Influences on the implementation of a physiological care approach: A mixed methods study in two obstetric units

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Declaration and Statement of Authorship

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All research procedures reported in the thesis were approved by the Health Research Authority (REC 17/IEC08/0037) on the 26/10/2017 (226761) and site approval obtained on the 18/01/2018 (C&W17/90)

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Date: 10/10/2023

Abstract

Routine clinical intervention use in labour and birth is evidenced to cause harm. To understand continuing increases and wide variations in its use, this thesis presents the findings of original research that explored influences on implementing a physiological care approach. In a physiological care approach, care focuses on meeting the woman's physical and emotional needs, while clinical intervention is used during labour and birth, only when problems that arise warrant it. The location was two obstetric units where clinical intervention rates are evidenced to be higher than other birth settings.

Aim: To explore and understand influences on the implementation of a physiological care approach in two obstetric units.

Design: An embedded mixed method explanatory study underpinned by Dewey's Pragmatism.

Sample: This comprised of two consultant midwives and two obstetricians, 12 women and their birth partners who experienced care during labour and birth, and 16 midwives who provided their care.

Methods: Observations and interviews were used. In observations, data was gathered on the midwives' training; their use of physiological care practices; and decision-making by midwives and obstetricians during labour. Interviews explored participants' experiences of driving; implementing a physiological care approach; and receiving care. Familiarisation with a care guideline was undertaken. Three stages of analysis included (i) a descriptive quantitative analysis of use of physiological care practices; (ii) a thematic analysis of observations of practices, training and interviews; (iii) an integrated analysis of quantitative and qualitative findings.

Findings: Organisational leadership: An important facilitator was the committed leadership of two consultant midwives who collaborated with two consultant obstetricians. However, consultant midwives were of the view that resourcing decisions to prioritise an obstetric framework of care, and resistance to a physiological care approach, acted as a barrier.

Professional Groups: Observation and midwives' experiences predominantly identified the use of hierarchical decision-making and centralised surveillance to embed an interventionist approach. Midwives' use of physiological care practices was observed to be variable. The routine use of an interventionist approach was engendered by large workloads, risk preoccupations and lack of skills to facilitate or provide consistent support for implementing a

physiological care approach. However, the norm of an interventionist approach was also observed and experienced as a preference amongst most professionals in the OUs including midwives.

Women: Women, with the support of their partners, sought to experience a physiological labour and birth but were not fully supported. Midwives assumed women who used OUs were open to clinical intervention, and routinely offered it to them. There was a lack of advocacy, options for care were not always explored, and informed consent was not always obtained for clinical interventions.

Conclusion: While there were facilitating influences, barriers predominated at all levels, negatively influencing the implementation of a physiological care approach.

Recommendations: A greater understanding of the need to prioritise and resource projects to progress implementation of physiological care approach; increased opportunities to develop skills including provision of clinical support; appraisal work to foster collaborative working between midwives and obstetricians; enhancing women's understanding of choices to experience a physiological birth; respecting women's choices, including advocating on women's behalf during labour can facilitate implementation in OUs.

Publications and writings arising from this study

Peer-reviewed published abstract

A systematic review and synthesis of facilitators and barriers to the implementation of evidence-based practices to support physiological labour and birth in obstetric settings Florence Darling, Christine McCourt and Martin Cartwright, (2019), City University of London, Implementation Science, 14 (Supp 2): O20.

Peer reviewed writings

Darling, F; McCourt, C., Cartwright, M (2020) 'Facilitators and barriers to the implementation of a physiological care approach during labour and birth in obstetric units: A systematic review and thematic synthesis', *Midwifery*, 92, 102861. doi: 10.1016/j.midw.2020.102861

Professional blog writings

"Normal birth at any costs" Understanding and addressing root causes is important to promoting safety in UK maternity services. Available at https://www.all4maternity.com/normal-birth-at-any-cost-understanding-and-addressing-root-causes-is-important-to-promote-safety-in-uk-maternity-services/

"Re-birthing birth in the UK" Available at https://www.all4maternity.com/re-birthing-birth-in-the-uk/

Peer-reviewed conference presentations

'Facilitators and barriers to the implementation of a physiological care approach during labour and birth in obstetric units: A systematic review and thematic synthesis' At UCLAN Normal Birth and Labour Conference, 2nd -4th Oct 2019, Grange-over-Sands, Cumbria, UK

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Finally, I dedicate this PhD to my parents who instilled in me a lifelong love for learning.

A QUOTE WM 3

“Why did they not wait”

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Abbreviations and Acronyms

AMU	Along-side maternity unit
BC	Birth Centre
CMW	Consultant midwives
CoCr	Continuity of carer
CS	Caesarean section
CTG	Continuous Tocographic Monitoring
FMU	Freestanding maternity unit
HSCC	Health and Social Care Committee
ICM	International Confederation of Midwives
LOB	Lead obstetricians
MLU	Midwife-Led Units
MUs	Midwifery Units
MBRRACE	Mothers and Babies Reducing Risks through Audits and Confidential Enquiry
NHS	National Health Service
NICE	National Institute of Clinical Excellence
NMC	Nursing and Midwifery Council
NMPA	National Maternal and Perinatal Audit
OASI	Obstetric Anal Sphincter Injury
OBS	Obstetricians
OU	Obstetric unit
PA	Physiological care approach
PCP	Physiological care practices
PIS	Participation Information Leaflet
PPH	Post-partum haemorrhage
PP	Participative Practices
PT	Partner (birth)
RCM	Royal College of Midwives

Abbreviations and Acronyms Continued

RCOG	Royal College of Obstetricians and Gynaecologist
SMW	Senior midwife
SP	Supportive Practices
UKWP	United Kingdom Working Party
VE	Vaginal examinations
QNMC	Quality, Newborn, and Maternal Care
WHO	World Health Organisation

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Chapter 1 Introduction

The impetus for this PhD research is the problem of increasing and wide variations in routine clinical intervention use in childbirth. The research through its investigations seeks to promote the understanding of facilitators and barriers to the implementation of a physiological care approach, an important international (WHO, 2018) and national UK recommendation (NICE, 2014; All Wales Clinical Pathway, 2002; Scotland's Keeping Childbirth Normal and Dynamic, 2009) to address the problem of routine clinical intervention use. Where it is acceptable to women, the approach advocates the use of an expectant approach in normal labour and birth, care to meet women's physical and emotional needs, and clinical intervention use only when problems that arise warrants its use.

This thesis presents the findings of an embedded explanatory mixed methods study that explored multiple realities of implementing a physiological care approach that included the use of care practices that constituted this approach. The focus was on understanding how facilitators and barriers influenced the implementation of a physiological care approach. In this context, facilitators and barriers are explored and identified at the levels of organisational, professional group (midwives and obstetricians) and women, and their influences are studied at two obstetric units at a National Health Service Trust in England. Obstetric units were selected because routine clinical intervention use is demonstrated to be higher in these units compared to midwifery units (Brocklehurst et al., 2011).

In this introductory chapter, I define all major concepts relevant to this research. This is followed by explanations of the rationales for this research, reflections on my experiences as a midwife, and motivations for undertaking the research. The aims and objectives, theoretical position and methods employed are introduced. Finally, a brief overview of the thesis is provided.

1.1 Study Concepts

This section begins with a discussion about normal birth and explains my reasons for using the term physiological instead of normal. It includes definitions of different types of birth settings including the obstetric unit, where this research is located. Also explained are the physiological and interventionist approach, types of interventions, and the nature of their use in childbirth. Subsequently the concepts of implementation and context are explored and the use of the word 'intervention' in implementation is described.

My aim is to make clear right from the start, the meaning of these concepts in this PhD research. It is also about adopting a reflexive position to address my own biases by drawing on the meaning of the concepts as defined here, in discussions in this research, as opposed to my personal views.

1.1.1 Normal birth

Locke and Nguyen (2010) describe the word 'normal' as a statistical, moral and biological concept. They state that as a statistical concept, the 'normal' is an average, a measure of what is most common, and a point against which deviation is measured. From a social or cultural perspective 'normal' indicates something that is normative or morally preferable—a state we ought to strive for. As a biological concept the word 'normal' refers to a healthy functioning of organisms and their parts which can become abnormal in the presence of pathology (Oxford English Dictionary, 1996).

In a normal labour when there is optimal physiological functioning, the neuroendocrine system enhances the release of endogenous oxytocin, and beneficial catecholamines in response to stress, promoting effective labour patterns. A normal labour occurs spontaneously, progresses supported by the body's own natural physiological functions, and results in the vaginal birth of the infant, placenta, and a physiological blood loss (Lowe, 2002; Unväs-Moberg, 2003).

1.1.1.1 The 'Normal' in childbirth

Definitions by organisations, for example, the World Health Organisation (WHO) focus on the scientific viewpoint of 'normal' as excluding pathology. The WHO (1996) defined normal birth as a process that is: "Spontaneous in onset, low risk at the start of labour and remaining so throughout labour and delivery. The infant is born spontaneously without help in the vertex (head down) position between 37 and 42 completed weeks of pregnancy" (WHO, 1996). In 2007, the Maternity Care Working Party (MCWP), an independent, multi-disciplinary body that campaigns for improvements in maternity care and raises awareness of the public health implications of rising clinical intervention rates, questioned the adequacy of the WHO's definition. The MCWP argued that the WHO needed to define it as a process that excludes the use of clinical interventions, for example, pharmacological pain relief like epidurals. The MCWP (2007) stated that a clearer definition was needed to clarify the concept of normal birth, for the purpose of accurate data gathering, and demonstrating the extent of clinical intervention use. The UK Working Party defined normal birth as taking place without the use of clinical interventions like inductions, augmentation, epidurals, episiotomies, instruments or a Caesarean (National Childbirth Trust, Royal College of Midwives, Royal College of Obstetricians and Gynaecologists, 2007).

However, Young (2009) in an article that explored the need for further statements about normal childbirth, referred to the concept of 'normal' in childbirth as evolving, triggered by the social and cultural constructions of birth. Young (2002) stated that in systems of care where a greater use of surveillance and clinical intervention is experienced, for example, where instruments are used but birth occurs vaginally, this may be regarded as normal. Others like Lyerly (2012) explore the use of the word 'normal' from a moral standpoint, questioning the wisdom of defining birth as 'normal' purely in terms of exclusion of clinical interventions. Lyerly (2012) notes that clinical interventions may be used when problems arise to

secure the woman's and baby's health and well-being. Amongst women who desire pharmacological analgesia, for example, an epidural, such clinical interventions may improve the experience of birth for women. Thus, Lyerly (2012) argues that "Normality as a goal for populations does not track well with normality as an ideal for particular women." An unintentional and untoward consequence is that women who use and benefit from technology may conclude that their births are somehow less than ideal, a distance from a notion of the "good" that was either out of reach or inconsistent with their values and preferences (Lyerly, 2012). Young (2009) and Lyerly (2012) both agree that seeing birth as an inherently normal physiological process, can highlight the harms of routine clinical intervention use, its benefits to women's social and psychological well-being and promote access to women who desire it. However, Lyerly (2012) proposes reconsideration of the notion of 'normal' as an ideal for all women. This was also the reason given by the Royal College of Midwives (RCM, 2017), the midwifery professional body and trade union in the UK, for ending its campaign for normal birth. The end of this campaign was triggered by an inquiry into failings at a local maternity hospital where the phrase "normal birth at any costs" was used to describe unsafe practices amongst a small group of midwives (Kirkup Report, 2015). A more recent report raised a similar concern (Ockenden Report, 2022). The chief executive of the RCM explained the normal birth campaign was not about midwives "pushing normal births beyond the point of safety." However, the RCM ended its campaign accepting that the use of the word normal, "is contentious" and value laden. The RCM currently campaigns for 'Better Births', a term used in a policy document based on a review of the maternity services which recommended that care be personalised to individual women's needs. In this context women have choice and control over the way their care is planned and receive care based on their individual needs and preferences. (NHS England, 2016).

My position is informed by biological sciences that underpins my understanding of birth as a normal physiological process, and like any such process, problems may arise which may warrant the need for clinical interventions. However, women's views must also inform our use of language and practices, and their concerns about the use of the word 'normal' must be given consideration. For this reason, this research will use the word 'physiological' throughout. However, I reiterate my position that, while recognising clinical interventions save lives when used appropriately, this cannot distract from efforts to reduce the routine use of clinical interventions, for example, Caesarean sections, inductions, augmentations and episiotomies that show no evidence of benefit, but which in effect cause harm (Belizán et al., 2015; Miller et al., 2016; Sandall et al., 2018)

1.1.2 Types of birth settings and definitions

In the UK, aside from the woman's home, birth can take place in a number of settings. These settings are outlined in Table 1.1 and derived from the Birthplace in England research programme (Rowe, 2011). This PhD research is located in two obstetric units (OU). Obstetric units may also be referred to as a labour ward or as a delivery suite with consultant obstetrician cover. Although much of the care in such units is provided by midwives and, in the UK, midwives are expected to be lead carers for women at low risk of complications in any birth setting, obstetric units have their own professional management structure and are typically seen as being led by obstetricians. In this PhD research, I will use the term obstetric units derived from the Birthplace in England Research Programme (See table 1.1)

Table 1.1: Definitions on place of birth for use in the Birthplace in England research programme (Rowe, 2011)

Obstetric unit (OU): an NHS clinical location in which care is provided by a team, with obstetricians taking primary professional responsibility for women at high risk of complications during labour and birth. Midwives offer care to all women in an OU, whether or not they are considered at high or low risk and take primary responsibility for women with straightforward pregnancies during labour and birth. Diagnostic and treatment medical services including obstetric, neonatal and anaesthetic care are available on site, 24 hours a day.

Alongside midwifery unit (AMU): an NHS clinical location offering care to women with straightforward pregnancies during labour and birth in which midwives take primary professional responsibility for care. During labour and birth diagnostic and treatment medical services, including obstetric, neonatal and anaesthetic care are available, should they be needed, in the same building, or in a separate building on the same site. Transfer will normally be by trolley, bed or wheelchair.

Freestanding midwifery unit (FMU): an NHS clinical location offering care to women with straightforward pregnancies during labour and birth in which midwives take primary professional responsibility for care. General Practitioners may also be involved in care. During labour and birth diagnostic and treatment medical services including obstetric, neonatal and anaesthetic care, are not immediately available but are located on a separate site should they be needed. Transfer will normally involve car or ambulance.

1.1.3 A physiological care approach

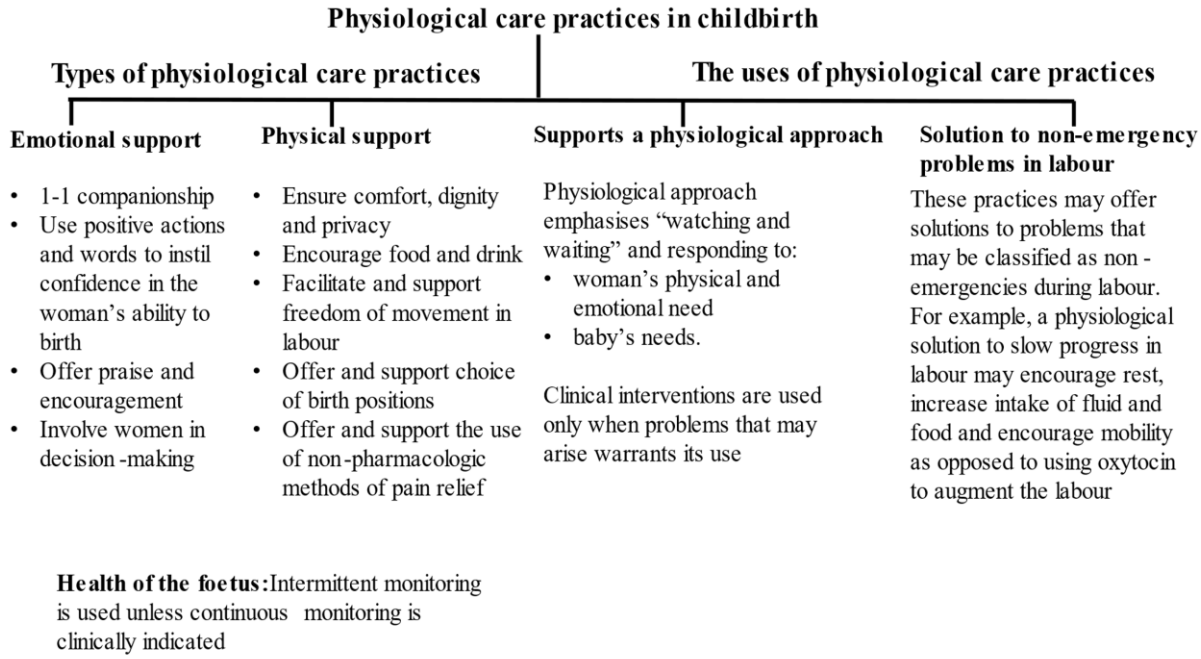
In this PhD research, a physiological care approach is defined as a preventative approach where expectant management is used, adopting a practice of 'watchful attendance and responding' to the woman's and her baby's needs (Kennedy, 2000; Jonge et al., 2021). Kennedy (2000) and Jonge et al. (2021) clarify this approach further by describing the care the midwife provides when using this approach (See section 1.1.3.1). The aim is to support a physiological labour progress and birth (Jonge et al., 2021) intervening only when problems arise that warrant it (Miller et al., 2016; WHO, 2018). Although described as a philosophical approach in some literature, a physiological care approach is informed by biological and physiological science in relation to birth. It is important to reiterate that this is not a new approach. However, it has been superseded by an interventionist approach, and shifting this has proved difficult - see section Ch 2, section 2.2.1. and 2.2.2 for explanations why, and for my reasons for using an implementation science lens to understand facilitators and barriers to implementing this approach.

1.1.3.1 Physiological care practices

Different terms may be used in literature to describe care practices used when implementing a physiological care approach. In this research, I use the term physiological care practices. For brevity and where appropriate I will use the term 'care practices.' These practices represent midwifery skills rooted in physiological evidence and empirical experiential learning. Physiological care practices meet both the woman's physical and emotional needs and are outlined in Figure 1.1. Supportive evidence for the use of these practices are further outlined in Table 1.3 section 1.2.3.These practices are also outlined in greater detail in the Physiological Practices Observation (PPO) tool (chapter 4, section 4.2). The PPO tool was developed by the author prior to this PhD and was adapted for use in this research to observe the midwives' use of 27 physiological care practices. The use of these practices was an important reality

explored in this study, and it provided the context for exploring and understanding influences on implementing a physiological care approach The finding are presented in chapter7

Figure 1.1: Physiological care practices and their use in clinical practice



Note: Please see table 1.3 for the sources of evidence from which these care practices are derived.

In the UK, midwives are described as autonomous professionals, using physiological care practices amongst women who are at low risk of complications, intervening, and involving obstetricians only in the event of complications (NMC, 2015). Midwives also have a professional responsibility to implement a physiological care approach appropriately amongst women at higher risk of complications, because of evidence that a physiological care approach benefits this group of women and their babies as well (NMC, 2015; WHO, 2018; ICM, 2019).

Midwives and obstetricians may also use physiological care practices to resolve problems classified as non-emergencies during labour. For example, when a diagnosis of slow progress in labour is made, a midwife may encourage rest, or increase the intake of fluid and food, as

opposed to routinely seeking an obstetric review to augment the labour. This avoids the risk of hyperstimulation of the uterus, associated with the use of oxytocin, leading to foetal distress (Olah and Steer, 2015).

1.1.4 An interventionist approach

In this PhD research, an interventionist approach is defined as an approach informed by an understanding of birth as inherently risky. The mainstay of an interventionist approach is a routine use of risk surveillance to identify and manage risks using clinical interventions (See 1.1.4.1-1.1.4.4) Researchers may use different terms to describe increasing clinical intervention use, for example, 'overuse' when conceptualised in the context of cost associated with avoidable harm or unnecessary use. In this research, I am using the word 'routine' to mean as a normal or a standard approach rather than what is appropriate to meet a clinical need (Medical Dictionary, 2021).

In an interventionist approach, labour is typically actively managed (O'Driscoll et al., 1973). A woman's labour is routinely augmented using artificial rupture of membranes or oxytocin, if progress does not meet pre-defined time frames for progress at different stages of labour, and the baby is routinely monitored. Active management is commonplace in obstetric units, and standardised to the care of all women, even though evidence shows that progress in labour is highly individualised and varies widely from woman to woman throughout labour (Grylka et al., 2019). Therefore, NICE clinical guidelines for intrapartum care are clear that active management should not be used as a standard approach (NICE, 2014; updated 2017) .

Midwives and obstetricians may use clinical interventions when deviations from the norm occur, so clinical interventions can be appropriately instituted. This can occur either in the pregnancy or in labour where, for example, during monitoring of the foetal heart, a baby may be identified as being in distress, requiring a Caesarean section. However, when an

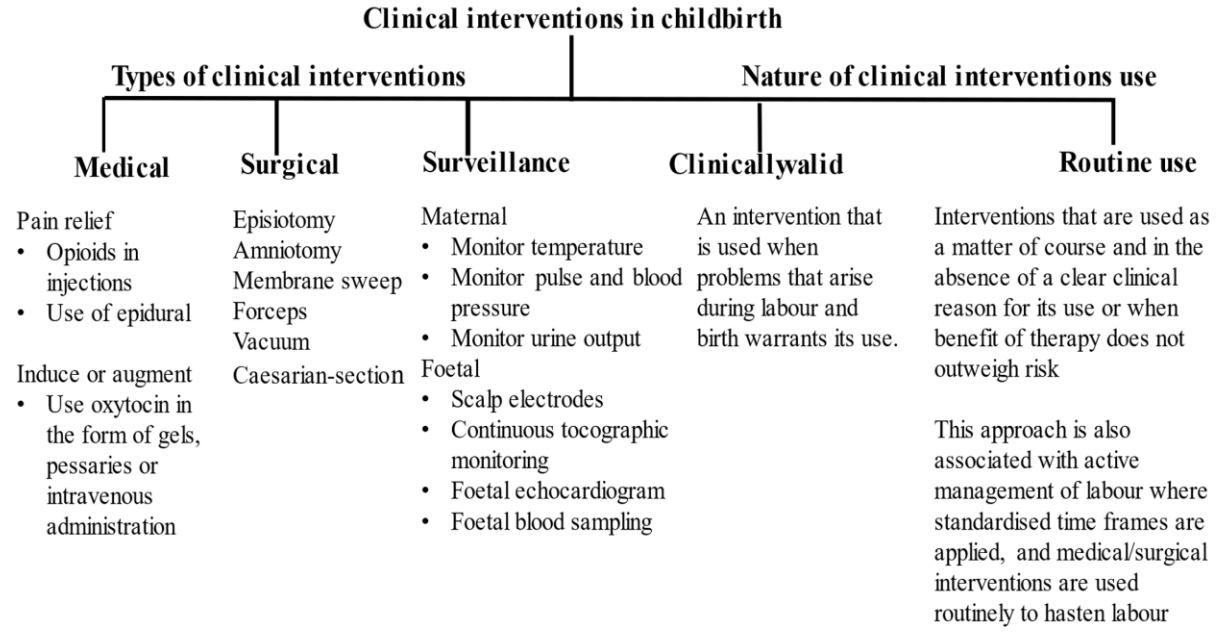
interventionist approach is routinely implemented or standardised to the care of all women; it is evidenced to cause harm (See section 1.2.1 and 2.1.2.3).

1.1.4.1. Clinical interventions

An intervention is the act or an instance of intervening, to interfere or to come between so as to prevent or change the course of events (Oxford English Dictionary, 1995). Childbirth is a physiological process. However, it is associated with a degree of risk, for example, foetal distress could occur. Managing such risks involves the use of clinical interventions. These can be categorised as surveillance and as medical or surgical interventions (Figure 1.2). Clinical interventions may also be used to guard against potential risks, for example, women of an older age group are identified as being at higher risk of stillbirth and labour may be induced (labour is initiated with drugs) to reduce this risk (RCOG, 2013a). It is important to recognise that in childbirth, clinical interventions may also be used to meet women's preferences or psychological needs, for example, epidurals to manage labour pains.

Clinical interventions are used by healthcare professionals (e.g. obstetricians, anaesthetists and midwives) either autonomously, or in consultation. For example, a midwife may decide to break the bag of waters around the baby without consulting an obstetrician. However, she can only augment labour with oxytocin in consultation with an obstetrician who must agree and prescribe its use.

Figure 1.2: Types of clinical interventions and use in clinical practice



Source of evidence: NICE, 2014; WHO, 2016; 2018.

1.1.4.2 Medical interventions

Medical intervention in childbirth includes the use of drugs for pain relief, for example, opioids like pethidine or morphine may be given via injections; and in epidurals, a mixture of local anaesthetic and opioids are given via a thin tube through a needle into the back. Drugs like prostaglandins may be used in the form of gels or pessaries in preparation for induction of labour, and synthetic oxytocin may be used intravenously to begin labour (inductions) and to hasten labour (augmentation).

1.1.4.3 Surgical interventions

Surgical interventions include membrane sweeping and/or amniotomy where a midwife or obstetrician can rupture the bag of waters around the baby using instruments as part of an induction or augmentation process. A surgical incision of the perineum and posterior vaginal wall (episiotomy) can be made to hasten birth if there is evidence of foetal distress.

Obstetricians can use instruments like a ventouse (vacuum extractor) or forceps and surgical incisions abdominally (Caesarean-sections) to deliver the baby.

1.1.4.4 Surveillance

Surveillance during childbirth can include the monitoring of a woman's temperature, pulse, blood pressure and urine output. The frequency of such surveillance can vary according to whether the woman is classified as at low risk or high risk of complications, but its variation is also influenced by professional and institutional norms and customs. Foetal surveillance can include monitoring the foetal heart and uterine contractions using technology externally with, for example, continuous tocographic monitoring, mobile telemetry, or a foetal echocardiogram, or internally using foetal scalp electrodes. Surveillance can include procedures such as incisions to the foetal scalp to draw blood to check oxygen levels. It includes the use of centralised continuous tocographic monitoring systems so that observers (senior midwives and obstetricians) can watch the foetal heart at a central station outside the labour rooms. Lower-technology forms of surveillance typically used by midwives and recommended for use in physiological labour in national (NICE 2014) and international guidelines (WHO, 2018) include use of intermittent auscultation of the foetal heart with a Doppler or Pinard stethoscope.

1.1.5 Implementation and context

Here, I define and explain the concepts of implementation and context. In the field of implementation science, implementation and context are noted to be inextricably intertwined, and an understanding of both is described as necessary to advance research (Dixon-Woods, 2014; Pfadenhauer et al., 2015; May et al., 2018; Nilsen and Bernhardsson, 2019).

Pfadenhauer et al. (2015), through a concept analysis, defined implementation as a planned and deliberately initiated effort with the intention to put an intervention into practice. However, unlike implementation, definitions of context are noted to vary widely, and it is

described in the literature as a concept that continues to mature (Pfadenhauer et. al. 2015; Nilsen and Bernhardsson, 2019; Rogers et al., 2020). See also section 2.2.2 for further discussions.

Pfadenhauer et al. (2015) state that context includes not only the setting, but also roles, interactions and relationships. As such it is not just a backdrop for implementation, but interacts, influences, modifies and facilitates or constrains the intervention and the implementation effort. In the field of implementation science, context is reported in a number of studies, to be not just a physical location, but consisting of roles, interactions, and relationships at multiple levels where facilitators and barrier could operate to influence implementation (Hawe, 2009; Dixon-Woods, 2014; Pfadenhauer et al. 2015; May et al., 2018). Facilitators and barriers could operate for example at (i) system-level: for example, the delivery of healthcare, its resourcing and incentivisation; (ii) organisational level: for example, financial and institutional structures, resourcing, culture, leadership to drive the implementation efforts; (iii) professional group level (midwives and obstetricians): for example, group philosophy, attitudes, and skills (Nippita et al., 2015; Macfarlane et al., 2015, Elshaug et al., 2017; Correa et al., 2020). At an individual level, facilitators and barriers could include, for example, women's knowledge and attitudes (Elshaug et al., 2017; Correa et al., 2020). The definition of implementation outlined by Pfadenhauer et al. (2015) and their discussions about context informs this research.

1.1.6 Non-clinical interventions

Betrán et al.(2018) use the phrase non-clinical interventions to refer to interventions in healthcare applied independently of the clinical encounter. I will use this phrase in this research to define interventions that work to drive implementation and/or facilitate the translation of evidence into practice. At an organisational level this can include,

for example: availability of resources, leadership, reconfiguring services based on policy recommendation: at a professional group level it can include audits and feedback, use of evidence-based guidelines; and at an individual level (women) it can include information leaflets, group education or face to face dialogue with healthcare professionals (NHS England, 2016; Betrán et al., 2018).

1.2 Study rationale

This section begins with a discussion of the problem of routine clinical intervention use that underpins the investigation in this PhD research. The risks associated with routine clinical intervention use in childbirth, and the evidence-base that informs a physiological care approach recommended to address this problem, are outlined. I also outline the rationale for: observing midwives' use of physiological care practices as the context for exploring facilitators and barriers to implementation; identifying facilitators and barriers and exploring how they influenced the implementation of a physiological care approach and conducting this research in two obstetric units. A reflection on my motivations for the research and conclusions are also presented.

1.2.1 Risks associated with routine clinical intervention use

When clinical interventions are used as matter of routine i.e. without a valid clinical reason, it can cause direct harm or trigger a 'cascade effect' i.e. where the use of one clinical intervention can lead to the use of other interventions to monitor, prevent, or treat possible side-effects, cumulatively increasing the risks of harm (Brody and Sakala, 2013; Jansen et al., 2013; Miller et al., 2016; Fox et al., 2021). Examples of such routine clinical interventions include continuous cardiotocography, labour inductions and augmentation, episiotomies, and non-medically indicated Caesarean sections. The manner in which these clinical interventions can lead to a 'cascade effect' is described in the next paragraph onwards.

A Cochrane review (Alfirevic et al., 2017) found that when continuous foetal monitoring (CTG) that records the foetal heart rate and uterine activity is used routinely in low risk labour, it can increase the risk of clinical interventions like Caesarean sections (CS) (RR 1.63, 95% CI 1.29 to 2.07) and is more likely to result in instrumental birth (RR 1.15, 95% CI 1.01 to 1.33). Continuous monitoring appears to be associated with reduced rates of neonatal seizures, but there are no clear differences in cerebral palsy, infant mortality or other standard measures of neonatal wellbeing (Alfirevic et al., 2017). Devane et al. (2017) in their review found that a 20-minute CTG on admission in labour, used in efforts to identify babies who were at greatest risk of becoming compromised, was not of any benefit, but women allocated to continuous monitoring have a higher probability of an increase in incidence of CS (risk ratio (RR) 1.20, CI 1.00 to 1.44). Pharmacological pain relief such as epidurals, for example, may provide effective pain relief but can also lead to prolonged first and second stages of labour (Anim-Somuah et al., 2018) and in obstetric models of care where standardised active management is used, it can increase the risk of augmentations (Brown et al., 2013; Newnham et al., 2017).

In induction of labour, synthetic oxytocin is used as part of a process of artificially starting labour, for example, if women are post-term when the risk of stillbirth may be increased. In augmentation of labour, oxytocin is used to increase frequency of contractions and hasten progress in a labour that has slowed. Although induction and augmentation can be effective (or even lifesaving) procedures when indicated, their overuse (used without a clear medical indication) is demonstrated in observational studies to be associated with uterine rupture, perineal lacerations, anal sphincter injury, and uterine prolapse (Vogel et al., 2013; Rygh et al., 2014). Olah and Steer, 2015 describe oxytocin as a useful but also a frequently abused drug through liberal and injudicious use. They argue, evidence that it shortens labours by 1.3 hours with a clinically modest reduction in Caesarean sections (Wei et al., 2013; Brown et al.,

2013), must be balanced against the increased risks of, for example, uterine hyperstimulation, uterine rupture, foetal distress and birth asphyxia, which are top causes reported by the UK National Litigation Authority (2012) for medical negligence claims. The evaluation of the UK Saving Babies Lives Care Bundle (NHS ENGLAND, 2016a), intended to halve stillbirth rates from 4.7 per 1000 to 2.3 per 1000 by 2030, reports a 20% fall in stillbirth rates, but also describes a 19.4% increase in induction rates, and a 27.7% increase in babies needing therapeutic cooling (Widdows at al., 2018). The second Saving Babies Lives Care Bundle report (NHS England, 2019) cautions against routine induction use, advocates a greater involvement of women in decision-making, and the use of other equally effective interventions, for example, continuity of midwifery carer models to reduce stillbirths. Overall, induction rates in the UK have increased from 20.4% (2007-2008) to 32.6% (2017-18) (UK National Maternal and Perinatal Audit, 2021). Oxytocin administration during labour is also reported to cause a persistent down regulation of the oxytocin receptors which persists postpartum, increasing the risk of postpartum haemorrhage (Phaneuf et al., 2000).

Instrumental deliveries that may follow the use of epidurals, augmentations, and induction are associated with an increased risk of perineal trauma (episiotomies and obstetric anal sphincter injuries) for the mother, and injury to the scalp and head of the baby with associated morbidities (RCOG, 2011; 2020). While episiotomy during forceps delivery is protective against obstetric anal sphincter injuries, its routine use in spontaneous vaginal birth increases this risk (RR 0.55, 95% CI 0.38 to 0.81) (Jiang et al., 2017). In a prospective cohort study, Sosa et al. (2009) report that episiotomy increases the risk of post-partum haemorrhage by 16.2% (aOR:1.70; CI 1.15–2.50). Other associated morbidities reported with the use instruments, include, for example, urinary incontinence, pain and dyspareunia (Jiang et al., 2017). Following CS compared to vaginal birth, the risk of infections, haemorrhage requiring hysterectomy or blood transfusions, deep-vein thrombosis, and other complications associated with

anaesthetic use, and surgery are higher (Belizán et al., 2007; Sandal et al., 2018). Haemorrhage, deep-vein thrombosis and post-partum infections remain a cause of mortality in women in the UK and worldwide (Belizán et al., 2007; WHO, 2015 Miller et al., 2016; MBRRACE, 2019). In a metasynthesis of 20 studies (n=21,429), Ayers et al., 2016 found CS and instrumental birth were associated with post-traumatic stress disorder (r=0.48). Other studies employing qualitative approaches also describe influences on the physical and psychological health of women with a resultant impact on the health of her baby from her inability to care for it (Beck, 2009; Beck and Watson, 2016; Reed et al., 2017).

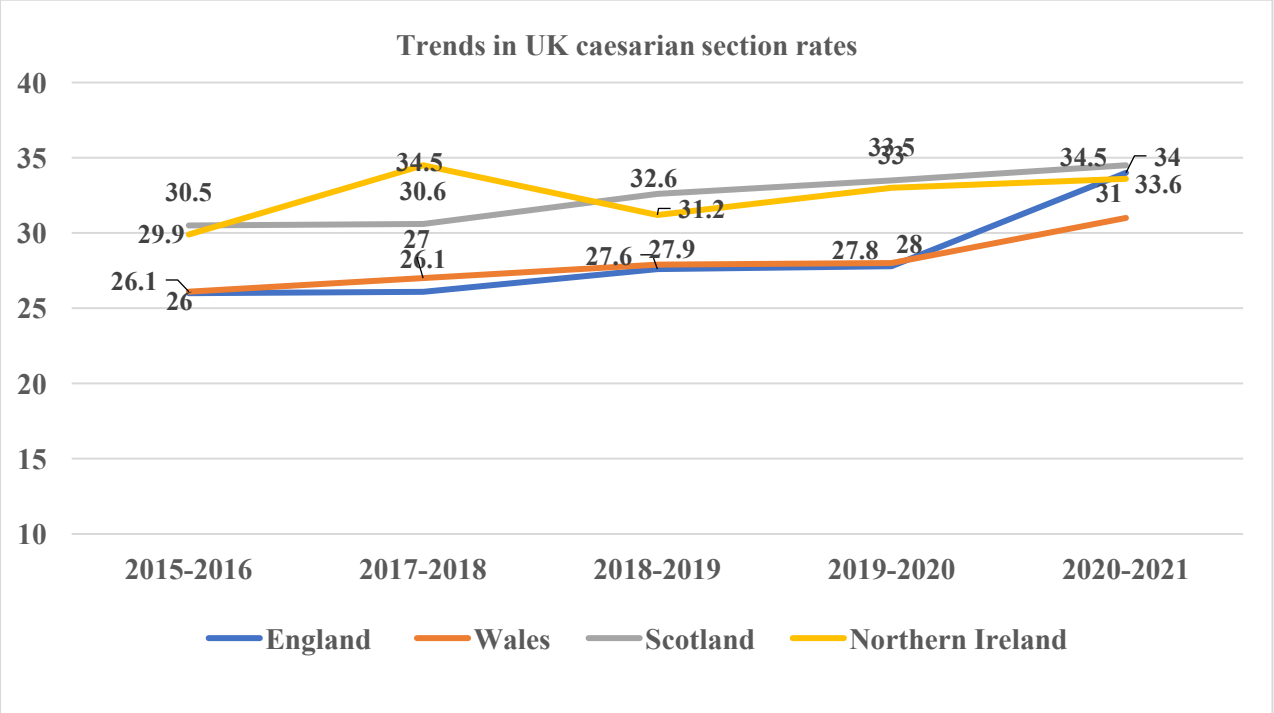
In the baby, respiratory morbidities (e.g. transient tachypnoea, respiratory distress syndrome, persistence pulmonary hypertension) are more prevalent following elective Caesarean section (ECS), compared to vaginal birth. A systematic review and meta-analysis of 16 studies (>382,000 term singleton neonates) reported a crude prevalence rate for respiratory morbidities of 2.8% (ECS) vs 0.99% (VB) (RR=1.95 (CI 1.40- 2.73) (Tefera et al, 2020). There is emerging evidence about the impact of elective Caesarean-section on long-term health (Hyde et al., 2011; Sandall et al., 2018; Keag et al., 2018). (See further detailed discussions on the impact of routine clinical intervention use on short and long term health in Ch 2, section 2.1.2.3).

Although clinical interventions are needed in some labours to save lives, substantive evidence shows that their routine use in a standardised approach to care during labour and birth causes harm (Brody and Sakala, 2013; Miller et al., 2016; Brownlee et al., 2017). The increased risk of complications associated with routine clinical intervention use, and cumulative risks in the event of an intervention cascade, emphasises the importance of research to explore and understand how facilitators and barriers influenced the implementation of a physiological care approach that advocates a more appropriate use of clinical interventions.

1.2.2 Increasing trends and wide variations in routine clinical intervention use

An important impetus for this research is the continuing increase and wide variations in the use of routine clinical interventions in childbirth. The data in the UK, shows a rising trend and wide variations in clinical intervention use (See figure 1.3 and table 1.3). This continues despite concerted efforts to reduce their use through evidence-based policies, guidelines and pathways, for example, Changing Childbirth, 1993; All Wales Clinical Pathway for Normal Birth, 2002; National Service Framework, 2004; Maternity Matters, 2007; Keeping Birth Natural and Dynamic, 2009; NHS England, 2017; NICE, 2014). The Caesarean section (CS) rate across the UK (Table 1.3) is well above the cut-off of 16% recommended by the WHO (2015). The WHO (2015) report states that beyond a CS rate of 16%, a reduction in maternal and new-born mortality is not achieved in the general population. Rates of more than 25%, seen in all countries of the UK in 2017-2018 (Table 1.3) are also reported to be associated with an increase in maternal mortality (WHO, 2015).

Figure 1.3: Increasing trends in the use of Caesarean sections in the UK



Source: NHS Digital, 2017, National Records Scotland, 2018; Maternity Statistics Wales, 2017; Northern Ireland Health Register).

A UK wide national audit also shows wide variations in clinical intervention use (Table 1.3), amongst women who are at low risk of complication, a group that are less likely to require clinical interventions compared to women who are at high risk of complications (National Maternal and Perinatal Audit, 2017-2018).

Table 1.2: Variations in the use of four clinical interventions amongst low risk women who had singleton births in NHS Trusts in England (NPMA, 2022)

Clinical interventions	**Rate of variations (2018-2019)**
Caesareans	21.8-35.3%
Instruments (Use of vacuum or forceps)	6.2-18.2%
Inductions (Use of drugs to begin labour)	13.4-47.2%
Episiotomy (A surgical incision into the muscles of the perineum)	15.8 - 36.6%

Variations in the frequency of clinical intervention use during birth may exist between different obstetric units (units located in hospitals managed by obstetricians and midwives) and between obstetric units and other birthing environments, for example, midwifery units in the hospital, community setting or home (Brocklehurst et al., 2011; Hollowell et al., 2015; National Maternal and Perinatal Audit, 2021; Scarf et al. 2018). Midwifery units are staffed and run by midwives, are organisationally separate, and do not offer epidural or surgical services (Rowe et al., 2011).

A consistent finding in studies that have controlled for case-mix differences, for example, age, ethnicity, level of socio-economic deprivation and clinical risk factors in the UK, is that these variations are not accounted for by maternal characteristics or clinical risks alone (Paranjothy et al., 2005; Bragg et al., 2010; Pallasmaa et al., 2013). These studies identify a need for research to explore other reasons for these variations to understand how routine

clinical intervention use can be reduced. Despite this evidence, and calls for more research in this area, there is a lack of direct observational evidence about midwifery practices during labour and childbirth in mainstream maternity service settings. The lack of such research informs one of the objectives of this study to observe and describe the use physiological care practices, in the context of its main aim to explore and understand influences on implementing a physiological care approach. Put simply, an understanding of what practices are being used in the study setting is needed to provide the context for the primary question of what influences midwives' use (or lack of use) of physiological care practices in these settings?

1.2.3 A physiological care approach

The impact on maternal and child health in the immediate and long-term from routine clinical intervention use, continues to drive efforts to promote, the implementation a physiological care approach, if it is acceptable to the woman.

Physiological care practices used in this context are evidence-based and disseminated through international guidelines (World Health Organisation,1996, 2018), national guidelines and pathways (Keeping Childbirth Birth Natural and Dynamic, 2009; NICE, 2014; All Wales Clinical Pathway for Normal Birth, 2002), and consensus statements and reports from UK professional and international organisations (Royal College of Midwives, Royal College of Obstetricians and Gynaecologist, National Childbirth Trust, American College of Nurse-Midwives, Midwife Alliance of North America, National Association of Certified Professional Midwives, 2012).

Care practices that support physiological labour and birth, reference sources, and the corresponding representation of these practices in the PPO tool used in the observation of midwives' use in this research, are presented in Table 1.3

Table 1.3: Evidence-based practices to support women's experiences of a physiological childbirth

Evidence-Based Practices/ Corresponding care practice in PPO tool	**Theoretical/empirical foundation for role in support of physiological childbirth**	**Source of evidence**
1) Avoid placing time limitation on normal labour progress (Care practice 1,12,13l)	This evidence enhances our understanding about physiological variability in labour progress and the highly individualised nature of cervical dilatation. This differs from current knowledge and the use of Friedman curve as a standard to make decisions about progress in labour. This curve standardised dilation of the cervix at 1 cm an hour and the start of active labour at 4 cm. Using it increases clinical intervention use like amniotomies and augmentation to hasten progress	Zhang *et al*., 2010; Downe *et al*., 2013; Oladapo et al., 2017; WHO, 2018.
2) Continuity of carer or 1-1 care (Care practices 5, 6, 10, 11, 17)	The provision of a labour companion, known and trusted by the woman reduces anxiousness. Reduction of anxiousness maximises the production of oxytocin needed to support labour progress. This increases the likelihood of a vaginal birth and reduces the risk of Caesarean-sections	NICE 2014; WHO 2018; Hodnett *et al*., 2012; Bohren *et al*., 2017.
3) Environmental factors (reducing bright lights, noise, ensuring comfort, calm and quiet, privacy) (Care practices 2, 4, 6)	Reduces anxiousness, reduces the production of adrenaline induced by stresses associated with being in unfamiliar environments and maximises the production of oxytocin to support labour progress	Taylor *et al*., 2000; Uvnäs-Moberg K, 2003.
4) Promote the use of non-pharmacological pain relief (e.g. Use of water, mobilisation, upright positions) (Care practices 3, 8)	Reduces the need for epidurals that may lead to other clinical interventions like augmentation. Reduces the need for opioids that affect neonatal behaviour, specifically their ability to breastfeed	NICE 2014; Burchell *et al.,* 2016;WHO 2018; Anim-Somuah *et al*., 2018
5) Freedom of movement in labour and upright positions (Care practices 3, 15)	Enhances the women's ability to cope with contractions, reduces the duration of labour, the need for epidural and the risks of instrumental and Caesarean birth	NICE 2014; Lawrence *et al*., 2013;WHO 2018.

Table 1.3 continued: Evidence-based approaches to support women's experiences of a physiological childbirth

Evidence-Based Practices	Theoretical/empirical foundation for role in supporting physiological childbirth	Source of evidence
6) Intermittent auscultation of foetal heart in labour unless continuous electronic monitoring is indicated (Care practice 9)	Reduces the use of invasive foetal monitoring, episiotomies, instruments and Caesareans births. Routine use of continuous monitoring does not reduce adverse neonatal outcomes	NICE 2014; Alfirevic *et al*., 2013; Devane et al., 2017
7) The provision of nutritional support (Care practice 14)	Shortens the duration of labour by at least 16 minutes	NICE 2014; Singata *et al*., 2013; Ciardulli *et al*., 2017
8) Spontaneous versus directed pushing (Care practice 16)	Increases vaginal birth. Increases 2nd stage and umbilical cord Ph but did not increase admissions to neonatal units. Foetal acidosis caused by directed pushing is evidenced as causing more harm.	Thomson, 1993; Caldeyro-Barcia et al., 1981; Nordstrom et al., 2001; Stones et al., 2017
9) Episiotomy only in the event of foetal distress (Care practice 18)	Routine use of episiotomy does not reduce perineal or vaginal trauma but can increase the risk of postpartum haemorrhage, infections and perineal pain	NICE 2014; Jiang *et al*., 2017
10) Skin to skin with mother immediately after birth (Care practice 20)	Promotes breastfeeding and improves the duration of breastfeeding	NICE 2014; WHO 2018; Moore *et al*., 2016
11) Delayed cord clamping (Care practices 21, 22)	Promotes transition to neonatal life, reduces the incidence of hypovolemia, increases cardiac output, increases haemoglobin concentrations and reduces the incidence of anaemia	NICE 2014; WHO 2018; McDonald *et al*., 2013
12) Care that involves women in decision-making (Care practices 23, 24, 25, 26, 27)	Reduces anxiousness and maximises the production of oxytocin. Reduces the incidence of traumatic birth and post-traumatic stress disorder	Beck, 2009; Miller *et al.*, 2016; Dekel *et al.*, 2017; NICE, 2014;WHO, 2018

The evidence in Table 1.3 is incorporated into the Physiological Practices Observation tool developed in 2014 and was used observe physiological care practices in this research (see Chapter 4).

1.2.4 Describing the use of physiological care practices

The differential use of physiological care practices is one of the reasons identified as potentially contributing to increases and variations in routine clinical intervention use, is (Miller et al., 2016; Sandall et al., 2018). Several international research bodies have proposed a move away from only measuring clinical intervention use, to also measuring or describing physiological care practices to improve the implementation of these, and to support the appropriate use of clinical interventions (Escuriet et al., 2015; Brownlee et al., 2017; Kennedy et al., 2016) (See also Ch 2, section 2.2.1.2 for a detailed discussions). Midwives' use physiological care practices represents an important research gap. It was viewed as relevant and important to exploring the reality of implementation work, that in this study also included identifying and exploring influences on implementation. Structured observation of the use of physiological care practices provided an understanding of their use, and a context for in-depth qualitative interpretive inquiry that was used to identify facilitators and barriers and explore their influences on implementing a physiological care approach.

Escuriet et al. (2017) in their study on a critical exploration of tools and indicators, noted a lack of tools to observe physiological care practices. A content validated tool for observing physiological care practices was developed by the researcher prior to the PhD (Darling, 2015; Darling and Collington, 2018) and its adaptation permitted structured observation of care practices in order to understand what practices midwives used in labour care for women assessed as at low risk of complications. (Darling, 2015; Darling and Collington, 2018; (See

chapter 4 for a detailed explanation of PPO tool's development and adaptation for use in this PhD; and chapter 5 and 6 for its application in this study).

1.2.5 Exploring facilitators and barriers to use of physiological care practices

The main aim of this PhD study is to address the research gap on identifying and exploring how facilitators and barriers influenced the implementation of a physiological care approach. Unstructured observations and interviews were used to identify and explore these influences and others A study of facilitators and barriers is important for understanding why implementation may be varied and understand why non-clinical intervention (See section1.1.6) to progress implementation may or may not be working (Greenhalgh et al, 2004, Eccles and Mittman, 2006, Damschroder et al., 2009; May et al., 2009; Correa et al., 2021). A systematic review was conducted first to assess the state of knowledge in relation to facilitators and barriers at organisational, professional group (midwives and obstetricians) and individual levels (women). This review (chapter 3) identified gaps in the evidence as themes which informed the analysis of data collected in the primary study.

In making the decision to identify and explore contextual influences on implementation, a definition of context is used as being a set of characteristics and circumstances that consist of active and unique factors that surround the implementation effort (Pfadenhauer et al. 2015), (See section 1.1.5 for a discussion on context and where facilitators and barriers could be located). It is not feasible in any one study, to explore all manner of contextual facilitators and barriers that may exist. The selection in this research is based on research gaps identified (See Ch 2, section 2.4.1, 2.4.2; Ch 3, section 3.9.1), and used to refine its aims and objectives.

Contextual facilitators and barriers in this research are explored at the levels of the organisation leadership responsible for driving implementation, professional groups (midwives and obstetricians) responsible for implementing a physiological care approach, and at an

individual level regarding women's experiences of care. For ease of reading, I use the phrase: facilitators and barriers in reference to all three levels. Facilitators and barriers are explored in two obstetric units, one with a lower clinical intervention rate and another with a higher rate. This was in order to address the lack of comparative research identified in several studies as necessary to understand why clinical interventions may vary between obstetric units (Stones and Arulkumaran, 2014; Kennedy et al., 2010; Hollowell et al., 2015; De Jonge et al., 2017).

System level influences were not explored directly in this research but were considered in the discussions drawing on published policies, reports and research on such influences as maternal and new-born healthcare delivery (Kings Fund, 2008; 2015; Sandall et al., 2011;WHO, 2016; Elshaug et al., 2017).

1.2.6 Research in Obstetric units

This research represents a move away from a focus on research in midwifery units (MUs) in the UK. This focus was spearheaded by UK policy recommendations to reconfigure the maternity services and offer women a choice of birth units (Changing Childbirth in England, 1993; Maternity Matters, 2007; Keeping Birth Natural and Dynamic, 2000; Better Births, 2016). The more recent Better Births (2016) report also recommended reconfiguring to provide care through continuity of carer models to all women in order to increase personalised care. For women without significant health risk factors, a guideline (NICE, 2014) recommends care outside of obstetric units, for example, in the women's homes or in midwifery units. This recommendation is based on evidence of reduced routine clinical intervention use in midwifery units, and in continuity of carer models (Hatem et al., 2008; Walsh and Devane, 2012; Hollowell et al., 2015; Sandall et al., 2016; Turienzo et al., 2021)

However, in England, despite these policy recommendations, 87% of women still give birth in obstetric units (Walsh et al., 2017). While some women may choose to use the obstetric unit, a number of other factors influences the continued use of obstetric units: historical obstetric-led provision of care; MUs not being available because of a lack of leadership to drive the change to reconfigure services; access to MUs not being encouraged because of a lack of awareness amongst decision-makers of the clinical and economic evidence; and the increasing use of clinical interventions like inductions because of national targets to reduce stillbirth rates (Coxon et al., 2014, 2017; Walsh et al., 2017; 2020; Wilkinson et al., 2017; Widdows et al., 2018). This continuing slow reconfiguration highlights the need to focus research on exploring practices in obstetric units, where most women in the UK birth, and where evidence shows that clinical intervention use is significantly higher than midwifery units (Brocklehurst et al., 2011).

1.2.7 Reflections and motivations for this research

I trained as a nurse in Malaysia and became a midwife after a ten-month training programme in Singapore where midwifery is not an autonomous profession. I decided to come to the UK in 1998 to pursue my dream of becoming an autonomous midwifery practitioner. The National Health Service sponsored my midwifery training, and I qualified as a registered midwife in 2000.

My experiences as a student and as a newly qualified midwife on obstetric units was about providing care based on a medical model where we actively managed women's labours and births. I read about different approaches to practice but was fearful of doing things differently. Supporting physiological childbirth and autonomous practice seemed illusory. Midwives who implemented physiological care practices were under scrutiny for a different way of working even though the practices they used are described in the Midwifery Code of

Practice. None of the hospitals in London where I worked had a birth centre despite the Changing Childbirth Policy (1993) and Maternity Matters report (DH, 2007), which both emphasise a woman-centred approach and the provision of choice of birth settings. National policies and guidelines on intrapartum care did little to change practices in obstetric units.

An incident with a woman who refused to get into bed and squatted on the floor to birth her baby, despite my exhortation for her not to, proved to be a turning point. Later I felt I had imposed a way of birthing on her that she did not want. She was squatting for a good reason and, in line with the mechanics of birth, was creating space for her baby to be born. It represented her embodied knowledge derived from her birth culture.

In 2005, I spent two weeks at the Edgware Birth Centre, one of the first freestanding birth centres in London, sitting and watching midwives work. It was a revelation but frightening because the labour process was not controlled. Instead, it was allowed to unfold with just the supportive presence of the midwife. Two seminal texts also informed my practice, 'Normal Childbirth: Evidence and Debate' written by pioneering midwifery researchers in physiological childbirth (Downe, 2004) and the 'Farmer and the Obstetrician' by Mr Odent – the French obstetrician who educated midwives about the influences of oxytocin on the labour process (Odent, 2000).

I did not return to working in OUs (obstetric units). Instead, I spent several years working on an along-side birth centre and freestanding birth centre to gain experience in a physiological care approach. I developed my research on understanding and using physiological care practices. The Physiological Practices Observation tool (see chapter 4) that I used in this project was initially piloted to gather midwives' views on the content of the tool for the purpose of observing these care practices and to understand its potential usefulness in preceptorship of midwives. Subsequently I undertook a content validation exercise to develop a good quality

scale for observing physiological care practices, and this provided an opportunity to adapt it for observations in this thesis.

My return to the OU setting to do this research signals a change in my view about research in childbirth aimed at reducing routine clinical interventions. I held a strong view that improving the uptake of MUs, whilst promoting quality and safety in these units, should take precedence in enabling women to experience a physiological childbirth. However, a more pressing problem is the significantly higher clinical intervention rates in OUs.

I felt care in OUs, where a majority of women still give birth, should not be ignored. I could not help but ask the question, why must women use an MU to experience a physiological childbirth? What is standing in the way of implementing a physiological care approach in obstetric units? During the course of this PhD research to explore this problem, I performed both a background literature review (chapter 2) and a systematic review (chapter 3) of studies to explore facilitators and barriers to the implementation of a physiological care approach in obstetric units. This enabled me to identify research gaps and develop the aims and objectives for my PhD research. I believe studying this problem by applying an implementation lens, may throw new light on progressing the implementation of a physiological care approach and provide answers to improving the implementation of this in obstetric units.[1] To this end, this research seeks to promote an understanding of the use of physiological care practices, and identifies facilitators and barriers and how they influenced the implementation of a physiological care approach.

[1] See chapter 2 for further discussions on the field of implementation science and why it informs this research.

1.3 Research aim and objectives and theoretical position

This section outlines the aims and objectives of this study and provides a summary of the theoretical position adopted followed by the conclusions and overview of thesis chapters.

1.3.1 Aim and objectives

Aim: To explore and understand influences on the implementation of a physiological care approach in two obstetric units.

Objectives:

i. To describe patterns of use in 22 supportive care practices and 5 participative care practices

ii. To identify and explore how facilitators and barriers at the levels of the organisation leadership, professional groups (midwives and obstetricians) and individuals (women) influenced the implementation of a physiological care approach

iii. To explore how facilitators and barriers differentially influence the implementation of a physiological care approach in a 'lower-intervention' versus 'higher-intervention' obstetric unit.

1.4 Theoretical position

To fulfil its aims and objectives, this research used an embedded explanatory mixed methods design underpinned by Pragmatism. A unifying principle in pragmatic thinking is that knowledge is consequential, generated after action and reflection on action, even if we can use what we know already (antecedent knowledge) to guide our actions (Biesta 2010; Greene and Nori, 2010).

In this research, Pragmatism as a paradigm draws on two core concepts of John Dewey (1938). The first is his **concept of enquiry** (an enquiry is an investigation into a part of reality with the purpose of creating knowledge for a controlled change of this part of the

reality). Secondly, it draws on what Dewey describes as an **intersubjective world** where he states, knowledge is constructed by exploring multiple realities. These two unifying principles of Pragmatism underpinned the epistemological basis for this research that explored the implementation of a physiological care approach in two obstetric units using mixed methods. The principles of intersubjectivity freed this research from being confined to just one method to exploring the realities studied. Both quantitative and qualitative methods were used to explore the multiple realities of implementation work. Principles and theoretical underpinning from the field of implementation science also informed the research (See Ch 5).

The realities explored include (i) A descriptive quantitative analysis was undertaken from observations of midwives' use of in physiological care practices. This used a content-validated practice tool developed prior to this PhD and adapted for observations in the PhD research; (ii) A thematic analysis emphasising the researcher's subjectivity as an analytic resource, and a continual questioning of assumptions was used to identify facilitators and barriers to implementing a physiological care approach. This used: observations of labour care; semi-structured interviews with consultant midwives and obstetricians responsible for driving implementation; and midwives who provided labour care and women who received this care. Observations included a training session to develop midwives' skills in a physiological care approach. Familiarisation of a maternity intrapartum care guideline for midwives was also undertaken; (iii) An integrated analysis synthesising quantitative and qualitative findings was then used to develop three joint displays to form conceptual models to critically explore and provide explanations for how facilitators and barriers influenced the implementation of a physiological care approach.

1.5 Conclusions

This introductory chapter sets the stage for the conduct of this PhD research. It outlines debates about normal birth, key concepts used, the rationales for the conduct of the research and theoretical position adopted. A personal reflection is shared about my experiences of working as a midwife implementing an interventionist approach and subsequent learning about a physiological care approach that led to my work and research in this area. Explanations are then provided about the shift in my interest in research in midwifery units to obstetric units. The aims and objectives of this research are outlined, and an overview of the thesis chapters are presented. In the next chapter, I will present a background literature review that expands on the rationales of this research and introduces in greater depth the theoretical perspectives that informed its development.

1.6 Overview of the thesis

This PhD research is organised into a further 9 chapters as follows:

Chapter 2 presents a background literature review, used to situate the research and develop its aims and objectives. This review outlines measures of frequencies, trends and variations in clinical intervention use. Types of clinical interventions used in childbirth and their impact on the health of women and their babies are described. Theories used to explain routine clinical intervention use in childbirth are outlined. The influences of evidence-based medicine on care in childbirth are critically analysed and arguments are presented for using an implementation science research lens in this research.

Chapter 3 presents a systematic review and thematic synthesis of 32 primary studies that examine facilitators and barriers to the implementation of physiological care approach in obstetric units. This review identified key themes and gaps in the existing literature on facilitators and barriers at three levels: organisation, professional groups (midwives and obstetricians) and individuals (women). Also described in this chapter is the use of the review's finding to validate the decision to use mixed methods in this research, refine investigations at an organisational level to focus on leadership to drive implementation, and address research gaps at the levels of professional groups (midwives and obstetricians) and women.

Chapter 4 describes the development of the Keeping Birth Normal tool, renamed as the Physiological Practices Observation tool (PPO), which was conducted in prior work and outlines its adaptation as a tool for use in observing the use of physiological care practices in this current study. This chapter also discusses the anticipated relevance and limitations of the PPO tool for use in observations; and challenges the researcher may encounter.

Chapter 5 sets out the study's methodology. The first part discusses philosophical assumptions underpinning this research and explains the rationale for selecting pragmatism as the

appropriate epistemological stance to guide investigations. The two core concepts of Dewey's pragmatism to justify its use of mixed methodology is explained. Also described is the implementation science lens to (i) describe the use of evidence based practices and (ii) explore facilitators and barriers to its implementation.

Chapter 6 describes the embedded explanatory design, reasons for its selection and sets out the methods of data collection used. The theoretical and methodological assumptions that informed choices about site selection, gaining access to site and participants, sampling frame to select participants, ethical considerations pertinent to this research, data collection and analysis techniques and procedures followed to ensure rigour and trustworthiness are also described and justified. Justification is provided for the three levels of analysis undertaken. Procedures used at each of the three stages of data analysis are described.

Chapter 7 sets out the results of the descriptive quantitative analysis. Results were summarised on the use of physiological care practices by midwives in 12 labours using frequencies, medians and IQRs (interquartile ranges). The chapter also summarises and discusses patterns of use across 12 labours and in individual physiological care practice. Also outlined are overall discussions and conclusions.

Chapter 8 sets out the results of the thematic analysis followed by discussions and conclusions. Themes identified as facilitators and as barriers at the level of organisation leadership, professional groups (midwives and obstetricians) and individuals (women) are juxtaposed to explore the various influences on implementing a physiological care approach. This is supported with quotes that drew on original transcribed data from observations and semi-structured interviews. The chapter also describes integrating quantitative and qualitative findings to develop joint displays in the form of conceptual models to explain the facilitators and barriers to implementation.

Chapter 9 This chapter provides a discussion of the study findings and synthesis, drawing on wider empirical and theoretical literature to critically explore the influences on the implementation of a physiological care approach.

Chapter 10 summarises the key findings of this work, and discusses the study's strengths and limitations, its implications, and it's contribution to knowledge. Finally, recommendations for policy, practice and research are given.

Chapter 2: Background Literature Review

Introduction

This chapter provides a general overview of the literature relevant to the problem of routine clinical intervention use in childbirth and identifies research gaps.

Part 1 outlines the nature and extent of increases and variations in the routine use of clinical interventions in labour and birth, and the impact of this on the health and well-being of women and their babies.

Part 2 outlines theories that have been used to explain the reasons for increases and variations in routine clinical intervention use. Evidence-based medicine is explored and influences of this field on approaches to care in childbirth is discussed. Arguments are presented for addressing research gaps identified to address the problem of routine clinical intervention use and variations in use. Justification is provided for using a structured approach to observe and describe the use of physiological care practices. Justification is also provided for exploring and understanding influences on implementing a physiological care approach.

Part 3 reviews regional, national and global research to address the problem of increasing routine clinical intervention use.

2.1 Literature review (Part 1)

2.1.1 Approach to the literature search

The researcher conducted a search for peer-reviewed articles relevant to the topic. A series of searches used the keywords: routine clinical interventions, normal birth, prevalence, trends, variations, mortality, morbidity, guidelines, midwifery, evidence-based practice, midwife, midwife-led and obstetric-led. The search only included publications in English.

Also included in the search were guidance and reports from international, professional, and civic bodies that provide information on the trends in the use of clinical interventions locally, regionally, and internationally. These documents also define approaches including the implementation of a physiological care approach to address the problem of routine clinical intervention use. Databases searched included: Cochrane Database of Systematic Reviews, CINAHL, Medline Complete, Embase and Google Scholar. Articles were also retrieved from open access sites including the BMJ, PLOS Medicine, SocIndex, Biomed Central, Wiley Online Library and Sage Online. Reference list and citation searching were also used to retrieve relevant articles

2.1.2 Trends, prevalence, variations in and impact of routine clinical intervention use

The purpose here is to define the scale and impact of the problem of routine clinical intervention use and establish the importance of this PhD research. The review outlines literature on global and local prevalence, trends, and variations to define the scale of the problem. It also describes the impact on the long-term health and well-being of women. The section also reviews research on the need to understand the use of evidence-based physiological care practices, questioning the current focus in research on purely understanding use and outcomes of clinical intervention.

