

Immediate, uninterrupted skin-to-skin contact and breastfeeding after birth: A cross-sectional electronic survey

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ABSTRACT

Objective: To determine the incidence of immediate, uninterrupted skin-to-skin contact and breastfeeding after birth; and which factors are associated with it.

Design: Cross-sectional e-survey was developed and piloted prior to distribution. Sampling was purposive and included snowball sampling. Associations between maternity care practices and the primary outcome measure were examined using logistic regression.

Setting: Australia

Participants: Women who birthed a term baby within the previous three years, in any Australian setting (hospital, birth centre or at home), were eligible to participate.

Measurements and findings: 1200 postpartum women met the eligibility criteria and completed the e-survey. The primary outcome, 'pronurturance', included: 1) immediate mother/baby holding; 2) skin-to-skin contact; 3) uninterrupted holding for at least 60 minutes; 4) breastfeeding in the birth setting. Of 1,200 participants, 22% (n=258) experienced pronurturance. Pronurturance was less likely following caesarean section (adjusted Odds Ratio (aOR) 0.07, 95% Confidence Interval (CI) 0.03-0.17). Pronurturance was more likely with a known midwife during labour and birth (aOR 1.89, 95% CI 1.35-2.65). Contributing to the low rate of pronurturance were lack of antenatal skin-to-skin information; babies being wrapped; women wearing clothing; and non-urgent caregiver interruptions including weighing the baby or facilitating the mother to shower.

Key conclusion: Health services must strategically address the institutional processes which delay and/or interrupt skin-to-skin contact and breastfeeding in both birth suite and operating theatre settings.

Implications for practice: Midwives and midwifery students providing continuity of carer are best placed to provide pronurturance to mothers and babies. Caregivers should educate women about pronurturance antenatally, and actively support immediate, uninterrupted mother/baby skin-to-skin contact and breastfeeding after birth.

Keywords: Midwifery, Skin-to-skin, Breastfeeding, Health Services, Newborn, Surveys and Questionnaires

Introduction

In Australia and elsewhere in the developed world, hospitals became the default place for birth in the early days of the 20th Century. As part of this shift to hospital, immediately after birth, newborns were removed from their mothers and taken to the nursery where they were cared for and returned to their mothers every four hours for feeding. Routine separation of newborns and their mothers at birth represented a huge departure from the hormonally-mediated way human and other mammals have evolved to interact with, protect and care for their babies from birth (Serperoa et al., 2013, Wynne-Edwards & Weil, 2019). While the Baby Friendly Hospital Initiative and its' Ten Steps for Successful Breastfeeding have gone some way to redress this practice; remnants of this routine separation still exist in hospitals today (World Health Organization & UNICEF, 2018).

The first minutes and hours after birth are a sensitive period for mammals and any disruption to this time can affect the newborn's long term health and even survival (Moore et al., 2016; Serperoa et al., 2013). At birth, skin-to-skin (SSC) contact between the newborn and her/his mother optimises the oxytocin signalling pathways in both. Oxytocin triggers sensitive caregiving and protective behaviours in the mother and reduces the stress response to being born for the neonate (Pohl et al., 2019). Quality, uninterrupted, extended mother/baby SSC and access to the mother's breast for at least one hour after birth facilitates mother-newborn interaction and optimal psychophysiological functioning for both mother and infant (Moore et al., 2016; Pohl et al., 2019). Newborns benefit from SSC in terms of cardio-respiratory stability, optimal thermoregulation and normal blood sugar levels. (Hofer et al., 2006). Their stress response at birth is ameliorated and they cry 90% less than babies who do not experience SSC at birth (Christensson et al., 1995). During this sensitive period post-birth, SSC has potential life-long effects on cognitive ability (Aisa et al., 2007); the capacity to form trusting relationships (Feldman et al., 2016; Pohl et al., 2019); and the mental and physical health of the individual, including the development of a healthy microbiome (Hendricks-Muñoz et al., 2015). In addition, SSC at birth has been found to facilitate long-term breastfeeding (Bystrova et al., 2009). The well-known benefits of successful breastfeeding have also been correlated with protection from childhood abuse and neglect (Strathearn et al., 2009).

