Midwifery 29 (2013) 819–825

Contents lists available at SciVerse ScienceDirect

Midwifery

journal homepage: www.elsevier.com/midw

Commentary

Designing out the Fear Cascade to increase the likelihood of normal birth

Maree Stenglin, BA, Dip Ed, MA, PhD (Honorary Research Fellow)[a,b], Maralyn Foureur, RM, BA, GradDip ClinEpi, PhD (Professor of Midwifery)[a,*]

[a] Centre for Midwifery, Child and Family Health, Faculty of Health, University of Technology Sydney, P.O. Box 123, Broadway, NSW 2007, Sydney, Australia
[b] University of Sydney, Sydney, Australia

ARTICLE INFO

Article history:
Received 20 March 2013
Received in revised form
13 April 2013
Accepted 21 April 2013

Keywords:
Birth
Environment
Design
Binding

Introduction

Increasing normal birth by lowering the rate of birth by caesarean section (CS) has become high on the list of health priorities for professional and government bodies in much of the developed world (Maternity Care Working Party, 2007; Society of Obstetricians and Gynaecologists of Canada (SOGC) et al., 2008; Commonwealth of Australia, 2009; American College of Nurse-Midwives et al., 2012). Researchers have explored many strategies for addressing the rising rate of CS (Bugg et al., 2011; Hatem et al., 2008; Hodnett et al., 2012; Jones et al., 2012; Smyth et al., 2013). However few of the strategies are informed by a theoretical understanding of women's psycho-emotional experience of institutional based intrapartum care and the ebb and flow of emotional needs during labour as it progresses towards birth. In particular, few consider the woman's inherent, mammalian need to feel safe and secure in the space in which she has chosen to give birth (Naaktgeboren, 1989; Buckley, 2004). This paper aims to address this gap by extending current understandings of the theory of birth territory (Fahy, 2008; Fahy et al., 2011). It does this by applying Binding (Stenglin, 2004, 2007), a theoretical tool drawn from social semiotics which reveals how spaces can be designed to enhance such feelings. The paper then explores how the design and use of existing spaces can be maximised to create safe, sanctum-like environments that meet the changing needs of women as their labour unfolds.

Surveillance and sanctuary

Increasing sophistication in the design of the hospital birth environment has resulted in birth spaces that are characterised by high levels of surveillance of the birthing woman. Although continual surveillance may reassure care providers, from the woman's perspective such surveillance may actually undermine her ability to labour effectively and to give birth unaided. Surveillance increases the woman's perceived stress and sets in motion a cascade of neuro-hormonal events that may have negative behavioural and health consequences for both mother and infant (Foureur, 2008; Davis and Walker, 2010).

To increase the likelihood of straightforward birth, it has been argued that birth spaces are needed that enable women to feel safe and secure (Foureur et al., 2010a). To better understand what constitutes a space that women view as safe, and private enough in which to give birth, a team of researchers has developed a theoretical framework called the Birth Unit Design Spatial Evaluation Tool (BUDSET), which identifies four crucial domains of the safe, or optimal, birth environment: the Fear Cascade, Facility, Support and Aesthetics (Foureur et al., 2010b; Foureur et al., 2011;

* Corresponding author.
E-mail addresses: m.stenglin@bigpond.com (M. Stenglin), maralyn.foureur@uts.edu.au (M. Foureur).

0266-6138/$ - see front matter
http://dx.doi.org/10.1016/j.midw.2013.04.005

Sheehy et al., 2011). Primary amongst these for positive birth outcomes is the Fear Cascade.

Supported by decades of research, the theory of the Fear Cascade reveals the role of the sympathetic nervous system in an unconscious, automatic response to acutely stressful events (Lederman et al., 1981; Simpkin and Ancheta, 2000; McEwan, 2007; Foureur, 2008). When the amygdala (the emotion processing limbic system of the brain) perceives an acute stressor the 'Fight, Flight or Freeze' response is initiated through a surge of catecholamines (Stable and Rankin, 2005). One of the catecholamines, adrenaline, has a particular ability to disrupt the production of oxytocin during labour. This is an adaptive response in the face of threat whereby the decrease in oxytocin will cause labour to slow down or stop so the mother can move to a safer and more protected space for the birth of her baby. In addition, the vasoconstrictive effect of adrenaline in diverting blood away from the abdomen results in less blood available for placental perfusion and fetal oxygenation, which in turn, may lead to fetal distress. Slow labour and fetal distress are the two main reasons for intervention in childbirth once labour has begun, hence the biological plausibility of the Fear Cascade, and its key role within the BUDSET framework.

In addition to the BUDSET framework, Fahy's work on Birth Territory (2008) substantially contributes to emerging understandings of the safe birth environment by identifying two important spatial types: one that evokes the fear cascade (the surveillance space) and one that does not (the sanctum). By expanding understandings of spaces that can evoke fear or insecurity, this paper attempts to build on Fahy's work (2008) and that of her colleagues (Fahy et al., 2011).