2.1.2.1 Global prevalence, trends, and variations in Caesarean-section rates

Clinical interventions that may be used routinely in labour and birth are wide-ranging for example,

i. Medical interventions: use of opioids and epidurals for pain relief, inductions, and augmentations with drugs to begin and hasten labour.
ii. Surgical interventions: amniotomy, episiotomy, instrumental births, and Caesarean-section.

iii. Foetal surveillance: the baby may be monitored continuously using external monitors, electrocardiogram, or scalp electrodes

This section focuses on trends and variations in Caesarean sections (CS) because it is a common measure of increasing clinical intervention use in labour and birth. CS rates are relatively easy to collect from surveys or routine statistical information systems (Betrán et al., 2015) and recognised as a reliable measure for global and national monitoring (Stanton et al., 2005).

A recent review (Boerma et al., 2018) using population data from 169 countries that included 98·4% of the world's births, 29·7 million (21·1%, 95% uncertainty interval 19·9-22·4) were estimated to occurred through CS in 2015, which was almost double the number of births by this method in 2000 (16·0 million [12·1%, 10·9-13·3] births). CS use in 2015 was up to ten times more frequent in the Latin America and Caribbean region, where it was used in 44·3% (41·3-47·4) of births, than in the west and central Africa region, where it was used in 4·1% (3·6-4·6) of births. The global and regional increases in CS use were driven both by an increasing proportion of births occurring in health facilities (accounting for 66·5% of the global increase) and increases in CS use within health facilities (33·5%), with considerable variation between regions. Increases in CS use was observed in all regions during 2000–15, and this increase occurred most rapidly in eastern Europe and central and south Asia. Population CS rates increased most slowly in west and central Africa (2·1%) and eastern and southern Africa (2·0%). In these regions, CS rates were less than 10% in 2015, and Elsaug et al. (2017) note that this highlights a problem of underuse of clinical interventions, equally harmful to women and babies.

The World Health Organisation (1985) states improved population health is not achieved at Caesarean section rates above 16%. More recently a review of this rate was undertaken to

account for social demographic changes and increasing complexities, for example, obesity in pregnancy and women of older age (Betrán et al., 2015). The methodology used in the eight studies varied. Only two studies controlled for confounders to demonstrate robust associations between the use of clinical interventions and outcomes. The WHO expert group who undertook the review continued to support a recommended cut-off at 16%. However, the reviewers emphasised that efforts must focus on providing Caesarean sections to women in need, rather than striving to achieve a specific rate (Betrán et al., 2015).

For developed countries, the discussions in the review by Betrán et al. (2015) drew on a study by Ye et al. (2014). This study used nationally representative data from 19 developed countries, employed longitudinal analysis and controlled confounders. The review concluded that mortality was a rare outcome in developed countries and stated that morbidities (e.g., infection, haemorrhage, prolonged hospital stays) are more useful indicators of the extent of the problem. (Betrán et al., 2015). However, the development of morbidity indicators is noted to be poor because of the need for long-term follow-up (Koblinsky et al., 2012; WHO, 2013). Where improvement in data gathering has occurred it also focused on severe morbidities (e.g., haemorrhage or infection) rather than non-life-threatening morbidities (e.g., urinary incontinence) and disability or chronic morbidities (e.g., fistulas or uterine prolapse) (Koblinksy et al., 2012; Geller et al., 2018). Betrán et al. (2015) also state, that although 16% may be the recommended cut-off at population level, this rate cannot used as a recommendation for facility level or individual provider level. They note that obstetric population case-mix, organisation structure and circumstances in which each facility operates may vary, justifying variations in the CS rates, and country-specific assessments of acceptable CS rates may be needed. Giving, an example, of Brazil where over 50% of the births were by CS in 2010, Betrán et al. (2015) argue that it may not be safe or advisable to

achieve a CS rate of 16% in the short term. The lack of expertise with assisted vaginal deliveries in some birth units could also be a major impediment to reducing CS rates (Betrán et al., 2015).

After this review by Betrán et al. (2015) the WHO (2015) proposed a need to develop a classification system for defining different groups of women and use of CS in these groups. An example of such a classification system is the Robson criteria (Robson et al., 2015). The Robson criteria classify all deliveries into one of ten groups based on five parameters.[2] Standardisation and uniformity facilitated by the criteria can reduce confounding in case-mix analysis and promote effective comparisons of CS rates at local and national levels. The aim of the WHO (2015) was to support efforts to understand CS use and achieve levels that support positive maternal and perinatal outcomes.

Using this classification Boerma et al. (2018) concluded that the Caesarean-section is frequently routinely used, and its use is widely varied in ways not accounted for by variation in clinical need. CS use is higher in richer countries with a higher density of physicians, health-care facilities, particularly private facilities, and educated populations. The Lancet series on optimising CS use presents a further detailed review by Betrán et al. (2018) on causes for increasing CS use that may exist at organisational, professional groups and individual levels.[3] The Lancet CS series (2018) also emphasised the need to study this

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[2] Five parameters of the Robson criteria: obstetric history (parity and previous caesarean sections), onset of labour (spontaneous, induced, or caesarean section before onset of labour), foetal presentation or lie (cephalic, breech, or transverse), number of neonates, and gestational age (preterm or term).

[3] See section 2.2.1 for a discussion on drivers of increased clinical interventions use and variations that may be located at a health-care system, organisations, professional groups, and individuals. Facilitators and barriers to the implementation of physiological are practices at organisational, professional groups (midwives and obstetricians) and individual levels are studied in greater depth in chapter 3.

problem in the local context and this is explored in the next section on prevalence and trends of routine clinical intervention use in Europe and the United Kingdom.

2.1.2.2 Local prevalence, trends, and variation in routine intervention use (Europe and the UK)

Europe has adopted recommendations by the WHO (2015) to gather data at local and national levels to study the problem of increasing CS use. Data gathering has also been extended to include other types of clinical interventions. The Euro-Peristat (2015) produces maternal and newborn statistics for use by national, European, and international stakeholders who make decisions about the health care of pregnant women and the newborn. Using this routine data from the Euro-Peristat study (2015), researchers noted variations of 16.1% to 56.9% in CS rates and 1.4 % to 15.1% in instrumental births among European countries.

Overall, the Euro-Peristat reported that CS rates were 4% higher in 2015 than in 2010. However, this represents an average: In Romania, CS rates were up by 27% (36.9% to 46.9%), Poland 24% (34.0% to 42.2%), Hungary 21% (32.3% to 39%), and Scotland 17% (27.8% to 32.5%). In Europe, Iceland has one of the lowest increases in CS rate, (14.8% in 2010 to 16.1% in 2015). The CS in Norway and Finland has fallen in the same period by 0.5% and 0.6% respectively.[4] In the United Kingdom, the Caesarean section rate in England is 27%, Wales, 26.1%, Scotland, 32.5% and Northern Ireland, 29.9% (Euro-Peristat, 2015).

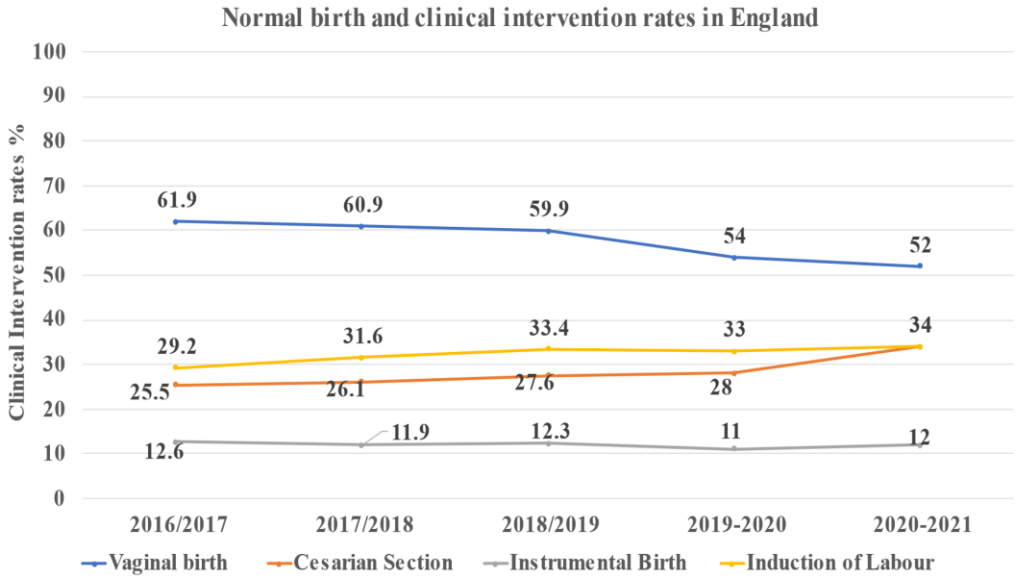
In the UK, national and local hospital audits inform healthcare providers about their use of clinical interventions. These capture mortality and some morbidity data (Hospital Episode

[4] Instrumental births, maternal and neonatal mortality, preterm birth and stillbirths are also lower in Norway and Finland compared to other countries in Europe (Peristat, 2015)

Statistics, 2017; NHS Digital, 2017-2021, MBRRACE UK, 2020). Indicators described as clinically relevant and methodologically robust are used in quality improvement and comparative benchmarking of women's health services across the UK. An example, is the Clinical Indicators Project, set up RCOG, 2013 in collaboration with London School of Hygiene and Tropical Medicine (Royal College of Obstetricians and Gynaecologist, 2013. The project aims to enhance understanding about the reasons for routine clinical intervention use in different groups of women, improve inaccuracies in data coding, and address incomplete submission by health-care providers. Using these clinical indicators, the National Maternal and Perinatal Audit (2021) reported that not every hospital was able to provide information for every measure, a small number in England were unable to provide any data, most hospitals failed data quality checks for at least one measure, and further work and investment was required to increase data quality.

Based on the data submitted, the NMPA (2021) report showed a 1.5 to two-fold difference in clinical intervention use between National Health Services hospitals in the UK, CSs ranged between 19.7% to 36.8% among first-time mothers who had vaginal birth, and variations of between 9.6% to 17.8% were seen in the rates of instrumental delivery (NMPA, 2021). Increasing trends and variations are also demonstrated in the rest of Europe (Euro-Peristat, 2015). See figure 2.1 for trends in England where this study is located.

Figure 2.1: Falling normal birth rates and increasing trends in clinical interventions in England (Hospital Episode Statistics, 2022)



2.1.2.3 Maternal Mortality and long term health consequences for women and babies from routine clinical intervention use

The last two decades have brought about a sharp growth in routine clinical intervention use. See Ch 1 section 1.2.1 for a detailed discussion on the risk of cumulative harm from routine clinical intervention use. In this discussion I focus on maternal mortality and long-term health consequences for women and babies

Although maternal mortality rates (MMR) in developed countries are low, clinical intervention rates in countries like the UK are higher than, for example, countries like Norway and Finland, where clinical intervention rates are lower but so also MMR and neonatal mortality rates (Peristat, 2015). Wide variations are observed in clinical interventions rates across Europe and in the UK, and the UK National Maternal and Perinatal Audit (2021) points to the need to understand underlying causes of these variations and to

investigate differences in practice that may contribute to observed variations. Preventable maternal deaths continue to occur from infections, haemorrhage, post-surgical thrombosis, and other anaesthetic complications (Betrán et al., 2016; Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries UK, 2020), reiterating the importance of careful consideration of routine clinical intervention use, where there is no clear evidence of benefit and it instead causes harm (Miller et al., 2016; Moynihan et al., 2012; Brownlee et al., 2017). Calls to reduce such avoidable harm grows as evidence shows that clinical intervention use is increased in hospital settings and is driven by profit gain rather than clinical indications (Miller et al., 2016; Elshaug et al., 2017; Jonge et al., 2019; Abbas, 2022).

Aside from maternal mortality, the lesser gathered outcome of maternal morbidity, is described as an equally important indicator (WHO, 2013; Chou et al., 2016) and shown to have a significant impact on the quality of life of women (Belizán, et al., 2007; Miller et al., 2016). Morbidities are framed as a spectrum, ranging at its most severe, 'maternal near miss' - defined as the near death of a woman who survived a complication during pregnancy or birth or within 42 days of the termination of pregnancy, to non-life-threatening morbidity, for example, an infected episiotomy wound which is more common (WHO, 2013; Say et al., 2016). Morbidities are amongst the leading causes of disability-adjusted life-years among women aged 15–44 years and increase the risk of mortality within a year of the morbidity occurring (Koblinsky et al., 2012; Saving lives, 2014). A range of conditions, both physical and mental, affect the health of women and consequently the health of their infants, family, and society.

There is also emerging evidence about the impact of routine clinical intervention use on the long-term health of babies (Dahlen et al., 2013, 2014; Coathup et al., 2020). This includes an

increased risk of type 1 diabetes, obesity, and asthma. Causal relationships have been difficult to establish because this evidence is drawn mainly from observational studies. However, controlling for confounders in individual studies has lent strength to the findings (Hyde and Modi, 2012; Blustein and Liu, 2015). Increased understanding about how physiological labour and birth contribute to child development, for example, by colonisation of the infant gut bacteria for energy uptake, and by the epigenetic consequences of the physical stress of labour, which primes the foetus for transition into adult life and for long-term continued well-being, also lends strength to evidence for supporting women's experience of a physiological labour and birth. Blustein and Liu (2015) argue that evidence of influences from observational studies on long term health is compelling and question the lack of inclusion of such evidence in guidelines. Abbas (2022) argue that apart from well-designed randomised controlled trials, evidence from observational and real-world data of women's views and experiences must inform decision-making of clinicians for progressing efforts to reduce the harm of routine clinical intervention use.

Outlined in the next section are theories exploring routine clinical intervention use in childbirth.

2.2 Literature review (Part 2)

2.2.1 Theories informing the study of routine clinical intervention use

This section outlines theories used to explain increasing routine clinical intervention use in childbirth. It also presents arguments for drawing on an implementation science research lens to study facilitators and barriers to the use of a physiological care approach to address the problem of increasing and wide variations in routine clinical intervention use. This includes:

i. Theories commonly used to explain the increasing routine clinical intervention use in childbirth

ii. Discussions on evidence-based medicine and the potential usefulness of using an implementation science research lens to study the use of a of a physiological care approach

2.2.1.1: Theorising routine clinical intervention use in childbirth

Prominent amongst theories used to explore increasing use of routine clinical intervention in childbirth is medicalisation theory. It is important to reiterate that the theorists themselves, for example, Illich (1976) and Zola (1983) did not include childbirth in their study of medicalisation (Oakley, 2016). However, the use of the work of these theorists underpins our current understanding of why non-medical conditions like childbirth are inappropriately medicalised, leading to care that routinely uses clinical intervention to guard against potential risks.

Zola (1983), a medical sociologist, defined medicalisation as a process whereby" more and more of everyday life comes under medical dominion, influence, and supervision." Applying this to professional work, Conrad (1992), describes medicalisation as occurring at a conceptual, institutional, and interactional levels. At a conceptual level, the work of risk theorists, for example, Giddens (1991) and Beck (1992) are usefully employed. Both describe a society preoccupied with risk, and that which seeks to be alert or is exhorted by individuals or groups to be alert for risks that may occur. Others, for example, Douglas and Widavsky (1982) proposed risk categorisation by individuals, groups, and other entities of events in society. Such social and cultural construction of risks are in turn described to influence how healthcare policy, professionals, societal, knowledge and media networks shapes care provisions. Risk theories have been used widely in childbirth research (Rothman, 1982; Murphy-Lawless, 1998; Scamell, 2011; Campo 2010; Spendlove, 2017) and writings (Lane, 2010; Cartwright et al., 2011; Scamell, 2014) to understand and explain its medicalisation.

Historical analysis of medicalisation also focuses widely on the shift of childbirth from a familial process in the home, to a medically controlled event in a hospital leading to its institutionalisation, and the workings of an 'obstetric project' (Arney, 1982; Oakley 1984; Lane 2006). An obstetric project describes obstetricians' work to establish dominant positions including producing and disseminating knowledge of childbirth as a site of pathology and risk, laying claim to specialised scientific knowledge, and therefore to superior expertise thus legitimising their involvement at an interactional level. For example, an obstetrician is needed to perform an instrumental birth or manage the medical induction of labour (Donnison, 1977; Arney, 1982; Rothman 1982, 2007; Oakley 1984; Murphy-Lawless 1998).

Drawing on a feminist perspective, researchers also argued that medical control and domination of childbirth has relied on medical professions' privileged gender (usually male) and class positions (Donnison, 1977; Oakley, 1980; Arney, 1982, Rothman, 1982; Davis-Floyd,1992). Drawing on embodiment theory, Davis and Walker (2010) and Chadwick and Foster (2014), for example, describe how women are subjected to binaries of being smaller, weaker, emotional, defective, and as so, being much more at risk, than their male counterparts who are considered ordered, uniform, consistent and rational. Others describe how these views are also applied to midwives who are mostly women (Oakley, 1984; Cahill, 2001; Davis-Floyd, 2001; Rothman, 2007). Midwifery knowledge derived from an understanding of childbirth as a physiological process, and women's embodied knowledge is described as devalued and marginalised (Rothman, 1982, Davis Floyd, 1992). In a biomedical model, women and midwives are described as deferring to the physician's authority and authoritative knowledge (McCourt and Dykes, 2010). In many countries today, midwifery is not an autonomous profession, and women actively seek obstetric care in hospitals (Declercq et al., 2001; McCourt and Dykes, 2010).

In a biomedical model of birth, the woman, her pregnancy, labour and birth, and the midwife who cares for her, are all subjected to monitoring and surveillance (Arney, 1982). In his theory of panopticism, Foucault (1995), draws on the metaphor of Jeremy Bentham's design of a tower of continual observations in prisons, to explain how surveillance is used in the exercise of power in institutions. Hunt and Symonds, (1995); Scamell (2011); Newnham et al. (2017) use this theory to illuminate how people are encouraged to conform, simply because of the possibility of being observed, even if they are not under direct observation. The strength of this disciplinary power, Foucault argues, is that it requires no coercion, as the techniques of power utilised encourage self-surveillance and self-regulation—where individuals mark and discipline their behaviour according to a set of implicit social norms. Thus, in many birthing units, centralised monitoring systems, audits, guidelines and training can all function to discipline professional work and align it with the norms of risk surveillance and management.

However, during the 1990s and 2000s, qualitative research contradicted a feminist perspective of childbirth that a natural childbirth was denied to and removed from women. While childbirth advocates, including consumers, feminists and midwives, believed that a model of 'natural' or 'holistic' midwife-led model of childbirth with minimal intervention, best met women's needs, research suggested that some women actively engaged with, and sought out medical birth (Davis-Floyd 1994; 2001; Martin 2003; Edwards 2005).

Others argued that the dichotomy between medical birth and women-centred, 'natural' or holistic birth, fails to see that 'natural' birth is just as much a social construct as 'medical birth' because birth is always a culturally mediated event (Annandale and Clark, 1996; Beckett 2005; Frost et al. 2006). However, Campo (2010) points out that women's understanding, and expectations of birth, continue to be heavily influenced by obstetric

hegemony that instils fear and mistrust in a natural birth process. Walsh (2000) notes that creating binary views - physiological versus medicalisation of birth - does not benefit women and proposes that theories must be used to study the act of parturition itself and explore how individuals can build agency to make decisions to resist or to engage with medical interventions.

Globally, birth remains a highly contested phenomenon, beset by ideological tensions between different professional groups, who hold differing views of birth, and battle for positional power. Obstetricians are often identified as adopting risk surveillance and management and midwives as adopting a physiological care approach. After years of being socialised in a medical model, variations exist in the way both professions practice (O'Connell and Downe, 2009), and practice appears to be dependent on the individual, other professionals they practise with, and the setting in which birth takes place (Harris, 2005; Fahy and Parratt, 2006; Blaaka and Eri, 2008).

Activism to demedicalise birth and change current socialised and experienced views of birth continues. Organisations like the Association of Radical Midwives in the UK engage in such activism. An important part of affecting this change is research led by midwives, researchers, policy makers and health organisations like the WHO.[5] In the UK, a policy of choice offers women the option of choosing to birth in outside of hospital settings where care is midwife-led are more likely to adopt a low intervention approach to birth.

The need to reconstruct birth as a normal physiological process is promoted through policy, education, and care practices (Changing Birth, 1993; Downe and McCourt, 2019; Downe,

[5] See section 2.3.1 for details about global and national research activity

2010; NICE, 2014, 2017; NHS England, 2017). However, several issues including organisational clinical governance structures focused on risk management, and a minimal resistance to over-medicalisation of birth in hospitals by midwives and obstetricians, act as barriers. The ability of midwives to support women to experience a physiological labour and birth after years of being socialised in a biomedical model also poses a problem (O' Connell and Downe, 2009; Scamell, 2011, 2014, 2016). Collaboration between different professional groups, identified as an important factor in reducing routine clinical intervention use, has been difficult to achieve (Downe et al., 2010b).

Other factors also influence clinical intervention use, for example, socio-cultural change; risk-aversion in society, where engaging with risk surveillance is viewed as acting responsibly to protect against adverse events; women's demand for technology because they want to be in control over personal and professional lives; powerful influences of the media; and other

international social platforms that reinforce the acceptability of clinical intervention use (Bick, 2010; Coxon et al., 2014; DeVries, 2015; Luce et al., 2016). Research that explains routine clinical intervention use in birth has contributed to our body of knowledge about why it occurs. It raises the importance of deinstitutionalised care, but not necessarily how the continued engagement by professionals and women with the medical model of care can be influenced.

The era of evidence-based medicine (EBM) using rigorously appraised evidence to inform practices, as opposed to ideologies, presented an opportunity to effect change to care in childbirth. The next section explores this approach, and the science that seeks to understand why evidence is not as readily translated into practice as might be expected.

2.2.2 Evidence- based medicine and practice

Davidoff et al. (1995) described evidence-based medicine (EBM) as rooted in 5 linked ideas:

i. Clinical decisions should be based on the best available scientific evidence
ii. The clinical problem, rather than habits or protocols, should determine the type of evidence sought
iii. Identifying the best evidence means using epidemiological and biostatistical ways of thinking
iv. Conclusions derived from identifying and appraising evidence are useful only if applied in managing patients or making healthcare decisions
v. Performance by health-care professionals should be constantly evaluated

EBM, and its ethos reflected in this definition, created opportunities to challenge the over-medicalisation of pregnancy and birth. Such challenges could be targeted at obstetricians' claims of authoritative knowledge, and the imposition of risk surveillance and routine use of clinical interventions to manage labour and birth. A seminal text on evidence about the lack of benefit and likely harm of routine clinical intervention use was published in Effective Care in Pregnancy and Birth (Chalmers et al. (1989) (1st edn), Enkin et al. (1995) (2nd edn). However, implementing an evidence-based physiological model of care, particularly in obstetric units, have proved challenging. The ability of midwives to use physiological care practices may or may not be supported in obstetric units. O'Connell and Downe (2009) in a meta-synthesis, describe how the implementation of a physiological care approach continues to be curtailed by established norms, based on a medical model, and enforced by a hierarchical decision-making structure led by obstetricians and midwives who subscribe to an interventionist approach. EBM recommendations to implement an interventionist approach were more likely to be translated and evaluated in practice. For example, evidence from the

term breech trial (Hannah et al., 2000) was implemented universally despite criticisms about the quality of this randomised controlled trial (McCourt, 2005; Hunter, 2012). In the UK, women with breech pregnancies are routinely offered a CS, because of the trial's finding that it improved perinatal mortality and morbidity. While widely implemented in the UK, in other European countries a more individualised approach to decision-making, espousing clinical expertise, and involving women in decision-making, has resulted in the retention of skills in the conduct of vaginal breech birth and a lowering of CS rates (Peristat, 2015).

A more recent example, is the change in practice after a review of 34 randomised controlled trials by Middleton at al. (2020). This review concluded that the use of induction amongst women at 37 weeks and beyond, resulted in lower perinatal death and fewer Caesarean sections, without an increase in instrumental birth, or babies admitted to neonatal units, compared to women who await spontaneous labour. However, the absolute rate reduction in perinatal deaths was small (0.4 versus 3 per 1000 births). The strength of evidence in support for using induction for various reasons, for example, reduced foetal movements, is also varied; however, non-medically indicated induction driven by the clinician's decision is prevalent (Humphries et al., 2009; Nippita et al., 2015; Olah and Steer, 2015), while women's involvement in these decisions is described as poor and their preferences are unmet (Coates et al., 2020; Yuill et al., 2022). Despite medical uncertainty about the reasons for induction, it continues to increase, while less expensive but effective approaches evidenced to improve neonatal outcomes, for example, continuity of care by midwives (Tracy et al., 2013; Sandall et al., 2016; Downe et al., 2019) are yet to be widely implemented. In 2021, for example, only 19% of women in the UK maternity services received continuity of care during labour, up from just 3% in 2019 to 16 % (CQC, 2022).

The use of best evidence in EBM derives from a grading system that places a high value on evidence derived from research which employs positivistic approaches like randomised controlled trials. The wisdom of contextualised tacit knowledge derived from clinical experience and patients' values, and the limitations with respect to highly complex and contextually influenced interventions, are largely ignored (Greenhalgh, 2010, 2014; Greenhalgh and Papoutsi, 2018). This critique has continued to gain momentum in EBM and is particularly relevant to care in pregnancy and birth. For example, the use of the Friedman Curve (1954) to assess progress in labour demonstrates the use of evidence derived from linear thinking associated with positivistic medicine and its application, at a population level, to a highly individualised and complex process, like labour and birth (Downe and McCourt, 2009; McCourt and Dykes, 2010). Although useful for purposes of identifying women with prolonged labour, its standardisation has led women to be routinely subjected clinical interventions, for example, augmentation when their labour progress did not meet parameters defined by the Friedman curve.

In its guidance, the WHO (2018) draws on more recent evidence that labour progress varies across individuals and throughout labour (Oladapo et al., 2018) to recommend an approach that considers individual women's needs and preference during labour to promote more positive experiences. Renfrew et al. (2014) in a quality framework for maternal and newborn care emphasise the optimisation of biological, psychological, social, and cultural processes; strengthening women's capabilities and expectant management, using interventions only when needed. The consideration of the individual woman' needs and preferences in this context forms an important part of care to address the continued increases and wide variations in clinical intervention use (Ten-Hooper et al., 2014; Macfarlane et al., 2015; Miller et al., 2016; WHO, 2018).

2.1.3 Describing the use of physiological care practices

A physiological care approach emphasises a preventative approach, advocating an expectant management of 'watchful attendance and responding', using care practices to meet the woman's physical and emotional needs and clinical intervention only when problems that may arise in the woman or her baby, warrant its use. While it is necessary to demonstrate the extent of clinical intervention use, researchers make an equally important case to describe or measure the use of physiological care practices to understand continuing increases and variations in clinical intervention use (Escuriet et al., 2015; Kennedy et al., 2016, 2018). Whether physiological care practices are used, represents an important research gap. Using a structured approach to describe or measure derives from positivistic science and is critiqued in this study as excluding contextualised knowledge. However, this research draws on a post-positivistic pragmatic paradigm where knowledge is constructed from exploring multiple realities (See chapter 5, section 5.1). Not all post-positivist paradigms are confined to qualitative inquiry to explore reality as experienced. In this research, the use of physiological care practices (an observable phenomenon) is regarded as important to understand in its own right, but these observations do not occur in isolation. They provide a context for a qualitative interpretive enquiry to explore influences on implementing a physiological care approach.

A critical exploration of tools used to assess performance in maternity services was conducted in Europe as part of ISCH COST Action, ISH1405, a dynamic EU framework for optimal maternity care. The review that was confined to Europe examined 23 studies, and two databases, and uncovered a total of 388 indicators that measured structure, process and outcomes in pregnancy and birth (Escuriet et al., 2015). The review found that comprehensive measures of physiological care practices to meet the woman's physical and emotional needs during physiological labour and birth are lacking (Escuriet et al., 2015).

Tools have been developed to observe, for example, practices to provide 'support in labour', (Ross-Davie et al., 2013; Dunne et al., 2014) vital to women's experiences of a physiological labour and birth, and to assess suitability of birth environments (Foureur et al., 2010). However, a comprehensive tool that includes other care practices is lacking. Other approaches to meet physical and emotional needs can include, for example: continuity of carer or 1-1 care (Hodnett et al., 2012; Sandall et al., 2016); environmental factors (reducing bright lights, ensuring comfort, calm and quiet, privacy) (Hodnett et al., 2012); availability of facilities (water for pain relief and birth aids to support different positions) (Lawrence et al., 2013; Lukasse et al., 2014); aspects of care (avoiding placing time limitations on labour processes, provision of nutritional support, delaying cord clamping and avoiding early separation of mother and infant) (Singata et al., 2013; Mcdonald et al., 2014; Oladapo et al., 2018); and offering praise and encouragement including involving women in decision-making about their care (Smith et al., 2014). An outcome of physiological birth is described as dependent on the complex inter-relationship between all these care practices (Enkin, 2006; Escuriet et al., 2015; Kennedy, 2010, Kennedy et al., 2011).

In this research, the observations of midwives' use of physiological care practices included a range of care practices both physical and emotional to support physiological labour and birth. The complex nature of observations through an active labour continuum benefited from the use of the tool to describe the use of care practices in a structured format. This was complemented by the more unstructured observation notes and supported further qualitative enquiry that was undertaken through interviews with the women and the midwives who provided their care to explore the influences on implementing a physiological care approach.

2.1.4 Exploring facilitators and barriers to a physiological care approach

While a greater understanding of the use of physiological care practices is needed, it does not necessarily ensure their implementation (Escuriet et al., 2015; Macfarlane et al., 2015; Elshaug et al., 2017). Research is also needed to explore how health-care professionals manage labour and birth in complex clinical environments where care is geared to intervening routinely e.g., in obstetric units located in hospitals, as opposed to not intervening unless clinically indicated e.g., in freestanding maternity units, located in the community (McCourt et al., 2012, 2014, 2016; Hollowell et al., 2015). This is an important related research priority where, apart from determining whether physiological care practices are used by health-care professionals, what is also needed is enquiry into what facilitates or acts as barriers to its implementation. (See further discussions under section 2.2.1.2).

To explore some of the implementation challenges of a physiological care approach, this review explored approaches to explain why good quality evidence is not translated or is varied in its translation (Grimshaw et al., 2012; Mittman, 2015). Implementation research (MRC, 2015) may study the use of non-clinical intervention used to (i) affect the translation of evidence, for example, the use of safety checklists, (ii) measure or describe **what** is being implemented (i.e., what is being delivered and what is being received during the intervention), (iii) measure or describe **how** it is being implemented (i.e., what resources were required to achieve the implementation of such an initiative, and (iv) identify facilitators and barriers to implementation of non-clinical interventions or practices demonstrated to produce positive outcomes, for example, the appropriate use of physiological care practices as part of expectant management as opposed to management that routinely uses clinical interventions; or explore de-implementing an interventionist approach. Researchers may also explore facilitators and barriers to understand and improve variations in the practice.

Implementation research also emphasises the significant role context plays in implementation. Definitions of context vary widely. In this research context is defined as a set of characteristics and circumstances that consist of active and unique factors that surround the implementation effort (Pfadenhauer et al. 2015). In the field of implementation science, context is reported to be not just a physical location, but consists of roles, interactions and relationships at multiple levels where facilitators and barriers could influence implementation (Hawes, 2009; Dixon-Woods, 2014; Pfadenhauer et al. 2015; May et al., 2018).

At a system level, for example, in policies or regulations, facilitators and barriers may lie across a whole health system or country and can include the regional, national or international environment. At an organisational level, it could be located in, for example, structure, resources, leadership, culture, networks and relationships, At a professional group level, it could be in their use of evidence-based practices, and at individual levels, in engagement with health-protective behaviours. Pfadenhauer et al. (2015) notes that it not always useful or meaningful to conduct an analysis at all levels described and the levels studied will depend on the intervention: in this research the intervention is a physiological care approach.

The discussions presented thus far in this review informed decisions in this research to explore the implementation of a physiological care approach in clinical practice by (i) describing the midwives' use of physiological care practices and (ii) identifying and exploring how facilitators and barriers influenced the implementation of a physiological care approach. The focus on understanding the work of implementation in clinical practice also led to the decision to explore facilitators and barriers at the levels of the organisations, professional groups (midwives and obstetricians) and individuals (women). A systematic review was used to refine the focus of investigations at these levels further.

2.3 Literature review (Part 3)

2.3.1 Research globally, and in midwife-led and obstetric led care

This section reviews global research into the problem of routine clinical intervention use and research into midwife-led and obstetric led care. It justifies this study's aim to explore the implementation of a physiological care approach in obstetric settings. A summary of the research gaps identified by this review and a conclusion is also presented.

2.3.1.1 Global level: Evidence-based quality framework

Globally, policy makers, researchers and practitioners have worked to produce evidence about the extent of clinical intervention use and its impact (Section 2.1.2.1, 2.1.2.2 and 2.1.2.3). Reviews of randomised trials have demonstrated the safety of different models of care associated with low intervention use, for example, midwife-led models (Hatem et al., 2008; Sandall et al., 2016). Qualitative research employing different epistemological stances, for example, constructionism, interpretivism and hermeneutics, have described the experiences of professionals who work in different models of care, and the women who receive care in these models (Davis-Floyd, 2001; Walsh, 2006; O' Connell and Downe, 2009; Walsh and Devane, 2012; McCourt et al., 2014, 2016; Scamell, 2011, 2014, 2016).

Aside from being used in local and national policies and guidelines, this body of evidence has also been used to develop a global evidence-based quality framework for newborn and maternal care. This formed part of the United Nations post-2015 development goals, a set of effective actions for the Global Strategy for Women's and Children's Health and Every Newborn Action Plan (Renfrew et al., 2014).

The Evidence-Based Quality Framework for Newborn and Maternal care defines a whole-systems approach of effective multidisciplinary teamwork, and integration across

hospitals, and communities for the provision of maternity care. Midwifery is described as pivotal to this approach because midwife-led care is demonstrated to be safe and cost-effective while clinical intervention rates are lower (Hatem et al., 2008; Brocklehurst et al., 2011; Overgaard et al., 2011; Vedam et al., 2012; Tracy et al., 2013; Schroder et al., 2012; De Jonge et al., 2013; 2017; Offerhaus et al., 2014; Sandal et al., 2016; Nove et al., 2020).

A meta synthesis of qualitative studies (Walsh and Devane, 2012) offered insights into why clinical interventions may be reduced when care is midwife-led. The studies used were small and were described by the authors as variable in quality. Midwife-led care appears to promote a more physiological care approach with an orientation towards normality, developing trusting relationships with women with an emphasises on empathetic care, and involvement in decision-making. The ability of midwives to work autonomously within such units, the size of the units, the smaller workload, and more time for care, were cited as important reasons for midwives being able to implement a physiological care approach (Walsh and Devane, 2012).

The evidence-based quality framework's recommendations based on this body of evidence related to five domains of care: practice, organisation of care, philosophy, values, and strategies (Renfrew et al., 2014). Under practice, the framework points to the promotion of a physiological care approach and the prevention of complications. Under philosophy, it outlines the need to optimise biological, psychological, social, and cultural processes to strengthen women's capabilities while using expectant management, and clinical intervention use only when problems that arise warrant it.

Based on this framework three areas for research were identified and grouped under three priority areas:

i. Continue to evaluate the effectiveness of different models of midwifery care
ii. Identify and describe aspects of care that optimise and those that disturb the biological/ physiological processes for all childbearing women
iii. Determine indicators, measures, and benchmarks for assessing the quality of maternal and newborn care across birthing units including the views of women (Kennedy et al., 2018).

An alliance of researchers, clinicians, advocates, and policymakers has since been created to further research in all three research priorities (QNMC, 2020)

2.3.1.2 Research into midwife-led care

The discussions here are focused on research in the UK. Policies to reconfigure maternity services in the UK offered women a choice of birthing units outside of hospitals. Apart from OUs, women could birth in alongside midwifery units (AMUs) located in hospitals and out-of-hospital midwifery units including freestanding maternity units in the community and in women's homes. Midwife-led care in MUs and women's homes, were organised to provide team continuity where care is provided to a group of women by small team of midwives, or continuity of carer models where a midwife cares for a caseload of women. Since the introduction of midwife-led models of care, research has explored its safety, cost-effectiveness, women's decision-making about the place of birth, availability, and accessibility focused on midwife-led care generally (Sandall et al., 2015; 2016) and in midwifery settings (Birthplace Collaborative Group, 2011, Brocklehurst et al., 2011; Schroeder et al., 2012., McCourt et al., 2012; Coxon et al., 2014; Hollowell et al., 2015, 2017; Scarf et al., 2018).

The Birthplace in England Cohort Study (2011) measured the labour, delivery, and birth outcomes, for the mother and baby, of place of birth planned in different settings amongst 64,000 'low risk' births in England. This included births in OUs, midwifery units (co-located birth centres in hospitals and freestanding in the community) and home births. The findings showed that women with planned births at home or in midwifery units were significantly less likely than those with planned births in obstetric units to have an instrumental or operative delivery or to receive medical interventions such as augmentation, epidural or spinal analgesia, general anaesthesia, or episiotomy and significantly more likely to have a spontaneous vaginal birth. Safety outcomes for neonates were similar for all units except amongst primigravid women who chose home births where neonatal outcomes were poorer. As a result, women were offered the option of a home birth, but it was not a recommendation (Brocklehurst et al., 2011; NICE, 2014). However, a secondary analysis of this data gathered of women with known risk factors choosing to birth at home, showed lower clinical intervention rates and intrapartum related mortality and morbidity. Neonatal admission was also lower in planned home births than planned OU births [adjusted relative risks (RR) 0.50, 95% CI 0.31–0.81] (Li et al., 2015). Midwife-led care is evidenced to benefit both women at lower and high risk of complications (Renfrew et al., 2014; Miller et al., 2016; Betrán et al., 2018) and the WHO (2018) reiterates the importance, where appropriate, of implementing a physiological care approach in both groups of women.

As part of this collaborative group of studies, Coxon et al. (2014) explored women's birthplace decisions, and provided an account of why many women preferred care in obstetric units. A diverse sample of 41 women from various ethnic backgrounds enabled the researchers to explore views of women from different cultural backgrounds. The study drew on the risk theories of Giddens (1991) and Beck (1992), to describe how cultural and societal

discourses, about the potential risks associated with birth, continue to shape the women's decisions. The hospital provided a perceived safety net against the uncertainties associated with birth. These risk perceptions also impacted on information-giving by professionals who discouraged women from using out-of-hospital units like freestanding MUs and home births, reinforcing perceptions that a hospital birth was safer. Since the Coxon et al. (2014) study, other reviews of quantitative and qualitative studies about women's decision-making drew similar conclusions (Hollowell et al., 2016; Henshall et al., 2016; Coxon et al., 2017; Yuill et al., 2021). The reviewers concluded that local and international risk discourse associated with childbirth was likely to continue to marginalise midwifery units.

McCourt et al. (2014) explored the readiness to provide safe and effective care in out-of hospital units using organisational case studies. Four publicly funded hospitals in England, classified by the Healthcare Quality Commission as "best or better performing," were selected to explore the organisational, and professional issues, that may impact on the quality and safety of care, during labour and birth in different MUs, and the women's homes (McCourt et al., 2011). Because of findings of poorer neonatal outcomes amongst women with first pregnancies who chose homebirth (Brocklehurst et al., 2011), the analysis chose to focus on care in this context. A key recommendation was a training amongst community midwives to develop their skills and confidence in caring for women in labour in out-of hospital setting; in a further study a greater integrated working across the maternity service was proposed so that community midwives could develop their skills and confidence in supporting birth in different settings (McCourt et al., 2012).

A secondary analysis Birthplace cohort study data applied a statistical analysis to study the influences of service configurations, size of units and staffing levels on variations in outcomes based on choice of place of birth (Hollowell et al., 2015). This showed that

variations in the use of clinical interventions existed across all birthing units, but wider variations occurred in OUs and co-located MUs, compared to FMUs in the community (Hollowell et al., 2015). The authors identified key areas for further research to explore the mechanisms involved: effects of unit 'culture', women's attitudes and expectations of intervention rates, and the impact of working in different birthing units on midwives' skills, attitudes, and confidence in relation to physiological birth (Hollowell et al., 2015).

More recent qualitative work has continued to focus investigations on understanding why clinical interventions are reduced in midwifery units (McCourt et al., 2012; 2014, 2016; Rance et al., 2013). Analysis by McCourt et al. (2016), combining data from two ethnographic studies in the UK, describes midwifery units as "therapeutic spaces" for women and midwives. Distinct and separate from OUs with regards to their design and philosophy, midwives could freely adopt a biopsychosocial model of birth, something they felt unable to do in an OU. Care was supportive of a physiological labour and birth, and midwives encouraged the involvement of the women and her family in their care, and this involvement was valued, as was the midwife's support for a physiological birth (McCourt et al., 2016).

Because of the benefits derived from care in midwifery units (MUs), a mapping study in England explored the availability and utilisation of alongside and freestanding midwifery units (Walsh et al., 2017) and factors influencing this (Walsh et al. 2020). Of the 134 publicly funded hospitals that submitted data, thirty-four still did not offer MUs for birth and others showed a preference for developing co-located MUs in hospitals. A spread of 4-31% in the number of women using MUs was reported. In 2016, the home birth rate in England was just 2.1% (HES, 2017).

The mapping phase (Walsh et al., 2020) also identified organisational processes within

maternity services regarding MU access and utilisation. A number of factors influenced the continued use of obstetric units: staffing shortage or 'capacity issues' on the OU; historical obstetric-led provision of care with MUs still viewed as an optional service; a lack of leadership to drive change to reconfigure and resource MUs because of a lack of awareness amongst decision-makers of the clinical and economic evidence; and a continuing misperception of increased safety of care in hospitals, or even in AMUs located in hospitals, compared with, for example, in FMUs (Walsh et al., 2017; 2020).

Continued investigations into improving the availability and utilisation of these units are important in efforts to promote women's experiences of physiological labour and birth. However, what this discussion also reveals is that the obstetric units remain an important setting for birth among low-risk women as care in midwife-led units is not always available, nor encouraged. As such OUs must remain a focus of research to understand how routine intervention use in these units can be reduced.

2.3.1.3 Research in obstetric-led model of care

Most studies exploring practices in obstetric units have shown care to be based on a biomedical model where an interventionist approach dominates. Obstetricians are described as asserting control over midwifery practices, the involvement of women in care is described as minimal or disregarded (Cahill, 2001; Fahy, 2007; O'Connell and Downe, 2009; Newham et al., 2017), and clinical interventions are demonstrated to be higher in OUs than in midwifery units (Brocklehurst et al., 2011; De Jonge et al., 2013; 2017).

However, the dichotomised view of obstetric units as adopting a biomedical model and midwifery units as adopting a physiological model is challenged by some studies. In an ethnographic study in the UK, Scamell (2011), based on observations of forty-two births in different settings, describes how the need to guard against potential risk, no matter how

small, permeates all birthing units and not just obstetric units. As part of a lancet series of articles on strengthening midwifery to improve maternal and newborn care, Stones and Arulkumaran (2014), argue that to blame obstetricians and the rise of private practice for overmedicalisation is too simplistic. To understand how clinical interventions can be reduced, they propose a systematic examination of all models that have succeeded in containing the rise of Caesarean delivery while, at the same time, assuring safety. Kennedy et al. (2010) used observations of practice (nature of observation were not clearly described) in one obstetric unit, and interviews in two units to understand why clinical intervention rates were reduced in both and identified collaborative working between midwives and obstetricians as an important facilitator of implementing a physiological care approach.

2.4 Research gaps

2.4.1 Research gap one

Most studies in childbirth tend to measure medical or surgical interventions and health outcomes to demonstrate the extent of the inappropriate use and impact of clinical intervention use. Physiological care practices (physical and emotional) to support women's experiences of physiological labour and birth are poorly studied (Escuriet et al., 2015; Kennedy et al., 2016) and hampered by a lack of tools (Escuriet et al., 2015).

This research will observe and describe the midwives' use of a range of physiological care practices, both physical and emotional, to support women's experiences of physiological labour and birth, providing the context for the study's main aim to explore influences on the implementation of a physiological care approach.

2.4.2 Research gap two

The review identifies the importance of studying influences on the implementation of a physiological care approach to understand continued increases in clinical intervention use and

its variations. Therefore, a systematic review will be conducted (chapter 3) to explore current evidence on the influences of facilitators and barriers at the levels of the organisations, professional groups (midwives and obstetricians) and individuals (women) to implementing a physiological care approach. These findings are then used to further refine the focus of investigations at these levels in this research.

2.5 Conclusions

The literature examined in this chapter shows that the negative consequences of routine clinical intervention use on the health and well-being of women and babies, are profound, yet variations and high rates that are not warranted by clinical need, are persistent or rising. Comprehensive data to understand the reasons for clinical intervention use in different categories of women is needed. Efforts to measure morbidities associated with clinical intervention use is also lacking and gathering this data is important to emphasise the urgent need to reduce its routine use.

This review identifies understanding the use of care practices that support women's experiences of a physiological labour and birth and exploring facilitators and barriers to implementing a physiological care approach, as important research priorities to understand routine clinical intervention use and variations. To understand the persisting problem of routine clinical intervention use and its wide variations, the study of facilitators and barriers is advocated in a broader context to include system, organisations, groups, and individuals. Despite national clinical guideline recommendations for women to use MUs because of significantly lower clinical intervention rates compared to OUs, OUs remain an important setting for birth among women at low risk of complications. Although the availability of MUs is a barrier in some areas, and health-care professionals do not always promote accessibility, perceptions of birth as inherently risky and of the hospital as a place that

ensures a safe birth, continue to drive women's choice of obstetric units. As such, research in OUs is important to understand how routine clinical intervention use and its variations in the care of women can be reduced. In the next chapter, I will present a systematic review to explore influences at the levels of the organisations, professional groups (midwives and obstetricians) and individuals (women) to implementing a physiological care approach in labour and birth.

Chapter 3: Facilitators and barriers to implementing a physiological care approach during labour and birth in obstetric settings: A systematic review and thematic synthesis

Introduction

This chapter presents the systematic review conducted as part of this PhD research. A systematic review is a specific method for searching, appraising and synthesising findings from primary research that may employ quantitative, qualitative or mixed methods. A preliminary scoping search revealed a range of primary research on facilitators and barriers to the implementation of a physiological care approach in OUs but there was no extant systematic review of the qualitative literature. Such review findings can have a wide application in informing guidance and recommendation, but the purpose it also served in this research, is to use its findings to refine its aims and objectives and consider its methodology and methods.

The objectives of the review were to:

i. Identify facilitators and barriers at the levels of the organisation, professional groups (i.e. midwives and obstetricians) and women to the implementation of a physiological care approach
ii. Explore how facilitators and barriers located at these levels influenced the implementation of a physiological care approach.

Studies that explore such influences may employ qualitative or mixed methods to observe practices or seek the views of health-care professionals who provide care in labour and birth within or outside of healthcare organisations. System-level factors are equally important but an in-depth exploration at this level was beyond the scope of the current review and would need to be done separately. This review and synthesis of evidence from these

primary studies use a thematic synthesis method. Thomas and Harden (2008) who developed this method describe it as effective in identifying facilitators and barriers and studying their influences on practices.

3.1 Background to the review

The routine use of clinical (i.e. technological, medical, surgical) interventions in labour and birth is widespread and variations exist within and between countries (Euro-Peristat 2018, Boerma et al., 2018). Variations are also observed in different settings for birth, for example the use of clinical interventions are significantly higher in obstetric units (OUs) compared to midwifery units (MUs) (Boerma et al., 2018, Brocklehurst et al., 2011).

Most women in middle and high income countries use OUs, commonly referred to as labour wards or delivery suites, for labour and birth (Boerma et al., 2018). In these units, midwives and obstetricians work as a team caring for women with healthy and with complicated pregnancies. The level of professional responsibilities in OUs for these women may vary. In most countries the primary responsibility for women with complicated pregnancies, more likely to require clinical interventions, lies with obstetricians, while midwives generally have primary responsibility for women with healthy ('low risk') pregnancies (Rowe et al., 2011; WHO, 2018). As an alternative to OUs, women with healthy pregnancies may choose to give birth in a midwifery units (MUs) or their homes, where such provision exists. Medical staff are not routinely involved in care in MUs. MUs are located either in a hospital or the community and care is provided in a home-like setting (Scarf et al., 2018).

Clinical interventions may be lifesaving when used appropriately but, when used routinely, they can cause harm (Miller et al., 2016). See Ch 1, section 1.1.4 for types of clinical interventions and Ch 2, section 2.1.2.1, 2.1.2.2, 2.1.2.3 for discussions on trends, variations and impact of routine clinical intervention use.

To support the appropriate use of clinical intervention, local, national, and international guidelines, for example, the World Health Organisation (WHO) guide: Intrapartum Care for a Positive Birth Experience (WHO, 2018) and in England, the NICE guidelines for intrapartum care for healthy women and their babies (NICE, 2017), recommend a physiological care approach to care during labour and birth. See 1.1.3 for a definition of a physiological care approach.

3.2 Methods

This review is reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). PRISMA guidelines are a minimum set of items for reporting systematic reviews (Shamseer et al., 2015). The review's search and selection process adhered to guidance for undertaking a review by the Centre for Reviews and Dissemination, University of York, 2009.

Qualitative data from exclusively qualitative or mixed methods studies were identified and a thematic synthesis method was applied (Thomas and Harden, 2008). Unlike quantitative studies, which mainly report on adherence to evidence-based practices, qualitative data is better suited to addressing the stated aim and objectives of the review, which focus on complex issues of identifying facilitators and barriers at organisation, professional groups (midwives and obstetricians) and individuals (women) and exploring how these influenced implementation.

3.2.1 Electronic Databases

An initial systematic search was conducted in January 2018. Four databases (CINAHL, Medline, SocIndex and Embase) were searched to identify relevant research. Only journals in the English Language were searched as funding was not available for translation costs. Table 3.1 lists the Subject Headings and free text terms used. Table 3.2 outlines the search strategy.

Table 3.1: Search terms

	Concepts	Search Terms
1	Labour/ Birth	“Childbirth" (MeSH/Cinayl) OR "Parturition" (MeSH/Medline), “Natural childbirth” (MeSH/Medline/SociIndex) Labour (MeSH/Medline), Delivery (MeSH/Medline) OR “Childbirth” “Birth” OR parturition OR labo#r OR labo?r OR "normal birth" OR “physiological birth” OR physiological labo#r OR “physiological labo?r OR physiologic*
2	Midwife	“Nurse Midwives" (MeSH/Cinayl/Medline) OR "Midwifery" (Mesh/Medline/SociIndex) OR Midwi*
3	Obstetric setting	“Intrapartum Care” (MeSH/Cinayl) OR “Obstetric Care” (Mesh/Cinayl) OR “obstetric setting” OR “labo#r ward" OR “labo?r ward” OR "delivery suite"
4	Intervention	“Unnecessary procedure” (MeSH/ Medline), “Medical Overuse” (MeSH/Medline/) OR “Unnecessary interventions” OR Interventions N5 birth (Ebscohost) OR Interventionsadj5 birth (OVID) OR “routine interventions” OR “Caesarean-section” (MeSH/Medline/Cinayl) OR “C?esarian-section” (OVID) OR C#esarian section (Ebscohost) OR Labor, Induced (MeSH/Medline/Cinayl) OR Induce* OR “Augmentation N5 labo#r OR Augmentationadj5lab?r (OVID) OR Augment* OR “Vacuum extraction” (MeSH/Cinayl) OR Obstetrical Forceps (MeSH/Medline/Cinayl) OR Episiotomy (MeSH/Medline/Cinayl) OR “ Analgesia, Epidural (MeSH/Medline/Cinayl) OR EpiduralN5 labo#r OR Epiduraladj5lab?r
5	Implementation	“Health Plan Implementation” (MeSH/Medline) OR Implement* OR adhere*
6	Evidence-based practice	“Evidence-based practice” (MeSH/Medline) OR “Evidence-Based” (Mesh/Cinayl/SociIndex))
7	Obstetrician	Obstetric* OR gyn#ecolog* OR ob-gyn.(MeSH/Cinayl Ultimate/Medline Comple/Sociology Source Ultimate
8	Woman	Wom#n OR female (MeSH/Cinayl Ultimate/Medline Complete/Sociology Source Ultimate)
	Search combinations	1 and 2 and 3 and 4 and 5 and 6 and 7 and 8

Table 3.2: Search strategy

1	A systematic search of bibliographic databases available at City, University of London via the EBSCOhost and OVID platforms Two medical database (Medline/Embase), one nursing database (CINAHL) and a sociological database (SocINDEX) were searched.
2	Search combined key concepts and study-type filters were derived from the research question: What are the facilitators and barriers to the implementation of a physiological care approach in obstetric settings? We also included the term "evidence-based practice" "midwife" "physiological birth" and "normal birth" in our search combinations because of our understanding that midwifery research in particular explored facilitators and barriers by observing midwifery practices or seeking midwifery views about their experiences of supporting normal/physiological labour and birth in obstetric settings. The implementation of midwifery practices may also be explored in the context of evidence based practices
3	Search used relevant subject headings/ indexed terms (MeSH), which represented the most accurate way of searching to denote the concepts in the databases used and combined with other free text terms. Synonyms of free text terms were also included.
4	Search used British and US spelling variations identified **using wildcards** relevant to each database. **Boolean operators** captured as many combinations of words as possible and truncation symbols were used to broaden the search to include various word endings and spellings.
5	**A reference and citation search of the 27** studies included was done. 3 articles were identified, appraised and included
6	A repeat database search was conducted in Sept 2018 and June 2019 because of a time lapse between the initial search and the publications of the review. 2 new studies were identified, appraised and included.
7	A repeat database search using the terms, obstetrician and woman was conducted in April 2023. Studies published up to June 2019 when the final search for studies included in this review was conducted were considered for inclusion. Two were appraised and one was included.

3.2.2 Inclusion criteria

We included primary research published between 1990 to June 2019 that used qualitative methods suited to exploring facilitators and barriers. We chose to go back to 1990 because several important events could have acted as impetus for research in physiological labour and birth. The WHO published a recommended cut off of 16% for Caesarean section rates at population level in 1985. In the UK recommendations for a radical change in care in childbirth was proposed by the Maternity Matters document: choice, access, continuity in a safe service (DH, 2007) to reduce centralisation of care in obstetric units in hospitals and offer women a choice of birth and carers in out-of hospital setting. The WHO guide to care in normal birth was published in 1996.

3.2.3 Exclusion Criteria

We excluded studies with an exclusively quantitative research design, descriptive case studies, and commentary articles written to convey opinion or stimulate discussion with no primary data collection. We excluded studies in countries that operated a predominantly private health-care system where practice may be influenced in specific ways, for example financial gain. We were interested in understanding decision-making by a range of health-care professionals, free from such influences.

We also excluded studies in countries where care is provided by birth attendants or obstetric nurses and midwifery is not recognized as an autonomous profession e.g. USA (ACNM, 2016). In the US, midwives are not universally licensed to practice or integrated into regional healthcare systems. Roles and responsibilities vary in different birthing units. Although these health-care professionals may be trained, their role in labour and birth maybe limited, and exploring a full range of influences at a professional level is not possible (UNFPA, ICM, WHO, 2014; ACNM, 2016, Vedam et al., 2018). The inclusion of these studies would reduce

the applicability of findings to healthcare systems where midwifery is fully integrated and recognised as an autonomous profession.

Studies in countries where access to health-care facilities and health-care professionals is poor were excluded (UNFPA, ICM, WHO, 2014). These are system level factors that we are not exploring in this review because we wanted an in-depth focus on influences at the level of the organisational, professional groups (midwives and obstetricians) and individuals (women).

The titles and abstracts of all identified articles from the database searches were screened independently against the inclusion and exclusion criteria by two researchers (FD+CMc). Disagreements in selection decisions were resolved through discussion. Subsequently FD+CMc (author and first supervisor) independently screened all full text articles considered for possible inclusion in the review followed by discussions to reach agreement on articles for inclusion in the critical appraisal The full texts of all articles retained after initial screening were independently critically appraised by two reviewers (FD + CMc, FD + MC, second supervisor) using the Joanna Briggs Checklist for Qualitative Research (JBI, 2017). This checklist identifies ten items to assess congruity between methodological aspects of qualitative studies (e.g. philosophical perspective, research objectives, data collection methods) and other features (e.g. reflexivity, adequate representation of participants' voices, ethics, and credibility) to determine whether the methods used were appropriate.

Each of the ten items were scored either a 0 (does not meet the criterion), 1 (unclear whether it meets the criterion) or 2 (meets the criterion). Summing across the 10 items an overall quality score for each study was produced: **0-10 (low), 11-16 (medium) and 17-20 (high).** Agreement between pairs of reviewers was reached on the rating for each study. The one

study assessed as low quality was excluded (n=1), and those assessed as medium and high were retained (n=27).

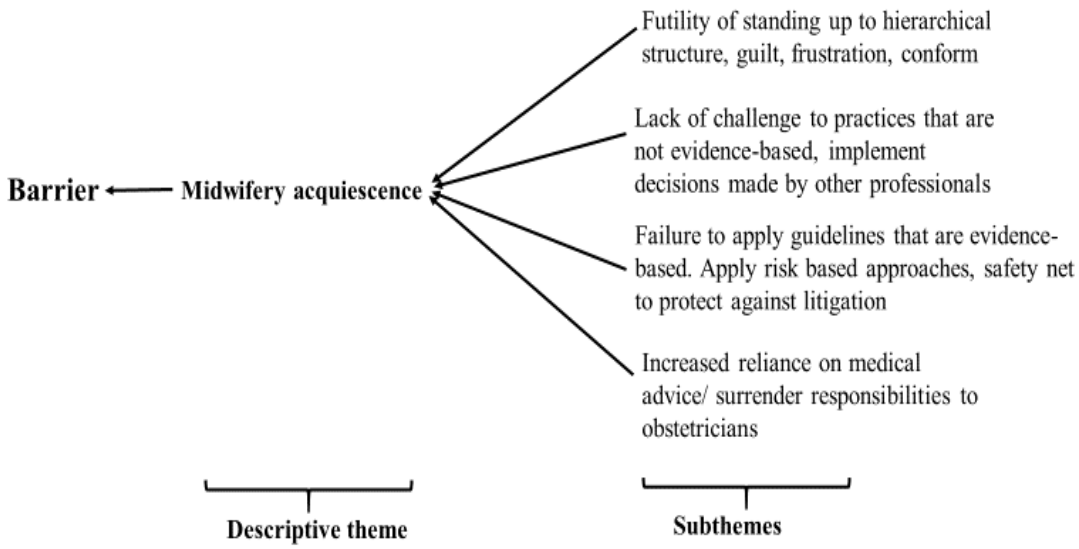
3.2.4 Data Extraction and synthesis

After a detailed reading of the retained papers, text from the results section of each article, including quotations from participants were imported into NVivo 11 software (QSR International, 2019). Thematic synthesis involves three phases: (i) line by line coding of the findings of the primary studies, (ii) development of descriptive themes, and (iii) development of analytical themes (Thomas and Harden, 2008). This method enabled us to identify facilitators and barriers, and through conceptual corroboration across the studies, explore how these facilitators and barriers influenced implementation. This process involved:

i. Line by line coding by reviewer 1 (FD) to identify all relevant phrases, concepts, and ideas
ii. To facilitate rigour of the coding process reviewers 2 (CMc) and 3 (MC) each independently reviewed and coded 16 papers (i.e., 32 papers in total, this includes the 27 articles retained after screening and quality assessment plus 5 additional articles identified through a reference and citation search). This was followed by discussions to resolve any disagreements (Figure 1.1 provides an example of how one of the descriptive themes were generated)
iii. Development of descriptive themes across the levels showing how facilitators and barriers influenced implementation
iv. Reaching agreement between the reviewers that the descriptive and analytical themes were derived from data presented in the studies

v. Grouping descriptive themes into a working explanatory model to inform our analysis, followed by further discussions between all reviewers to develop analytical themes and understand the influences of facilitators and barriers.

Figure 3.1: An illustration of how the theme midwifery acquiescence was derived from the data



3.2.5 Reflexivity

As a midwife I am passionate about implementing a physiological care approach, I remained aware through the review of how my views might influence my analysis and interpretation. The thematic synthesis method was useful in this regard because interpretations are derived from conceptual activity, drawing on original data from primary research and making the interpretive process visible to the reader. Bias was minimised by ensuring that two reviewers assessed quality of the studies. We were careful not to exclude studies purely due to the lack of congruence between different stages of the research process. This is important in a

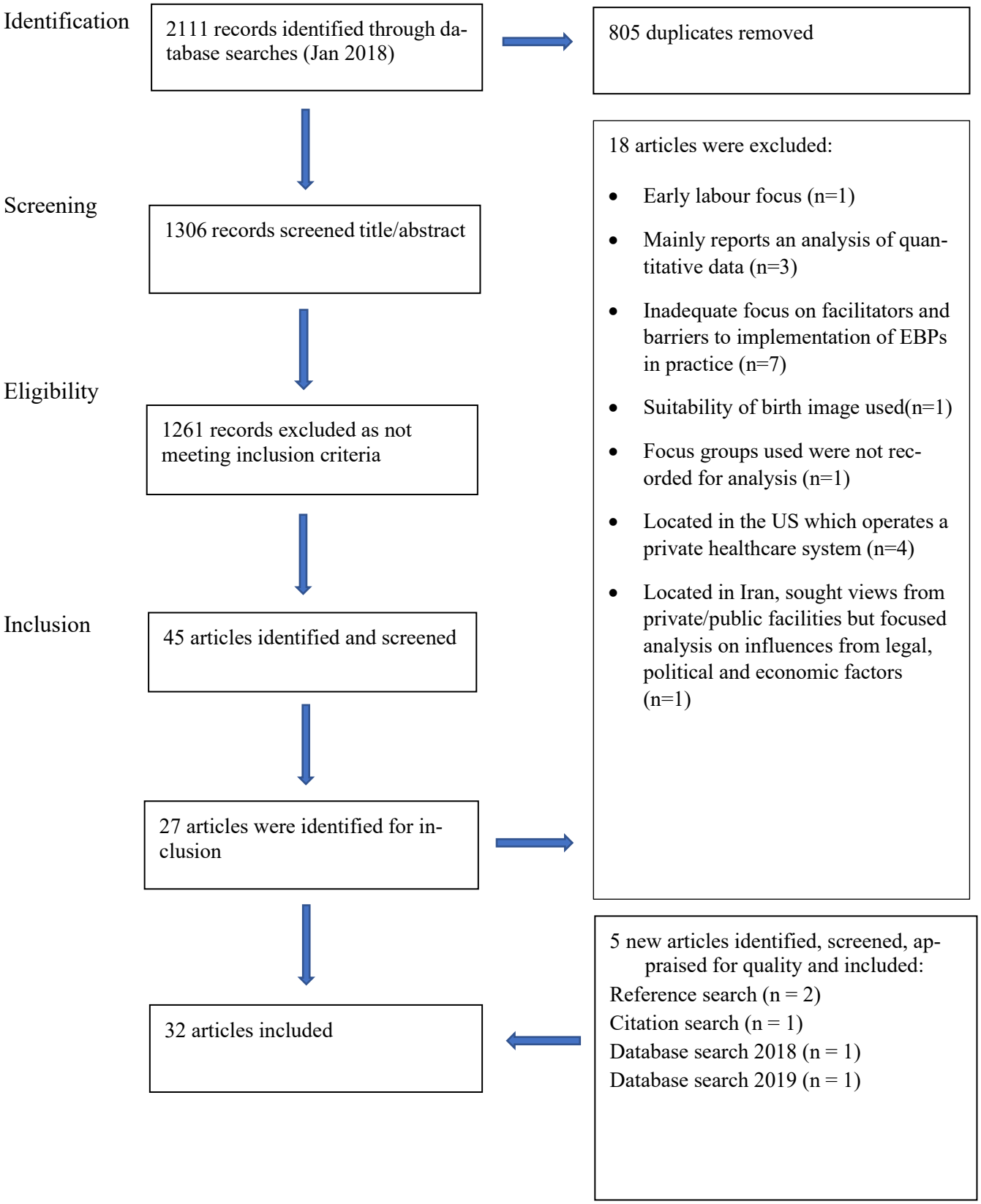
thematic synthesis, which depends on original data for conceptual work. Decisions about inclusion where congruity was lacking also involved two reviewers. The discussion about derivations of sub-themes, development of descriptive themes and an analysis of these themes across the studies to understand the influences on implementing a physiological care approach also involved two reviewers.