Literature review

Women who have early SSC with their newborns are more likely than those having usual hospital care to have an ‘effective’ first breastfeed, be discharged from hospital exclusively breastfeeding and, remain breastfeeding four months after birth (Moore et al., 2016). Following a vaginal birth, SSC confers physical and emotional health benefits (Redshaw et al., 2014). Importantly, early and uninterrupted SSC and BF have been associated with a lower incidence of postpartum haemorrhage (Saxton et al., 2015).

Despite the clear and compelling advantages of SSC after birth, there is some evidence the way maternity care is provided has a variable impact on SSC and BF at birth (Redshaw et al., 2014). For example, a sample of Queensland women (n=4574) who gave birth in private hospitals and/or had caesarean sections were: highly unlikely to have SSC, were very likely to hold their baby within five minutes of birth but not beyond twenty minutes (Redshaw et al., 2014). Inconsistencies in the practice of SSC during the first hour post birth were found in an observational study of 78 mother-newborn pairs conducted in a public, metropolitan hospital in Queensland (Cantrill, 2014). In this study, only 33% (n=26) of women had continuous, uninterrupted SSC with their newborn babies immediately after birth (Cantrill, 2014). Modifiable reasons for separating mothers and babies at birth included ‘warming’ and; ‘routine practices’ such as weighing, physical assessment, Vitamin K injections and wrapping (Cantrill, 2014). A British study of two labour wards (women n=50 and midwives n=51) found that while holding the baby within one minute of birth was common; the median duration of the first hold was only eight minutes (Sheridan, 2010). Amongst French women planning to breastfeed (n=30), when midwives intervened to initiate SSC within two minutes of birth, SSC continued an average 90 minutes although interruptions were still likely (Robiquet et al., 2016). Similar modifiable reasons for delay and/or interruptions to SSC as reported by Cantrill (2014) were found in the British and French studies, along with clinician’s priorities and institutional imperatives (Koopman et al., 2016; Sheridan, 2010).

The present study was designed to address the gaps in the current research specifically regarding the combination of immediate, uninterrupted SSC and breastfeeding along with the factors associated with deficits in SSC immediacy and duration. Deficits within the currently available research include studies that: focused on baby holding rather than SSC (Biro et al., 2015; Sheridan, 2010); did not distinguish between which parent ‘held the baby’ (Biro et al., 2015); and those that did not report immediacy or duration beyond 30 minutes (Saxton et al.,

2015), or whose definition was too broad (within 10 minutes, within 5 minutes) (Moore et al., 2016; Redshaw et al., 2014). One study did examine the combination of timing, duration and SSC but did not specifically investigate factors related to interruption of SSC and it only measured exposure to breastmilk or colostrum rather than the act of breastfeeding (Redshaw et al., 2014).

The study which is the subject of this paper, has aimed to determine: 1) the incidence of immediate, uninterrupted mother-baby SSC contact and BF after birth; and 2) the maternity care factors associated with the immediacy and duration of uninterrupted mother-baby skin-to-skin contact within the first 60 minutes of birth.

The survey design was informed by the hormonal physiology for childbearing (Buckley, 2015), and two midwifery theories: Birth Territory (Fahy et al., 2011) and Pronurturance Theory (Saxton et al., 2016). These theories propose how holistic midwifery practices can optimise oxytocin release and uptake for the woman and optimise physiological transition to life outside the womb for the baby. The midwife first creates and maintains a supportive environment which is warm, dim, private and perceived by the woman to be non-threatening.(Fahy et al., 2011; Saxton et al., 2016) The midwife's aim at birth is to work with the woman and baby to promote, protect and support immediate and sustained SSC and early BF, with minimal interference (Buckley, 2015; Odent, 2001; Saxton et al., 2016; Uvnas-Moberg, 1996; Uvnas-Moberg & Eriksson, 1998). Avoidance of interruptions to the woman and baby dyad is a priority until the first breastfeed is spontaneously completed to maintain optimal oxytocin release and continue physiological care (Matthiesen et al., 2001; Saxton et al., 2016). Key concepts from Pronurturance Theory have been operationalised for this study and are described in the Methods.

METHODS

Design

A cross-sectional design with purposive sampling, data were collected through an anonymous e-survey that was distributed via maternity and parenting networks through email bulletins and social media posts.

