., 2016). Some researchers suggest that women who decide to have a planned CS have low self-esteem and may have feelings of incapacity to be a mother (O’Reilly, Choby, Séjourné, & Callahan, 2014). Others comment that the diminished sense of control can negatively affect women’s birth experience (Hodnett, Gates, Hofmeyr, & Sakala, 2012). Guittier et al. (2014) stated that women who have CS experience sensorial deprivation in relation to their baby and it is possible that these feelings pre-empt this dissociation.
When interviewed around six weeks postpartum, women in this study repeatedly stated that during the first hours after their CS they wanted their newborn to stay with them and to have SSC. It is essential that the mother and newborn have ‘togetherness’ from the moment of birth (Bergman, 2014). SSC is the opposite of separation and is the biological norm for newborns (Bergman, 2014). Women reported the trauma of not having their baby stay with them and the distress they felt when other people had the first cuddles with their newborn. Birth trauma has been described as “The emergence of a baby from the body of its mother, in a way which may or may not have caused physical injury. The mother finds either the events, injury or the care she received deeply distressing or disturbing. The distress is of an enduring nature.” (Greenfield et al., 2016, p. 257). A woman’s subjective response to a form of psychological stress determines if she sees the event as traumatic (Greenfield et al., 2016). A CS is identified as a predisposing factor that can influence whether a mother sees her birth as traumatic, however the care that a woman receives is recognised as having a greater influence on the woman’s perception of her birth (Greenfield et al., 2016). There is also emerging evidence that between 1.7-9% of women report having post-traumatic stress disorder after childbirth, and they are more predisposed to getting post-traumatic stress disorder if they have a CS (Ayers, Bond, Bertullies, & Wijma, 2016; Simpson, Schmied, Dickson, & Dahlen, 2017).

Women in this study reported that they have continued guilt over not falling in love with their newborn instantly and they related this to the separation that happened immediately after birth. It is also known that having a CS may hinder maternal-infant bonding (Sockol, Battle, Howard, & Davis, 2014). The separation of mother and baby after elective CS can have a long-term negative impact on maternal-infant bonding (Bayes et al., 2012). Other research has shown that at 12-14 hours after birth, babies born by CS were observed to cry less than those born by vaginal birth when separated from their mother (Olza Fernández et al., 2013).
Some suggest that a reduction in crying is beneficial, however normal infant bonding behaviour includes crying in reaction to separation (Feldman, Weller, Leckman, Kuint, & Eidelman, 1999). Olza Fernández et al. (2013) stated that this lack of response could be an early sign of disconnection from the mother and may further be related to attention and memory disorders. Initial separation has been shown to reduce maternal repetitive caretaking interactions with newborns (Feldman et al., 1999). Another study showed evidence that women were significantly more likely to get depressed if they were unable to immediately hold their newborn after birth (Astbury, Brown, Lumley, & Small, 1994). Babies born by CS may cry less because the baby may be reflecting the mothers physiological reactivity as seen in a study of 12-14 month old infants by Waters, West and Mendes (2014).

This alteration in attachment behaviour may also be caused because the newborn does not have the increased sympathetic activation and catecholamine surge related to the stress of a vaginal birth (Olza Fernández et al., 2013). Evidence shows that the concentrations of epinephrine and norepinephrine are significantly lower in the umbilical artery of babies born by CS compared to those born vaginally (Agata et al., 1995). The sympathetic activation of the catecholamines epinephrine and norepinephrine may also be important for further neonatal adaptation (Irestedt et al., 1983).

When the babies were born, the women in this research talked about their intense desire to hold their baby, have SSC, and described their joy when they did. Other research has likewise documented the initial overwhelming desire for mothers to connect with their babies (Bayes et al., 2012). Further research that explored SSC in the OT noted that women want to hold their baby and have their partners present and involved (Frederick et al., 2016). Women expect to be supported and actively involved in taking up their mothering role prior to their baby being born by CS (Bayes et al., 2012), however, when it comes to the reality, women often are not given the opportunity to take on the mothering role.
To improve maternal childbirth satisfaction it is essential that health services and professionals provide care that protects the emotional well-being of the mother and facilitates maternal-infant bonding (Bayes et al., 2012). This type of care includes the provision of SSC. Previous research (Armbrust et al., 2016; Crenshaw et al., 2012; Finigan & Davies, 2004; Frederick et al., 2016; Gouchon et al., 2010; Hung & Berg, 2011; Nolan & Lawrence, 2009; Sundin & Mazac, 2015) and findings from this research confirm that immediate or early SSC helps improve maternal satisfaction with care. SSC can reduce women’s feeling “no more than an incubator” and mourning over the “lost moments of (her baby’s) life that we can never get back” (Bayes et al., 2012, p. e 906).

Women in this research recognised that there are barriers to providing SSC in the OT and recovery and that there is pressure on health professionals; however, they want their decisions about their birth and the immediate postnatal period to be supported. We should not underestimate the importance of SSC to mothers. Women want and need health professionals to facilitate this instinctual, innate and evidence-based care; however it is still often not prioritised in the health environment.

7.2.2 Institutional power

The CS rates in New South Wales (NSW) are steadily climbing (NSW Ministry of Health, 2017). The rate increased from 31.1% in 2012 to 32.4% in 2015, and 32.9% in 2016 (NSW Ministry of Health, 2016, 2017). When women’s bodies do not conform to the set medicalised understanding of normal birth, interventions that control the situation, like CS, are employed (Ross, 2013). To help reduce the increasing CS rate NSW Ministry of Health (2010) published a policy directive ‘Maternity- Towards Normal Birth in NSW’. Hospitals should look at ways to reduce the incidence of CS as this will reduce the risk of mothers being denied SSC and early initiation of breastfeeding (Linares et al., 2017). If a CS is
necessary, then health professionals and hospitals should provide mother-centred care during a CS, including SSC.

The OT is a medicalised environment where normal maternal-infant interaction does not traditionally occur. Human responses are shaped by power differentials in the structured medicalised environment. In this study the OT and recovery environment and the hospital system did not prioritise mothering. Health professionals reflected how complex and potentially dangerous CS birth is and voiced concerns about bringing SSC into this environment; however, on a personal level, health professionals also recognised the importance of SSC and keeping mothers and babies together.

There is discordance between NSW Health directives and the care that is provided in hospitals. A policy directive from NSW Ministry of Health (2011) states that health care settings should support breastfeeding by implementing the BFHI, which includes the provision of SSC in the OT, however as of the 18th December, 2017, six years after the publishing of the directive, only ten NSW hospitals are accredited (Australian College of Midwives, 2017). Another guideline encourages active partnering with patients, including being “respectful of and responsive to their individual patient preferences, needs and values” to optimise the peri-operative journey. The guideline further highlights that the success of the peri-operative process includes patient’s perspectives of the care provided (NSW Ministry of Health, 2018, p. 29). The Australian Operating Theatre Efficiency Guidelines also states that OT health professionals need to be willing to try new approaches that will improve patient experiences in the OT, however performance is measured on efficiency, safety, productivity, cost and clinical outcomes (Agency for Clinical Innovation, 2014). Even though the aim is to improve the patient experience in the OT, what the newborn and mother emotionally need are not the main focus due to the inherent safety concerns in this highly medicalised environment.
The medical model of care in Australia is dominant and it influences midwifery care (Newnham, 2014). Healthcare is often shaped to avoid an unlikely misfortune, a one-policy fits all approach limits maternal choice and the flexibility for midwives to provide patient-centred care (Newnham, 2014; Scamell, 2011). Fear around birth has increased over recent years, especially in maternity services where the mother and her baby are both clients (Scamell, 2011). The medical profession are “convinced that altering natural processes makes them better – more predictable, more controllable and therefore safer” (Davis Floyd, 2001, p. S9). Despite the fact that routine procedures offer the illusion of safety and reduce the fear of death, in reality “they often generate more problems than they solve” (Davis Floyd, 2001, p. S10).

Midwives who work in hospitals are committed to aligning themselves with normal childbirth, however their position is juxtaposed with a system that focuses on health surveillance and is risk averse (Scamell, 2011). Midwifery clinical practice does not always reflect the care that they hope to provide (Porter, Crozier, Sinclair, & George Kernohan, 2007). Midwifery based woman-centred care is hard to provide because midwives have to juggle their responsibilities to their employer, their colleagues and at the same time protect their own needs, including avoiding possible litigation (Hood, Fenwick, & Butt, 2010; Stapleton, Kirkham, Thomas, & Curtis, 2002). Furthermore, midwives are expected to, and will often follow doctors’ orders, to protect themselves against criticism and punishment even though this care can disempower the women they care for (Hood et al., 2010; Hussein, Dahlen, Duff, & Schmied, 2016; Stapleton et al., 2002). This creates “somewhat of a disconnection between how midwifery is represented in much of literature and what many actually do in their day-to-day working lives” (Scamell, 2011, p. 990).

Health professionals state that hierarchy in health systems sanction the control that health professionals have over their clients (Bohren et al., 2015). Women report that that health
professionals provide good technical support however, they are removed from the ability to make any decisions about their childbirth (Bohren et al., 2015). In the medical model women are not viewed as active participants in their birth and women often give themselves over to the health professionals (Hussein et al., 2016). One woman in the thesis by Ross stated “With the doctor, you are the patient and they are the expert, and you don’t really have a chance to be informed or involved. You don’t need to be” (Ross, 2013, p. 177). Like some midwives, women also state that they are unable to express their opinions due to fear of reprisal leading to unfair treatment (Bohren et al., 2015). To empower birthing women, health professionals need to respect them and view them as capable authorities in their own care (Ross, 2013). Women state that being given time to process the information they are provided will help them make informed choices and it will improve their birth satisfaction (Ross, 2013; Spaich et al., 2013).

Senior bureaucrats in NSW are pushing to make humanistic improvements to health care (NSW Ministry of Health, 2010), however they are difficult to enact in health facilities (Davis Floyd, 2001). When humanistic care is provided, health practitioners recognise that the mind and body cannot be separated (Davis Floyd, 2001). Humanistic care is characterised by intentionally connecting with clients, listen to them and treating them with respect, consideration and kindness (Davis Floyd, 2001).

Mothers and babies physiologically need to be together after birth, including after a CS (Crenshaw, 2014). The routine separation of mother and baby, and the lack of SSC after a CS, can be harmful because it can physiologically put the mother and baby at risk, it can decrease maternal-infant bonding and decrease maternal responsiveness to her baby (Crenshaw, 2014; Hubbard & Gattman, 2017). SSC makes CS more humane (Barbero, Madamangalam, & Shields, 2013), however it is important to support the woman’s choice of
contact with their baby, whatever that may be. Health professionals need to actively enable women to make their own individual CS birthing choices (Leap, 2016).

7.2.3 Changing the surgical environment – Connecting birth and surgery

The paper *A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery* (page 74) highlights the facilitators and barriers of providing SSC in the OT and recovery. It highlights that SSC can be provided in this environment if knowledge about SSC is improved, if staff are made available to provide this care and with the implementation of small adaptations of the use of equipment. Chapter 6, also highlights that individual staff members can improve the implementation of SSC. Implementing these recommendations can change the care that is provided in the surgical environment, and subsequently help safeguard the safe physical and emotional connection of birth and surgery.

7.2.3.1 Shortage of midwives

In this study the shortage of health professionals, especially midwives, hindered the provision of SSC after a CS. Many other studies have also reported on the shortage of health professionals available to provide SSC in the OT (Boyd, 2017; Crenshaw et al., 2012; Koopman et al., 2016; Nolan & Lawrence, 2009; Stone et al., 2014; Zwedberg et al., 2014). Adequate staffing levels are needed to increase the consistency of SSC being provided (Hubbard & Gattman, 2017).

In 2011, the Commonwealth Department of Health recognised that there was an existing and worsening shortage in the nursing and midwifery workforce (Health Workforce Australia, 2011). Data showing the age of the midwifery workforce published by the Department of Health (2009) indicated that many of the midwifery workforce is likely to be have retired by now, or are just about to retire. Even with efforts to increase the midwifery workforce, the current shortage restricts the amount of best practice care provided. It is important that
strategies are put into place to improve the retention of the midwifery workforce (United Nations Population Fund, International Confederation of Midwives, & World Health Organization, 2014) and to find new and innovative ways to address these shortages in the meantime.

Despite a shortage of midwives in the maternity unit, my research showed that the contact between mothers and babies improved on average if the woman had continuity of midwifery or obstetric care. This increase in SSC may have been related to, as midwives in this study stated, the fact that working in this model of care facilitated the midwife to stay with the woman and her newborn in the OT and recovery, as they generally did not have the pressure to look after another woman. However, it is also likely to do with the fact that when relationships are formed in this model, care providers become more invested in the women and her needs. Continuity of care is one of the dimensions of patient-centred care or woman-centred care which is known to improve the quality and safety of the care being provided, it decreases the cost of care and improves patients’ satisfaction and experience (Australian Commision on Safety and Quality in Health Care, 2011). A recent Cochrane review showed that women who are cared for under a midwifery continuity of care model have increased satisfaction with their birth experience, however this review did not single out the care of women who undergo a CS (Sandall, Soltani, Gates, Shennan, & Devane, 2016). Under continuity of care models, women are also supported to make decisions about their care and they are emotionally supported (Forster et al., 2016). Midwives in this study agreed that the increase in maternal-infant contact may be related to the fact that the women have more input into decisions about their care in a continuity of care model. Continuity of care helped the midwife to know what care the women want and therefore facilitate it, including SSC.
7.2.3.2 Implementation and needs for education

This research highlighted that many parents and health professionals did not understand the importance of SSC and why it should be implemented soon after birth. Similar findings have been reported elsewhere (Boyd, 2017; Hung & Berg, 2011; Koopman et al., 2016; Zwedberg et al., 2014). The lack of health professional knowledge about SSC and education about their expected role when providing SSC hinders the provision of SSC after a CS (Boyd, 2017; Koopman et al., 2016; Zwedberg et al., 2014). This lack of knowledge leads to health professional resistance, and fear of change (Boyd, 2017; Hung & Berg, 2011).

Health professionals need to be adequately educated prior to providing parental education (Turenne, Héon, Aita, Faessler, & Doddridge, 2016). Parent education is positively influenced by health professionals (Turenne et al., 2016). If educators have a gap in their knowledge, it is likely they will provide inadequate education to clients (Swiger, 2015; Windorski & Kalb, 2002). It is important that health professionals, especially midwives, have up-to-date education about the benefits of SSC and how to overcome the complexities of providing it in the OT, so that they can adequately educate parents about the same.

Midwives in this study recommended that midwives discuss with parents, especially with mothers, about the SSC before the day of their CS. Despite the increasing use of the internet for a source of maternal pregnancy and birth information, women still consider their conversations with midwives as an important source of information (Grimes, Forster, & Newton, 2014). If women are booked to have a CS, OT and recovery health professionals also recommended parental education on how to maintain the sterile field whilst providing SSC. Koopman, et al. (2016) and Zwedberg et al. (2014) likewise recommended providing parental education during the antenatal period to improve the implementation of SSC in the OT. To improve parental education about SSC, one hospital gave out a brochure to parents about what to expect and the benefits of SSC during a pre-operative appointment; however it
was not determined if this was a successful form of education (Sundin & Mazac, 2015). Time is needed to provide information and education about SSC in the OT (Barbero et al., 2013). Parent education is important as it is influential in the success of SSC being implemented in the OT and recovery.

To improve this knowledge, further staff education on the benefits SSC of and how to safely provide SSC is recommended. Some participating health professionals recommended writing a protocol to facilitate the provision of safe SSC after a CS. A protocol could be written to ensure that SSC is provided as per the WHO and UNICEF’s recommendations. Many of the facilitators that are highlighted in my paper *A juxtaposition of birth and surgery: Providing skin-to-skin contact in the operating theatre and recovery* (page 74) could be addressed when writing a protocol. The protocol could address how to reduce the pressure to complete procedures in specific timeframes, improve communication, effectively utilise the surgical space and reduce the risk of equipment hindering immediate or early SSC after a CS (Stevens et al., 2014). Bayes, et al. (2012) also recommended that hospital protocols provide strategies for optimal mother-infant bonding.

The literature review in Chapter 2 of this thesis highlighted the success of using programs to implement the SSC in the OT. These programs utilised a multidisciplinary approach to amalgamate the skills and knowledge of many health professionals to write protocols on how to safely provide SSC after a CS. These programs facilitated communication so that potential safety issues could be addressed prior to implementation or on later evaluation of the implemented care. The programs include: the Plan, Do, Study, Act (PDSA) implementation model (Brady et al., 2014; Hung & Berg, 2011); a Practice, Reflection, Education and Training combined with Ethnography for Sustainable Success (PRECESS) Immersion method (Crenshaw et al., 2012); the Iowa Model of Evidence-Based Practice implementation model (Boyd, 2017; Stone et al., 2014); the John Hopkins Nursing Evidence-Based Practice
implementation model (Grassley & Jones, 2014); a nursing intervention (NIMS) protocol (Nolan & Lawrence, 2009); a multidisciplinary approach model (de Alba-Romero et al., 2014; Sundin & Mazac, 2015); and basing the implementation on the ‘Natural Caesarean’ designed by Smith, Plaat and Fisk (2008) (Schorn et al., 2015). Policies are written to meet the institutional needs of efficiency (Anderson, 2017), however policy makers also have the responsibility to write policies that enhance person-centred care (Moore et al., 2017). Once the protocol is written, education on the written protocol will help ensure that health professionals know how to safely provide SSC and it will help with successful facilitation (Brady et al., 2014; de Alba-Romero et al., 2014; Grassley & Jones, 2014; Hung & Berg, 2011; Nolan & Lawrence, 2009; Sundin & Mazac, 2015). Implementing one of these programs has the potential to improve the birth experience of women who undergo a CS, improve safety of the woman and baby undergoing this care and make this process more efficient; therefore it helps address some of the Operating Theatre Efficiency Guidelines performance outcomes (Agency for Clinical Innovation, 2014).

Writing a SSC protocol and providing education on it can improve SSC implementation because it reduces the fear of the unknown (Barbero et al., 2013; Hubbard & Gattman, 2017). Education, encouragement and reinforcement of the protocol helps change health professional attitudes from SSC being viewed as an intrusion in practice to being a wanted adaption to care (Barbero et al., 2013). It is also important that there is strong leadership to facilitate change in practice (Moore et al., 2017).

7.2.3.3 Individuals making the difference

Chapter 6 highlights how some health professionals went beyond the normal care expected to ensure that the woman had the contact they wanted with their baby. Even though they surpassed the expected care, they were actually following the principles outlined in their professions ‘code of conduct’. Doctors, nurses and midwives are expected to respect and
empower the women they care for, be their advocate, respond to their psychological, physical and spiritual needs and work to eliminate human rights violations (Australian Medical Association, 2016; International Confederation of Midwives, 2017; Nursing and Midwifery Board of Australia, 2018a, 2018b).

If doctors, nurses and midwives were truly woman-centred as recommended in their codes of conduct, women would get the care they want after a CS. This is important because the way that care is provided has a significant impact on the women’s birth experience (Lewis, 2015; NSW Ministry of Health, 2014; Raynor, 2010). Previous research has shown that women are 88% less likely to experience post-traumatic stress disorder at six weeks postpartum if they are able to ask questions during birth, helping them feel a sense of control (De Schepper et al., 2016). It is recommended that if there are options in care, the health professional should communicate these options clearly, so that women can make informed choices during the birthing process (Katie Cook & Loomis, 2012; Jackson, Land, & Holmes, 2017).

There are many things that influence health professionals being an advocate for the people they look after. A key factor in health practitioners becoming a client advocate is connecting with the client (Davoodvand, Abbaszadeh, & Ahmadi, 2016; Negarandeh, Oskouie, Ahmadi, Nikravesh, & Hallberg, 2006; Tomaszewski-Barlem et al., 2017). Patient advocacy is also facilitated if the health professional looking after the patient has a good connection with, and the same goals as, the other health professionals in the environment in which they are working (Negarandeh et al., 2006; Tomaszewski-Barlem et al., 2017). Furthermore, to be an advocate, the health professionals need to know what the client wants and accept their right to make informed choices (Choi, 2015; Negarandeh et al., 2006).

Until institutional changes occur, individual health professionals can be an advocate for SSC in the OT and recovery. Patient advocacy can be achieved by setting aside your own
personal beliefs, listening to the patient, by being flexible, empathetic and self-motivated to meet the clients’ needs (Choi, 2015). Being an advocate can lead to increased job satisfaction and it can also improve the clients’ sense of control and satisfaction (Choi, 2015). Routines do not need to prevent women from taking up their maternal role (Bayes et al., 2012). Champions for initiatives are key to implementing organisational change, however these champions also need to have influence in the organisation (Batras, Duff, & Smith, 2016). Ultimately, the culture of organisations needs to be conducive to patient advocacy so that health professionals can provide the support that is needed without fear of repercussions (Choi, 2015). This will enable mothers to ‘own’ their baby in this complex environment.