3.3 Findings

The initial database search yielded 1306 articles. Of these, 1261 were ineligible after the initial screening of the title and abstract. Forty-five full text articles were assessed for eligibility, of which 17 were excluded as not meeting the study criteria and one was excluded after being appraised as low quality, leaving 27 articles.

Only one study, by Lavender and Chapple (2004), was excluded on the basis of methodological quality. In this study focus-groups were not audio recorded and 11 out of 16 focus groups lasting for 60 -120 minutes were reported as being managed by a single researcher (i.e. facilitating the focus group and simultaneously taking field notes). This raises questions about the comprehensiveness of the data gathered, and member checking used does not necessarily address this weakness (Morse, 2015). Additionally, only brief verbatim quotes were used, and this did not adequately contribute to the analysis. All three mixed-method studies identified in the initial electronic database search were also excluded because their respective analyses were focused on quantitative data.

Figure 3.2: Prisma Chart



3.3.1 Characteristics of included studies

Of the final 32 articles (Table 3), one primary study contributed three articles (Scamell, 2011, 2016; Scamell and Alaszewski, 2012) and two primary studies contributed two articles each (Earl, 2004, Earl and Hunter, 2006), (Hunter and Segrott, 2010, 2014). The studies were conducted in England (n=6), Australia (n=4), Norway (n=3), Scotland, (n=2), Sweden (n=2), New Zealand (n=2), Iran (n=2),Wales (n=1), Republic of Ireland (n=1), Netherlands (n=1), Germany (n=1), Cyprus (n=1), Canada (n=2), Japan (n=1).

The studies included used relevant methodologies, e.g. ethnography (n=11) and phenomenology (n=5) and a variety of data collection methods, interviews (n=13), observation and interviews (n=10), focus groups (n=5) and focus groups and interviews (n=1). Participants included midwives (n=546), women (n=184), obstetricians (n=46), managers (n=21), other healthcare professionals (n=4), and members from a woman's pressure group (n=3).

Table 3.3 Characteristics of included studies

	Studies included in the synthesis	Country	Study aims	Participants and setting	Study design, data collection and analysis/ rating of quality (R1/R2)
1	Machin, D and Scamell, M, 1997	UK	To examine why primigravid women who talk about rejecting medical intervention revert to the dominant medical culture during labour and birth	40 women who attended antenatal classes, 20 at the hospital and 20 at classes by a charitable organisation.	Ethnography. Participant and non-participant observation and interviews at antenatal clinics, labour and postnatal wards
2	Richens, Y, 2000	UK	To explore whether research evidence is being used in practice.	Sample size not given but the study was set in a delivery suite	Ethnography. Participant/ non-participant observation, interviews and use of clinical records
3	Kornelson, J, 2005	Canada	To examine home and hospital birthing women's experiences with and attitudes to obstetric technology	50 women**,** 25 who birthed at home and 25 at the hospital	Exploratory Qualitative. Semi structured interviews, thematic analysis
4	Earl (Dissertation), 2004 [29]	New Zealand	To gain a deeper understanding of how midwives' work in obstetric hospitals to keep birth normal	8 core midwives at 2 tertiary obstetric hospitals	Qualitative interpretive study. Phenomenology, Interviews, thematic analysis
5	Earl, D and Hunter, M, 2006				The article explored one of the themes from the research and its subtheme
6	Lane, K, 2006	Australia	Explores midwives and obstetricians relationships as they renegotiated expanded skillsets, knowledge bases and autonomy	9 obstetricians who worked in public hospitals and 29 midwives from hospitals, and community	Interview study. Critical discourse analysis.
7	Russell, K, 2007	UK	To describe midwives' experiences of supporting normal birth in obstetric-led units	6 midwives who worked in obstetric settings	Ethnography. Semi-structured Interview, grounded theory analysis
8	Blaaka, G and Schauer, E, 2008	Norway	To describe midwives' practical skills in a centralised specialised maternity ward	7 midwives who worked in a hospital labour ward responsible for 5000 births	Phenomenology, Interviews, thematic analysis

Table 3.3 continued: Characteristics of included studies

	Studies included in the synthesis	Country	Study aims	Participants and setting	Study design, data collection and analysis/rating of quality (R1/R2)
9	Larsson, M., Aldegarmann, U and Aarts, C, 2009	Sweden	To explore how midwives, understand and experience their professional role and identity after continuing changes over 25 years	20 midwives who worked in a university hospital	Exploratory qualitative design. Focus groups, thematic content analysis
10	Keating, A and Fleming, V.E.M	Ireland	To explore midwives' experience of facilitating normal birth in an obstetric unit	10 midwives with 6-30 years of experience who worked in an obstetric unit	Feminist approach. Semi structured interviews, thematic analysis
11	Weik, E, 2009	Germany	To inquire into institutional logics, identity, and power relations in different settings for birth	15 self-employed midwives, clinic midwives (hospitals are referred to as clinics) and obstetricians.	Constructivist, phenomenological. Qualitative semi-structured interviews, personal experiences of childbirth and media reports on birth and birth practices. Narrative analysis .
12	Hood, L., Fenwick, J and Butt, J, 2010	Australia	To describe Australian midwives' experience of an external review of obstetric services.	16 midwives who worked at a tertiary referral unit	Exploratory Descriptive design, semi-structured interviews. Thematic analysis
13	Behruzi, R et al., 2010	Japan.	To explore Japanese child birthing experiences	44 participants who worked in tertiary and private hospitals.	Observations of labour ward care, attendance at ANC and PNC. Semi-structured interviews and focus groups. Inductive content analysis
14	Kennedy, H.P et al., 2010	UK	To explore factors that foster or hinder the support of normal birth	26 midwives, six obstetricians, one anaesthesiologist and 27 women in two public hospitals	Interpretive qualitative combining institutional ethnography and narrative methods
15	Surtees, R, 2010	New Zealand	To critically explore ways midwives conduct themselves as accountable professionals	40 midwives who worked in hospitals, communities or were self-employed.	Critical Discourse Analysis, Interviews and observations

Table 3.3 continued: Characteristics of included studies

	Studies included in the synthesis	Country	Study aims	Participants and setting	Study design, data collection and analysis/rating of quality
16	Hunter, B and Segrott, J, 2010	UK	Investigation of the implementation of a pathway to support normal birth	4 senior practitioners, 41 midwives, 5 managers and 6 obstetricians from a semi-rural unit and a tertiary hospital	Ethnography. Observations of the use of a normal birth pathway in real life settings and evaluation of implementation, thematic analysis
17	Hunter, B and Segrott, J, 2014	UK	Explores how the pathway influenced inter-professional relationships between midwives and doctors	Drawn from the above study	
18	Scamell, M, 2011	UK	To explore how midwives, make sense of risk and how this sense making affects clinical practice	10 managers, 14 midwives from different birth settings, 3members of a midwifery pressure group	Ethnography. Participant and non-participant observation of 42 births including interviews)
19	Scamell, M and Alaszewski, A, 2012	UK	To examine the ways in which risk is categorised in childbirth, and decision-making.		A/A (Uses data from 2011 study)
20	Scamell, M, 2016	UK	To examine how risk management constitutes midwifery understanding of childbirth		A/A (Uses data from 2011 study)
21	Hadjigeorgiou, E and Coxon, K, 2014	Cyprus	To explore midwives' perception as clients advocates for normal birth	20 midwives who worked in public hospitals	Participant observations of L/W practices, semi-structured interviews, thematic analysis
22	Page, M and Mander, R, 2014	Scotland	To explore midwives' perception of uncertainty when caring for women in low risk labour	19 midwives practising in a range of maternity settings	Grounded theory. Unstructured in - depth interviews, focus groups. thematic analysis
23	Carolan-Olah, M., Kruger, G, Garvey-Graham, A, 2015	Australia	To explore midwives' experiences and views of factors that facilitate or impede normal birth	Interviews with 22 midwives in a public hospital	Interpretive phenomenological approach. Interviews, Thematic analysis
24	Janani, F and Kohan, S, 2016 [6]	Iran	To explore the challenges of implementing a physiological birth program.	38 midwives and 6 obstetricians who worked in a public hospital	Exploratory qualitative. Semi-structured interviews, Content analysis

Table 3.3 continued

	Studies included in the synthesis	Country	Study aims	Participants and setting	Study design, data collection and analysis/ rating of quality
25	Thompson, S.M., Nieuwenhuijze, M.J., Low, L.K and DeVries, R, 2016	Nether-land	To describe Dutch midwives' attitudes and motivation for the promotion of physiological birth	3 focus groups of hospital -based midwives and 4 focus groups of community - based midwives	Exploratory design. Focus groups, thematic analysis
26	Robertson, J.H and Thomson, A.M, 2016	UK	To explore how midwives' personal involvement in clinical negligence litigation affects midwifery practice	22 midwives who have been alleged as negligent	Descriptive Phenomenological -Interviews
27	Pazandeh, F., Potrata, B., Huss, R, Hirst, J and House, A, 2017	Iran	To understand women's experiences of care during labour and childbirth in a medicalised context	**26 women** who birthed in public hospitals	Qualitative study. Semi - structured interviews, thematic analysis
28	Healy, S., Humpreys, E and Kennedy, C, 2017	Ireland	To explore midwives' and obstetricians' perception of risk on practices in different settings for birth.	25 midwives and obstetricians who worked in different birth settings.	Semi - structured interviews, thematic analysis
29	Newnham, E.C., McKellar, l.V and Pincombe, J, 2017	Australia	To explore personal, social, cultural and institutional influences on women's decision to use epidural analgesia	Observation of 6 labouring women, interviews with 16 women, two antenatal interviews and 1 postnatal.	Ethnography employing critical medical anthropology, Foucauldian and Feminist theory. Participant observation of labour ward practices
30	Aune, I., Holsether, O.V and Kristensen, A.M. T, 2018	Norway	To gain a deeper understanding of the thoughts and experiences of midwives promoting normal births.	9 midwives at three maternity wards who worked in hospitals and the community	Qualitative. In-depth interviews.
31	Panda, S., Daly, D., Begley, C., Karlström, K., Larsson, B., Bäck, L and Hildingsson, I, 2018	Sweden	To explore Swedish obstetricians' and midwives' perceptions of the factors influencing decision-making for CS.	11 midwives and 5 obstetricians from two selected Swedish maternity hospitals	A qualitative design. Four audio-recorded focus group interviews, thematic analysis
32	Aanensen, E.H., Skjoldal, K., Sommerseth, E and Dahl, B, 2018	Norway	To explore and describe midwives' experiences of promoting normal birth in obstetric-led birth units in Norway.	10 midwives working in 2 maternity hospitals	A qualitative research design, Semi-structured interviews. Systematic Text Condensation.

Table 3.3 continued: Characteristics of studies included in the review

This study was included in the review after a repeat search to include obstetrician and women in the list of search terms.

	Studies included in the synthesis	Country	Study aims	Participants and setting	Study design, data Collection and analysis/ rating of quality
33	Hall, W.A., Tomkinson, J., and Klein, M.C, 2012	Canada	To understand how care providers and women manage birth	6 women: 2 chose a homebirth and 7 chose the hospital 56 care providers: 16 family doctors, 12 midwives, 12 nurses, 5 obstetricians and 11 doulas	Glaserian grounded theory using 6 focus groups. Data collected and analysed concurrently using a constant comparison method.

3.4 Thematic synthesis

A discussion of facilitators and barriers to the implementation of a physiological care approach to care is presented at the level of the organisation, professional groups (midwives and obstetricians) and women. The analysis focuses on barriers because they are more widely identified and explored in the primary studies, compared to facilitators. The influences of facilitators (Figure 3.3) and barriers (Figure 3.5) are identified. This is followed by analysis of the two analytical themes that emerged from this synthesis.

3.4.1 Facilitators: Organisation

3.4.1.1 Reconfiguration of services to enhance autonomy

Most studies in this review were conducted in OUs located in large public hospitals. Five studies included midwives who practiced concurrently in OUs and other settings e.g. community midwifery (Lane, 2006, Thompson et al., 2016), MUs (Page and Mander, 2014; Healy et al., 2017), case-load practices (Carolan-Olah et al., 2015) and home births (Page and Mander, 2014). Midwives interviewed in these studies described how their experiences in other birthing units outside the OUs, enhanced their autonomy, and ability to implement a physiological care approach in OUs. They also described how their implementation of a physiological care approach influenced the practices of other midwives and obstetricians in the OU:

> "Obstetricians were using birth stools," and OU midwives were saying, "I will do that too." (Community MW, Thompson et al., 2016, pp.70)

> "I learned from the midwives that "…waiting is not a bad thing…" (OBS, Lane, 2006, pp. 347).

One study explored midwifery experiences of autonomous working in OUs supported by a normal labour pathway (Hunter and Segrott, 2010, 2014). A normal labour pathway was

described by one midwife as legitimising their use of a physiological care approach in an autonomous capacity because it was evidence based: “It’s backed by research, which is really how midwifery should be practised, rather than that’s how it’s always been done” (MW, Hunter and Segrott, 2014, pp. 728). Not all midwives agreed, some described their implementation of physiological care approach as “midwifery work” that did not need to be justified using a pathway (Hunter and Segrott, 2010, pp. 232). However, referring to the risk averse culture in OUs and differing views amongst professionals, one midwife said: “I think it’s helped me to have the confidence really to say, this woman falls into the normal pathway therefore this is what I am going to do” (MW, Hunter and Segrott, pp. 728).

3.4.2 Facilitators: Professionals (Midwife)

3.4.2.1 Support from senior midwives

Midwives described the value of senior midwives who chose to foster a physiological approach. These senior midwives worked clinically and were described as:

> “Believing in the ability of women to labour without having to have [clinical] interventions. They were able to stand-up to medical staff… a big influence in… wait and see” (MW, Keating and Fleming, 2009, pp. 525).

In several other studies, senior midwives who espoused leadership roles (Kennedy et al., 2010), and acted as role models to instil confidence and develop skills (Earl, 2004; Hadjigeorgiou and Coxon, 2014; Carolan-Olah, 2015; Healy et al., 2017). These midwives were described as important to implementing a physiological care approach in OUs.

3.4.3 Facilitators: Other professional groups

3.4.3.1 Collaborative working

In OUs with lower clinical intervention rates, studies described collaboration between midwives and obstetricians (Kennedy et al., 2010; Hall et al., 2012; Panda et al., 2018). Describing a team approach, one obstetrician said: "Every time it goes wrong, ...we talk about it and then you can learn something. Where the reason for CS is...dystocia…we would discuss it with the midwife rather than a senior consultant" (Obstetrician, Panda et al., 2018, pp.5). One midwife said:

> "I think that generally people in charge respect our judgement, ….I think most of the time, it is left to us to facilitate that normal birth, and …that's really important to me" (MW, Carolan-Olah et al., 2015, pp.116).

Collaborative working in OUs also appeared to be experienced in services with established midwifery-led services. One midwife described how, "it took a while for the doctors to realise that there is room for us and them, but a trusting relationship had developed" (Healy et al., 2017, pp. 371). Other studies describe similar experiences (Lane, 2006, Thompson et al., 2016, Aune et al., 2018).

3.4.4 Facilitators: Women

3.4.4.1 Questioning the inappropriate use of clinical interventions

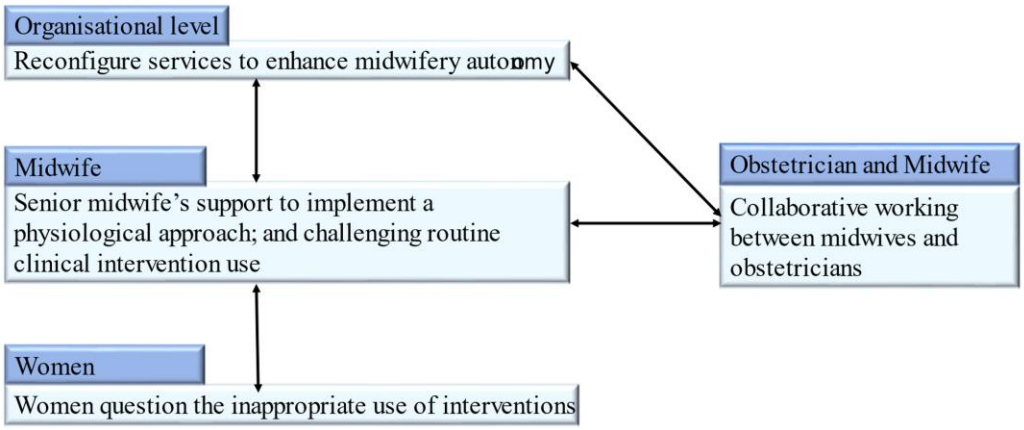
Some women expressed their unease about routine clinical intervention use:

> "Being in the hospital was quite upsetting because, you know, the technology was there, and they wanted to use it" (W, Kornelson, 2005, pp.1500).

Others spoke about the distressing nature of clinical interventions, questioning whether labour and birth should be "controlled in this way" (W, Parzandeh et al., 2015, pp.66). Women expressed an openness to clinical interventions but as one put it, "I am not in a place

where I need to have all the technology available, I just want it to be used in an appropriate manner" (W, Kornelson, 2005, pp.1500).

Figure 3.3: Facilitators influencing the implementation of a physiological care approach



3.4.5 Barriers: Organisation

3.4.5.1 Organisational clinical governance

Many of the studies were in OUs in large public hospitals accessed by women considered at low risk as well as women considered at high risk of complications. In the studies reviewed, clinical governance strategies ostensibly designed to protect women and their babies, were evident in the use of local protocols, guidelines, audits and training to manage risks (Keating and Fleming, 2009; Surtees, 2009; Larsson et al., 2009; Scamell, 2011, 2016, Scamell and Alaszweski, 2012; Hadjigeorgiou and Coxon, 2014; Page and Mander, 2014; Healy et al., 2017). Referring to training, a midwife said,

> "You know, there are lots of study days and development, but they all manage high risk" (MW, Healy et al., 2017, pp. 372).

Studies in some countries reported a lack of policies and guidelines to support a physiological care approach, for example Australia (Carolan-Olah et al., 2015), Cyprus (Hadjigeorgiou and Coxon, 2014) and Iran (Janani and Kohan, 2015).

3.4.5.2 Institutional time

Centralisation of care also meant that the length of time women could labour on OUs was limited (Weik 2009; Newnham et al., 2017). One author described how access to these units by other women was achieved by 'fixing stalled labours' with clinical interventions such as augmentation, 'pushing women to keep pace with institutional time' rather than the 'rhythms of their labouring bodies' (Newnham et al., 2017). Others described similar findings (Kornelson, 2005; Blaaka and Schauer, 2008; Weik, 2009; Surtees, 2009; Keating and Fleming, 2009; Page and Mander, 2014; Carolan-Olah et al., 2015; Aune et al., 2018; Aanensen et al., 2018).

3.4.5.3 Resourcing priorities

Resourcing priorities were described by midwives as focused on risk surveillance technologies rather than, for example, equipment to facilitate birth in alternative positions (Thompson et al., 2016; Janani and Kohan, 2015). Midwives also observed that the poor resourcing of staffing did not support the safe care of large numbers of women who accessed centralised units (Richens, 2002; Janani and Kohan, 2015; Newnham et al., 2017), nor did it support a physiological care approach where complex and variable labour processes needed more time for care (Richens, 2002; Keating and Fleming, 2009; Page and Mander, 2014; Aune et al., 2018; Aanensen et al., 2018).

3.4.6 Barriers: Professionals (Midwives)

3.4.6.1. Cognitive Dissonance

In most studies, midwives described experiencing what could be termed a cognitive dissonance, when they wanted to use PCPs (physiological care practices) to aid labour progress and birth, but instead felt compelled to use risk surveillance and restrictive time frames to actively manage labour, using clinical interventions such as augmentation to hasten progress and birth (Richens, 2002; Earl, 2004; Russell, 2007; Larsonn et al., 2009; Keating and Fleming, 2009; Hunter and Segrott, 2010, 2014; Hall et al., 2012; Hadjigeorgiou and Coxon, 2014; Carolan-Olah et al., 2015; Janani and Kohan, 2015; Thompson et al., 2016; Newnham et al., 2017; Healy et al., 2017; Aune et al., 2018; Aanensen et al., 2018).

Midwives responded to this internal conflict with feelings of anger, guilt and frustration:

> "I disagree with them, but local hospital protocols and hierarchy prevent me from reacting or intervening [PCPs], I feel bad, guilty." (MW, Hadjigeorgiou and Coxon, 2014, pp.986).

> "The most frustrating thing about working here is you just want to slow everything down. I mean, just give her a chance." (MW, Newnham et al., 2017, pp.7).

The studies showed that midwives viewed implementing a physiological care approach as their professional responsibility but their efforts to use PCPs may or may not be supported (Earl, 2004; Russell, 2007; Lane, 2006; Behruzi et al., 2010; Blaaka and Schauer, 2008; Keating and Fleming, 2009; Hunter and Segrott, 2010, 2014; Page and Mander, 2014, Janani and Kohan, 2015; Hadjigeorgiou and Coxon, 2014; Carolan-Olah et al., 2015; Thompson et al., 2016; Healy et al., 2017; Aune et al., 2018, Aanensen et al., 2018). One midwife explained:

> "I was angry that I was in a disempowered position. The doctors held all the decision-making process and power. I was just the handmaiden that carried out the instructions.

So, I was sad, disappointed. It is hard to reconcile your own practice when things like that happen (MW, Earl, 2004, pp.125)

3.4.6.2 Acquiescence, Risk Preoccupation and Rationalisation

Despite emotional responses to not being able to implement a physiological care approach, most studies described how midwives mainly conformed, employing risk surveillance and active management of labour using routine clinical interventions (Earl, 2004; Weik, 2009; Surtees, 2009; Behruzi et al., 2010; Blaaka and Schauer, 2008; Keating and Fleming, 2009; Hunter and Segrott, 2010, 2014; Page and Mander, 2014; Hadjigeorgiou and Coxon, 2014; Janani and Kohan, 2015; Carolan-Olah et al., 2015; Thompson et al., 2016; Healy et al., 2017; Aune et al., 2018; Aanensen et al., 2018).

In these circumstances, some midwives and obstetricians, questioned midwives' commitment to their professional role and responsibility to implement a physiological care approach:

"Sometimes I feel they just don't take pride in their role as a midwife and the huge kind of responsibility they have as a midwife to promote and advocate for patients that are low risk" (Obstetrician (OB), Hunter and Segrott, 2014, pp.371).

"I think that's [normal birth] not easy, but I think you can choose it. Staying with the woman ….what will I do? I will do observations or offer her drugs because it is uncomfortable just to sit here and do nothing. Being with women is really hard for some midwives (MW, Carolan-Olah et al., 2015, pp.118).

However, midwives frequently expressed a sense of futility in challenging hierarchical structures that impose an interventionist approach (Richens, 2002; Surtees, 2009; Behruzi et al., 2010; Blaaka and Schauer, 2008; Keating and Fleming, 2009; Hunter and Segrott, 2010, 2014; Page and Mander, 2014; Hadjigeorgiou and Coxon, 2014; Janani and Kohan, 2015; Carolan-Olah et al., 2015; Thompson et al., 2016; Healy et al., 2017; Aune et al., 2017; Aanensen et al., 2018).

One study employing an ethnographic approach described in depth a midwifery preoccupation with risk where midwives through their words and actions demonstrated that normality cannot be presumed, and can only be verified through surveillance (Scamell, 2011, 2016; Scamell and Alaszewski, 2012). Other studies reported a similar preoccupation with risks (Surtees, 2009; Hall et al., 2012; Hunter and Segrott, 2014; Page and Mander, 2014; Robertson and Thompson, 2016). Some studies described how risk preoccupations were rationalised by midwives by offering a view of physiological birth that accommodates a level of surveillance which is not supported by evidence (Earl and Hunter, 2006; Surtees, 2009; Keating and Fleming, 2009; Scamell, 2011, 2016; Scamell and Alaszewski, 2012; Page and Mander, 2014):

> "When they come in, I would do a baseline CTG, to make sure that everything was OK, and then I wouldn't do another CTG for another 4–5 hours, and I would do one after 4–5 hours to keep an eye on the baby" (MW, Keating and Fleming, 2009, pp. 526).

Other forms of rationalisation included the classification of some clinical interventions as minor, for example, artificial rupture of membranes. This procedure does not constitute evidence-based practice when used routinely but was employed by midwives because it was viewed as possibly averting the need to use a 'bigger' clinical intervention, for example, augmentation with drugs to hasten labour (Earl and Hunter, 2006). A standardised approach to managing labour was also perceived by midwives as offering greater clinical certainty (Surtees, 2009; Larsonn et al., 2009; Weik, 2009; Page and Mander, 2014; Scamell, 2011; Scamell and Alaszewski, 2012; Healy et al., 2017). Page and Mander (2014) noted:

> 'managing time contained intrapartum uncertainty, standardisation about assessment, points of intervention and the type of intervention to use, simplified decision-making processes'

Fear of litigation was a key driver of risk surveillance behaviour amongst midwives and was described by one author as 'covering oneself' and 'playing it safe' (Surtees, 2010). Other studies reported similar behaviours by midwives (Richens, 2002; Surtees, 2009; Weik, 2009; Larsonn et al., 2009; Scamell, 2011, 2016; Hall et al., 2012; Page and Mander, 2014; Robertson and Thompson, 2016). This fear also appeared to result in midwives abdicating an advocacy role that encouraged women to consider a physiological care approach (Earl, 2004; Larsonn et al., 2009; Hood et al., 2010; Hall et al., 2012; Hadjigeorgiou and Coxon, 2014; Page and Mander, 2014; Robertson and Thompson, 2016). Personal experiences of midwives who were investigated for clinical negligence and external reviews of obstetric services also stoked fears of litigation resulting in midwives adopting an interventionist approach to care (Robertson and Thompson, 2016; Hood et al., 2010).

Rather than confront risk-aversion, midwives described circumventing responses such as working on night shifts: "You can make decisions on night duty. It is easier, less hierarchical" (MW, Keating and Fleming, 2009, pp. 524) and falsifying findings of vaginal assessment to 'buy women time' for labour progress (Russell, 2007). Other midwives described leaving the OU to practice in MUs or leaving the profession altogether (Hood et al., 2010; Robertson and Thompson, 2016).

3.4.6.3 Erosion of knowledge and skills

The perceived erosion of midwifery knowledge and skills from working in OUs was seen as a barrier to the implementation of a physiological care approach:

> "When you're not in a low risk unit… it's easy just to view everyone as high risk…I've spoken to midwives who have lost their confidence in normal birth because they haven't seen a normal birth" (MW, Carolan-Olah et al., pp.115).

For some midwives, this loss of knowledge, skills and confidence influenced their ability to work with the complexity and unpredictability associated with physiological labour and birth

(Earl, 2004; Kornelson, 2005; Blaaka *et al*., 2008; Hood et al., 2010; Page and Mander, 2014). In contrast, midwives who worked in other settings, such as home births or stand-alone midwifery units, described their experiences as developing "the midwives' ability to tolerate such unpredictability" (Earl, 2004, Kornelson, 2005; Lane, 2006; Surtees, 2009; Blaaka and Schauer, 2008; Page and Mander, 2014; Healy et al., 2017).

Experienced senior midwives on whom junior midwives relied on for support may choose to facilitate a physiological care approach (Earl, 2004; Carolan-Olah et al., 2015; Keating and Fleming, 2009) or impose risk surveillance and active management (Earl, 2004; Russell, 2007; Hunter and Segrott, 2010, 2014; Hadjigeorgiou and Coxon, 2014; Keating and Fleming, 2009; Scamell, 2011, 2016). In the context of a dominant risk culture, senior midwives often saw routine surveillance as necessary to identify and manage risk and were inclined to enforce this approach (Page and Mander, 2014; Hunter and Segrott, 2010, 2014; Scamell, 2011, 2016

3.4.7 Barriers: Professionals (obstetricians)

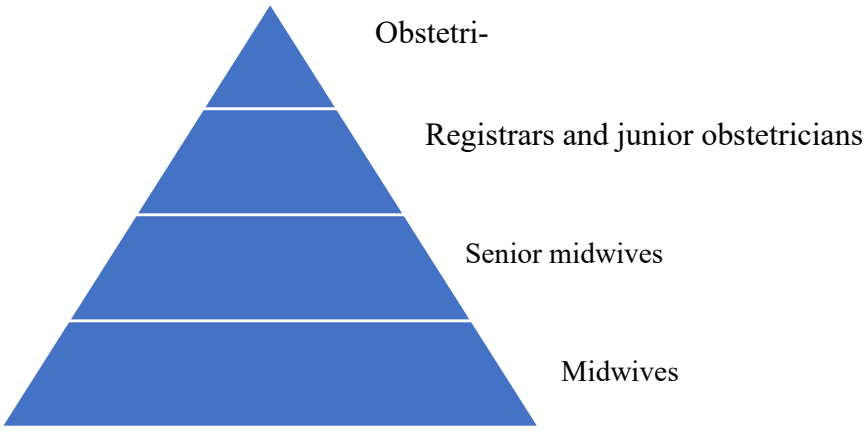
3.4.7.1 Hierarchical decision-making led by obstetricians

Midwives frequently described obstetricians as assuming a position at the top of a hierarchical decision-making structure and as lead decision-makers in the care of women with low and high risk pregnancies in OUs (Richens, 2002; Lane, 2006, Russell, 2007; Surtees, 2009; Keating and Fleming, 2009; Larsonn et al., 2009, Hadjigeorgiou and Coxon, 2014; Hunter and Segrott, 2014; Janani and Kohan, 2015; Thompson et al., 2016; Newnham et al., 2017; Healy et al., 2017; Aanensen et al., 2018). Some obstetricians questioned the evidence that informed a physiological care approach. Another in reference to one national clinical guideline promoting a physiological care approach said:

> "We're swapping one lot of vagueish evidence for another lot of vagueish evidence and wait and see if anything goes wrong" (OB, Hunter and Segrott, 2014, pp.232).

Obstetricians suggested that midwives wanted autonomy to make decisions, but not the accountability when things went wrong, and that obstetric involvement could avert problems (Lane, 2006; Surtees, 2009; Keating and Fleming, 2009; Hadjigeorgiou and Coxon, 2014; Hunter and Segrott, 2014; Janani and Kohan, 2015; Newnham et al., 2017).

Figure 3.4: A common tacit structure of hierarchy in obstetric settings described in the studies



Efforts to enhance midwifery autonomy prompted suggestions that midwives were promoting a 'midwifery project' (Hunter and Segrott, 2014). One obstetrician argued:

> "The term woman-centred care is what we regularly hear but actually to be honest, when I sit it in these discussions, the woman at the centre of the care commonly, sadly, is the midwife" (OB, Healy et al., 2017, pp. 371).

Midwives saw professional delineation as necessary to challenge the current status quo of powerful obstetricians who, "just don't have that belief in normal physiology" (MW; Hunter and Segrott, 2014, pp. 732). Despite challenges to obstetric dominance, several studies described a panoptic effect of surveillance, on professional groups like midwives, which engendered a preoccupation with risk surveillance including midwives self-monitoring their own compliance (Surtees, 2009; Scamell, 2011, Scamell and Alaszewski, 2012; Scamell, Page and Mander, 2014).

For some midwives, the possibility of meaningful professional collaboration appeared elusive:

> "Until they [the obstetricians] relinquish some of that [power], can we have true collaboration because there is no equality in terms of the midwife assuming some of that responsibility and accountability" (MW, Surtees, 2009, pp. 347).

3.4.8 Barriers: Women

3.4.8.1 Perceptions of birth as inherently risky

Some women's views of birthing appeared to be shaped by perceptions of birth as inherently risky: "I think the world we are living in possesses certain hazards… so it's not as easy to give birth as it would have been in a natural environment" (W, Kornelson, 2005, pp.1501). Authors of several studies also argued that women's perceptions of birth were influenced by the media, and reinforced by professionals, (Kornelson, 2005; Weik, 2009; Surtees, 2009; Larsonn et al., 2009; Scamell, 2011; Hall et al., 2012) and family and peers (Hadjigeorgiou and Coxon, 2014; Janani and Kohan, 2015; Hall et al., 2012; Parzandeh et al., 2017).

3.4.8.2 Lack of knowledge

Midwives described a lack of knowledge among women about clinical intervention use, and professionals' failure to address this in antenatal period because of the lack of continuity and time for care during the antenatal period, described as important contributing factors to women's lack of knowledge (Carolan-Olah et al., 2015; Thompson et al., 2016; Aune et al., 2018).:

> "A lot ….don't know what's going on inside their body, feel out of control and want to control it. Usually that is with drugs or an epidural. So that comes back to antenatal time" (MW, Carolan-Olah et al., 2015, pp.116).

In the context of the midwife's diminished autonomy in obstetric units, women's knowledge (e.g. about the birthing process and their choice of care options) were viewed by midwives as

important (Earl, 2004; Earl and Hunter, 2006; Page and Mander, 2014; Hadjigeorgiou and Coxon, 2014). Midwives expressed how they were more likely to adopt a physiological approach when it was congruent with women's wishes:

> "If I have a woman who has very determined views, I would be more likely to argue for her but if not, I become a bit more submissive to the doctors" (MW, Page and Mander, 2014, pp. 33).

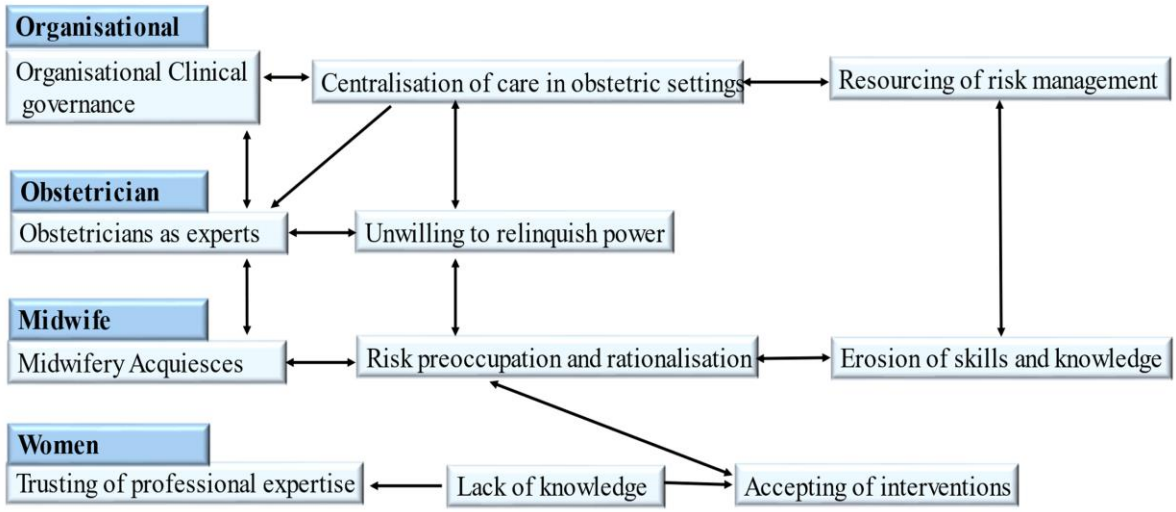
However, women's expressed desire to acquire knowledge and skills to become involved in decision-making varied (Machin and Scamell, 1997; Kornelson, 2005; Hall et al., 2012).

3.4.8.3 Trusting professionals

Some women explained they trusted professionals: "all the things that are going on around you. It's just a relief to know at least someone is in control here" (W, Machin and Scamell, 1997, pp.82). In some countries, women were also perceived by midwives as preferring obstetricians rather than midwives, to make decisions on their behalf (Larsonn et al., 2009; Parzandeh et al., 2017; Hadjigeorgiou and Coxon, 2014). Some women described the need for flexibility: "I didn't want a lot of stuff, but if I needed it, I needed it" (W, Kornelson, 2005, pp.1500). Others described how they expected clinical interventions and did not always question their use (Kornelson, 2005; Parzandeh et al., 2017).

Using observations and interviews with women, authors cast doubts about the women's ability to resist clinical interventions in OUs, even when they were empowered to birth with minimal clinical interventions (Machin and Scamell 1997; Kornelson, 2005; Hall et al., 2012). The authors argue that the strong "interventionist metaphor" (Machin and Scamell, 1997) of birth in OUs increased women's vulnerability and engendered greater reliance on professionals to make decisions on their behalf, increasing their susceptibility to clinical interventions (Machin and Scamell 1997; Kornelson, 2005; Parzandeh et al., 2017; Hall et al., 2012).

Figure 3.5: Barriers influencing the implementation of a physiological care approach



3.5 Analytical themes

Two overarching analytical themes emerged from this synthesis: 'birth as inherently risky' and 'birth as inherently physiological.' This thematic synthesis suggests that the perception of 'birth as an inherently risky' is predominant in OUs, driving organisational policies based on risk management; professional practices focused on routine surveillance; the application of standardised time frames to the labour progress and the use of routine clinical interventions to hasten progress and birth. (Earl, 2004, Kornelson, 2005; Lane, 2006; Russell, 2007; Blaaka and Schauer et al., 2008; Surtees, 2009; Weik, 2009; Keating and Fleming, 2009; Scamell, 2011, 2016; Scamell and Alaszweski, 2012; Behruzi et al., 2010; Hall et al., 2012; Page and Mander, 2014; Hadjigeorgiou and Coxon, 2014; Janani and Kohan, 2015; Carolan-Olah et al., 2015; Healy et al., 2017, Parzandeh et al., 2017; Newham et al., 2017; Aanensen et al., 2018).

In the included studies, the legitimacy of a physiological care approach that informs an expectant approach of 'watching and attending,' and aiding labour progress and birth by using

physiological care practices to respond to and meet women's physical and emotional needs was often challenged by obstetricians, and not always supported by midwives working in OUs (Surtees, 2009; Weik, 2009; Behruzi et al., 2010; Hunter and Segrott, 2010, 2014; Scamell, 2011; Page and Mander, 2014; Hadjigeorgiou and Coxon, 2014; Keating and Fleming, 2009; Janani and Kohan, 2015; Carolan-Olah et al., 2015; Healy et al., 2017; Parzandeh et al., 2017; Newham et al., 2017; Aanensen et al., 2018; Earl, 2004; Russell, 2007; Hunter and Segrott, 2010, 2014; Scamell, 2011; Page and Mander, 2014).

The strong influences of the perception of 'birth as an inherently risky' in OUs remain despite decades of policies, (England's Changing Childbirth Policy, 1993 and Better Births Policy, 2016*),* clinical guidelines (WHO, 1994, 2018), and research evidence (Chalmers et al., 1989; Downe and Byrom, 2019) that have sought to encourage a reconceptualisation of birth as a physiological process and promote the implementation of a physiological care approach to care.

3.6 Discussion

This systematic review and thematic synthesis critically examines facilitators and barriers to the use of a physiological care approach to care at the level of the organisation, professional groups (i.e. midwives and obstetricians) and women. We identified 16 descriptive themes from 32 included studies and generated two over-arching analytical themes that recurred in all studies: perceptions of birth as inherently risky and perceptions of birth as inherently physiological. The thematic synthesis presents rigorous qualitative evidence about the influences of perceptions of birth as inherently risky on the practices of midwives and obstetricians in OUs. The range of relevant methodologies and methods used in the primary research enhances the trustworthiness of findings.

At an organisational level, centralisation of care in OUs, clinical governance and associated risk management strategies, ostensibly designed to promote safety, sustained an

interventionist approach. Centralisation resulted in women's labours being subjected to what was described as 'institutional time' where an active management of labour led to routine clinical intervention use to deliver women and make beds available for other women who wanted to access these units. This did not benefit women who needed more time on these units in order to experience a physiological labour and birth. Organisational influences were a focus in only three studies (Weik, 2009; Scamell, 2011; Newnham et al., 2017) and further research is required.

The theme 'cognitive dissonance' describes conflicts experienced by midwives who wanted to implement a physiological care approach but felt compelled to use an interventionist approach. Midwives described their efforts to negotiate the use of a physiological care approach "as a struggle on a daily basis" (Blaaka and Schauer, 2008). In her study on "emotion work" in midwifery, Hunter (2004), notes that while emotional burdens in the workplace are frequently located in worker/client relationships, in midwifery they appear to be caused by dissonance associated with the conflicting ideologies of an interventionist versus physiological care approach. This review strengthens this finding. Such emotional difficulties are evidenced as an important contributory factor in the psychological stresses experienced by midwives and are reported as reasons for midwives leaving the profession (Harvie et al., 2019; Cull et al., 2020.)

There is evidence of variations in practices within the two professional groups: some midwives align with an interventionist approach and some obstetricians with a physiological care approach. However, a recurring theme was the curtailment of midwives' ability to implement a physiological care approach by a dominant interventionist approach led by obstetricians. The theme 'hierarchical decision-making led by obstetricians' describes how they imposed an interventionist approach using routine clinical interventions despite evidence of harm of routine clinical intervention use (See Ch 1, Section 1.2.1; Ch 2, 2.2.2.3).

In a risk averse culture, evidence-based guidelines that recommend the use of physiological care practices were frequently resisted. Several studies (Lane, 2006, Surtees, 2009; Scamell, 2011; Newnham et al., 2017) drew on panopticism, a social theory developed by Foucault (1995), to describe how a dominant interventionist approach impelled midwives to use risk surveillance and obsessive self-checking to monitor their own compliance. Rationalisation of routine clinical intervention use was evident amongst midwives, who expressed the view of physiological labour and birth as accommodating a level of surveillance and perceived an interventionist approach as affording greater clinical certainty. Their strategies included classifying some clinical interventions as minor, using them to try to prevent more substantial interventions. Experiences of investigations for clinical negligence, external review of OUs, and fears of litigation were also important drivers of interventionist approaches at organisational and professional levels.

Several studies also reported how a dominant interventionist approach prompted midwives to use covert strategies such as working night shifts, when greater autonomy was experienced or 'buying women more time' by falsifying assessments of labour progress (Richens, 2002; Russell, 2007). Exploring midwives' use of altered assessments of labour progress, Scamell and Stewart (2014), describe how midwives felt it was justified because women needed to be protected from iatrogenic risk imposed by rigid time frames to assess and manage labour progress. Scamell and Stewart (2014), observe that midwives are not risk takers, but their use of covert strategies suggests an understanding about the need for flexibility in assessments to avoid clinical interventions. Others argue that such covert strategies do not enable midwives to bring about collective change where a physiological care approach can be normalised and openly used to support women (Kirkham, 1999).

A persistent interventionist approach has led to an erosion of knowledge and skills to support a physiological care approach. In this context, experienced senior midwives are described as

potentially important facilitators of a physiological care approach (Earl, 2004, Keating and Fleming, 2009; Kennedy et al., 2010; Carolan-Olah, 2015; Hadjigeorgiou and Coxon, 2014; Healy et al., 2017). Exploring midwives' experiences in publicly funded hospital setting, O'Connell and Downe (2009), identify senior midwives as the direct determinants of midwifery practice rather than obstetricians. Our analysis shows that senior midwives were influential in midwives being able to use a physiological care approach, however their experiences in a risk averse culture also led some to encompass routine surveillance to identify and manage risk and use their senior positions to enforce interventionist approaches. O'Connell and Downe (2009) report similar findings. The differing positions senior midwives adopt, reasons for this, and their effects require further research.

Women's common perceptions of birth as inherently risky influenced their decision-making during labour. Women who used OUs understood that clinical intervention may be needed and described the need to be flexible. However, women also said that clinical interventions must be used appropriately, and such a view appears to support midwives' use of physiological care approaches in OUs (Kornelson, 2005; Page and Mander, 2014). Women also described a reliance on professionals to make decisions on their behalf. Some were described by midwives as lacking in knowledge, and others were described as vulnerable in OUs,

despite being knowledgeable about birthing with minimal interventions (Kornelson, 2005; Machin and Scamell, 1999; Hall et al., 2012). A reliance on professionals to make decisions increased women's susceptibility to clinical interventions. An important consequence of an interventionist approach for women was a loss of advocacy by midwives. Women expected clinical interventions to shape their experiences and were generally accepting rather than resistant. Only five studies explored women's experiences of care; all used interviews and focus groups for data collection. Both are useful tools for exploring women's subjective

experiences of care. However, to understand how decisions are made during labour, methods using observational techniques (e.g. focused ethnography) are required to study interactions between women and the professionals caring for them (midwives, obstetricians) and between different professionals in the care team. Socio-cultural factors (e.g. in some countries concerns about vaginal birth on sexual relationship with their partners) beyond the scope of this review, were explored briefly in three studies (Behruzi et al., 2010; Janani and Kohan, 2015; Parzandeh et al., 2017) and are an important area for research.

An important facilitator of implementation of a physiological care approach to care was collaborative working between midwives and obstetricians. In units where collaborative working was observed, labour and birth was viewed as a physiological process by midwives and obstetricians and autonomous decision-making by midwives was valued by obstetricians. However, the widely held view by midwives that obstetricians on the whole did not see birth as a physiological process may have the unintended consequence of reducing collaboration (Downe et al., 2010). Facilitating influences of collaborative working and ways this can be enhanced and supported remains an important area for further research and action.

3.7 Conceptual framework

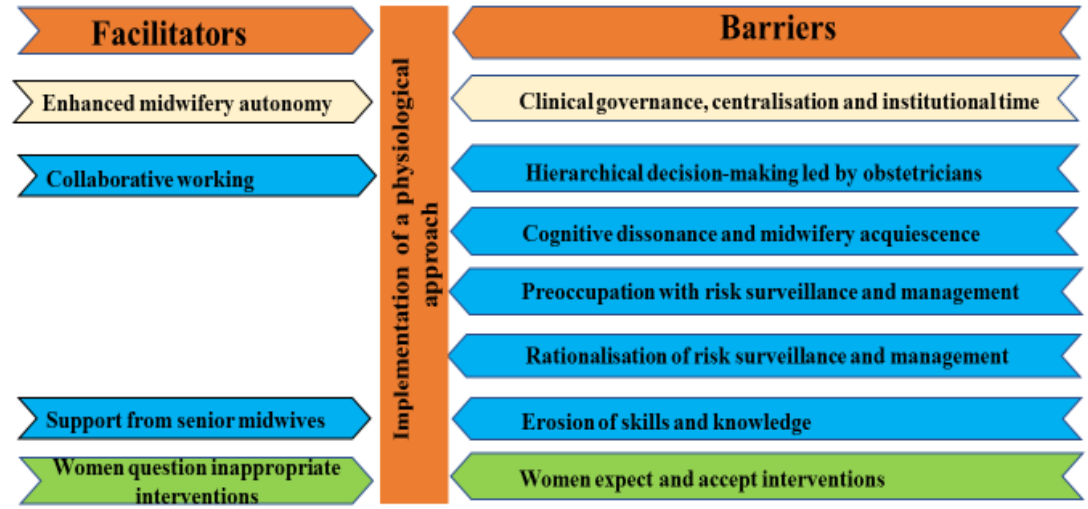
The conceptual framework (figure 3.6) draws on force field analysis[6] to show prevalent perception of birth as inherently risky and the dominance of an interventionist approach to care. This exerts much stronger influence on implementation compared to a physiological

[6] Force field analysis is a tool that provides a perspective on the forces at work when trying to make changes in organizations. This approach to analysing change was developed by Kurt Lewin. For any particular activity in this instance: the implementation of a physiological care approach, there are driving forces (facilitators)and restraining forces (barriers) that will impact whether this goal can be achieved. Driving forces, which help achieve the goal are shown as arrows pointing to the right while restraining forces which hinder goal achievement are the arrows pointing to the left in the opposite direction.

approach.

Although we are able to identify some influences on the implementation of a physiological care approach, the PhD research through its investigations, may clarify these influences further, and identify other influences. This is important to more fully understand how facilitators can be enhanced and barriers addressed to improve the implementation of a physiological approach in OUs.

Figure 3.6: Facilitators and barriers to the implementation of a physiological care approach.



Footnote: The longer arrows denote barriers that arise from the more dominant perceptions of birth as inherently risky and the shorter arrows denote the facilitators that arise from the more muted perceptions of birth as inherently physiological.
Organisational level Professional groups Women

3.8 Strengths and limitations

This strength in this review relates to its use of an internationally recognised guideline to develop a protocol to perform a robust and transparent review. A range of studies were used to identify facilitators and barriers and their influences on implementing a physiological care approach in obstetric settings. A comprehensive search for published studies used pre-determined search criteria. Included studies were assessed using a validated critical appraisal tool so readers can judge the quality of the studies and generalisability to their

own context. This is aided by presenting comprehensive details about the primary studies including research team characteristics, participants, settings, and methods as reported by the authors of each study (see Table 3.3).

A tested method for systematic review that synthesises experiences and perspectives were used. Using the thematic synthesis method and combining participants' (n=610) views from included studies, a considerable overlap was seen for themes related to perceptions of birth and barriers at the level of midwives and obstetricians. Overlaps are also seen in barriers at the level of the organisation, women, and facilitators at all levels. However, the number of studies that explored this, depth of exploration, and type of methods used suggest that more research is needed to understand these influences. We were able to outline how some facilitators and barriers influenced the implementation of a physiological care approach, but these influences also need further investigation.

A limitation is that these findings only relate to the participants in the studies. Many of the studies also explored the problem mainly from a midwifery perspective. We were careful to ensure that data for the synthesis were drawn from obstetric settings. Most of the studies described context but we are not able to account for contextual differences in obstetric settings that may be organised differently unless they are explicitly stated. System level influences need to be examined but were beyond the scope of this study.

3.9 Research gaps

Although observations were used in 10 studies included in this review, observations of labour care only took place in four: In one, observations focused on surveillance activity in labour and birth (42 labours) and another, the implementation of a clinical pathway (5 labours). In two, the number of labours and aspects of care that were observed were not clearly stated. In six other studies observations took place in antenatal or postnatal clinics, outside of labour room, at organisational meetings, and study days.

Only two studies in the review explored organisational influences, one described midwifery leadership as promoting a physiological care approach, and another described institutional working in a centralised system of care in OUs as limiting the time needed for women to experience a physiological labour and birth; and managing access by other women to these units by actively managing labour.

Only four studies explored women's experiences using interviews. Facilitators were only explored explicitly in three studies and these used interviews. Both these areas are identified as lacking in evidence and need further research.

3.9.1 Gaps addressed in this PhD

Organisational level: This review identified midwifery leadership as a facilitator and also found that evidence is lacking. This PhD research focused its investigations at an organisational level on midwifery leadership to explore in greater depth the influences on its role to drive the implementation.

Professional group level: The review demonstrated that evidence at this level had been generated mainly by using interviews. Where observations in labour care took place, this was focused on the influences of risk surveillance activity, and other organisational routines in a centralised system of care.

This research will undertake a more comprehensive approach to exploring facilitators and barriers at this level, using both observations of labour care and a training session to develop midwives' skills; undertake familiarisation with guidelines to support the implementation and interview midwives who provided labour care.

Women: The review showed that evidence at this level is lacking and was generated through interviews. This research will use observations of labour care to describe women's involvement in decisions-making as well as interviews to explore women and birth partners' experiences of care.

3.10 Conclusions

This review's objective was to identify and understand how facilitators and barriers at the level of the organisation, professional groups (i.e. midwives and obstetricians) and women influenced the implementation of a physiological care approach. It was also used to consider the methods used and refine the focus of investigations in this PhD research.

The review shows that that contrary to evidence-based guidelines that recommend the implementation of a physiological care approach, an interventionist approach is prevalent in obstetric units. At an organisational level, centralisation of care in obstetric units limited women's time for labouring and acted as a barrier to care practices to support physiological labour and birth. Risk management strategies ostensibly designed to promote safety sustained an interventionist approach.

At a professional group level, collaborative working by obstetricians and midwives, a valuing of midwifery autonomy were important facilitators. Barriers include hierarchical decision-making led by obstetricians, midwifery acquiesce, obstetric and midwifery risk preoccupation, rationalisation of routine clinical intervention use. In this context, an erosion of midwifery knowledge and skills presents a significant barrier to the implementation of a physiological care approach.

At the level of the woman, facilitators included women's questioning of inappropriate intervention use by professionals. A lack of knowledge and reliance on professionals (midwives and obstetricians) to make decisions on their behalf, acted as barrier.

In the next chapter the three phases of the development of the Keeping birth Normal tool that took place prior to the PhD, and renamed the Physiological Practices Observation tool is described followed by its adaptation as an observation tool in this PhD research.

Chapter 4: The development of the Physiological Practices Observation (PPO) tool

Introduction

This chapter describes the development of the Physiological Practices Observation tool (PPO) (formerly known as the Keeping Birth Normal tool), used in this PhD research. It begins with a short background to the tool, which was designed initially for use in the preceptorship of newly qualified midwives.

A summary of the three stages of the tool's development that took place prior to this PhD (publishes as Darling, 2016; Darling and Collington, 2018 = see appendices 12 and 13) is presented:

Stage 1: Generating a list of physiological care practices

Stage 2: Piloting of the PPO tool

Stage 3: Validating the content of the PPO tool

Finally, the adaptation of the Tool for research purposes in this PhD is presented. This adapted tool is used to observe and describe midwives' patterns of use in 27 physiological care practices: 22 supportive care practices providing physical and emotional support, and 5 participative care practices on involving women in decision-making during labour and birth.

4.1 Background to the development of the PPO tool

I developed the PPO tool when I was a midwife working in a freestanding birth centre (FMU). My aim at this time was to develop a structured approach to observe midwifery practices. I felt such an approach could be useful in the context of, for example, supporting the preceptorship of newly qualified midwives and offering targeted support to meet individual learning needs.

4.1.1 Generating a list of physiological care practices

I began the process of developing the tool by generating a comprehensive list of physiological care practices from research evidence (see Ch 1, Table 1.1). Physiological care practices are a range of practices used to provide physical support (for example encouraging eating and drinking) and emotional support (for example 1-1 companionship), to enable women to experience a physiological labour and birth (See Ch 1, Fig 1.1; table 1.3). It includes involving women in decision-making (WHO, 2018).

The care practices in the PPO tool were derived from documents that use transparent and rigorous processes to critically appraise evidence related to the implementation of a physiological care approach. Most of these practices were drawn from the National Institute of Clinical Excellence [7] (NICE guidelines for the intrapartum care of healthy women and babies in England) (2014; updated 2017). NICE uses a rigorous evidence-review process to evaluate the role of these care practices in order to make recommendations. A wide consultative approach involving practitioners and service user representatives are used to develop NICE guidelines; NICE also updates its guidance regularly as new evidence emerges.

The other important document that informed the development of the list of care practices in the PPO tool was the World Health Organisation guideline on normal care in childbirth (1996). The PPO tool was developed in 2014. An updated guideline from the WHO in 2018,

[7] The National Institute of Clinical Excellence (NICE) produces evidence-based guidance and advice for health, public health and social care practitioners in England and Wales using a range of experts, service users, carers and the public. Since it was formed in 1999, NICE has gained a global reputation for transparency, rigour, independence and objectivity in its guideline development. In 2008, it set up NICE International to address demands for its expertise, its processes and methods and contribute to better health around the world. The Royal College of Obstetricians and Gynaecologist referred to NICE guidelines as representing the gold standard for guideline development globally (RCOG, 2016)

on intrapartum care for a positive childbirth experience, confirms that the care practices are relevant to implementing a physiological care approach. The WHO (2018) guideline not only recommends the use of evidence-based care practices to meet the woman's physical and emotional needs (supportive practices), but also emphasises the involvement of women in decision-making (participative practices) to promote childbirth as a positive experience for women.

I also used other documents that incorporated evidence about women's experience about their care as sources. Although the NICE guidelines covered all key clinical evidence, I consulted guidance from other organisations, which I considered to be shaped by an experiential understanding of birth as a physiological process and the need for care to be woman-centred. This included the Royal College of Midwives and Royal College of Obstetricians and Gynaecologists' report 'Our shared views about the need to recognise, facilitate and audit normal birth' (2007); the White Ribbon Alliance 'Charter for Respectful Maternity Care' (2011); the American College of Nurse-Midwives, Midwife Alliance of North America and National Association of Certified Professional Midwives' 'Consensus Statement on Physiological labour and Birth' (2012); the National Childbirth Trust Report 'Normal birth as a measure of the quality of care: evidence on safety, effectiveness and women's experiences' (Dodwell and Newburn 2012). After deriving a comprehensive list of 56 care practices, I ordered these into 12 conceptually related 'domains' to form what I described as the 'Keeping Birth Normal tool' and renamed in this PhD as the Physiological Practices Observation tool.' See Ch 1, section 1.1.3; 1.1.3.1 for discussions on a physiological care approach and practices. My use of the word 'tool' at this stage referred to a dictionary definition, 'an instrument to do a particular type of work' (Collins Dictionary, 2020). The aim of the tool was to enable preceptors to make structured observations of a newly qualified midwife's use of physiological care practices and, where needed, support its further development.

4.1.2 Piloting of the PPO tool

The pilot in practice had two aims, (i) to explore midwives' views on the content of the tool for use in observing and assessing physiological care practices; and (ii) its usefulness in structured preceptorships. The pilot took place in a freestanding maternity unit (FMU) and obstetric unit (OU) in one National Health Service. Ten midwives, five senior midwifery practitioners, (the preceptors) and five midwives, (the preceptees) participated. Of the preceptees, two on the OU had qualified for two years, and three on the FMU were newly qualified. Using the PPO tool, each preceptor completed five observations of the preceptee's practice. This was followed by reflections by preceptees with preceptors, where observations were discussed, areas for improvement highlighted, and practice development was supported by their preceptors before another evaluation. The preceptees also produced a written reflection of their experiences of learning in using physiological care practices.

Following five evaluations, all preceptors and preceptees completed a questionnaire[8] and participated in a one-hour semi-structured individual interview that explored the experiences of preceptors in using the tool to observe practices and provide preceptorship; and preceptees' view on receiving preceptorship to use a physiological care approach. Views were also sought on the relevance of the content of the tool to observing physiological care practices.

[8] The questionnaire was comprised of 13 questions, 8 of these questions required preceptors and preceptees to use a 4-point Likert scale to rate the usefulness of the tool in structured preceptorship. One question required them to rate the relevance of the domains to implementing a physiological care approach. Four other open-ended questions asked the midwives to provide their views about how the tool could be improved for use in observing physiological care practices including its usefulness in preceptorship. Based on feedback during interviews about items in the tool, one item in domain one, two in domain two, two in domain three and one in domain seven were removed.

The preceptors and preceptees rated all 12 domains of the PPO tool as relevant to observing physiological care practices. Based on preceptors' and preceptees' feedback, six care practices were removed. These practices were described as relating more to practice in general as opposed to just a physiological care approach, for example, "I understand that guidelines are reviewed regularly, and I keep updated on new changes".

Four preceptors and all preceptees described the tool as useful in preceptorship. One preceptor questioned whether ratings the practices of newly qualified midwives was fair because of their work in highly pressured clinical environments. However, four preceptors felt that such structured observations were necessary to improve standards. Newly qualified midwives described the tool as particularly useful for preceptorship. Two preceptors and two preceptees described its use in preceptorship as needed in obstetric units where implementing a physiological care approach was more challenging.

At the end of this process the tool contained 12 domains and 50 care practices**.** I concluded that I should proceed with further development because there was evidence of the usefulness of the PPO tool in observing physiological care practices; and it could, for example be used to provide structured preceptorship. I considered an important next step was to undertake a content validation exercise, to ensure a good quality scale is developed for the purpose of observing physiological care practices and promote the wider use of the tool. This piloting work was published as Darling (2016), Appendix 12).

4.1.3 Validating the content of the Physiological Practices Observation tool

Content validation was undertaken as part of a Master's in Research in Clinical Practice project and completed in Sept 2015. The purpose of this exercise was to develop a good quality scale for the observing physiological care practices. In this project, content validation was defined: "the extent to which the PPO tool has a fairly representative sample of physiological

care practices of the entire domain (a physiological care approach) it seeks to observe." (Lynn, 1985).

Content was validated using 7 professional experts and 8 service user representatives. In the context of content validation, experts are referred to as subject-matter experts i.e., they had an in-depth knowledge about physiological labour and birth which they demonstrated through practice, education and research (Grant and Davis, 1997). The women participants who were approached had personally experienced care in the maternity service and were members of the Maternity Voices Partnership; and were actively engaged in work with maternity services and its users to improve quality of care these services provided.

A set of inclusion and exclusion criteria was developed and used to recruit 7 experts (six midwives and one obstetrician) and 8 women for participation in the content validation exercise. All participants used a 4-point ordinal scale[9] to rate the relevance of 50 physiological care practices for the purpose of implementing a physiological care approach. A scale-level content validity index (S-CVI) was derived for the proportion of care practices (items), that were rated either a 3 or 4 for relevance by the participants.[10] An index was also derived for each care practice (item) in the tool (item-level content validity index or I-CVI). The S-CVI averaged across the 15 experts was used to derive a scale-level CVI/Average (S-CVI/Ave).

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[9] 4-point ordinal scale. 1 = not relevant, 2 = Quite relevant, 3 = Somewhat relevant, 4 = Highly relevant

[10] The study used an average scale level content validity index (S-CVI/AVE) instead of universal agreement (S-CVI/UA) to develop the scale. Polit et al. (2007) proposed (S-CVI/AVE) for a larger sample size of experts because they felt that a universal agreement was too stringent. With a S-CVI/Ave the scale is composed of some care practices with complete agreement and others with moderate agreement. Polit et al. (2007) also state that for the scale to be to be judged to have excellent quality it should be composed of care practices with a I-CVI of > 0.78 and a S-CVI/Ave of 0.9.

Six experts and five women analysed all 50 care practices in the tool.[11] The initial scale of 50 care practices received an S-CVI/Ave of 0.88. To improve the scale the I-CVI was used to select care practices for deletion or revision using an evaluation a criteria developed by Fleiss (1981) and Cicchetti and Sparrow (1981). Revisions and additions to the list of care practices in the tool also used qualitative comments provided by the experts.

After revisions, the scale was returned to five experts: two midwives, one obstetrician and two women from the original group of fifteen, to rate the care practices using a 4-point ordinal scale. The scale received an S-CVI/Ave score of 1. The tool now contained 12 domains and 45 care practices and the plan to use this tool for research came about when I applied to do a PhD. This work was published as: Collington and Darling, 2017 (Appendix 13)

4.1.4 The adaptation of the PPO tool for use in observations in the PhD project

At this point, I had a tool which had undergone three stages of development: generating a list of physiological care practices; a pilot which showed that the tool was useful for observing physiological care practices and could support, for example, the preceptorship of midwives; a content validation exercise developing a good quality scale (S-CVI/Ave=1) to observe physiological care practices. The content validation offered greater versality with regards to how the tool could be used. However, the items in the tool post content validation was highly descriptive with each care practice linking several elements of care. In discussion with my supervisors, I decided that it was possible to adapt the tool for use by myself, to observe and describe the use of physiological care practices.

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[11] One expert (obstetrician) did not analyse domain five: Partnership working and communication because he felt it was not applicable to obstetricians. Two women did not analyse two care practices in domain five, two women did not analyse two care practices in domain six and two women did not analyse four care practices in domain eight and did not give any reasons why they did not do so.

The adaptation of the PPO tool for use in my PhD research addressed three main areas.

i. The removal of domains and care practices that were not relevant to my observation in the PhD research study (e.g. care in early labour), because observations will focus the midwives' use of care practices during established labour.

ii. Ensuring that each care practice described a single element of care rather than linking two or more separate elements of care (e.g. I ensure that the woman's space is protected from unnecessary intrusion. I am a non-intrusive presence in the room while the woman's labours following her own rhythms). This would enable me to focus my observations and collate data accurately for each care practice for the purpose of a descriptive quantitative analysis.

iii. Reorganising of domains and care practices while retaining original content.