Ethics and rigour

Institutional ethical approval was granted prior to the study commencing (ECN-18-211). Potential participants had the opportunity to read information about the study and check they met study criteria, before deciding to follow the link to the survey. Completion of the survey was interpreted as evidence of consent. This paper conforms to the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) (Eysenbach, 2004).

Development and pre-testing

A 26-item e-survey was developed on Qualtrics™ an online survey system, informed by a review of theory, biology and research evidence relevant to the research aim (Hastie & Fahy, 2009; Saxton et al., 2014; Saxton et al., 2015; Saxton et al., 2016). The survey was also informed by Step 4 of Ten Steps for Successful Breastfeeding, which recommended uninterrupted skin-to-skin contact for the first 60 minutes (World Health Organization & UNICEF, 2018). Seven items collected socio-demographic information, as well as pregnancy and birth details, to enable comparisons between the participants and the Australian national demographic of birthing women (Australian Institute of Health and Welfare, 2017). The main part of the survey (17 closed response items) focussed on the participants' recollections and perceptions of what happened in the first 60 minutes after birth. Items about obstetric interventions in labour and birth were included to enable testing for potential associations between these variables and the primary outcome. The final two items were optional: 1) to provide email contact information to enter the draw to win a prize and 2) to provide email contact information to receive a copy of the research results. The e-survey was piloted for usability and technical functionality, with 27 participants who met the eligibility criteria, through the Student Association of a regional university. Only minor changes to the survey tool were made in response to this pilot testing.

Recruitment and sampling

Initial contact with potential participants was made via the Internet. Sampling was purposive with snowballing to recruit women who had given birth at term to a live, singleton baby in Australia within the previous three years. During both piloting and the main survey phases, participants were incentivised by the opportunity to win a prize following completion of the e-survey: a \$50 grocery voucher in the pilot phase and an iPad Air in the main phase. To

enter the draw, participants had the option to provide an email address at the end of the survey. This identifying feature was removed by the research assistant prior to data analysis.

National birth and parenting email and social media networks were used to invite members to participate and to encourage them to share the invitation more widely; for example, consumer email bulletins such as 'Health Consumers Queensland' and Facebook posts to specific Australian baby and toddler parenting groups. The social media posts (which had the ability to be shared across Facebook) included information about the study, including eligibility criteria along with contact details for the lead researcher and the local Human Research Ethics Committee. If potential participants chose to follow the anonymous link, they were directed to the survey platform on Qualtrics e-survey.

Survey administration

Participants could voluntarily complete the survey via an anonymous link, with responses automatically captured by the online software system Qualtrics. The survey was active for a period of four-weeks during October – November 2015. The main electronic survey consisted of 26 total items on one screen and took five minutes on average to complete. Respondents were able to review and change their answers through use of a 'back' button. Some free text items were conditionally displayed, for example if participants indicated they had intervention during childbirth, they were prompted to describe this using free text.

Measures

The primary outcome measure of pronurture is described and defined below. Next, the three types of secondary measures are listed. Those secondary measures related to pronurture are defined first, followed by the demographic characteristics and finally the perinatal characteristics.

Primary outcome

The binary primary outcome measure (0;1), pronurture, had a value 1 attributed if all four of the conditions of the composite were met, and a value 0 attributed if only some or none of the conditions were met. The four conditions were:

- 1) Woman immediately held her baby within one minute of birth;

- 2) Had skin-to-skin contact (i.e. the baby's naked body was placed directly onto the woman's bare skin);
- 3) Held their baby for at least 60 minutes (with or without SSC);
- 4) Baby breastfed after birth (i.e. baby suckling at the breast or attempting to while still in the birth setting).

Participants who were exposed to all four components were analysed as receiving pronurture; whereas those who received some or none of the components were analysed as not receiving pronurture.

Secondary outcomes

Pronurture components:

Hold

1. *Immediacy of the hold* - an estimation of how long after the birth before the woman held the baby: one minute, five minutes, 10 minutes or longer.
2. *Duration of the hold* - an estimation of how long the woman held her baby without interruption: less than 5 minutes, 5-14 minutes, 15-29 minutes, 30-44 minutes, 45-59 minutes, 60 minutes or more.
3. *Who decided to end the first cuddle* – a choice between: mine, my partner, a family member or my support person, a doctor, or a midwife;
4. *For what reason/s was the first cuddle ended* – a choice of one or more from several options, e.g. to weigh the baby.