7.3 **Strengths and limitations of the study**

This study highlights the challenges of providing SSC in a large metropolitan hospital in the OT and recovery; however, it also provides evidence of how to provide this care in this complex environment. This study brings a holistic view of the implications of providing SSC in the OT and recovery, as it has involved viewing and interviewing all relevant ‘players’, including a broad range of health professionals and the most important people in the picture, the mother, her support people and her newborn. It also analyses how the health care environment impacts the care that is given. This study also highlighted that video footage is a valuable source of data that can be visualised and analysed limitlessly. The in-depth data video footage provides is pivotal in highlighting potential improvements in practice.

As with every study, there are limitations in this one. This study involved a small cohort of women and health professionals in one hospital in Australia. This research only involved women that were having a planned CS, full-term healthy infants and English-speaking participants, therefore the results may not be representative of all women undergoing a CS.
Furthermore, it is important to consider that the participants were being observed, because being observed can impact and alter the care that is being provided.

If the research methodology is replicated, the results may differ because each hospital, OT and recovery have unique challenges and cultures. Furthermore, what women want in regard to the contact they have with their newborn may differ.

### 7.4 Recommendations for future research

During this research I noted that there was minimal research and no uniformity within research publications about SSC after a CS. There is no conclusive evidence for the outcomes of SSC after a CS.

To optimise the meta-analysis of future research I recommend the use of the ‘Healthy Children Project’s Skin-to-Skin Implementation Algorithm’ ([Appendix A](#)). This algorithm highlights the recommendations for SSC, including SSC after a CS and alerts researchers and health care providers about where they can improve care.

To address concerns about the provision of SSC after a CS, further innovative research is needed on:

- Overcoming institutional barriers
- Overcome staffing concerns with the provision of this care
- Optimising health professional education
- Optimising maternal and support people’s knowledge
- Baby’s ability to go through the nine phases of SSC as defined in Widstrom et al. (2011) after a CS
- Protecting the birth space in the operating theatre and recovery
- What women want in the first two hours after a CS
- What partners want in the first two hours after a CS
- Short and long term outcomes for breastfeeding
- Short and long term infant health outcomes
- Short and long term maternal health outcomes
- Safety with the provision of SSC
- Maternal CS infection rates
- Newborn microbiome
- Short and long term maternal and infant bonding outcomes
- Impact on the family unit

To start addressing these points, I have just recently commenced further research on maternal satisfaction with care in the first two hours of birth.

### 7.5 Impact

The worldwide impact of this PhD research has already seen. The WHO and UNICEF in the latest update of the Baby Friendly Hospital Initiative implementation guidance (WHO & UNICEF, 2018) quoted my literature review stating:

> **Immediate skin-to-skin care and initiation of breastfeeding is feasible following a caesarean section with local anaesthesia (epidural)** (Stevens et al., 2014).

This guidance will be used across the world to support optimal clinical care for mothers and their babies. Furthermore, my other research papers offer direction on how to make practical and organisational changes so that SSC can be safely provided in the complex operating theatre and recovery environments after a CS.
Whilst doing my research I have formed strong national and international research and professional collaborations. I have presented at many local, national, international and online conferences. I have performed collaborative workshops with people from Australia, the United States of America and England and have had the opportunity to write a paper with people from the United States of America and Japan (Brimdyr et al., 2017). I have also had a blog written about my research (Health Children Project Center for Breastfeeding, 2017).

This PhD research has had an impact on my career. Since starting my PhD I was offered a Clinical Midwifery Consultant in Infant Feeding position and I have utilised the information from my literature review and my research to collaboratively write a procedure on the provision of SSC in the OT and recovery for this Local Health District in NSW (Appendix X) which is currently being implemented. I have also been offered a secondment position within the Local Health District to perform research. I have initiated research on “Maternal Satisfaction with Care After a Caesarean Section”; “Maternal Access to Antenatal Breastfeeding Education”; “Re-lactation or Inducting Lactation Without Birthing” and “Infant Follow-up After Being Identified Having a Tongue Restriction”. I am also supporting a fellow researcher, on their research project “Comparison Between Peppermint Water and Expressed Breast Milk for Nipple Damage”.

7.6 Conclusion

This research highlighted the juxtaposition of providing SSC in the medicalised environment of the OT and recovery, and the subsequent effect on the mother’s ability to ‘own’ her own newborn during this time. Women stated that they wanted to remain with their baby after their CS, that SSC increased the closeness that they craved, and it helped them bond with their baby. Considering SSC is important to women, it is important for health professionals
to be their advocate and find ways to provide this care. The inherent barriers in providing this care, including organisational priorities, can be overcome. SSC can be facilitated safely in the OT, and recovery, by implementing continuity of care and by collaboratively writing a protocol. The protocol should be directed to meet the individual institutional needs whilst ensuring that SSC is provided as per the WHO and UNICEF’s recommendations. It is important to address in the protocol how to reduce the pressure to complete procedures in a specific time frame, how to improve communication pathways, how to best utilise the space in the OT and recovery and how to reduce the risk of equipment in the OT from hindering immediate or early SSC. Health professional and parent education on the importance of SSC and their role in its facilitation is then crucial to ensure SSC is provided safely in this complex environment. Implementing these could reduce the juxtaposition of birth and surgery and facilitate cultural change. Individual health professionals can also positively effect change, even if it is with one mother at a time. This can increase the numbers of women receiving SSC in the OT and recovery.
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Appendix A. Publication: An implementation algorithm to improve skin-to-skin practice in the first hour after birth

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Abstract
Evidence supporting the practice of skin-to-skin contact and breastfeeding soon after birth points to physiological, social, and psychological benefits for both mother and baby. The 2009 revision of Step 4 of the WHO/UNICEF “Ten Steps to Successful Breastfeeding” elaborated on the practice of skin-to-skin contact between the mother and her newborn baby indicating that the practice should be “immediate” and “without separation” unless documented medically justifiable reasons for delayed contact or interruption exist. While immediate, continuous, uninterrupted skin-to-skin contact with mother in the first hour after birth, babies progress through 9 instinctive, complex, distinct, and observable stages including self-attachment and suckling. However, the most recent Cochrane review of early skin-to-skin contact cites inconsistencies in the practice; the authors found “inadequate evidence with respect to details...such as timing of initiation and dose.” This paper introduces a novel algorithm to analyze the practice of skin-to-skin in the first hour using two data sets and suggests opportunities for practice improvement. The algorithm considers the mother’s Robinson criteria, skin-to-skin experience, and Wildstrom’s 9 Stages. Using data from vaginal births in Japan and caesarean births in Australia, the algorithm utilizes data in a new way to highlight challenges to best practices. The use of a tool to analyze the implementation of skin-to-skin care in the first hour after birth illuminates the successes, barriers, and opportunities for improvement to achieving the standard of care for babies. Future application should involve more diverse facilities and Robinson’s classification.

KEYWORDS
algorithm, birth, caesarean, skin-to-skin, vaginal

1 INTRODUCTION

The WHO/UNICEF Baby-Friendly Hospital Initiative integrates the “Ten Steps to Successful Breastfeeding” into practice. A 2009 revision offered specific guidance for Step 4, practices in the first hour after birth: 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 are medically justifiable reasons.” (World Health Organization & UNICEF, 2009, p. 34). The Baby-Friendly USA (2016) Step 4 standard specifies immediate, continuous, and uninterrupted skin-to-skin contact (SSC) between the mother and her newborn infant after birth “unless there are documented medically justifiable reasons for delayed contact or interruption.” The Australian Baby-Friendly Health Initiative recommends “immediate skin-to-skin contact on the mother’s chest after birth and that the baby is allowed to remain there without interruption or separation” unless “a medically initiated procedure is required” (Australian College of Midwives, n.d., p. 22). The Japanese Baby-Friendly Hospital Initiative guidelines follow the WHO 2009 revision and include the suggestion of a delay in routine care unless there is a medical reason for separation (Igaki-Ohin, 2009; Japan Society of Perinatal and Neonatal Medicine et al., 2012).

Echoes of Step 4 guidance are found in the policy documents and statements of professional organizations. For example, The Academy of Breastfeeding Medicine Model Policy states “At birth or soon thereafter all newborns, if baby and mother are stable, will be placed skin-to-skin with the mother...allow uninterrupted mother-infant
contact and breastfeeding...” (ABM Protocol Committee, 2010, p. 173). The American Academy of Pediatrics Section on Breastfeeding Model Policy concurs, “Healthy term newborns with no evidence of respiratory compromise will be placed and remain in direct skin-to-skin contact with their mothers immediately after delivery until the first feeding is accomplished, unless medically contraindicated” (QulIN [Quality Improvement Innovation Network] & American Academy of Pediatrics, 2009, p. 1). An official practice brief from the Association of Women’s Health, Obstetric and Neonatal Nurses recommends immediate SSC that is uninterrupted and continues for the “first hour of life or until the first breastfeeding is completed” (AWHONN, 2015). The Academy of Obstetricians and Gynecologists in the Committee Opinion titled “Optimizing Support for Breastfeeding as Part of Obstetric Practice” suggests that SSC care should begin “early” (American Congress of Obstetricians & Gynecologists, 2016). The International Childbirth Education Association Position Paper on SSC directs that it begin “immediately after the birth of the baby” (Lowie, 2015, p. 1), and the Lamaze Healthy Birth Practice #6 warns against interruption: “Disrupting or delaying skin-to-skin care may suppress a newborn’s innate protective behaviors, lead to behavioral disorganization, and make self-attachment and breastfeeding more difficult” (Lamaze International, n.d., p. 212). A collaborative document “Points to Bear in Mind in Regard to the Implementation of ‘Early Mother-Infant Skin-to-Skin Contact’” was published by the major Japanese professional organizations involved with birth and contains implementation strategies that include starting as soon as possible after birth and continuing until breastfeeding is complete (Japan Society of Perinatal and Neonatal Medicine, 2012).

While in immediate, continuous uninterrupted SSC with mother in the first hour after birth, babies progress through nine instinctive, complex, distinct, and observable stages (Table 1) that have been documented elsewhere (Widstrom et al., 2011). In Stage 7, the baby finds the nipple and licks, mouths, massages, and becomes familiar with the mother’s breast; in Stage 8, the infant self-attaches and suckles. Uncompromised term newborns go through these stages at varying rates and usually achieve sucking within 60 to 90 min after birth (Widstrom et al., 2011; Widstrom et al., 1987). Interruption, such as non-emergent newborn care, is a modifiable practice that has been linked to decreased achievement of sucking (Robiquet et al., 2016). Breastfeeding within the first hour has been shown to have an inverse relationship with breastfeeding difficulties (Bramson et al., 2010) and neonatal mortality (Edmond et al., 2006; Wallace, Crear-Perry, Richardson, Tarver, & Theall, 2017).

Evidence supporting the biologically normal (Bergman, Linley, & Evans, 2004) practice of SSC after birth points to benefits for both mother and baby; SSC holding decreases the baby’s stress of being born (Bystrøv et al., 2003; Takahashi, Tamakoshi, Matsushima, & Kawabe, 2011) and promotes more optimal thermoregulation (Beiranvand, Valizadeh, Hosseinzadeh, & Pouria, 2014) continuing even through the first days (Nimbalikar et al., 2014). Babies cry less (Christensson, Cabrera, Christensson, Uvnäs-Moberg, & Winberg, 1995; Mazzarelli et al., 1999) and have improved the cardiopulmonary dynamics during the early hours after birth (Takahashi et al., 2011). SSC has been shown to increase breastfeeding initiation and exclusive breastfeeding, reduce formula supplementation in hospital, lead to an earlier successful first breastfeed (Bramson et al., 2010; Crenshaw et al., 2012; Mahmood, Jamal, & Khan, 2011; Marín Gabriel et al., 2010; Mikiel-Kostyra, Mazur, & Boltrusko, 2002; Srivastava, Gupta, Bhatnagar, & Dutta, 2014), and promote more optimal suckling (Richard & Alade, 1990). For the mother, early SSC leads to earlier expulsion of the placenta (Marín Gabriel et al., 2010), reduced bleeding (Dordović, Jovanović, & Dordović, 2008), lowered maternal stress levels (Handlin et al., 2009), and enhanced breastfeeding self-efficacy (Aghdas, Talat, & Sepidveh, 2014). The contact of the baby while skin to skin with the mother induces a rise in the hormone oxytocin, which in turn leads to more social responsiveness and may also promote parenting behaviors (Uvnäs-Moberg, 1998; Winberg, 2005), bonding, and attachment (Affonso, Wahlberg, & Persson, 1989).

In spite of the supportive policies, professional statements, and the numerous advantages of SSC described in the literature, the most recent Cochrane review of early SSC for mothers and their healthy newborn infants (Moore, Bergman, Anderson, & Medley, 2016) cites inconsistencies in the practice. For example, only 47% of the 38 included trials selected for the systematic review reported that SSC began “early” or “immediately,” meaning that after the birth, the baby had been carefully dried and placed, without delay, on the mother’s abdomen (in the case of a vaginal birth) or on the mother’s chest above the drape (in the case of a caesarean birth). In addition, 66 studies were assessed and excluded from the Cochrane review. The primary reason for exclusion was that “...the investigators did not state that the infants in the intervention group received immediate or early skin-to-skin contact” (Moore et al., 2016). In some published accounts of SSC, the duration has ranged from as few as 15 min (De Chateau & Wiberg, 1977; Valdya, Sharma, & Dhungril, 2005) to a mean of more than 30 hr (Syfrett 1993 as cited in Moore et al., 2016). The Cochrane review concludes:

Despite our concerns about the quality of the studies, and since we found no evidence of harm in any included studies, we conclude the evidence supports that early SSC should be normal practice for healthy newborns including those born by cesarean and babies born early at 35 weeks or more. (Moore et al., 2016, p. 3)
TABLE 1 Widström’s 9 Stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Birth cry is a distinct and specific cry as the baby’s lungs expand for the first time.</td>
</tr>
<tr>
<td>2.</td>
<td>Relaxation is a time immediately after the birth cry ends, when the baby becomes still and has no visible movements.</td>
</tr>
<tr>
<td>3.</td>
<td>Awakening begins as the baby opens the eyes for the first time, blinks, has small mouth movements, and limited hand and shoulder motions.</td>
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<tr>
<td>4.</td>
<td>Activity involves larger body movements, including whole arm motions, specific finger movements, shoulder motion, head lifting, and stable open eyes.</td>
</tr>
<tr>
<td>5.</td>
<td>Rest could happen at any point during the first hour, interspersed between stages or as a transition between stages.</td>
</tr>
<tr>
<td>6.</td>
<td>Crawling involves the baby moving purposely towards the breast and nipple. It could be accomplished through sliding, leaping, bobbing, or pushing.</td>
</tr>
<tr>
<td>7.</td>
<td>Familiarization is a stage at the mother’s nipple where the baby licks, tastes, touches, and moves around the nipple and areola area.</td>
</tr>
<tr>
<td>8.</td>
<td>Sucking involves the baby self-attaching to the nipple and initiating breastfeeding.</td>
</tr>
<tr>
<td>9.</td>
<td>Sleeping is an involuntary activity of the baby around 1.5 to 2 hr after birth.</td>
</tr>
</tbody>
</table>


However, the authors found “inadequate evidence with respect to details … such as timing of initiation and dose” relative to outcomes (Moore et al., 2016, p. 29).

Although giving birth via caesarean is a well-documented barrier to SSC in the first hour (Stevens, Schmied, Burns, & Dahlen, 2014), it is not known whether other obstetrical conditions affect the practice. Robson’s criteria have been used most often prebirth to prospectively “compare CS rates in a consistent and action-oriented manner” (Betran, Vindevoghel, Souza, Gâmezoglu, & Torloni, 2014, p. 1). The Robson 10-group classification system utilizes straightforward obstetric parameters such as parity, singleton or multiple pregnancies, gestational age, spontaneous or induced labour, prior caesarean section, breech fetus, and abnormal positioning, including transverse or oblique. The use of the Robson classification system decreases interpretation and allows comparison across hospital systems, states, and countries. The modified Robson criteria for Canada (Farine & Shepherd, 2012) combine the original 2001 10-group classification with suggestions proposed in subsequent years allowing for subcategories to be separated and compared (Table 2). Tracking the Robson criteria can be used to determine if different groups receive a different experience during the first hour after birth.

TABLE 2 The Canadian modified Robson criteria (adapted from Farine & Shepherd, 2012)

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nullipara, singleton cephalic, ≥37 weeks, spontaneous labour</td>
</tr>
<tr>
<td>2</td>
<td>Nullipara, singleton cephalic, ≥37 weeks</td>
</tr>
<tr>
<td></td>
<td>A. Induced</td>
</tr>
<tr>
<td></td>
<td>B. Caesarean section before labour</td>
</tr>
<tr>
<td>3</td>
<td>Multipara, singleton cephalic, ≥37 weeks, spontaneous labour</td>
</tr>
<tr>
<td>4</td>
<td>Multipara, singleton cephalic, ≥37 weeks</td>
</tr>
<tr>
<td></td>
<td>A. Induced</td>
</tr>
<tr>
<td></td>
<td>B. Caesarean section before labour</td>
</tr>
<tr>
<td>5</td>
<td>Previous caesarean section, singleton cephalic, ≥37 weeks</td>
</tr>
<tr>
<td></td>
<td>A. Spontaneous labour</td>
</tr>
<tr>
<td></td>
<td>B. Induced</td>
</tr>
<tr>
<td></td>
<td>C. Caesarean section before labour</td>
</tr>
<tr>
<td>6</td>
<td>All nulliparous breeches</td>
</tr>
<tr>
<td></td>
<td>A. Spontaneous labour</td>
</tr>
<tr>
<td></td>
<td>B. Induced</td>
</tr>
<tr>
<td></td>
<td>C. Caesarean section before labour</td>
</tr>
<tr>
<td>7</td>
<td>All multipara breeches (including previous caesarean section)</td>
</tr>
<tr>
<td></td>
<td>A. Spontaneous labour</td>
</tr>
<tr>
<td></td>
<td>B. Induced</td>
</tr>
<tr>
<td></td>
<td>C. Caesarean section before labour</td>
</tr>
<tr>
<td>8</td>
<td>All multiple pregnancies (including previous caesarean section)</td>
</tr>
<tr>
<td></td>
<td>A. Spontaneous labour</td>
</tr>
<tr>
<td></td>
<td>B. Induced</td>
</tr>
<tr>
<td></td>
<td>C. Caesarean section before labour</td>
</tr>
<tr>
<td>9</td>
<td>All abnormal lies (including previous caesarean section but excluding breech)</td>
</tr>
<tr>
<td></td>
<td>A. Spontaneous labour</td>
</tr>
<tr>
<td></td>
<td>B. Induced</td>
</tr>
<tr>
<td></td>
<td>C. Caesarean section before labour</td>
</tr>
<tr>
<td>10</td>
<td>All singleton cephalic, ≤36 weeks (including previous caesarean section)</td>
</tr>
<tr>
<td></td>
<td>A. Spontaneous labour</td>
</tr>
<tr>
<td></td>
<td>B. Induced</td>
</tr>
<tr>
<td></td>
<td>C. Caesarean section before labour</td>
</tr>
</tbody>
</table>
In light of our experience researching and implementing SSC (Brimdyr et al., 2015; Brimdyr, Widström, Cawkell, Svensson, & Turner-Maffle, 2012; Stevens, Schmied, Burns, & Dahlen, 2016; Takahashi et al., 2011) and in consideration of the findings of the Cochrane team (Moore et al., 2016), we present a novel algorithm, Healthy Children Project’s Skin-to-Skin Implementation Algorithm (HCP-S2S-IA; Figure 1), which considers the mothers’ condition as she begins the birthing experience according to Robson criteria (Table 2) and then, using the tool, plots the experience of each dyad in regard to immediate, continuous, and uninterrupted SSC after birth. We conducted iterative analyses of videotapes of immediate, uninterrupted, and continuous SSC in the first hour in two hospitals, one in Japan with mothers who gave birth vaginally and one in Australia with mothers who gave birth via caesarean.