Throughout this process (See appendix 14), care was taken to maintain the integrity of content with regards to 'representativeness of physiological care practices to the entire domain (a physiological care approach)' that was assessed during content validation

I was guided in this process once again by the NICE Guidelines and the NICE Quality Standards on intrapartum care. I examined the NICE recommendations for care under established labour and noted how the recommendation were written. Following the adaptation process, the 12 domains and 50 care practices in the PPO tool, post content validation, were reorganised into 6 domains and 27 care practices.

The six domains in the adapted PPO tool now are:

i. Domain one: Approach to care

ii. Domain two: Environment

iii. Domain three: Support in labour

iv. Domain four: Ongoing care

v. Domain five: First hour of birth

vi. Domain six: Involving women in decision-making.

A detailed version of the tool with examples of care practices observed is presented in Appendix 15. While the adapted tool will benefit from a Delphi exercise, for the purpose of the PhD, it was shared with my supervisors, 2 experts who were involved in its content validation stage, 5 research midwives, two MU leads and the lead midwife for the project at the hospitals. All commented that it was relevant to observing a physiological care approach. The adapted tool used in the PhD research presented in Table 4.1.

Table 4.1: The adapted Physiological Practices Observation tool (Please also see appendix 15 for a more detailed version of this tool that was used in observations where examples of care that may be observed under care practice 1, 2, 4, 23 are outlined)

Domain 1: Approach to care	**Domain 4: Ongoing care continued**
1. Adopts careful watching, attending and responding as labour unfolds.	14. Encourages the woman to eat, drink and void
Domain 2: Environment	15. Assists the woman to birth, to adopt positions of their choice and offers advice on the use of upright positions
2. Ensures the woman is comfortable in her place of birth	16. Awaits and supports the woman to use her body's natural expulsive reflex
3. Creates space to promote and support mobilisation, also understanding that some women may prefer to rest and be quiet	17. Remains close caring for her needs, praising and encouraging the woman's efforts to birth their baby
4. Protects this space from unnecessary intrusion	18. Performs an episiotomy only in the event of foetal distress
Domain 3: Supporting women	**Domain 5: First hour of birth**
5. Provides one to one care, leaving the woman on her own only for short periods or if she requests it	19. Places the baby skin to skin with the woman soon after birth and for as long as she wishes
6. Encourages and supports the woman to use natural methods of pain relief. This can include massage, breathing, positioning and use of water	20. Offers the woman a choice of an active or physiological care approach to birth her placenta
7. Assumes a quiet, comforting presence during the woman's labour	21. Clamps the baby's cord after a minute if the woman chooses an injection to birth her placenta or leaves the cord unclamped for as long as the woman wishes to wait
8. Conveys her belief in the woman's ability to birth her baby through positive words and actions	22. Leaves the cord unclamped if the woman chooses a physiological 3rd stage
Domain 4: Ongoing care	**Domain 6: Involving women in decision-making**
9. Listens regularly to the baby's heart in a gentle and unobtrusive way	23. Aims to build a relationship with the woman based on mutual trust and respect
10. Keeps the woman and her birth partner informed about their baby's condition	24. Acts as the woman's advocate, ensuring her plans for birth are supported and implemented as far as possible. Guidelines are used flexibly considering the women's perspectives and needs during labour
11. Keeps careful records but does not allow this to interfere with her care of the woman	25. Listens to and addresses the woman's concerns and preferences respectfully
12. Uses non-invasive approaches to note onset and progress in active labour	26. Explores options and explains pros and cons when change to the woman's plans are needed
13. Keeps internal examinations to the minimum and uses it only if there concerns about progress	27. Obtains informed consent to any change to plans that have already been discussed

4.2 Observing midwives' use of physiological care practices

In chapter 5, I provide a detailed explanation about why I have chosen to observe midwives' use of physiological care practices. In this section, I provide a brief explanation of how physiological care practices are used and of the subjective and objective nature of the observed use of these practices; and discuss the scale selected to observe midwives' use.

4.2.1 Observed use of physiological care practices

Typically, a midwife may use all the physiological care practices defined in the PPO tool to support the woman throughout her labour. However, there are clinical complexities and uncertainties associated with the use of physiological care practices. Their use may depend on the individual practitioner's assessment of clinical progress of the labour, the woman's needs and her preferences. Each care practice may be used several times at different points; or several care practices may be needed at a single point in labour; or the care practice may not be used at all because clinical assessments demonstrate a need for clinical interventions; or the woman may prefer a different approach to the care practice proposed.

What I have chosen to do is to focus purely on observing a single use of a care practice by the midwife during the course of the labour i.e., whether the midwife is observed to use or not use a physiological care practice as defined in the PPO tool.

The observation of the midwives' use of care practices is inevitably subjective to a degree as observations guided by the tool and reported in Chapter 7 were made by a single researcher (FD) using her professional judgement. Another practitioner using the PPO tool may disagree with me about whether a care practice needed to be used or not, and the point at which it was used in the labour. However, the aim was to be as objective as possible by using a structured evidence-based tool where some care practices may be used despite clear evidence of lack of benefit in normal labour, and can in effect increase the risk of harm, for example, the use of the lithotomy position advised for use only during instrumental births. This was important for

the purposes of supporting the qualitative enquiry used in this study to understand whether and how physiological care practices were used when the clinical situation and client wishes warrant these.

The response scale includes a 'not applicable' option for practices that were not used for clinical reasons; for example, the midwife may not be able to use intermittent monitoring if, based on assessments and clinical guidelines, continuous monitoring is needed to monitor the foetal heart.

Table 4.2 Scale for observing physiological care practices

N/A	Not applicable
Ob	Observed
N/Ob	Not Observed

4.3 Conclusions

This chapter presented the background to the development of the PPO tool, followed by a summary of the first three stages of the tool's development that occurred prior to this PhD. The adaptation of the PPO tool for research in this PhD and development of scales for observing and documenting the use of physiological care practices is outlined.

In the next chapter, I describe the philosophical assumptions that underpin this research and guide the methodology and methods used to answer the questions posed in this research.

Chapter 5: Research Design and Methodology

Introduction

The purpose of this chapter is to describe and explain this research's design and methodology. As part of this, the philosophical assumptions that underpins and informs its design, use of mixed methodology and methods are outlined. The meaning of a paradigm is defined and the differing views of the role of paradigms in informing research are discussed. This is followed by a discussion about Pragmatism as a paradigm, and justification for its use to inform this PhD research's observational design, and use of mixed methodology and methods to fulfil its research aims and objectives. The research also draws on implementation science and describes the aims of research in this field. It discusses why a physiological care approach is a complex intervention and describes how these discussions guided decisions in this research about (i) the constructs observed in this study of midwifery practices and (ii) the exploration of facilitators and barriers to at the levels of the organisational leadership, professional groups (midwives and obstetricians), and individuals (women) and influences on implementing a physiological care approach. The aim of this research is to: explore and understand influences on implementing a physiological care approach in two obstetric units.

Its objectives are to:

i. To describe patterns of use in 22 supportive care practices and 5 participative care practices

ii. To identify and explore how facilitators and barriers at the levels of the organisation leadership, professional groups (midwives and obstetricians) and individuals (women) influenced the implementation of physiological care approach in two obstetric units.

iii. To explore how facilitators and barriers differentially influence the implementation of a physiological care approach in a 'lower-intervention' versus 'higher-intervention' obstetric unit

This research employed an embedded mixed method explanatory design, using a quantitative and qualitative method, to facilitate a comprehensive understanding of physiological care practices and facilitators and barriers to implementation in two obstetric settings.

In summary, a descriptive quantitative analysis describes the observed use in physiological care practices. This is followed by a thematic analysis to identify and describe influences at the levels of organisational leadership, professional groups (midwives and obstetricians), and individuals (women) on the implementation of a physiological care approach. Subsequently, a contiguous approach was applied where quantitative and qualitative findings were presented separately. These findings were then integrated in three joint displays (a visual representation of the combined findings) forming three conceptual models. These models were then utilised in discussions to explain how facilitators and barriers influenced implementation.

5.1 Philosophical Assumptions

Introduced by Thomas Kuhn, the term 'paradigm' in social research is used to refer to philosophical assumptions that define the world view and guides the actions of the researcher (Lincoln et al., 2011). There are several paradigms or world views that structure social research, for example, Post-Positivism, Constructivism or Pragmatism. They are all essentially philosophical in nature and encompass the following common elements: axiology: beliefs about the role of values and morals in research; ontology - assumptions about the nature of reality; epistemology - theory of knowledge: how we come to know the world and have faith in the validity of this knowledge and methodology - a shared understanding about the best means to gain knowledge about the world (Lincoln et al., 2011).

The paradigm most commonly associated with research that seeks to combine a quantitative and qualitative method is Pragmatism. Pragmatism carries an everyday meaning as being practical, paying attention to the particular context in which you find yourself and not being

weighed down by doctrine or ideology. A unifying principle in pragmatic thinking is that knowledge is consequential, generated after action and reflection on action, even if we can use what we know already (antecedent knowledge) to guide our actions (Cornish and Gillespie, 2009; Biesta 2010; Green and Hall, 2010)

Pragmatism as a paradigm is often described as underpinning research focused on problem-solving (Johnson and Onwuegbuzie, 2006; Feilzer, 2010). However, mixed methods proponents argue that the conceptualisation of Pragmatism as a philosophical foundation for mixed methods research, cannot focus purely on the practical i.e., 'using what works' with an emphasis on problem-solving, employing a myriad of methods for practical purposes of induction, deduction or abduction[12] (Morgan, 2007; Biesta 2010; Green and Hall, 2010). Three main thoughts are pursued in the contexts about a Pragmatism that goes beyond 'using what works' (i) questions whether pragmatism can provide a philosophical foundation for all forms of mixed methods research or just provide philosophical tools to aid "a more precise questioning about the strength, status and validity of knowledge claims (Biesta, 2010) (ii) whether the use of a broader and more multi-faceted concept, for example, 'mental models'[13] described by Phillips (1996) and Smith (1997) would be more useful in engaging with paradigm issues in mixed methods research (Green and Hall, 2010) (iii) whether Pragmatism encompasses philosophical attributes that have important implications for mixed method enquiry (Morgan, 2007; 2014). The focus of discussion here relates to the third, and arguments

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[12] In induction, new theories may be generated from the data. In deduction existing theories are tested with new observations. In abduction, any anomalies in the data is not ignored if it does not fit with theory used but is included in efforts to derive a more comprehensive analysis (Meyer and Lunnay, 2012

[13] A mental model is the set of assumptions, predispositions, and values and beliefs with which all social inquirers approach their work. Mental models influence research in terms of what we choose to study and how we frame, design and implement a given inquiry. Mental models also influence how we observe and listen, what we see and hear, what we interpret as salient and important and indeed what we learn from our empirical work (Greene and Hall, 2013).

are presented to justify its use as a philosophical foundation for mixed method enquiry in this research.

There are multiple versions of Pragmatism developed primarily from the writings of Charles Sanders Peirce, Willian James and in particular John Dewey and its major tenets are synthesised by Biesta and Burbules (2004) and Johnson and Onwuegbuzie (2006). They are:

i. A rejection of the traditional mind and matter dualism
ii. A view of knowledge as both constructed and as a function of organism-environment transactions
iii. A recognition that knowledge is fallible because we can never be certain that our current knowledge will be appropriate for future enquiry problems
iv. A belief that truth comes from experience and absolute truth will be determined at the end of history
v. Adopts a problem-solving and action focused enquiry process
vi. An advancement of the term, 'warranted assertions' to underscore the point that assertions can be warranted only in a specific enquiry context and their value must be re-established in new enquiries
vii. A commitment to values of democracy, freedom, equality and progress

In this research Pragmatism as a paradigm draws on two core concepts of John Dewey (1938). The first is his **concept of enquiry** (an enquiry is an investigation into some part of reality with the purpose of creating knowledge for a controlled change of this part of the reality). Dewey (1925) stated that, "an empiricism which is content with repeating facts already past has no place for possibility and for liberty." Thus, a pragmatic approach to the subject of this thesis has an interest in explaining the existence and dominance of an interventionist model in OUs where clinical interventions are used as a matter of routine. However, it also considers how a prospective, yet to be completely realised world could be

achieved i.e., where a physiological care approach is implemented to meet the needs of women who want to experience a physiological labour and birth and want clinical interventions to be used appropriately.

Secondly a pragmatism that draws on Dewey's thinking rejects the dichotomy of objectivism (that there is a single underlying reality, knowledge of which is acquired through empirical enquiry and hypothesis testing), and subjectivism (that reality is socially constructed, and knowledge produced via interpretations of social phenomena that are relative and situational). Instead, knowledge in pragmatism is derived from what Dewey (2008) describes as **an intersubjective world** where shared meanings are constructed by people in their interactions with each other, and used as an everyday resource, to interpret the meaning of elements of social and cultural life. In this context Dewey was also of the view that knowledge can only be constructed by exploring multiple realities. In making its decisions, the research also draws on what mixed method researchers describe as "intersubjectivity', a pragmatic response to the concept of "incommensurability" (Kuhn, 1963) that informs traditional metaphysical research. Incommensurability questions whether two different paradigms can operate together because different paradigms produce different kinds of knowledge (Morgan, 2007, Biesta, 2010, Goldkuhl, 2012).

In espousing intersubjectivity, where knowledge is constructed by exploring multiple realities, a pragmatic philosophical approach offers a flexible and more reflexive approach to research design. The aim is to build functional and viable conceptual models to understand experiences, which can be used as heuristic markers to facilitate open reflections and discussions on how to adequately intervene in a situation. The researcher's own experiences of the phenomena to be studied is not excluded, and instead actively inform efforts to seek consensus about which questions are worth asking and about which methods are most

appropriate in seeking answers to these questions (Morgan 2007; Feilzer 2010; Goldkuhl, 2012).

This project embraces these ideas of Pragmatism to explore realities that included:

(i) observing and describing the midwives' use of physiological care practices because this observable phenomena is inextricably a part of implementation work and was viewed as critical to informing further in-depth qualitative enquiry that included unstructured observations and interviews.

(ii) identifying and exploring how facilitators and barriers influenced the implementation of a physiological care approach. This drew on a range of perspectives that included the experiences of professionals involved in driving and implementing a physiological care approach in practice, and the women receiving this care.

These different types of evidence required the use of different methods of data collection and analysis (Biesta, 2010).

Thus, pragmatic research is not driven by theory used in a purely deductive way but engages in a process referred to as abductive reasoning moving between theory and other data that may be derived deductively and inductively. For example, the analysis in this research uses quantitative data gathered through observations of practice, and qualitative data gathered through observations of professional decisions-making and interviews to explore experiences of midwives, obstetricians and women.

Importantly for pragmatists, uncertainties are inherent in any form of knowledge derived from actions and consequences, what applies in one situation may not necessarily apply in another. This is an important concept in the 'warranted assertions' of Dewey, where knowledge is warranted only in a specific enquiry context and the value of this knowledge must be re-established in new enquiries. For example, in empirical research evidence

produced to one context may not necessarily readily transfer into another (Biesta 2015; Morgan, 2014; Moore et al., 2017). However, Morgan, (2007) also states that a pragmatist must use knowledge effectively and consider its applicability by giving careful thought to research design and methods that can support transferability of research evidence to a similar context.

5.2 Rationale for research design

5.2.1 Implementation research and pragmatism

Drawing on the tenets of Pragmatism, I explore the implementation of a physiological care approach[14] in OUs where clinical interventions are significantly higher than other units for birth, for example, midwifery units. As discussed in chapters 1-3, International (WHO, 2018) and National Guidelines, for example, NICE guidelines in England (2014; updated 2017), support health care professionals to implement a physiological care approach during labour and birth and use clinical interventions only when warranted in problems that may arise in the woman and her baby. To shed further light on the specific questions I should be asking and to develop my aims and objectives, I performed a background literature review, systematic review and examined the field of implementation research that explores problems in translating evidence in practice.

In the background literature review (Chapter 2), I explored the nature, extent and impact of routine clinical intervention use on women's health and the health of their babies. I also explored research on evidence-based practice and the implementation of a physiological approach. I then undertook a systematic review and thematic synthesis (Chapter 3) of 32 research papers of literature on facilitators and barriers to the implementation of a physiological

[14] In this PhD a physiological care approach is defined as an approach that advocates an expectant management, watching, attending and responding using a range of physiological care practices (PCPs) to meet the women's physical and emotional needs, clinical interventions are used only when problems that arise in the woman and her baby warrants its use (Miller et al., 2016 WHO, 2018).

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care approach in obstetric settings. The research gaps identified in the background literature are described in Chapter 2, sections 2.4.1, 2.4.2 and the findings of the systematic review and how this fed into the study are described in Chapter 3, section 3.9.

Implementation research is the scientific study of the translation of evidence into practice to reduce inappropriate care, for example, routine clinical intervention use (Foy et al., 2001). With regards to the translation of evidence research could, for example examine the implementation of a physiological care approach to support appropriate decision-making about clinical intervention use, rather than routine use at different points in the labour.

Implementation research also involves the study of what facilitates or acts as a barrier to the translation of evidence in different contexts or by individuals, to reduce unwarranted variations in practice (e.g., in use of physiological care practices). Pfadenhauer et al. (2015) define context as a set of characteristics and circumstances that consist of active and unique factors that surround the implementation effort. They state that context is not purely the physical location (e.g., a setting like the OUs) but also embraces roles, social interactions and relationships that may influence, modify or otherwise facilitate or act as a barrier to implementation. Thus, in implementation research, identifying contextual facilitators and barriers presents opportunities to explore why variations in the implementation of physiological care approach occur, and how facilitators can be enhanced, and barriers removed to improve implementation (Eccles & Mittman, 2006).

Contextual facilitators and barriers may be described as located at the levels of systems e.g., the regional, national or international environment that surrounds an organisation; the organisation, for example, the employer, geography, its structure and size, shared interest and characteristics, culture, networks and relationships; professional groups: at the levels of direct action where the implementation is delivered, and at an individual level, (e.g., knowledge, attitudes, preferences and expectations of individual professionals or of the

woman who receives care) (Damschroder et al., 2009; Nilsen and Bernhardsson, 2015; Pfadenhauer et al., 2017). Facilitators and barriers at contextual and individual levels are also described as interacting to influence implementation (Damshroder et al., 2009; Dixons-Wood; 2014; Hawes et al., 2009; Sandall 2014; Pfadenhauer et al., 2015).

In any study multiple factors that may act as facilitators and barriers at the levels of the system, organisation, professional groups and women can be explored. However, I have chosen to perform a focused investigation informed by the type of intervention, for reasons of practicality (a single researcher) and producing in-depth evidence on specific areas identified as lacking in evidence in the systematic review (see chapter 3 and next paragraph).

At a system level, I decided to incorporate evidence of facilitators and barriers produced by research or reported in policy documents when discussing the study's findings. At an organisational level, this study will explore midwifery leadership role and responsibilities to drive implementation. This explores their interactions with business managers and other professionals to develop the maternity services, and professionals in practice to promote the implementation of a physiological care approach. At a professional group level, I focused on observing and describing the midwife's use of physiological care practices; and facilitators and barriers that may arise in their interactions with senior midwives and obstetricians during decision-making. At the level of individuals, facilitators and barriers were explored in women and birth partners' interactions with midwives and obstetricians during labour and birth.

5.2.2 Mixed methodology and methods

I decided to use structured observations to gather quantitative data on the use of physiological care practices by midwives, using the Physiological Practices Observation (PPO) tool formerly described as the Keeping Birth Normal tool (Darling and Collington, 2019). The development of the PPO tool was described in chapter 4. The data from these observations were used to describe patterns of use in physiological care practices and also

informed qualitative enquiry using interviews with midwives about care practices used, and explore women's experiences of care.

Unstructured observations were used to identify and describe facilitators and barriers located at the levels of organisational leadership and professional groups (i.e., midwives and obstetricians) and individuals (woman). Some facilitators and barriers may be directly observed during interactions. (See examples of these facilitators and barriers described in section 5.3.1 of this Chapter and in Ch 2, section 2.2.2). I gathered qualitative data on decision-making processes at professional group and individual levels. Observations were also used to study interactions during one training sessions to develop skills in using a physiological care approach. However, other facilitators and barriers at these levels may be hidden, for example, fear of not subscribing to normative ways of workings or women's understanding of care. This needs to be understood from the viewpoint of midwives and women. Several method can be used to do this, for example, interviews, surveys and diaries. I have chosen to use interviews to allow a more interactive form of data gathering and enable participants (consultant midwives and obstetricians, midwives and women), to give their personal views and accounts of their experiences, as well to question my interpretations of their practice (Green and Thorogood, 2004). The observations of the midwives' use of physiological care practices and influences on their use are not value free, and maybe influenced by my subjectivity. While a more consistent and objective approach was aided by use of a structured tool, unstructured approaches supported the enquiry into understanding the care provided by midwives, obstetricians and experienced by women. Reflexive-accounting was used throughout the research process, acknowledging the influence of my personal views and opinions throughout the process of gathering both quantitative and qualitative data and interpretation.

Further explanation about how reflexivity is used in this research is provided in Chapter 6, sections 6.8, 6.9).

Creswell and Clark (2011) describe several reasons for mixing methods, for example, (i) using different data and validating findings by seeking corroboration between quantitative and qualitative data; (ii) completeness by using a combination of research approaches to provide a complete and comprehensive picture of the phenomenon to provide stronger inferences; (iii) explanation where one approach (i.e., quantitative or qualitative) is used to explain findings generated by either a quantitative or qualitative method; (v) using a qualitative phase of a study to develop a hypothesis that is tested in a follow-up quantitative phase. Creswell and Clark (2011) also outline and describe several mixed methods designs: convergent, explanatory, exploratory, embedded, transformative and multiphase. In this research, the aim is to use an embedded explanatory design to explore the multiple realties of implementing a physiological care approach in obstetric settings; and build a comprehensive understanding of facilitators and barriers to the implementation. See table 5.1 for the characteristics of the embedded explanatory design used in this research. Further details on the types of data gathered, and analysis techniques are provided in Chapter 6.

Table 5.1: Characteristics of included of the embedded mixed method explanatory research

Paradigm Foundation	Level of interaction	Priority accorded to quantitative and qualitative strands	Timing of gathering quantitative and qualitative data	Primary point of interface of mixing	Primary Mixing Strategy
Pragmatism	Interactive	Equal importance Both quantitative and qualitative strands generate important findings in their own right. However, apart from understanding use, the quantitative data also provides the context for exploring influences on implementation	Concurrent gathering of quantitative and qualitative data during observation of decision-making processes in labour and birth Observation of a one training session for midwives Interviews at a later date to gather qualitative data about experiences of professionals driving and implementing a physiological care approach; and women and birth partners' experiences of care	Interpretation and reporting	Separate data analysis, followed by presentation of findings, integration of quantitative and qualitative findings to explore how facilitators and barriers influenced implementation.

5.3 Applying an implementation science research lens

Within the broader epistemological and theoretical perspectives that shaped the methodology of the research, the next section gives an overview of the type of constructs that may be measured, assessed or described in implementation research. This is followed by a discussion on the complexity of a physiological care approach; and how this influenced decisions in planning and conducting this research.

5.3.1 Studying the implementation of a physiological care approach

Much of the research in implementation science is focused on the study of fidelity of an intervention or practice in relation to the intended implementation. Fidelity is defined, "as the extent to which an intervention or programme is delivered as intended." (Carroll et al., 2007). While there are several components that could be measured, for example adherence, content, process, dose, quality of delivery, competence, participant responsiveness, and program differentiation (Breitenstein et al., 2010); the component of fidelity that is most frequently measured is adherence. Adherence is defined as the quantity or presence of prescribed behaviours defined in an intervention. For example, if the intervention is the prescription of a drug, researchers could measure patient adherence to the prescribed dose, frequency, and duration of treatment.

Measures of adherence can help researchers understand why an intended outcome has or has not been achieved, since the intervention may not have been implemented with fidelity. Fidelity may also help to explain why outcomes may vary amongst different groups and subgroups. However, implementation theorists also note that depending on the nature of intervention, examining only fidelity provides only a limited understanding about why an intended outcome may or may not be achieved and why variations exist (Kislov et al., 2019). The complexity of the intervention must also be considered (Petticrew et al., 2009; Hawe, 2015; Moore et al., 2019). For example, in early guidance, the Medical Research Council

(2000) positioned multi-component interventions like the Sure Start programmes aimed at improving the life chances of young children, as complex, contrasting it with simpler mono-component interventions such as drug therapies (Campbell et al., 2007), The guidance has since moved beyond these binary concepts of interventions (Craig et al., 2008; Moore et al., 2015**).** A complex systems perspective emphasises not only the complexity of the intervention itself but also context as the primary source of intervention complexity (Hawes et al., 2009; 2015).This thinking currently informs MRC guidance (Moore et al., 2015). In the next section I outline the complexity of a physiological care approach and where influences on implementing a physiological care approach will be studied in this research (See also discussions in section 2.2.2 about contextual influences on implementation).

5.3.2 The complexity of a physiological care approach

The physiological care approach advocates a 'watchful attendance' (Leap and Hunter, 2016; Kennedy, 2000; Jonge et al., 2021) and is conceptualised as an intervention because its 'watching' is not without intent. Watchful attendance advocates waiting on the physiological functioning of labour; however, this time is used as both a diagnostic and a therapeutic tool to see 'what nature does'. During this time the midwife or others caring for the woman respond to her needs using a range of care practices that provide physical and emotional support to guide the woman through the labour and birth process. This approach is regarded as profoundly important if the midwife and others caring for the woman are not to fall into the trap of routinely using clinical interventions (Kennedy, 2000; Leap and Hunter; Jonge et al., 2021).

Complexity arises for a number of reasons. Firstly, the physiological care approach is not about avoiding clinical interventions altogether. Rather, it is about supporting a physiological process, which may include the appropriate use of clinical interventions. Jonge et al. (2021) argue it is much more difficult to 'watch', even though based on evidence, and act at the right

time (attend/respond) than to routinely execute a protocol. Care is a complex balancing act of providing the right care at the right time, knowing when to wait and when to intervene (Miller et al., 2016; Elshaug et al., 2017).

Secondly, complexity arises from using a physiological care approach rooted in the premise that labour is a complex and individualised process. A physiological care approach draws on evidence that labour progress varies considerably from woman to woman and throughout labour (Zhang et al., 2010a; 2010b). In using a physiological care approach, the non-linearity of labour progress is acknowledged, and standardised time frames to assess and actively manage progress are avoided. Instead, care is individualised to each women's progress and assessment of her need. In contrast in current systems of care informed by an interventionist approach, labour is actively managed and standardised to the care of all women. In this approach, labour progress is classified into different stages and the length of labour progress is pre-defined in each stage. This facilitates the diagnoses normality or abnormality of each stage, and clinical interventions are used to manage "abnormalities" that occur (McCourt and Dykes, 2010; Cheyne and Duff, 2019). In the context of labour and birth care in most birth settings in the UK, care is often focused on exerting greater control over a complex and unpredictable labour process using clinical interventions as a matter of routine. Disrupting this deeply entrenched system of active management to implement a physiological care approach, as identified in my systematic review (chapter 3) is complex.,

However, it is not a simple matter disrupting an entrenched system of active management; complexity also arises from women's preferences for care in labour and birth. Women's maternity care preferences, for example, whether they was to use clinical interventions or engage with a physiological approach, has its roots in myriad influences arising from their personal views, the media, friends and family, and societal culture around birth (Larsonn et al., 2009; Behruzi et al., 2010; Hadjigeorgiou and Coxon, 2014; Kay et al., 2017). Thus, not all

women may want to engage with a physiological approach but rather demonstrate a preference for the use clinical interventions. However, the systematic review conducted as part of this thesis and others (Downe, et al.,2018) show that most women want a physiological birth experience, and their preference is be involved in decision-making about clinical intervention use, and for clinical interventions to be used appropriately. Thus, supporting women will require midwives to use a range of physiological care practices including women's involvement to understand individual need and preferences. Exploring influences on practices can support this understanding further.

In this PhD research, I focus on "use" as opposed to "adherence" precisely because of individualised nature of care. A physiological care practice may be used several times at different points; or several care practices may be needed at single point in labour; or it may not be used at all because clinical assessments demonstrate a need for clinical interventions; or the woman prefers a different approach from the care practice prescribed or advised (Refer to Chapter 4, section 4.8 for other discussions on observed use.

5.3.3 Intervention complexity arising from context and individual levels

As previously discussed in section 5.3.1 of this chapter apart from the intervention itself, the main source of complexity is context. Facilitators and barriers that may arise at the levels of the organisation, professional group (midwives and obstetricians) and women are outlined in Chapter 3, section 3.4. This research explores facilitator and barriers at all three levels, seeking to add to current evidence where it is lacking, and generating new evidence by addressing research gaps identified in Chapter 3, section 3.18.

5.4 Conclusion

This chapter explains the research design and methodology underpinning the empirical investigations in this research. The core concept of Dewey's pragmatism: "knowledge is constructed from experiences and derived from exploring multiple realities" guided decisions in the PhD research to explore the daily work of implementation in OUs, and the use of mixed methodology and methods to fulfil its aims and objectives.

The two aims, and objectives derived from the literature review and methodology were refined further using a systematic review to focus investigations at an organisational level on midwifery leadership; use observations of labour care and semi-structured interviews with participants at all three levels where facilitators and barriers were explored. An embedded explanatory design was selected because it facilitated comprehensive investigations using appropriate methods to explore the multiple realties of implementing a physiological care approach in obstetric settings; and build a comprehensive understanding of facilitators and barriers and their influences on implementation.

In order to develop the study's empirical investigations further I drew on the implementation science field that informs research into complex interventions. This identified the importance of studying processes in implementation, specifically the midwives' use of physiological care practices and facilitators and barriers to this. It also informed decisions to study facilitators and barriers at the levels of organisational leadership, professional groups and women to develop a comprehensive understanding of how facilitators and barriers influenced implementation. In the next chapter I outline in detail the methods used in this mixed method embedded explanatory design, with justifications for each. The sampling strategy is outlined followed by a description of ethics application, fieldwork and data analysis procedures.

Chapter 6: Methods and field work

Introduction

This chapter describes the operationalisation of the embedded explanatory design selected to meet the aims and objectives (Ch1, Section 1.10) of this research. The aims were:

i. To observe and describe the patterns of use in 27 physiological care practices in a sample of midwives in two obstetric units

ii. To explore and understand how facilitators and barriers at the levels of organisational leadership, professional groups (i.e. midwives and obstetricians) and individuals (women) influenced the implementation of a physiological care approach

The chapter begins with a description of the embedded explanatory mixed method approach used. It includes a general description of quantitative and qualitative methods, a detailed description why each method was selected, types of data gathered, and the field work undertaken to gather data. The approach to accessing participants, sampling techniques and recruitment are then described. This is followed by a description of ethical issues and challenges including how they were resolved. Finally, details are provided about the three stages of data analysis, the techniques used, and reasons for their use.

6.1 Study methods

The mixed methods embedded explanatory design used in this PhD study integrates data from multiple data collection methods (Figure 6.1) based on the premise that fulfilling the objectives of the aim in this study required the gathering of different types of data (Creswell and Clark, 2011).

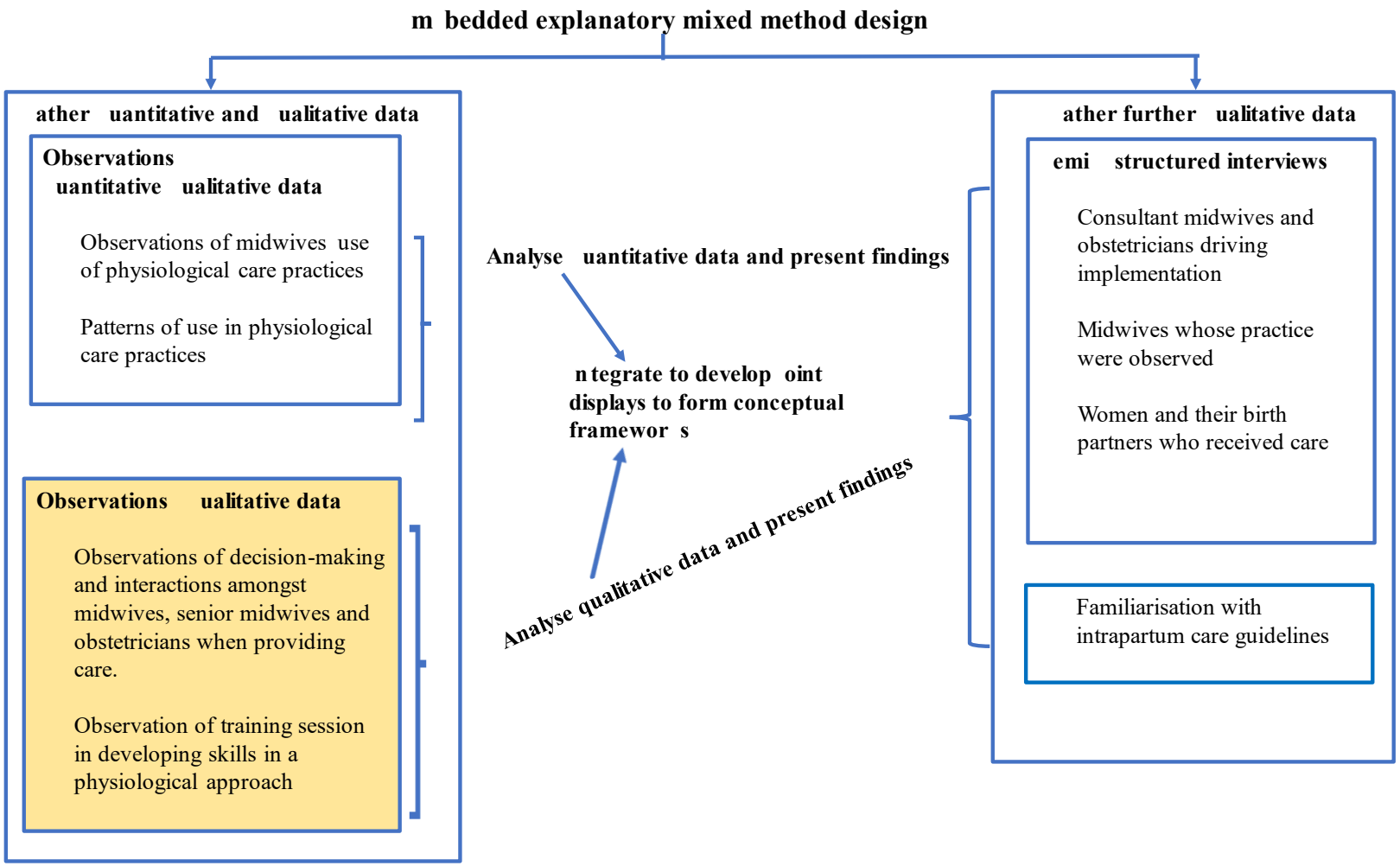
Observation techniques were used to explore the multiple realities of implementation work, gathering structured quantitative data on the midwives' use of physiological care practices; and qualitative data on decision-making processes during the woman's established labour

until her baby was born. Observations were also made of a training session for midwives on developing skills in a physiological care approach. Familiarisation was also undertaken with the content of an intrapartum care guideline that informed practice.

To explore the realities of practice further, semi-structured interviews were used to gather qualitative data on the experiences of consultant midwives and obstetricians who drive the implementation of a physiological care approach; the midwives who were observed providing care in practice; and the women and their birth partners who received this care.

Quantitative and qualitative data were analysed, and findings were presented separately. This was then integrated to produce three joint displays to form conceptual models. These models were used to explain how facilitators and barriers at the organisational leadership, professional groups (i.e. midwives and obstetricians) and individuals (women) levels influenced the implementation of a physiological care approach (See section 6.9.4 for further details about the integration process). This approach to consider all realities conforms to the principles of intersubjectivity associated with Pragmatism to facilitate 'meaning making' defined as an iterative, interactive, synergistic, and holistic process that continues until understanding is reached (Onwuguebie and Collins, 2009; Morgan, 2014).

Figure 6.1: Methods used within an embedded explanatory mixed method design



6.1.1 Methods of Data Collection

The key methods used to gather data in this study were observations and interviews. Other sources of data included one cross-site maternity care intrapartum guideline for midwives and my field diary (Table 6.1).

Table 6.1: Key methods used to collect data in this study

1. Structured observations of midwives' use of physiological care practices in established labour until the baby is born, using the Physiological Practices Observation tool (quantitative), plus unstructured observations notes (qualitative)
2. Interviews with midwives whose practices were observed
3. Interviews with women and their birth partners whose labour and birth were observed
4. Interviews with two consultant midwives responsible for driving the implementation of a physiological care approach on both sites
5. Interviews with two senior consultant obstetricians in charge of OUs on both sites and who collaborated with consultant midwives
6. Observation of a 2-hour training session in developing skills in a physiological care approach
7. Field diary records
8. A reading of one cross-site maternity intrapartum care guideline for midwives

6.1.2 Observation and the observer role.

This research used observation, a technique that involves collecting data using one's senses, especially looking and listening in a meaningful and systematic way (McKechnie, 2008). Observations in this research used both a structured and unstructured approach. A structured approach is the use of a method used to quantify, measure, assess or describe a behaviour or behaviours and the researcher typically concentrates on pre-defined observational entities. In an unstructured approach, data gathered is not pre-specified and is usually descriptive and gathered of a phenomena of interest as it unfolds (Green and Thorogood, 2004).

The PPO tool was used to structure observations and gather quantitative data about

midwives' use of physiological care practices in this. At the same time, unstructured observations of interactions between different professionals (midwives and obstetricians), and between professionals and women in decision-making during labour care, was used to gather qualitative data to explore facilitators and barriers to the implementation of a physiological care approach.

To understand my role as an observer in this context, I drew on Adler and Adler's (1994) description of the observer role compared to roles described, for example in Gold's typology.[15] Adler and Adler (1994) describe peripheral, active or complete membership roles [16] and their description provided me with greater understanding to enable me to make decisions about the role I wanted to adopt in practice.

In considering the position I would adopt as an observer, I reflected on my role as a midwife keen to promote a physiological care approach, recognising that I might consciously or unconsciously, become involved in decision-making about clinical care. Even though it is not possible for me to be completely objective, I wanted to refrain from influencing the midwife's use of physiological care practices and other decisions relating to the care of the woman. Adler and Adler's (1994) classification provided a clearer guide to the way I should

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[15]Gold's typology describes four modes of an observer's role (1) the complete participant, (2) the participant as observer, (3) the observer as participant and (4) the complete observer.

[16] Peripheral role: researchers observe and interact closely enough with members to establish an insider identity without participating in the activities that constitute the core of the membership group.
Active roles: researchers become involved in the setting's central activities assuming responsibilities that advance the group but without fully committing to member's values and goals.
Complete membership roles: researchers who study scenes where they are already members or those who become converted to genuine membership during the course of their research (Adler and Adler, 1994).

position myself and I chose to adopt a peripheral observer role where I would, “observe and interact closely enough to establish an insider identity but without participating in the activities that constitute the core of the membership group.” (Adler and Adler, 1993).

I made it clear to women in the participation information sheets, and in person, that as a peripheral observer, I would not be involved in decision-making about their care. The women accepted this and understood that the duty of care lay with the professionals and not the researcher. I explained that if I observed practices that were unsafe, I would step out of my researcher role, involve managers and discontinue my observations. In line with the professional code of conduct I would also do the same in the event of emergencies (Nursing and Midwifery Council, 2015). I reminded women that they were free to withdraw participation at any time without giving a reason.

To support the maintenance of my peripheral observer role, I remained reflexive and explored this with my peers and supervisors. However, as McCambridge et al. (2013) state, any act of observation will impact on the field; little can be securely known about the conditions under which they operate, their mechanisms of effects, or their magnitudes. I was reflexive about any possible influences that I may have had on the decisions that were made by the midwife, or midwife’s reactivity as a result of my presence, and wrote about this in my reflexive diary which formed part of the observation data. These influences informed my analysis.

6.1.2.1 Understanding practical challenges of observations

Prior to beginning my observations, three midwives who were former colleagues and continuing to practise, including myself, observed two lengthy birth video clips on YouTube to discuss some of the practical challenges associated with observations in practice and how I could stay focused. Some suggestions that were considered and used included ensuring the availability of adequate snacks and water, having a good supply of writing material and

seeking permission to use toileting facilities in the room so I did not leave the room for lengthy periods.

6.1.2.2 Observation data gathered

During observations, the Physiological Practices Observation tool [17] helped me to stay focused on the midwives' actions and decision-making during labour and gather appropriate data on their use of physiological care practices. At the same time, I also made notes about other practices used by midwives that diverged from the physiological care practices described in the PPO tool.

The nature of the birth setting (OUs), for example the size, content and ambience of the rooms where women laboured, and the conversations between the woman, birth partner and midwife, between the midwife and other professionals (obstetricians, managers and other midwives), and between all professionals and the woman in relation to decision-making about care, were all directly observed, and notes were written.

In addition to observations during labour, I also observed one mandatory training session for midwives on both sites on developing their skills in implementing a physiological approach. As training or lack of it can influence implementation, this formed important data to develop a comprehensive picture of facilitators and barriers.

Detailed field notes were written within 24 hours after each observation. Drawing on these notes, I developed relevant question for use in my interviews with midwives and woman observed. I also made notes in my reflective field diary of conversations I had with

[17] The adapted Physiological Practices Assessment Tool is composed of 27 care practices relevant to implementing a physiological care approach. See chapter 4 for details about the four stages of the tool's development.

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obstetricians, midwives or managers who came to relieve midwives for breaks or who I met after the event and with their verbal consent included this data in the analysis.

6.1.3 Semi-structured interviews

Aside from observations of practice, I interviewed at:

i. organisational leadership level: two consultant midwives and two consultant obstetricians who they collaborated with to drive the implementation of a physiological care approach
ii. individual level: women whose care was observed and their birth partners
iii. professional group level: midwives who were observed in practice

The term ‘qualitative interviews’ refers to interview techniques that provide textually rich data. Unlike the peripheral role I adopted in observation, interviews (Green and Thorogood, 2014) facilitate closer interactions with participants so that access to their knowledge, experiences, and perspectives can be gained about care during labour and birth. Using a semi-structured interview format, I sought to achieve a balance, using questions to explore and understand motivations and behaviour of participants while allowing participants to freely share their views about their experiences; and questions or clarify my interpretation of their motivations and behaviour. These interactions are described as essential for the purpose of being reflexive about the influences of my own biases from my clinical knowledge, judgement, and experiences (Burns et al., 2010).

Interactions during interviews, and the purposeful use of reflexivity, are also described as important tools to study influences which are not necessarily always transparent to the observer. This could include how the participants’ accounts, representations of selves and experiences are shaped by their interaction with me, the participant’s own biases, ideologies or mood, or by the context in which the interview took place (Green and Thorogood, 2004; Hammersley and Atkinson, 2007)

To facilitate interactions, the interviews were conducted at a time and premises that suited the participants. All interviews were recorded with an "Elegant" digital voice recorder and downloaded on to the university's personal password protected computer. I sought permission to record the interview, and if participants agreed placed the recorder in a position to ensure a clear recording without distracting the interviewee. The researcher verbatim transcribed this to ensure a reliable record of the interview, and uploaded on to the university's secure One drive facility. All identifying features of interviewees were removed from the transcripts to ensure confidentiality. Each interview was labelled with a research ID and date.

6.1.3. Semi -structured interviews with consultant midwives and obstetricians

Interviews with two consultant midwives and two consultant obstetricians took place in their offices using a topic guide (Table 6.2). The interviews explored their roles in driving the implementation of a physiological care approach, and experiences of interactions to fulfil this role at an organisational level with other clinicians and managers. These interactions revolved around the setting of priorities for developing the maternity service, seeking consensus re these priorities and allocation of resources. It also explored their interactions with professional groups (i.e. midwives and obstetricians) in efforts to implement a physiological care approach in OUs.

Table 6.2 Topic guide for consultant midwives and consultant obstetricians interviews

1. Professional background information such as training, past and current experiences in different settings for birth, understanding of their commitment to implementing a physiological care approach
2. Interactions and challenges at an organisational and professional level to drive the implementation of a physiological care approach and challenges
3. Perceptions of facilitators and barriers and how it influenced their role and responsibilities
4. Non-clinical interventions to drive the implementation a physiological care approach: its development and challenges in implementation and evaluation
5. Organisational support for the development and implementation of non-clinical interventions, for example resource allocation for staffing and training

6.1.4 Semi-structured interviews with women and their birth partners

I planned to interview both the woman and her birth partner together if they consented to this and if not, interviews would be conducted separately. Interviews with women and their birth partners used a topic guide (Table 6.3) to elicit their experiences of care, including their involvement in decision-making and perceptions of professionals' practice. I began by asking women and their partners to describe their experiences, followed by questions that drew on my observations and ended by asking women if they wished to add to what had been explored.

Table 6.3 Semi-structured topic guide for interviews with women and birth partners

1. Perceptions about the care they received
2. Their views on involvement in decision-making about their care
3. Use of clinical interventions and why they thought it happened
4. Attitudes and behaviour of midwives and obstetricians

6.1.5 Semi-structured interviews with midwives

The interviews with midwives explored their experiences of implementing a physiological care approach and decision-making that involved senior midwives and obstetricians during labour and birth. All interviews with midwives were conducted on hospital premises except for one midwife who wanted a telephone interview. Face to face interviews took place in a quiet room on the birth centre or in offices where interruptions could be avoided. I sought to allay any anxiousness amongst the midwives by reminding them that the interview was an opportunity for reflection, assuring them of confidentiality**.** The interviews were arranged 24-48 hours following the labours observed. Questioning during interviews used a topic guide (Table 6.4), questions were informed by observations of practice in every case. I began by asking midwives to give an account of how they perceived the care that they had provided; and ended each interview by inviting them to add to what had been explored and raise any issues that were not addressed.

Table 6.4: Semi-structured topic guide for interviews with midwives

1. Professional background information such as training, past and current experiences
2. Decision-making. These questions varied based on observations and sought to understand decisions that were made: For example, not offering the woman the option of water for use in pain relief?
3. Exploration of facilitators and barriers including personal perceptions about its influences on implementing a physiological care approach
4. Relationships with junior and senior midwives, consultant midwives and professional midwife advocates
5. Relationships with other healthcare professionals, for example, obstetricians
6. Relationships with women
7. Organisational influences, for example, leadership by consultant midwives, resourcing of training, and staffing levels

6.2 Guidelines

I familiarised myself with the content of a supplementary source of information: a cross-site maternity intrapartum guideline. Such tools support decision-making during labour and birth at both hospitals. The guideline was obtained through the lead for this PhD research project at the Trust. Familiarising myself with the content enable me to point out in my analysis divergences from recommendations in the guidelines that also mirrored some of the practices described in the PPO tool.

6.3 Field and research diary

I used a field diary to record my thoughts during the recruitment process, data collection and analysis. Each entry was dated. I wrote about being on the obstetric units and in the labour room. The main focus of my writing was three-fold (i) exploring my feelings about not being involved in care of the woman, (ii) supporting my reflexivity to remain in my peripheral observer role during structured and unstructured observations and (iii) adopting an enquiring rather than an accusative and critical stance during interviews (Hammersley and Atkinson, 2007). I also used a research diary to record informal conversations with managers, midwives, other professionals and women. I wrote in my diaries soon after observations, interviews and conversations to aid recall of events. I also noted the quality of my observations and how I can improve my note taking.

Writings in my diaries were used to make short analytical notes along the margins of my observations that were uploaded for analysis. I continued to refer to the diaries during analysis to assist meaning-making and reflexivity during analysis to explore how facilitators and barriers influenced implementation.

6.4 Sampling strategy

The sampling in this study was driven by its two aims:

i. To observe and describe the patterns of use in 27 physiological care practices in a sample of midwives in two obstetric units
ii. To explore and understand how facilitators and barriers at the levels of organisational leadership, professional groups (i.e. midwives and obstetricians) and individual (women) influenced the implementation of a physiological care approach.

The sampling techniques and sample size were an important part of gathering good quality data to support analysis and meaning making (Morse, 2000) which are needed to make inferences to meet aims 1 and 2. I needed to sample adequately across each of the three levels where facilitators and barriers are explored: organisation leadership, midwives and obstetricians, and women.

Teddie and Fu (2017), describe several types of sampling techniques:

i. Quantitative sampling aims to achieve representativeness and generalisability of
ii. finding; and uses probability sampling. A relatively large number of units from a population, or from specific subgroups (strata) of a population are selected in a random manner where the probability of inclusion for every member of the population is determinable
iii. Qualitative sampling aims for in-depth understanding of the problem; sampling is usually non-probabilistic: a non-random technique that does not need underlying theories or a set number of participants. Two examples are convenience and purposive sampling
    - Convenience sampling: This involves drawing samples that are both easily accessible and willing to participate in a study
    - Purposive sampling: A deliberate choice of a participant is used due to the

qualities participants possess. The researcher decides what needs to be known and sets out to recruit people who are able and willing to provide the information by virtue of knowledge or experience. Several types of purposive sampling may be used (Etikan et al. 2016)

iv. Mixed method sampling which usually uses both probabilistic and non-probabilistic sampling.

In this mixed method study, however, a purposive sampling approach was used to gather both quantitative and qualitative data. This was because the quantitative data gathered on the midwives' use of physiological care practices formed part of exploring the reality of implementing a physiological care approach in OUs. The aim was not to generalise the findings on the observed use, but to use this data in an integrated analysis, combining it with qualitative data on facilitators and barriers at the levels of the organisation, professional groups (midwives and obstetricians) and women, to explore and understand how these facilitators and barriers influenced the implementation of a physiological care approach in OUs.

6.4.1 Quantitative data: sample size

The sample size for midwives whose practices were observed to gather quantitative data was not pre-determined as this was determined by the number of women who consented to participate and were eventually observed.

6.4.2 Qualitative data: sample size

Sim et al. (2018) describe several approaches[18] to determining sample sizes in qualitative research. The debates about determining sample sizes a priori in exploratory studies continue, but the general conclusion is that it is inherently problematic. However, I needed to determine an estimated sample size that would allow me to allocate a time frame for recruitment and apply for ethics approval. Other considerations were to meet time-frames for completion of the PhD, and data collection by only one researcher. To do this, I was guided by (i)conceptual considerations to meet the aims of the study (Morse, 2000); (ii) the rule of thumb approach where sample sizes (a range of 2-30) are proposed by researchers for different methods in qualitative studies (Sim et al., 2018) and (iii) the numerical guideline developed by Guest et al. (2006) who propose a sample size of 20-36 for studies using observations.

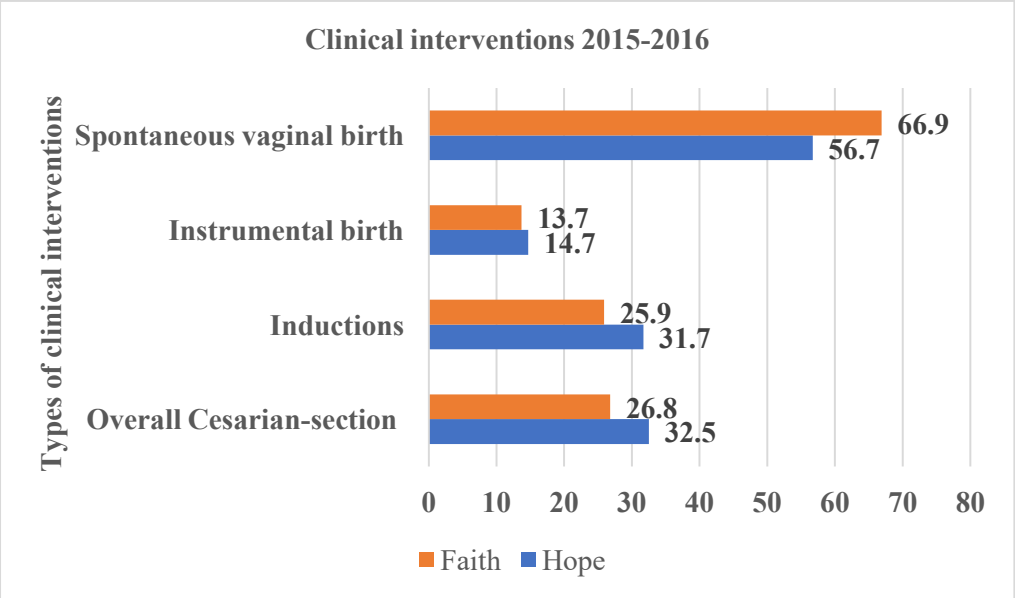
In the next three sections I outline the sampling used for participants at the levels where facilitators and barriers were explored, i.e., organisation leadership, professional groups (i.e. midwives and obstetricians) and individuals (women). At unit level, and levels of organisational leadership and women, a purposive sampling was used. However, at a professional group level, the sampling of midwives was determined by women who consented to participate, and whose care was observed. Further details of sampling and the consent approach are explained fully below.

[18] 1. Rules of thumb: This is based on methodological considerations and past experience with similar studies. 2. Formal conceptual model: This is based upon specific characteristics of the proposed study, such as its aim, its underlying theoretical framework, and the type of analysis intended. 3. Use of guidelines derived from empirical investigation. 4. Use of statistical formulae to determine sample size a priori (Sim et al., 2018).

6.4.3 Unit-Level Sampling (Obstetric setting)

A purposive sample of two OUs in London was used. Clinical interventions rates across birth settings vary from year to year, and data submitted by hospitals in UK have been consistently identified as incomplete in audit reports (NMPA, 2015-2018). In 2016, when selection was considered, CS rates in all hospitals in London fell into two categories (i) 24.2-29.5% and (ii) 31.3-35.5%.(NMPA, 2017). London hospitals were sampled because this was where the researcher lived and worked; funding did not enable relocating or waiting in another part of England for recruitment with uncertainties about time frames needed for data collection. Proximity to the site was also necessary for the purpose of travel to the site to conduct observations.

Figure 6.2: Clinical intervention rates at Faith and Hope 2015-2016.



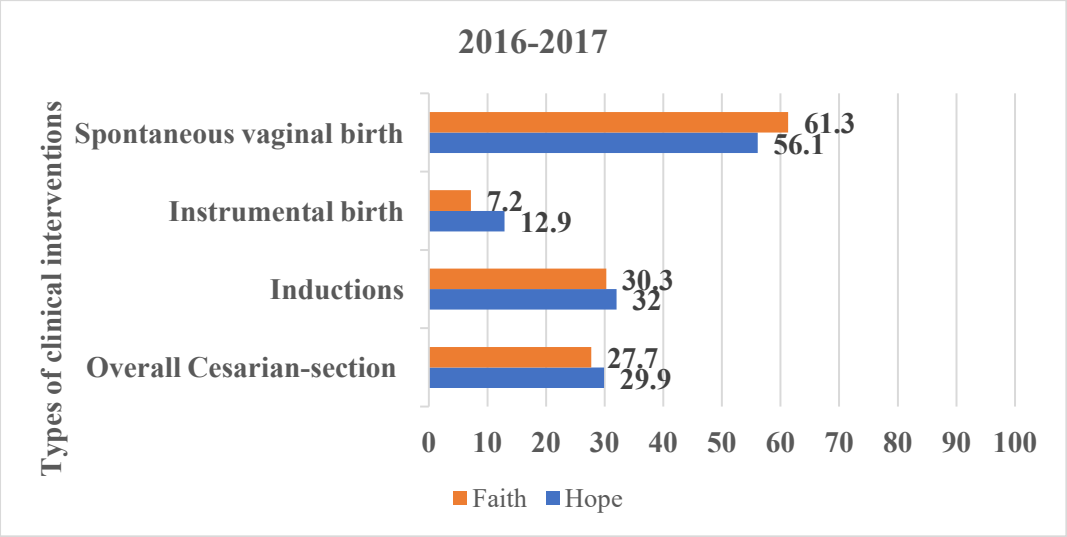
Footnote: Faith and Hope are separate obstetric units located in two different hospitals (Source: NHS Digital, 2017) (Data submitted may not be complete)

A hospital in category one with a lower clinical intervention rates and along with another hospital in category two with a higher clinical intervention rates. The hospitals selected were anonymised as Faith and Hope The hospitals were similar in terms of service configuration

and resource allocation, thus making them comparable at system level since in 2015 they were merged into a Foundation Health Trust. However, as illustrated in their statistics for intervention rates they could be expected to vary at organisational and professional levels and in terms of patient profile, aligning well with the focus of the analysis. They provide and develop healthcare according to core NHS principles - free care, based on need and not ability to pay (DOH, 2019). Together they both serve a population of 1.1 million people in seven London boroughs, providing birth care for over 11000 babies per year. The population was White British/higher than average White Other population compared to the rest of England. The second largest population the Trust serves is Indian followed by Black people (Data London, 2018).

Although the two hospital were initially selected because of one had a higher clinical interventions rates (Hope) compared to the other (Faith), by the time recruitment and data collection began in 2018, these differences had narrowed (Figure 6.3).

Figure 6.3 Clinical interventions at Faith and Hope



Footnote: Faith and Hope are separate obstetric units located in two different hospitals (Source: NHS Digital, 2017) (Data submitted may not be complete)

I made the decision to continue because field work to encourage participation from professionals and site access were complete. I felt I could still explore the reasons for the small differences between the two units and explore what could have facilitated a fall, for example in CS rates at Hope.

6.4.4 Organisation leadership level: Recruitment and sampling of consultant midwives and obstetricians

There are three consultant midwives working at the Trust, one responsible for safe-guarding and public health, and two (one at each hospital) were responsible for driving the implementation of a physiological care approach. Both the latter were approached for recruitment because of this role, received a participation information leaflet, and consented to participate in the research. One also agreed to act as a research lead for the project at the Trust.

There were twelve consultant obstetricians working at the Trust. A sample of two consultant obstetricians with clinical and managerial responsibilities for the OU at each hospital, and who according to the project lead collaborated with to drive implementation were approached for recruitment. Both received a participation information leaflet and consented to participate in the research. The consultant midwives and consultant obstetricians were recruited to explore their interactions at the levels of organisation leadership and professional groups (midwives and obstetricians) to drive implementation of a physiological care approach.

6.4.5 Individual level: Recruitment and sampling of women and birth partners

Posters approved by the ethics committee were placed in antenatal clinics at both sites to inform women about this research. A set of inclusion and exclusion criteria (Table 6.5) was developed and used in recruitment. Women with complex pregnancies with a high levels of obstetric involvement in their care were not included. This group of women benefit from physiological care practices; however, their care is obstetrician-led, and they are more likely to need clinical interventions with evolving risks. Care of labours and births under

obstetrician do not present the same opportunities to observe the use of physiological care practices by midwives. All women with a pregnancy at low risk of complications and those with a second pregnancy who may be classified as being higher risk because of previous PPH [19] and/or previous Caesarean-section and/or have minor medical conditions that does not require a high level of secondary care were eligible to participate. This included women who used an epidural because efforts to support physiology continue in this context (Inclusion criteria 1, 2, 3, 4). Women who have an epidural before established labour are not included because the length of the labour is difficult to predict and, labours can be protracted and lengthy (Exclusion criterion 1).

A purposive sample of women including any person or persons who acted as the woman's birth partner, i.e. husbands, live in partner, mother, relative or friend who consented to participate were recruited to (i) observe their care during established labour (ii) interview the woman and birth partner together about their experiences of care if the woman consented to have the partner there or separately if the woman preferred this. Women who did not have a birth partner were also eligible to participate.

[19] A PPH is a post-partum haemorrhage that can occur after a baby is born. It is classified as a PPH if a woman suffers more than 1000mls of blood loss (NICE, 2014).

Table 6.5: Inclusion and exclusion criteria for the recruitment of women

	Inclusion criteria
1.	Women with a first or a subsequent pregnancy at low risk of complications (a single a foetus in cephalic presentation at 37-42 week with no medical or obstetric risk factors) (NICE, 2014)
2.	Women in established labour (37-42wks) who are at least 3-6 cm dilated and/or not using an epidural or choose to use an epidural (WHO, 2018)
3.	Women classified as having a low-risk induction (41 weeks to 42 weeks), not using an epidural and/or were using an epidural after established labour had begun (Cross-site guidelines on intra-partum care)
4.	Women with a second pregnancy who may be classified as high risk because of a previous PPH and/or previous Caesarean-section and/or have minor medical conditions that does not require a high level of secondary care
	Exclusion criteria
5.	Women who have a low-risk induction [20] but choose to have an epidural before established labour and/or require the use of further clinical interventions, for example the use of oxytocin

To recruit women in person, I attended antenatal clinics, breast-feeding and birth preparation classes on both sites. I also sought help with recruitment from community midwives and birth preparation teachers. All women who were eligible and partners received a Participation Information Sheet (PIS) and a consent form. I recruited as many women as I could because I anticipated that women's eligibility may change as pregnancy progressed, before or during labour, or they may change their mind about participation. A total of 52 women were recruited (See tables in appendix 18 and 19) for the reasons why women were lost to observation at Faith and Hope or why women changed their mind about participation.

[20] The induction is classified as low risk when the woman's pregnancy is low risk, and her labour becomes established after one prostaglandin pessary and progresses without any further interventions.

6.4.6 Professional Group level: Recruitment and sampling of midwives

Posters approved by the ethics committee were displayed in both OUs to inform all healthcare professionals about the study. All midwives who worked on Faith and Hope were eligible to participate and received emails with PIS, and consent forms. Four engagements events were organised to allow midwives and obstetricians to attend, ask questions and for midwives to receive a PIS. I also attended shift handovers to seek participation. Two reminders were sent to encourage midwives to read the PIS and consider participation. Midwives are the lead carers of women; and have the responsibility to implement a physiological care approach where appropriate. I wanted to observe the midwives' use of physiological care practices and their interactions with other professionals, for example obstetricians and senior midwives to provide care during labour and birth. However, I was not able to be purposive in identifying midwives prior to labour and with differing levels of experiences (junior and senior midwives) or midwives with experiences of working in different birthing units, for example the community, and birth centres to explore whether these factors influenced their implementation. This was because I did not know when women's labours would begin, nor which midwives would be on the shift, and would care for the women. The number of midwives observed was also determined by the number of women who could be observed in labour. So, I recruited as many midwives as possible in hope that these midwives would be on the shift when the women arrived in labour and a varied sample could be achieved.

6.5 Gaining Access

Negotiating relationships is essential in all research that seeks access to data on the behaviours or thoughts of participants. Participants, women and midwives may be concerned about confidentiality, how the data will be processed and used, and the impact it might have

on them personally. Midwives may be additionally concerned about how it may impact on their careers. Hammersley and Atkinson (2007) note that that reassurances can facilitate access to research sites and participant views. A number of different approaches were used to reassure managers, midwives, obstetricians about the conduct of the research and encourage participation.

Hospital sites where Faith and Hope are located approved the conduct of the study. I was issued with an honorary contract on the 8/11/2017 to begin data collection. I had approached gatekeepers (Head of Midwifery and Consultant midwives) prior to this date to establish relationships, and gain acceptance for the conduct of the study.

Seven meetings were held with the consultant midwife who acted as the clinical lead for the PhD project. We met regularly to assess progress, develop action plans to manage recruitment, receive and address any feedback about any concerns that may have been raised by midwives and obstetricians about my presence on the obstetric units, and the labour room. I attended two audit meetings where midwives and obstetricians were present to answer questions, and provide explanation about the research's aims, objectives, methods, data management and analysis, and dissemination of findings. To speak to as many midwives and obstetricians as possible, two engagements event were held on the units. Both engagements events were well attended. I also visited during handovers to reach out to the midwives with a PIS and answer any questions they might have. I also met with two labour ward managers, identified by the consultant midwife as gatekeepers for the conduct of the PhD research. I reported to these managers when I arrived at the OUs to speak to midwives about participation or conduct observations. The room where I was doing my observations was marked out on the whiteboard by the labour ward managers. These managers were also my point of

contact if I encountered any problems or needed to step out of my researcher role and report any safety concerns. The labour ward managers were also informed when I left the unit.