Skin-to-skin

1. *Reasons for no SSC* – a choice between: 'the baby was wrapped or dressed' OR 'I was wearing a bra or top'

Breastfeeding

1. *Women's position at the time of first hold* – a choice between: lying flat, half-sitting, sitting upright, kneeling or squatting, reclining in water, standing, side-lying;
2. *Women perceived they were in a comfortable position to breastfeed*: yes/no.

Demographic characteristics were self-reported or derived from other information: maternal age, ethnicity, rurality and model of maternity care. Antenatal, intrapartum and postpartum characteristics were analysed: parity for the index 'birth'; received health professional advice of the benefits of SSC in pregnancy; continuity of midwifery carer in labour; normal birth (i.e. 'Was your labour and birth completely normal? That means labour was not induced, no drugs were given and no epidural. If you only used nitrous oxide gas, please answer 'yes'), and medical interventions including any of the following (induction of labour / epidural or spinal analgesia / instrumental vaginal birth (forceps or vacuum) / caesarean section / postpartum haemorrhage / Other (free text)).

Data Analysis

The socio-demographic, and obstetric characteristics, including the models of care, were analysed to assess the associations with pronurture using Chi square analysis. Logistic regression analyses were used to assess factors influencing pronurture. Due to collinearity concerns with 'normal birth' and medical intervention, these variables were excluded from the logistic regression models. However, their component variables (mode of birth and induction of labour) were included, together with any other characteristic which was significantly associated with pronurture, with a p value less than 0.10, in the multivariate logistic regression model. Unadjusted odds ratios (OR) and adjusted odds ratios (aOR) together with their 95% confidence intervals (95% CI) and probability values were reported. Due to the relatively low rates of missing data, missing data were excluded from statistical analysis and models, but were reported initially in describing study participants. All analyses were conducted using SPSS version 22.0. Statistical significance was set at $p < 0.05$.

RESULTS

There were 1334 returned surveys, of which 134 were excluded because they were invalid (n=1 male respondent; n=33 blank record) or participants did not meet the inclusion criteria (n=100). The exclusions were as follows: preterm birth (n=76), missing year and date of birth for baby (n=20), twins (n=4, one set full term, 3 sets preterm). The total number of eligible participants was 1200.

Participant Characteristics

Respondents derived from every State and Territory of Australia with most residing in the more populous states of Queensland (22%, n=226), New South Wales (34%, n=402, and Victoria (27%, n=325); with the other jurisdictions representing a combined 17% (n=202) of respondents. Compared to a national report (Australian Institute of Health and Welfare, 2017), the women taking part in this survey were similar in terms of parity, health insurance status and the state in which they gave birth. However, a higher proportion of our study sample had a spontaneous vaginal birth (69.1% vs. 54.2%), a lower proportion had a caesarean section (18.8% vs. 33.3%), induction of labour (30% vs 29.3%), instrumental vaginal birth (12% vs 12.5%). Aboriginal and/or Torres Strait Islander women were under-represented (2.0% vs. 4.3%) (Australian Institute of Health and Welfare, 2017). Our sample had a higher proportion of women giving birth at home compared to national figures (10.6% vs. 0.3%) (Australian Institute of Health and Welfare, 2017). Regarding maternal age distribution, the survey mothers were older, with women aged over 35 years more frequently represented (58.8% vs 22.3%) (Australian Institute of Health and Welfare, 2017).

Key Findings

Table 1 shows the findings for the primary outcome ‘pronurturance’, a complex variable comprised of four components.

Insert Table 1

1) Immediacy of first hold

While most respondents held their baby within one minute of birth (Table 1), 10% of women (n=119) waited to hold their baby for 10 minutes or more. Rates of respondents experiencing both an immediate cuddle and SSC were 58% (n=689).