2 METHODS

2.1 Data collection—Japan

For the purpose of examining the SSC implementation algorithm, we are analysing data from a Japanese study on newborn behaviour after vaginal birth from a Baby-Friendly designated hospital in Nishio, Japan. A convenience sample of 14 clinically uncomplicated primipara and multipara mothers gave informed consent to participate into the study, which included videotaping infants during the first hour or so after birth while the babies were in SSC with their mother. The study’s inclusion criteria included Japanese-speaking women ≥18 years of age who were healthy and non-smokers. Both primipara and multipara mothers were included if they planned a normal birth with no anaesthesia during labour. The infants were eligible if they were healthy and born at term and could continue in the study if they had an Apgar score of at least eight at 1 min after birth. Each dyad received a unique code within the study that was also associated with the video record of the first hour after birth. They were placed in SSC, as per hospital routine. The study did not change any hospital protocols or routines, with the exception of the addition of the video recording of the baby for the first hour after birth while in SSC with the mother.

Immediately after the birth, the newborn was placed in SSC ventrally on the mother’s abdomen, dried, and covered with a warm blanket. Hospital protocol stated that the baby would remain in SSC continuously with the semireclined mother for at least the first hour after birth unless there was a medical reason to interrupt. The baby was monitored using Pulse Oximetry (Covidien-Nellcor and Puritan Bennett, Boulder, USA) following the Japanese guideline for early SSC (Wyllie et al., 2015). The baby was allowed to move, uninterrupted, through Widström’s 9 Stages. The research protocol provided that if the baby was removed by the nurse or delivery ward staff for more than 60 min, the video recording would be stopped. The dyad would then be described as “removed for medical reasons.” Demographics and labour medications were collected from the Electronic Medical Record System. The study was approved by the Ethics Review Committee of the Nagoya University School of Medicine, Nagoya, Japan.

The infants’ behaviour while in SSC with mother was video recorded for 1 hr. Subsequently, iterative analysis was performed by two research assistants who had been trained to identify each of Widström’s 9 Stages of Newborn Behaviour. The training involved viewing a professional video (Brimdyr, Widström, & Svensson, 2011) that defined and illustrated each stage and then attending a workshop about Widström’s 9 Stages. The research assistants separately and independently coded all of the blinded video recordings for the nine stages using MAXQDA 11.0.2, 2013, a professional qualitative data analysis software. Although behaviours of staff, family, and the mother who interacted with the baby were noted, this paper reports only on the experience of the baby during the first hour with the expectation of the baby achieving all nine stages.

<table>
<thead>
<tr>
<th>Robson’s Criteria Noted</th>
<th>Immediate Skin-to-Skin?</th>
<th>Continues Skin-to-Skin?</th>
<th>Uninterrupted Skin-to-Skin?</th>
<th>Widström’s 9 Stages achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No: Hospital Protocol</td>
<td>No: No Emergency Care</td>
<td>No: Emergency Care</td>
<td>No: Family Interference</td>
<td>Yes</td>
</tr>
<tr>
<td>No: Staff Interference</td>
<td>No: No Emergency Care</td>
<td>No: Emergency Care</td>
<td>No: Family Interference</td>
<td>Yes</td>
</tr>
</tbody>
</table>

FIGURE 1 Healthy Children Project’s Skin-to-Skin Implementation Algorithm © Healthy Children Project, used with permission
2.2 Data collection—Australia

We also analysed data from an Australian study conducted at a metropolitan public hospital in Sydney, Australia, that has approximately 3,700 births a year. The Baby-Friendly Health Initiative in Australia recommends that for caesarean births, the “baby is placed skin-to-skin on the mother’s chest whilst she is on the theatre table, immediately after or within 5 minutes” (Australian College of Midwives, n.d., p. 22). This study focused on SSC in the operating theatre and in recovery after elective repeat caesarean. Twenty-one women who planned a repeat caesarean birth participated. Sixteen of the women gave written consent to field notes being collected and being videotaped, whereas the remaining five women gave written consent to only field notes being collected. Data collection was focused on maternal and support person contact with the baby for up to 2 hr immediately after the birth. The study’s inclusion criteria included mothers who were planning an uncomplicated caesarean birth following a previous caesarean birth, who were between 18 and 40 years of age, had a singleton pregnancy, and planned to breastfeed. The specifics of the research have been reported elsewhere (Stevens et al., 2016). Standard midwifery care at this hospital included the initiation of SSC in the recovery area. This was facilitated by a post-natal midwife after the birth unit midwife transferred care to them in recovery or by a caseload midwife (a continuity of care midwife) who was expected to stay with the woman in the operating theatre and on into the recovery area. Despite this being the standard midwifery care, it was known anecdotally that some midwives initiated SSC in the operating theatre. The study did not change any hospital protocols or routines, with the exception of collecting data, and for most mothers, videotaping of all maternal and support person contact with the baby in the first 2 hr. The methodology is detailed elsewhere (Stevens et al., 2014). The study was approved by the Human Research Ethics Committee from the hospital, Study No. 13/347-HREC/13 /F102 and Western Sydney University, Study No. H10482.

Analysis of the video and audio recordings was conducted through NVivo10 and analysed through critical ethnographic techniques. Furthermore, the timing of relevant events, including the timing of all maternal-infant contact, was recorded. For the purposes of this analysis, the video footage and field notes provided the data.

2.3 Method of analysis

Data regarding the experience of the mothers and babies from both the Japanese data set and the Australian study were analysed separately to elucidate the experience of the mothers and babies after birth. Then, using the HCP-S2S+IA algorithm, the dyads were plotted individually. The algorithm is colour coded—blue boxes and arrows point to the pathway of best practice. Red shows how and when the dyad has left the best practice trail. Yellow indicates that the dyad has encountered situations that are not best practice but may not be precluded from the achievement of immediate, continuous, and uninterrupted SSC in the first hour. Green boxes indicate best practice in each parameter. After the numbers have been entered, the algorithm is used to review the numbers and reflect on institutional barriers to best practice. The mothers were classified according to Robson’s criteria as modified for Canada. The Robson’s criteria were applied to each step in the algorithm. For ease of use, the Robson’s criteria chart is also colour coded with red, yellow, and green, to match the steps of the algorithm. This allows for a second dimension of inquiry using the algorithm; is there a pattern of outcome based on Robson Criteria?

The first element, after the birth, is Immediate Skin-to-Skin. Here, we ask, was the newborn placed immediately (within 5 min) on the mother’s chest? Did hospital protocol or policy preclude the pair from receiving immediate SSC at the time of the birth? These would be included as “No: Hospital Protocol or Protocol” on the algorithm.

Newborns for whom hospital protocol would have allowed SSC but who may not have received it are also considered in the immediate section of the algorithm. This lack of SSC due to emergent care for the mother or infant results in the pair being removed from the best practice pathway if separation lasts for more than 5 min. They would then be categorized as “No: Emergent Care for Mother or Infant.” If the separation results in a delay of less than 5 min, the pair is categorized as yellow—a caution for the hospital to review—but the dyad continues on the blue best practice path.

The next element of the model considers continuous SSC during the full first hour or so. If the newborn is removed from SSC either for emergent or routine care any time within the first hour or so after birth, it is recorded.

The algorithm considers the standard of uninterrupted or undisturbed SSC next. Dyads are recategorized if staff interfere with the newborn during the first hour or if the mother or family interferes with the newborn’s innate behaviours. Staff “helping” the newborn to latch would be considered interfering, because the SSC standard includes newborn crawling, familiarizing, and self-attaching.

Best practice is ultimately measured through the achievement of Widström’s 9 Stages during the first hour or so after birth. Immediate, continuous, and uninterrupted practice optimizes the infant’s ability to achieve this goal.

If a dyad experienced immediate, continuous, uninterrupted SSC for the first hour or so after birth and progressed through Widström’s Stages and suckled, they have achieved the standard of best practice.

3 RESULTS

3.1 Results—Japanese data set

Analysis of the Japanese dyads is presented in Figure 2. Fourteen mothers consented to participate in the study. They are categorized in Table 3, column “Consenting, prebirth” according to Robson’s criteria. All mothers had a vaginal birth. Five mothers are included in Group 1, nulliparous with spontaneous labour; eight are multiparous with a spontaneous labour, and one is a multipara who was induced.

All 14 babies were immediately placed in SSC with their mother. None were removed due to hospital protocol or emergent care. Thirteen of the 14 babies received continuous SSC with their mother. One baby was removed at 50 min. Seven of the 13 remaining newborns were interrupted by staff who “helped” the newborn to breastfeed during the first hour. Six newborns were uninterrupted. One of the newborns who had immediate, continuous, uninterrupted SSC progressed through
Widstrom’s 9 Stages and achieved the standard of self-attachment and suckling. The other five newborns did not progress past the Activity Stage (Stage 4).

3.2 Results—Australian study

Analysis of the Australian study is presented in Figure 3. Twenty-one mothers consented to participate in the study. Table 4 categorizes the 21 mothers according to Robson’s criteria. All mothers had a repeat, elective caesarean section and were consented before surgery (Robson’s category 4B).

One baby was immediately placed in SSC with mother. Seven were placed in SSC with mother within 5 min of birth. Twelve received SSC later than 5 min after the birth (between 5.01 and 65.05 min), and one did not receive any SSC within the first 2 hr after birth. Seven of the mothers who received immediate SSC, or within 5 min of birth, did not experience continuous SSC because they received less than 45 min of initial SSC with mother. The newborns were removed from the mother for routine care. One baby was not removed for routine care. One mother requested the baby to be removed, and it was recorded as “interrupted” on the algorithm. None of the babies met the standard for SSC—immediate, continuous, uninterrupted SSC for at least an hour, progressing through Widstrom’s 9 Stages, self-attaching to the breast and suckling.

4 DISCUSSION

4.1 Discussion—Japan

The algorithm allows us to examine SSC during the first hour after birth in relation to the international standard of immediate, continuous, uninterrupted SSC with the goal of progressing to self-attached suckling followed by sleep. By using the HCP-S2S-IA, the hospital can review practice in order to better understand their barriers to achieving the standard of care and more clearly identify where to direct interventions aimed at improvement.

A review of the algorithm (Figure 1) representing the data from the Japanese study indicates that the hospital practice succeeded with immediate SSC for mothers who gave birth vaginally. All newborns in the study were placed in SSC with mother within the first minutes after birth. Short delays (less than 5 min) were observed when the mother needed to move into a position that was more conducive to SSC, for example, after a mother gave birth on her hands and knees (ID#Y11), she manoeuvred carefully, with the assistance of the midwife, to lay on her back, in a slight incline. This took 3:14 min.

Hospital practices were also successful at supporting the continuous aspect of SSC. Only one infant was removed and that was for routine care at 50 min. Hospital practices could be reviewed to determine whether staffing issues or staff education would help to ensure continuous SSC for at least 60 min, or until the newborn falls asleep (around 90 min after birth), for all mothers.

More than half of the mothers in the Japanese data set were subject to interruption by staff during the first hour after birth. Two of the newborns were moved by the staff. The other five were moved and then latched by the staff to the mother’s nipple. We speculate that this may be a result of the historic understanding Step 4 of the BFHI, “Help mothers initiate breastfeeding within a half-hour of birth.” This could easily be interpreted as assisting a mother to latch her baby within 30 min of the birth. In 2009, WHO clarified this step, emphasizing SSC during the first hour or so after birth, although the wording of the step itself was unchanged (World Health Organization & UNICEF, 2009, p. 34). The use of HCP-S2S-IA highlights the need for staff education and skills regarding the 2009 changes to the interpretation of Step 4 of the BFHI.
<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
<th>Prebirth</th>
<th>Immediate hospital policy at birth</th>
<th>Immediate emergent care immediately after birth</th>
<th>Immediate delayed &lt;5 Immediate emergent care</th>
<th>Continuous: Removed for routine care</th>
<th>Continuous: Removed for routine care</th>
<th>Uninterrupted: Family interfered</th>
<th>Uninterrupted: Family interfered</th>
<th>Not achieved nine stages</th>
<th>Not achieved nine stages</th>
<th>Met standard</th>
<th>Met standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nullipara, singleton 5 cephalic, ≥37 weeks, spontaneous labour</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Nullipara, singleton 0 cephalic, ≥37 weeks A. Induced B. Caesarean section before labour</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>1</td>
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<td></td>
<td></td>
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<tr>
<td>3</td>
<td>Multipara, singleton cephalic, ≥37 weeks, spontaneous labour</td>
<td>A. 1</td>
<td>A. 1</td>
<td>A. 1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>A. 1</td>
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</tr>
<tr>
<td>4</td>
<td>Multipara, singleton cephalic, ≥37 weeks A. Induced B. Caesarean section before labour</td>
<td>A. 1</td>
<td>A. 1</td>
<td>A. 1</td>
<td>1</td>
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<td>A. 1</td>
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</tr>
<tr>
<td>5</td>
<td>Previous caesarean section, singleton cephalic, ≥37 weeks A. Spontaneous labour B. Induced C. Caesarean section before labour</td>
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<tr>
<td>6</td>
<td>All nulliparous breech A. Spontaneous labour B. Induced</td>
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<td>All multipara breech</td>
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(Continues)
Only one of the newborns who received immediate, continuous, uninterrupted SSC in the Japanese data set progressed through Widstrom's 9 Stages, self-attached, and achieved the standard of suckling within the first hour as a continuum of instinctive behaviour. If babies do not achieve suckling, the hospital might closely examine practices and review elements that could be interfering with a newborn's instinctive behaviour. For example, synthetic oxytocin as well as epidurals containing fentanyl can change a newborn's behaviour during the first hour, resulting in the newborn not progressing to suckling (Brindyl et al., 2015). Robson's criteria applied to the Japanese data set mothers indicates that, of the five mothers in this category, three are primiparas who were not induced and did not have exposure to epidural, one is a multipara who was not induced and did not have exposure to epidural, and one was a multipara who was induced but did not have exposure to epidural. Yet none of the five newborns in this category progressed past the Activity Stage (Stage 4). What else could be inhibiting the newborn's innate behaviour? The algorithm highlighted an area of research that could be proving a barrier to the otherwise implemented advantages of immediate, continuous, uninterrupted SSC. For example, infants who had naso-oral/phyngal suctioning at birth were six times less likely to suckle effectively during the first hour after birth (Cantrill, Creed, Cooke, & Dikes, 2014). One speculation is that the use of iodine during the birthing process, which has a strong and distinct odour, may be interfering with the instinctive behaviour of the newborn to smell the amniotic fluid and the colostrum/Montgomery gland scents as a directive to the breast (Porter, 2004; Porter & Winberg, 1999). Iodine has an intensifying impact on olfactory cells as well as a negative effect on eyesight. More exploration is needed to clarify the findings.

### 4.2 Discussion—Australia

We examined the data of Australian mothers who gave birth via elective caesarean in relation to the standard of immediate, continuous, uninterrupted SSC with the goal of progressing to self-attached suckling followed by sleep. Only one newborn in the study was placed in SSC with a mother immediately after birth (Figure 3). Short delays (less than 5 min) were observed in seven of the mothers before they received their newborn in SSC in the operating theatre. Hospital practices prevented 13 of the dyads from receiving immediate SSC.

A further review of the HCP-S2S-IA indicates that hospital practices also interfered with the continuous aspect of SSC. Seven of the eight newborns who were placed in SSC within 5 min of birth were removed within the first hour. In this example, hospital practices might be reviewed to examine whether or not staffing or staff education would help to ensure continuous SSC for at least 60 min, or until the newborn breastfeeds and falls asleep (around 90 min after birth).

Examination of uninterrupted SSC in the Australian data set indicates that the single mother who did not have her newborn removed for routine care by the staff asked for the newborn to be removed due to nausea. According to analysis, 20 of the 21 Australian newborns were unable to complete at least 60 min of SSC due to hospital policies or routine care. The tool provides feedback to the
hospital regarding the current barriers in implementing immediate, continuous, uninterrupted SSC after elective caesarean birth.

4.3 Discussion

4.3.1 What the data as a whole says about the patterns of behaviour in this field

The algorithm allows review and deeper understanding of the barriers to best practice of immediate, continuous SSC during the first hour after birth. The first question concerns immediate SSC between the mother and baby. Was the newborn placed immediately (within 5 min) on the mother’s chest? What could be preventing this implementation of best practice? This could be the case if the hospital has a protocol, for example, that includes babies born by caesarean in the classification of those who should not be eligible for immediate SSC. This was the case for a number of mothers in the Australian study. Other challenges could be a policy about births that occur in the Emergency Department or if certain anaesthesia was used. Perhaps the hospital has no policy about SSC as best practice, and implementation is based on staff preference or mother request. Does the facility not allow for staffing the required number of nurses to enable SSC? Perhaps swaddling or washing or routinely assessing every baby while on a warming table was required by protocol, or conducted by staff choice, before SSC could be started. These would be included as No: Hospital Policy or Protocol on the algorithm. This categorization could highlight for the hospital the barriers to best practice.

None of the separation in our two example cases revealed prevention of immediate SSC due to emergent care for the mother or infant. This would have been the categorization if newborn did not have an initial birth cry or had a low 1-min Apgar requiring transfer to the NICU team, rather than to the mother’s chest, or, the mother has haemorrhaged, requiring the newborn to be placed elsewhere. It is vital for a hospital to recognize if the lack of immediate SSC contact is due to hospital policy or a need for emergent care. Each reflects opportunities for more in depth review or quality improvement projects.

The next element of the model considers continuous SSC during the first hour or so. Continuous SSC is vital for warmth, respirations, and colonization of the newborn. Because the newborn will need to begin again the progression through Wildstrom’s 9 Stages after separation from the mother, any separation can be problematic because the newborn has limited time before falling asleep after birth. It is important to understand why the separation is occurring. Are there concerns about the infant’s respirations? Are there concerns about the mother haemorrhaging? These would be examples of Emergent Care. None of the infants in these two examples were removed during the first hour for emergent care. If they had been, it would highlight a concern about the status of the mother and/or infant immediately after birth. Were the newborns removed for routine care? This occurred both in the Japanese data set and the Australian data set. Routine care during the first hour after birth can and should be conducted while mother and infant remain in SSC. This pathway of the algorithm highlights an opportunity for staff education.

The algorithm considers the standard of uninterrupted or undisturbed SSC next. Dyads are recategorized if staff interfere with the newborn during the first hour or if the mother or family interferes with the newborn’s innate behaviours. This could be subtle or significant. It is possible for staff to shift a newborn, to take vital signs, for mother to eat and shift position all without disturbing the newborn through the progression of the nine stages. It is possible to move the mother from an operating table to the stretcher without separating
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<tr>
<th>Group</th>
<th>Description</th>
<th>Immediate policy at birth</th>
<th>Immediate care immediately after birth</th>
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or interfering with newborn behaviour. On the other hand, it is possible to disrupt a newborn when checking vitals or helping a mother to shift position. Staff gently helping to reposition a newborn’s head to maintain a clear airway could be done in a way that does not interrupt the newborn. Flipping a baby over and rearranging the newborn’s body could be very disruptive. Staff “helping” the newborn to latch would be considered interrupting, because the SSC standard includes newborn crawling, familiarizing, and self-attaching. It is this “help” that is highlighted in the Japanese data, presenting an opportunity for staff education on the latest understanding of best practice.

The ultimate goal of immediate, continuous, uninterrupted SSC during the first hour after birth is manifested through the instinctive behaviour of the newborn during this time. If needed, this can be observed closely as Widstrom’s 9 Stages. However, even when unobserved, this is the neurological pattern of behaviour that infants progress through during the first hour. Video allows us to examine this closely, but a secure knowledge of the instinctive behaviour allows us to understand when a newborn has, or has not, achieved all of the stages. Each stage is clear, even without close observation. Did the newborn open their eyes? Did the newborn move their arms and shift their body? Did the newborn progress to the breast? Did the newborn lick the nipple? Mothers, partners, and health care providers can know and understand whether the newborn progressed through the stages and achieved suckling and sleeping, without needing to stand over the dyad for the full hour. If a newborn has not achieved these stages—why would they not open their eyes? Why would they not crawl? Why would they not lick? Why would they not suckle—needs to lead to further examination of these newborns, perhaps by examining their exposure to labour medications (Brimdyr et al., 2015), or the infant’s physical condition, can give insight into their experience. A review of the Australian data shows that newborns never had the opportunity to consider the achievement of the standard, due to barriers during the first hour. Continued use of the tool would allow deeper understanding of the challenges, an opportunity to celebrate further progress, and a clear understanding of the goal of best practice. A review of the Japanese data highlights a challenge at the end of the algorithm. Why would newborns not demonstrate instinctive behaviour? Further exploration can focus on this question, to increase the benefits of the work of implementing SSC.

Although giving birth via caesarean is a well-documented barrier to SSC in the first hour (Steens et al., 2014), it is not known whether other obstetrical conditions affect the practice. The additional layer of Robson’s criteria helps to highlight progress made in overcoming the known challenges of SSC after caesarean, as well as deepening the understanding of appropriate implementation of best practice with SSC to all mothers.