6.6 Health and safety

Health and safety while doing this study was informed by the NHS Lone Working policy. Potential hazards identified through a risk assessment. The assessment indicated that the risk of harm to participants, and my self was minimal. Hospital sites are secure, public transport was used to travel to hospital sites for meetings and data collection only commenced after ethics approval was obtained. No concerns were identified about women who consented, and I was able to interview them in their homes.

6.7 Ethical considerations

This section describes the seeking of ethical approval and some of the challenges faced. It outlines ethical issues relevant to the study, how they were considered in the planning of the study and how they were mitigated.

6.7.1 Gaining approval from the ethics committee

The ethics application for the study was submitted to the U.K. Health Research Authority. The initial assessment by an NHS ethics committee did not result in an approval (19/07/2017). The committee was concerned about the impact of my presence on clinical intervention use by midwives, citing possible failure by midwives to intervene when problems arose in the labour. The committee also raised concerns about what was described as the pursuit of a personal agenda to advance a midwifery approach to care without due regard for women's choices. I was informed that I could appeal the decision.

The administrator who was present at the committee meeting suggested that I make an application to the social research ethics committee who she proposed were more experienced in assessing observational and qualitative studies.

My application to the social research ethics committee, was attended by Prof McCourt as I was away. It received ethics approval after minor changes requested by the committee were made (See appendix 1). Permission to conduct the study was given by the HRA (REC 17/IEC08/0037) on the 26/10/2017 (226761). Site approval was obtained on the 18/01/2018 (C&W17/90)

This next section outlines the key ethical considerations that apply to this study.

6.7.2 Informed consent

Informed consent is a legal and ethical requirement. It must be given by persons with capacity and given voluntarily, with full information about what it means for them to take part described in participation information sheet before participation (HRA, 2015). I sought a written informed consent from midwives, obstetricians, managers, women and their partners before data collection (See Appendix 4-11).

6.7.2.1 Consent from consultant midwives and obstetricians

The two consultant midwives and obstetricians were sent a PIS and consent form to read. They were given a week to consider participation before I contacted them to answer any questions or provide clarification. A consent form was signed by all four participants and filed in the research file.

6.7.2.2 Consent from women and birth partners

Women and their birth partners who expressed an interest in participation were given a PIS and consent form by the researcher. The women who consented contacted me when they arrived at the hospital in labour via a research phone provided by City University of London and used only for my PhD research. Consent by the woman, her birth partner and the midwife (see below) was reconfirmed at this point, and they were also informed that they could change their mind about participation at any time without giving a reason.

I met with the women and their birth partners post-birth to confirm that consent for interviews post-birth that I obtained when I recruited them was still valid, and that I could proceed with the interviews three to four weeks after birth at a time and place of their choosing. The women and their birth partners understood that the interview was about their experiences of care and was not about raising issues about an individual midwife or other professionals.

6.7.2.3 Consent from healthcare professionals

A participant information sheet (PIS) approved by the ethics committee was distributed to the midwives. The midwives were given a week to consider participation. The contact details of the PI and her supervisor was available to the midwives in the event clarification was needed**.** The midwives from whom consent was obtained provided care in established labour. Other professionals who came into the room were aware that observations were taking place, because the midwife introduced me, and informed them about why I was there. My presence was also identified on the white board on both units when I was present, and it was made clear that if my presence was a cause for concern, I would leave the room. I introduced myself to other midwives and obstetricians who became involved in care to perform technical tasks and sought a verbal consent from them to continue my observations (See also section 6.4 for a description of activities I engaged in to inform and reassure midwives and obstetricians about the research and its aim, and give them opportunities for questions and reassurances about concerns that were raised)

6.7.3 Confidentiality and anonymity

Professionals and women were assured that their identity would be protected in all study reports, presentations and other forms of dissemination. After downloading data on to a password protected computer on university premises, all personal identifiers were removed from observation notes and interview transcripts (GDPR, 2018; HRA, 2015). This data was

then uploaded on to OneDrive at City University of London so that I could access it if I needed to when I was not on the university premises.

The names of participants and the hospital are not reported in the thesis and only codes and pseudonyms were used. The data was kept confidential, accessed only by my supervisors and myself. Care was taken to ensure that quotations used in the text did not compromise anonymity. According to the GDPR (2018) and in accordance with City, University of London Guidelines, observation notes and interview transcripts were kept secure at the university. Consent was obtained to retain raw anonymised data so it can be accessed for the conduct of a larger study in the future and archived in a secure University database for a minimum of ten years (Framework for Good Practice in Research, City University of London). I remained aware throughout of the trust the hospital placed in me to protect privacy.

6.8 My role as a researcher in the research process

This study is concerned with the phenomenon of increasing routine clinical intervention use in OUs. This increase, despite the wide dissemination of evidence of benefits from a physiological care approach, led to this study and the questions it poses. As a midwife, I believe childbirth is a physiological process and clinical interventions are only warranted when problems arise. This view is in line with the evidence on optimal birth outcomes and is reflected in evidence-based clinical guidelines for care (NICE, 2017; WHO, 2018) so it is not simply subjective. Nonetheless, I carefully considered the influences of my subjectivity on the rigour of data collection as a peripheral observer, and subsequent analysis and interpretation using reflexive accounting. Reflexive accounting is an important tool used in qualitative research to: "make activities and claims more accountable, a critical feature is to acknowledge our awareness of processes that may actually impede, and prevent adequate understanding of all relevant dimensions of an activity." (Altheide and Johnson, 2000). I used a field diary to support my reflexive accounting at different stages of the research process.

I gathered all the data for this project. Not being a midwife at the OUs and not having any pre-existing personal relationships with staff created a degree of distance and impartiality. However, as a midwife researching other midwives I was positioned as an 'insider.' I was also a researcher (peripheral observer) positioned as an 'outsider' relative to the clinicians being observed. Burns et al. (2012) state that balancing both these perspectives is a challenge and requires concerted reflexivity to sustain, for example my peripheral observer role during data collection. There were several advantages to my 'insider' status. I was able to develop a positive rapport with professionals who I engaged with to discuss the project and answer questions about it. Several questions by midwives and obstetricians were clarified and also used to refine the project.[21]

Observations are not foreign to midwives in NHS services.[22] Within the context of mentorship, peer reviews and supervision, midwives' practise may be observed to support professional development. To a certain extent this may have mitigated against the observer effect, where participants change their behaviour when they know they are being observed. Patton (2002) notes that over the course of an observation participants are more likely to adopt natural behaviours as time goes on. Monahan and Fischer (2010) argue that despite the

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[21] Midwives and obstetricians questioned the use of the word "unnecessary interventions" as unhelpful because in their view professionals with a duty of care they did not intervene unnecessarily. This was substituted with "routine intervention use". An obstetrician wanted to know if obstetricians were involved in the Checklist's development. I explained that one of the experts used in content validation was an obstetrician. Midwives were concerned that women who used epidural were included. I explained that this was a common form of pain relief and required midwives to remain focused on supporting physiology and as such they were an important group to observe

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[22] Observations have been used in research in birth units in the UK previously. An ethnographic study observed the practices of midwives in 42 labour events (Scamell, 2011). This studied the influences of risk surveillance and management on midwifery practice. Another observed midwives' support practices in labour (Ross-Davie, 2013). This PhD project expands on this work to include observations of practices during labour and relationships between midwives and other professionals and women.

observer effect, profound truths can still be revealed about the phenomena being studied. They also note that "observer effects" are unavoidable in any knowledge production, regardless of the scientific field. McCambridge et al. (2013) emphasise that any act of observation will impact on the field; and little can be securely known about the conditions under which they operate, their mechanisms of effect, or their magnitudes. Taking these views into consideration, before starting my field work, I wrote about my early experiences as a newly trained midwife in a labour ward and the challenges I faced.[23] As I gathered data, I wrote about my views, beliefs and assumptions as an individual and as a midwife, reflecting on how this influenced my data collection. I also wrote about the reactivity of midwives and women to my presence in the room. This reflexive writing was an important part of helping my self-awareness as an 'insider' and 'outsider' (Burns et al., 2012). Discussions with supervisors and a peer review of a selection of anonymised observations, transcribed interviews, and reflexive writing was used to support me in my data collection and analysis.

6.9 Data management, analysis and synthesis

This section begins with a description of the quantitative and qualitative dataset followed by the analysis applied to quantitative and qualitative data. The integrated analysis of quantitative and qualitative findings are then described.

6.9.1 Dataset

The dataset for each labour event observed is comprised of a set of anonymised quantitative data including the observed use of physiological care practices, and qualitative data from observations of labour care and interviews with the postnatal woman, and where relevant, birth partner, and the attending midwife. This was complemented by the overall data from

[23] An example of this writing is presented in chapter 1.

observation of a mandatory training session of midwives in developing skills in a physiological care approach, semi-structured interviews with consultant midwives and consultant obstetricians, and a set of cross-site midwifery intrapartum care guidelines and field notes which was included in the analysis.

6.9.2 A descriptive quantitative analysis

The observed use of physiological care practices in each labour used the adapted PPO tool. The quantitative data gathered was entered into SPSS (a statistical software suite). The aim was to summarise the data in a meaningful way and report on midwives' use of physiological care practices. Descriptive statistics were used to summarise data and describe frequencies, medians and inter-quartile ranges for use of the physiological care practices itemised in the PPO tool. This analysis was conducted for all 12 labours. Subsequently the data was summarised to describe observed use in each physiological care practice across all 12 labours. Data that was gathered were cleaned, collated and any qualitative observations were organised using N-Vivo.

6.9.3 Thematic analysis of qualitative data

Qualitative data (including unstructured observations and interview data) were analysed using a thematic analysis method guided by Braun and Clarke (2006). Braun and Clarke (2006) describe several approaches to thematic analysis. The approach used in this analysis is driven by the research questions where the aim is to identify facilitators and barriers to a physiological care approach and explore how they influenced implementation. However, the analysis also draws on Braun and Clarke (2020) writings on the need for emphasis on continual questioning of assumptions we are making in interpreting and coding the data. The researcher's subjectivity is described as an analytic resource; emphasising reflexive engagement with theory, data, and interpretation. Themes are described as not passively emerging from either data or coding, but as creative and interpretive stories about the data.

In order to be able to engage with the data in this thoughtful and reflexive way, data files were initially organised using the NVivo software, Version 12. N-Vivo facilitated a systematic and structured approach to organising data files and allowed me to engage effectively in the first four stages of thematic analysis outlined in Table 6.6.

Table 6.6: Thematic analysis method

Phase	**Description of the process**
1. Familiarising yourself with the data	Transcribing data, reading and re-reading data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic way across the entire dataset, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering data relevant to each potential theme.
4. Reviewing themes	Checking to ensure that the themes work in relation to level 1 and level 2 analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and overall story the analysis tells. Develop a detailed visual presentation of themes to support interpretation
6. Producing a report	Presentation of key themes supported by quotes from participants' text, outlining where relevant frequencies of evidence of consensus among the participants occurred and whether there was any contradicting or dissenting information provided.

Source: Braun and Clarke (2006)

I gathered all the data and transcribed it myself and so was immersed in the data from the outset. The whole data set was read several times. This was then uploaded onto NVivo software and reread to facilitate further immersion.

Codes were applied to anything in the transcripts that was identified as meaningful, before revisiting each transcript to look carefully below surface level meaning and to identify what

constituted a facilitator or barrier in each labour. Short descriptive writings (Appendix 21) written for each labour observed were used to assist this process.

I also used my research journal to support my reflexive accounting about experiences of data collection, my feelings about what I had observed, and about experiences shared by participants. This method assisted me during analysis to be conscious of my strong personal views about the implementation of a physiological care approach and reminded me to represent the experiences of participants rather than my own.

Recurrent codes were collated, and new codes were identified, and an initial mind map of facilitators and barriers was developed. This was done collaboratively with my supervisors and the consultant midwife who was the clinical lead for the PhD study. Collaborative working and checking was a helpful process to clarify whether the sub-themes fitted together to form a theme or if a separation of ideas was necessary.

Data checking and discussions included:

i. A reading by the consultant midwife supporting my PhD project at the hospital of transcribed notes of observations of 5 labours, 5 interviews with midwives, women and birth partners observed in these labours. She shared her views about what she perceived as facilitators and barriers in the data during a two hour discussion. I made notes during our conversation. I used these discussions to reflect further on sub-themes and descriptive themes
ii. I shared the transcribed notes, and mind maps of sub themes (Appendix 22-26) with my first supervisor, CMc who observed that the map was useful for developing descriptive themes.
iii. A visual presentation of subthemes, categorised as descriptive themes of facilitators and barriers at the levels of the organisation leadership, professional groups

(midwives and obstetricians) and individuals (women), was used to support the analysis (See appendix 27).

6.9.4 Integrating quantitative and qualitative data

6.9.4.1 Approach to integration

The integration of quantitative and qualitative data in this study occurred at an interpretation and reporting level. Fetters et al., 2013 describe several methods of integrating data. This research integrates through narrative and joint display. Integration through narrative can use three approaches, weaving, contiguous and staged. In this research, a contiguous approach is used where both quantitative findings on use of physiological care practices, and a qualitative analysis of themes identified as influencing implementation are first presented separately (chapters 7 and 8). Both sets of findings were integrated in joint displays to form three conceptual models to inform critical discussions on how facilitators and barriers influenced implementation. These are presented in chapter 8, following the thematic analysis (see Chapter 8, section 8.3.1). A joint display is a way of bringing together data through visual means and using it to draw out insights beyond the information gained from the separate quantitative and qualitative results (Fetters et al., 2013).

6.10 Rigour and trustworthiness

Rigour and trustworthiness in this study was guided by writings on quality in mixed methods (O'Cathain, 2010) and others (May and Pope, 2000) and use of reflexive accounting (Finlay, 2002; Altheide and Johnson, 2010). Using the methods described in these writings, the research design is described and justified. The context and roles of both strands (quantitative and qualitative) in the research, including how the sample was determined, how data was gathered, integrated and interpreted, are made transparent (May and Pope, 2000, O'Cathain, 2010).

In the current study, rigour is derived from methodological triangulation (different sources of data from observations and interviews with midwives, obstetricians and women were used). An early peer review of two observations by one of my supervisors helped me stay focused on reducing my influences on care during observations and interviews. The coding of six anonymised observations and transcribed interviews was undertaken collaboratively with my supervisors and the lead clinical midwife for the project.

I used reflexive accounting of my influences on all aspects of the research process to minimise bias and promote rigour. Such biases arose from my previous experiences as a midwife in obstetric settings that I personally felt and still feel is unsuited to supporting a physiological labour and birth. I am also sensitive to women's vulnerability during labour and act intuitively to protect them from routine clinical interventions. I understood this view to be a challenge during observations and interviews. I wrote in a reflexive diary soon after observations and interviews and this reflexive accounting was made along the margins against sections of observations and transcribed interviews. The influences of my subjectivity and strategies I used to address my biases is evident in my writing on data collection, analysis and interpretation

6.10 Conclusions

This chapter describes and justifies key methods used to gather data, sampling strategy and planned sample size and analytical techniques used to fulfil its two aims and objectives. The ethics application process and ethical considerations, recruitment and time frames for data collection are presented. This is followed by a description of the approaches used in data analysis and integration using a five stage process.

Two OUs with differing clinical intervention rates were selected for observation of practices. After site access and ethics approval, the established labour of a purposive sample of women who met the inclusion criteria and who consented to participate were observed during labour.

The practices of a sample of midwives who consented to participate and cared for these women were observed for their use of physiological care practices.

The three approaches to data analysis are described, beginning with a descriptive quantitative analysis of observed use of physiological care practices by midwives across all labours observed. This was followed by a thematic analysis of (i) qualitative observation data of professional interactions during labour care and one training session on developing midwifery skills in a physiological care approach; (ii) at organisational level: transcribed interview data with consultant midwives and obstetricians driving implementation; and (iii) at professional groups levels: midwives' experiences of implementation (iv) at individual level: women and their birth partners' experiences of care and (v) my fieldnotes. The thematic analysis was used to identify and describe influences of facilitators and barriers at all three levels. Subsequently, the quantitative and qualitative findings were integrated in three joint displays to form conceptual models to inform discussions in Chapter 9. The next chapter presents the results of the first stage of data analysis: a descriptive quantitative analysis.

Chapter 7: Observed use in physiological care practices by midwives.

7.1 Introduction

This chapter presents a descriptive analysis of the observed use of physiological care practices by midwives. It is one of the many realities explored in this study, and structured observations used the adapted Physiological Practices Observation (PPO) tool. A structured approach facilitated focused observations on a wide range of care practices that may be used when implementing a physiological care approach, and provided the context for wider exploration of influences on implementation. In particular, the structured approach supported further in-depth inquiry to understand the variable use of care practices; appropriate use to avert inappropriate clinical intervention; empowerment of midwives to use these care practices including opportunities to develop their skills; women and their partners' experiences of care and midwife advocacy at different points in the labour.

The sample size that was observed is small. As such we do not draw any generalisable inferences from these findings, and merely use it in integration with a range of other perspectives to identify and explore how facilitators and barriers influenced implementation (See chapter 8)

The development of the tool is described in Chapter 4.

The analysis presented in this chapter addresses the first aim of the study, with the following objective:

i. To describe patterns of use in 22 supportive care practices and 5 participative care practices

7.2 A summary of the methods

A descriptive quantitative analysis was performed. Data was gathered in 12 labours about midwives' use of physiological care practices using the adapted Physiological Practices Observation tool. Briefly, the tool comprises 22 physiological care practices, of which one

describes the approach of 'watchful attendance' while the other 21 describe the midwife's response to meet woman's physical and emotional needs (e.g., activities to ensure comfort and offering praise and encouragement). A further 5 care practices relate to involving women in decision-making (e.g. considering women's preferences during labour). As described in Chapter 1, these 27 care practices are derived from current best evidence to support the implementation of a physiological care approach, with use of clinical interventions only when problems that arise warrant this (WHO, 2018; NICE, 2017). For ease of reading, the first 22 physiological care practices are referred to as supportive practices (SP) and the 5 practices on involving women in decisions-making are referred to as participative practices (PP).

Each of the 27 care practices in the adapted PPO tool may be used throughout and at different points in the course of a labour. In this research, **a single use** during labour when clinically appropriate was recorded as **'observed'** or **'not observed'**. Not all practices were deemed clinically appropriate to be used. As a result, exclusions were made for any one of six reasons outlined and these were marked as not applicable (see appendix 18 for exclusions made in each labour)

i. The midwife could not use the care practice because the woman's previous or current pregnancy history required the use of clinical interventions
ii. The midwife's assessment of labour demonstrated that clinical interventions were needed
iii. Local guidelines required the midwife to use clinical interventions
iv. Women's personal preferences, for example the woman chooses to use an epidural
v. The clinical situation did not enable me to adequately describe whether a care practice was used
vi. I chose to end the observations because care had moved from being low risk to high risk.

7.2.1 Data analysis process

Data was entered into SPSS and described using frequencies presented as percentages; medians and an interquartile range. The results of the observed use are summarised across the 12 labours and presented graphically for each labour. Although the original intention had been to compare use across the two study sites (Faith and Hope), the small number of labours I was able to observe at Hope, limited the capacity to do this (see appendix 19 for tables of women lost to observation and reasons why).

Following the results across 12 labours, the observed use of individual physiological care practices are presented (see Table 7.2).

7.3 Results

Based on women's consent and availability, a total of 12 labours were observed across both sites. Length of observations ranged from 2 to 13.5 hours and a total of 89 hours of observations were completed (See appendix 20). A description of sample characteristics is presented in Table 7.1. Subsequently, the overall proportion of care practices observed being used by midwives in each of the 12 labours are presented.

7.3.1 Characteristics of the sample of midwives observed

Based on the process outlined in Chapter 6, 16 midwives who consented to participate were observed. In 9 labours one midwife was observed, while in the remaining 3 labours (L5, L9 and L12) two midwives were observed since shift changes meant that 2 midwives provided care.

Table 7.1 Characteristics of 16 midwives who were observed

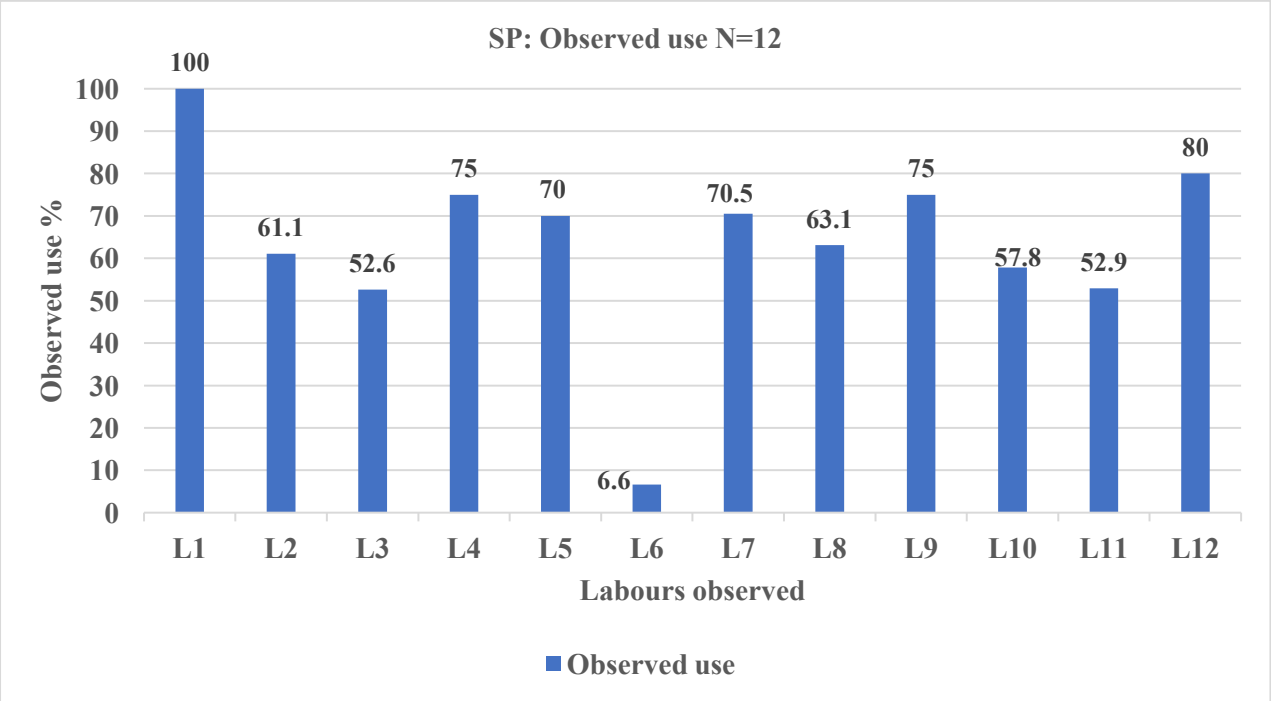
Labour code	Experience	Previous Experience	Current work
L1 (MW1F)	10yrs	OU/BC/ Community	OU/BC/Community
L2 (MW2F)	2 yrs	OU	OU
L3 (MW3F)	2 yrs	OU	OU
L4 (MW4F)	2 yrs	OU	OU
L5 (MW5F) (1)	2 yrs	OU	OU/BC/Community
L5 (MW5F) (2)	8 yrs	OU	OU
L6 (MW6F) (1)	8 yrs	OU	OU
L6 (MW6F) (2)	10yrs	OU	OU
L7 (MW7F)	2 yrs	OU	OU/BC/ Community
L8 (MW8F)	4 yrs	OU	OU
L9 (MW9F) (1)	8 yrs	OU/BC/Community	OU/CoCr
L9 (MW9F) (2)	2 yrs	OU	OU
L10 (MW10H)	1.5 yrs	OU	OU
L11 (MW11H)	1.5 yrs	OU	OU
L12 (MW12H) (1)	10 yrs	OU	OU
L12 (MW12H) (2)	2 yrs	OU/BC/ Community	OU/BC/ Community

Continuity of carer model (CoCr): In a continuity of carer model, care may be provided by the same midwife and/or obstetrician or a small team of midwives throughout the antenatal, intrapartum and postnatal periods

7.3.2 Observed use of 22 supportive practices

Summary findings across all 12 labours and practices observed will be presented first, and then findings will be presented for each specific practice in turn. Using the adapted PPO tool, the median proportion of appropriate supportive practices used across the 12 labours was 66.5%, (IQR=55.3-75%) (Figure 7.1).

Figure 7.1



Of the 14 individual midwives out of the 16 who were observed across the 12 labours (two in L6 and L12 who handed over care and were observed for an estimated 10 minutes were excluded), five midwives in L1, L5, L7, L9 and L12 who worked rotationally across the OU, BC and community were observed to use a higher proportion of supportive care practices (Figure 7.2). The findings were not indicative of a possible positive relationship between years of experience and a higher proportion of observed use (Figure 7.3). However, as numbers observed are small, the findings from these observations would need to be tested in a larger study.

Figure 7.2

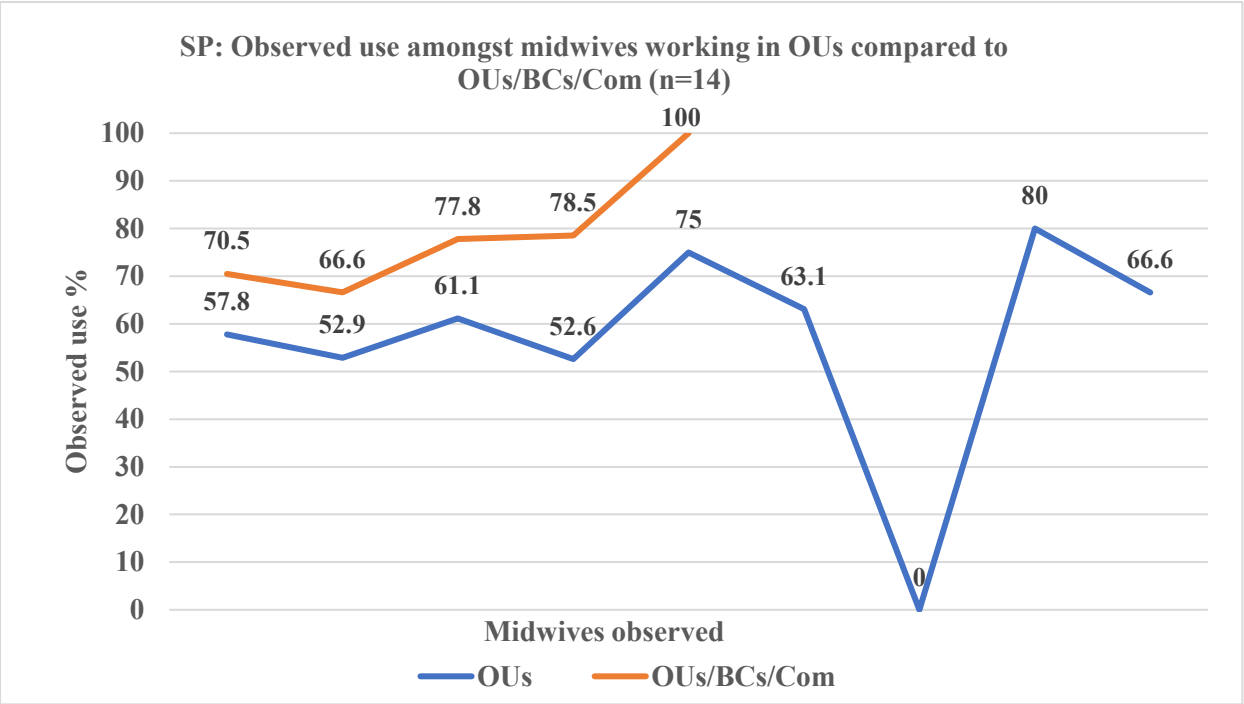
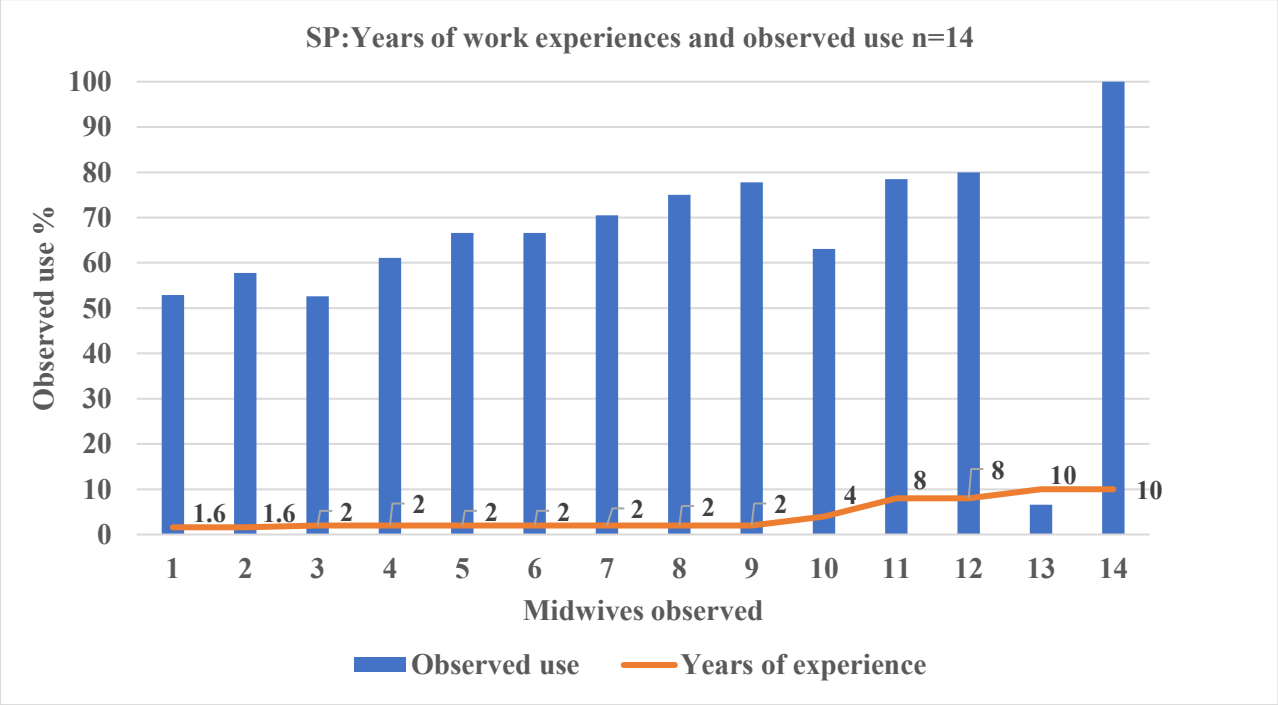


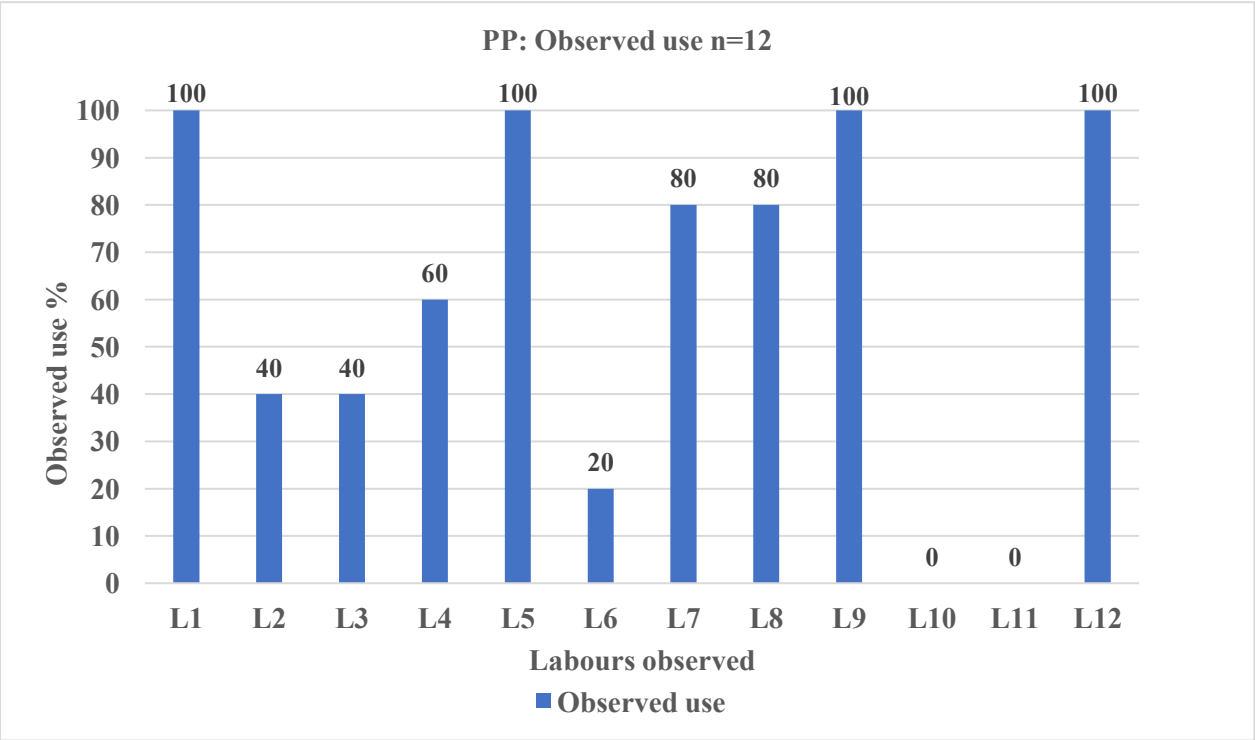
Figure 7.3



7.3.3 Observed use of 5 participative practices

Using the adapted PPO tool, a median proportion of participative practices observed as used by midwives was 70%, (IQR=20-100%) (Figure 7.4). See exclusions made in the observation of participative practices (Appendix 18).

Figure 7.4



Of the 13 midwives out of 16 who were observed (one midwife in L5, L6 and L12 was excluded because of the short period of observation), five midwives in L1, L5, L7, L9 and L12 who worked rotationally across the OU, BC and community used a higher proportion of participative care practices (Figure 7.5). The findings were not indicative of a possible positive relationship between years of experience and a higher proportion of observed use (Figure 7.6). However, as numbers observed are small and these observations would need to be tested in a larger study.

Figure 7.5

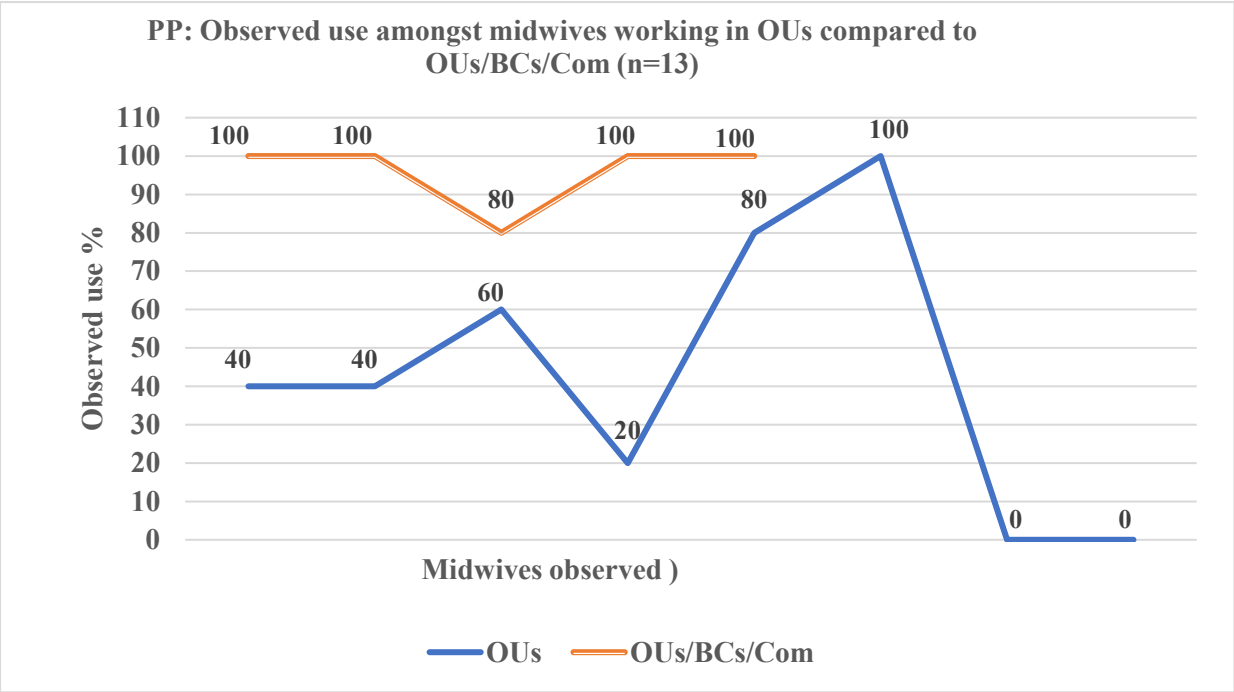
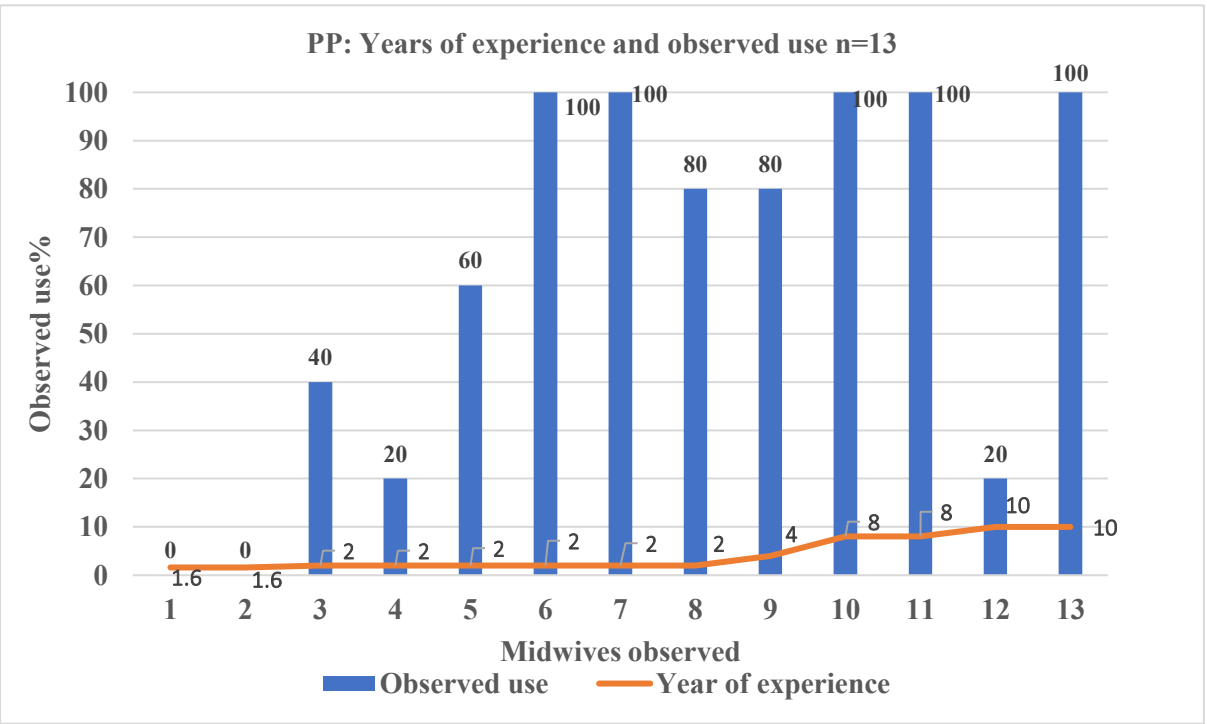


Figure 7.6



7.3.4 Observed use for each physiological care practice

While the preceding section analysed midwives' use of 22 supportive practices, 5 participative practices, across each of the 12 labours and births, this section focuses on observed use for each of the 27 physiological care practices across the 12 labours and births.

The proportion of each physiological care practice observed as used by midwives is outlined in Table 7.2. This is then followed by a description of patterns of use of across 22 supportive and 5 participative care practices.

7.3.4.1 Patterns of observed use in individual care practices

The observed use across 27 individual care practices varied across the 12 labours. The proportion of observed use for individual supportive practices ranged from 8.3-91.6% (IQR=41.7) and for individual participative practice from 22.2 to 83.3% (IQR=38.8).

Several individual supportive practices were not consistently used; for example, only 10% facilitated mobility; 41.6% protected the labour space from unnecessary intrusion; 41.6% offered non-pharmacological pain relief; 54.5% supported spontaneous pushing; 54.5% facilitated post-birth skin to skin contact and the cord was left unclamped to support the baby's breathing and reduce anaemia in only 8.3% of cases.

Table 7.2: Observed use in individual physiological care practices

	Supportive practices	**Observed use %**
1.	Adopts careful watching, attending and responding as labour unfolds.	91.6
2.	Ensures the woman is comfortable in her place of birth	91.6
3	Creates space to promote and support mobilisation, also understanding that some women may prefer to rest and be quiet	10
4.	Protects this space from unnecessary intrusion	41.6
5.	Provides one to one care, leaving the woman on her own only for short periods or if she requests it	83.3
6.	Encourages and supports the woman to use natural methods of pain relief. This can include massage, breathing, positioning and use of water	41.6
7.	Assumes a quiet, comforting presence during the woman's labour	91.6
8.	Conveys belief in the woman's ability to birth normally through positive words and actions	91.6
9.	Uses intermittent auscultation, listening regularly to the baby's heart in a gentle and unobtrusive way	41.6
10.	Keeps the woman and her partner updated about their baby's health	75
11.	Keeps careful records but does not allow this to interfere with her care of the woman	83.3
12.	Uses non-invasive approaches to note onset and progress in active labour	55.5
13.	Keeps internal examinations (vaginal) to a minimum,	28.5
14.	Encourages the woman to eat, drink and void	75
15.	Supports the woman to use upright positions.	66.6
16.	Awaits and supports the woman's body's natural expulsive reflex to birth her baby	54.5
17	Remains close, caring for her needs, praising and encouraging the woman's efforts to birth her baby	83.3
18.	Performs an episiotomy only in the event of foetal distress/for other reasons that have valid clinically indication.	33.2
19.	Offers the woman a physiological care approach to birth her placenta	8.3
20.	Places the baby skin to skin with the woman soon after birth and for as long as she wishes	54.5
21.	Clamps the baby's cord after a minute if the woman chooses an active management to birth her placenta or leaves the cord unclamped for as long as the woman wishes to wait	8.3
22.	Leaves the cord unclamped if the woman chooses a physiological 3rd stage	0

Observed use in individual participative practices (Table 7.2 continued) showed that only 50% of midwives advocated on women's behalf and an informed consent for a change in the plan of care was obtained in only 22.2% of cases.

Table 7.2 continued

	Participative Practices	**Observed use %**
23.	Aims to build a relationship with the woman and birth partner based on mutual trust and respect	83.3
24	Acts as the woman's advocate, ensuring her plans for birth are supported and implemented as far as possible. Guidelines are used flexibly considering the women's perspectives and needs during labour	50
25.	Listens and addresses the woman's concerns and preferences respectfully	66.6
26.	Explores options and explains pros and cons when a change to the woman's plans is needed	63.6
27	Always obtains informed consent to any procedure or change to plans, ensuring that the women's decisions about her body and birth are respected and followed.	22.2

7.4 Discussion

This descriptive quantitative analysis meets the first objective in this research: to observe the use of 27 physiological care practices in a sample of midwives in two obstetric units. The use of supportive and participative care practices was lower overall in several evidence-based practices than would be expected in relation to those captured in the PPO tool and varied between midwives. Their use also varied widely across different specific supportive practices, from a minimum of 8.3% for optimal cord clamping to 91.6% in for example, 'watchful attendance' and for participative practices from 22.2% in 'obtaining and informed consent' to 83.3% aimed to build a 'relationship of trust and respect'.

Overall, midwives' did not always demonstrate the appropriate use of physiological care practices at different points in the labour to avert the routine use of clinical interventions. Several individual care practices with demonstrated benefit for physiological outcomes, for example: facilitation of mobility (Lawrence et al., 2013; Zang et al., 2021);

non-pharmacological pain relief (Lukasse et al., 2014); spontaneous pushing (Thompson, 1993; Roberts, 2002; Elvander et al., 2015; Stones et al., 2017); post-birth skin to skin contact to promote bonding and breastfeeding (Moore et al., 2016); and leaving the cord unclamped to support the baby's breathing and reduce anaemia (Rabe et al., 2012) were either poorly implemented or not implemented.

There is an indication that midwives who work rotationally across the OU, BC and community may have higher rates of use, while conversely a higher number of years of work experience does not appear to result in increased use. Generalisable inferences cannot be drawn from the small sample observed, and these findings can only be regarded as hypothesis forming. Further and larger-scale research would be needed to explore these issues further. These tentative findings are however, supported by attitude and self-efficacy surveys and qualitative analyses of the influences on midwives of working in MUs and other midwife led models of care on practice in OUs (Vedam et al., 2014, 2018; Carolan-Olah et al., 2015; Page and Mander, 2014; Thompson et al., 2016; Zinsser et al., 2016; Healy et al., 2017; McInnes et al., 2020).

A survey of attitudes and practice (Vedam et al., 2009) and a cross sectional study (Zinsser, 2009) exploring attitudes to physiological labour and birth, demonstrated findings similar to this research, where years of work experiences were not significantly associated with using physiological care practices. The authors postulate that this could be because more recently qualified midwives are educated differently about physiological birth, and are maybe more motivated than more experienced midwives who may be demotivated through policies and restrictions placed upon their autonomy. Compared to years of work experiences, these studies also found that work in midwifery units and women's homes were associated significantly with the higher self-efficacy in and attitude scores to a physiological care approach.

In several qualitative studies, midwives described working in midwife-led units and continuity of carer models as enhancing their ability to implement a physiological care approach and promote its implementation amongst other midwives and obstetricians in the OU. Midwives and obstetricians in OUs also described learning about and using physiological care practices, for example, upright positions (Lane, 2006; Carolan-Olah et al., 2015; Page and Mander, 2014; Thompson et al., 2016; Healy et al., 2017).

7.5 Conclusions

This descriptive quantitative analysis shows that the median proportion of observed use in 22 supportive and 5 participative practices varied across 12 labours. Midwives opting for rotational working across birth settings were observed to use a wider range of supportive and participative practices. However, the sample observed was small and generalisable inferences cannot be drawn.

An important reason for a high level of observed use of a philosophy of 'watchful attendance' but midwives not using associated physiological care practices, were the barriers they faced in the two obstetric units which will be discussed in the next chapter. Unstructured observations in two obstetric units, indicated that practices were predominantly informed by an interventionist approach and enforced through a high level of surveillance and involvement of other healthcare professionals (OU coordinators and obstetricians). This is discussed in Chapter 8 where a thematic analysis is used to identify and explore the influences of facilitators and barriers at the levels of the organisation leadership, professional groups (midwives and obstetricians) and individual (women) on the implementation of a physiological care approach.

Chapter 8: Influences on the implementation of a physiological care approach during labour and birth

Introduction

This chapter presents the findings in relation to the influences on the implementation of a physiological care approach during labour and birth, in two obstetric units (Faith and Hope). The objective of the analysis was:

i. To identify and describe facilitators and barriers at the levels of the organisation leadership, professional groups (midwives and obstetricians) and individuals (women) on the implementation of physiological care approach

To meet this objective, a thematic analysis guided by Braun and Clarke (2006) was performed.

8.1 Summary of methods

Details of data collection, management and analysis are presented in Chapter 6, section 6.9. Briefly the thematic analysis drew on data derived from each of the levels where influences facilitators and barriers were explored. This included:

i. Organisational leadership level: semi-structured interviews with two consultant midwives and two consultant obstetricians about their experiences in driving the implementation of a physiological care approach
ii. Professional groups (midwives and obstetricians): (i) unstructured observations of decision-making between obstetricians and midwives (including senior midwives) about care in 12 labours, and (ii) semi-structured interviews with 10 midwives whose labour care was observed about their experiences of implementing a physiological care approach
iii. Individual level (women): interviews with 11 women and 8 partners whose labour care was observed about their experiences of receiving care.

iv. Observation of one midwifery training session on developing skills in a physiological care approach; familiarisation with a cross-site intrapartum maternity care guideline; fieldnotes consisting of conversations with professionals and women when observing care; reflections on my personal feelings and responses to the care that I observed, and any other experiences shared by professionals and women.

A thematic analysis was performed, see chapter 6 section for details of thematic analysis undertaken. Throughout the analytical process, reflexivity was employed where my positionality as a researcher with strong personal views about the implementation of a physiological care approach was carefully considered. This drew on my reflexive accounting in a field diary when gaining access, recruiting, conducting observations and conducting interviews.

8.2 Characteristics of sample

Organisational level: Two consultant midwives (n=2) were interviewed for a duration of 2 hours each and two consultant obstetricians (n=2) were interviewed for a duration of one hour each.

Table 8.1: Characteristics of consultant midwives (CMW) and obstetricians (COB)

Code	Site	Experience	Work experience	Current role
CMW1	Hope/Faith	12 yrs	Obstetric Unit/Community/CoCr model	Consultant Midwife
CMW2	Hope/Faith	20 yrs	Obstetric Unit/Community/CoCr model	Consultant Midwife
COB1	Faith	14 yrs	Obstetrics/Healthcare Safety	Lead clinician/manager for Faith
COB2	Hope	12 yrs	Obstetrics/Gynaecology	Lead clinician/manager for Hope

Key: CoCr = Continuity of carer

Professional Group level: Sixteen midwives (n=16) were observed in 12 labours. Ten (n=10) of these midwives consented to be interviewed and were interviewed for a duration of an hour each.

Table 8.2: Characteristics of 10 midwives who were interviewed

Labour Code	Site	Education	Experience	Previous experience	Current work
L1 (MW1F)	Faith	Degree	10 yrs	OU/BC/ Community	OU/BC/Community
L2 (MW2F)	Faith	Degree	2 yrs	OU	OU
L3 (MW3F)	Faith	Degree	2 yrs	OU	OU
L4 (MW4F)	Faith	Degree	2 yrs	OU	OU
L5 (MW5F)	Faith	Degree	2 yrs	OU	OU/BC/Community
L7 (MW7F)	Faith	Degree	2 yrs	OU	OU/BC/Community
L8 (MW8F)	Faith	Degree	4 yrs	OU	OU/BC
L9 (MW9F)	Faith	Degree	2 yrs	OU	OU/CoCr
L10 (MW10H)	Hope	Degree	1.5 yrs	OU	OU
L12 (MW12H)	Hope	Degree	2 yrs	OU/BC/ Community	OU/BC/Community

Individual level (women):

18 women (n=18) at Faith and 22 women (n=22) at Hope consented to participate. Of the 12 who were observed, (n=9) women were observed at Faith and three (n=3) at Hope. Eleven (n=11) of these women and nine (n=) partners consented to an interview and were interviewed together for a duration of one hour. Two birth partners were unable to be present for interviews because of work commitments.

Table 8.3 Characteristics of the 11 women and 9 birth partners interviewed

Women	Partners	Site	Age	Education	Occupation	Pregnancy
W1F/1st baby	PT1F/husband	Faith	28	Tertiary	IT Professional	Low risk/epidural
W2F/1st baby	PT2F/husband	Faith	37	Secondary	Administrator	Low risk/baby had a minor cardiac anomaly, problems not anticipated during labour and after birth.
W3F/2nd baby	PT3F/husband	Faith	28	Secondary	Checkout clerk	Low risk /vaginal birth after Caesarean-section
W4F/1st baby	PT4F/husband	Faith	29	Tertiary	IT Professional	Low risk pregnancy
W5F/2nd baby		Faith	32	Secondary	Homemaker	Low risk pregnancy/epidural
W6F/2nd baby		Faith	30	Secondary	Homemaker	Low risk pregnancy
W7F/1st baby	PT7F/husband	Faith	28	Tertiary	IT Professional	Low risk pregnancy/low risk induction
W8F/1st baby	PT8F/husband	Faith	35	Secondary	Administrator	Low risk pregnancy/low risk induction
W9F/1st baby	PT9F/husband	Faith	34	Tertiary	IT Professional	Low risk pregnancy
W10H/1st baby	PT10H/husband	Hope	36	Tertiary	Analyst	Low risk pregnancy
W11H/2nd baby	PT11H/husband	Hope	28	Secondary	Homemaker	Low risk pregnancy/previous history of PPH

8.3 Findings

The discussion of my findings and interpretation supported by original quotes, identify and describe facilitators and barriers and their influences at the level of the organisation leadership, professional groups and women. Juxtapositions of themes identified as facilitators and barriers at these three levels are used to discuss their influences at each level and across the three levels where they occurred.

8.3.1 Organisational leadership level

8.3.1.1 Clinical leadership

At an organisational leadership level, clinical leadership by two consultant midwives was identified as having an important role in implementing a physiological care approach across the maternity service at both hospitals. Both consultant midwives' worked closely and collaborated with two consultant obstetricians who were supportive of their work.

Consultant midwife 2 said that their main aim was to:

> "keep women on a physiological pathway and for this approach to underpin care amongst all women, where even in complexity, physiology can be supported as much as possible." (CMW2)

The consultant midwives used the maternity dashboard [24] as a tool to alert them to increases in clinical intervention rates and complications.

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[24] The Maternity Dashboard is a tool that can be employed to monitor the implementation of principles of clinical performance and governance 'on the ground'. It can be used to benchmark activity and monitor performance against the standards agreed locally for the maternity unit on a monthly basis (RCOG, 2008).

In her interview, consultant obstetrician 1 described birth "as a physiological process" and said that senior obstetricians must do more "to role model this approach to influence and change the practices of midwives and obstetricians." (COB1)

Referring to midwives' practice at Faith, she explained:

> "They put the woman on her side for 5 minutes and she is on her back again. There are many senior midwives here who have been practising in this way for many years and the practices of many of these midwives and obstetricians are habitual and not evidence based." (COB1)

Consultant obstetrician 2 described OU coordinators and other senior midwives as having responsibility for educating midwives and obstetricians about a physiological care approach. The consultant midwives were currently focused on implementing the continuity of carer model (CoCr), and personalise care i.e., women have choice and control over the way their care is planned and receive care based on 'what matters' to them and their individual needs and preferences (DoH 2016; NHS England, 2016). Consultant obstetrician 2 expressed confidence that the CoCr model will be resourced, once NHS funding to pilot the model ends, because of policy backing of the Better Births Report[25] (DoH 2016) and its identification as a priority in the Trust report.

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[25] The Better Births Report (produced after a review of the maternity services in 2015) states that continuity of carer ensures safe care based on a relationship of mutual trust and respect in line with the woman's decisions. Continuity of carer provides for consistency of the midwife and/or obstetrician who cares for a woman throughout the antenatal, intrapartum and postnatal periods.

The consultant midwives described several projects to achieve the goal of improving implementation of a physiological care approach: upscaling the continuity of carer model; creating opportunities for midwives to work across different birth settings, for example, OUs, birth centres, community; training to develop midwifery skills in supporting physiological labour and birth; and developing cross-site clinical guidelines to progress implementation in practice. The midwifery consultants were also responsible for seeking resources to implement these projects.

8.3.1.2 Competing for resources

The consultant midwives described challenges encountered in resourcing projects, for example, upscaling the CoCr model and other related activities, e.g., in depth training of midwives and obstetricians, as posing barriers to progressing implementation. During interviews they described challenges in negotiations with other clinical managers about priority setting and obtaining funds. Consultant midwife 1 said: "the organisation's aim for a safe high quality service can be achieved by implementing a physiological care approach and using clinical interventions appropriately." However, to resource the models of care to achieve this, the consultant midwives stated that they still needed to make a "good business case."

Consultant midwife 1 expressed that,

> "making a case for funds with an overarching body of people from obstetrics, anaesthetics and neonatal is challenging … everyone's got their own agenda and we are in competition with each other." (CMW1)

She was of the view that:

> "Organisational priorities were orientated towards allocating resources to obstetric specialisms and research aimed at reducing stillbirths, pre-term births and admission to neonatal units. They do not recognise a social model of midwifery could also achieve these outcomes." (CMW1)

During their interviews, both consultant midwives repeatedly used the phrase "winning hearts and minds," to pursue their goal of evidence-based care which they both described as "keeping all women where appropriate on a physiological pathway."

However, consultant midwife 1 noted that priorities were often set by, and frequently allocated to, those who "had the biggest standing and biggest reputation and who were going to bring in the money", going on to say:

> "Our obstetric colleagues support the private service; we need this service to a certain extent to bring in the money that supports other services we provide." (CMW1)

The difficulty in achieving consensus was described as frustrating, not least for the business teams who depended on senior clinical managers to outline priorities for service development. Consultant midwife 1 said that "it was not a bad fight," but to stay committed she described having to remind herself that their work to develop a service that prioritised a physiological care approach was important.

CMW1 said:

> "I need to move away from feeling like an imposter in my role. You have a right to be here and what you are doing makes a difference. I must stand there with conviction to have the difficult conversations." (CMW1)

However, consultant midwife 1 also asserted: "negotiations are hard, and I am still developing the courage to do it without becoming emotional." Although the consultant midwives worked collaboratively with consultant obstetricians who managed the OUs, others, for example the current Head of Midwifery was described as taking a "hands-off approach", unlike a previous Head of Midwifery who was experienced as proactive in supporting consultant midwives. Obstetricians who consultant midwives worked with at an organisational leadership level were also described as unsupportive.

CMW2 said:

> "If they [referring to obstetricians who were clinical managers] had a voodoo doll and could throw it at the both of us, they would have. I was in tears several times, but we have got to be brave, or we are going to lose midwifery forever." (CMW2)

As a result of being early adopter sites, only peripheral funding from the NHS (NHS England, 2015) for the maternity transformation programme is available to the CMWs. This was used to send midwives for study days or to the birth centre to develop their skills in using a physiological care approach (CMW1). There was organisational support for the implementation of CoCr model but uncertainty about funding remained at the time of the interview with both CMWs.

> "The Trust is very happy for us to do it, but they are not about to give me any more staff. So, for the moment we must achieve it with our current workforce. That is challenging and not doable." (CMW1)

Without additional funding, consultant midwife 1 felt that their ambitions to upscale continuity of carer models and other midwife-led services at the Trust would be unsuccessful. Negotiations to obtain funding were not observed directly but derived from interviews with CMWs. However, it was evident in activities that consultant midwives described to "find a pot of money."

> " We are using funding from the hospital charity funding for refurbishment work on Faith where women complained about OU birthing rooms which are small and filled with medical equipment compared to the larger home-like rooms on the birth centres that they felt were more comfortable for birthing. We also use charity funding to invest in equipment on both sites, e.g., birth balls, peanut balls, and birth stools and telemetry machines to facilitate mobility for women on continuous cardiotocographic monitoring (CTG)" (Field notes, conversation with CMW1).

Further strain was experienced when funding for 2 hour mandatory training for midwives in physiological labour and birth was removed. Although it was eventually reinstated after negotiations, the consultant midwives expressed concerns about continued yearly funding for this training.

8.3.1.3 Continuity of carer models and rotational working across birth settings

Despite challenges faced in resourcing, both consultant midwives in separate interviews stated that they were committed to implementing the continuity of carer model. The implementation of continuity of carer models is a recommendation of the Better Births Report. Its implementation was described as a priority by both consultant midwives and identified as such in the Trust report for 2017.

CMW2 said:

> "Our focus is the continuity of carer teams, if we get them right, these midwives will be autonomous, accountable and have a sense of responsibility for these women. They will come in and know her background, her family and her children and how important her upright birth is to her. So many of issues for me, the root of sorting it goes back to continuity."

Four main views were shared by the consultant midwives about how continuity can address the problem of increasing clinical intervention use, and the poor implementation of a physiological care approach. The first related to how the model creates a sense of responsibility for the impact of care:

> "Building continuity models will create a sense of responsibility for the direct impact on care, as the woman's midwife. You want to be skilled in a physiological care approach because it matters. It is easy to shirk that responsibility if you know the woman is going to see somebody else next time." (CWM1)

Secondly, both consultants spoke about how continuity can develop midwifery skills and confidence:

> "When I speak to these midwives, they know the evidence. They find their voices for the women"(referring to the midwife's close relationships with women in CoCr models). "Supporting women across the pathway [antenatal, labour and postnatal care] helps them see the bigger picture and they are more aware of their developmental needs and seek support to develop their skills. Their confidence develops more quickly" (CMW2)

Thirdly, referring to the OU at Hope, consultant midwife 2 noted that a large number of women who used this unit were "from a higher socio-economic group, boardroom types who wanted control over all aspects of their lives and keen to, e.g., opt for elective Caesarean-sections." However, she also argued that:

> "By building closer relationships through continuity of carer, the midwives are able to encourage these women to move away from using unnecessary clinical interventions." (CMW2)

Fourthly, CMW2 described a reduced routine involvement of OU professionals in the care of women cared for by CoCr midwives.

> "These women were not seen as part of OU rather as women who are part of CoCr midwives caseload and were only attended to when these midwives sought assistance. They leave them alone." (CMW2)

The value of upscaling continuity of carer models across both sites was justified by consultant midwife 2, by sharing the outcomes of the continuity teams that were currently being piloted at both hospitals:

> "The continuity teams have an 80% normal birth rate, 8-10% are home births (outcomes of CoCr at Faith). On Hope, they have an epidural rate of 80% but they are seeing clinical interventions fall in these women." (CMW2)

While the continuity of carer model was in the implementation phase, midwives were also encouraged to develop their skills in using a physiological approach by working in other birth settings apart from the OUs, e,g., in community teams (where a small team of midwives provided antenatal, labour including homebirths for women who opted for this choice and postnatal care), and two along-side birth centres.

Unlike other studies (Taylor et al., 2019; McInnes et al., 2020) where midwives have described concerns that rotational working or CoCr models may interfere with developing specialised skills, several midwives (MW1F, MW5F, MW7F, MW12H) in this research who opted for rotational working across the OU, community and birth centres described how it reduced their institutionalisation:

> "I now work everywhere. I may not be an expert in one area, but I can understand the woman's journey a bit more. This has helped me to see the bigger picture rather than become institutionalised on the labour ward" (MW7F).

Another referring to presence of birth centres said:

> "I think most midwives in this unit [Faith] do promote normality because they have a birth centre, and they know about normality. They have a good BC and strong senior midwives who promote normality so we can always incorporate a bit of normality even in high risk cases" (MW1F).

All ten midwives interviewed in this study who had previously worked in BCs and the community during their induction as new recruits, felt that it contributed to improving their skills in a physiological care approach. However, despite the facilitating influences of the CoCr model and rotational working outlined by CMWs and experienced by some midwives and

supporting evidence in the wider literature (Hatem *et al*., 2008; Tracy et al., 2013; Sandall et al., 2013, 2016; Darling et al., 2021; Turienzo et al., 2021). The next two themes describe a barrier at the level of midwives to implementing the CoCr model and rotational working and a potential barrier in expressed views by obstetricians that only one birth setting was needed for the care for all women .

8.3.1.4 Midwife's preference for wor ing in one birth setting

Despite the CMWs belief about the benefits of working in CoCr models and rotational working, resistance to this amongst many midwives presented what both CMWs described as a significant challenge:

> "Not all midwives are not willing to make the change, it appears many midwives don't want it [referring to preferences for working in one setting either in the BC, OU or community; concerns about time commitment and not wanting to be on-call]: and it is again about winning hearts and minds." (CMW1)

At the time of the study the CoCr model in particular was being staffed by a lead senior midwife and mostly newly qualified midwives who CMWs described as more interested in providing continuity of carer. Rotational working appeared to be embraced by some midwives who described it as wanting to see the "bigger picture rather than become institutionalised and medicalised on the OU."

8.3.1.5 Differing views about midwife-led care

The consultant midwives saw reconfiguration as an opportunity to build a highly skilled autonomous midwifery workforce to empower and support women to experience a physiological labour and birth. Where appropriate, care would be provided in BCs, and the community, referring to a link obstetrician for birth centres when there was a problem. When caring for women at high risk of complications, midwives would work closely with the obstetricians in OUs, and where appropriate, support these women to experience a physiological labour and

birth. Both obstetric consultants interviewed agreed that women benefited from continuity of carer. However, their views about the benefits of a reconfigured maternity service focused on delivering primarily midwife-led care differed from those of the consultant midwives. This poses a barrier in a culture of care where most obstetricians were described as interventionist or were observed to implement an interventionist approach.