2) Skin-to-skin contact

Approximately one third of respondents did not receive any skin-to-skin contact in the birth environment (Table 1). Women reported the most common reason for this was because they were wearing a bra or top (60%, n=212). Of those women who were impeded by clothing, 70% (n=149) reported they would have removed it had the midwife suggested it. The remaining women who did not receive SSC (40%, n=143) were not able to because the baby

was wrapped or dressed. Over a third (37%, n=121) of women who did not receive SSC had not discussed the benefits of SSC with a health professional during pregnancy; compared to 25% (n=210) of women who had experienced SSC (p=0.001).

3) Duration of first hold and interruptions

One-third of respondents held their baby uninterrupted for at least 60 minutes (Table 2); while 11% held their baby for less than 5 minutes. Table 2 reports that when cuddles lasted less than 60 minutes, most of the time, the decision to end the cuddle was made by a health professional.

Insert Table 2

The most common perceived reasons for interrupting the first cuddle in less than 60 minutes were to perform a procedure on the woman, help her to the shower, or weigh the baby (Table 2).

4) Any breastfeeding

Of the 1197 mothers who responded about breastfeeding intention, 98.6% (n=1180) had intended to breastfeed. For the women who intended to breastfeed, 81% (n=953) were able to breastfeed in the birth setting while 19% (n=225) were not (p=0.029); these figures provided the BF component of pronurturance (Table 1). Of the mothers who breastfed in the birth setting, 77% (n=737) also experienced SSC contact with their baby; whereas of mothers who did not breastfeed in the birth setting, only 45% (n=103) had had SSC (p<0.001). Both breastfeeding in the birth setting and SSC at birth were experienced by 62% (n=737) of respondents. Of the mothers who breastfed, 85% (n=810) stated they were in a comfortable position to do so, whereas 56% of respondents (n=126) who did not breastfeed reported they were not in a comfortable position to do so (p<0.001). The most common reasons that breastfeeding mothers who had a spontaneous vaginal birth (SVB) were not comfortable were: 57% (n=39) needed to move from where they gave birth (e.g. birth pool, bathroom, birth stool); and 14% (n=10) had medical interventions during third and fourth stage (e.g. perineal suturing, post-partum haemorrhage).

Table 3 presents the primary outcome, pronurturance with maternal characteristics, as well as birthing related factors including model of care, place of birth, and medical interventions.

Insert Table 3

Neither age, rurality, nor ethnicity were significantly related to experiencing pronurturance ($p>0.05$). Rates of pronurturance were significantly higher for women who were multiparous, had a known midwife at birth, gave birth at home, or had spontaneous vaginal birth. Most medical interventions were associated with significantly lower rates of pronurturance, including induction of labour, instrumental vaginal birth and caesarean section. Interestingly, epidural analgesia for a vaginal birth did not independently impact pronurturance rates. To adjust for differences in the baseline characteristics of respondents, we adjusted for confounding variables. Table 4 presents the results of logistic regression reported in unadjusted Odds Ratios (ORs) and adjusted Odds Ratios (aORs) with 95% Confidence Intervals (CI) where $p<0.05$ denotes significance.

Insert Table 4

After controlling for confounding, just two factors significantly predicted pronurturance at birth: 1) experiencing vaginal birth (spontaneous or instrumental); and 2) receiving intrapartum care from a known midwife.

DISCUSSION

This is the first published cross-sectional survey of women's experiences of pronurturance across Australian birth settings. Despite World Health Organisation guidelines which recommend immediate and uninterrupted skin-to-skin contact for the first 60 minutes, with breastfeeding occurring within the first hour, only a fifth of participants in this study had this experience. After controlling for potential confounders, factors which increased the likelihood of pronurturance were vaginal birth and known midwife at birth. Conversely, caesarean birth and not having a known midwife at birth were associated with a lower chance of receiving pronurturance.