Research shows that dyads who experience immediate, continuous, uninterrupted SSC for the first hour or so after birth, and progress through Widstrom’s Stages and suckle, achieve the standard of best practice. Why is there only one dyad who achieved this standard? Research studies highlight the inconsistencies of implementation of SSC, as highlighted in the most recent Cochrane review of early SSC for mothers and their healthy newborn infants (Moore et al., 2016), including the timing of initial SSC, the duration, and the concept of continuous contact. A study of Australian midwives highlighted their understanding of the importance of SSC, but not of the importance of “continuous, uninterrupted” SSC (Cantrill, Creedy, & Cooke, 2004). By highlighting the challenges of immediate, continuous, uninterrupted SSC, hospitals can illuminate where they are not yet meeting best practice, as well as understand a path forward towards best practice.

Although based on evidence, this algorithm is illustrated on only two sets of data. Implementation of the algorithm in different locations will strengthen the ability to compare and contrast strengths and barriers of different settings, allowing shared understanding of the challenges of implementing immediate, continuous, uninterrupted SSC. It is vital that the algorithm continues to focus on clinical practice, rather than the “result” of simply succumbing, because that misunderstanding of the early interpretations of Step 4 of the BFHI resulted in helping the newborn to breastfeed, with unfortunate consequences.

5 CONCLUSION

We have developed and provided examples of use for a tool intended to improve implementation of the evidence-based practice of SSC in the first hour after birth. The novel algorithm (HCP-S2S-IA) combines Robson’s criteria for obstetric classification, parameters for best practice of SSC (immediate, continuous, and uninterrupted) along with Widstrom’s 9 Stages in order to evaluate the experience of mothers and babies in the first hour after birth. Although the exemplar sample sizes were small, differences could be discerned, and opportunities for practice improvement can be elucidated. Larger samples with more varied Robson classifications are likely to assist hospital staff further in understanding the barriers within more discrete populations of mothers. Because every birthing facility has unique strengths and challenges, use of the algorithm periodically will allow new barriers to be documented and progress celebrated. This simple algorithm for hospitals to follow could have far-reaching impact on making practice visible, auditing, and reporting practices enabling the achievement of best practice, as well as providing a consistent measure for future research.

ACKNOWLEDGMENTS

The authors would like to acknowledge the generosity of the mothers, babies and hospital staff in our research studies.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

CONTRIBUTIONS

KB and KC substantially contributed to the creation of the algorithm. JS substantially contributed to the data and analysis, with KB and KC, of the Australian caesarean data into the algorithm. YT substantially contributed to the data and analysis, with KB and KC, of the Japanese vaginal birth data into the algorithm. All authors contributed to the writing of the paper. All authors contributed to the interpretation of the data, drafting and revising the article, and final approval of the version to be published.

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REFERENCES


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Appendix B. Publication: Providing skin-to-skin contact in the operating theatre

Providing Skin-to-Skin Contact in the Operating Theatre

Providing skin-to-skin (SS), where the newborn baby is placed on their mother’s bare chest, in the operating theatre (OT) is not rocket science. The World Health Organization (WHO) and the United Nations International Children’s Emergency Fund (UNICEF) recommend that the mother and baby should have skin-to-skin contact immediately after birth, including after a caesarean section (CS) if the woman has not had a general anaesthetic.

There is no reason why we cannot provide this, if we overcome our fear of the unknown through education, support and time (Hung & Berg, 2011). A documented barrier is the lack of staff on the day of the caesarean (Crenshaw et al., 2012; Nolan & Lawrance, 2009), however, this does not need to be an issue. The Towards Normal Birth Policy Directive states that women should have one-to-one professional care with a midwife (NSW Department of Health, 2010). For example, one midwife can prepare the woman for her CS, be there at the birth of the baby and then stay with them to help monitor the baby until they are transferred to the postnatal ward. This care should be no different than for a woman who has a normal birth. Britmoyer et al. (2010), Crenshaw et al. (2012), Duffy and Conrad (2013), Hung and Berg (2011) and Phillips (2013) commented on how to implement SS in the OT at the time of the CS.

Pre-implantation:
• Write a protocol with the collaborative effort of staff, including midwives, managers, doctors, anesthetists, pediatricians and other operating theatre/recovery staff.
• Education of staff.

Antenatal period:
• Education for mothers and their support people.

Prior to commencement of the CS, the following needs to be determined:
• Are there any contraindications for SS?
• Confirm with the mother – does she want SS? If so, does she want it in the OT, in Recovery or up on the ward?
• Avoid washing the mother’s chest with chlorhexidine.
• Assess the OT – does equipment need to be moved to provide room for SS?
• Have the mother’s gown undone and her hands removed from the sleeves.
• Be aware of where the woman’s IV lines are – try not to disturb them.
• Place the oxygen saturation probe on the toe instead of her finger.
• Are warm blankets/towels/beanie ready for the baby?

After the baby is delivered:
• Does the baby appear to be responding appropriately? If so, commence SS.
• The baby is placed in a transverse position on to the mother’s bare chest.
• The baby is dried.
• Warm blankets cover the baby and the mother.
• Apgar observations made.
• Teach the father how to help support the baby.
• Continue observations of the baby – are the nurse visible, is the baby centrally pink, is the respiratory rate stable?
• Teach the mother and father to observe the wellbeing of their baby – is the airway free, can the mother feel the baby breathe, is the baby centrally pink?

After surgery when transferring the mother and baby from the operating room table to the bed:
• Place the baby in a vertical position.
• Cross the mother’s arms over the baby.
• Midwife places their hands over the mother to make sure the baby is secure when moved to the bed.

In recovery:
• Give feedings whilst having SS or wait until after the baby’s first breastfeeding and first sleep.
• Postponed measurements, weight and assessment until after the baby’s first breastfeeding and first sleep.
• If we, as midwives, do not provide immediate SS following a CS, then one third of the birthing population will potentially miss out on the benefits that SS offers mothers and babies in Australia (U, Ziel, Hider, & Sullivan, 2012).

References on request.
Appendix C. Publication: Maternal Assisted Caesarean Section

Maternal Assisted Caesarean Section

So what is a maternal assisted caesarean section? In basic terms, it is when the mother helps lift her baby out of her abdomen during a caesarean section. If you want to find out more details, the King Edward Memorial Hospital in Perth has written a great protocol for a Maternal Assisted Caesarean Section (King Edward Memorial Hospital, 2014).

At the end of last year I attended and filmed a maternal assisted caesarean section (MACS) for my PhD research project on skin-to-skin contact immediately after a caesarean section. This is the only one that I have observed, therefore, it is important to know that this is not a prescription of how to do it. The mother, Chantale (alias), planned to have a caesarean section due to having one previously. She had been seeing an obstetrician, who discussed the option to have a MACS. She stated that at the beginning she was sceptical because she did not know if she could handle it emotionally. Chantale eventually decided that this is what she wanted and stated that she understood how important it was to keep mothers and babies together and wanted to have this contact for this birth.

When I saw Chantale on the day of her planned caesarean section, she was vibrant and couldn’t wait to hold her baby in her arms. I was similarly buzzing with excitement because I had not seen a MACS before, and was also excited that I had permission to capture it on video.

The MACS was not much different from a normal caesarean section. The changes observed were:

- Chantale was instructed how to perform a surgical scrub and how to put on sterile gloves in the anaesthetic bay
- The O2 sensor was placed on her ear
- The IV was situated in the cubital fossa due to Chantale’s lower arms and hands needing to remain sterile; however, it made it challenging for Chantale to hold the baby without it alarming
- The continual cardiac monitoring electrodes were placed on Chantale’s shoulder tips and under...
A disposable sterile gown was placed on Chantale in the operating theatre and was cut down the middle to facilitate the newborn being placed on her chest. Chantale’s sterile gloves were replaced in the operating theatre. Chantale was directed to place her sterile hands and arms on the lower end sterile blue drape. Chantale was directed by the obstetrician to help lift her baby out of her abdomen and then she put the baby directly on her bare chest. The blue drape was lifted to maintain a sterile field immediately after Chantale put her baby on her chest. The midwife dried the baby and directed Chantale’s partner Paul (alias) to cut the cord whilst the baby was on Chantale’s chest in the operating theatre.

Chantale stated, “When I was able to put my hand on his arm pits and pull him out, that was the most amazing sensation. It’s pretty indescribable the feeling you get”. I personally could not help but tear up whilst I continued to film this magic moment between Chantale and her much adored baby. Chantale’s husband and her sister, who were also attending, had beaming smiles and were enveloped by the tactile joyous atmosphere. All I could think about was that the MACS was right for Chantale. This is what she wanted and it worked so perfectly for her. That instant bond with her baby was tangible – you could see it. I was shocked by the emotions in the room: the adoring mum, the captivated partner and sister, the proud obstetrician and the joy on the staff members’ faces. Everyone was caught up in the moment. I have never seen a mother so engrossed with her newborn whilst having a caesarean section. I queried: Was this just because of this mum, or would it be the same for other mothers who had a MACS?

Chantale continued to have skin-to-skin contact for the majority of the time until I left their presence two hours later. Chantale recalled later how excited she was that she could have that contact and that she could breastfeed within five minutes or so. She stated, “Just having him on me right from the beginning was such a bonding experience, than having Paul experience that with me – seeing me with him he said was one of the most amazing things that he’d seen because when I had...[previous child], he was taken away from me for three or four hours, so Paul got to experience that, but I didn’t”. Chantale continued to say, “I think it’s just the closeness you get. I don’t think you can get any closer than skin-to-skin and having that baby just feeling you, and touching his hands and cuddling his feet, just that closeness, it’s indescribable the feelings that you get, but I think it’s just such an amazing emotional journey that you two can go on and nobody can change that and take it away from me”.

www.realmidwives.com.au
Appendix D. HREC Hospital Approval Letter
22 October 2013

Ms Jeni Stevens
School of Nursing & Midwifery
University of Western Sydney
PO Box 1797
FENRITH NSW 2751

Dear Ms Stevens,

**HREC reference number:** Study 13/47 - HREC/13/102

**Study title:** Facilitation, barriers and implications of immediate skin to skin post caesarean section: An ethnographic study

Thank you for your email dated 18/10/2013 addressing the matters raised in the Committee’s letter dated 15 October 2013 following ethical review of the above project at Human Research Ethics meeting held on 24/9/13.

This HREC has been accredited by the NSW Department of Health as a lead HREC to provide the single ethical and scientific review of proposals to conduct research within the NSW public health system. This lead HREC is constituted and operates in accordance with the National Health and Medical Research Council’s National Statement on Ethical Conduct in Human Research and the CPMP/ICH Note for Guidance on Good Clinical Practice.

I am pleased to advise that the HREC has now granted ethical approval of this single site research project to be conducted by you at under the supervision of Professor Hannah Dahlen as Principal investigator.

The following documentation has been reviewed and approved by the HREC:

- NEAF application AU/1/ASA113
- Scientific Protocol Version 1 dated 17/7/2013
- Recruitment flyer Version 2 dated 16/10/2013 for Professional Staff
- Recruitment flyer Version 2 dated 16/10/2013 for Women
• Participant Information & Consent Sheet for Women Version 4 dated 16/10/2013
• Participant Information & Consent Sheet for Health Professionals Interviews Version 3 dated 16/10/2013
• Participant Information & Consent Sheet for Health Professionals Theatre Version 3 dated 16/10/2013
• Participant Information & Consent Sheet for Partners/Support People Version 3 dated 15/10/2013
• Attachment 1 - Data Collection form
• Attachment 2 - Data Collection form
• Questionnaire - Women - Baseline Information, V1 dated 17/7/2013
• Questionnaire - Health Professionals - Focus Group and Interviews, Baseline Information V1 dated 17/7/2013
• Women 6 week postnatal interview questions V1 dated 17/7/2013
• Health Professional Focus Group and interview questions - V1 dated 17/7/2013

Please note the following conditions of approval:

• The co-ordinating investigator will immediately report anything which might warrant review of ethical approval of the project in the specified format, including unforeseen events that might affect continued ethical acceptability of the project.

• For clinical trials using implantable medical devices, the co-ordinating investigator will confirm to the HREC, that a process has been established for tracking the participants, with consent, for the lifetime of the device and will immediately report any device incidents to the Therapeutic Goods Administration (TGA).

• The co-ordinating investigator will provide to the HREC in the specific format, proposed amendments to the research protocol or conduct of the research which may affect the ethical acceptability of the project. Copies of all amendments when approved by the HREC must also be submitted to the relevant research governance officer.

• The co-ordinating investigator must notify the HREC, giving reasons, if the project is discontinued at a site before the expected date of completion.

• The coordinating investigator must provide an annual report to the HREC and a final report at completion of the study, in the specified format. HREC approval is valid for 12 months from the date of final approval and continuation of the HREC approval beyond the initial 12 month approval period is contingent upon submission of an annual report each year. A copy of the Annual / Final Research Report Form is attached and can be obtained electronically from the Research Office on request.

• The HREC has the discretion to adopt other appropriate mechanisms for monitoring depending on the complexity, design and risk perceived, including
  • Discussion of relevant aspects of the project with investigators, at any time;
Study 13/47 - HREC/13/102 - cont'd

- Random inspection of research sites, data, or consent documentation;
- Interview with research participants or other forms of feedback from them; and
- Request and review reports from independent agencies such as a Data and Safety Monitoring Board.

- It should be noted that compliance with the ethical guidelines is entirely the responsibility of the researcher.
- If your research project is an interventional trial, please ensure you register your trial onto one of the clinical trial registries, i.e. http://www.actr.org.au

You are reminded that this letter constitutes ethical approval only. You must not commence this research project at a site until separate authorisation from the Chief Executive or delegate of that site has been obtained. A copy of this letter and the approved Participant Information and Consent Forms must be forwarded to all site investigators for submission to the relevant Research Governance Officer.

In all future correspondence concerning this study, please quote your approval number, ref. Study 13/47 - HREC/13/102.

The HREC wishes you every success in your research.

Yours sincerely

Chair
LHD
Human research Ethics Committee

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Appendix E. HREC University of Western Sydney Approval Letter
HUMAN RESEARCH ETHICS COMMITTEE

11 December 2013

Professor Hannah Dahlen
School of Nursing and Midwifery

Dear Hannah,

I wish to formally advise you that the Human Research Ethics Committee has reciprocally approved your research proposal H10482 "Facilitators, barriers and implications of immediate skin to skin post caesarean section: An ethnographic study", until 22 October 2014 with the provision of a copy of the progress/final reports provided to the Local Health District Human Research Ethics Committee (ref. 13/47 - HREC/13/102).

Please quote the registration number and title as indicated above in the subject line on all future correspondence related to this project; emails should be sent to humanethics@uws.edu.au address.

This protocol covers the following researchers:
Hannah Dahlen, Virginia Schmied, Elaine Burns and Jennifer Stevens

Yours sincerely,

Annmarie D’Souza
Human Ethics Officer
Human Research Ethics Committee
Appendix F. Site Specific Approval Letter

03 February 2014

Member

Dear

HREC reference number: HREC/13/1102
SSA reference number: SSA/13/150
Project title: Facilitators, barriers and implications of immediate skin to skin post caesarean section: An ethnographic study
Protocol number:

Thank you for submitting an application for authorisation of this project. I am pleased to inform you that authorisation has been granted for this study to take place at the following sites:

- Delivery Suite
- Perioperative Services
- Recovery
- Postnatal Ward
- Antenatal Clinic
- Operating Theatre

The approved information and consent documents for use at this site are:

- Participant Information Sheet and Consent for Women, version 4, dated 16 October 2013
- Participant Information Sheet and Consent for Health Professionals Interviews, version 1, dated 16 October 2013
- Participant Information Sheet and Consent for Health Professionals Theatre, version 3, dated 16 October 2013
- Participant Information Sheet and Consent for Partners/Support People, Hospital, version 3, dated 16 October 2013
- Recruitment Flyer – Professional Staff, Hospital, version 2, dated 16 October 2013
- Recruitment Flyer – Women, Hospital, version 2, dated 16 October 2013

Thanking you for your continued support,

[Signature]

[Name]

[Position]
• Attachment 1 – Data Collection form
• Attachment 2 – Data Collection form
• Questionnaire – Women – Baseline information, 17 July 2013
• Questionnaire – Health Professionals – Focus Group and Interviews. Baseline Information, Hospital, version 1 dated 17 July 2013
• Women 6 week Postnatal Interview questions, Hospital, version 1 dated 17 July 2013
• Health Professional Focus Group and Interview Questions, Hospital, version 1, dated 17 July 2013

The following conditions apply to this research project. These are additional to those conditions imposed by the Human Research Ethics Committee that granted ethical approval:

1. All Local Health District research team members involved in your study must organise a time with the Research Governance Officer to sign a confidentiality agreement and obtain ID badge prior to conducting study visits at any of the facilities across the

2. Insurance certificate must be current for governance clearance to remain valid. The insurance certificate submitted expires 31 October 2014. Please submit updated certificate when issued.

3. Proposed amendments to the research protocol or conduct of the research which may affect the ethical acceptability of the project, and which are submitted to the lead HREC for review, are copied to the research governance officer;

4. Proposed amendments to the research protocol or conduct of the research which may affect the ongoing site acceptability of the project, are to be submitted to the research governance officer.

I wish you every success in your research

Yours Sincerely

[Signature]

[Signature] - Research Governance Officer

[Signature]

Ms Jane Stevenson.
Appendix G. Ethics Adjustment Letter

19th February, 2014

Re: HREC/13/102 and SSA/13/130

Project Title: Facilitators, barriers and implications of immediate skin to skin post caesarean section: An ethnographic study

Dear [Name 1] and [Name 2],

The following changes to the approved forms have been made:

Women's PIS:

- Changed the email address from j.stevens@uws.edu.au to jeni.stevens@uws.edu.au on page 4
- Changed the email address from [Name of Coordinator]@nsw.health.nsw.gov.au to @health.nsw.gov.au on page 4
- Added: ADVISE THE RESEARCHER JENI STEVENS ON 0410 563 924 OR jeni.stevens@uws.edu.au OF THE DATE AND TIME OF YOUR PLANNED CAESAREAN SECTION on page 2

Partners PIS, Health Professional Interviews PIS, Health Professionals Theatre PIS

- Changed the email address from j.stevens@uws.edu.au to jeni.stevens@uws.edu.au on page 4
- Changed the email address from [Name of Coordinator]@nsw.health.nsw.gov.au to @health.nsw.gov.au on pages 3 or 4

Advertisement for Women, Advertisement for Health Professionals:

- Changed the email address from j.stevens@uws.edu.au to jeni.stevens@uws.edu.au

I am also asking for permissions for the Advertisement of Women to be able to be placed where the midwives and doctors do antenatal visits. The aim is that the midwife/doctor could give the potential participants the advertisement. This will allow for maximum potential for obtaining participants, whilst still giving the woman the full control in regards to contacting me.

Can you please let me know the outcome as soon as you can. Thank you once again.

Sincerely,

Jeni Stevens
26 February 2014

Professor Hannah Dahl
School of Nursing & Midwifery
University of Western Sydney
PO Box 1797
PENRITH NSW 2751

Dear Professor Dahl,

HREC reference number: Study 13/47 - HREC/13/102
Study title: Facilitators, barriers and implications of immediate skin to skin post caesarean section: An ethnographic study

Thank you for your email and letter dated 19 February 2014 together with a copy of the following documents for the above referenced study:

- Recruitment flyer Version 3 dated 19/2/2014 for Professional Staff
- Recruitment flyer Version 3 dated 19/2/2014 for Women
- Participant Information & Consent Sheet for Women Version 5 dated 19/2/2014
- Participant Information & Consent Sheet for Health Professionals Interviews Version 4 dated 19/2/2014
- Participant Information & Consent Sheet for Health Professionals Theatre Version 4 dated 19/2/2014
- Participant Information & Consent Sheet for Partners/Support People Version 4 dated 19/2/2014

The Committee noted your advice that (a) all of the above listed study documents were updated to reflect your new email address and the email address of the 'patient liaison officer Ms XXX id and (b) an additional sentence asking the women to inform you of the date of their planned caesarean, was inserted into the Participant Information and Consent Sheet for the Women.
The Committee also noted and approved your request for copies of the recruitment flyers for the women to be placed in areas of Antenatal where the midwives and doctors conduct the consults, therefore providing an opportunity for interested women viewing and obtaining a copy of the advertisement and contacting you directly.

You are reminded that this letter constitutes ethical approval only. A copy of this letter and the approved documents must be forwarded to the relevant Research Governance Officer.