Consultant obstetrician 1 said:

> "There are good reasons why all women have a named consultant with intrapartum expertise. I want to be kept informed about the care of all women (be it low risk or high risk). I do not want to be excluded" (COB1)

When questioned about the routine involvement of obstetricians who subscribed to an interventionist approach in the care of all women, COB1 said, "Yes, this can be a problem – unfortunately, this is a dilemma for which there are no easy solutions." At the same time, she recalled her own experiences of difficulties in questioning practices amongst her obstetric colleagues:

> "Sometimes I can get people's back up. I have been known to correct people and it has not always gone down well." (COB1)

She was reluctant to comment further on the attitudes of her obstetric colleagues at the hospitals, but when asked about the private obstetric services at Hope, she said:

> "I would not work in private practice. Clinical interventions are increased in private care. It conflicts with work to promote a physiological care approach. I am not sure how my colleagues cope with it." (COB1)

Consultant obstetrician 2 was also highly supportive of a CoCr model and said that many women sought her private service because they wanted to experience continuity and not a Caesarean-section. However, she also stated that the CoCr model was about supporting women's choice, "if she wants entonox, fine here is your entonox, if she wants an epidural,

fine you can have an epidural. Women must not be pressured to achieve a physiological birth." She also felt that it was highly stressful for women to make choices to use alternative birth settings to experience a low intervention birth:

> "We need to move away from 'the obstetricians do high risk and the midwives do physiological birth.' We do need to get rid of midwifery units and change the way we think about birth – we should be able to have one unit where women can come in without this divide" (COB2)

This obstetrician also said that a centralised surveillance system was needed so that obstetric support could be provided to oversee midwifery practices to ensure safe care (See 8.3.2.5 for further discussion on the barriers posed by a centralised risk surveillance system).

Based on their experiences of resistance to a physiological care approach on the obstetric units, CMW2 stated that BCs and care in the community were needed to remove women from the obstetric gaze:

> "Take the women away from them (obstetricians) as much as possible. If obstetricians do not cast their eyes over them, they are less likely to end up with clinical interventions." (CMW2)

CMW1 also expressed the view that the CoCr model was not just about supporting women's choices, but offered opportunities to have, "good conversations, encourage and empower woman to want to experience a physiological labour and birth in OUs." The consultant midwives also adopted local policies like BCs as a default choice to increase the use of BCs by women. This policy is supported by evidence from a review of randomised control trials (Scarf et al., 2018) and a large observational Birthplace in England study (2011) that showed clinical intervention use is significantly lower in BCs compared to OUs. The implementation of this policy was given as a reason by consultant midwife 2 as a reason for the slight fall in

clinical intervention rates and positive neonatal outcomes at Hope, even though rates remained still slightly higher than Faith.

8.3.1.6 Changing organisational culture

8.3.1.6.1 Senior midwifery leadership in practice

The CMWs expected senior midwives (SMWs) who acted as labour ward coordinators to provide clinical leadership and support in practice. Consultant midwives spent only two days a week in clinical practice. Both stated that they intended to make more time in the future for clinical work on the OUs. However, they also felt this was likely to be impeded by the large number of projects they managed, and complexities associated with implementation in a merged Trust (see 8.3.1.6.2 for a description of interaction to develop clinical guidelines)

Referring to OU coordinators and senior midwife leadership, consultant midwife 1 described it as varied and dependent on who was on a shift:

> "Depending on the leadership in those areas, midwives who want to make change, support different behaviours or practices can either feel empowered to do that or disempowered. The leadership can change on a day to day basis and depending on who your OU coordinator was, the culture can be different on that day and you either feel empowered or disabled" (CMW1)

OU coordinators and other senior midwives on Faith were described by consultant obstetrician 1 and consultant midwife 2 as 'old school'. CMW2 said:

> "their practices are from the 1980s and they are resistant to change. These senior midwives [at Faith] genuinely believe what they do, for example, lithotomy positions and perineal sweeping actually work, but their practices are not evidence-based." (CMW2)

Midwives interviewed expressed similar views:

> "There are some who are much more in favour of trying to promote normality, having discussions, or challenging obstetrician's decisions." (MW2F)
>
> "It depends. Some of the coordinators and doctors are keen to support normal birth, others are not, and it depends on who is on that day." (MW12H)

Most midwives explained that they did not receive the support they needed from OU coordinators on both units:

> "You are newly qualified, and you are asking for advice and even then they do not nurture you to make your own decisions – they make the decisions for you and that is the decision that is made regardless." (MW4F)
>
> "I wouldn't imagine any of them, if they were looking after a woman, using a birth stool or upright positions. That will help you to imagine how it's hard for us as new midwives to say, "let's use different practices." (MW5F)

I observed one OU coordinator's conversation with MW2F who was concerned about a bloody discharge, of a woman who was approaching second stage, and was considering an artificial rupture of membranes to check if the amniotic fluid was clear:

> OU coordinator: "I don't think there is a problem, it is probably a heavy show (a frequently observed bloody mucous discharge at imminent labour or birth) but if you want to break her waters, go ahead."
>
> MW2F in her interview said: "I thought it was ambiguous or said in not such a supportive way – do it if you want to. She was not listening to my concerns."

Both consultant midwives felt that years of centralised care in OUs and managing large workloads had negatively influenced support for midwives and women from SMWs who also acted as OU coordinators (see 8.3.2.7 on institutional time). CMW1 said:

> "The speed at which women need to be moved through the service conflicts with their role to support midwives, affects what is recommended because you are pressured to get women through the pathway, use language to persuade her to make a certain decision rather than allow more time" (CMW1)

Clinical support was also lacking because of shortages of senior midwives. Midwives were observed leaving rooms to look for senior midwives when call bells were used and no one came. Both CMWs spoke about the difficulties with retaining midwives: "We spend a lot of our energy training good midwives, but they leave." (CMW1). Consultant midwife 2 said, "we are hopeful that opportunities for different ways of working will encourage retention." One senior midwife who was acted as coordinator described an important cause of anxiety on some shifts. She said:

> "we are often managing a busy unit with mostly newly qualified midwives. On most days we are running around like headless chickens, keeping our fingers crossed hoping that nothing goes wrong" (Field notes conversation with SMW).

While consultant midwives said that their time in clinical practice was limited by their work at organisational level, most midwives' perceptions were that the consultant midwives' work was focused on running birth choices clinics, providing bespoke packages for women, and supporting MWs on the BCs and community. These midwives and consultant obstetrician 1 described how the presence of consultant midwives on the units was important to changing practices:

> "We need them on the units. I bet if they were on the unit every day, things will change. Instead they are at meetings about managing budgets and workloads" (COB1)

The consultant midwives felt that midwives on the OUs could seek support from Professional Midwifery Advocates or Practice Development Midwives for clinical and reflective activity. However, midwives noted that they were unlikely to access these specialist midwives as they

were not located on the OUs or were engaged in other tasks (for example, training) and were not immediately available for clinical support. Several midwives also expressed how greater exposure to BCs was needed to develop their skills in a physiological care approach because of the lack of clinical support in OUs.

8.3.1.6.2 Managing attitudes and changing behaviours

In describing efforts to influence the cultural norms dominated by an interventionist approach, CMWs highlighted guidelines as an important tool to inform practice. Consultant midwife 1 described the complexities of developing and implementing a cross-site guideline in a merged Trust:

> "We do not have time to come together to debate new evidence, explore what that evidence really tells us and agree as a team [both sides have different pathways] whether we are going to recommend new evidence or follow our own guidance." (CMW1)

These complexities led to a cross-site intrapartum care guideline ratified for use four years after the merger, but only for midwives. When I questioned why the guideline only informed midwifery practices, there were murmurs about difficulties in reaching consensus with obstetricians about evidence to guide practice. Further probing was ignored (Field notes).

Referring to her experience of interactions with professionals to implement a physiological care approach, CMW1 explained:

> "We can create guidelines but if you do not have a midwife or obstetrician who is going to empower women to want those things, change does not happen. And the culture around that behaviour is really difficult to change. Often recommendations are based on personal views, experiences, clinical judgement, and understanding why each of these people may recommend something different is a minefield." (CMW1)

Consultant obstetrician 1 said that "I do not think our practices are evidence-based even though we may have good evidence-based guidelines." The attitudes of obstetricians in

particular was described by both consultant midwives as difficult to address. CMW1 described having 'corridor conversations' with obstetricians that were generally ignored. Concerns about obstetricians' behaviours and poor practices were escalated to senior COBs in charge of different groups of obstetricians who rotated to work on the OUs but the CMWs said:

> "It is difficult to know what happens, to trust that appropriate action has been taken by COBs to address poor practice and if change in practice is monitored." (CMW1)

Consultant midwife 2 felt that the difficulties with obstetricians were best resolved by "taking women eligible for midwife-led care away from obstetricians through autonomous working by midwives." However, consultant midwives were also concerned by the attitudes of midwives. These were not just senior midwives described as 'old school' and resistant to change, but a new generation of younger midwives; the young midwife who CMW1 described as:

> "Not invested in the labour, doesn't get women up on their hands and knees, doesn't suggest things to her, doesn't look at her birth choices or ask the doctors to give woman more time or stop what doctors [using practices that do not support physiology] are doing" (CMW1)

This was observed in all labours except for L1, L4, L8 and L12. Despite concerns, CMW1 noted that such attitudes were frequently not addressed:

> "It seems we are much better when there is a clinical incident than we are with attitudes. We allow people to behave badly for long periods and it gets difficult to challenge it." (CMW1)

To address this, consultant midwife 2 explained that they needed to focus their energies on midwives who wanted to embrace a physiological care approach and:

> "Make this group the majority on the OUs so there is a presence of midwives aligned to supporting a physiological labour and birth [professional champions] to empower other midwives to address conflicts to implementing this care." (CMW2)

This is an important strategy given that midwives expressed how they found it difficult to receive clinical support to implementing a physiological care approach on the OUs. However, while I was on these units, it was unclear to me who these champions were. When I asked Consultant midwife 1 who they were and how they could be identified she said:

> "In an informal way, we know who they are. Not just midwives, I am also talking about consultants and registrars. They are part of the team." (CMW1)

I met several who acted as champions, but they informed me that while they did an occasional shift on the OU, most of their time was spent supporting midwives to work in out-of hospital settings either in continuity of carer teams, BCs or the community (Field notes).

The lack of clinical support from senior midwives, the limited time spent by consultant midwives on the units and the poor organisation of the presence of champions, posed significant barriers to midwives' using physiological care practices in both OUs. The difficulties experienced by midwives were also compounded by a failure to resource sessions to facilitate in-depth learning and find time for inter-professional learning in clinical practice (see 8.3.2.8).

8.3.1.7 Lack of resourcing to support in-depth training

Both consultant midwives said that the current 2 hour mandatory training sessions for midwives did not allow for adequate time for in-depth discussion related to all aspects of appropriate and inappropriate use of clinical interventions. I observed one session led by consultant midwife 2. This began with a video on physiological labour and birth. This was followed by a very brief discussion about the influences of differing perceptions of birth on practices, before exploring women's concerns about empowering and disempowering language. The use of the BCs as a default choice for all women at low risk of complications was emphasised,

drawing on and discussing NICE guideline recommendations. Subsequently, consultant midwife 2 explored the importance of carefully considering the use for clinical interventions using one case scenario. Subsequently, a 'lithotomy challenge' was conducted so midwives could experience how women felt when they adopted this position; encourage midwives to use it only when an instrumental birth was needed, and challenge its routine use by other professionals. However, I also observed that there was no time, for example, to address and discuss concerns raised by midwives about a lack of conviction in their ability to challenge inappropriate clinical intervention use on the OU. Consultant midwives said that they were still not successful in obtaining funding for whole day sessions. Midwives did describe the two hour mandatory training sessions as useful, however, even the continuance of these sessions remains uncertain (See 8.3.1.7).

8.3.2 Professional group level

8.3.2.1 A lack of understanding about the appropriate use of a physiological care practices

8.3.2.1.1 upport in labour is partner's responsibility

Several midwives said that it was the husband/partner's responsibility to meet women's physical and emotional needs. The most common form of support that I observed midwives using was verbal: "you are doing so well", "keep going, keep going, you can do it" or "it will be over soon." Eye contact and use of touch was limited.

All the midwives except for MW1F and MW12H spent considerable time doing administrative work, e.g., admitting women, documenting care, leaving the room to keep SMWs updated about progress, and preparing for imminent birth. MW5F said:

> "I want to spend time with the woman, but I also need to admit her so that labour ward coordinators know the lady's history, what's happening and who the midwife is and the like"

Some MWs felt that the computer freed up time for care and enhanced accuracy (MW1F, MW3F), while others felt that it, "takes away from care because data needs to be entered in real-time" (MW5F, MW10H).

Women commented on the lack of physical or emotional support from midwives:

> "They forget how reassuring it can be, especially for someone who is doing it for the first time, to have someone there, instead [you have] someone who is focused on admin work, leaving you on your own" (W10H)
>
> "In terms of supporting the woman's needs in labour, this was not there. If I had not received support [from my husband] I would have gone for the epidural or something" (W8F)

The midwife's attitude to, for example, women choosing the epidural was: "Well! If labour slows [as a result], we know what to do [referring to the use of oxytocin to augment labour], so I am not worried." Observations showed that while time spent on support was minimal, a considerable amount of time was spent getting a good CTG trace where it was used. To do this, midwives asked women to change their positions in the midst of contractions, and women who were mobilising were told to get back into bed. Midwives were also observed to frequently adjust or readjust the external tocometer holding it down while they watched the monitor. These actions by midwives were mainly impelled by centralised risk surveillance (see section 8.3.2.4, 8.3.2.5).

8.2.10.2 Predominant use of recumbent positions, and directed pushing

I observed the use of upright positions in some labours, e.g., the hands and knees position and the lateral position. However, I also observed that women seldom adopted these positions for birth. Instead women were encouraged to go onto their backs. An important reason for this, from the midwives' perspective and the training they were given was to apply perineal protection (hands on the perineum), a requirement of the Obstetric Anal Sphincter Injury care

bundle[26] (RCOG and RCM, 2014) to reduce 3rd and 4th degree tears. I observed that midwives found applying perineal protection in upright positions difficult even though CMWs said that training had been provided. MW12H said:

> "I was thinking I won't be able to protect the perineum. I remember trying to get her to turn around so I could do the OASI, as we are expected to do that with everyone now at Hope." (MW12H)

MW12H also explained that midwives were concerned not to be blamed for 3rd and 4th degree tears because:

> "The perineum midwife said, we must all apply perineal protection because if the woman has a 3rd or 4th degree tear, we are responsible for it basically. So, it does make you worry. There are many other factors that cause OASI, so it is worrying." (MW12H)

I observed MW12H bending over and under in an awkward position to apply perineal protection but being unable to do it effectively. Eventually, she opted to watch the perineum and guide the woman and said:

> "I don't really agree with being hands-on, obviously you can but in situations like that it can't be of very much use. If you do it [perineal protection] well it does reduce the big tears, but you do get a lot of labial tears. We are finding deep, deep labial tears." (MW12H)

Evidence is not supportive of either a hands-on or hands-off approach and the recommendation is that it should be determined by the clinical judgement of the individual midwife

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[26] At present there is no evidence to suggest that perineal protection improves outcomes. Warm compresses and massage may improve outcomes and do not seem to cause harm but were not recommended as part of the OASI care bundle (Aasheim et al., 2017)

(NICE, 2017). However, the spectre of blame appears to induce midwives to use the recumbent positions so they can apply a hand-on approach recommended by the OASI care bundle to reduce 3rd and 4th degree tears. Recumbent positions are also associated with a higher incidence of foetal heart decelerations (Stone, 2017) and increases women's risk of instrumental deliveries which in themselves are associated with increased perineal trauma. Given the concerns expressed about 3rd and 4th degree tears, it was surprising that the lithotomy position, which increases the risk of these tears (Tasker et al., 2005), was commonly used. Although two midwives described it as a position of last resort (MW7F, MW12H), I observed senior midwives and obstetricians instructing midwives to put women in this position even when instrumental births were not planned (L7, L8). Midwives also said that they were encouraged to use this position to hasten birth (MW5F, MW12H). Some midwives (MW5F, MW7F, MW10H), believed that it could play a role in hastening delivery although this is not supported by evidence or clinical guidelines.

Another common practice that I observed being used by several midwives (MW3F, MW4F, MW7F, MW8F, MW9F, MW11H) was pushing while breath-holding in recumbent positions, sometimes called the Valsalva approach. To encourage women, I often heard midwives and obstetricians shouting, "push! push! push! harder! harder! longer! Longer!....., come on keep going." I observed that this frequently also resulted in foetal heart decelerations (L2, L4, L9, L10) prompting obstetricians watching the trace at a central station to come into the room to hasten birth with instruments.

8.3.2.1.2 Assumption that women who use OUs want pharmacological pain relief

During conversations at recruitment, ten out of the 12 women who participated said that they wanted as much as possible to avoid the epidural. However, all 10 midwives who were interviewed said that women who chose the OU did so because they want to use the epidural at some point in the labour.

> "I know the MW on the antenatal ward said she [the woman] did not want an epidural, but I offered it anyway just in case she changed her mind." (MW3F)

The only pain relief options that midwives were observed offering were entonox, opioids and epidural – described by MW12H as the "usual spill". Despite availability of pools on the OUs, none of the women were offered this option. Instead, women who wanted to use water for pain relief were questioned about why they were not using the BC, and W4F was offered the option of moving to the birth centre to use the pool, which she refused because she had chosen the obstetric setting for birth.

MW3F, MW4F and MW7F said that, unlike core midwives on the BC, they were not prioritised for training in the use of water, massage, aromatherapy or hypnobirthing as pain coping strategies or comfort mechanisms. However, MW5F said that:

> "Midwives at the hospital are trained to do waterbirths, reflexology, acupuncture and aromatherapy. We have all of the oils, the needles are available, but you do not see these being used on the OU. These complementary therapies are only used on the BC." (MW5F)

Several midwives said during interviews that a way of working that used approaches described in the quote above was not a norm on the OUs (MW2F, MW4F, MW8F, MW12H) and "unlike the BCs they do not nurture you to develop or support you to use these practices on the OUs." (MW4F, MW5F, MW12H).

8.3.2.1.3 Standard OU rooms and poor use of equipment

Most of the rooms in the OU had a large bed in the centre and were filled with medical equipment. I observed very little effort on the part of the midwives to alter this environment, even though hospital guidelines recommend making space in the rooms to encourage mobility. Several midwives (MW2F, MW4F, MW7F, MW8F) said that women usually opt for an epidural and need continuous monitoring. Beds were located close to the wall-mounted monitor. MW8F said:

> "I'd rather not move the bed. I'd rather have it close to the monitor just in case the woman changes her mind and wants an epidural. If she uses an epidural, she will need continuous monitoring." (MW8F)

Although midwives complained about loss of equipment, shortages and needing to go to the BCs to borrow it, I observed that birth balls, peanut balls, birth stools and telemetry were available on both units but rarely used. Women commented on this:

> "I am not sure if they would have brought in the ball and bean bag or asked me to get out of bed. Not sure how involved she [the midwife] would have got. I would not have gotten off the bed or tried the different position if no one had asked me to [support from husband] but it was good because it was helping." (W7F)

Although both units had a pool, it was not offered despite, for example, MW10H observing that water provided effective pain relief and acknowledging that many women "did not know that the labour ward [OU] had a pool."

A senior midwife commented that pools on Hope were seldom used because most women chose to use epidurals. However, I observed that none of the women were offered the option of using water and W10H said, "I did not want to use an epidural, but it seemed I had no other choice." On Faith, I observed MW4F asking the woman to go to the BC where she could be supported to birth in water, but the woman refused to do this (OBS, L4). In her later

interview, MW4F said she did this because she was not confident to birth the woman in water and was unsure if she would be supported to do this on the OU.

Although beds were fully automated and could be altered into upright positions, midwives were observed not to use the full range of options available. Only MW1F was observed to use the bed to create an upright position for the woman. I observed that the most commonly used part of the bed were poles attached to the end (MW4F, MW5F, MW7F, MWF8, MW10H), initially for women to rest their legs but eventually to lie on their backs with their feet in the stirrups in a lithotomy position.

I observed that midwives did not use birth stools. When during their interviews I asked why, several (MW2F, MW4F, MW10H) said that it caused bad tears. However, the evidence about the risk of tears in upright positions using equipment like birth stools is inconclusive (Gupta et al., 2017). It appeared that midwives were more in fear of being blamed for the occurrence of 3rd and 4th degree tears than basing this view on evidence.

It is questionable whether skills in the appropriate use of physiological care practices can improve when what was observed and experienced by midwives in day to day practice were interactions to embed an interventionist approach..

8.3.2.2 Hierarchical decision-making led by obstetricians and OU coordinators

As autonomous professionals (NMC, 2015), midwives do not require permission or to consult with professionals when a woman who is at low risk of complications is progressing normally in labour. They are qualified to diagnose complications and provide emergency care but are expected to seek obstetric support in a timely manner when problems arise. Autonomy also confers power on midwives to challenge decisions they feel are not appropriate to the care of women. However, in both OUs studied here, midwives were not observed to challenge routine clinical interventions use, and it was hierarchical decision-making led by obstetricians and the obstetric coordinators that drove practices.

Hierarchical decision-making by obstetricians was observed as follows: at the beginning of a shift, a team consisting of a consultant or senior obstetrician, junior obstetricians and senior midwives greeted women during ward rounds. They described themselves as "the team" looking after the woman, while the midwife caring for the woman updated "the team" about the woman's care. Usually they said, "everything is normal, and we hope it will stay that way and you will not have to see us again" (Field notes). However, midwives were expected to and observed to routinely escalate the progress of the woman's labour to obstetricians and co-ordinators. Frequently, I observed these discussions taking place at a whiteboard where women's names, key points of her history and progress in labour are documented. If a woman was on a CTG monitor, the trace on the central monitor formed part of the discussions (Field notes). Obstetricians were also observed to routinely enter the labour rooms and become involved in care impelled by what they had observed on the centralised monitor without being called by midwives.

Most of the midwives were observed to be subject to this form of hierarchical decision-making and described this in their interviews:

> "I don't mind being challenged – I think that is really useful, there are tussles with the obstetricians about the way forward, but it is having the discussion at all. We had agreed that the trace was normal but in the room she [the obstetrician] said don't worry, don't worry -you have done everything you can and the decision [to do a ventouse] was already made." (MW2F)

I observed obstetricians repeat vaginal examinations that had just been performed by midwives when there was no obvious clinical reasons to do this. Consent for its use was also not fully informed (MW2F, MW4F, MW7F, MW8F). MW4F said:

> "OBS was going to examine her but did not introduce himself, you haven't told the woman why you are going to examine her, it is a lack of communication and a lack of consent – you are asking for consent, but it is not informed." (MW4F)

Obstetricians were observed frequently entering labour rooms to intervene clinically, addressing the woman with the phrase, "we are going to help you" and midwives moving away to allow interventions to take place. This was observed in L2, L7, L8 and L10. For example, observations in L10 (Hope) showed the midwife stepping back, when OU coordinators and obstetricians took over care:

> MW10H: Came back from updating the team about the woman's progress in labour and also informing them about the meconium she thought she had observed. She was not sure if it was indeed meconium. She says to the woman: "I am going to have to put a cannula in" and prepares to insert the canula without explaining why.
>
> SMW: Enters the room and says: "I am not happy with the foetal heart and there is meconium. We are going to do a ventouse."
>
> MW10H: Head bowed with no eye contact, moved about like an automaton: Does not speak to the woman and sets about preparing for a ventouse.
>
> Obstetrician: Enters room and says: "The foetal heart is fine, but we are going to deliver the baby" [No other options were discussed with the woman]. (OBS, L10)

8.3.2.3 Midwifery acquiescence

Even though midwives were assigned as lead carers of women and described as such, they were observed frequently to carry out instructions that they said had been decided by senior midwives or obstetricians, for example, vaginal examinations were done before they were due (MW2F, MW4F, MW7F, MW8F, MW10F); IV fluids were commenced when women were eating and drinking (MW8F), and women were asked to commence pushing when they did not feel the urge to do so (MW4F, MW7F, MW8F, MW9F).

Practices like perineal sweeping were described by CMW2 as “archaic practices” that caused pain and distress and should be abolished. However, I observed its frequent use by obstetricians during labour with no interventions from midwives. I also observed MW3F, MW5F and MW8F using this practice and MW8F rationalised this by saying, “obstetricians were going to come in and do it, so I did it.”

MW2F, MW7F, MW8F and MW10H in their interviews stated that there were no clinical reasons for use of interventions in the second stages of the labours I had observed and that more time could have been given for the women they were caring for to birth, but these midwives were not observed to challenge decisions that were made. Nor were the reasons for clinical interventions explained to these women. Instead, the women were told by obstetricians and SMWs that “they were tired and needed help” (W2F, W7F, W8F).

> “You are tired, your baby is not far away, let us help you, we don’t want your baby to get tired, it will be over soon, your baby will be here, and you can enjoy him/her (OBS, L2)
>
> “Your body is not made to do this first time around.” (OBS, L7)

The ventouse was used to deliver W2F, whilst obstetricians instructed the midwives to put W7F and W8F women in a lithotomy position. Both were birthed with an episiotomy, W7F by the obstetrician and W8F by the midwife.

Describing day to day practice on the OUs two MWs said:

> “You come into work, women are on the bed, on an epidural and doctors give you a plan, rather than you make your own plan. If you spend 99% of your working life here it’s very easy to become a part of that culture.” (MW5F)
>
> “Practices are deeply ingrained, they are just habitual – you end up doing things – how often do you have women on intermittent auscultation on OU – hardly ever, you do it automatically, put them on a CTG.” (MW2F)

On entering a room I observed a midwife admitting WM1F who was low risk and putting her on a CTG. When I asked her the reason for this, she said:

> "Well! she is thinking about using an epidural and I wanted to do a CTG to make sure baby was well."
>
> The woman was observed breathing through her contractions. She said she wanted to wait and did not want an epidural. After a shift change over, the midwife who took over removed the CTG and used intermittent monitoring. She said that some midwives preferred continuous monitoring" [local guidelines state that it must not be routinely used] (OBS, L1).

Some midwives who used intermittent monitoring were observed to have difficulties in positioning the sonicaid and listening while the women were in different positions. Women were moved frequently and unnecessarily in active labour. MW12H, for example was observed putting the woman on a short period of continuous monitoring without using a range of assessments outlined in guidelines on intermittent monitoring in second stage.

Some of the reasons midwives gave for not always challenging senior midwives' and obstetricians' decisions included:

> "It's quite hard to stand up to the culture on the OU of a certain behaviour [using routine clinical interventions] when you're a newly qualified MW." (MW5F)
>
> "I can question, but they are my senior, and I must respect their views." (MW8F)
>
> "I wanted the doctors in there but that is me practising defensively, and not facilitating what could have been a spontaneous vaginal birth." (MW2F)

The use of clinical interventions were also frequently rationalised by midwives and obstetricians as helping women, for example, "foetal scalp electrodes can help mobility" (MW11H) or "all she needed was a touch of syntocinon to get her to full dilatation" (SMW).

8.3.2.4 A lack of autonomous decision-making

As an autonomous professional, a midwife must be able to control her practice by demonstrating her ability in exercising choices and making clinical decisions independently with women (Fleming, 1998; NMC, 2015; ICM, 2018). This theme describes a lack of autonomous decision-making with midwives having to seek permission to use physiological care practices and mostly implementing what was regarded as acceptable practice by OU coordinators and obstetricians. MW2F was observed negotiating a four-hour wait before rupturing membranes (ARM) but observed agreeing to a 2-hour wait because:

> "Everything was progressing well. But the doctors: well their argument was, she was on labour ward – so what are you going to do? We can wait for two hours but you can do an ARM after that." (MW2F)

However, there was no clinical indication for an ARM because this woman was contracting normally. When I asked her about this decision in the subsequent interview, MW2F said:

> "So, for me it is like a balance – I feel if I challenge every decision – it is like being difficult -if I am over difficult – I will not have the support – I feel I need some support – I do not want to be a maverick and work totally alone. I want to challenge decisions but also work to progress care."(MW2F)

Although the midwife spoke about needing support, she also said in her interview, "this is how things are done on OU."

Two midwives described their lack of autonomy in decision-making to support a physiological labour and birth. I observed MW8F coming back to the room:

> "She looked anxious and distressed while the midwife in the room tried to comfort her. They are watching the CTG and want to come in to deliver the baby. I have to put her in lithotomy. They have decided it's time for her to have her baby." (OBS)

During the interview she said,

> "So hard to strike a balance. I was trying to keep them out. I did not want them to come to the room. She had worked so hard to get there, I did not want them to do anything." (MW8F)

MW10H said:

> " They were watching the CTG outside and wanted to do a ventouse. She was beginning to push well but once they were in the room it was too late. I felt they could have given her more time but once they were in the room, there was little I could do."

Midwives were also observed or described seeking permission to use physiological care practices that were not the norm in this service, MW2F said:

> "She was low risk, on an epidural – so the [NICE] guidelines say she can eat and drink – I thought I am going to clear this with the coordinator because I know it is not common practice in the unit. The coordinator said no, the anaesthetist said it is dangerous – so I documented that the team consensus was not to do it." (MW2F)

MW5F described observing consultant midwives challenging obstetricians when there was no valid reason to intervene immediately and noted this presented an opportunity for their own reflection and learning. However, all the midwives except MW1F felt they needed support to challenge decisions to intervene, for example:

> "I do not know if I will ever fully truly get there in terms of being totally autonomous on the OU. I do not want to feel isolated." (MW2F)

> "I will stand up for women I look after most of the time – it just depends on what team is on and what support you have." (MW4F)

MW8F also felt MWs can question but "must equally respect the view of the leads in charge of the team [OU coordinators and obstetricians]." Midwives were not observed to act autonomously, nor did they regard themselves as such even though this study observed labours of

women at low obstetric risk, “she is on the labour ward, it cannot be fully my decision, it has to involve the doctors because of the medical input she already has” (MW7F). This lack of autonomy was also reflected in interviews with women:

> “The midwife wasn’t my primary carer at that point. There was the doctor and the other midwife [senior midwife], yah! she came in took over” (W7F)

8.3.2.5 Risk surveillance

Surveillance methods were widely used to guard against risk. The main focus of surveillance was the foetal heart, and this used a centralised foetal heart monitoring system. The CTG trace was checked by OU coordinators or other senior midwives, applying an approach required by guidelines described as “fresh eyes” to confirm that the midwife’s assessment of the foetal heart was correct. The CTG recording was also observed at a central station. Midwives described how this caused obstetricians to enter rooms frequently when they did not request assistance. Midwives noted that in such cases they had no concerns about the foetal heart because of what was happening clinically in the room:

> “Sometimes the woman is in second stage, the baby is about to be born, there may be foetal heart changes and they come in.” (MW5F)

> “It happens a lot. Occasionally it is helpful but most of the time it is annoying. I think what is the point of me being in there, if someone is going to come in and take over after seeing something on the outside.” (MW3F)

MW12H expressed how there was a lack of trust amongst some obstetricians about midwifery care and said, “they often do not discuss care, they just come in and intervene.” Such entrances were observed to occur in seven labours. In six of these it occurred when women were bearing down. This led to clinical interventions to hasten birth in five, even though it was established there was no foetal distress.

Obstetricians and senior midwives were frequently observed standing at the main station near the central monitoring system discussing cases. I observed a great deal of anxiousness amongst midwives caring for women on CTGs: a lot of time was spent watching the CTG monitor and instructing women to assume semi-recumbent positions so they could get a good trace. Midwives were also concerned to get a good trace to avoid clinical interventions. MW8F said:

> "Yes, I was strict with the woman about getting into bed because I needed to get a good trace, so they [OU Coordinators and obstetricians] will be happy and stop bothering us." (MW8F)

In both OUs centralised foetal heart monitoring systems were used, and I observed that this prompted obstetricians to routinely enter women's room, knocking and opening the door without waiting, when birth was imminent, disregarding the views of midwives that foetal heart changes observed were not indicative of foetal distress and they had not requested assistance. However, consultant obstetrician 2 argued that midwives can become 'fixated' due to prolonged observations of the foetal heart trace, and fail to recognise abnormal changes. She stated that centralised monitoring can provide obstetric support to oversee practice and ensure safe care.

8.3.2.6 Power and control exerted over decision-making

Midwives and other professionals including junior obstetricians, senior midwives and women and their birth partners all experienced power and control exerted over their decision-making. Power here is defined as 'control, authority or influence over others' (Miriam Webster Dictionary, 2021). Such power was evident in the way consultant or senior obstetricians overruled decisions, for example, "everything was normal and was progressing well. But the doctors: well their arguments were, 'she was on labour ward – what are we waiting for?'(MW2F)

Another obstetrician was observed questioning the couple's (L1) decision to wait before receiving syntocinon to augment her labour:

> "What are you waiting for? What are you expecting in 2 hours? Do you want an infection?," even though the wait had been agreed with another obstetrician (Obstetrician in charge).

Most midwives' were observed implementing decisions made by senior midwives and obstetricians after updating them about the woman's progress in labour. These discussions rarely involved women and their birth partners (see 8.3.3.3 and 8.3.3.4).

PT8 said:

> "The midwife kept leaving the room – to talk to doctors. They had updates happening outside the room. They should come to the room to discuss our care"

Surveillance was another important means of control. Midwives were very conscious of obstetricians watching the CTG from outside the room (see 8.3.2.4, 8.3.2.5) for its influences on midwives' ac-

tions).

In six out of the 12 labours observed (L2, L4, L6, L7, L8, L10), consent was not fully informed for clinical intervention used in second stage to birth the baby.

Women said:

> "I felt they were routinely doing all of this. They were not communicating very much. There were so many people doing different things. We did not really know what was going on." (W8F)

> "What was happening really? What was really the matter, the problem? Nobody told me nothing. I really don't know. And my husband doesn't know either." (W6F)

Only one midwife (MW1F) was observed asking obstetricians to leave because she felt they had come in to intervene without this being warranted:

> "They had come in to write up the syntocinon. They did not speak to me. They just assumed this was going to happen." (MW1F)

MW1F (a senior midwife) described participating in decision-making about clinical intervention use and gave an example of her discussions about CTG interpretation where initial decisions to intervene were reconsidered:

> "I have looked after women who have had awful CTG but with my knowledge I can say: just look at it differently and they do say: you have a point." (MW1F)

In her interview she attributed this to her experiences of working in several hospitals across birth settings, and her training that had developed a high level of skills in CTG interpretation. She felt that both experience and skills were needed for midwives to participate effectively in decision-making about clinical intervention use.

8.3.2.7 Institutional time

Consultant midwife 1 explained that SMWs had responsibility to keep work flowing (i.e. women birthed and discharged) to ensure bed availability on the two busy units. She commented how this level of workload resulted in, "an almost unconscious decision by OU coordinators to use clinical intervention to get women delivered rather than give them more time." OU coordinators were observed routinely checking on labour progress, usually at the end of a shift, to update the white board before handover to the next shift.

> "There is a time limit on how long women can be on the OU. They would ideally want everyone to be in active labour and they think it will help to augment labour to push things on." (MW2F)

> "You need to be seen to be progressing the labour and birth or you will be questioned." (MW1F)

> "We are shift workers and we know what it is like at the end of a shift, they wanted it over, a 12-hour shift, it was rush, rush, rush. She should have been given more time. She did not need a cut." (PT8F)

A woman who is fully dilated was routinely treated as a case for an obstetric review, just before shift hand-over even though there were no problems identified by the midwives. MW7F said:

> "Knowing we were about to have shift hand-over, if we did not have an obstetric review [an obstetric review was sought by senior OU coordinators to set time frames for clinical interventions or make decisions to hasten births] the midwife who takes over may be left in the dark." (MW7F)

I observed OU coordinators seek obstetric reviews to deliver women who were close to birthing (W4F, W7F, W8F, W10H). However, my observations also showed that the decision to hasten birth was not always driven by pressure to make beds available. OU coordinators also demonstrated a preference for using an interventionist approach rather than support midwives to implement a physiological care approach. In L4 the coordinator suggested the use of a lateral position but made no effort to support the midwife who said she was not confident in using the position and instead said: "I will get a registrar review to help." In others, obstetric reviews were driven by risk preoccupation. For example, in three labours (L4, L9, L10) where meconium was present, obstetric reviews were sought to hasten birth, even though birth was imminent and foetal heart trace was normal.

The use of a ventouse was considered in 7 of the 12 labours and used in three (W2F, W4F, W7F, W8F, W10H) even though birth was imminent and foetal heart rate was normal. In W2F W7F, W8F instead considering the use of upright positions to support descent and rotation of the baby, a ventouse was used because the shift was coming to an end. In W4F and W10H meconium was present. There were no concerns about the foetal heart, but because

meconium was present, a ventouse was used. A ventouse was also considered for use in W3F, W5F and W9F because of foetal heart decelerations, occurring possibly because of directed pushing in recumbent positions, but all three women birthed before a ventouse could be used. We can argue, as did both consultant midwives, that the barriers described thus far to implementing a physiological care approach on the OUs emphasise the importance of policies, like BCs as a default choice, to promote low intervention births. However, several women who I spoke to during recruitment, including the women who participated, questioned the policy of BCs as a default choice and felt that women should be supported to experience a physiological labour and birth in all settings.

8.3.2.8 Lack of time for in-depth learning in practice

Opportunities for formal reflections on day-to-day practice and experiences of implementing a physiological care approach were not available:

> "I have reflective sessions about births that didn't go so well, and even getting everyone together for that was difficult. I can see reflection on our daily practice as beneficial in theory, but I don't know if it is something we will be able to facilitate." (MW7F)

> "As a Trust, we cannot seem to find time for reflective learning activities. I head the Clinical Effectiveness and Outcomes unit and I realise just how much we need such activity for midwives and obstetricians. This has not been easy to achieve." (COB1)

Midwives described their preceptorship in practice upon qualification in developing skills in using care practices as limited and focused mainly on familiarising themselves with different clinical areas. Midwives described formal reflections with consultant midwives and Patient Midwifery Advocates as focused on learning from serious untoward incidents (SUIs). Consultant midwife 2 also described resourced inter-professional training as focused on simulation to manage obstetric emergencies, human factors case scenarios, developing skills in

CTG interpretation and sharing of audit data on the implementation of pathways on risk management processes.

Audits of clinical intervention use were submitted monthly to a national maternity database. However, there was no formal appraisal work undertaken to understand clinical intervention use on both OUs. This could have drawn on experiences of midwives and women cared for in the CoCr model where a fall in clinical interventions were reported by consultant midwife 2. In her interview, consultant obstetrician 2 merely said that their rates were comparable to outcomes at other local NHS Trusts in London. On the other hand, consultant midwives described concerns about the extensive nature of 'archaic practices' in the OUs, for example, perineal sweeping and routine use of lithotomy positions while formal audits of physiological care practices did not take place. Overall, consultant midwife 2 stated that time for all forms of training in practice was limited, and the frequency of these sessions needed to increase to meet the learning needs of midwives and obstetricians (obstetricians did not attend classroom sessions but participated in simulations in practice when these occurred).

8.3.3 Individual Level

8.3.3.1 BCs as a default choice

At both hospitals, women at low risk of complications were directed to the BC unless they opted out. Women explained that they understood the reason why the BCs were being recommended to help them experience a low intervention birth. However, women also felt that they should be able to experience a physiological labour and birth in all settings for birth, not just in the birth centre:

> "Yah! An uncomplicated pregnancy is not a determinant of whether or not you will have an uncomplicated birth. I had asked all the questions, I discussed it with my midwife and on that day I had my decisions questioned. It is an uncomplicated pregnancy so let us do whatever we like and override the one decision you get to make." (W10H)

> "Lots of the people we know have had complications. It would better for us to be on the labour ward in case there were problems. The level of care should be the same wherever you go, instead of 'why are you here? You should be going to the BC.'' (W4F)

W4F and W10H in their interviews post-birth described how their decision to opt out was questioned by midwives several times and how this led them to consider the use of clinical interventions:

> "We understood why they wanted to encourage us to use the birth centre. After several midwives offered this option, it felt easier to just say that I will keep my options open and say I may want to use an epidural." (W4F)

In observations in L10, the midwife in conversations with the woman said:

> MW [antenatal ward]: "They have the pool room free on the OU. But would you like to go to the birth centre and use the pool there?" [There were two pools on the OU]
>
> W10H: "I do not want to go to the birth centre. I want to go to the labour ward."
>
> W10H: "I did not want the epidural, and it seemed I had no choice. I could only use the OU if I used the epidural." (Observation, L10)

While barriers to implementing a physiological care approach cast doubts on the ability of women to experience a physiological labour and birth on the OUs, an important facilitator that was observed and described by all the women who participated was their desire to experience a physiological labour and birth and making birth preparation to do so. Actions to avoid and resist clinical interventions were also observed.

8.3.3.2 Preparing for a physiological birth, avoiding and resisting routine clinical intervention use

Eight out of 12 women/birth partners (exceptions were those having a second baby), attended childbirth education classes. Several did internet research and spoke to friends and family to

prepare for labour and birth. All 12 women described choices to avoid clinical interventions and spoke about influences on their decisions to avoid clinical interventions based on their own previous experiences and the experiences of their family and friends.

In one case, where the woman (W2F) was vocalising loudly during contractions. I observed an obstetrician walk into the room four times to suggest use of the epidural. W2F said, "it was an environment with loads of people coming in and out and it was intrusive." When she explained her decision to refuse the offer of an epidural, W2F described the experiences of a relative:

> "She suffered from severe headaches, she could not get up, she could not walk. Her husband felt she was pressured into having an epidural. She recommended that I do not have it." (W2F, Interview)

Women's decisions were also influenced by their previous experiences of birth:

> "I didn't want to use the injection in my back. I have a backache and many of my friends have the same problem after using this injection." (W3F, Interview)

W11H was observed refusing to move to a recumbent position for birth (and later said:

> "I was on my back the last time. It was so much easier to push standing up this time and I was not listening to the midwife." (W11H, interview)

Women's made plans and acted to avoid clinical interventions during labour. When I met W12H, she expressed strong feelings about wanting to stay mobile and use upright positions (Field notes/conversations with W12 during recruitment). During labour, W12H was observed to actively refuse to use the recumbent position, despite the midwife persuading her to do so to apply perineal protection, as per guideline requirement to reduce the risk of 3rd or 4th degree tears. Two women (W7F, W9F) made decisions to avoid early inductions that were recommended.

W9F said:

> "I was very scared of the possible induction. I imagined the worst scenario in terms of instruments, what can go wrong, having an epidural and how that would affect me and the baby." (W9F, interview)

Both these women also chose not to use the epidural during labour despite being encouraged. During the ward round, a senior obstetrician said to W7F: "Get it in now so you will be more comfortable", while an obstetric registrar said: "It is your choice and if you do not wish to use it, that is fine too". W7F said: "How can you push if you have an epidural? It must be hard."

In another case, I observed the birth partner of a woman who had chosen to use epidural (W1F) negotiating a longer wait when her contractions slowed after the epidural insertion, rather than agreeing to immediate intravenous syntocinon to stimulate stronger contractions. The couple insisted on waiting despite the consultant obstetrician (COB) on shift being opposed to waiting.

> PTF1 said: "I do not think we will lose anything by waiting two hours" and stands his ground.
>
> COB: Bleep sounds - she leaves the room.
>
> PTF1 sighs – "I am so against interfering in a normal process." He worries about what will happen if nothing happens in 2 hours (Observation, L2).

In the cases of all ten women who declined use of an epidural, I observed professionals only offering the use of opioids or epidurals. However, with the support of their birth partners, they stayed mobile and adopted upright positions to manage the pain of their contractions.

W9F refused the use of an episiotomy. She recounted and I observed:

> W9F: "The only thing I asked was they didn't do an episiotomy.
>
> The obstetrician stood at the end of bed, gloved up with a ventouse trolley by his side.
>
> The midwife held a pair of scissors, the baby's heartbeat was slowing down (the baby's head was at the perineum and advancing).
>
> MW: "I am sorry, but I need to do a small cut"
>
> W9F: "No! No! No way, I will push my baby out" (W9F, interview).

W6F recalled conversations about the use of instruments:

> "When I heard they were going to use the suction: I thought to myself, I am going to push him out. I wanted him to be OK" (W6F, interview).

However, women's resolve to experience a physiological labour and birth was mainly described by them as unsupported antenatally and during labour and birth. This lack of support was also observed during labour.

8.3.3.3 Lack of information to explore options and develop birth plans

Women described how they had little information about opportunities available at the Trust to support their experiences of a physiological labour and birth and the lack of time for conversations with midwives to develop birth plans and explore how birth plans can be realised. Consultant midwives described the setting up of a birth options clinic on both sites to develop personalised care plans with women and explore options with women who questioned changes in their care plan or made choices that were not supported by local guidelines, for example, women with a previous CS who wanted to use water to manage their contractions. Citing outcomes at Hope, consultant midwife 2 described the birth choices clinic as instrumental in reducing, for example, elective Caesareans-sections, where 50% of women who initially wanted an elective Caesarean-section changed their mind.

However, the birth options clinics were not common knowledge and referrals were at the discretion of the midwives. Not all women were referred. Several women who were considering participation were informed that they could not, for example, use the BCs for birth, were not aware that they could be referred to a birth options clinic for a discussion with the consultant midwives.

Women and their partners said that conversations with midwives would have been more beneficial than antenatal education classes to develop their birth plans (W1F/PT1F, W2F/PT2F, W4F/PT4F, W7F/PT7F, W8F/PT8F, W10H/PT10H). One birth partner shared his experience of attending a large antenatal class:

> "A lot of information was conveyed in a short period of time. There was very little 'hands on' to learn techniques to support." (PT1F)

Several other birth partners described feeling unprepared to provide support in labour. One said (of the classes): "We felt we were 'being talked at'" (PT10H). Birth classes on both units were oversubscribed and we teachers have a great deal to get through in a day (field notes, conversations with an educator).

Another partner described how during short antenatal clinic appointments; the risks associated with clinical interventions like the epidural were poorly communicated:

> "I asked the midwife many times about disadvantages. If they had told us about the increased risks, there must be stats. We are IT people. If we had known, we might think differently about this. It is no point talking to us about it when she was in labour." (PTW1)

Unlike the women who used the OU, women who chose to use the BC were able to attend classes by midwives on the BC focused on supporting physiological birth. For the women who used OUs, the main source of information were families, friends and the internet. Friends and family in particular strongly influenced the choices women made. For example,

one woman used an epidural because of advice from a friend, despite encouragement from the midwife to try other forms of pain relief:

> "I spoke to my friend. She said with epidural you won't feel anything, so you will sleep, you will feel energy to push." (W1F)

8.3.3.4 Lack of support and advocacy

Women and partners described and were observed to lack support during labour. Recalling it as their first experience, birth partners (PT1F, PT2F, PT7F, PT8F) spoke about how they underestimated the process and how tough it was. PT7F, recalling how he had to provide most of the physical and emotional support said:

> "It was hard managing the back massage, feed, and reassure my wife on my own." (PT7F)

Another partner said:

> "The MW was doing a lot of admin while you were in dire straits – she was tapping things into her computer, preparing stuff, undoing stuff, and not asking how you were, the focus was not really on you, and she will glance over and see, 'Well! The baby is not here yet and so we will carry on." (PT10H)

W1F explained her lack of understanding about the breathing techniques:

> "Nobody taught us how to breathe. In fact, breathing was the most helpful thing. It would be very difficult to use Entonox [gas and air that women breathe through a mask] because you do not know how to breathe." (W1F)

The women for whom this was a first experience (W2F, W4F, W7F, W8F) said that better support would have helped them avoid clinical interventions. However, several midwives suggested that women must decide on the approach to care and instruct them about their needs:

> "It is up to her to decide if she wants to use a different position." (MW5F)

> "Quite often, if women do not want an epidural they will tell you if they want to stand up and be walking around. But I don't think she [the woman whose labour was observed] would have done that." (MW3F)

MW2F said that it was easier to care for women who came in with bespoke plans to use a physiological care approach:

> "I really enjoy looking after women with bespoke plans (developed independently by consultant midwives in collaboration with obstetricians) and who make their own decisions rather than us promoting normality and doing all that stuff." (MW2F)

However, she acknowledged that not all women came in with bespoke plans developed by CMWs. Further she said:

> "Doing what the woman wants is also dependent on whether everyone else [SMW and obstetricians] are for or against what the woman wants you to do. It becomes difficult when no one else wants you to do it." (MW2F)

Other midwives also expressed a similar view. Consultant midwives described empowering women as an important goal because midwives did not always suggest or support women to use a physiological care practices:

> "We need to empower the women to know, to want and to ask, not be passive because if you ask, the midwife will often do it but if you don't ask, she may not for a complex array of reasons." (CMW1)

Several midwives reported that some midwives on the units want to use a physiological care approach and others not, "probably a 50-50 split" (MW12H).

One midwife said:

> "The women here have an epidural, CTG and rest. It's much better for everyone, I have no patience for all the watching and waiting on the BCs" (MW3F).

Several midwives described advocating on women's behalf. I observed this in L1 but otherwise midwives mainly acquiesced to obstetricians, particularly when birth was imminent (see themes 8.3.2.2 and 8.3.2.3). Mostly it was birth partners that I observed supporting the women to stay mobile, adopt different positions, feed them and encourage them to stay focused on their birth-plans that described wanting a physiological labour and birth experience. Women reacted with shock and confusion when clinical interventions took place:

> "So, ok! up until now you have not taken me seriously [referring to the little support she received on coming to the OU], and I have all these wires and bits hanging off me. You have got a ventouse out and you are cutting me [episiotomy]." (W10H)

> "It was ok until the doctors came. Wow! How serious is this? Then more people came, whether they were required or not I do not know but that was the last stage of labour, were they there for support? I don't know." (PT2F)

Women and birth partners described the involvement of other professionals as "intrusive" (W1F), "intimidating" (PT8F), and also questioned if it was midwives who needed support (W2F, W7F, W8F).

Women's vulnerabilities were laid bare as they tried to deal with their distress while not fully understanding what was happening to them. I observed women's discomfort as several vaginal examinations were done in quick succession by MWs (W4F, W6F, W7F, W8F, W10H, W3H). An obstetrician swept the perineum pulling it apart causing the woman to cry out. Her husband looked on helplessly as the obstetrician continued before doing an episiotomy.

> "The obstetrician came in, started doing something and I could feel her, like pulling, really pulling me, opening me up." (W7F)

Another obstetrician tapped her foot telling the woman to "push! push!" while sweeping the perineum before saying to the midwives: "I don't think you need me; the foetal heart is fine."

She then walked out while the midwife continued to birth the woman in lithotomy with an episiotomy. (Observation, W8F)

There was little done to reduce pain and distress. Professionals acted with the women as they did with women who used epidurals who did not experience pain during procedures. W10H was tearful while expressing regret about her ventouse birth: "If my care had been managed better, I would have had the energy to push my baby out." Others blamed themselves for clinical interventions that happened: "I should have waited longer to birth my placenta, but I did not read up on this" (W7F). (PT1F) said: "I did not speak up when they cut the baby's cord straightway. I was not good enough."

Another partner (PT9F) described it as a race and another (PT7F) as carnage, and both men said that a high level of stress appeared to be a normal part of the process.

8.4 Integrated analysis

8.4.1 Joint displays in the form of conceptual models

To synthesise quantitative (Chapter 7) and the qualitative findings outlined here, three joint displays (a visual representation of integrated findings) were developed to form conceptual models at the three levels analysed – organisational, professional and individual. These will inform discussions in this chapter and chapter 9 where discussions draw on wider empirical and theoretical literature. In the joint displays quantitative findings are in yellow and qualitative findings of facilitators are represented by blue arrows and barriers by grey arrows.

Figure 8.1: Influences at organisational leadership and senior professional level

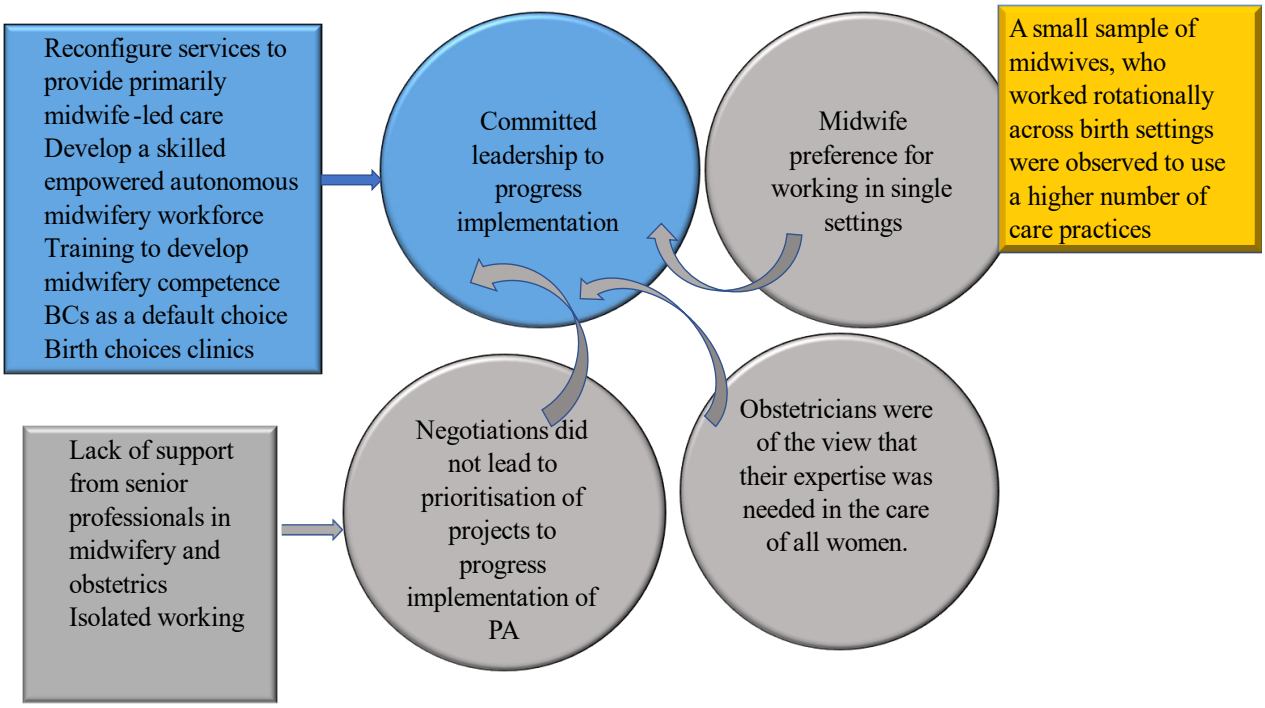


Figure 8.2: Influences of facilitators and barriers at professional group level

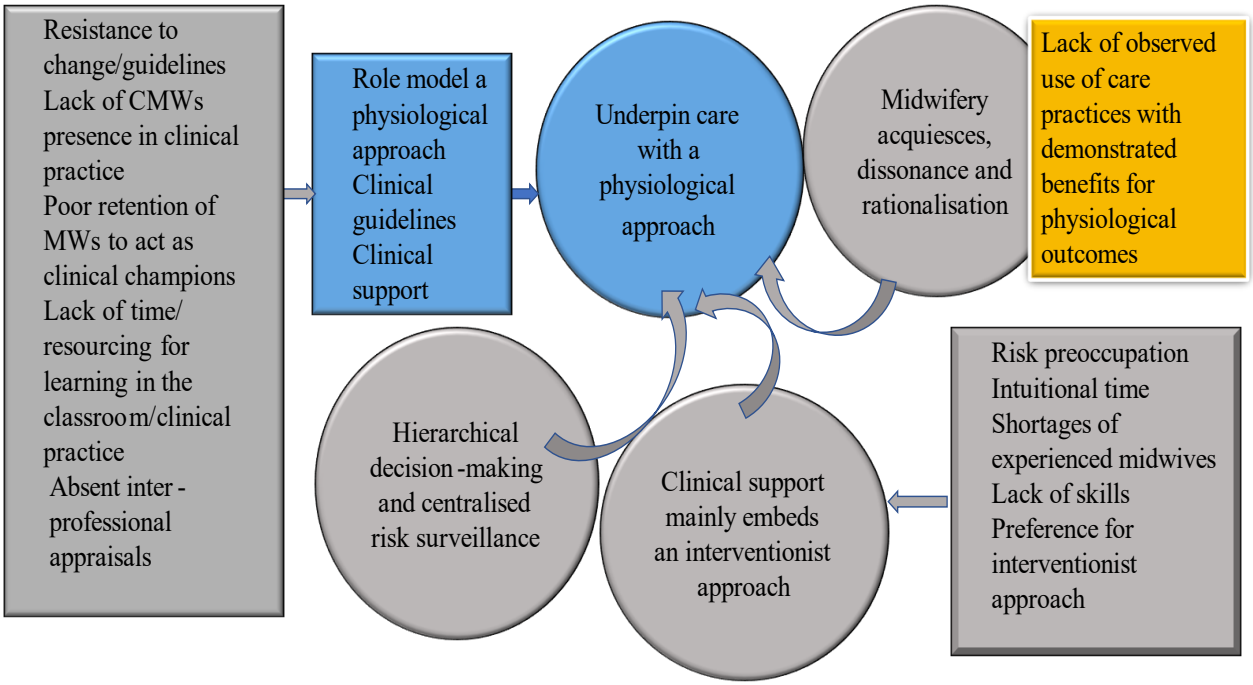
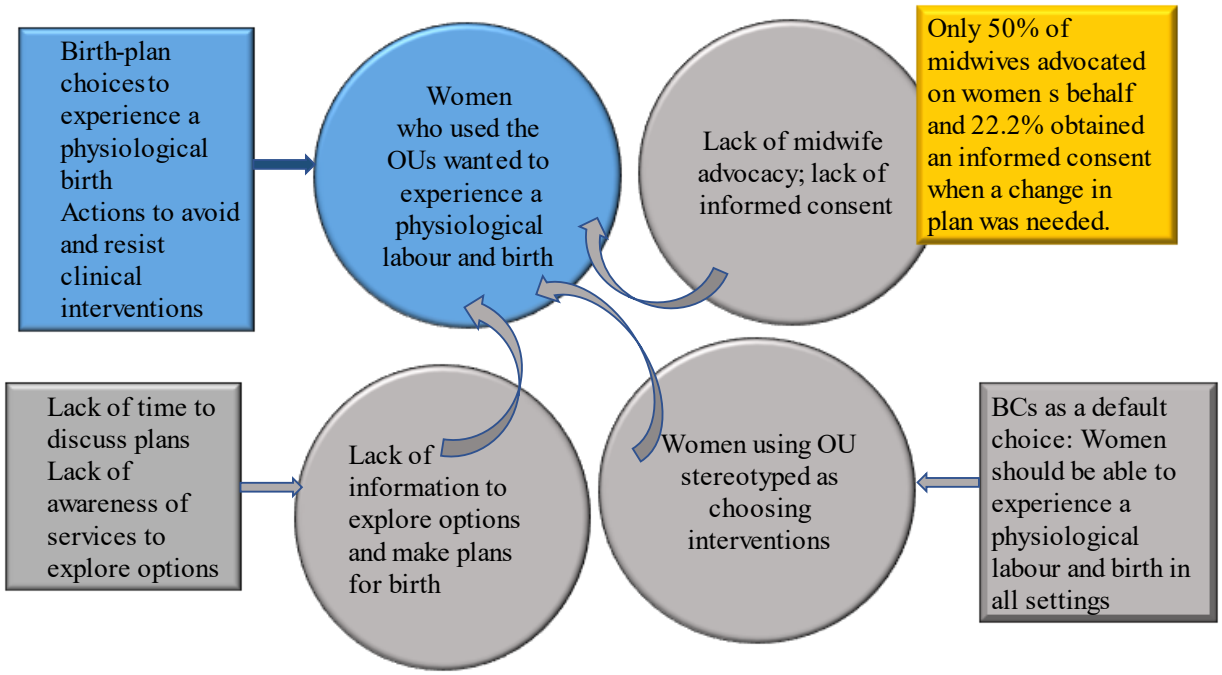


Figure 8.3: Influences of facilitators and barriers at the individual level



8.5 Discussion

This chapter has examined influences on the implementation of a physiological care approach in labour and birth in two obstetric units. It meets the objective to identify, describe and explore influences at the levels of the organisation, professional groups (midwives and obstetricians) and women on the implementation of a physiological care approach. A thematic analysis was used, and themes generated were juxtaposed to explore influences on implementation at each level, and across all the three levels where they occurred. Subsequently three joint displays were developed to form conceptual models from integrating quantitative and qualitative findings.

The original objective of comparing facilitators and barriers between the two units was not met since I was only able to conduct 3 labour observations in Hope. Further, although an aim of this research was to identify any barriers that arose at the level of the women, what was

actually identified were influences at organisational leadership and professional group levels on women's experiences of care. The observation data mainly pointed to barriers at these two levels rather than the women themselves.

An important influence at an organisational leadership level is midwifery clinical leadership. Studies have explored influences of clinical leadership on relationships, practices in labour wards, and the delivery of midwife led care in hospital settings (Parkin, 2015; Perriman, 2018; McInnes et al., 2020). These studies describe a multi-faceted role where the consultant midwifery leadership was described as transformational in making positive change, underpinned by clinical expertise to mentor and develop a highly competent midwifery workforce, and focused on facilitating collaboration between midwives, obstetricians and women, to improve the care in the maternity services. However, evidence on how leadership is directed specifically to drive the implementation of a physiological care approach is limited (Darling et al., 2020).

This research explored the role of midwifery leadership with a particular focus on consultant midwives' leadership in driving implementation in OUs. Strong leadership was evident in that both CMWs articulated their vision to underpin care in the maternity services with a physiological care approach, demonstrated in efforts to, for example, reconfigure the maternity service to provide predominantly midwife-led care, provide opportunities for midwives to work in midwife-led models of care, and provide training to develop midwife skills in implementing a physiological care approach.

The primary focus of CMWs' work to reconfigure the maternity services focused specifically on piloting and upscaling continuity of carer (CoCr) models in line with recommendations of a national maternity review in England (NHS England, 2016), to increase the number of women who used two along-side BCs and to improve homebirth rates and midwifery care in the community. Such reconfiguration is supported by quantitative evidence that clinical

intervention use is reduced in midwife led units (BCs) with safe outcomes, and in the continuity of carer model with positive clinical outcomes and experiences of care for the woman and improved outcomes for their babies (Hatem et al., 2008; Brocklehurst et al., 2011; Overgaard et al., 2011; Vedam et al., 2012; De Jonge et al., 2013; Tracy et al., 2013; Sandall et al., 2013; Offerhaus *et al*., 2014). This positive outcome was also described by the consultant midwives as occurring in the CoCr model implemented at the hospitals who participated as an early adopter site. National safety targets, e.g., a reduction in stillbirth and preterm rates, could also be achieved: based on international review evidence, women who receive care in CoCr models experienced less foetal loss before and after 24 weeks and less neonatal death (RR 0.84, 95% CI 0.71 to 0.99) and were 24% less likely to experience pre-term birth (RR 0.76, 95% CI 0.64 to 0.91). Women also report significantly improved experience of care (Sandall et al., 2016).