Caesarean birth

Caesarean birth poses unique challenges to the provision of pronurturance. Following caesarean birth women want their baby to stay with them, to have their baby naked and experience SSC; whereas having their baby taken away results in feelings of disconnection (Stevens et al., 2019). Yet, critical institutional factors including inadequate staffing and lack of education about the importance of skin-to-skin are barriers to initiation following caesarean birth (Koopman et al., 2016). A French study of SSC following planned caesarean section, reported initiation occurred at approximately 3-5 minutes after birth and disruption to the first hold occurred at 21-minutes (median) (Vamour et al., 2019). A Vietnamese study of staff attitudes towards SSC at caesarean birth identified barriers including operating theatre temperature, concerns about the baby falling or delaying the operation, and belief that SSC made monitoring the mother more difficult (Tran et al., 2018). As health professionals' actions are influenced by institutional regulations, further education can increase the provision of immediate and sustained SSC at caesarean birth (Stevens et al., 2018). For example, an Indian participatory action research study reported an increase in early SSC and breastfeeding on the operating table from 0% to 100% within four-months of a phased-approach to change including education and a new policy (Maria et al., 2018). The so-called 'gentle caesarean' is increasingly common; involving early and continuous SSC and no separation of mother-baby in the operation theatre or in recovery (Bronsgest et al., 2019). The midwife's role at caesarean birth is to facilitate immediate skin-to-skin contact which has been shown to reduce the time to the first breastfeed and increase breastfeeding initiation (Stevens et al., 2014).

Continuity of midwifery carer

Women who had a known midwife at birth were more likely to receive pronurturance. While Cochrane systematic review demonstrated continuity of midwifery care was associated with spontaneous vaginal birth, it was not associated with increased breastfeeding initiation (Sandall et al., 2016). This study demonstrates that having a known midwife may impact other aspects of care during the first hour after birth, specifically immediate and uninterrupted skin-to-skin contact. When the midwife does not know the woman, the birthing process, including the third and fourth stages of labour, is more likely to be treated in a standardised way that normalises routine intervention (Romano & Lothian, 2008). Midwives providing continuity of care are motivated by their relationship with the woman to do their utmost to support her during childbearing (Jepsen et al., 2016). The midwife-woman relationship

enables the midwife to optimise the interconnected biological, psychological, emotional and social processes that occur during labour and birth (Sakala & Newburn, 2014).

Facilitating immediate skin-to-skin contact

The definition of ‘immediacy’ (< 1 minute after birth) reflects the important physiological benefits of SSC and is more precise than the definition of immediacy reported in other studies (Moore et al., 2016; Redshaw et al., 2014). Twenty-five percent of participants did not hold their babies immediately; and despite most participants planning to have SSC, only 70% experienced this. Early and uninterrupted skin-to-skin contact of the mother and her newborn is a component of physiological care during third stage of labour (Saxton et al., 2015). Such contact is important to achieve and sustain because of its positive impact on breastfeeding and the short- and long-term well-being of women and babies (Christensson et al., 1995; Hendricks-Muñoz et al., 2015; Hofer, 2006; Moore et al., 2016; Redshaw et al., 2014). The two factors in this study that negatively influenced SSC and its immediacy were the presence of women’s clothing and/or the baby’s clothing or wraps. The results indicate that these factors may have been averted had more women been provided with information about immediate SSC at birth during the antenatal period. Caregivers have a pivotal role, not only in educating women and their families (Koopman et al., 2016), but in facilitating the woman to remove impeding clothing prior to birth, along with stopping the practice of immediately wrapping and dressing the baby at birth.

Avoiding interruption to the first hold

Despite the highest-level evidence showing that mother-baby pairs require uninterrupted skin-to-skin contact for 60 minutes after birth (Moore et al., 2016); our participants frequently experienced interruptions to the first hold, and most commonly prior to 30 minutes. Participants perceived that the caregiver was usually the person who decided to end the first hold, commonly for non-urgent reasons including performing a procedure on the mother and weighing the baby. In an ethnographic study, British midwives identified workload as a reason for early interruption to the first hold because they felt pressured to complete tasks and free up birth suite beds (Sheridan, 2010). Likewise, a French observational study reported 53.3% of participants (n=16) were interrupted prior to the first breastfeed primarily so the midwife could perform routine tasks (Robiquet et al., 2016).

Health services must strategically address the institutional processes which delay, and interrupt, skin-to-skin contact and breastfeeding for all mother-baby pairs.