Yours sincerely

Dr.,
Chair
Local Health District
Human Research Ethics Committee

c.c. Ms Jeni Stevens, UWS
## Appendix I. Critical Appraisal Skills Programme Review Qualitative Research

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Was there a clear statement of the aims of the research?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Is the qualitative methodology appropriate?</td>
<td>Mixed Method</td>
<td>Qualitative</td>
<td>Quality Improvement Program</td>
</tr>
<tr>
<td></td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Was the research design appropriate to address the aims of the research?</td>
<td>Yes = 1 Part 1: Descriptive observational</td>
<td>Yes = 1 Van Manen’s Interpretive phenomenology</td>
<td>Yes = 1 Plan, Do, Study, Act Model</td>
</tr>
<tr>
<td></td>
<td>Part 2: Review of hospital records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the recruitment strategy appropriate to the aims of the research?</td>
<td>Part 1: Yes = 1</td>
<td>Yes = 1</td>
<td>= 0 Not recruited</td>
</tr>
<tr>
<td></td>
<td>Part 2: NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were all the data collected in a way that addressed the research issue?</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
</tr>
<tr>
<td>Has the relationship between the researcher and participants been adequately considered?</td>
<td>=0 Not stated</td>
<td>= 1 Yes</td>
<td>=0 Not stated</td>
</tr>
<tr>
<td>Have ethical issues been taken into consideration?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Not stated</td>
</tr>
<tr>
<td>Was the data analysis sufficiently rigorous?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Not stated</td>
</tr>
<tr>
<td>Is there a clear statement of findings?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>How valuable is this research for this review?</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
</tr>
<tr>
<td>Score</td>
<td>9/10</td>
<td>10/10</td>
<td>6/10</td>
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(Critical Appraisal Skills Programme International Network, 2013a)
Appendix J. Critical Appraisal Skills Programme Review Randomised Controlled Trials

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Did the trial address a clearly focused issue?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Was the assignment of participants to the groups randomised?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Were all the patients who entered the trial properly accounted for at its conclusion?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Were the participants, health workers and study personnel &quot;blind&quot; to the treatment</td>
<td>No = 0</td>
<td>No = 0</td>
<td>No. Analyser not aware of study purpose =0</td>
<td>No. Analyser not aware of study purpose =0</td>
</tr>
<tr>
<td>Were the groups similar at the start of the study</td>
<td>Yes = 1</td>
<td>Yes, except infant birth weight=0</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>Aside from the experimental intervention, were the groups treated equally?</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
<td>Yes = 1</td>
</tr>
<tr>
<td>How large was the treatment effect?</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
</tr>
<tr>
<td>How precise was the estimate of the treatment effect?</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
</tr>
<tr>
<td>Can the results be applied to the local population?</td>
<td>Small numbers = 0</td>
<td>Small numbers = 0</td>
<td>Small numbers = 0</td>
<td>Small numbers = 0</td>
</tr>
<tr>
<td>Were all clinically important outcomes considered?</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
</tr>
<tr>
<td>Are the benefits worth the harms and costs?</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
<td>= 1</td>
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<tr>
<td>Score</td>
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<td>8/11</td>
<td>9/11</td>
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(Critical Appraisal Skills Programme International Network, 2013b)
**Appendix K. Literature Review Summary of New Papers**

<table>
<thead>
<tr>
<th>Reference Location</th>
<th>Study Design</th>
<th>Aim</th>
<th>Participants</th>
<th>SSC after CS Data</th>
<th>Relevant Outcomes</th>
</tr>
</thead>
</table>
| Armbrust, Hinkson, von Weizacker, & Henrich (2015) Germany, Berlin | Prospective Randomized Controlled Trial | To evaluate the Charité CS which includes early SSC – patient satisfaction and subjective birth experience | 205 Participants | Initiation:  
- Control: Not stated  
- Intervention: Immediately after examined by the obstetrician  
Duration:  
- Control: Not stated  
- Intervention: For the duration of the operation, at least one hour (no time noted)  
Interrupted:  
- Control: Not stated  
- Intervention: No |  
- SSC possible in 72% of cases (not noted if it is the intervention arm only or both)  
- SSC and the opportunity to BF was rated to be very important  
- BF problems significantly less in intervention group (may not be related specifically to SSC)  
BF rates (may not be related specifically to SSC)  
- 69% Control  
- 81% Intervention |
| Bavaro, Mendoza, McCarthy Toledo & Bauchal (2016) US, Chicago | Quantitative Prospective Observational Study | To evaluate and compare sedation levels with women undergoing unscheduled and scheduled CS and to assess whether timing of SSC and breastfeeding differed between the groups | 48 Participants | Initiation:  
- Scheduled <30 mins 14%  
30-60 mins 73%  
>60 mins 14%  
- Unscheduled <30 mins 17%  
30-60 mins 52%  
>60 mins 32%  
Duration:  
- Not stated  
Interrupted:  
- Not stated |  
- Women were more sedated in the Unscheduled CS group than the Scheduled group – which may be related to the labour process, sleep deprivation and exhaustion  
Initiation of Breastfeeding:  
- Scheduled  
30-60 mins 42%  
1-2 hours 25%  
>2 hours 13%  
- Unscheduled  
30-60 mins 25%  
1-2 hours 50%  
>2 hours 8% |

**Data Collection**  
- Parent questionnaire 4 days after birth  
- Compilation of medical records  
**Data Analysis:** SPSS and ANOVA

**Data Collection**  
- Demographic data  
- Labour characteristics  
- Intra-operative haemodynamic values and medications  
- Sedation scales – Visual analog scale AND observers assessment of alertness and sedation  
- Time off birth to initiation of SSC and first BF  
**Data Analysis:** Mann-Whitney U-test, sample size analysis – PASS version 13.0.1, statistical analysis R version 3.2.2 and RStudio version 0.99.473
<table>
<thead>
<tr>
<th>Reference Location</th>
<th>Study Design</th>
<th>Aim</th>
<th>Participants</th>
<th>SSC after CS Data</th>
<th>Relevant Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boyd (2017) US, Great Lakes</td>
<td>Quality Improvement Project Implementation of a seven step Iowa Model of Evidence-Based Practice to Promote Quality Care framework</td>
<td>To implement initiation of SSC within 1 hour of CS</td>
<td>50 Surveys about 50 women having CS’s attended by staff working in the hospital</td>
<td>Initiation: Within 1 hour Duration: Median time of 42.5 minutes (range 10-95 mins) Interrupted: Yes, on transfer from the OT bed to a stretcher</td>
<td>Facilitators: • Education of staff members, positive reinforcement, active support, creative nursing care, witnessing positive outcomes, positive comments from health professionals, mothers and families Barriers: • Maternal and newborn instability; staffing shortages; emergent surgery; equipment problems; staff resistance to change, negative comments from staff</td>
</tr>
<tr>
<td></td>
<td>Data Collection: Questionnaire for staff Data Analysis: Collation of questionnaire information into a spreadsheet</td>
<td></td>
<td>Mothers: • Regional anaesthesia • No nausea or vomiting • No pain • No anxiety • Maternal request for no SSC • Medically stable Babies: • Not premature • No foetal intolerance to labour • APGARS ≥7 at 1 minute and ≥9 at 5 minutes • Medically stable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brady, Bullpitt &amp; Chairelli (2014) US, Bridgeport</td>
<td>Quality Improvement Project Implementation of a Plan, Do, Study, Act (PDSA) Model for Improvement</td>
<td>To provide SSC in the OT and to increase exclusive BF rates</td>
<td>Nil number of participants recorded Staff: • Working in the hospital Mothers: • Medically stable Babies: • Medically stable</td>
<td>Initiation: After 5 minutes of observation Duration: For the duration of the operation (no time noted) Interrupted: No</td>
</tr>
<tr>
<td></td>
<td>Data Collection: Compilation of electronic medical records Auditing of charts</td>
<td></td>
<td></td>
<td></td>
<td>SSC in the OT rates • 1 month: 43% • 10 months: &gt;70% Exclusive breastfeeding outcomes for those who had SSC in the OT • 6 months: 8% • 10 months: 19%</td>
</tr>
<tr>
<td></td>
<td>Data Analysis: Compilation of statistics to monitor trends</td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td></td>
<td>De Alba-Romero, et al. (2014) Spain, Madrid</td>
<td>Quality Improvement Project Staff implementation of a project which included: • Education about evidence • Commencing SSC in the OT • Support by specialists</td>
<td>To provide immediate SSC after CS and to recognise the importance of companion support</td>
<td>Nil number of participants recorded Staff: • Obstetricians, midwives, nurses &amp; neonatologists Mothers: • Nil placenta previa, uncontrolled pre-eclampsia, or a general anaesthetic Babies: • &gt;36/40, &gt;2000g, nil life-threatening malformations, medically stable</td>
<td>Initiation: Immediate (after delayed cord clamping) Duration: 2 hours Interrupted: No</td>
</tr>
<tr>
<td></td>
<td>Data Collection: Compilation of records Data Analysis: Compilation of statistics for an internal quality insurance study</td>
<td></td>
<td></td>
<td></td>
<td>SSC in the OT rates between 7-15 months after implementation SSC all CS births • 43.6% SSC all elective CS births • 79.8% SSC all emergency CS births • 29.4%</td>
</tr>
<tr>
<td>Reference Location</td>
<td>Study Design</td>
<td>Aim</td>
<td>Participants</td>
<td>SSC after CS Data</td>
<td>Relevant Outcomes</td>
</tr>
<tr>
<td>--------------------</td>
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</tr>
<tr>
<td>Frederick, Busen, Engebretson, Hurst &amp; Schneider (2015) US, Texas</td>
<td>Ethnographic Study Data Collection • Observations during the CS, up to the first feed • Interviews 24-48 hours after birth Data Analysis: Thematic analysis</td>
<td>To explore and describe mother’s experience of SSC immediately after CS</td>
<td>11 Participants Mothers: • Age between 23-38y • Between 39-42/40 • Single baby • Regional anaesthesia • English speaking • Medically stable Babies: • APGARS ≥7 at 1 mins, &amp; ≥8 at 5 mins • Medically stable</td>
<td>Initiation: Between 5-18 minutes Duration: Between 12-62 minutes of visualised time Interrupted: Not stated</td>
<td>Themes identified • Mutual caregiving between mother and baby: Desire to hold the baby, responding to each other, tuning out the environment, calming nature, comforting touch, verbal interaction, empowerment, bonding, natural, made breastfeeding easier • Fathers influence: Important to the mother, formation of the family unit, assisting, buffer for the environment • CS environment: Impersonal, separated, no control, alleviation with SSC, feeling like the baby was in the way, reminded of the environment, positioning affecting visualisation, interruptions by surgical equipment, feeling overwhelmed, anxiety over wellbeing of the baby</td>
</tr>
<tr>
<td>Grassley &amp; Jones (2014) US</td>
<td>Quality Improvement Project Implementation of the John Hopkins Nursing Evidence-Based Practice model Data Collection • Nurses recorded minutes of SSC, barriers and perceptions for themselves and patients Data Analysis: Compilation of statistics</td>
<td>To increase the implementation of SSC in the OT and report on the frequency of SSC, types of barriers and facilitators</td>
<td>44 Family Participants Mothers: • No noted criteria Babies: • No noted criteria</td>
<td>Initiation: In the OT Duration: Minimum of 15 minutes Interrupted: Not stated</td>
<td>SSC rates in the OT Prior to implementation • Infrequent After implementation • 80%. 43% for a minimum of 15 minutes, 37% &lt; 15 mins, 11% declined, 9% unable to hold the newborn due to maternal or newborn condition. Barriers • Difficulty positioning, maternal nausea/clastrophobia, newborn condition, short length of surgery. Facilitators: • Staff preparation (87%) &amp; Family birth experiences (positive responses)</td>
</tr>
<tr>
<td>Reference Location</td>
<td>Study Design</td>
<td>Aim</td>
<td>Participants</td>
<td>SSC after CS Data</td>
<td>Relevant Outcomes</td>
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<tr>
<td>Gregson, Meadows, Teakle &amp; Blacker (2016) UK, England</td>
<td>Randomized Controlled Trial</td>
<td>To determine whether SSC between a mother and baby in the OT can affect BF outcomes at 48 hours, 10 days and 6 weeks postpartum, NICU admission and mother’s experience</td>
<td>366 Participants</td>
<td>Initiation:</td>
<td>No differences in NICU admissions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>187 Control group</td>
<td>Control: After the operation</td>
<td>Nil significant differences in satisfaction confidence, parental satisfaction and recovery at 10 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>182 Intervention group</td>
<td>Intervention: In the OT</td>
<td>Babies more settled in intervention group at 10 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mothers:</td>
<td>Duration of First SSC:</td>
<td>2 x Unexpected collapse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Elective CS</td>
<td>Control: 30 mins 5%</td>
<td>Hours of SSC in first 24 hours:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>≥37/40</td>
<td>1 hour 8%</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chosen to BF at birth</td>
<td>2 hours 20%</td>
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<td></td>
<td></td>
<td></td>
<td>Medically stable</td>
<td>&gt; 3 hours 67%</td>
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<td></td>
<td></td>
<td></td>
<td>Babies:</td>
<td>Intervention: 30 mins 3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No major congenital abnormality</td>
<td>1 hour 8%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2 hours 14%</td>
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<td></td>
<td></td>
<td></td>
<td>&gt; 3 hours 75%</td>
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<td></td>
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<td>Interrupted:</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td>Control: Not stated</td>
<td>Exclusive BF on hospital discharge:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Intervention: Not stated</td>
<td>SSC with the mother: 65%</td>
</tr>
<tr>
<td></td>
<td>Data Collection</td>
<td></td>
<td></td>
<td></td>
<td>SSC with the father: 36%</td>
</tr>
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<td></td>
<td>No SSC: 32%</td>
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<td></td>
<td>Exclusive BF at three months:</td>
</tr>
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<td>SSC with the mother: 55%</td>
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<td></td>
<td>SSC with the father: 32%</td>
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<td>No SSC: 30%</td>
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<td>Exclusive BF at six months:</td>
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<td>SSC with the mother: 12%</td>
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<td></td>
<td>SSC with the father: 9%</td>
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<td>No SSC: 3%</td>
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<td></td>
<td>Data Analysis: Collection of information into an Excel spreadsheet, SPSS &amp; Fisher’s test</td>
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<td>Hours of SSC in 24 hours at 48 hours, related to any breastmilk all participants:</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>&lt;8 hours 94%, 8-12 hours 97%, &gt;12 hours 100%</td>
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<td></td>
<td>Hours of SSC in 24 hours at 6 weeks, related to any breastmilk all participants:</td>
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<td></td>
<td>&lt;8 hours 58%, 8-12 hours 36%, &gt;12 hours 56%</td>
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<td></td>
<td>Feeding rates at 48 hours</td>
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<td></td>
<td>Control: Breast 83%, Artificial 4%, Mixed 12%</td>
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<td></td>
<td></td>
<td></td>
<td>Intervention: Breast 88%, Artificial 4%, Mixed 7%</td>
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<td>Feeding rates at 10 days</td>
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<td></td>
<td>Control: Breast 66%, Artificial 13%, Mixed 21%</td>
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<td></td>
<td></td>
<td></td>
<td>Intervention: Breast 69%, Artificial 13%, Mixed 18%</td>
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<td>Feeding rates at 6 weeks</td>
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<td></td>
<td>Control: Breast 46%, Artificial 31%, Mixed 22%</td>
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<td></td>
<td>Intervention: Breast 53%, Artificial 28%, Mixed 19%</td>
</tr>
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<table>
<thead>
<tr>
<th>Guala, et al. (2017) Italy, Verbania</th>
<th>Quantitative Cohort Study</th>
<th>To examine SSC in the OT after CS and its relationship with duration of BF</th>
<th>252 Participant Pairs</th>
<th>Initiative:</th>
<th>Exclusive BF on hospital discharge:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Three groups:</td>
<td></td>
<td>SSC with the mother: 145</td>
<td>SSC with the mother: After the 5-minute APGAR</td>
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<tr>
<td></td>
<td>SSC with the mother</td>
<td></td>
<td>SSC with the father: 44</td>
<td>SSC with the father: After the 5-minute APGAR</td>
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<td>No SSC: 63</td>
<td>Maternal SSC on the postnatal ward</td>
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<td>Mothers:</td>
<td>No-SSC: Maternal SSC on the postnatal ward</td>
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<td></td>
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<td>≥37/40</td>
<td>Duration with the mother:</td>
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<td></td>
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<td>Having a CS</td>
<td>Indicated &gt; 2 hours - all groups</td>
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<td>Received BF information during pregnancy</td>
<td>Interrupted:</td>
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<td>Motivated to BF Partners:</td>
<td>Not stated</td>
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<td>Motivated for BF Babies:</td>
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<td>APGAR at 5 mins &gt;7</td>
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<td></td>
<td>Data Collection:</td>
<td></td>
<td>OpenEpi, contingency tables, Kelsey test and Chi Squared</td>
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<td>Data Analysis:</td>
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<td>Reference Location</td>
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<td>SSC after CS Data</td>
<td>Relevant Outcomes</td>
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<tr>
<td>Heidarzadeh, Hakimi, Habibelahi, Mohammadi, &amp; Shahzad (2016) Iran, Tabriz</td>
<td>Quantitative Comparative Study</td>
<td>To compare successful ‘breast crawl’ between neonates born by vaginal birth or CS and factors associated with a positive outcome.</td>
<td>399 Participants</td>
<td>Initiation: Vaginal birth: before expulsion of the placenta</td>
<td>Achieving breast crawl: Vaginal birth: 257/292 - 88.01% CS: 12/107 - 11.21%</td>
</tr>
<tr>
<td></td>
<td>Comparing “breast crawl” within 60 minutes of SSC between two groups of babies (reaching the nipple and having 1-2 two sucks)</td>
<td></td>
<td>Vaginal birth: 292</td>
<td>Duration of First SSC: Aimed for 60 minutes for both groups – however not recorded</td>
<td>Time for completion of breast crawl (those successful within 60 minutes only): Vaginal birth: 45 mins CS: 28 mins</td>
</tr>
<tr>
<td></td>
<td>The two groups consisted of: Unmedicated, non-instrumental vaginal birth – episiotomy included</td>
<td></td>
<td>CS: 107</td>
<td>Factored related to the unsuccessful ‘breast crawl’ cohort in the CS group</td>
<td>Factors related to the unsuccessful ‘breast crawl’ cohort in the CS group 93.6% of mothers in could not tolerate the weight of the infant due to abdominal pain 6.3% of mothers did not want to try ‘breast crawl’ due to fear of scar dehiscence</td>
</tr>
<tr>
<td></td>
<td>Repeat elective CS</td>
<td></td>
<td>Mothers: No pre-existing physical or psychiatric condition No pain relief during ‘breast crawl’</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Data Collection</td>
<td></td>
<td>Babies: Between 37/40-41/40 No multiples &gt;7 APGAR at 5 mins No medical complications No meconium stained liquor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interviews</td>
<td></td>
<td>Initiated: Vaginal: Yes CS: Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compilation of medical records</td>
<td></td>
<td>Duration of First SSC: Not stated</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Analysis: SPSS &amp; logistic regression models</td>
<td></td>
<td>Interrupted: Vaginal: Not stated CS: Not stated</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Other than until they arrived in the birth suite</td>
<td></td>
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<tr>
<td>Kollmann, et al. (2017) Austria, Graz</td>
<td>Prospective Randomized Controlled Pilot Study</td>
<td>To investigate the impact of early SSC in the OT on neonatal adaptation, maternal pain and stress response</td>
<td>35 Participants</td>
<td>Initiation: Control: In the birth suite</td>
<td>Neonatal Transition: Arterial O2 saturation – no differences Needed supplemental O2: Control – 5/18, Intervention – 1/7</td>
</tr>
<tr>
<td></td>
<td>Control = standard care: SSC when arrived in birth suite</td>
<td></td>
<td>17 Control group</td>
<td>Intervention: &lt;5 minutes</td>
<td>HR – no differences Temperature – no differences all in normal range APGARs 1 min 9, 5 mins 10, 10 mins 10: Control – 13/18, Intervention – 15/17</td>
</tr>
<tr>
<td></td>
<td>Intervention: Intra-operative SSC</td>
<td></td>
<td>18 Intervention group</td>
<td>Duration of First SSC: Not stated</td>
<td>Maternal and infant salivary stress biomarkers: Maternal – comparable between groups other than salivary alpha-amylase activity increased higher in the Intervention group in the first minutes after birth (no knowledge if is a ‘positive stressor’ or ‘negative stressor’). Newborn – too many missing samples for analysis</td>
</tr>
<tr>
<td></td>
<td>Data Collection</td>
<td></td>
<td>Mothers: &gt; 18 years of age Elective CS ≥37/40</td>
<td>Intervention: Not stated</td>
<td>Maternal wellbeing and pain: Maternal pain: no differences Maternal nausea and vomiting: no relevant differences</td>
</tr>
<tr>
<td></td>
<td>Neonatal APGAR scores, arterial O2 Sat, HR and Temp</td>
<td></td>
<td>Single baby No placental abnormality No previous vertical uterine incision No hx of major abdominal surgery</td>
<td>Intervention: Not stated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maternal pain perception Maternal and neonatal stress response - salivary free cortisol and alpha amylase tests</td>
<td></td>
<td>Babies: No foetal malformations</td>
<td></td>
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<tr>
<td></td>
<td>Data Analysis: Comparisons between the two groups using Fisher Exact Test, Mann-Whitney U test and linear mixed model using statistic software R.</td>
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<tr>
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</table>
| Koopman, Callaghan-Koru, Alaofin, Argani & Farzin (2016) US | Exploratory qualitative research  
Data Collection:  
- Semi-structured interviews  
Data Analysis: Thematic analysis  
| To provide insight into key factors from a clinician’s perspective that influence uninterrupted early (immediate) SSC after vaginal and CS birth of healthy full-term neonates  
11 Participants  
Including:  
- 5 registered nurses and 1 medical doctor from obstetrics and gynaecology  
- 4 registered nurses and 1 medical doctor from the NICU | Initiation: NA  
Duration: NA  
Interrupted: NA | | Perceptions  
- Early SSC was seldom practiced after a CS  
- <½ hour SSC is described  
Barriers after a CS  
- Institutional factors: Competing priorities, inadequate staffing, education and experience, small OT, weighing & concerns about neonatal health  
- Familial-level factors: Education and motivation, mothers want a clean neonate & do not ask for it  
- Implementation factors: Mothers being uncomfortable, absence of clear roles & communication  
Facilitators after a CS  
- Institutional factors: Discussions at prenatal visits, staff agreement of the practice & clinician education  
- Familial-level factors: Parental education and motivation  
- Implementation factors: Development of a protocol and flowchart |
| Posthuma, et al. (2017) Netherlands, Groningen | Retrospect cohort study  
Data Collection: Compilation of electronic medical records  
Data Analysis: Continuous data was tested with a Student’s t-test or non-parametric Mann-Whitney U test. Categorical data was analysed with a Chi-square test. Analysis performed using SPSS 20 | To compare maternal and neonatal outcomes after conventional CS vs a natural/skin-to-skin CS (SSCS)  
650 Participants  
- Conventional: 365  
- SSCS: 285  
Mothers:  
- No general anaesthesia  
Babies:  
- >37/40  
- No foetal distress  
| Initiation:  
- Conventional: Not stated  
SSCS: Immediate  
Duration of First SSC:  
- Conventional: Not stated  
- SSCS: During the whole CS  
Interrupted:  
- Conventional: Not stated  
SSCS: Likely, as they are all checked by a paediatrician in the recovery ward within an hour after birth | | Significant maternal findings:  
- Length of admission - Conventional: 4.4 (±1.19), SSCS: 4.0 (±0.7)  
- Prolonged maternal admission (>4 days) - Conventional: 30%, SSCS: 17%  
Non-significant maternal findings:  
- Post-operative decrease in Hb (<1.2mmol/L) - Conventional: 33%, SSCS: 38%  
- Maternal blood Transfusion - Conventional: 3%, SSCS: 1.1%  
- Maternal death – both 0.0%  
- Surgical site infection - Conventional: 1.6%, SSCS: 2.1%  
- Non-surgical site infection - Conventional: 4.1%, SSCS: 1.8%  
- Infection with positive blood culture - Conventional: 0.0%, SSCS: 0.7%  
- Total infections - Conventional: 5.8%, SSCS: 4.2%  
Significant neonatal findings:  
- Neonatal admission to paediatric ward - Conventional: 18%, SSCS: 9.5%  
- Suspected neonatal infection - Conventional: 7.3%, SSCS: 2.0%  
Non-significant neonatal findings:  
- Neonatal APGAR score <7 at 5 minutes - Conventional: 1.63%, SSCS: 2.4%  
- Umbilical artery pH <7.0 Conventional: 0.0%, SSCS: 0.4%  
- Hyperbilirubinemia - Conventional: 1.6%, SSCS: 1.4%  
- Hypoglycaemia - Conventional: 2.4%, SSCS: 1.7%  
- Hypothermia - Conventional: 1.1%, SSCS: 0.7%  
- Neonatal Sepsis - Conventional: 0.0%, SSCS: 0.3%  
- Neonatal death – both 0.0%  
- Transfer to the NICU - Conventional: 0.8%, SSCS: 0.0%  
Mean surgery time - Conventional: 36 mins, SSCS: 39 mins  
Mean recovery time - Conventional: 129 mins, SSCS: 114 mins |
<table>
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<tr>
<th>Reference Location</th>
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<th>SSC after CS Data</th>
<th>Relevant Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schneider, Crenshaw &amp; Gilder (2017) US</td>
<td>Retrospective analysis of outcomes for a Quality Improvement Project</td>
<td>To test for a difference in the proportion of transfers to the NICU for observations before/after the implementation of immediate SSC during CS</td>
<td>2841 Neonate participants • Before implementation: 1070 Mothers: • 37-42/40 • Scheduled or non-emergent CS</td>
<td>Initiation: • Before implementation: In recovery • After implementation: Immediate Duration: Not stated Interrupted: Not stated</td>
<td>Neonatal admission to NICU: • Before implementation: 5.6% • After implementation: 1.75%</td>
</tr>
<tr>
<td>Schorn, Moore, Spetalnick &amp; Morad (2015) US</td>
<td>Quality Improvement Project Implementing a ‘family-centred’ CS which included encouraging participation in decision making about the support and care at their CS, watching the birth, ‘hands-off’ neonatal resuscitation, delayed cord clamping and SSC in the OT Data Collection • Compilation of NICU medical records Data Analysis: Chi-square test</td>
<td>To describe a quality improvement process, present initial outcome data and identify areas for continued improvement and research</td>
<td>2534 Participants Babies: • Not admitted to a NICU</td>
<td>Initiation: Immediate Duration: Until bed transfer Interrupted: Yes, on bed transfer</td>
<td>SSC in the OT (cannot confirm all were a ‘family centred’ CS): • Pre-implementation: 2.1-8.1% • Post-implementation: 13.1-38.6% Exclusive BF rates on discharge: • Non-SSC: 27.9-51.4% • SSC: 1.75% 38.5-65.7%</td>
</tr>
<tr>
<td>Stone, Prater &amp; Spencer (2014) US</td>
<td>Quality Improvement Project Implementation of the Iowa Model of Evidence-Based Practice to promote Quality Care and Lewin’s Change Theory Data Collection • Survey after SSC in the OT Data Analysis: Compilation of survey data in ANOVA</td>
<td>To develop a protocol for SSC in the OT, to implement the protocol and to evaluate the process of implementation</td>
<td>Staff completed 36 surveys for 15 cases Mothers: • Full term • Non-emergent CS • Low-risk • Healthy Babies: • Low-risk • Healthy</td>
<td>Initiation: 5 mins Duration: Not stated Interrupted: Not stated</td>
<td>Barriers: • SSC became normal practice after the project • Gathering support for implementation • Staffing • High acuity of patients Facilitators • Development of a protocol • Building a network of champions • Simulations</td>
</tr>
<tr>
<td>Sundin &amp; Mazac (2015) US, Forth Worth</td>
<td>Quality Improvement Project Implementation of a Multidisciplinary Quality Group Data Collection • Postpartum interviews • Review of anesthetic record Data Analysis: Compilation of collected data. Qualitative data was sorted into broad thematic categories</td>
<td>To evaluate maternal satisfaction and maternal perception of pain when babies have SSC immediately after CS</td>
<td>583 Participants • 205 scheduled repeat CS • 60 had SSC (46 in OT) • 523 did not have SSC Mothers: • Stable • Happy to hold the baby Babies: • Stable</td>
<td>Initiation: 46 in the OT, 14 Not stated Duration: Not stated Interrupted: Not stated</td>
<td>Maternal birth experience this time with SSC in the OT vs previous CS without SSC: • 96% very satisfied, 4% satisfied vs 10% very satisfied, 84% satisfied, 6% dissatisfied Additional pain medication with SSC (includes all SSC) vs with no SSC: • 43% vs 53%</td>
</tr>
<tr>
<td>Reference Location</td>
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<tr>
<td>Yuksel, Et al, (2015)</td>
<td>Randomised Case-Controlled Study</td>
<td>To evaluate the effect of immediate SSC and early BF on maternal oxidative stress and post-operative pain</td>
<td>90 Participants</td>
<td>Initiation:</td>
<td>Immediate SSC and early breastfeeding after a CS reduces maternal oxidative stress and benefits mothers and newborns.</td>
</tr>
<tr>
<td></td>
<td>Data Collection</td>
<td></td>
<td></td>
<td>Control: Not stated</td>
<td>Post-operative time of first opioid administration and total consumption</td>
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<td>Intervention: Not stated</td>
<td>Not significant difference</td>
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<td>Preoperative serum levels:</td>
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<td>No statistical difference</td>
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<td>Total antioxidant status:</td>
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<td>Significant difference</td>
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<td>Significant difference</td>
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<td>Data Analysis: Biochemical analysis with GraphPad Prism 6.05; datasets using Kolomogorov-Smirnov test; continuous variables using mann-Whitney U test or unpaired t-test; categorical data using two-tailed Fisher’s exact test</td>
<td></td>
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<td>Positive correlation with oxytocin levels post-operatively</td>
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<td>Total oxidant status:</td>
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<td>Significant difference</td>
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<td>Oxidative stress indices:</td>
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<td>Post-operative serum levels:</td>
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<td>Maternal condition:</td>
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<td>Significant difference</td>
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<td>Post-operative serum oxytocin levels:</td>
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<td></td>
<td>Significantly higher with SSC</td>
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<td>Qualitative Interviews – Pilot Study Data Collection</td>
<td>To explore midwives’ experiences and perceptions of SSC between mother and their health full-term infants immediately after CS and during the first day after CS</td>
<td>8 Midwives</td>
<td>Initiation:</td>
<td>Fighting an uphill battle’</td>
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<td></td>
<td>Data Analysis: Qualitative content analysis inspired by Graneheim and Lundman identifying an overall theme</td>
<td></td>
<td></td>
<td>NA</td>
<td>Barriers:</td>
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<td>Duration: NA</td>
<td>Parents do not engage in and do not understand the benefits of SSC</td>
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<td>Interrupted: NA</td>
<td>Lack of staff education</td>
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<td></td>
<td>Staff shortages – may not be prioritised</td>
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<td>Maternal condition – decreased mobility and pain</td>
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<td>Lack of collaboration between wards and staff</td>
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<td>Emergency CS – staffing issues</td>
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<td>Lack of time – may not be prioritised</td>
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<td>Providing parental education is time consuming</td>
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<td>Mother-in-law perception of SSC</td>
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<td>Mothers not wanting to hold their newborn</td>
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<td>Mothers finding it difficult to hold their newborn</td>
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<td>Lack of confidence with midwives’ advice</td>
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<td>Facilitators:</td>
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<td>Elective CS - better staffing</td>
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<td>Communication - finding new ways to provide parental information</td>
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<td>Midwives feeling contentment with SSC</td>
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<td>Mothers wanting to hold their newborn</td>
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<td>Utilising partner assistance to help hold the baby</td>
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<td>Parental education in outpatient clinics</td>
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</table>
Appendix L. Advertisement Health Professionals Focus Groups and Interviews