Expanding current understandings of the birth terrain

The work of Fahy (2008) and her colleagues on the birth environment (Fahy et al., 2011) focuses on the over-arching concept of the birth territory. This includes physical and geographical space as well as social relations within a space such as power. Birth territory can be further sub-divided into two key areas: the physical terrain and jurisdiction. Jurisdiction is concerned with social power in the birthing territory whereas the physical terrain consists of two differently organised spaces located at opposite ends of a cline. They are the surveillance room at one end and the sanctum at the other. Fahy et al.'s (2011) conceptualisation of the physical terrain can be represented in the following way (see Fig. 1).

Fahy et al. (2011) describe the surveillance space as one in which the bed dominates the space. Surveillance spaces typically have a curtained but otherwise open doorway without a lockable door. They may also have a door or wall with an internal window used by staff for monitoring the occupant of the space. Typically such spaces are clinical: stark, well lit, white and sanitised with the equipment staff may need on display. In contrast, the sanctum is described as a homely and protective environment, designed to optimise the privacy of the occupant. It therefore has a door that is kept closed and access to a toilet, a bath and a view of the outdoors. In particular, it is the way the sanctum maintains the occupant's **privacy** that distinguishes the design and organisation of the room from the surveillance space.

Significantly, the physical terrain described by Fahy et al. (2011) overlaps strongly with Stenglin's social semiotic theory of space (2004). In particular, it resonates with the theoretical tools of Binding and Bonding. Over the past 10 years, these tools have been used to analyse a range of different spaces: museum exhibitions (Martin and Stenglin, 2007; Stenglin, 2004, 2008a, 2009), restaurants (Stenglin, 2008b), a winery (2007), homes (Stenglin 2008a, 2010) and universities (Ravelli and Stenglin, 2008) as well as virtual spaces (Djonov and Stenglin, 2010). Their robustness suggests that they would be equally applicable to birthing environments, so their resonance with the way Fahy et al. (2011) have conceptualised the physical terrain will now be explored. Due to word constraints, however, this paper will focus solely on Binding.

Binding: how women feel in birth environments

Binding is concerned with the interpersonal relationship between a user and a space. It is organised along a cline and identifies both choices for security and insecurity. Spaces that evoke feelings of security, safety and comfort lie in the middle of the Binding scale, whereas spaces that evoke feelings of insecurity and fear lie at the extreme ends of the scale (see Fig. 2).

There are two choices for spatial security: **Bound** and **Unbound** spaces. A Bound space is womb-like. It envelops around the occupant firmly, evoking feelings of comfort, privacy and protection. It does so through choices for firm enclosure such as corners, nooks and crannies. This concept is well explained by the Norwegian born Australian architect, Britt Andreson: 'I think the very first sense of shelter you might have is actually being in your mother's arms. So it is that sometimes, you can make a space that is… comforting or protective in that way' (In the Mind of the Architect, ABC Series, Episode 1, first screened in Sydney on 21 July, 2000).

Bound spaces thus provide their occupants with sanctuary, shelter, privacy and protection. In Sheehy et al. (2011), one of the midwives refers to such spaces as 'caves'. Similarly, French philosopher Bachelard (1964: 91) captures the sense of refuge evoked by Bound cave-like spaces in the following way: 'The well-being I feel seated in front of my fire while bad weather rages out-of-doors is entirely animal. A rat in its hole, a rabbit in its burrow, cows in the stable, must all feel the same contentment that I feel. Thus well being takes us back to the primitiveness of the refuge. Physically, the creature endowed with a sense of refuge, huddles up to itself, takes cover, lies snug, concealed'. In other words, at the heart of a Bound space lie feelings of safety and security.

One of the important things about Bound spaces is that they not only provide a safe and secure environment, they also offer a quiet space ideally suited to inward reflection and contemplation. While labour is typically accompanied by intense pain, researchers have found that women describe 'a need to focus in on themselves as a way of getting through the pain of the contractions and a need to shut out the rest of the world' (Dixon, 2010: 183). Bound spaces provide an ideal environment for such inward focusing, which some women refer to as being in 'the zone': I had the contractions that were getting more full-on. I just, how did I feel, I felt I was in the zone, I, I wasn't anxious anymore I was fully focused on doing the job I had to do (Kate, third baby, born at tertiary hospital as cited in Dixon (2010: 184)). Thus the sense of protection, safety and shelter one feels in a Bound space helps dissipate anxiety and enables the woman to let go of fear and shift the focus of her attention inwards.

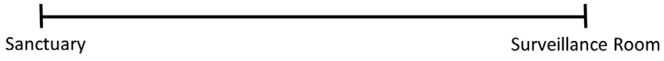

Fig. 1. Birth Territory (Fahy, 2008; Fahy et al., 2011).

Fig. 2. Binding scale (Stenglin, 2004).