However, despite these positive influences, there were barriers to upscaling midwife-led services. Prioritisation for resourcing was accorded to specialist work by obstetric consultants to meet national targets e.g., reducing stillbirths and preterm births, and to private obstetric care that generated income. Describing their work as not regarded as high profile as obstetricians', consultant midwives expressed frustration that evidence did not convince business and clinical managers (including obstetricians in the group) to resource the upscaling of midwifery led services, improve staffing, and provide expanded training in a physiological care approach. Apart from resourcing, a significant barrier at a professional group level to implementing, in particular the CoCr models, was reported to be midwifery resistance. The reasons identified by consultant midwives in this study are also identified in several studies (Taylor et al., 2019; McInnes et al, 2020). CMWs reported a preference by midwives to work in the BCs, or in the community doing antenatal and postnatal work but not labour care (home birth rates were low at about 1% at Hope and at 1-7% at Faith in 2019); some were concerned about not

developing expertise in labour care, and others about their ability to meet family commitments. To address this, different shift patterns were being trialled within continuity models. However, this also risked removing high levels of continuity, an important contributory factor to positive outcomes, e.g. the reduced clinical interventions demonstrated in these models (Sandall et al., 2013; Perriman et al., 2018; Yuill et al., 2020).

Unlike the difficulties experienced by CMWs in their work to seek consensus amongst senior obstetricians to resource projects to drive implementation, a higher level of cooperation was demonstrated in their work with two consultant obstetricians in-charge of the OUs. Both these obstetricians supported the implementation of the CoCr models and agreed that they needed to reduce over-medicalisation of childbirth. However, despite acknowledging the barriers midwives faced working with a majority of obstetricians who implemented an interventionist approach, the consultant obstetricians did not support autonomous working by midwives. These obstetricians believed that obstetric expertise was needed in the care of all women. One obstetrician described the CoCr models as an opportunity to remove the divide caused by BCs and to foster collaborative working between midwives and obstetricians in OUs. Studies by Lane, (2006), Hunter and Segrott, (2010, 2014) and Healy et al. (2017) report similarly that obstetricians describe efforts to foster midwife-led care as a "midwifery project" that seeks to exclude obstetricians. Other studies however, report that midwife-led models of care have been found to improve collaboration and encourage midwives and obstetricians to implement a physiological care approach in OUs (Lane, 2006; Thompson et al., 2016; Page and Mander, 2014; Carolan-Olah et al., 2015; Healy et al., 2017).

Unlike the consultant obstetricians who appeared to disregard the resistance to a physiological care approach by a majority of obstetricians, and continued to emphasise collaborative working, the consultant midwives viewed this resistance in OUs, as a deeply problematic barrier. In their work to progress implementation in OUs they described: being ignored by

obstetricians and OU coordinators; failures to use guidelines supportive of a physiological care approach; continued implementation of an interventionist approach; lacking processes to manage poor practices amongst obstetricians, and difficulties in addressing poor attitudes amongst most senior midwives who acted as OU coordinators. Changing the culture of risk surveillance and shifting the dominance of an interventionist approach in OUs was described by both CMWs as their biggest challenge. An interventionist approach was observed to be progressed by OU Coordinators (who are senior midwives) and obstetricians using a regime of risk surveillance and hierarchical decision-making. Surveillance included routine escalation of care and checks by SMWs and obstetricians who repeated assessments by midwives and instituted interventions, e.g., IV fluids; insertion of urinary catheters when women were eating, drinking and voiding; or hastening birth. Surveillance also used centralised CTG monitoring and prompted entry into the room by obstetricians if they felt there was a problem with the foetal heart. It also acted as a regular meeting point for OU coordinators and obstetricians to discuss progress in labour, before going into the room to inform the women about their decisions, as opposed to direct observation of wellbeing or involving her and her birth partner in decision-making.

Within both OUs, many of the barriers to midwives' implementation of a physiological care approach identified in the review performed as part of this PhD (Darling et al., 2021), were observed and reported as experienced by midwives. This included control over women's and midwifery decision-making by obstetricians and OU coordinators; acquiescence rather than autonomous decision-making by midwives; risk preoccupation and its rationalisation and defensive practices. As labour progressed, midwives were observed to become less involved, and their views rarely considered in decision-making about the care of the women. Midwives were also observed not to advocate on women's behalf. Only 50% of midwives in the

labours observed advocated on women's behalf and only 22.2% obtained informed consent when a change in plan was needed.

Midwives described being autonomous and accountable for implementing a physiological care approach on the BCs but not on the OUs. Some midwives stated that accountability for women's care on the OUs was not solely theirs because obstetricians were routinely involved in care and decision-making had to include them.

Some midwives were observed choosing to implement an interventionist approach, and several described this preference amongst their midwifery colleagues. Experiencing a physiological birth on the OU was also described by several midwives as the women's and birth partners' responsibility because they did not choose the BCs where they were more likely to experience such a birth. However, several women during the recruitment period, and those who participated, questioned the use of organisational non-clinical interventions like BCs as a default choice. They felt that they should be supported to experience a physiological labour and birth in all birthing units/settings. This contradicts findings in other studies where women who used OUs settings reported anticipating or accepting the use of clinical interventions, or chose BCs to experience a physiological birth (Machin and Scamell, 1999; Kornelson, 2005; Downe et al., 2018).

In this culture of care, a significant barrier to midwives implementing a physiological care approach was the observed lack of clinical support. The need for clinical support was high: both units were staffed with midwives who, as reported in Chapter 7 were observed to need support to improve skills in implementing a physiological care approach. In addition, time for and depth of midwife and inter-professional training were poorly resourced, and learning from appraisals of experiences of implementing a physiological care approach was absent. One midwife described in-depth training and experiences of working in different models of care as an important reason why she was able to discuss and make a case for reconsidering

the use of a clinical intervention; several studies identify this as an important factor in facilitating autonomy in decision-making by midwives (Perdok et al., 2016; Sonmezer, 2020a, 2020b).

Opportunities to work in settings outside of OUs was a facilitator of the implementation of a physiological care approach, a finding that was also identified by the systematic review reported in Chapter 3 (Darling et al., 2020). A descriptive quantitative analysis (Chapter 7) showed that a small sample of 5 midwives who worked across the OUs, BCs and community used a wider range of physiological care practices compared to midwives who predominantly worked on the OUs.

In the OUs, midwives described learning mainly from untoward clinical incidents as a result of failing to intervene appropriately. Audit meetings focused mainly on sharing findings on adherence to practice-based guidelines ostensibly aimed at reducing risk: e.g., care guidelines to reduce 3rd and 4th degree tears. The use of physiological care practices on the OU was not audited. Risk management activities are important initiatives to keep women safe and a requirement of the NHS (NHS England, 2020) to counter future occurrences of clinical incidents, improve safety, and reduce negligence claims. However, this type of activity also led midwives in this research to implement practices ostensibly aimed at reducing risk as opposed to physiological care practices that were equally safe or safer, and more effective. Similar findings are reported in other studies in the systematic review reported in Chapter 3 (Surtees, 2009; Scamell, 2011, 2016; Scamell and Alaszweski, 2012; Page and Mander, 2014; Healy et al., 2017).

When questioned about implementation of practices that lacked evidence (for example, the use of lithotomy positions in the absence of instrumental births) midwives described mimicking the care of OU coordinators, “their first port of call” and of obstetricians. They also described epidural use as not a problem, because syntocinon can be used to speed up the labour,

and lithotomy positions can help to shorten the second stage. Midwives were also observed to engage in what Annandale (1988) described as ironic intervention: intervention intended to avoid a more significant intervention; for example, getting women who were mobilising into bed to get a good CTG trace or getting women to push at full dilation rather than await a natural urge to push. Although such care is not in keeping with implementing a physiological care approach, or in line with evidence-based clinical guidelines for intrapartum care, midwives perceived them as not necessarily harmful, and as a way of keeping other professionals from becoming involved and using other more invasive clinical interventions.

Although consultant midwives and obstetricians viewed role modelling a physiological care approach in practice as important to its implementation, their time on the OUs was limited. Consultant midwives hoped to increase time spent in clinical practice, but it appears that given their current levels of commitment at an organisational level, this is unlikely to happen. The midwives' description of the nature of clinical support received from the OU coordinators were similar to experiences described in other studies, i.e. clinical support was varied and dependent on whether these senior midwives chose to facilitate a physiological care approach (Earl, 2004, Carolan-Olah et al., 2015, Keating and Fleming, 2009) or impose an interventionist approach (Earl, 2004, Russell, 2007, Hunter and Segrott, 2010, 2014, Hadjigeorgiou and Coxon, 2014, Keating and Fleming, 2009, Scamell, 2011, 2016). OU coordinators in this research were mainly observed to implement an interventionist approach, with actions observed to be driven primarily by tacit guidelines based on local custom and practice, or protocols such as care bundle recommendations, intended to minimise risks, as opposed to implementing an evidence-based physiological care approach. To a lesser extent 'institutional time' played a role. Newham et al. (2017) described 'institutional time' as limiting to the length of time women could labour on OUs because of the need to speed up deliveries and clear beds for other women who needed care rather than by clinical need.

Midwives on the OUs were mostly observed to implement an interventionist approach. Observations of the use of physiological care practices showed that support in labour was assigned to birth partners who lacked skills or confidence; pharmacological pain relief was routinely offered while other comfort measures such as water for pain relief were not readily available or used; women were not encouraged to mobilise and use upright positions; and in second stage all the women were directed to push in recumbent positions while breath-holding, thereby increasing the risk of foetal heart decelerations (Stone et al., 2017).

Consultant midwives expressed doubt about whether midwives could work collaboratively with obstetricians and most OU coordinators, to implement a physiological care approach. Collaborative working is noted to be an important facilitator of evidence-based practice and implementation of recommended midwifery care, for example in studies that report this (McCourt et al., 2018; Walsh et al., 2020) midwives and obstetricians perceived birth as an inherently physiological process, were committed to implementing a physiological care approach and respected midwifery autonomy. In such settings, midwifery expertise was used to resolve problems that were classified as non-emergencies (Kennedy et al. 2011; Thompson et al., 2016; Panda et al. 2018). However, this form of collaborative working was not observed in this study and was described by respondents as rarely experienced at both OUs.

In attempts to progress the implementation of a physiological care approach on the OU, consultant midwives described using professional champions to support implementation and managing conflict between different professional groups to effect change. There is evidence in the literature that champions can effectively initiate and sustain implementation by overcoming barriers, developing skills, enhancing staff engagement, and improving staff motivation (Miech et al., 2020). At present, a pool of professional champions is yet to be formally established on both units. Most midwives acting as champions were on BCs or in its newly established CoCr model. An important barrier to creating a pool of professional champions

was failure to retain such midwifery expertise in the OUs. This is a difficult challenge to overcome when most midwives, including consultant midwives, reported being doubtful about progressing the implementation of a physiological care approach in the OUs because of the many barriers encountered. Several other studies (Lane, 2006; McCourt et al., 2016; Cramer and Hunter, 2019) including the systematic review (see Chapter 3 and Darling et al., 2020) report similar findings. However, the consultant midwives remain resolved to reconfiguring services to provide as much continuity of midwifery carer and care outside of OUs as possible. They saw reconfiguration to include the CoCr model as needed to improve the implementation of a physiological care approach in OUs because it improved skills, encouraged autonomous working to challenge routine clinical intervention use and promoted the advocacy of women. Their reconfiguration strategy also included encouraging birth outside of OUs, removing women from obstetric care unless they chose it, and midwives accessing obstetric care in a timely manner only when problems arose. However, the women in my study questioned having to use the BCs to experience a physiological birth. The experiences of women also showed a lack of support from midwives in preparation to experience a physiological care approach before and during labour.

A finding of the review performed as part of this PhD (Darling et al., 2020), was that an important barrier to women's ability to explore options and develop good plans to experience a physiological labour and birth, was the lack of time during short clinic appointments. Antenatal education was described as "information overload" and as "talking at them" (provided in a didactic way), and women and partners said that it did not prepare them for labour. As reported in other studies (Hadjigeorgiou and Coxon, 2014; Janani and Kohan, 2015; Sayakot and Carolan Olah, 2016; Parzandeh et al., 2017; Yuill et al., 2020) women mainly gained their knowledge from the internet and friends and family or drew on previous experiences.

Despite feeling poorly prepared for birth, during labour, women and their birth partners were observed to resist routine or unwarranted clinical interventions - an important facilitator to sustain their experience of a physiological labour and birth. This contradicts findings from studies where the strong "interventionist metaphor" of birth in OUs engendered greater reliance on professionals to make decisions on their behalf (Machin and Scamell 1999 Kornelson, 2005; Janani and Kohan, 2015). However, women were observed only to be able to do this until birth became imminent. At this point women described becoming tired and anxious and needing support and advocacy from midwives. Yet it was precisely at this time that the midwives became disengaged, allowing obstetricians to take over. Although partners provided good support, the lack of clarity about the involvement of other professionals in the woman's care did not facilitate their involvement and midwives tended to devolve supportive care to partners. Women and partners described their surprise at the involvement of other professionals because midwives had not informed them of any concerns. This was observed occurring in all the labours to varying degrees. Several practices, for example, perineal sweeping, repeated vaginal examination, use of lithotomy and episiotomies were observed to be used without a clear clinical justification and to cause pain and distress.

The quantitative analysis in Chapter 7 that described the use of 5 participative practices suggested women were not involved in decision-making in 7 out of the 9 labours where clinical interventions were used. Consent for clinical interventions were not fully informed and reasons given for use were cursory: it was either that the baby was 'tired' and it was observed being used in cases where there was no evidence of foetal distress (one midwife described this as a metaphor for potential foetal distress and a get-out clause) or women were described as tired (a metaphor for woman seen as 'needing help' so birth could be hastened). Assuming that there was a problem with their baby, women were also observed not to question clinical intervention use in such cases. The lack of informed consent related in this study is identified

as an important cause of post-traumatic stress disorder (Beck, 2004; Beck and Watson 2010; Ayers et al., 2016; WHO, 2019). As Beck 2004, reported in her study, midwives and obstetricians intent on delivering the baby appeared not to be aware of the traumatic effects of their approach to care.

During their interviews, several women spoke of their regret that their birth did not go as planned. Women and their partners expressed disappointment at not being involved in decision-making and wished midwives had given them greater support. Others blamed themselves for allowing clinical interventions to take place; and two couples also stated that their clinical interventions were driven by institutional time.

This study's objective of comparing facilitators and barriers in low interventions versus high interventions units was not completely met because of the very small sample observed at Hope. Some differences were described in interviews, e.g., consultant midwives and obstetricians described older midwives at Faith as more resistant to change and mired in entrenched methods of working, compared to the younger midwives at Hope who were more willing to adopt evidenced based practices and work in the CoCr model. Similar findings have been demonstrated in other studies exploring the characteristics of midwives who implemented a physiological care approach and choose to work in midwife led units (Vedam et al. 2009, 2014; Zinsser et al. 2016). However, despite a greater willingness, younger midwives were also observed as deferring to professionals with greater experience and seniority. I identify in this chapter the many barriers midwives at Hope and Faith faced with regards to implementing a physiological care approach and the continuing dominance of an interventionist approach. Higher normal birth rates on Faith were attributed by consultant midwife 2 to lower epidural use amongst local women. The increasing normal birth rates at Hope were mainly attributed to an increase in the number of women who used BCs or received continuity of carer.

8.6 Conclusions

In this chapter, I have used a thematic analysis to present findings on influences at the levels of the organisational leadership, professional groups (midwives and obstetricians) and individuals (women), on implementation of a physiological care approach. In the next chapter, the three conceptual models that synthesised the quantitative and qualitative findings are used to discuss the findings further, drawing on wider empirical and theoretical literature to critically explore influences at all three levels on the implementation of a physiological care approach.

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Chapter 9 Discussions

Introduction

This PhD research set out to explore the implementation of a physiological care approach to labour care in two obstetric units and understand influences on its use at the levels of organisational leadership, professional groups (midwives and obstetricians) and individuals (women). It adopted a pragmatic standpoint, and used an embedded explanatory mixed methods design to explore the multiple realities of the implementation of a physiological approach. The findings were arrived at by undertaking three stages of analysis: (i) quantitative analysis that generated descriptive findings on the midwives' use of physiological care practices, (ii) a qualitative analysis that generated analytical findings on influences at the level of organisational leadership, professional groups (midwives and obstetricians) and women and across three levels where they occurred, and finally (iii) an integrated analysis synthesising quantitative and qualitative findings to underpin a critical discussion of how facilitators and barriers at all three levels influenced implementation.

This chapter draws on all three stages of analysis and discusses the findings in the light of wider empirical and theoretical literature to critically explore the influences on the implementation of a physiological approach.

9.1 Influences at organisational leadership level

9.1.1 Interactions with business teams and clinical managers

At an organisational leadership level an important facilitating influence was a high level understanding demonstrated by two consultant midwives in their drive to underpin the care of all women, where appropriate, with a physiological approach. Their drive to implement a physiological approach was evident in their efforts to reconfigure the maternity services to deliver midwife-led care for women at low-risk of complications in all birth settings, develop midwifery skills in implementing a physiological approach, other organisational non-clinical

interventions to reduce the use of OUs by women assessed as at low risk of complications, and support women with bespoke plans so they could experience, where appropriate, a physiological labour and birth in the OUs.

Research into midwifery leadership to drive the implementation of a physiological approach in OUs is limited (Darling et al., 2020). This PhD research provides a greater insight into the challenges of fulfilling this role. Robinson (2012) describes consultant midwives as being in a position of power and described this power as derived from clinically acquired wisdom, transformational leadership skills, and a belief in woman centred care. However, this research reveals that consultant midwives' positional power to negotiate with clinicians and business teams to achieve a consensus to prioritise and resource projects to implement a physiological approach was limited.

I did not observe proceedings at these meetings nor interview clinicians or business teams who were present. It is unclear as to why business teams, who were described by consultant midwives as preoccupied with efficiency savings and reducing cash depletion to sustain a Foundation Health Trust status, were not interested in evidence that midwife-led care was safe and cost-effective. System level influences such as a decade of underfunding of the UK National Health Service, restructuring in attempts improve to cost efficiency and generate income, have complicated budgeting decisions and led to trade-offs, for example, in poor resourcing of staffing and activities like training (Kings Fund, 2021). Both a lack of staffing and training were identified in recent reports as contributing to failings in the maternity services (Morecambe Bay, 2015; Ockenden report, 2022). Business teams, it appeared, appraised clinicians of budget constraints, and negotiations about projects to be prioritised took place amongst clinicians before a business case was made for resourcing. However, neither negotiations with clinicians nor subsequent resourcing decisions made by business teams met the level of commitment expected by consultant midwives to reconfigure and upscale

midwife-led care with proven evidence of safety and cost-effectiveness (Schroeder et al., 2012). A large body of research demonstrates safety benefits of reduced routine clinical intervention use (Hatem et al., 2008; Brocklehurst et al., 2011) because a physiological approach is more likely to be implemented (Walsh and Devane, 2012; Renfrew et al., 2014; Hollowell et al., 2017; Nove et al., 2021). Midwife-led care, for example, among women who received care in the CoCr model are 16% less likely to lose their baby, 19% less likely to lose their baby before 24 weeks and 24% less likely to experience pre-term birth' they also report significantly improved experiences of care (Sandall et al., 2016; Turienzo et al., 2021).

Despite this compelling evidence, in the consultant midwives' view, business teams demonstrated a preference for prioritising and resourcing an obstetric framework of care (also adopted in national care bundles) to meet targets to reduce stillbirth rates, maternal and neonatal deaths and brain injury (NHS, England, 2017; 2019); implement recommendations from reports on failings in the maternity services to resource risk surveillance, for example, technology-based systems such as centralised foetal monitoring that lacks evidence for improving safety and effectiveness (Nunes at al., 2013) and risk-management with the intention to improve safety but not consistently in accordance with high-quality evidence (Kirkup Report, 2015; Ockenden Report, 2022).

In consultant midwives' negotiations with clinicians, evidence of decisions made to prioritise and resource an obstetric framework of care were also observed in practice, for example in the uncertainty surrounding resources for yearly mandatory and in-depth training in a physiological care approach for midwives, absent multi-disciplinary training; and other activities to improve the obstetric units birthing environment for women. Consultant midwives referred to the challenges of obtaining funding from sources outside the organisation to progress implementation work as a preoccupation (See Ch 8, section 8.3.1.2). The consultant midwives' description of, "feeling like imposters and needing to remind themselves that their work was

important," suggests a marginalisation of midwifery knowledge and practices. Such marginalisation is widely reported in research exploring control and domination of childbirth knowledge and practices by medical professionals. Medical professionals are described as successfully generating and disseminating knowledge about childbirth as a site of risk and pathology, and therefore justifying the need for their expertise to inform care, which is cast as more scientific and authoritative (Oakley, 1980, Arney 1982, Donnison, 1988; Davis-Floyd, 1992; Murphy Lawless, 1998; Cahill, 2001; Benoit et al., 2010 and Newnham, 2014). Jordan (1993) describes such knowledge as " that which is considered legitimate, consistent, official, worthy of discussion and appropriate to justify the specific actions of the people engaged in the fulfilment of the tasks set." (Jordan, 1993).

The obstetric framework that was prioritised in these services mirrors care derived from obstetric knowledge, and agreement to resource it also suggests the influences of obstetric discourses of authoritative knowledge and expertise at this level. Other influences, for example, that of a privileged gender described in studies (Oakley, 1980; Cahill, 2000, Fahy, 2007) were not identified by the consultant midwives, but status and reputations arising, for example, from obstetricians' income-generating capabilities through private obstetric services and research were described.

The consultant midwives suggested that a lack of skills on their part could have possibly contributed to not securing the level of resources they needed. Studies do report role ambiguity where consultant midwives were described as clinical specialist, and as lacking preparedness for undertaking strategic roles (Guest, 2001; 2004; Humphries et al., 2007). However, other comments in reference to their involvement like, "a right to be here," "needing to be brave" and experiences of hostility described in their interactions with some obstetricians, also suggest powerlessness rather than problems rooted in skills alone. The physiological approach is not new; it is evidence-based but difficulties persist in resourcing and

prioritising its implementation (McIntosh and Hunter, 2014; McCourt et al., 2011; Walsh et al., 2020). More evidence, derived from using observations in the boardroom, is needed to identify and explore these interactions in greater depth in future research applying relevant theories, for example, that of Crenshaw's (1997) theory of intersectionality. Crenshaw's (1997) legal study explored discrimination against black women, developing a framework to understand power structures and procedures that might create and maintain marginalisation and oppression. This has since been applied in the study of other groups and could potentially be used to study the powerlessness experienced by the consultant midwives more generally, but also specifically in their work to progress the implementation of a physiological approach. Of particular relevance in this theory is that a number of identities/factors, for example, gender, status including perceptions of the work that the consultant midwives were wanting to progress, could interact, combine, overlap, or intersect to sustain their position. This could provide answers to continued challenges consultant midwives face in progressing implementation of evidence-based midwifery care.

9.1.2 Interactions with consultant obstetricians

There was evidence of a level of cooperation between the consultant midwives and obstetricians in their commitment to work together to reduce routine clinical intervention use. In interviews, the two consultant obstetricians who were leads for managing the obstetric units stated that the practices of a majority of obstetricians at both OUs were rooted in an interventionist approach. Both described an urgent need to reduce routine clinical intervention use. In efforts to change this approach, consultant obstetricians also described the resistance experienced by consultant midwives. However, unlike the consultant midwives who described autonomous working by midwives as necessary to bring about a shift in an interventionist approach on the OUs, both consultant obstetricians were not

convinced that this was needed. Obstetrician 1 described obstetric resistance to a physiological approach, "as a problem with no easy answers" but regarded obstetricians as "experts in intrapartum care," and supported their routine involvement in the care of all women including when implementing a physiological approach (See also discussion in 9.2.2 on perceptions of obstetric expertise). Obstetrician 2 described midwives as skilled in a physiological approach, and obstetricians to be called upon when problems occurred. However; she also considered surveillance through centralised foetal heart monitoring systems as necessary to oversee the potential failure by midwives to recognise problems. She described midwifery units (MUs) as creating a divide between obstetricians and midwives and described the CoCr model as an opportunity for midwives and obstetricians to remove MUs, and work collaboratively in one setting: obstetric units. It seemed that both obstetricians' views pointed to a need for supervision of, rather than collaborative working with midwives, a view that has been consistently expressed by obstetricians in other studies (Lane, 2006; Hunter et al., 2010a; 2014; Healy et al., 2017; Spendlove, 2017).

The divide created by midwife-led units that obstetrician 2 described is refuted in other studies, where midwife-led units were described as enhancing the use of physiological care practices amongst midwives and obstetricians on OUs (Lane, 2006; Carolan-Olah, 2015; Thompson et al., 2016). While obstetricians felt that CoCr promoted collaborative working, and this is supported in relevant research, the main mediating factors for reduced clinical intervention use in this model appears to be increased levels of skills, a greater sense of accountability and responsibility for implementing a physiological approach and personalisation of care. Continuity also developed relationships of trust between midwives and women and between midwives and obstetricians. In studies of CoCr models, women described midwives working in this way as empowering and supporting them to experience a physiological

labour and birth (Sandall and Finlay, 2000; McCourt and Stevens, 2009; Homer et al., 2017; Perriman et al., 2018; McInnes et al., 2020; Rayment-Jones et al., 2020).

The obstetricians' views of collaborative working identified in this study also differs from what is described in the UK midwife's standards of practice (NMC, 2019) and the evidence-based Quality Newborn and Maternal Care Framework (QNMC, 2015) to improve quality of care in childbirth globally. This standard and framework describes midwives as lead professionals, autonomous and accountable for care, referring to obstetricians only when deviations from the norm occurred. This is a form of collaboration which is non-hierarchical. In their study in Sweden, Panda et al. (2018), exploring the reasons for lower rates of Caesarean-section in two obstetric units, found that an important contributory factor was a respect for midwifery autonomy, where obstetricians routinely sought midwifery expertise to find physiological solutions to non-urgent problems during labour and birth. However, the review conducted as part of this PhD research (Darling et al., 2020) found that the collaborative working described by Panda et al. (2018) is not the reported experience of most midwives working in OUs, and neither was it in this current study. Researchers warn against removing MUs and other models of midwife-led care, for example, CoCr/caseload models, which provide opportunities and optimum conditions, to develop skills and confidence in physiological care practices and foster autonomous working by midwives (Reiger 2009; De Vries et al., 2013). Collaborative working between obstetricians and midwives is also reported as difficult to achieve because of tensions and rivalries arising from deep philosophical and professional differences between midwives and obstetricians (Lane, 2006; Reiger 2009; Behruzi et al., 2017).

Despite their experiences with business teams and clinicians, the consultant midwives were undeterred in efforts to create an autonomous midwifery workforce. National maternity policy recommendations to implement CoCr models provided an important impetus (Better Births, 2016). The consultant midwives drew on available resources from their participation

as an Early Adopter site to implement CoCr and other alternative sources of funds to progress activities such as training. However, midwifery resistance to working in the CoCr model was perceived as posing a barrier. Consultant midwives described preference amongst midwives who have only experienced work in one setting as resisting CoCr models, unlike newly qualified midwives who were recruited and expressed a keenness to work in CoCr models.

Midwives with a preference to work in one setting were described as concerned about time involved in caring, doing on-calls to sustain continuity, and not developing specialist skills and confidence in one particular area of midwifery (antenatal, intrapartum, postnatal); all reasons also outlined in a recent survey of 798 midwives in UK (Taylor et al., 2019). Other studies have identified similar barriers including a lack of skills and confidence from lacking opportunities to work in out-of hospital settings, but now being expected to do so without being supported to develop their skills (McCourt et al., 2011; McCourt et al., 2012; Taylor et al., 2019; Martin et al., 2020)

9.2 Influences at a professional group level (midwives and obstetricians)

9.2.1.Resistance to a physiological approach

Despite a high level of commitment to implementing a physiological approach, consultant midwives described their interactions to foster a physiological care approach in OUs that was "mostly ignored," as "soul destroying." They, and the consultant obstetricians, stated that practices on the two obstetric units were not evidence-based and agreed that an interventionist approach dominated care. Both described the resistance amongst obstetricians and midwives to interactions to support the appropriate implementation of physiological approach as a significant barrier.

Guidelines to foster the use of a physiological approach were not always observed to be implemented (Ch 7, section 7.3.4; Ch 8, section 8.3.2.3, 8.3.2.4). Evidence shows that guidelines are only moderately effective in changing practices (Grimshaw et al., 2006; Lugtenberg

at al., 2009) and a range of facilitators and barriers to guideline development and implementation are identified (Grol, 2001; Grimshaw et al., 2009; Greenhalgh et al., 2014; Fischer et al., 2016). In this research, at the development stage, consultant midwives described barriers in (i) what knowledge should be transferred (ii) who should transfer this knowledge as influencing guideline development. The merger of the two hospitals, groups with different views about how care should be managed, and time constraints on meetings and discussing differences complicated efforts to arrive at a consensus. A consensus was not reached about evidence to be included, for example, in an intrapartum guideline that was ratified three years after the merger only for use by midwives, despite the existence of national evidence-based guidelines for intrapartum care (NICE 2014; updated 2017).

In the two units studied, where an interventionist approach dominated, practices outlined in guidelines to use a physiological care approach were either not implemented or midwives were needing support to develop skills to implement them (See chapter 7, 7.3.4; chapter 8, section 8.3.2.1). Midwives described implementation as dependent on whether an agreement to do so could be reached with specific OU coordinators and obstetricians. On the other hand, midwives were informed that they had to implement recommendations of, for example, a National Obstetric Anal Sphincter Injury (OASI) care bundle to apply perineal protection to protect against 3rd or 4th degree tears, even though evidence-base for this practice was lacking (See Ch 8, section 8.3.2.1).

The observations and midwives' experiences in this research lends greater salience to arguments that day to day interactions within communities of practices exert stronger influences on implementation than formal guidelines (Gabbay and May 2014; May et al., 2019). Gabbay and May (2014) described day to day interactions as contributing to the

development of "clinical mindlines"[27] that professionals are more likely to use in practice. . In both OUs, in day to day interactions, observations showed that most obstetricians and OU coordinators engaged in interactions to implement an interventionist approach, which shaped the "clinical mindlines" of most midwives and obstetricians in both OUs.

9.2.2 Hierarchical decision-making and surveillance

A significant barrier to the implementation of a physiological approach is midwives' experiences of hierarchical decision-making led by obstetricians. Most senior midwives who undertook roles as OU coordinators played the role of a conduit, calling on obstetricians to discuss cases, to make decisions to intervene and/or institute clinical interventions (See also discussion in 9.2.3). The findings in this research mirror the experiences of midwives in most of the studies included in the systematic review (Darling et al., 2021) where autonomous decision-making by midwives to implement a physiological approach were rarely valued or nurtured.

Most midwives in the current study described a lack of trust in and respect for their decision-making by obstetricians, and observations also showed obstetricians not taking the midwives' views into consideration. Despite OU coordinators and obstetricians endorsing midwives as lead carers to women, routine escalation of decision-making about care to these professionals in relation to women's progress in labour was observed, progress was re-checked by OU coordinators during regular rounds on shifts, and a centralised foetal heart monitoring surveillance system was observed to exert a panoptic effect on midwives. In his theory of panopticism Foucault (1995), draws on Jeremy Bentham's design of a tower of continual

[27] Clinical mindlines: guidelines-in-the-head, in which evidence from a wide range of sources has been melded with tacit knowledge acquired through experience and continual learning to become internalised as a clinician's personal guide to practising in varied contexts

observations in prisons to explain how surveillance is used in the exercise of power in institutions. Hunt and Symonds, (1995); Scamell (2011); Newnham et al. (2017) use this theory to illuminate how midwives were encouraged to conform, simply because of the possibility of being observed even if they are not under direct observation. Foucault argues, that these this from of power encouraged self-surveillance and self-regulation where individuals mark and discipline their behaviour according to a set of implicit social norms. This was echoed in the observations in this research. For example, a midwife, explaining why she needed a good CTG trace and was very 'strict' with a woman, insisting she got into bed so a good trace could be obtained said, "they were watching central foetal heart monitor outside." Most midwives implemented decisions made by OU coordinators and obstetricians in-charge.

Midwives described learning from observing consultant midwives and some senior midwives' challenges to routine clinical intervention use; they described MLUs as creating greater awareness about the need to implement a physiological approach. However, in only one out twelve labours in this research was a midwife observed to challenge such a decision, in this case an obstetrician's decision to augment a labour when there was no valid clinical reason to do so, and to advocate to support a woman to wait for contractions to return after an epidural.

Midwives described the routine use of continuous foetal heart monitoring, which is not supported by national clinical guidelines (NICE 2014), as habitual (Ch 8, section 8.3.2.4). Observations showed that surveillance using centralised foetal heart monitoring systems caused a great deal of anxiety for midwives. In a recent institutional ethnography study in one labour ward, Small et al. (2021) described behaviours that could potentially negatively influence safe care, for example, a shift in focus from caring for the birthing woman to focusing on the CTG, making decisions without a full clinical picture, disregarding midwives and women's views, performing unwarranted clinical interventions, interrupting midwives and

disrupting care during birth, causing anxiousness amongst women and reducing midwifery confidence in challenging unsafe decisions.

This research reiterates several findings of Small's study. Midwives attended to CTG machines instead of caring for women, and discouraged mobility and upright positions that women wanted to adopt in order to obtain good CTG traces (See Ch 8, section 8.3.2.5). Obstetricians were observed routinely entering rooms even when midwives did not request their assistance, and midwives described them disregarding their views, and interrupting them while they were supporting women to birth. Decisions to intervene based on centralised monitoring without consulting the midwife, or the woman, occurred in 3 labours. Continuous monitoring amongst women at low risk of complications, including those with decision-support systems to aid interpretation, have not been shown to improve safety or neonatal outcomes (Alfirevic et al., 2017; Brocklehurst et al., 2017).

Control over decision-making extended beyond midwives to women. Discussions about care frequently took place outside women's rooms, options were not always explored and procedures to intervene were observed to be undertaken without fully informed consent. By describing participative practices using the PPO tool, this research showed that fully informed consent was not obtained for clinical interventions that were used (inserting IV drips, catheters, perineal sweeping, instrumental births) in seven labours, and use across all participative practices on "involving women in decision-making" needed to improve to meet NICE quality standards (See chapter 7, section 7.3.4).

Observations also showed midwives withdrawing care when obstetricians and OU coordinators became involved, and they did not always explain to women the reasons for the involvement of other professionals. Anxious and confused women interpreted obstetric involvement as a sign that something was wrong with the baby. Explanations given to women by obstetricians and OU coordinators were often patronising, such as "you are getting tired" or "you

need help," and uninformative. Also observed were challenges by obstetricians who questioned, for example, women's decisions to wait before augmenting labour when there was no valid clinical indication for this clinical intervention (See Ch 8, section 8.3.2.2).

The control exerted over midwives' and women's decision-making observed by me and reported by participants may be influenced by discourses about childbirth as a site of risk and pathology and need for obstetric expertise to manage risks and ensure safety (See discussion under section 10.2.1). Foucault's ideas on discourse and power (Barth, 2008) and other risk theories (Beck, 1992 and Douglas and Widavsky, 1982) are widely used in research to explore control over midwifery and women's decision-making.

In his concept of genealogy, Foucault, drawing on historical and continued struggles between dominant and subjugated knowledge, challenges the idea of progress as inevitable. He refers to the "endless repeated play of dominations" where dominant voices present themselves as "at least inevitable, at the most true and incontrovertible" (Foucault, 1977). Foucault describes how dominant discourses are in a constant state of creating and maintaining boundaries through the development of power/knowledge: thought and action, knowledge and practice. Jordan (1993) in her work observing births in four cultures (Yucatan, America, Sweden and Holland) formulated the concept of 'authoritative knowledge': a concept that she describes is created and translated through joint interactions, "knowledge that is considered legitimate, consistent, official, worthy of discussion and appropriate to justify the specific actions of the people engaged in the fulfilment of the tasks set." (Jordan, 1993).

Both Foucault (1977) and Jordan (1993) describe those operating within dominant discourses as adjudicating who has access to this knowledge, who is denied, and who maintains control, and how this discourse is institutionalised. Other non-medical forms of knowledge, such as women's bodily experience, experience-based knowledge of traditional midwives, and even a current evidence-base derived from formal positivist enquiry supporting midwifery practices,

are delegitimized and displaced. Researchers (Davis-Floyd and Sargent 1997; Lane, 2006; Campo, 2010; Newnham et al., 2014; 2017; Page and Mander, 2014; Spendlove, 2017) all draw on Foucault (1977) and Jordan (1993) to argue that opposition to midwifery autonomy and independent decision-making is evidence of this discourse in action.

By placing midwifery and women's embodied knowledge at the margins of legitimacy, decision-making by both were controlled while an interventionist approach is standardised, ostensibly to promote safety and achieve greater certainty of positive outcomes. However, this certainty of positive outcomes is challenged by evidence that routine clinical intervention use causes harm: Maternal mortality and morbidities both physical (e.g. urological complications) or mental (e.g. psychological trauma) are increased (Brody and Sakala, 2013; Jansen et al., 2013; Betrán et al., 2016; Miller et al., 2016; Say et al., 2016; Fox et al., 2021). Increasingly compelling evidence shows that babies born by CS have an altered physiology that potentially impacts on short and long-term health (Hyde and Modi, 2012; Sandall et al., 2018; Dahlen et al., 2013, 2014, 2021). Iatrogenic preterm deliveries by Caesarean increases the risk of respiratory problems at birth (Belizán et al., 2007; Tsai et al., 2012). Others who are born early as a result of policies of routine inductions also suffer poorer health outcomes. For example, babies born following induction of labour in pregnancies classified as being at term (37-41+6) suffer poorer health outcomes in the long term compared to babies born at an older gestational age (Boyle et al., 2012; Dahlen et al., 2021; Petrou et al., 2020).

Other explanations for the persistence of an interventionist approach, in the face of such evidence, have drawn on theorists like Beck (1992) who progressed the idea of societies post-industrialisation as 'risk societies', preoccupied with debating, preventing, managing and protecting against risks. Beck (1991) notes that perceptions of risk are pursued within power relationships, where certain individuals and/groups possess, "the power to define what is

harmful, what is not and to what extent, and how to control and regulate risks that may arise". For example, the power of obstetricians at the top of the hierarchy, were observed in this research to veto decisions made by midwives and challenge women's choices to wait on labour physiology when they and their baby are well (Ch 8, Section 8.3.2.2, 8.3.2.6). Others, for example, Douglas and Widavsky (1982), have focused on social and cultural constructions of risk, arguing that the unpredictable nature of risk leads to risk categorisation, and a selection of 'ways of life' that may be perceived to be more at risk than others, "each social arrangement elevates some risks to a high peak and depresses others below sight." However, risk categorisation is frequently subjective and other potential dangers maybe ignored; group interactions and activities/rituals serve to incorporate an understanding of, and actions to counter, harm posed by events perceived to be risky. So, for example, in cultures where birth is perceived as inherently risky; birth in hospitals are perceived to be safer, a view also shared by several women in this research and in others (Kornelson et al., 2005; Weik, 2009; Surtees, 2009; Larsonn et al., 2009; Hadjigeorgiou and Coxon, 2014, Coxon et al., 2014; Janani and Kohan, 2015; Parzandeh et al., 2017).

Evidence shows that clinical intervention rates are higher where care is primarily obstetric-led and located in hospitals (Boerma et al., 2018; Dahlen et al., 2012). Despite this, the influences of technologically focused risk perceptions on care in childbirth are widely reported (Scamell 2011; Scamell and Alaszweski, 2012; 2014; Spendlove, 2017; McCourt et al., 2016; Healy et al., 2017). This influence was also evident in this research where risk preoccupations engendered routine surveillance and control over midwives' and women's decisions-making, and other structures such as the resourcing of risk management activities played a role in embedding an interventionist approach.

9.2.3 Lack of clinical support

Most midwives sought support from OU coordinators and other senior midwives to develop their skills in implementing a physiological approach. As such, the actions of OU coordinators who were observed to interact with midwives to implement an interventionist approach, posed a significant barrier to implementing a physiological approach.

O'Connell and Downe (2009) describe senior midwives/OU coordinators as 'street-level bureaucrats' who progressed the implementation of an interventionist approach. They drew on Lipsky's sociological theory, "street-level bureaucracy," and a key contention, which is that the decisions and actions of street-level bureaucrats actually 'become' the policies of the agencies they work for. In applying what Lipsky's terms as discretionary powers, bureaucrats possessed of expertise and a degree of freedom from organisational oversight and authority, can determine access or sanction i.e., 'make policy' that may or may not conform to policy directives. So while consultant midwives described a policy to underpin care of all women with a physiological approach, incorporating use of interventions where appropriate, OU coordinators were mainly observed and described as interacting to implement an interventionist approach. To explain their behaviours, Lipsky also explores the conditions under which street-level bureaucrats operate, for example, providing services to 'captive clients'. Most women in the UK feel 'captive' because they have no option other than to use maternity services in the National Health Service; services with inadequate resources, vague and conflicting organisational expectations, and poor performance management, yet in high demand. Observation and experiences shared by midwives about why OU coordinators did not provide clinical support to nurture a physiological approach, resonates with some of Lipsky's analysis and arguments, for example, (i) labour was managed by institutional time rather than allowing time for physiological progression because beds had to be cleared for other women waiting for care to ensure a safe workflow in two very busy obstetric units; (ii) a shortage of

senior midwives and other managerial responsibilities limited time for clinical support to meet high demands from a junior midwifery workforce; (iii) the OU coordinators' own embeddedness in an interventionist approach and lacking skills but who were reluctant to interact to acquire skills and knowledge to implement a physiological approach (iv) defensive practices as a risk management strategy to avoid blame for negative outcomes that may occur (Ch 8, 8.3.2.4, 8.3.2.5).

Clinical support from OU coordinators was needed because consultant midwives were unable to meet their commitment to spend 50% of their time in clinical practice. The consultant midwives were not able to fulfil all the responsibilities associated with work at an organisational leadership level that was complicated by restructuring as a Foundation Trust, inconsistent support from the Head of Midwifery, and clinical work involving midwives and women. Others, for example, Professional Midwifery Advocates and Practice Development Midwives were available for support but were not physically located in the units, being engaged in other tasks and not readily accessible for clinical support to midwives.

Plans to use professional champions (midwives and obstetricians), highly recommended for the purposes of fostering and countering resistance to implementation of a new or less established practice (Greenhalgh et al., 2005; Damshroder et al., 2009; Powell et al., 2015) were hampered by difficulties in both OUs in recruiting and retaining midwives who could act in this capacity. Midwives described most professional champions as working in the BCs or supporting newly qualified midwives in the CoCr model to progress reconfiguration. Consultant midwives described retention on the OUs as difficult because midwives were doubtful about having sufficient time for care, and about their ability to work autonomously, an issue also described in other studies of midwifery practice and retention (Finlayson et al., 2002 and Ball et al., 2002; Hunter 2010; Darling et al., 2020).

A facilitating influence identified in this research and others (McCourt and Stevens, 2009; Walsh, 2006; Davis and Homer, 2016; McCourt et al., 2016; 2018; Rocca-Ihenacho et al., 2020) are the benefits midwives derived from implementing a physiological approach in MUs and in the community. Midwives described opportunities for lengthy postings to MUs as limited because of its core staffing but there were opportunities for midwives who worked in the OU to rotate into the BCs and community; an integrated approach of working across different settings. Findings based on a small sample of midwives who work in this way demonstrated a higher level of use in physiological care practices (Ch7, section 7.3.2; 7.3.3). Other qualitative studies have described similar influences of working in MUs and other models of midwifery care as promoting the implementation of a physiological approach in OUs (Lane, 2006; Carolan-Olah, 2015; Thompson et al., 2016). The difference in the higher level of use of physiological care practices amongst midwives who worked in rotation across OUs, MUs and Community is worth exploring using a larger sample. Research also demonstrates that midwives in models of care, for example, caseloads and continuity of carer models, which requires work in all birth settings, are also associated with lower clinical intervention use and positive experiences amongst women (See also discussion of outcomes of care in these models in section 10.2.1).

9.2.4 Institutionalisation in an interventionist approach

Most midwives in this research described their experiences on the OUs as not nurturing their implementation of a physiological approach, but as institutionalising them in an interventionist approach. In focusing on understanding how implementation is progressed within organisations and amongst healthcare professionals. Parsons, 1959 for example, defines institutionalisation as the point where practices become habitualised as the product of socialisation processes. Drawing on this May et al. (2009), developing their theory on understanding how evidence is translated in practice, argue that:

> "the work of implementation does not automatically rest on individual cognition and volition, but includes extant vocabularies and repertoires of interaction, normative frameworks and belief systems, symbolic and material resources, power relations and legitimating authority"(pp 538).

This research also identified other forms of socialisation, for example, in the use of extensive training and audits of guidelines in risk surveillance and management, also reported in other studies (Scamell, 2011;2014; Healy et al., 2016; Spendlove, 2017), as engendering heightened risk perceptions and preoccupations. An example of this is the routine use of continuous tocographic monitoring for all women that is evidenced to increase clinical intervention use without conferring a safety benefit (Alfirevic et al., 2017; Devane et al., 2017). This research also identifies how training in implementing national care bundles undermined the use of some physiological care practices (e.g., persuading women to use recumbent positions to apply perineal protection to reduce 3rd and 4th degree tears). Despite midwives being aware of the lack of evidence base for this recommendation, they were also anxious about being blamed for negative outcomes when women insisted on using upright positions and 3rd or 4th degree tears occurred.

Multi-disciplinary training, identified by Sandall et al. (2010) and Walker et al. (2018) as needed to promote learning and implementation, was absent. Although consultant midwives and obstetricians recognised that greater time commitment for such activities was needed for all professionals, it remains poorly organised and resourced. Midwives described their 2-hour mandatory training annually to develop skills in implementing a physiological care approach as useful, but inadequate to meet their practice needs. Observations of a training session showed a degree of interactive learning, but a lack of time did not permit critical discussions about problems that midwives raised about implementing a physiological approach.

In this research, observations show obstetricians brushing aside negotiations to implement a physiological approach with, “we do not wait on OU, you can wait on the BC” and compromises accepted by midwives were observed not to support adequate waiting needed for physiological labour progress. Midwives were concerned about being viewed as obstructive for challenging practices they did not agree with; others worried about isolation and being denied clinical support when in need, and some described engaging in defensive practice to avoid being blamed for mistakes. Most midwives’ behaviours suggest a resignation to implementing an interventionist approach and midwives were not observed to be autonomous decision-makers, nor viewed themselves as such.

Midwives interviewed said that some midwives on the units preferred an interventionist approach. Others during observations were noted to be working like automatons, following instructions, avoiding eye contact and not communicating with women. Hunter (2010b) draws on her research on ‘emotion work’ in midwifery and that of others (Lipsky, 2004; Deery 2009; Cramer and Hunter, 2019) to describe this way of working as a way of coping with the challenges and cognitive dissonance experienced when ‘the reality of the workplace contrasts so vividly with midwives’ training and their ability to fulfil their professional role as autonomous decision-makers’ (Hunter, 2010b, pp 231). In working like automatons, Hunter, (2010b) describes midwives as adopting Goffman’s (1969) “impression management” to maintain a professional mask and preserve credibility with co-workers. Relatedly, Deery and Kirkham (2007) and Deery (2009) draw on Parsons’ (1951) concept of ‘affective neutrality’ to describe how midwives suppressed or disguised their emotions to ensure that the workplace remains as emotionally neutral as possible and to not impede the smooth running of the maternity unit. In this research, for example, midwives rationalised their implementation of an interventionist approach as working in a collegial manner, or as needing “to be seen to progress labour and birth” or “there’s only so long that a woman can labour on the unit,” and

described putting plans discussed with obstetricians in place to ensure smooth shift handovers.

The findings in this research also reveal the emotional conflicts stemming from institutionalised working driven by hierarchical decision-making and a lack of support also described in studies by Ball et al. 2002; Kirkham, 2006; Creamer and Hunter, 2019 and Hunter, 2010b. Midwives described fear of isolation, being blamed for mistakes, being seen as disrespectful, being viewed as a 'maverick' as reasons for conforming to the current norms in the units as opposed to challenging it.

Institutionalised working using an interventionist approach and its rationalisation to manage cognitive dissonance and emotional conflicts also serves to erode midwifery skills and confidence. Other studies exploring midwifery experiences in obstetric settings have described similar findings (Earl and Hunter, 2006; Page and Mander, 2014; Spendlove, 2017).

9.2.5 n fluences on women's and their partner's experiences of physiological labour and birth

Women and birth partners described a lack of time to explore risks and benefits of clinical interventions with midwives in the antenatal period as a barrier to decision-making about their choices for birth. They also described other approaches to deliver information to support decision-making, such as antenatal education and leaflets, as inadequate. Birth partners also stated that they were not prepared for the extent of labour support they had to provide because midwives did not, and not having the skills to provide this support. Their accounts were supported by observation data of their experiences during labour and birth. Women described the experiences of families and friends who had shared their own prior experiences of birth and problems they encountered as the main influences on their decision-making, for example, their choice to use the OUs for birth and for using or resisting clinical interventions. This reflects the influences of social construction of birth, also described in

several studies exploring women's decision-making (Davis-Floyd, 1997a;1997b; Kornelson, 2005; Weik, 2009; Campo, 2018; Yuill et al., 2020). Yuill et al's literature review (2020) describes women's decision-making as a complex and dynamic process and identifies personalisation of care, for example as experienced in the CoCr model, as offering time for women and midwives to explore the myriad influences on women's choices and to support decision-making. This is cited as a reason for reduced clinical intervention use amongst this group of women (Sandall et al., 2018; Yuill et al., 2020).

Midwives and consultant midwives described several organisational non-clinical interventions as facilitative of a physiological labour and birth, such as use of BCs as a default choice, provision of homebirth services, and birth choices clinics to develop bespoke plans for women who opted for care outside of guidelines or explore options with women who questioned recommended care plans by professionals. However, women's experiences of these services suggests a lack of equity because not all women were aware of its availability or understood its function.

Women who opted out of using the BCs but who were directed to the BCs when they arrived in labour and during labour, described how it had led them to consider using, or feeling they had no choice but to use, clinical interventions like epidurals to access the OUs. While they said they understood the reasons why BCs were being promoted (women described visiting the BC and speaking the BCs midwives and understood why they were more likely to experience of a physiological labour and birth in this setting), it did not fully influence the choices they made because of their perceptions of birth as inherently risky, reinforced through conversations with friends and family. Women also said they should be supported by midwives to experience a physiological birth in all birth settings and gave this as their reason for questioning the use of BCs as a default choice, and for questioning the way that midwives challenged their opt-out decisions.

The findings in this research illuminate the tensions between midwives on the OUs and the women and their birth partners with plans to experience physiological labour and birth. These parents were wrongly assumed to be open to clinical interventions and so were routinely offered an interventionist approach to care. This form of conscious or subconscious stereotyping is reported to be widespread in the maternity service, identified to occur along the lines of race, ethnicity, educational, socio-economic status; the use of birth plans (as was also experienced by women in this research) did little to influence the choices women were offered and the care they received (Green et al., 1990; Simkin, 2007; Puthussery et al., 2008; Henderson et al., 2013; Coxon et al., 2014). Exploring non-clinical factors influencing, for example, Caesarean section use, studies report a higher use amongst women who used private facilities because of assumptions that these women did so to access Caesareans, whereas the views of the women contradicted this (Porter et al., 2001; Hopkins and Amaral, 2005; Bourgeault et al., 2008). Reviews exploring women's preferences for CS use (McCourt et al., 2007; Massoni et al., 2011) found that maternal requests had a minimal contribution to the overall rising CS rates. For example, women at Hope were described by professionals as, "high flying boardroom types" who wanted Caesarean sections but were also noted to change their mind after attending a birth choices clinic to explore options and discuss care. One obstetrician said that women used her private service because they wanted continuity and not as many assumed because they wanted a Caesarean section.

In this research observations of resistance amongst women to epidurals, inductions/augmentation, use of recumbent positions, and episiotomies did not support midwives' view that women who use the OU wanted or were open to the use of clinical interventions. A worrying barrier was the view by midwives that in the context of the availability of BCs, women who chose the OUs, must expect an interventionist approach or take personal responsibility for experiencing a physiological labour and birth.

Observations showed birth partners struggling to provide labour support while midwives stepped aside, allowing obstetricians and coordinators intent on using an interventionist approach to deliver their baby. Inevitably women questioned midwives' skills and autonomy. Women and their birth partners expressed a sense of regret about the midwife's lack of support during labour, their lack of involvement in decision-making, the failure of midwives to advocate on their behalf and not being given more time to birth naturally and avoid unnecessary clinical interventions. Participative practices observed in this research showed that in seven out nine labours where several clinical interventions were used during labour and to hasten birth, explanations for use were cursory, and consent was not fully informed.

Women in this research described experiences that bore all the hallmarks of a traumatic birth described in research in this field (Beck, 2004; Beck and Watson 2010; Ayers et al., 2016; WHO, 2019), for example, care that disregarded their pain and distress, loss, sadness, regret, disappointment and guilt, with several women and their birth partners describing how they should have done more themselves to avoid clinical interventions..

9.2.6 Lack of appraisal work

Appraisal work is described widely in literature, as fostering implementation and represents an important part of effecting change (Pisek et al., 2001; Greenhalgh et al., 2004; Safran et al., 2006; Simpson et al., 2008).

At an organisational leadership level, both consultant midwives undertook informal appraisals together to understand how they could engage business teams and clinical managers more effectively to drive the implementation of a physiological approach. Their main purpose in doing this was to upscale the CoCr model and resource activities related to its implementation including addressing barriers presented by midwives to working in the model. However, there was no evidence of appraisals between consultant midwives and

consultant obstetricians to explore their views about autonomous midwifery practice; divisions caused by MLUs; and with other senior midwifery managers to explore, for example, concerns related to the retention of midwives who could act as professional champions in the OUs.

Audits and evaluations took place for the purposes of submission to the National Maternal and Perinatal Audit (NMPA, 2021) that reported outcomes of clinical intervention use across UK maternity services. Although submissions highlighted the need to reduce clinical intervention rates, at a professional group level poor audits of PCP use, a lack of time and the challenges of meeting as a group because of busy shift, and other commitments, did not facilitate formal appraisals. Such appraisal work could be used to *subvert* hierarchical decsion-making structures, to *modify practice* to draw on midwifery as well as obstetric expertise and to *reconstruct practice* to draw appropriately on a physiological approach along with appropriate and judicious use of interventions (when clinically indicated) to provide care (May et al., 2009; QNMC, 2015). Panda et al. (2018) described such an approach to practise as collaborative working that resulted in reduced clinical intervention use. Formal appraisals that were resourced and conducted in the service emphasised risk escalation and management but did not include multi-disciplinary work to explore how the implementation of a physiological approach can be progressed.

Midwives' personal appraisals revealed that some of them had significant insight into the barriers they faced on the OUs and were glad for opportunities to develop their skills in other birthing units. Most midwives, however, resigned themselves to implementing an interventionist approach. Yet others felt that an interventionist approach was an effective way of providing care and adopted this approach readily in their day to day practice.

9.3 Conclusion

This research met its two aims (i) to describe patterns of use in physiological care practices and (ii) explore how facilitators and barriers at the levels of the organisation leadership, professional groups (midwives and obstetricians) and women influenced the implementation of a physiological approach in two obstetrics settings. However it did not meet objective two of aim two: explore how facilitators and barriers differentially influence the implementation of a physiological approach in a 'lower-intervention' versus 'higher-intervention' obstetric unit. No definite conclusions could be drawn because only 3 observations were conducted at Hope. Despite successful recruitment, there were high losses to observation and time-frames for conduct of the project by a single researcher did not permit further recruitment and observations. In addition, investigations at an organisational level were focused on exploring influences only at leadership level and system level influences were not directly explored. A summary of key findings are presented in Chapter 11 with strengths and limitations, contribution to knowledge and implications for policy, practice and research.

Chapter 10 Conclusions

Introduction

This embedded explanatory mixed methods research provided an opportunity to explore and understand wide-ranging influences of facilitators and barriers at the levels of organisation leadership, professional groups, and women on the implementation of a physiological approach.

In this concluding chapter, a summary of key findings are presented followed by a reflection on the strengths and limitations of the study that includes reflexive accounting of my own role as researcher. The study's contribution to knowledge; implications and recommendation for policy, practice and research are then discussed. This is followed by a reflection on implications of the study for recent debates in relation to maternity care.

10 1 Key findings

10.1.1 Organisational level

An important facilitator at this level was the committed leadership of two consultant midwives to underpin care where appropriate with a physiological approach and promote positive experiences for women. However, in the consultant midwives' view they were unable to successfully facilitate understanding, engage and negotiate with business teams and clinicians to prioritise and resource projects to implement a physiological approach. Heightened risk perceptions and preoccupations engendered by recent failings at the maternity services; obstetric discourses for promoting safety through risk management; their expertise, status and income-generating capacity exerted a greater influence on prioritising and resourcing decisions compared to midwifery knowledge and practices. This posed a barrier to the consultant midwives' ability to reconfigure and upscale midwife-led care and create a skilled, competent, and autonomous midwifery workforce that they believed could bring about a shift from an interventionist approach to a physiological approach in the OUs.

Consultant obstetricians who collaborated with consultant midwives agreed that practices of a majority of obstetricians at both OUs were rooted in an interventionist approach and described an urgent need to reduce routine clinical intervention use. However, they emphasised the need for a collaborative approach rather than midwifery autonomy to progress implementation. The collaborative working they proposed was based on the supervision of midwives, use of surveillance, and obstetric expertise, rather than using this expertise to provide clinically appropriate support. The approach proposed by the obstetricians was observed to reduce midwifery skills in a physiological approach, and not to foster autonomous decision-making to challenge routine clinical intervention use.

10.1.2 Professional group level

An important facilitator of implementation of a physiological approach were opportunities for midwives to work in different birth settings. Aside from midwives sharing experiences of how this opportunity developed their skills, a higher level of use in physiological care practices was observed amongst a small sample of just 5 midwives who rotated to work in the OUs, BCs and community. This small sample size limits any inference that can be made, and this facilitating influence will require further research.

A significant barrier in the OUs was the use of hierarchical decision-making and centralised surveillance by OU coordinators and obstetricians to embed and integrate an interventionist approach. Although this implementation by OU coordinators was engendered by daily dilemmas of working in a highly pressured environment with heavy workloads and a high demand for support from junior midwives, barriers also included OU coordinators' lack of skills in a physiological approach; a preference for the norm of an interventionist approach that was standardised rather than personalised to women's choices, and clinical needs.

Most midwives described themselves as being institutionalised in an interventionist approach, did not regard themselves as autonomous decision-makers, sought permission to implement a

physiological approach, and did not challenge routine clinical intervention use nor advocate on women's behalf. Midwives were resigned to routinely implementing an interventionist approach in the OU; and looked to opportunities to work in the MUs and the community to develop their skills in a physiological approach. However, some midwives chose to implement an interventionist approach. Others rationalised their use of an interventionist approach to manage cognitive dissonance that arose from having to engage in its routine implementation; and emotional conflicts from conforming to the norms in the units. Widespread rationalisation by midwives also serves to erode skills and confidence in a physiological approach, further embedding an interventionist approach.

A lack of implementation of several supportive and participative practices amongst midwives described in this research, demonstrates a continued need for clinical support amongst midwives; as such the lack of clinical support to nurture the implementation of a physiological care approach in the OUs is a significant barrier. Although opportunities to work across birth settings i.e. OUs, MUs and community and the CoCr model was facilitative of implementation on the OUs, not all midwives embraced this facilitating influence, or felt supported to do so. Significant barriers were also posed by a lack of time spent on the OUs by consultant midwives. These included: poor retention of skilled midwives who could act as professional champions; lack of resourcing of time for in-depth training; and absent multi-disciplinary training and appraisals to foster collaborative working between midwives and obstetricians to appropriately implement a physiological and an interventionist approach

10.1.3 Women

An important facilitator was plans by women to experience a physiological labour and birth and their resolve, with the support of their partners, to achieve their goal including their

observed resistance to clinical intervention use. The barriers identified at the level of the woman were barriers to their experiences of a physiological labour and birth located at an organisational leadership and professional group level. Most women and birth partners experienced care that did not allow for adequate time for discussions about risks and benefits to support their decision-making about choices in labour and birth. Their decision-making mainly drew on their previous experiences of labour and the experiences of friends and families. Non-clinical organisational interventions like birth choices clinics are facilitative of women's experiences of physiological labour and birth. However, not all women were cognisant of these services or were referred. Professionals viewed planning birth in a BCs or women's home as the option for women with low-risk pregnancies to increase their likelihood of physiological labour and birth. However, when women who had opted out of the BC or homebirth option were encouraged by OU midwives to reconsider this decision in early labour and during established labour, this led them to consider use of clinical interventions like the epidural to access or remain in the OUs.

During labour and birth, most women experienced care where physiological care practices either lacking in appropriate use or not implemented. Women and their birth partners were poorly involved in decision-making and explanations for clinical interventions used were cursory. A significant barrier was the lack of a fully informed consent for clinical intervention use, observed in seven out twelve labours. However, the spectre of clinical interventions loomed over all the women because obstetric reviews were the default as opposed to a physiological approach. A lack of advocacy by midwives; assumptions that women who used the OU were open to clinical interventions; assigned responsibility to women for experiencing a physiological labour and birth because they did not opt for MUs, acted as barriers to women's ability to experience a physiological labour through to birth.

10.2 Strengths

Important strengths in this research are its methodological, analytical, interpretive rigour. The use of different data sources including observation and interviews from different perspectives provided a more nuanced understanding and also promoted transferability of its findings to comparable contexts.

10.2.1 Methodological rigour

This was facilitated by conducting a comprehensive critical review of the literature to situate the study and shape the two main research aims, objectives and methods. A systematic review was also used to identify current knowledge or gaps on this topic, refine aims and objectives, carefully consider and validate the appropriateness of methodology and methods.

Reasons for using mixed methods and all details of paradigm, design, data collection, analysis and reporting of findings are described. Key aspects of the design are described, including priority assigned to quantitative and qualitative methods, reasons for combining the methods, sequencing and the stage at which integration took place.

10.2.1.1 Rich data for analysis

Data was gathered using observations and interviews and rich data was yielded for analysis. Sample sizes were small but included midwives with differing length and types of work experiences, and women from a range of ethnic groups, experiencing first and second labours at low risks of complications.

Analysis incorporated data from:

i. Observations used a content-validated tool adapted for the PhD research (Physiological Practices Observation tool). This provided 89 hours of structured observation data on the midwives' use of physiological care practices, and unstructured qualitative

observation notes on decision-making related the use of these practices across 12 labours by midwives, obstetricians and OU coordinators with women

ii. Semi-structured interviews with participants recruited from across all the three levels generated questions that drew on observations. This explored experiences of driving and implementing a physiological approach and receipt of care. Interviews were conducted with two consultant midwives, 2 consultant obstetricians, 10 midwives, 11 women and 9 birth partners.

iii. Two hours observation of a training session, a reading of intrapartum guidelines for midwives and notes from a field diary on my reflexive accounting written throughout the research process

10.2.2 Analytical rigour

10.2.2.1 Data checking with academic and practice supervisors

Although data was gathered and the main analysis was conducted by a single researcher, the quantitative analysis benefited from discussions with my supervisors and a statistician who advised the use of appropriate methods for statistical analysis.

In the qualitative analysis the derivation of sub themes and themes involved supervisors and a consultant midwife in-charge of the project at the hospital, reading five transcribed writings of observations and interviews. This was followed by face-face discussion and feedback provided in writing. Any concerns raised about whether the collated sub-themes were derived from the data and appropriately conceptualised a descriptive theme, resulted in a return to original transcription and reflexive notes to reconsider coding and derivation. My supervisors checked all worked examples of analysis: table, figures, mind maps, thematic maps, and joint displays developed through integration. These are available for scrutiny in the chapters and appendices.

10.3 Limitations

Whilst this study made important contributions to the understanding of routine practices in obstetric units in England, and facilitators and barriers to implementing a physiological care approach, there are limitations to its findings.

10.3.1 PPO tool and sample Size

The PPO tool used for observations in this study was adapted to focus observations on practices in active labour. Original content from a validation exercise was retained, which reflected the evidence base that underpins use of a physiological approach, and the adaption process is made transparent for scrutiny (Appendix 14). This adapted tool was piloted locally. Using the tool, only a small sample of twelve labours were observed. (see appendix 19) for reasons why women were lost to observation). A small sample limited the ability to use robust statistical analysis to explore associations between levels of use in physiological care practices that was observed and other variables. As such generalisable inferences that cannot be made from its quantitative descriptive analysis. Only patterns of use across 12 labours and individual physiological care practices could be described and used within an integrated analysis of data with a range of perspectives to present findings on the influences on implementing a physiological care approach.