Study Title: INTERACTIONS BETWEEN MOTHERS AND BABIES FOLLOWING ELECTIVE CAESAREAN SECTION: AN ETHONOGRAPHIC STUDY

MANAGERS, EDUCATORS, MIDWIVES

Further research applicants needed:

Do you directly work with women who are having a repeat Caesarean section?

Are you willing to be involved in an audio recorded face-to-face interview or focus group?

For more information or you would like to participate, please contact Jeni Stevens on - Phone: 0410 563 924 or email:
Jeni.Stevens@uws.edu.au

This study has been approved by the
Research Ethics Committee
Version 3

Local Health District Human
Dated 15/02/2014
Page 3 of 3

Focus Groups

All Midwifery staff welcome to either one

- **Thursday 18th September** - Birth Unit Tea Room
  2:00 PM
- **Tuesday 23rd September** - S4E Education Room
  2:30 PM
Appendix M. Advertisement Health Professionals Caesarean, Focus Groups and Interviews
Study Title: INTERACTIONS BETWEEN MOTHERS AND BABIES FOLLOWING ELECTIVE CAESAREAN SECTION: AN ETHONOGRAPHIC STUDY

DOCTORS, PAEDIATRICIANS, ANAESTHETISTS, MANAGERS, EDUCATORS, MIDWIVES & NURSES

You could potentially be asked to be involved in a research project which looks at mother and infant interaction post elective caesarean sections. This research involves recording what happens in theatre using field notes and video recording.

It is unlikely that you will be video recorded, as the focus is directly on mother/partner/support person and infant interaction. No names will be recorded in the data.

You will be asked by the researcher on the day of the caesarean section if you are willing to be a study participant. Participation is voluntary.

Further research applicants needed:

Do you directly work with women who are having a repeat caesarean section?

Are you willing to be involved in an audio recorded face-to-face interview or focus group?

For more information or you would like to participate, please contact Jeni Stevens on - Phone: 0410 563 924 or email: Jeni.Stevens@uws.edu.au
Appendix N. Advertisement Women

Study Title: INTERACTIONS BETWEEN MOTHERS AND BABIES FOLLOWING ELECTIVE CAESAREAN SECTION: AN ETHNOGRAPHIC STUDY

Are you having an elective caesarean section after a previous caesarean section?

Are you interested in being involved in a research project about the interaction you have with your baby after your caesarean section in the first few hours after your caesarean section?

For further information - please see Jeni Stevens in the Antenatal Clinic

Or contact Jeni on:

Phone: 0410 563 924 Email: Jeni.Stevens@uws.edu.au

This study has been approved by the Research Ethics Committee

Local Health District Human

Version 3. Dated 19/02/2014
Appendix O. Participant Information Sheet and Consent Form Women
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Principal Investigator: Hannah Dahlen
Professor of Midwifery
University of Western Sydney
School of Nursing and Midwifery

Invitation
You are invited to participate in a research study into the care provided to mother and baby in the first two hours following a caesarean section.

The study is being conducted by:
Jeni Stevens
PhD Student, the University of Western Sydney.
Hannah Dahlen
Professor of Midwifery, the University of Western Sydney
Virginia Schmid
Professor of Midwifery, the University of Western Sydney
Elaine Burns
Midwifery Lecturer, the University of Western Sydney

Clinical Midwifery Consultant, Hospital

Before you decide whether or not you wish to participate in this study, it is important for you to understand why the research is being conducted and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish.

What is the purpose of the study?
The purpose of this research is to observe the interactions of mother, baby, partner or support person and staff in the first 2 hours after a planned caesarean section.

Who will be invited to enter the study?
You are invited to participate in this study because you are having a planned caesarean section after previous caesarean section.

Do you have a choice?
Participation in this study is voluntary. It is completely up to you whether or not you participate. If you decide not to participate, it will not affect your care from hospital staff now or in the future. Whatever your decision, it will not affect your relationship with the staff caring for you. New information about the care being studied may become available during the course of the study.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

You will be kept informed of any significant new findings that may affect your willingness to continue in the study. If you wish to withdraw from the study after it has started, you can do so at any time without having to give a reason.

What will happen on the study?
If you agree to participate in this study, you will be asked to sign the Participant Consent Form.

If you agree to participate in this research, you will be asked to participate in:

- Answering baseline questions when you sign the consent form. These questions allow the researcher to determine when you will be having your baby, how many pregnancies you have had, and your previous breastfeeding experience. It should only take five minutes.
- ADVISE THE RESEARCHER JENI STEVENS ON 0410 663 924 OR Jeni.Stevens@uws.edu.au OF THE DATE AND TIME OF YOUR PLANNED CAESAREAN SECTION
- On the day of your baby's birth, the researcher will meet you just prior to your caesarean section to confirm that you are happy for her to be present during your baby's birth. If you agree, the researcher will follow you and your baby for up to two hours post birth. The researcher will observe and document the midwifery care you receive.
- The researcher may also ask you if you would agree to have the interaction between you and your baby (in the two hours after birth) video-recorded.
- Six weeks after the birth of the baby the researcher will contact you for a follow up audio-recorded telephone or face-to-face interview. This will be an opportunity for you to discuss your birthing and breastfeeding experience. It is estimated that this interview could take around one hour of your time.

Are there any risks?
The video-recordings may make you feel uncomfortable. There may be times where your breasts may be filmed. You have the option to not be video recorded and the researcher will just take notes of what is happening.

If you feel uncomfortable at any time in the research, you can ask for a break, or you can withdraw your consent to be a participant without any consequences.

It is important to us that the wellbeing of yourself and your baby are protected. In the unlikely event that you or your baby need extra medical care due to becoming unwell, the researcher will stop video-recording or taking notes immediately and leave the room, and will erase and destroy any data already collected that same day. Due to the research inclusion criteria the researcher will remove your data from the study.

PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Are there any benefits?
This study aims to further midwifery knowledge. The study findings are expected to provide insight into care of women and their babies following a caesarean section, how we can improve this care, and will be used to inform the way care is provided in the future. It is likely that this information will be used to inform further research. There will be no change in the care you receive, therefore this research will be of no direct disadvantage or benefit to you; however, participating in the interview will give you a chance to express your birth and breastfeeding experience.

Confidentiality / Privacy
All of the health professionals involved in your care during and within two hours after your caesarean section will know that you are participating in the study. The care that you are given will not be changed in any way.

Data Collected other than Video-Recordings:
Any identifiable information that is collected about you in connection with this study will remain confidential and will be stored separately from any interview data and will be disclosed only with your permission, or except as required by law. Only the researchers named above will have access to your details which will be held securely at the University of Western Sydney. The consent form and general information collected will be kept in a separate location from the observational and interview data. Individual participants and institutions will not be identifiable in any publications arising from this research.

Video-recordings:
You will be able to choose whether to be video-recorded and under what conditions. You are able to withdraw consent for the use of the video-recordings at any time. The video-recordings will be stored securely at the University of Western Sydney.

Will taking part in this study cost me anything, and will I be paid?
Participation in this study will not cost you anything, nor will you be paid.

What happens with the results?
If you give us your permission by signing the consent document, we plan to publish the results in peer-reviewed journals and present the results at conferences and hospital in-services. You will not be identifiable in any publication or presentation. Results of the study will be provided to you, if you wish.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Complaints
This study has been approved by Local Health District Human Research Ethics Committee and the University of Western Sydney Human Research Ethics Committee. If you have any concerns about the conduct of the study, or your rights as a study participant, you may contact: Hospital Patient Representative. (Contact Details: Email address: ). HREC project number: Study 13/47-HREC/13V/102.

Contact details
When you have read this information, the researcher Jeni Stevens will discuss it with you and any queries you may have. If you would like to know more at any stage, please do not hesitate to contact her on 0410 563 924 or email Jeni.Stevens@uws.edu.au. For further information you can also contact Hospital on 02 4734 2282. If you have any emotional stress while on the study, please contact your local doctor or Lifeline on 131 114.

Thank you for taking the time to consider this study.

If you wish to take part in it, please sign the attached consent form. This information sheet is for you to keep.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

CONSENT TO PARTICIPATE IN RESEARCH

Name of Researcher:

1. I understand that the researcher will conduct this study in a manner conforming to ethical and scientific principles set out by the National Health and Medical Research Council of Australia and the Good Clinical Research Practice Guidelines of the Therapeutic Goods Administration.

2. I acknowledge that I have read, or have had read to me the Participant Information Sheet relating to this study. I acknowledge that I understand the Participant Information Sheet. I acknowledge that the general purposes, methods, demands and possible risks and inconveniences which may occur to me during the study have been explained to me by Jeni Stevens ("the researcher") and I, being over the age of 18, acknowledge that I understand the general purposes, methods, demands and possible risks and inconveniences which may occur during the study.

3. I acknowledge that I have been given time to consider the information and to seek other advice.

4. I acknowledge that refusal to take part in this study will not affect the usual treatment of my condition.

5. I acknowledge that I am volunteering to take part in this study and I may withdraw at any time.

6. I acknowledge that this research has been approved by the Human Research Ethics Committee.

7. I acknowledge that I have received a copy of this form and the Participant Information Sheet which I have signed.

8. I acknowledge that any regulatory authorities may monitor the research in which I am agreeing to participate. However, I understand that my identity will not be disclosed to anyone else or in publications or presentations.