Protecting breastfeeding

Having SSC was associated with breastfeeding at birth; whereas being in an uncomfortable position or needing medical treatment was associated with not initiating breastfeeding. The BF rate in our study was almost double that reported by Saxton et al. 2015; this is likely due to their definition of breastfeeding which was within 30 minutes of birth. Approaches to breastfeeding which emphasise innate maternal and newborn breastfeeding abilities, and provide an environment free from unnecessary intervention, are key to supporting breastfeeding initiation and physiology (Schafer & Genna, 2015). Supportive environments feel non-threatening and private to the woman; the midwife should create and maintain them, adjusting noise and heating levels according to the woman's changing needs (Fahy et al., 2011; Saxton et al., 2016). In this context, midwives must ensure women are in an optimal position to breastfeed immediately after birth, so that skin-to-skin contact can be initiated and not interrupted prior to completion of the first breastfeed. The midwife also has a crucial role to play in facilitating immediate skin-to-skin contact during caesarean birth because SSC has been shown to reduce the time to the first breastfeed, increase breastfeeding initiation, and reduce artificial formula supplementation (Stevens et al., 2014).

Implications for practice

The following five steps should facilitate most women to receive pronurturance: 1) midwives, midwifery students and childbirth educators prepare women for pronurturance including discussing the need to have a naked chest and abdomen at birth; 2) prior to the actual birth, midwives remind the woman to remove her clothes (including her bra); 3) at birth the naked baby is immediately placed on the woman's bare chest/abdomen; 4) the mother/baby dyad is kept warm and observed during the first hold, with hands-off guidance, until spontaneous BF has been completed; 5) non-urgent tasks are delayed for the first hour or more to allow for uninterrupted SSC and BF to occur.

Strengths and limitations

An e-survey method was selected because, compared with paper and pencil surveys it has the following advantages: 1) minimal effort for participants to access, complete and send; 2)

online anonymity that may increase response rates and more honest answers; 3) less expense for the researcher; 4) increased validity and efficiency as returned surveys do not need data entry; 5) no problems deciphering handwriting and; 6) social media allows access to a vast pool of potential participants who meet inclusion criteria (Hunter, 2012). The potential disadvantages of e-surveys are mostly to do with the possibility of excluding participants who do not have a computer skills or internet access (Whitehead, 2007). However, these potential disadvantages are more than offset by the disadvantages of pen and paper surveys, whose disadvantages are well known (Hunter, 2012). In order to manage recall bias, women were eligible to participate if they had given birth within the previous three years. Evidence suggests women can still clearly remember their childbirth experience five years later (Takehara et al., 2014).

The sampling method had several limitations. Firstly, as participants were not recruited, there was no follow-up to offer reminders to complete the survey. Secondly, there was potential selection bias as survey participation was limited to women who had access to internet, a Facebook account and/or links to organisations used to promote the survey. The email bulletins were state-wide consumer advocacy organisations, which targeted members who demographically tend towards higher education and privilege. Thirdly, the snowball sampling method enabled the Facebook survey post to be shared amongst an unmeasurable number of potential participants which meant a response rate could not be reported. Fourthly, socially disadvantaged groups are harder to reach populations in terms of research participation; apart from incentivisation there were no strategies to purposefully collect data to address selection bias. While there were many similarities between our sample and the general Australian birthing population (Australian Institute of Health and Welfare, 2017); our sample was older, less ethnically diverse, had higher education attainment and experienced fewer medical interventions in birth. Notwithstanding this potential bias, which should favour higher rates of pronurture, the rate of pronurture in our study was low (22%). Since living remotely and speaking a first language other than English negatively predicts holding the baby (Redshaw et al., 2014); pronurture rates may have been even lower if the sample included more socially disadvantaged women.

CONCLUSION

This study has used the operationalised concept of pronurture to report the extent to which women received postpartum care based on the World Health Organisation recommendations during the immediate postnatal period. Less than a quarter of participants received pronurture which was largely attributed to lack of antenatal skin-to-skin information; babies being wrapped; women wearing clothing; and non-urgent caregiver interruptions including weighing the baby or facilitating the mother to shower. Women who had a vaginal birth or received midwifery continuity of care were more likely to receive pronurture. Women whose babies were born by caesarean section or who did not have a known midwife were least likely to receive pronurture. Given the positive impact of pronurture on the short- and long-term health and wellbeing of women and babies, these results present compelling evidence of the need for change in hospital practices.

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