Please circle and initial against the video recording option you have chosen:

a. I agree for my baby and myself to be video recorded after the birth

b. I do not want to be video recorded but I am happy for notes to be taken and to be interviewed 6-8 weeks after the birth

9. I would like for my "alias" name (so that you will not be identifiable in the data) to be:


Women: Version 5. Dated 19/02/2014 Page 5 of 8

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PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Before signing, please read 'IMPORTANT NOTE' following.
IMPORTANT NOTE:
This consent should only be signed as follows:
1. Where a participant is over the age of 16 years, then by the participant personally:

Name of participant ___________________________ Date of Birth ___________________________

Signature of participant ___________________________ Date: ___________________________

Address of participant (If you want a copy of the video recording sent to you)

__________________________

Signature of researcher ___________________________ Date: ___________________________

Signature of witness ___________________________ Date: ___________________________

Women: Version 5. Dated 19/02/2014 Page 5 of 6
Appendix P. Participant Information Sheet and Consent Form Partners/Support People
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Principal Investigator: Hannah Dahien
Professor of Midwifery
University of Western Sydney
School of Nursing and Midwifery

Invitation
You are invited to participate in a research study into the care provided to mother and baby in the first two hours following a caesarean section.

The study is being conducted by:
Jeni Stevens
PhD Student, the University of Western Sydney.
Hannah Dahien
Professor of Midwifery, the University of Western Sydney
Virginia Schmied
Professor of Midwifery, the University of Western Sydney
Elaine Burns
Midwifery Lecturer, the University of Western Sydney

Clinical Midwifery Consultant, Hospital

Before you decide whether or not you wish to participate in this study, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish.

What is the purpose of the study?
The purpose of this research is to observe the interactions of mother, baby, partner or support person and staff in the first 2 hours after a planned caesarean section.

Who will be invited to enter the study?
You are invited to participate in this study because you plan to be a support person for a woman who is having a planned caesarean section after previous caesarean section.

Do you have a choice?
Participation in this study is voluntary. It is completely up to you whether or not you participate. You will be kept informed of any significant new findings that may affect your willingness to continue in the study. If you wish to withdraw from the study once it has started, you can do so at any time without having to give a reason.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

What will happen on the study?
If you agree to participate in this study, you will be asked to sign the Participant Consent Form.

If you agree to participate in this research, you will be asked to participate in:

- On the day of the baby’s birth, the researcher will meet you just prior to the caesarean section to confirm that you are happy for her to be present during the baby’s birth. If you agree, the researcher will observe and document the midwifery care received.
- The researcher may also ask you if you would agree to have the interaction between you and the baby (in the two hours after birth) video-recorded.

Are there any risks?
The video-recordings that are focused on the interaction you and your partner/friend/daughter have with the baby may make you feel uncomfortable. You have the option to not be video recorded and the researcher will just take notes of what is happening.

If you feel uncomfortable at any time in the research, you can ask for a break, or you can withdraw your consent to be a participant without any consequences.

It is important to us that the wellbeing of yourself, your partner/friend/daughter and the baby are protected. In the unlikely event that you, your partner/friend/daughter or the baby need extra medical care due to becoming unwell, the researcher will stop video-recording or taking notes immediately and leave the room, and will erase and destroy any data already collected that same day. Due to the research inclusion criteria the researcher will remove your data from the study.

Are there any benefits?
This study aims to further midwifery knowledge. The study findings are expected to provide insight into care of women and their babies following a caesarean section, how we can improve this care, and will be used to inform the way care is provided in the future. It is likely that this information will be used to inform further research. There will be no change in the care you receive, therefore this research will be of no direct disadvantage or benefit to you.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Confidentiality / Privacy
All of the health professionals involved in the care of your partner/friend/daughter within two hours post the caesarean section will know that you are participating in the study. This care will not be changed in any way.

Data Collected other than Video-Recordings:
Any identifiable information that is collected about you in connection with this study will remain confidential and will be disclosed only with your permission, or except as required by law. Only the researchers named above will have access to your details and results that will be held securely at the University of Western Sydney. The consent form will be kept in a separate location from the observational data. Individual participants and institutions will not be identifiable in any publications arising from this research.

Video-recordings:
You will be able to choose whether to be video-recorded and under what conditions. You are able to withdraw consent for the use of the video-recordings at any time. The video-recordings will be stored securely at the University of Western Sydney.

Will taking part in this study cost me anything, and will I be paid?
Participation in this study will not cost you anything, nor will you be paid.

What happens with the results?
If you give us your permission by signing the consent document, we plan to publish the results in peer-reviewed journals and present the results at conferences and hospital inservices. You will not be identifiable in any publication or presentation. Results of the study will be provided to you, if you wish.

Complaints
This study has been approved by Local Health District Human Research Ethics Committee and the University of Western Sydney Human Research Ethics Committee. If you have any concerns about the conduct of the study, or your rights as a study participant, you may contact: Hospital Patient Representative. (Contact Details: Email address: HREC project number: Study 13/47-HREC/13/102).

Contact details
When you have read this information, the researcher Jeni Stevens will discuss it with you and any queries you may have. If you would like to know more at any stage, please do not hesitate to contact her on 0410 563 924 or email Jeni.Stevens@uws.edu.au. For further information you can also contact Hospital on 02 4734 2282.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

If you have any emotional stress while on the study, please contact your local doctor or Lifeline on 131114.

Thank you for taking the time to consider this study.

If you wish to take part in it, please sign the attached consent form. This information sheet is for you to keep.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

CONSENT TO PARTICIPATE IN RESEARCH

Name of Researcher:

1. I understand that the researcher will conduct this study in a manner conforming to ethical and scientific principles set out by the National Health and Medical Research Council of Australia and the Good Clinical Research Practice Guidelines of the Therapeutic Goods Administration.

2. I acknowledge that I have read, or have had read to me the Participant Information Sheet relating to this study. I acknowledge that I understand the Participant Information Sheet. I acknowledge that the general purposes, methods, demands and possible risks and inconveniences which may occur to me during the study have been explained to me by Jeni Stevens (the researcher) and I, being over the age of 18 acknowledge that I understand the general purposes, methods, demands and possible risks and inconveniences which may occur during the study.

3. I acknowledge that I have been given time to consider the information and to seek other advice.

4. I acknowledge that refusal to take part in this study will not affect the usual treatment of my conditions.

5. I acknowledge that I am volunteering to take part in this study and I may withdraw at any time.

6. I acknowledge that the research has been approved by the Local Health District Human Research Ethics Committee.

7. I acknowledge that I have received a copy of this form and the Participant Information Sheet, which I have signed.

8. I acknowledge that any regulatory authorities may monitor the research in which I am agreeing to participate. However, I understand that my identity will not be disclosed to anyone else or in publications or presentations.

Please circle and initial against the video recording option you have chosen:

a. I agree for my baby and myself to be video recorded after the birth

b. I do not want to be video recorded but I am happy for notes to be taken and to be interviewed 6-8 weeks after the birth

9. I would like for my "alias" name (so that you will not be identifiable in the data) to be:
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Before signing, please read 'IMPORTANT NOTE' following.

IMPORTANT NOTE:
This consent should only be signed as follows:
1. Where a participant is over the age of 16 years, then by the participant personally.

Name of participant ___________________________ Date of Birth ___________________________

Signature of participant ___________________________ Date: ___________________________

Signature of researcher ___________________________ Date: ___________________________

Signature of witness ___________________________ Date: ___________________________

Appendix Q. Participant Information Sheet and Consent Form Health Professionals Theatre
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Principal Investigator: Hannah Dahlen
Professor of Midwifery
University of Western Sydney
School of Nursing and Midwifery

Invocation
You are invited to participate in a research study into the care provided to a mother and baby immediately following a caesarean section.

The study is being conducted by:
Jeni Stevens
PhD Student, the University of Western Sydney.
Hannah Dahlen
Professor of Midwifery, the University of Western Sydney
Virginia Schmied
Professor of Midwifery, the University of Western Sydney
Elaine Burns
Midwifery Lecturer, the University of Western Sydney

Clinical Midwifery Consultant, Hospital

Before you decide whether or not you wish to participate in this study, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish.

What is the purpose of the study?
The purpose of this research is to observe the interactions of mother, baby, partner or support person and staff in the first 2 hours after a planned caesarean section.

Who will be invited to enter the study?
You are invited to participate in this component of the study because you will be providing care for women during and/or following a planned caesarean section.

Do you have a choice?
Participation in this study is voluntary. It is completely up to you whether or not you participate. If you decide not to participate, it will not affect you or your relationship with the local health district or hospital now or in the future. Whatever your decision, it will not affect your employment at this hospital. New information about the care being studied may become available during the course of the study.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

You will be kept informed of any significant new findings that may affect your willingness to continue in the study. If you wish to withdraw from the study after it has started, you can do so at any time without having to give a reason.

What will happen on the study?
If you agree to participate in this study, you will be asked to sign the Participant Consent Form.

If you agree to participate in this research, you will be asked to participate in some or all of the following:

- In the Operating Theatre:
  o Observations during and post the caesarean section. The researcher will be focused on documenting, through field notes and video-recording, the interactions between the mother and her infant once the infant is born. This will include documenting the interactions between health professionals and the woman or her support person and may also include documenting the interaction between the partner/support person and the infant. The researcher will also document the layout of the theatre and where equipment is placed.

- In Recovery:
  o Observations and documenting, through field notes and video-recording, the interactions between the mother and her infant for up to two hours post the birth of the infant in recovery. This will include documenting the interactions between health professionals and the woman or her support person and may also include documenting the interaction between the partner/support person and the infant. The researcher will also document the recovery environment.

- In the Postnatal Ward:
  o Observations and documenting, through field notes and video-recording, the interactions between the mother and her infant for up to two hours post the birth of the infant in the postnatal ward. This will include documenting the interactions between health professionals and the woman or her support person and may also include documenting the interaction between the partner/support person and the infant. The researcher will also document the postnatal environment.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Are there any risks?
The video-recordings will be directly focused on the interaction between the mother and her baby. It is unlikely that you will be visually video-recorded; however it is likely that your voice may be recorded by the video-recorder. If you are inadvertently video recorded, you have the option to give consent for the whole video-recording to be used for analysis, or that the section where you are visible, to be deleted, therefore not used in analysis. You can withdraw consent to any of the above at any time.

If at any time, the mother or infant need specialised care due to complications, the researcher will stop collecting data and turn off the video-recording. The researcher will leave the room and will delete and destroy the data collected that same day. Due to the research inclusion criteria the researcher will remove your data from the study. If you feel uncomfortable at any time in the research, you can withdraw your consent to be a participant without any consequences.

Are there any benefits?
This study aims to further midwifery knowledge. The study findings are expected to provide insight into care of woman and their babies following a caesarean section, how we can improve this care, and will be used to inform the way care is provided in the future. It is likely that this information will be used to inform further research. There will be no change in the care you provide. This research will be of no direct disadvantage or benefit to you.

Confidentiality / Privacy
All of the health professionals involved in the care of the mother and baby in your specific area of work will know that you are participating in the study.

Data Collected other than Video-Recordings;
Any identifiable information that is collected about you in connection with this study will remain confidential and will be disclosed only with your permission, or except as required by law. Only the researchers named above will have access to your details which will be held securely at the University of Western Sydney. The consent form will be kept in a separate location from the observational data. Individual participants and institutions will not be identifiable in any publications arising from this research.

Video-recordings:
You are unlikely to be video-recorded. If you do inadvertently get video-recorded, you will be able to choose what conditions that you have in regard to use of the video-recordings. You are able to withdraw from consent of the use of the video-recordings at any time. The video-recordings will be stored securely at the University of Western Sydney.

PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Will taking part in this study cost me anything, and will I be paid?
Participation in this study will not cost you anything, nor will you be paid.

What happens with the results?
If you give us your permission by signing the consent document, we plan to publish the results in peer-reviewed journals and present the results at conferences and hospital in-services. You will not be identifiable in any publication or presentation. Results of the study will be provided to you, if you wish.

Complaints
This study has been approved by Local Health District Human Research Ethics Committee and the University of Western Sydney Human Research Ethics Committee. If you have any concerns about the conduct of the study, or your rights as a study participant, you may contact Hospital Patient Representative. (Contact Details: 02 - Email address: HREC project number: Study 13/47-HREC/13/162.

Contact details
When you have read this information, the researcher Jeri Stevens will discuss it with you and any queries you may have. If you would like to know more at any stage, please do not hesitate to contact her on 0410 563 924 or email Jeri.Stevens@uws.edu.au. For further information you can also contact Hospital on 02 4734 2292. If you have any emotional stress while on the study, please contact the staff counsellor on 02 4734 2677 or your local doctor.

Thank you for taking the time to consider this study.

If you wish to take part in it, please sign the attached consent form. This information sheet is for you to keep.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

CONSENT TO PARTICIPATE IN RESEARCH

Name of Researcher:

1. I understand that the researcher will conduct this study in a manner conforming to ethical and scientific principles set out by the National Health and Medical Research Council of Australia and the Good Clinical Research Practice Guidelines of the Therapeutic Goods Administration.

2. I acknowledge that I have read, or have had read to me the Participant Information Sheet relating to this study. I acknowledge that I understand the Participant Information Sheet. I acknowledge that the general purposes, methods, demands and possible risks and inconveniences which may occur to me during the study have been explained to me by Jeni Stevens (the researcher) and I, being over the age of 18, acknowledge that I understand the general purposes, methods, demands and possible risks and inconveniences which may occur during the study.

3. I acknowledge that I have been given time to consider the information and to seek other advice.

4. I acknowledge that refusal to take part in this study will not affect the usual treatment of my condition.

5. I acknowledge that I am volunteering to take part in this study and I may withdraw at any time.

6. I acknowledge that this research has been approved by the Local Health District Human Research Ethics Committee.

7. I acknowledge that I have received a copy of this form and the Participant Information Sheet, which I have signed.

8. I acknowledge that any regulatory authorities may monitor the research in which I am agreeing to participate. However, I understand that my identity will not be disclosed to anyone else or in publications or presentations.

Before signing, please read "IMPORTANT NOTE" following.

IMPORTANT NOTE:
This consent should only be signed as follows:
1. Where a participant is over the age of 16 years, then by the participant personally:

Name of participant ______________________ Date of Birth ________________

Signature of participant ______________________ Date: ________________

Signature of researcher ______________________ Date: ________________

Signature of witness ______________________ Date: ________________

Health Professional's Theatre, Version 4. Dated 19/02/2014 Page 5 of 6
Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Please circle and initial against the video recording option you have chosen – Only fill in if you are inadvertently video-recorded:

- I consent for the whole video-recording to be used for analysis
- I want the section of the video-recording that I am in to be deleted, therefore not be used for analysis.

Please Remember: You can withdraw consent to the above at any time.
Appendix R. Participant Information Sheet and Consent Form Health Professional Interviews

PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Principal Investigator: Hannah Dahlen
Professor of Midwifery
University of Western Sydney
School of Nursing and Midwifery

Invitation
You are invited to participate in a research study into the care provided to a mother and baby immediately following a caesarean section.

The study is being conducted by:
Jeni Stevens
PhD Student, the University of Western Sydney.
Hannah Dahlen
Professor of Midwifery, the University of Western Sydney
Virginia Schmied
Professor of Midwifery, the University of Western Sydney
Elaine Burns
Midwifery Lecturer, the University of Western Sydney

Clinical Midwifery Consultant,

Before you decide whether or not you wish to participate in this study, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish.

What is the purpose of the study?
The purpose of this research is to observe the interactions of mother, baby, partner or support person and staff in the first 2 hours after a planned caesarean section.

Who will be invited to enter the study?
You are invited to participate in this component of the study because you are involved in providing care for women during and/or following a planned caesarean section.

Do you have a choice?
Participation in this study is voluntary. It is completely up to you whether or not you participate. If you decide not to participate, it will not affect you or your relationship with the local health district or hospital now or in the future. Whatever your decision, it will not affect your employment at this hospital. New information about the care being studied may become available during the course of the study. You will be kept informed of any significant new findings that may affect your willingness to continue in the study.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

If you wish to withdraw from the study after it has started, you can do so at any time without having to give a reason.

What will happen on the study?
If you agree to participate in this study, you will be asked to sign the Participant Consent Form.

If you agree to participate in this research, you will be asked to participate in:

- An audio-recorded focus group or face-to-face interview. Focus groups and one-to-one interviews will be conducted at a time and place convenient for staff. Focus groups and one-to-one interviews will take around 60 minutes of your time.

Are there any risks?
If you decide to be a participant of a focus group and you feel uncomfortable at any time during the research, you can ask for a break or you can withdraw your consent to be a participant.

Are there any benefits?
This study aims to further midwifery knowledge. The study findings are expected to provide insight into the care of women and their babies following a caesarean section, how we can improve this care, and will be used to inform the way care is provided in the future. It is likely that this information will be used to inform further research. This research will be of no direct disadvantage or benefit to you.

Confidentiality / Privacy
Focus Group Participation:

Only the participants in the focus group and the above named researchers will know that you are a participant in the research. Every participant in the focus group will be asked to sign a statement that they will not identify any of the other participants in their focus group and will not discuss with anyone what has been disclosed. All aspects of the study, including results will be confidential and only the above named researchers will have access to information on participants (in coded form). The consent form and the general information about you will be kept in a separate location from the interview data. The data will be stored securely at the University of Western Sydney. Individual participants in the focus groups and institutions will not be identifiable in any publications or presentations arising from this research.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Face-to-Face Interview Participation:

All aspects of the study, including results will be confidential and only the above named researchers will have access to information on participants (in coded form). The consent form and the general information about you will be kept in a separate location from the interview data. The data will be stored securely at the University of Western Sydney. Individual participants in the face to face groups and institutions will not be identifiable in any publications or presentations arising from this research.

Data Collected:

Any identifiable information that is collected about you in connection with this study will remain confidential and will be stored separately from any interview or focus group data. Only the researchers named above will have access to your details which will be held securely at the University of Western Sydney. The consent form and general information collected will be kept in a separate location from the focus group and interview data. Individual participants and institutions will not be identifiable in any publications arising from this research.

Will taking part in this study cost me anything, and will I be paid?

Participation in this study will not cost you anything, nor will you be paid.

What happens with the results?

If you give us your permission by signing the consent document, we plan to publish the results in peer-reviewed journals and present the results at conferences and hospital inservices. You will not be identifiable in any publication or presentation. Results of the study will be provided to you, if you wish.

Complaints

This study has been approved by Local Health District Human Research Ethics Committee and the University of Western Sydney Human Research Ethics Committee. If you have any concerns about the conduct of the study, or your rights as a study participant, you may contact:

(Contact Details: HREC project number: Study 13/47-HREC/13/102.)
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Contact details
When you have read this information, the researcher Jeni Stevens will discuss it with you and any queries you may have. If you would like to know more at any stage, please do not hesitate to contact her on 0410 563 924 or email Jeni.Stevens@uws.edu.au. For further information you can also contact at Hospital on 02 . If you have any emotional stress while on the study, please contact the staff counsellor on 02 or your local doctor.

Thank you for taking the time to consider this study.

If you wish to take part in it, please sign the attached consent form. This information sheet is for you to keep.
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean
section: An ethnographic study

CONSENT TO PARTICIPATE IN RESEARCH

Name of Researcher:

1. I understand that the researcher will conduct this study in a manner conforming to ethical and scientific principles set out by the National Health and Medical Research Council of Australia and the Good Clinical Research Practice Guidelines of the Therapeutic Goods Administration.

2. I acknowledge that I have read, or have had read to me the Participant Information Sheet relating to this study. I acknowledge that I understand the Participant Information Sheet. I acknowledge that the general purposes, methods, demands and possible risks and inconveniences which may occur to me during the study have been explained to me by [Name of Researcher] (the researcher) and I, being over the age of 18, acknowledge that I understand the general purposes, methods, demands and possible risks and inconveniences which may occur during the study.

3. I acknowledge that I have been given time to consider the information and to seek other advice.

4. I acknowledge that refusal to take part in this study will not affect the usual treatment of my condition.

5. I acknowledge that I am volunteering to take part in this study and I may withdraw at any time.

6. I acknowledge that this research has been approved by the Human Research Ethics Committee.

7. I acknowledge that I have received a copy of this form and the Participant Information Sheet, which I have signed.

8. I acknowledge that any regulatory authorities may monitor the research in which I am agreeing to participate. However, I understand that my identity will not be disclosed to anyone else or in publications or presentations.

Please circle and initial against the appropriate answer, and sign the statement if appropriate.

- A face-to-face interview
- A focus group
  - I will not reveal to any person who is involved in my focus group any information that is confidential, and I will not discuss with anyone what has been disclosed.

Signature of Participant: ___________________________ Date: / / 

Health Professionals Interview: Version 4

Dated: 16/02/2014

Page 5 of 5
PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

Before signing, please read 'IMPORTANT NOTE' following.

IMPORTANT NOTE:
This consent should only be signed as follows:

1. Where a participant is over the age of 16 years, then by the participant personally.

Name of participant ______________________________ Date of Birth ______________

Signature of participant __________________________ Date: __________________

Signature of researcher ___________________________ Date: __________________

Signature of witness ______________________________ Date: __________________
Appendix S. Health Professional Focus Group and Interviews Baseline Information

**Study Title:** INTERACTIONS BETWEEN MOTHERS AND BABIES FOLLOWING ELECTIVE CAESAREAN SECTION: AN ETHONOGRAPHIC STUDY

**HEALTH PROFESSIONALS – FOCUS GROUP AND INTERVIEWS –**

Baseline Information

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>ANSWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your profession?</td>
<td></td>
</tr>
<tr>
<td>How long have you been working in your profession?</td>
<td></td>
</tr>
</tbody>
</table>
Appendix T. Women Baseline Information

Study Title: INTERACTIONS BETWEEN MOTHERS AND BABIES FOLLOWING ELECTIVE CAESAREAN SECTION: AN ETHNOGRAPHIC STUDY

WOMEN – Baseline Information

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>ANSWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your age?</td>
<td></td>
</tr>
<tr>
<td>Do you have any medical conditions? If so, what are they?</td>
<td></td>
</tr>
<tr>
<td>How many times have you been pregnant?</td>
<td></td>
</tr>
<tr>
<td>How many children have you got now?</td>
<td></td>
</tr>
<tr>
<td>What types of birth have you previously experienced?</td>
<td></td>
</tr>
<tr>
<td>What were your previous caesarean sections for? (e.g. foetal distress, high blood pressure)</td>
<td></td>
</tr>
<tr>
<td>What is your ethnic background?</td>
<td></td>
</tr>
<tr>
<td>Have you previously breastfed?</td>
<td></td>
</tr>
</tbody>
</table>

This study has been approved by the Local Health District Human Research Ethics Committee

Version 1. Dated 1/7/2013

Page 1 of 2
Appendix U. Field Notes Data Collection Form

Adapted from Cantrill (2006)

Alias Name……………………………………………………………Date……………………….GP………. Gestation……………

Anaesthetic …………………………… Support Person…………………………………………………………

<table>
<thead>
<tr>
<th>What</th>
<th>Time / NA</th>
<th>What</th>
<th>Time / NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gown Undone prior CS</td>
<td></td>
<td>Pokes out tongue</td>
<td></td>
</tr>
<tr>
<td>Blankets/Beanie</td>
<td></td>
<td>Salivates</td>
<td></td>
</tr>
<tr>
<td>Time of birth</td>
<td></td>
<td>Attempts to turn head</td>
<td></td>
</tr>
<tr>
<td>Apgars</td>
<td></td>
<td>Sucks on skin</td>
<td></td>
</tr>
<tr>
<td>Meconium</td>
<td></td>
<td>Grasps nipple</td>
<td></td>
</tr>
<tr>
<td>PPH</td>
<td></td>
<td>Sucks on hand</td>
<td></td>
</tr>
<tr>
<td>Taken to resus trolley</td>
<td></td>
<td>Attaches to the breast</td>
<td></td>
</tr>
<tr>
<td>Taken to the mother</td>
<td></td>
<td>Detaches</td>
<td></td>
</tr>
<tr>
<td>Taken to the father/support</td>
<td></td>
<td>Breastfeeds</td>
<td></td>
</tr>
<tr>
<td>Taken from the father/support</td>
<td></td>
<td>Finishes breastfeed</td>
<td></td>
</tr>
<tr>
<td>Placed in cot</td>
<td></td>
<td>Talks</td>
<td></td>
</tr>
<tr>
<td>Wrapped/Naked</td>
<td></td>
<td>Cries</td>
<td></td>
</tr>
<tr>
<td>Skin to Skin</td>
<td></td>
<td>Weighed</td>
<td></td>
</tr>
<tr>
<td>Face to face/other contact</td>
<td></td>
<td>Measured</td>
<td></td>
</tr>
<tr>
<td>Pushes with feet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crawling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grasping with hands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eyes open</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand to mouth</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conversations/who/time:

                                                                
                                                                
                                                                

Theatre Layout: Picture
### Stages of Skin to Skin: Adapted from Brimdyr, Svensson, & Widström (2010)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Times</th>
<th>What does the infant do</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birth Cry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relaxation:</strong> SS with mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Awakening:</strong> small movements head, shoulders, opens eyes, some mouth movements</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Activity:</strong> increased mouthing movements, rooting</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rest:</strong> any time</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crawling:</strong> approaches the breast, reaches the nipple (&gt;35 mins post birth)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Familiarization:</strong> massaging, licking the breast, salivating (&gt;45 mins post birth, for around 20 mins)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Suckling:</strong> Takes the nipple, self-attaches and breastfeeds (about 1 hour post birth)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sleep</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix V. Women Interview Questions
Study Title: Interactions between mothers and babies following elective caesarean section: An ethnographic study

WOMEN – SIX WEEK POSTNATAL INTERVIEW QUESTIONS

- Tell me about your birth

- How do you compare this birth experience with prior birth/s?

- How would you describe your contact with your baby post your caesarean section?

- How was it different than with your other child/children?

- Tell me about your current breastfeeding experience

- How does this breastfeeding experience compare to prior experiences?
Appendix W.  Health Professional Focus Group and Interview Questions

**Study Title:** Interactions between mothers and babies following elective caesarean section: An ethnographic study

**HEALTH PROFESSIONAL FOCUS GROUP AND INTERVIEW QUESTIONS**

- What do you know about skin to skin?

- What settings have you seen skin to skin being implemented?

- How can skin to skin be provided in the operating theatre?

- What do you perceive are barriers in providing skin to skin in the operating theatre?

- What do you perceive are benefits in providing skin to skin in the operating theatre?
Appendix X. Procedure: Skin-to-Skin Contact in the Operating Theatre and Recovery Unit

Procedure

Title: Skin-to-Skin Contact in the Operating Theatre and the Recovery Unit

Intended Audience: All staff involved in the care of women undergoing a planned caesarean section including Registered Nurses/Midwives, Enrolled Nurses, Anaesthetists, Paediatricians, Neonatologists and Obstetricians


Context:
The Baby Friendly Health Initiative (BFHI) is a WHO and UNICEF initiative that aims to give every baby the best start in life. The BFHI does this by creating a health care environment where breastfeeding is the norm and where evidence based practice is used to promote the health and well-being of all babies and their mothers. The BFHI Ten Steps to Successful Breastfeeding are the global standard by which health services are assessed and accredited (World Health Organization & United Nations Children's Fund, 2009).

This procedure describes how to implement step four (4) of the ten steps for BFHI, being:

“Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour and encourage mothers to recognise when their babies are ready to breastfeed, offering help if needed” (Australian College of Midwives, 2016a, p. 22)

In regards to a caesarean section:

Optimum practice:
- The baby is placed skin-to-skin on the mother’s chest while she is on the theatre table, immediately after or within 5 minutes.

BFHI minimum requirements:
- When the mother has not had a general anaesthetic, her baby is on her chest in skin-to-skin contact no later than 10 minutes after she arrives in recovery, unless evidence can be provided that the mother’s or baby’s condition prevented this.
- When the mother has had a general anaesthetic, her baby is on her chest in skin-to-skin contact within 10 minutes of being able to respond to her baby, unless evidence can be provided that the mother’s or baby’s condition prevented this.

(Australian College of Midwives, 2016a, p. 22)

This policy currently covers the care of mothers and their babies after planned caesarean sections with no general anaesthetic. The aim is to increase this service to all mothers undergoing a caesarean section in the near future.
Definitions

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFHI</td>
<td>Baby Friendly Health Initiative. An initiative from the WHO and UNICEF which aims to protect, support and promote breastfeeding</td>
</tr>
<tr>
<td>BU</td>
<td>Birth Unit</td>
</tr>
<tr>
<td>CS</td>
<td>Caesarean Section</td>
</tr>
<tr>
<td>MRN</td>
<td>Medical Record Number</td>
</tr>
<tr>
<td>OT</td>
<td>Operating Theatre</td>
</tr>
<tr>
<td>SSC</td>
<td>Skin-to-Skin Contact - Where naked babies (sometimes with a nappy on) are placed directly on the bare chest of the mother, father or support person</td>
</tr>
</tbody>
</table>

Antenatal Period

All women giving birth in the operating theatre will be informed by their Midwife about:

- The benefits of SSC within the first hour of birth for all mother/baby dyads
- The role that SSC plays in facilitating the first breastfeed (if planning to breastfeed)
- A pamphlet discussing the support person’s role in the operating theatre and recovery
- A record of the discussion and the woman’s decision re: SSC will be documented in her medical record

Equipment

Operating Theatre (provided and checked by the BU midwife)

- A fully equipped neonatal resuscitation unit
- Theatre pack with paperwork
- 2 x warm towels
- 3 x bunny rugs
- Baby bonnet
- Nappy

Recovery (provided and checked by the SSC midwife/RN/EN)

- A bassinet with functional O2 and suction setup attached and a fully equipped neonatal resuscitation unit
- Thermometer and probe covers
- Blood glucose monitor and lancets
- Weighing machine
- Bunny rugs
- Nappies
- Singlets and gowns for the baby
- Disposable bottle and teat, artificial baby milk in a small container for medical purposes
- Disposable gloves
- Spare equipment and paperwork

Procedure

Procedure Rules

The following rules apply throughout this procedure:
• One support person is allowed in OT and recovery, unless special permission is sought
• The newborn and support person will not be transferred to another ward (e.g. recovery/postnatal) without the mother unless there is no staff available to observe the baby
• The staff member allocated to look after the baby has the main responsibility to look after the support person and will inform them about maintaining the sterile field. Other staff members are encouraged to assist when necessary.

**ALERT**
The wellbeing of the mother and neonate take precedence over Skin-To-Skin Contact

Set up before the operation

The BU ward clerk will:
• Ring the postnatal ward to let them know that a woman is going to theatre - to ensure that the recovery nurse/midwife will be in recovery within the hour

The BU/Caseload midwife will:
• Prepare the mother and the paperwork for the mother prior to arrival at the OT for CS or instrumental birth prior and document the location of EBM
• Determine how the mother wants to feed her baby
• Arrange for the safe storage of the expressed breastmilk brought in from home
• Confirm/request consent for Hepatitis B vaccine and Vitamin K injection and request the RMO to complete the paediatric medication chart
• Ensure one arm is out of the OT gown to allow easier access for the newborn to be placed in SSC
• Encourage and educate the mother on how to express her breastmilk before entering the operating theatre
• Consider ways to make the anaesthetic bay less crowded (e.g. keep the babies cot outside the OT exit door)
• Ensure that the support person is dressed for theatre, has read the support person pamphlet and will direct them where to go and sit in theatre
• Attend the caesarean list team briefing to discuss that they aim to provide SSC in the operating theatre

The Anaesthetic staff will:
• Aim to place the Intravenous Cannula on the left arm, avoiding the cubital fossa

The Operating Theatre staff will:
• Ring the birth unit midwife just before the caesarean list team briefing is to occur, so they can attend it.
In the Operating Theatre

The BU/Caseload midwife will:

- Request, before surgery starts, for the sterile drape to be lowered when the neonate is born so that the mother can see her newborn being born and if delayed cord clamping occurs
- Discuss the possibility of the neonate going directly to the mother once he/she is born, if a NICU doctor is present
- Check the neonatal resuscitation trolley
- Be responsible for the safety of the newborn

**ALERT**

Babies who require resuscitation or are in an unstable condition at birth may not be suitable for immediate Skin-to-Skin contact, however once the baby is stable Skin-to-Skin should be offered.

The Operating Theatre staff will:

- Raise the head of the bed and ensure that a pillow is available for the mother
- Ensure that the sterile drape is taught and low enough down the mother’s chest to allow the baby to have SSC with the mother without impeding in the surgical area
- Recommend that the ‘black bar’ (the bar used to hold a bandage used to keep the mother’s abdomen open) not used as it restricts the space on the mother’s chest – use the taller equivalent if necessary
- Maintain the safety of the mother

The Anaesthetic staff will:

- Place the BP cuff on the right arm
- Place the cardiac monitoring dots/leads on the shoulder-tips and the sides – avoiding the chest area
- Place the O2 Sat monitor on an ear lobe

Once the baby is born

The BU/Caseload midwife will:

- Receive the newborn
- Determine the wellbeing of the baby
- If the neonate is not stable:
  - Provide the appropriate care - resuscitate if necessary
  - Get another staff member to call for urgent assistance if it is required
  - Obtain APGAR scores
  - Transfer the neonate to the NICU, with the support person if necessary
  - Place the neonate in SSC with the mother if baby stabilises
- If the neonate is stable
  - Place the neonate immediately in SSC with the mother
  - Dry the neonate on the mother’s chest with the receiving towel
  - Surround the neonate with dry and warm dry towels/bunny rugs which have been collected from the neonatal resuscitation trolley by the scout nurse
o Observe the neonate and obtain APGAR scores, clamp the cord and encouraged the support person to cut the cord whilst on the mothers chest
o Places the baby in optimal SSC position – chest to chest, and cover with the dry and warm towels/bunny rugs
o Ensure that the neonate does not encroach into the surgical area
o Ensure the safety of the neonate whilst on the mothers chest and educate the support person as per “Keeping Babies Safe During Skin-to-Skin Contact” Procedure – observe for breathing, colour, tone and ensure the baby does not fall
  • Ensure that the support person maintains the sterile field
  • Place ID tags on the mother and one on the neonate as per policy (triband)
  • Help maintain the sterile area
  • Remove the neonate immediately from the mothers chest if OT staff are concerned about the wellbeing of the mother
  • Complete the appropriate documentation in the Neonatal Examination Daily Assessment and Care Plan
  • Collect the placenta and take cord gases if required

The Operating Theatre staff will:
  • Drop the drape once the newborn is born to help the mother and her support person visualise the baby - if the surgeon permits
  • Alert the BU/Caseload midwife if the newborn is encroaching into the surgical area
  • Not request removal of the newborn from the mothers chest unless it is medically indicated
  • Ensure the safety of the mother

**ALERT**
The baby should not be removed from the maternal chest unless it is medically indicated or on maternal request.

The operating theatre/recovery staff will alert the BU/Caseload midwife or SSC nurse/midwife if the newborn needs to be removed from the mother’s chest to maintain the safety of the mother. The BU/Caseload midwife or SSC midwife/nurse/enrolled nurse/AIM will immediately move the baby.

The baby should ideally go to either the support person, or if deemed necessary the resusitaire or NICU. If the support person is the partner, then SSC with the partner should be encouraged.

**Transferring the mother and baby from the operating theatre bed to the ward bed**

The BU/Caseload midwife will:
  • Ensure that SSC is not disturbed
  • Ensure the safety of the baby with the transfer and that the mother and baby remain together
  • Ensure that the support person is in an safe area
  • Get the mother to cross her arms over her baby
  • The midwife is to place his/her hands over the mother’s arms to ensure the safety of the baby on transfer
The Operating Theatre staff will:

- Ensure the safety of the mother
- Utilise all available staff (including 2xOAs if available) to transfer the mother

**In Recovery**

The BU/Caseload midwife will:

- Take the completed birth and neonatal summaries and paediatric medication chart to the allocated SSC staff member in recovery
- Ring the postnatal ward to get the SSC staff member to come down if they are not present
- Hand over to the allocated SSC staff member
- Complete eMaternity documentation of the birth, the appropriate sections of the Neonatal Examination Daily Assessment and Care Plan and progress notes
- Will Inform BU reception of the time of birth and sex of the infant in order to generate a medical record number (MRN) for the infant, and will inform the allocated SSC health professional of the MRN

The SSC midwife/nurse/3rd year assistant in midwifery/enrolled nurse will:

(Note: The enrolled nurse is required to have completed the “Enrolled Nurse Skin-to-Skin Contact in Recovery Education Sign-Off Sheet” before commencing this care – see attached)

- Ensure that they are ready to receive the baby in recovery within one hour of notification of the caesarean by the BU ward clerk
- Ensure that SSC is undisturbed for at least an hour, unless medically indicated
- Ensure that SSC is undisturbed until after the completion of the first breastfeed if the mother plans to breastfeed, unless medically indicated
- Provide hands-off breastfeeding support/education
- Offer assistance if required (e.g. re-positioning the neonate)
- Educate the mother and support person about maintaining the safety of the newborn whilst having SSC as per “Keeping Babies Safe During Skin-to-Skin Contact” Procedure
- Discuss optimal positioning of the baby while in SSC, to decrease the risk of airway occlusion by the mothers breast/body
- Encourage SSC with the partner if the mother requests to not have SSC
- Perform and document relevant areas of the Neonatal Care Plan that may be achieved without disturbing SSC:
  - Paediatric Falls Risk
  - Paediatric Pressure Injury
  - Daily Neonatal Assessment
  - Daily Feeding Assessment
  - Group B Strep Observations (if indicated)
  - Meconium stained liquor observations (if indicated)
  - Subgaleal observations (if indicated)
  - Blood glucose levels (if indicated)
- Place the last triband on the baby with the inclusion of their MRN
- Perform and document relevant Maternal documentation
- Postnatal Assessment form front page
- Ontario Modified Stratify Falls Risk Screen
- Waterlow Score

- Document relevant information in the Blue Book, progress notes, standard neonatal observation chart (SNOC) and eMaternity
- If the mother and newborn are still in Recovery after an hour of SSC/the first breastfeed, complete:
  - The neonatal examination (midwives/RN’s only)
  - Any other appropriate assessments not attended with SSC
- Be responsible for the baby on transfer to the Postnatal Ward

Recovery nurse will:

- Maintain the safety of the mother
- Perform checks as per policy
- Not request removal of the newborn from the mothers chest unless it is medically indicated
- Be responsible for the safety of the mother on transfer to the Postnatal Ward. If both the recovery RN and the SSC midwife/RN (not 3rd year AIM or EN) agree, the SSC midwife/RN may receive the mothers’ handover and take both the mother and newborn up to the postnatal ward.

**ALERT – NEONATAL EMERGENCY**
The BU/Caseload midwife or SSC staff member will provide appropriate care to the newborn.

The operating theatre/recovery staff will call and state where they are.

The team will bring the Blue Bag to recovery and will assist with/take over the care of the newborn.

**On Arrival to the Postnatal Ward**

The SSC midwife/nurse/3rd year assistant in midwifery/enrolled nurse will:

- Hand over care of the newborn (and the mother if they received handover from recovery staff) to the allocated midwife on the Postnatal Ward

The SSC midwife/nurse OR the postnatal ward midwife will:

- Complete the neonatal examination, daily neonatal assessment, Blue Book, progress notes, standard neonatal observation chart (SNOC)
- Update e-maternity (including weight etc…)
- Give Hep B and Vitamin K if consent is obtained

If recovery staff complete the transfer to the postnatal ward, recovery staff will:

- Hand over care of the mother to the allocated Postnatal midwife
On Neonatal Discharge

- The staff member that completes the neonatal discharge summary will ensure that all relevant details are completed in e-Maternity (e.g. weight, length, etc…)

Implementation Plan

To support the implementation of a new policy or procedure an implementation plan will be included in the document and will include:

- Education by the means of in-services and mentoring if required of midwives, operating theatre staff, recovery staff and postnatal nurses and enrolled nurses
- This plan will be fully implemented by 6 months of publication of this protocol
- Numbers will be by all appropriate phones
- Further communication of this protocol will be disseminated through group emails and through communication books in appropriate wards
- Resource requirements – a resusitaire for recovery
- Systems for monitoring compliance: Skin-to-Skin contact rates will be observed through the appropriate electronic medical records
- This project will be run by Jeni Stevens, and by a team of midwifery educators

Risks of Non-Compliance

Low risk

References and Related Policies


Review Date and Version History

The review date of all procedures is three (3) years unless an earlier review is required due to changes in law, policy or practice.

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<td>19/9/17</td>
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<td>20/10/17</td>
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Enrolled Nurse Skin-to-Skin Contact in Recovery
Education Competency

Staff Member Name:______________________________
Staff ID Number:_________________________________

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I _____________________________________(staff member) confirm that ____________________________________________ (Enrolled Nurse) is competent in providing care related to Skin-to-Skin Contact in Recovery.

Signature___________________________________________
Date_______________________________________________

I _____________________________________ (Enrolled Nurse) confirm that I feel confident in providing Skin-to-Skin Contact care in Recovery and will seek further education/advice if needed.

Signature___________________________________________
Date_______________________________________________