The small sample size observed at Hope also did not enable any conclusions to be drawn about differences in facilitators and barriers between both obstetric settings that may have contributed to a lower or higher clinical interventions rate. Both these limitations were not easily remedied in the context of the time frames of the PhD research but could provide a basis for future work.

10.4 Interpretive Rigour

10.4.1 Comparison across multiple data sources

Multiple data sources described in 10.2.1 generated rich data for analysis and facilitated

interpretive rigour using a range of different perspectives enabling comparisons across viewpoints to interpret and support critical arguments to generate credible findings.

10.4.2 Reflexive accounting

My reflexive accounting was relevant to establishing methodological, analytical and interpretive rigour. At a methodological level, an important part of my reflexive accounting related to sustaining my 'insider' role as a midwife researching other midwives, observing and interacting but without participating in decision-making about care and my 'outsider' role as a peripheral observer relative to the clinicians at work. This was a challenge because I observed decisions that I felt were appropriate to the woman's needs and others that were not. Despite interactions with midwives and women, I had to refrain from influencing decisions that I felt were inappropriate. My reflexive accounting was supportive but did not completely remove the emotional conflicts I felt from not intervening to support midwives and women. However, interviews with midwives where they openly discussed their decisions, and demonstrated curiosity and a willingness to critically explore the care that was provided, were helpful. As were interviews with women and birth partners who drew comfort from the opportunity to discuss their care and understand their experiences.

To ensure both analytic and interpretive rigour, I carefully considered and acknowledged my subjectivity. I did not undertake member checking and chose to focus on using reflexive accounting and original quotes to show that interpretations and inferences drew on the participants' voices. I reflected on my positionality and personal biases during all three stages of analysis to ensure I did not under or over interpret data and presented the views of participants. This was enhanced by discussions with my supervisors.

10.4.3 Bias

The PPO tool proved a useful instrument for observing and gathering data on the use of 27 physiological care practices. Although all 27 care practices in the PPO tool are important in the implementation of a physiological approach (NICE, 2017), the ability to observe all these care practices in any single labour is limited by the realities of clinical practice, the uncertainties associated with labour progress and birth, and women's personal preferences. Observation to understand use of physiological care practices by one researcher may increase bias. To address this, it would be valuable for future research to use larger samples, trained observers and generate inter-rater reliability measures amongst observers using the tool.

Researcher subjectivity inevitably influenced the findings in this study because data was analysed and interpreted through the critical lens of a single researcher, with expertise in a physiological approach, and committed to supporting women to experience a physiological labour and birth. I acknowledge that my own worldview is bound to influence the findings, and I addressed this interpretive bias by using a structured tool, by being reflexive about my personal and professional reactions to what I observed and through PhD supervision.

10.5 Contribution to knowledge

This study builds on and extends existing empirical knowledge by providing detailed data on professional practices and also adds to the theoretical understanding of the influences of facilitators and barriers to the implementation of physiological approach in two obstetric settings. The findings were able to provide a more nuanced understanding of many of the challenges and complexities of driving, implementing, and experiencing a physiological approach in obstetric settings. It was able to do this by drawing on rich data gathered through observations of implementation in clinical practice, exploring through interviews with

participants engaged in driving, implementing and receiving care. This was enhanced in the analysis by exploring the findings across different levels and types of data to identify similarities and contradictions to generate a critical discussion of findings.

This research addressed the lack of evidence on work at an organisational leadership level to drive the implementation of a physiological approach. It points to a dominance of obstetric knowledge and practices and the marginalisation of midwifery knowledge and practices. This presented a barrier to implementation in practice, but also at an organisational level, in the prioritising and resourcing of projects to implement a physiological approach or other measures. The evidence also points to the relative powerlessness experienced by the consultant midwives that played out in their expressions of self-reassurance about the importance of their role, needing to be brave, and needing to reassure themselves of their right to be involved in discussions at this level. An important element in any future research would be to explore other discriminatory influences at the organisation and leadership level, and to explore the reasons for persistence of difficulties, for example, in reconfiguring services to provide midwife-led care despite robust evidence informing national clinical guidelines and policies.

The findings also expose the degree of resistance to implementing a physiological approach at a professional group level among midwives and obstetricians, reinforces findings from other studies, and highlights the prevailing obstetric view that supervision of midwives by obstetricians are necessary for safe practice. Such supervision was evident in the use of hierarchical decision-making, centralised surveillance, routine involvement by and escalation of the care of all women including those experiencing a normal labour to obstetricians and OU coordinators.

This research also adds to evidence that collaborative working between midwives and

obstetricians is unlikely if current systems of care that do not respect or foster autonomous midwifery decision-making remain in place. It supports arguments by researchers that MUs and other ways of delivering care like the CoCr model are needed to develop midwifery skills in using a physiological approach, foster autonomy and support women's experiences of a physiological labour and birth.

Barriers reported in other studies and outlined in the review conducted as part of this PhD (Darling et al., 2020) were observed or described in this research. However, by using mixed methods, and an integration of findings from multiple sources, this research exposes in greater depth the mechanisms of influence on implementation of a physiological approach and on women and their birth partners' experiences of this. This includes the degree of control exerted on midwives' decision-making, for example, through centralised surveillance systems and daily interactions by OU coordinators and obstetrician to embed and sustain an interventionist approach.

To my knowledge this is the first time that a tool designed to observe midwives use physiological practices has been used in research. The development of the tool prior to the PhD research, and its adaptation for use in this PhD research is made transparent to demonstrate how the integrity of original content validity was maintained to describe midwives' use of physiological care practices in a structured form, and to focus my observations on decision-making processes related to the use of these care practices.

In this research the tool was used to generate findings about midwives' use of physiological care practices (supportive and participative practices), and variations in both. I was able to describe possible facilitative influences of rotational work in OUs, MLUs and the community in higher levels of use of physiological care practices. However, the difficulties of conducting large scale observational studies and complexities associated with assessing practices in complex individualised labour process necessitates the use of qualitative research. The qualitative

work in this research expands on evidence on barriers to provision of clinical support by OU coordinators and also identifies the need for resourcing of more time and depth to training in implementing a physiological approach (See recommendations for practice). This includes multi-disciplinary training and formal appraisals to foster collaborative working amongst midwives and obstetricians. This research emphasises the importance of the facilitating influences of collaborative working by midwives and obstetricians, illuminates what collaborative working to implement a physiological approach means and highlights the lack of such collaboration in the OUs.

Of particular importance in this study are findings of widespread rationalisation by midwives of their implementation of an interventionist approach. This could be considered as a strategy to manage the cognitive dissonance they experienced between daily realities of a norm of an interventionist approach and the clinical support from consultant midwives, guidelines and mandatory training that emphasised a physiological approach. The analysis identified that the prevailing approach, and midwives' rationalisation of it, not only served to erode the skills of midwives, but also to influence women's experiences of a physiological labour and birth.

This research shows that while midwives actively directed women to MUs to increase their likelihood of experiencing a physiological labour and birth, they also described women who chose OUs as needing to take responsibility for experiencing a physiological labour and birth. Midwives also assumed that these women were open to routine clinical intervention use and so routinely offered it to them.

The findings add to evidence about the lack of time in current systems of care to fulfil women's and their birth partners' need to explore plans for birth that include decisions about place of birth and clinical intervention use. Women's understanding of organisational non-clinical interventions like MUs as a default choice needs to be explored further. Women's use

of OUs was driven by their perceptions of birth as inherently risky. Observations showed, and women described pressure to use the MUs by midwives. As a result women felt they needed to use clinical interventions, for example, epidurals to access the OUs. Other non-clinical interventions, for example, birth choices clinics and bespoke plans to support women's plans for a physiological labour and birth in an obstetric setting adds to evidence that time and personalisation of care supports their experiences in obstetric settings.

The study also illuminates women and their birth partners' perceived barriers to their experiences of physiological labour and birth. Women identified as contributory factors: a lack of support in labour from midwives, undertaken instead by birth partners who felt ill-prepared for this role; a lack of independent decision-making by midwives who women were informed were their lead carers, but who did not advocate their behalf; routinised working and not allowing time for physiological labour and birth processes; and a lack of their involvement in decision-making about care or clinical intervention use. Their perspectives were also supported by the data gathered on midwives' observed use of participative practices.

10.6 Implications and recommendations

10.6.1 Implications for policy

Current Better Births (DoH 2016) policy recommendations to reconfigure services and to implement the CoCr model in England need to go beyond providing resource packs for implementation, funding and evaluation of the outcomes only at the piloting stage. This research took place at two hospitals that were early adopter sites, but uncertainty remains about resourcing the changes needed to implement and upscale this model. Further attention is needed to find solutions to address persistent barriers to policy implementation with respect to midwifery evidence.

10.6.2 Implications for practice

10.6.2.1 Organisational leadership level

At this level, there are opportunities to improve the support that consultant midwives receive to drive implementation. The role of Head of Midwifery (HOM) in this context needs to be explored further. Consultant midwives could benefit, for example, from the Head of Midwifery's involvement in supporting and strengthening their position in negotiations to resource projects to drive implementation.

The Head of Midwifery also has a role in reviewing the consultant midwives' commitments at an organisational leadership level to support their provision of clinical support. The need to resource more than just two consultant midwives must be considered in the context of complexities of this role and its responsibilities in a Foundation Health Trust.

Creating and retaining a team of professional champions in OUs remains a challenge. Most midwives with expertise chose to work outside of the OUs. Others engage in work to lead and support birth centres and Continuity of Carer teams. Dismantling the hierarchical decision-making structure in OUs; fostering a respect for midwifery autonomy and involvement of midwives in decision-making; improved structures to manage poor practice and attitudes are all needed to improve midwifery retention in OUs and to support the implementation of midwifery practices.

10.6.2.2 Professional group level

Learning activities in implementing a physiological care approach is limited in practice. Tools like the PPO can play a role is supporting such activities. Longer inductions to birth centres and community settings is much needed for developing skills in implementing a physiological care approach.

Currently, multi-disciplinary training and appraisals in implementing a physiological approach is absent. This needs to be resourced in a similar way to risk management training,

given the robust evidence of its safety and wellbeing value, and also be used to foster collaborative working between obstetricians and midwives.

For OU coordinators, nurturing a physiological approach in busy obstetric settings while undertaking a range of other responsibilities was challenging. Large cohorts of junior midwives added to this challenge. A review of the roles and responsibilities of OU coordinators and senior midwives is needed to understand how their provision of clinical work with midwives can be supported. This should also include an understanding of coordinators and senior midwives' level of skills in using a physiological approach. The time consultant midwives, obstetricians, and others spend on providing clinical support in OUs needs to be increased.

The use of untested technology like centralised surveillance to progress and embed an interventionist approach needs a rethink when it has not been demonstrated to improve safety. Findings in this research resonate with findings of Small et al. (2021) that behaviours induced by this technology may increase the risk of unnecessary clinical intervention use.

10.6.2.3 Women

Work to implement the CoCr model must continue to improve personalisation of care and support women's decision-making during labour and birth. Other ways to deliver personalisation of care in antenatal clinics can explore, for example, increasing the time allocated for appointments from 36 weeks onwards when discussion about plans for birth takes place.

Birth partners and women also reported information overload in birth preparation classes. More time must be resourced for this activity. Birth preparation can include developing birth partners' confidence to perform support roles during labour; information about services and facilities to support their physiological birth experience; and improving understanding about

the meaning of informed consent and raising concerns about women's lack of involvement in decision-making.

10.7 Recommendations for research

10.7.1 Organisational leadership level

An important area for further research is exploring boardroom dynamics in NHS Trusts where business teams and clinicians make decisions to resource the development of the maternity services. There is a paucity of research in this area despite the problems identified at a management level in reports of failings at NHS Trusts and the maternity services (Francis Report, 2013; Morecambe Bay Report, 2015; Ockenden Report, 2022.). This research can explore resourcing influenced by pressures to achieve and maintain NHS Foundation Health Trust and identified as detrimental to the quality of care received by patients in the Francis Report (2013) on failings at Mid Staffordshire NHS Trust. In this context, investigation can include the prioritising of income generating private obstetric service, which is evidenced to increase the use of routine clinical interventions (Lutomski et al., 2012; Dahlen et al., 2014; Boerma et al., 2018). Such research can benefit from institutional ethnography that employs, for example, a discourse analysis. Other methods informed by feminist theories, for example, intersectional theory could be used to explore decision-making and the position of midwifery in the services.

A critical area for further research is understanding how senior midwives can provide effective clinical support in practice. This can explore further the barriers posed by attitudes, level of skills, and other demands on the senior midwives who undertake OU coordinators roles and responsibilities.

10.7.2 Professional group level

To my knowledge this is the first time a tool has been used to observe use of a range of physiological care practices in active labour till after birth. A future study could examine clinical

competence, an important component, to understand the quality of translation of evidence based practices. A larger study powered to explore association is needed to explore findings in this study related to influences of, for example, years of work experience and midwives working rotationally across the OU, BC and community. This is important to explore further because one would expect midwives with more years of work experience and who are often assigned preceptorship roles, to be more skilled in applying a of physiological care approach. Facilitating influences of, for example rotational working across birth settings remains a critical area for research. At present, the development and use of midwife-led settings in the UK varies widely with birth still largely concentrated in OUs, reducing the exposure of midwives to practices outside of OUs (Walsh et al., 2017; 2020). This could have negative consequences for reducing routine clinical intervention use on OUs.

This type of research could, for example, explore the influences on implementation from practising in different models of midwifery care. This can, for example, be used in comparative research to:

i) Explore use of physiological care practices in different birth settings

ii) Explore the influences on working in, for example MLUs, the CoCr model or other models on midwife's use of physiological care practices on the OUs

This type of comparative research could also aim to understand how midwives working in different models of care navigate barriers on the OUs and understand support needs to foster implementation in OUs. Further research is also needed to understand reluctance amongst midwives to work across birth setting.

Understanding how collaborative working can be fostered in OUs is another important area for research. Evaluating the influences of multi-disciplinary training, appraisals of practice and audits can improve our understanding about how to progress collaboration.

Further research is also needed to explore the influences of centralised surveillance on professional behaviour. This technology is recommended for implementation in the UK National Health Service by post maternity services review (Ockenden Report, 2022) with no evidence that it improves safety.

10.7.3 Women

Women's use of birth settings continues to be driven by perception of birth as inherently risky. Knowledge transfer about physiological labour and birth in hospitals and other settings, and wider society, needs research scrutiny to explore influences on this transfer. This could explore information sources that women access i.e. relatives, peers, media and internet and other external influences, for example, the UK independent reviews for safety failures at several maternity services.

Research can also explore midwives and other professionals' interactions with women to discuss options to support women's choices to experience a physiological birth experience and influences on these interactions. This research can illuminate how personal choices of birth setting, women's roles in experiencing a physiological labour and birth, can be better supported.

10.8 Reflection

This is an important study in the current context of debates about physiological labour and birth in the UK. The phrase "normal birth at any costs" was first used in the report on the failings at the Morecambe Bay maternity services (2015) and has since been used in the findings of the Ockenden report (2021), this time in reference to not only midwives, but also obstetricians. These failings have given rise to calls to "stamp out the normal birth ideology," and this has increased in intensity after a similar call was issued in the Health and Social Care Committee report on safety in the UK maternity services (2021). Midwifery concerns centre

on how this will inevitably influence the implementation of a physiological approach and support the appropriate use of clinical interventions in childbirth necessary for safe care. This PhD report is timely for two reasons. Firstly, it addresses a deficiency in both the Morecambe Bay and Ockenden report that emphasises and recommends approaches to risk surveillance and management as opposed to the appropriate use of a physiological approach and the judicious use of clinical interventions needed to provide the safest care. Secondly, in identifying facilitators and barriers to the implementation of a physiological approach, it offers opportunities to progress constructive debates to enhance facilitators and address barriers at all levels to progress the safe implementation of a physiological approach.

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Appendix 1: Ethical approval from City University of London

Research Office
Northampton Square
London EC1V 0HB

[redacted]

www.city.ac.uk

Ref: PhD/17-18/02

23 October 2017

Dear Florence, Chris and Martin

Re: Facilitators and barriers to the implementation of a physiological care approach in labour and birth: a mixed methods study in two obstetric settings

Thank you for confirming that you have received HRA ethical approval for your proposed project.

Please find attached, details of the full indemnity cover for your study.

Under the School Research Governance guidelines you are requested to contact myself once the project has been completed, and may be asked to complete a brief progress report six months after registering the project with the School.

If you have any queries please do not hesitate to contact me as below.

Yours sincerely

[redacted]

Appendix 2: Ethics approval from the Health Research Authority

Letter of HRA Approval

Study title:	**Facilitators and barriers to the implementation of a physiological care approach in labour and birth: a mixed methods study in two obstetric settings**
IRAS project ID:	**226761**
REC reference:	**17/IEC08/0037**
Sponsor	**City, University Of London**

NHS
Health Research Authority

[redacted]

26 October 2017

Dear [redacted]

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England
The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the

section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.

- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Your IRAS project ID is **226761**. Please quote this on all correspondence.

Yours sincerely'

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Appendix 3: Site Approval

Dear Florence and Victoria,

RE: IRAS 226761. Confirmation of Capacity and Capability at Chelsea and Westminster Hospital NHS Foundation Trust

Study title: Facilitators and barriers to the implementation of a physiological care approach in labour and birth: a mixed methods study in two obstetric settings

IRAS reference: **226761**
REC reference: **17/IEC08/0037**
Local reference: **C&W17/90**

This email confirms that Chelsea and Westminster Hospital NHS Foundation Trust has the capacity and capability to deliver the above referenced study. Please find attached our Statement of Activities as confirmation.

We agree to start the study when the sponsor gives the green light to begin, and a signed copy of the attached SIA is returned.

As you may be aware, the Trust is committed to achieving the national metric of recruiting the first participant promptly and finishing recruitment on time and on target. These metrics are reported to the Department of Health and published on our website, and there are financial penalties if we fail to achieve them.

Therefore, your targets are:

Recruitment of first participant by:	**17th February 2018**
Recruitment of **20** participants by:	**15th September 2018**

Please let me know the date you enrol your first participant. If you are not able to meet these targets, please contact Damon Foster, Research Delivery Operations Manager (damon.foster@chelwest.nhs.uk), who will be happy to discuss support available, and/or take note of the reasons why these targets cannot be achieved.

If you have any queries about these targets or any point throughout your project, please do not hesitate to contact me. Meanwhile, may I take this opportunity to wish you well with your research. We look forward to hearing the progress and outcomes for the study.

With best regards.

[redacted]

Appendix 4: Participation information sheet for women

What if there is a problem?
If you would like to complain about any aspect of the study, City University London has established a complaints procedure via the Secretary to the University's Senate Research Ethics Committee. If you have concerns about the study, you need to phone 020 7040 3040. You can then ask to speak to the Secretary to Senate Research Ethics Committee and inform them that the name of the PhD project is "**Facilitators and barriers to the implementation of a physiological approach: A mixed methods study in two obstetric settings**
You could also write to the Secretary at:
Anna Ramberg
Research Office, E214
City University of London
Northampton Square
London
EC1V 0HB
Email: Anna.Ramberg.1@city.ac.uk

Funding
The PhD project is funded by the City University of London PhD Studentship Awards

University Sponsored Research
This will be provided by City University of London. If you are harmed as a result of your participation in the study, you will be compensated, provided that, on the balance of probabilities, an injury was caused as a direct result of the intervention or procedures you received during the study. These special compensation arrangements apply where an injury is caused to you that would not have occurred if you were not in the study.

We would not be bound to pay compensation where: The injury resulted from a drug or procedure outside the protocol and/or -The protocol was not followed. These arrangements do not affect your right to pursue a claim through legal action.

Study approvals
The study has been approved by the NHS National Research Ethics Service: include reference number

Research team

[redacted]

PhD Study

Facilitators and barriers to the implementation of a physiological approach: A mixed methods study in two obstetric settings

Information for women

Hospital Logo removed

PIS for women front page 1.3 210917 IRAS 226761

What is the project about?
Although the use of interventions in childbirth is necessary when problems arise, routine use unsupported by evidence impacts on the health and well-being of women and babies.
This study assesses the use ofevidence-based care practices by midwives and obstetricians to meet your physical and emotional needs during labour and birth and use clinal interventions when problems arise. It does this on the labour wards, because clinical interventions in these units remain high.

What does this study involve?
The study will observe the practice of all healthcare professionals involved in providing your care during labour. It assesses the use of evidence-based physiological care practices by midwives. It will also explore factors that influences the ability of professionals to use these practices. You will also be invited for a postnatal interview about your experience of care during birth

Why have I been invited?
If your pregnancy is low risk during labour and you, your partner and the midwife caring for you have consented to participate in the study, practice can be observed.

What are the benefits of this study?
Your involvement in this study will enable us to improve the use of evidence-based care practices and explore barriers to successful implementation. It will help us to understand how your involvement in decision-making can reduce the use of clinical interventions. It will enable us to explore how your views can be potentially used to improve care.

What are the risks of participating?
The risks to you are minimal.Your choices about your care will be respected and your participation will have no impact on the care you receive. If you experience distress when recalling events surrounding your birth, during the interview, the researcher will discontinue the interview. Appropriate support will be arranged with your consent.

Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. We would discuss this with you before telling anyone else.

What will happen if I take part?
If you decide to participate, you and your labour companion will sign a consent form and place it in your notes before labour begins. You will receive the consent form with this leaflet when you attend your 36 week check with the midwife.

When you arrive on the labour ward, the admitting midwife will check your notes. If the consent is signed by you and your partner, the researcher will meet you with the midwife who will care for you to observe your labour. The researcher will not be involved in your care. She will be quiet, observe, assess practice and write notes, until your baby is born.
She will contact you after birth to obtain a consent for an interview. The interview will last for up to an hour and your partner may participate if you wish them to. The interview will be audiotaped with your consent. This data will be transcribed and stored on a password protected computer

This computer will be kept in a locked cabinet at the researcher's office in City University of London. Audio-transcribing services are provided by City University of London

Do I have to take part?
No, you do not have to take part. Your participation is entirely voluntary, and you are free to withdraw at any time and without giving a reason. You may ask the researcher to leave the labour room at any point and you will be able to decline an interview following the birth if you wish. Your decisions will have no impact on your care. If you withdraw, your data will be retained.

Will anyone know that I'm taking part in this project?
Only those caring for you during your labour will be know that you are taking part in this research. No one else will know apart from the team during the shift, those supporting you and the researchers.

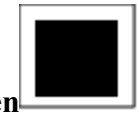
Access to medical records
The researcher will only access your medical records on care in labour and childbirth. She will do this to examine discussions that may have taken place between healthcare professionals outside of care provided in the labour room. This is used build a complete picture of care to understand how decision taken to intervene or not to intervene in labour are made.

What will happen when the research study stops?
Anything you tell us will be kept confidentially by City University of London for ten years with your consent and then deleted using a secure procedure.

PIS for women version1.3 210917 IRAS ID 226761

What will happen to results of the research study?
The anonymised results of the study will be shared with practitioners at the Trust and members of Maternity Voices. It will be presented at seminars and conferences.

It will be published in one peer-reviewed journal. We can send you a copy of the report if you would like to see it. We will ensure that the information you provide is not traced back to you in conversations, reports and dissemination.

Appendix 5: Consent for women 

Principle investigator: Florence Darling Study Title: Facilitators and barriers to implementing a physiological care approach in labour and birth: A mixed methods study in two obstetric settings

1	I confirm that I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records.	
2a	I understand this will involve being observed during labour/during practice	
2b	I understand this will involve being interviewed by the researcher	
2c	I understand this will involve allowing the interview to be audiotaped and transcribed	
3	This information will be held and processed for the following purpose(s): I understand the information will be used to report on the use of evidence to reduce overuse of medical interventions in labour and childbirth and explain variations in the use of evidence by healthcare professionals	
4	I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any presentations, reports and publications or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.	
5	I understand that sections of medical notes on my care in labour and birth may be looked at by researcher. This is to examine documentation by professionals of consultations with other professionals about my care which may not be observed by the researcher in the labour room.	
6	I understand that the study data may be looked at by individuals from regulatory authorities for audit and monitoring purposes.	
7	I understand that this data will be retained for at least 10 years on a secure database at City University of London, and the data may be examined again at the next phase of this study.	
8	I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.	
9	I agree to City University of London recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on City complying with its duties and obligations under the Data Protection Act 1998.	
10	I agree to the use of anonymised quotes in publication.	
11	I agree to take part in the above study.	

Name of Participant Signature Date_

Name of Researcher Signature Date

When completed, 1 copy for participant; 1 copy for researcher file.

Appendix 6: Participation information sheet for labour companion

What if there is a problem?
If you would like to complain about any aspect of the study, City University of London has established a complaints procedure via the Secretary to the University's Senate Research Ethics Committee. If you have concerns about the study, you need to phone 020 7040 3040. You can then ask to speak to the Secretary to Senate Research Ethics Committee and inform them that the name of the PhD project is "**Facilitators and barriers to the implementation of physiological approach: A mixed methods study in two obstetric settings."**
You could also write to the Secretary at:
Anna Ramberg
Research Office, E214
City University of London
Northampton Square
London
EC1V 0HB
Email: Anna.Ramberg.1@city.ac.uk

Funding

The PhD project is funded by the City University of London PhD Studentship Awards

University Sponsored Research

This will be provided by City University of London. If you are harmed as a result of your participation in the study, you will be compensated, provided that, on the balance of probabilities, an injury was caused as a direct result of the intervention or procedures you received during the study. These special compensation arrangements apply where an injury is caused to you that would not have occurred if you were not in the study.

We would not be bound to pay compensation where:
The injury resulted from a drug or procedure outside the protocol and/or -The protocol was not followed. These arrangements do not affect your right to pursue a claim through legal action.

Study approvals

The study has been approved by the NHS National Research Ethics Service: include reference number

Research team

[redacted]

PhD Study

Facilitators and barriers to the implementation of physiological approach: A mixed methods study in two obstetric settings

Information for labour companion

Hospital Logo removed

PIS for labour companion front page 1.3 210917
IRAS 226761

What is the project about?

Although the use of interventions in childbirth is necessary when problems arise, routine use unsupported by evidence impacts on the health and well-being of women and babies.

This study assesses the use of care practices by midwives and obstetricians to meet your physical and emotional needs during labour and birth and use clinal interventions when problems arise. It does this on the labour wards, because clinical interventions in these units remain high.

What does this study involve?

The study will observe the practice of all healthcare professionals involved in providing your care during labour. It assesses the use of physiological care practices by midwives. It will also explore factors that influences the ability of professionals to use these practices. You will also be invited for a postnatal interview to explore your experience of care during labour and birth

Why have I been invited?

If your pregnancy is low risk during labour and you, your partner and the midwife caring for you have consented to participate in the study, practice can be observed.

What are the benefits of this study?

Your involvement in this study will enable us to improve the use of evidence -based are practices and explore barriers to successful implementation. It will help us to understand how your involvement in decision-making can reduce the use of clinical interventions. It will enable us to explore how your views can be potentially used to improve care.

PIS for labour companion version1.3 210917 IRAS ID 226761

What are the risks of participating?

The risks to you are minimal.Your choices about your care will be respected and your participation will have no impact on the care you and your partner receive. If you experience distress when recalling events surrounding your birth, during the interview, the researcher will discontinue the interview. Appropriate support will be arranged with your consent. Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. We would discuss this with you before telling anyone else.

What will happen if I take part?

If you decide to participate, you will sign a consent form and place it in your partner's notes before her labour begins. Your partner will receive the consent form with this leaflet when she attends her 36 week check with the midwife.

When you arrive in the labour ward, with your partner the admitting midwife will check her notes. If the consent is signed by you and your partner, the researcher will meet you with the midwife who will care for you to observe your labour. The researcher will not be involved in your care. She will be quiet, observe, assess practice and write notes, until your baby is born.

She will contact your partner after birth to obtain a consent and arrange a date and time for an interview. The interview will last for up to an hour. If your partner wishes you to participate, consent will be obtained from you if you agree. The interview will be audiotaped with consent and data transcribed and stored on a password protected computer.

This computer will be kept in a locked cabinet at the researcher's office in City University of London. Audio-transcribing services are provided by City University of London

Do I have to take part?

No, you do not have to take part. Your participation is entirely voluntary, and you are free to withdraw at any time and without giving a reason. You may ask the researcher to leave the labour room at any point and you will be able to decline an interview following the birth if you wish. Your decisions will have no impact on your partner's care. If you withdraw, your data will be retained

Will anyone know that I'm taking part in this project?

Only those caring for your partner during her labour will know that you are taking part in this research. No one else will know apart from the team during the shift, those supporting you and the researchers.

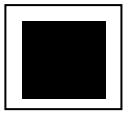
What will happen when the research study stops?

Anything you tell us will be kept confidentially by City University of London for ten years with your consent and then deleted using a secure procedure.

What will happen to results of the research study?

The results of the study willbe shared with professionals at the Trust and members of Maternity Voices. It will be presented at seminars and conferences. It will be published in one peer-reviewed journal. We can send you a copy of the report if you would like to see it. We will ensure that the information you provide is not traced back to you in conversations, reports and dissemination.

Appendix 7: Consent for Labour companion



Consent form for Labour companion

Principle investigator: Florence Darling Study Title: Facilitators and barriers to implementing a physiological care approach in labour and birth: A mixed methods study in two obstetric settings

1	I confirm that I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records.	
2a	I understand my participation will involve being observed during labour/during practice	
2b	I understand my participation will involve being interviewed by the researcher if my partner wishes me to be present during the interview	
2c	I understand my participation will involve allowing the interview to be audiotaped and transcribed	
3	This information will be held and processed for the following purpose(s): I understand the information will be used to report on the use of evidence to reduce overuse of medical interventions in labour and childbirth and explain variations in the use of evidence by healthcare professionals	
4	I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any presentations, reports and publications or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.	
5	I understand that the study data may be looked at by individuals from regulatory authorities for audit and monitoring purposes.	
6	I understand that this data will be retained for at least 10 years on a secure database at City University of London, and the data may be examined again at the next phase of this study.	
7	I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.	
8	I agree to City University of London recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on City complying with its duties and obligations under the Data Protection Act 1998.	
9	I agree to the use of anonymised quotes in publication.	
10	I agree to take part in the above study.	

Name of Partner /Labour companion Signature Date

_____ _____ _____

Name of Researcher Signature Date

When completed, 1 copy for participant; 1 copy for researcher file.

Appendix 8: Participation Information Sheet for midwives

What if there is a problem?
If you would like to complain about any aspect of the study, City University London has established a complaints procedure via the Secretary to the University's Senate Research Ethics Committee. If you have concerns about the study, you need to phone 020 7040 3040. You can then ask to speak to the Secretary to Senate Research Ethics Committee and inform them that the name of the PhD project is "**Facilitators and barriers to the implementation of physiological approach: A mixed methods study in two obstetric settings**"

You could also write to the Secretary at:
Anna Ramberg
Research Office, E214
City University of London
Northampton Square
London
EC1V 0HB
Email: Anna.Ramberg.1@city.ac.uk

Funding

The PhD project is funded by the City University of London PhD Studentship

Awards

University Sponsored Research

This will be provided by City University of London. If you are harmed as a result of your participation in the study, you will be compensated, provided that, on the balance of probabilities, an injury was caused as a direct result of the intervention or procedures you received during the the study. These special compensation arrangements apply where an injury is caused to you that would not have occurred if you were not in the study.

We would not be bound to pay compensation where:
The injury resulted from a drug or procedure outside the protocol and/or -The protocol was not followed.
These arrangements do not affect your right to pursue a claim through legal action.

Study approvals

The study has been approved by the NHS National Research Ethics Service: include reference number

Research team

[redacted]

PhD Study

Facilitators and barriers to the implementation of physiological approach: A mixed methods study in two obstetric settings

Information for midwives

Hospital Logo removed

PIS Ifor midwife front page Version 1.3 210917 IRAS ID226761

What is the project about?

Although the use of clinical interventions in childbirth is necessary when problems arise, routine use unsupported by evidence impacts on the health and well-being of women and babies.

This study assesses the use of physiological care practices by midwives and obstetricians to meet women's physical and emotional needs during labour and birth and use clinical interventions only when problems arise. It does this on the labour wards, because clinical interventions use in these units remain high.

What does this study involve?

The study will observe midwives' practices while they provide care in labour. It assesses their use of physiological care practices. It will also explore factors that influences their ability to use these care practices to implement a physiological approach. It also interviews midwives who are observed, women who experienced their care and consultant midwives and obstetricins who drive implemention.

Why have I been invited?

The observation of your practice is a key element in data gathering about the use of physiological care practices and facilitators and barriers to its implementation.

What are the risks of participating?

The risks to you are minimal. However, if you experience distress during reflection or dialogue at the interview, the researcher will discontinue the interview. The interview may be rescheduled with your consent. Appropriate support will be arranged with your consent.

If at any time you feel uncomfortable with the researcher's presence as an observer, you may ask her to withdraw without giving a reason.

What are the benefits of this study?

Your involvement in this study will enable you to reflect on your practice and engage in dialogue to improve the implementation of a physiological approach. Facilitators can be promoted while barriers to successful implementation can be explored and addressed. It will also help us understand whether women are involved in decision-making..

Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. We would discuss this with you before telling anyone else.

What will happen if I take part?

If you decide to participate, the researcher will approach you to obtain a written consent, to be present when you are caring for a woman and conduct an interview within 24hrs -3days after the care episode.

If you consent the researcher will position herself in a corner, so as not be in the way of care-giving. She will not be involved in care. She will be quiet, observe, assess practice and write notes until the baby is born.

She will meet with you after birth to for an interview in a office designated for this purpose. The interview will last for up to an hour and audiotaped with your consent.

This audio-taped data will be transcribed and stored on a password protected computer. This computer will be stored in a locked cabinet at the researcher's office in City University of London.

Audio-transcribing services are provided by City University of London.

Do I have to take part?

No, you do not have to take part. Your participation is entirely voluntary. You are still free to withdraw at any time and without giving a reason. If you withdraw your data will be retained

Will anyone know that I'm taking part in this project?

Other professionals on the shift will know that you are taking part in this research. No one else will know apart from the team, those supporting you and the researchers. All data will be confidential and will be shared with you but not with any managers or colleagues.

What will happen when the research study stops?

Anything you tell us will be kept confidentially by City University of London for ten years with your consent and then deleted using secure procedures.

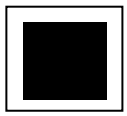
Access to medical records

The researcher will only access medical records on care in labour and childbirth. She will do this to examine discussions that may have taken place between healthcare professionals outside of care provided in the labour room. This is used build a complete picture of care to understand how decision taken to intervene or not to intervene in labour are made.

What will happen to results of the research study?

The anonymised results of the study will be shared with practitioners at the Trust and members of Maternity Voices. It will be presented at seminars and conferences.

It will be published in one peer-reviewed journal. We can send you a copy of the report if you would like to see it. We will ensure that the information you provide is not traced back to you in conversations, reports and dissemination.



Appendix 9: Consent form for midwives

Principle investigator: Florence Darling

Study Title: Facilitators and barriers to implementing a physiological care approach in labour and birth: A mixed methods study in two obstetric settings

1	I confirm that I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records.	
2a	I understand my participation will involve being observed when providing care to women in labour	
2b	I understand my participation will involve being interviewed by the researcher	
2c	I understand my participation will involve allowing the interview to be audiotaped and transcribed	
3	This information will be held and processed for the following purpose(s): I understand the information will be used to report on the use of evidence to reduce overuse of medical interventions in labour and childbirth and explain variations in the use of evidence by healthcare professionals	
4	I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any presentations, reports and publications or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.	
5	I understand that the study data may be looked at by individuals from regulatory authorities for audit and monitoring purposes.	
6	I understand that sections of medical records on the woman's care in labour and childbirth will be accessed by the researcher. This is to examine documentation by professionals of consultations with other professionals about care which may not be observed by the researcher in the labour room.	
7	I understand that this data will be retained for at least 10 years on a secure database at City University of London, and the data may be examined again at the next phase of this study.	
8	I understand that my participation is voluntary, that I can choose not to participate in part or all the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.	
9	I agree to City University of London recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on City complying with its duties and obligations under the Data Protection Act 1998.	
9	I agree to the use of anonymised quotes in publication.	
10	I agree to take part in the above study.	

_____	_____	_____
Name of Participant	Signature	Date
_____	_____	_____
Name of Researcher	Signature	Date

Appendix 10: Participation information sheet for consultant midwives and obstetricians

What if there is a problem?
If you would like to complain about any aspect of the study, City University London has established a complaints procedure via the Secretary to the University's Senate Research Ethics Committee. If you have concerns about the study, you need to phone 020 7040 3040. You can then ask to speak to the Secretary to Senate Research Ethics Committee and inform them that the name of the PhD project is "**Facilitators and barriers to the implementation of physiological approach: A mixed methods study in two obstetric settings**"

You could also write to the Secretary at:
Anna Ramberg
Research Office, E214
City University of London
Northampton Square
London
EC1V 0HB
Email: Anna.Ramberg.1@city.ac.uk

Funding

The PhD project is funded by the City University of London PhD Studentship
Awards

University Sponsored Research

This will be provided by City University of London. If you are harmed as a result of your participation in the study, you will be compensated, provided that, on the balance of probabilities, an injury was caused as a direct result of the intervention or procedures you received during the the study. These special compensation arrangements apply where an injury is caused to you that would not have occurred if you were not in the study.

We would not be bound to pay compensation where:
The injury resulted from a drug or procedure outside the protocol and/or -The protocol was not followed.
These arrangements do not affect your right to pursue a claim through legal action.

Study approvals

The study has been approved by the NHS National Research Ethics Service: include reference number

Research team

[redacted]

PhD Study

Facilitators and barriers to the implementation of physiological approach: A mixed methods study in two obstetric settings

Information for midwives

Hospital Logo removed

PIS Ifor midwife front page Version 1.3 210917 IRAS ID226761

What is the project about?
Although the use of clinical interventions in childbirth is necessary when problems arise, routine use unsupported by evidence impacts on the health and well-being of women and babies. This study assesses the use of physiological care practices by midwives and obstetricians to meet women's physical and emotional needs during labour and birth and use of clinical interventions only when problems arise. It does this on the labour wards, because clinical interventions use in these units remain high.

What does this study involve?
The study will observe and assesses the midwives' use of physiological care practices. It will explore facilitators and barriers to their ability to use these care practices to implement a physiological approach . It also interviews midwives who are observed, women who experienced their care and consultant midwives and obstetricins who drive implemention.

Why have I been invited?
We want to understand your role and responsibilities in driving the implementation of a physiological approach at organisational and professional group level . We would also like to explore facilitators and barriers you encounter in fulfilling your role and responsibilities..

What are the risks of participating?
The risks to you are minimal. However, if you experience distress during the interview, the researcher will discontinue the interview. withdraw without giving a reason.

What are the benefits of this study?
Your involvement in this study will enable you to reflect on your role and engage in dialogue to improve the implementation of a physiological approach. Facilitators can be promoted while barriers to successful implementation can be explored and addressed

Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. We would discuss this with you before telling anyone else.

What will happen if I take part?
If you decide to participate, the researcher will approach you to obtain a written consent.

If you consent the researcher will meet with you for an interview in an office designated for this purpose. The interview will last for up to 1-2 hours and audiotaped with your consent.

This audio-taped data will be transcribed and stored on a password protected computer. This computer will be stored in a locked cabinet at the researcher's office in City University of London.

Audio-transcribing services are provided by City University of London.

Do I have to take part?

No, you do not have to take part. Your participation is entirely voluntary. You are still free to withdraw at any time and without giving a reason. If you withdraw your data will be retained

Will anyone know that I'm taking part in this project?

No one else will know apart from you and the researchers. All data will be confidential and will be shared with you but not with any managers or colleagues.

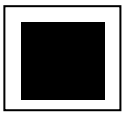
What will happen when the research study stops?

Anything you tell us will be kept confidentially by City University of London for ten years with your consent and then deleted using secure procedures.

Access to medical records
The researcher will only access medical records on care in labour and childbirth. She will do this to examine discussions that may have taken place between healthcare professionals outside of care provided in the labour room. This is used build a complete picture of care to understand how decision taken to intervene or not to intervene in labour are made.

PIS for consultant midwives andobstetriciansversion 1.3 210917 IRAS ID 226761

Appendix 11: Consent form for consultant midwives and obstetricians



Principle investigator: Florence Darling

Study Title: Facilitators and barriers to the implementation of a physiological care approach in labour and birth: A mixed methods study in two obstetric settings

1	I confirm that I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records.	
2a	I understand my participation will involve being observed when providing care to women in labour	
2b	I understand my participation will involve being interviewed by the researcher	
2c	I understand my participation will involve allowing the interview to be audiotaped and transcribed	
3	This information will be held and processed for the following purpose(s): I understand the information will be used to report on the use of evidence to reduce overuse of medical interventions in labour and childbirth and explain variations in the use of evidence by healthcare professionals	
4	I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any presentations, reports and publications or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.	
5	I understand that the study data may be looked at by individuals from regulatory authorities for audit and monitoring purposes.	
6	I understand that sections of medical records on the woman's care in labour and childbirth will be accessed by the researcher. This is to examine documentation by professionals of consultations with other professionals about care which may not be observed by the researcher in the labour room.	
7	I understand that this data will be retained for at least 10 years on a secure database at City University of London, and the data may be examined again at the next phase of this study.	
8	I understand that my participation is voluntary, that I can choose not to participate in part or all the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.	
9	I agree to City University of London recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on City complying with its duties and obligations under the Data Protection Act 1998.	
9	I agree to the use of anonymised quotes in publication.	
10	I agree to take part in the above study.	

_____	_____	_____
Name of Participant	Signature	Date
_____	_____	_____
Name of Researcher	Signature	Date

When completed, 1 copy for participant; 1 copy for researcher file.

Appendix 12 Practitioners' views and barriers to implementation of the Physiological Practices Observation tool: A pilot study.

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KBNtool finalised pr

Appendix 13: Assessing evidence-informed practices to reduce routine Interventions in labour and childbirth: validating the content of the Physiological Practices Observation tool.

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Appendix 14: The adaptation process of the PPO Tool post-content validation

Philosophy (Domain 1: Now titled as Approach to care in adapted tool)	
1.1 My approach to care is based on the philosophy that birth is a normal physiological process and an understanding that minimising interventions is crucial to doing no harm	
2. Facilitating choice (Removed and used in domain 6 of adapted tool)	
2.1 The woman's plans for birth are a key focal point of my care during her birth.	
2.2 I act as the woman's advocate in ensuring her plans for birth are supported and implemented as far as possible.	
3. Guidelines *(Removed and used in domain 6 of adapted tool)*	
3.1 I use guidelines-both local and national when providing care in labour, but flexibly considering the woman's perspectives and her needs throughout labour	
4. Environment *(Titled domain 2 in adapted tool)*	
4.1The environment in which the woman births are one where she must feel safe and comfortable. Her wishes inform my actions, but I am proficient in advising her on ways to ensure safety and comfort	
4.2 I ensure that all equipment needed to assist the woman to assume different positions to birth is available and the women are aware how to use it.	
4.3a I ensure that space is created to facilitate mobilisation	4.3b Use positions to aid descent and rotation of the baby. The woman may also choose not to mobilise and to stay calm and quiet
4.4a I ensure that the woman's space is protected from unnecessary intrusion.	4.4b I am a non-intrusive presence in the room, while the woman labours following her own rhythms.
5. Partnership working and communication *(Removed and used in domain 4 and 6 of adapted tool)*	
5.1 I facilitate care based on the woman's plan for her birth. Any need for change in her plans is discussed with her and where appropriate with her partner.	
5.2 My care of the woman is regularly documented. Documentation is an important part of care provisions in labour, but I ensure that it does not interfere with my caring of the woman.	
6. *Supporting women in labour (Titled domain 3 in adapted tool)*	
6.1 I believe in the woman's ability to birth their babies normally. I convey this through positive words and supportive actions	
6.2 I encourage the woman to use natural methods of pain relief. This can include massage, positioning, use of breathing techniques and water	
6.3 I encourage the use of water immersion for pain relief understanding that it is evidenced as reducing the need for drugs.	
6.4 I provide one to one support to the woman in established labour, leaving the room only for short periods or if the woman requests this.	
6.5 I build a rapport with the woman and her birth partners based on trust and mutual respect	

Domain: Philosophy was renamed as "approach to care" 1.1, 8.5, 9.9 were merged and re written. (This is No 1 in the adapted tool).

Care practices in Domains 2 and 3 were used in the writing of No 24 and No, 26 in domain 6 of adapted tool: Involving women in decision-making.

4.1 and 4.2 were merged and written as No 2 in Domain 2: Environment of the adapted tool

4.3a is No 3 and 4.4a is No 4 in Domain 2 of adapted tool.

4.3b was simplified and is No15 in domain 4: Ongoing labour in adapted tool.

4.4b is No 6 of the adapted tool: domain 3: Supporting women in labour.

5.1 was used in writing No 25 in domain 6 in the adapted tool.

5.2 is No 11 in domain 4: Ongoing care in the adapted tool.

6.1 was retained as No 7 in domain 3 in the adapted tool.

6.2 was retained as No 8 in the adapted tool.

6.3 was removed and this was assessed in No 8 in the adapted tool.

6.5 was moved into Domain 6 tool: Involving women in decision-making as No 23 and rewritten.

6.4 is No 5 in Domain 3:Supporting women in labour

4.4 (gold) is now (No 6).

7. Progress in early labour *(Removed)*
7.1 I am able to explain clearly, the benefits of labouring at home or in an environment where the woman feels comfortable and safe during this time.
7.2 I inform the woman about ways she can care for herself while she is at home/in latent labour including ascertaining if she has access to support from her birth partners
7.3 I appreciate that the woman's definition of the start of labour and mine may be different and that she may benefit from professional support in early labour.

This section was removed because it did not form part of the assessment in this research

The PPO Tool post content validation continued

8. ***Active labour (Titled domain 4 in adapted tool as: Ongoing care)***	
8.1 I am able to use non-invasive approaches to note onset and progress in active labour.	
8.2 Vaginal examination are kept to the minimum and only if I have concerns about progress.	This is undertaken with informed consent from the woman.
8.3a I monitor the foetal heart intermittently as per guidelines	8.3b Using it as a means of providing information to the woman and her birth partner
8.4 I encourage the woman to eat, drink and void.	
8.5 As labour progresses, I adopt a watch and wait approach so long as birth follows the normal path.	I remain close, caring for the woman with kind words and gentle touch.
9: **Imminent birth** ***(Used in domain 4 of adapted tool titled Ongoing care)***	
9.1 I use non-invasive approaches to note the onset of 2nd stage.	
9.2 I use vaginal examinations as part of my assessment only if there are concerns about progress.	
9.3 I monitor the foetal heart intermittently as per guideline but ensure that the monitoring is gentle, unobtrusive and does not create anxiety	
9.4 I assist the woman to birth in a position of their choice and offer advice on positions known to assist descent and rotation based on progress .	
9.5 I await and support the woman to use her body's natural expulsive reflex to birth their baby.	
9.6 I offer the woman praise and encouragement acknowledging her efforts to birth her baby	
9.7 I remain with the woman throughout this process caring for her needs, being kind	
9.8 I use an episiotomy only in the event of foetal distress.	
9.9. As birth progresses, I adopt a watch and wait approach so long as birth follows the normal path. I remain close, caring for the woman with kind words and a gentle touch.	

8.1 was merged with 9.1 and is No 12 in adapted tool

8.2 was merged with 9.2 and is No 13 in adapted tool.

8.2 (blue) is No 27 in Domain 6: Involving women in decision-making.

8.3a is merged with 9.3 and rewritten as No 9 in adapted tool

8.3b is rewritten as No 10 in adapted tool.

8.4 is No 14.

8.5 is merged into No 1

9.4 was merged with 4.3 and rewritten as No15: The midwife assist women to adopt positions of their choice and supports woman to use upright positions (No 15).

9.5 is No 16.

9.6 and 9.7 were merged and is No 17.

9.8 is No 18.

9.9 is merged into No 1.

The PPO tool post-content validation continued

10. Birth of the placenta (*Titled domain 5 in adapted tool as: Imminent birth*)	All care practices in Domain 10 are retained in the adapted tool as Domain 5: First Hour of Birth except for 10.3. 10.3 is now No14 in the adapted tool: Domain 4: Ongoing labour The care practices that were retained were simplified in content.
10.1 A physiological third stage proceeds from a physiological first and second stage. I am able to support the woman's choice with birthing her placenta.	
10.2 If the woman chooses active management, I wait for a minute before clamping the cord and administering oxytocin or for as long as the woman wishes me to wait.	
10.3 I encourage the woman to void prior to birth if she is able to reduce the incidence of a post- partum haemorrhage.	
10.4 I ensure that the baby remains skin to skin with the woman to maximise the production of oxytocin and promote uterine contraction.	
11. Birth of the baby/breastfeeding (Removed)	
11.1 I ensure the baby is skin to skin immediately after birth to promote biological nurturing	
11.2 I am able to assist the woman to latch her baby on her breast if necessary	
11.3 I encourage breastfeeding in the first hour after birth for as long the woman wants to feed her baby and the baby wishes to feed.	
11.4 I ensure that both the woman and her baby stay together to facilitate bonding and breastfeeding.	
12. Respect and dignity *(Replaced with domain 6: Involving women in decision-making*	12.1, 12.2 and 12.3 were removed. These elements are assessed in No 17, 23, 24, 25 of the adapted tool; and also used to provide examples in 4, 23 Several care practices from other domains were used to write 3 care practices, no 23, no 24, no 25, in domain 6: Involving women in decsion-making,. 12.4 is No 27 and 12.5 is No 26 in the adapted tool
12.1 I treat the woman as an individual and respect her dignity.	
12.2 I treat her kindly and compassionately	
12.3 I respect her right to confidentiality.	
12.4 I gain her informed consent if plans that have been agreed with her needs to change	
12.5 I listen to her and respond respectfully to her concerns and preferences.	

Appendix 15: The PPO tool adapted for observations in the PhD research (Detailed version)

Domain 1: Approach to care
1.Advocates watching, attending and responding appropriately as labour unfolds. **(***This approach is underpinned by a view that birth is an inherently normal physiological process. It advocates being with the woman, caring and responding to the woman's needs and providing physical and emotional support until birth. Clinical interventions are used only when problems that may arise in the woman and her baby, warrants it use***)**
Domain 2: Environment
2.Ensures the woman is comfortable in her place of birth **(***Ensuring the room is not too cold or too hot, bright lights are avoided, all facilities for rest and using upright positions e.g. birthing balls, bean bags, mats are made available)*
3.Creates space to promote and support mobilisation, also understanding that some women may prefer to rest and be quiet
4.Protects this space from unnecessary intrusion *(Protects the woman's privacy by making sure she is not overlooked or interrupted. Anyone requesting entry to the room must knock and only those granted permission may come in)*
Domain 3: Supporting women
5.Provides one to one care, leaving the woman on her own only for short periods or if she requests it
6.Encourages and supports the woman to use natural methods of pain relief. This can include massage, breathing, positioning and use of water
7.Assumes a quiet, comforting presence during the woman's labour
8.Conveys her belief in the woman's ability to birth normally through positive words and actions
Domain 4: Ongoing care
9.Listens regularly to the baby's heart in a gentle and unobtrusive way
10.Keep the woman and her birth partner informed about their baby's condition
11.Keeps careful records but does not allow this to interfere with her care of the woman
12.Uses non-invasive approaches to note onset and progress in active labour (woman's movements, the sounds she makes, the flush on her cheeks, her breathing, skin - tone
13.Keeps internal examinations to the minimum and uses it only if there concerns about progress
14.Encourages the woman to eat, drink and void
15.Assist women to birth, to adopt positions of their choice and offers advice on the use of upright positions
16.Awaits and supports the woman to use her body's natural expulsive reflex to birth their baby.
17.Remains close caring for her needs, praising and encouraging the woman's efforts to birth her baby
18.Performs an episiotomy only in the event of foetal distress.

The adapted Physiological Practices Observation tool (continued)
Domain 5: First hour of birth
19.Places the baby skin to skin with the woman soon after birth and for as long as she wishes
20.Offers the woman a choice of an active or physiological care approach to birth her placenta
21.Clamps the baby's cord after a minute if the woman chooses an injection to birth her placenta or leaves the cord unclamped for as long as the woman wishes to wait
22.Leaves the cord unclamped if the woman chooses a physiological 3rd stage
Domain 6: Involving women in decision-making
23.Aims to build a relationship with the woman based on mutual trust and respect. *(Being in tune with the woman's wishes for her labour; showing courtesy; offering reassurance and praise; listening; being warm and kind)*
24.Acts as the woman's advocate, ensuring her plans for birth are supported and implemented as far as possible. Guidelines are used flexibly considering the women's perspectives and needs during labour
25. Listens and addresses the woman's concerns and preferences respectfully
26.Explores options and explains pros and cons when change to the woman's plans are needed
27.Obtains informed consent to any change to plans that have already been discussed

Appendix 16: Collated data in excel on observed use in 22 supportive practices

Labours observed	Site	Total PCPs	PCPs assessed after exclusions	PCPs assessed after exclusions %	Total observed use	Total observed use%
LB1	1	22	13	59	13	100
LB2	1	22	18	81.8	11	61.1
LB3	1	22	19	86.3	10	52.6
LB4	1	22	20	90.9	15	75
LB5	1	22	20	90.9	14	70
LB6	1	22	15	68.1	1	6.6
LB7	1	22	17	77.2	12	70.5
LB8	1	22	19	86.3	12	63.1
LB9	1	22	20	90.9	15	75
LB10	2	22	19	86.3	11	57.8
LB11	2	22	17	77.2	9	52.9
LB12	2	22	20	90.9	16	80

Appendix 17: Collated data in excel on observed use in 5 participative practices

P	Site	Total PCPs	PCPs assessed after exclusions	PCPs assessed after exclusions %	Total observed use	Total observed use%
LB1	1	5	4	80	4	80
LB2	1	5	5	100	2	40
LB3	1	5	5	100	1	20
LB4	1	5	5	100	3	60
LB5	1	5	4	80	4	80
LB6	1	5	5	100	1	20
LB7	1	5	5	100	4	80
LB8	1	5	5	100	4	80
LB9	1	5	5	100	5	100
LB10	2	5	5	100	1	20
LB11	2	5	3	60	0	0
LB12	2	5	5	100	5	100

Appendix 18: Number of physiological care practices assessed in each labour and reasons for exclusions

Labour and Birth	Parity	Reasons for non-applicability of some physiological care practices	Total practices out 27 observed
L1 (Faith)	G1 P0	Epidural and needing CTG. Labour slowed, syntocinon was started. One participative practice was excluded because observation were discontinued	17
L2 (Faith)	G1 P0	Minor cardiac anomaly in the baby needing CTG	23
L3 (Faith)	G2 P1	Previous Caesarean-section needing CTG	24
L4 (Faith)	G1 P0	Appearance of meconium needing CTG	25
L5 (Faith)	G2 P1	Use of epidural needing CTG/ Quick 2nd stage.	24
L6 (Faith)	G2 P1	Quick labour with foetal heart deceleration needing CTG	20
L7 (Faith)	G1 P0	Low risk induction needing CTG	22
L8 (Faith)	G1 P0	Low risk induction needing CTG	24
L9 (Faith)	G1 P0	Low platelets needing active management of 3rd stage.	25
L10 (Hope)	G1 P0	Appearance of meconium needing CTG	24
L11 (Hope)	G2 P1	Previous post-partum haemorrhage	20
L12 (Hope)	G2 P1	Previous post-partum haemorrhage	25

Key: G1 P0 = primigravida; G2 P1 = multipara CTG=continuous tocographic monitoring

Appendix 19: Loss to observations

Reasons women were lost to observations at Hope

Numbers recruited	Reasons labour was not observed
5 women (n=5)	Changed their mind and only wanted birth companions to be present
8 women (n=8)	Change in risk status from low risk to high risk after recruitment
2 women (n=2)	Did not get in touch when in labour. Unable to contact to ascertain reason
3 women (n=3)	Decided to use birth centre (alongside midwifery unit)
Total: n=18	

Reasons women were lost to observations at Faith

Numbers recruited	Reasons labour was not observed
1 woman (n=1)	Changed her mind and decided she will have an elective C-section
1 woman (n=1)	Change in personal circumstances
2 women (n=2)	Changed their mind and only wanted the birth companions to be present
9 women (n=9)	Change in risk status from low risk to high risk after recruitment
5 women (n=5)	Decided to use the birth centre
1 woman (n=1)	Directed to the BC (Her plan was to use the OU)
3 women (n=3)	Changed their mind, concerned they will not receive clinical interventions
Total: n=22	

Appendix 20: Duration of observation in each labour

Faith	Duration	Hope	Duration
L1	11hrs	L10	5hrs
L2	8hrs	L11	4hrs
L3	6hrs	L12	8hrs 15mins
L4	6hrs 30mins		
L5	9hrs		
L6	2hrs		
L7	11hrs		
L8	13hrs 30mins		
L9	4hr 50mins		
n=9	71hrs 50mins	n=3	17hrs 15mins

Appendix 21: Summary descriptive of quantitative and qualitative data

Quantitative: LB 2 : Observed use in supportive practice 61.1% Observed use in participative practices – 40%

MW: Midwife offers her options for pain relief – pethidine and epidural. I still do this, so they know what is available. The pool room is occupied -we only have one pool

MW: The telemetry was not charged. Ideally, I would have liked her to be more mobile

MW: She mutters: the change in the baseline is probably because the head has come right down. L/W Coordinator in the room. Fresh eyes – signs it. Does not say anything

W2 begins to bear down with her contractions. Lots of bloody show. MW looks anxiously at the woman. She speaks to L/W coordinator. Some clots are expelled. The MW worries – she says out aloud: "is it an APH"? She wants to break her waters to see if there is any blood in it.

SM: She is going to deliver soon. The foetal heart is fine. What are you worried about? I don't think you are going to see blood in the waters, but if you want to break it go ahead **.**

MW:I think this was good advice, but I did not feel that way at that time. Do it if you want to - that to me is not particularly

W: I have never experienced anything like this, looking back I was glad we tried all those positions because it did help going on my knees and all the screaming as well-though I should not have done it

MW: I prefer the recumbent, but we do use other positions on the B/C

W: In terms of being ready for it, I was not ready. I don't think my husband was ready. I think you learnt quite a lot as well, turning to the husband.

MW: You are working much more as part of a team – it is harder to put EBPs into practice because decision-making is more shared you are working sharing those decisions with people who are making alternative judgement. Practices are deeply ingrained, they are just habitual – you end up doing things – how often do you have women on intermittent auscultation on L/W – hardly ever, you put them on a CTG

W: I remember the MW being very encouraging. Midwife was good., amazing but towards the end she needed a bit more support and reassurance

they there for support? Is there something wrong with the baby?

MW: I do not know if I will ever fully truly get there in terms of being totally autonomous on L/W -that might be a big ask for me as a person, but I feel a bit more able to challenge

W: In distress the woman repeatedly says: No, I do not want an epidural. **OBN** Why! Why! do you not want to use it. **W**: It has side-effects. **OBN** – No! No! it does not. If you have it, you be pain free. **MW:** If enough doctors come in and say this, I might not have wavered, but the couple may have changed their mind

W: Our relative had a bad experience with the epidural, they suggested not to. She was also pressured into having an epidural. You are in so much pain that you want a quick fix, get rid of it.

MW: There are time limits on how long someone might be on L/W. Breaking waters can augment it, just to push things on. I negotiated a 2 hour wait. I knew we did not need to intervene, but I do not want to want to work at odds with the doctors**. MW:** I wanted the doctors in there to review it but that is me practicing defensively, not facilitating what could been a vaginal birth – The CTG picked up nicely

OBN: There is nothing wrong with the CTG -Talking to the CTG

MW: She is almost fully dilated. We can wait for an hour for descent

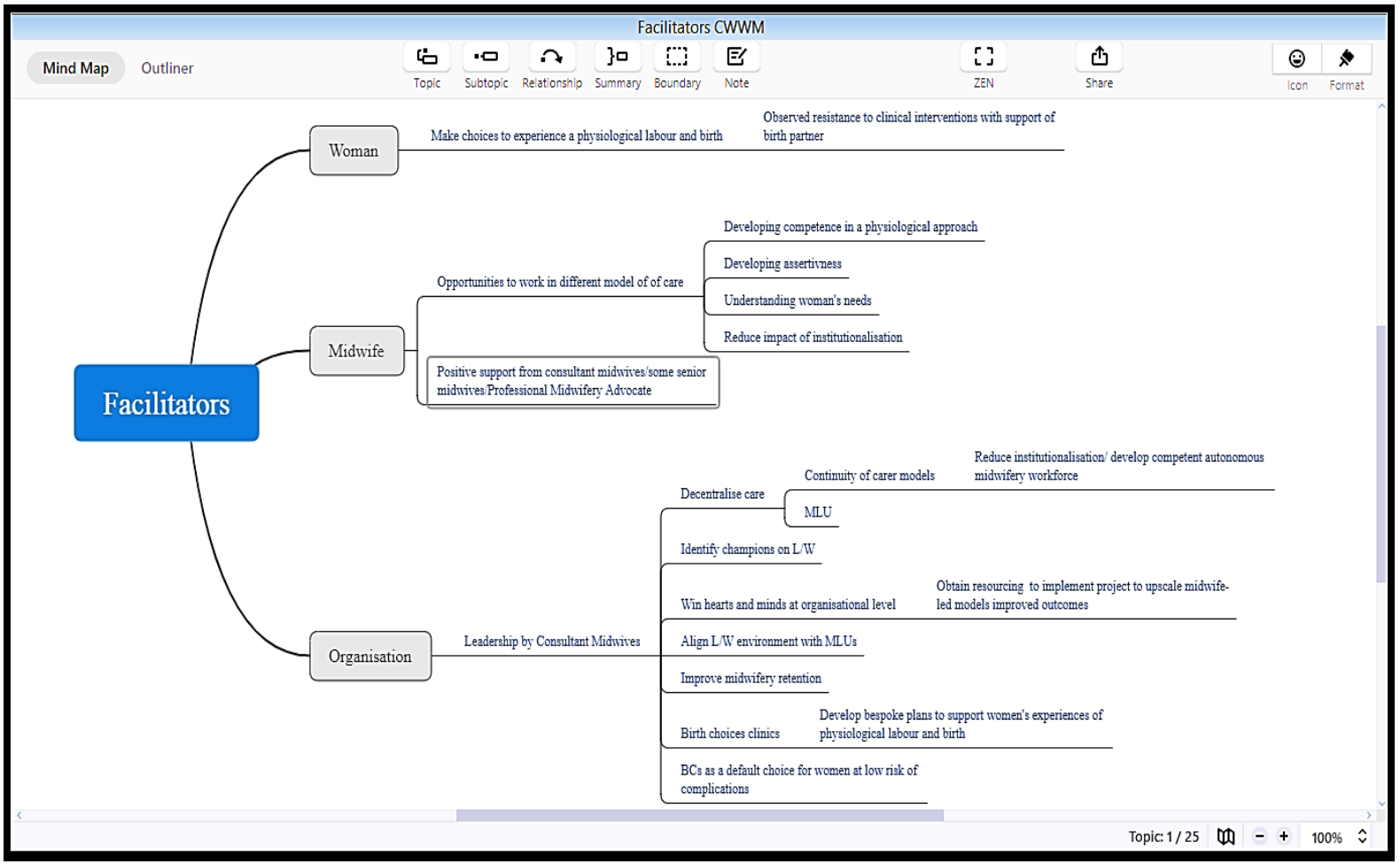
OBN: Let us start pushing, push, push

MW: Points to the woman thigh - Direct your pushing here. A chorus of push, push push…. Woman put in lithotomy. **OBN:** There is nothing wrong, but babies do not like this stage. I am going to guide the baby out

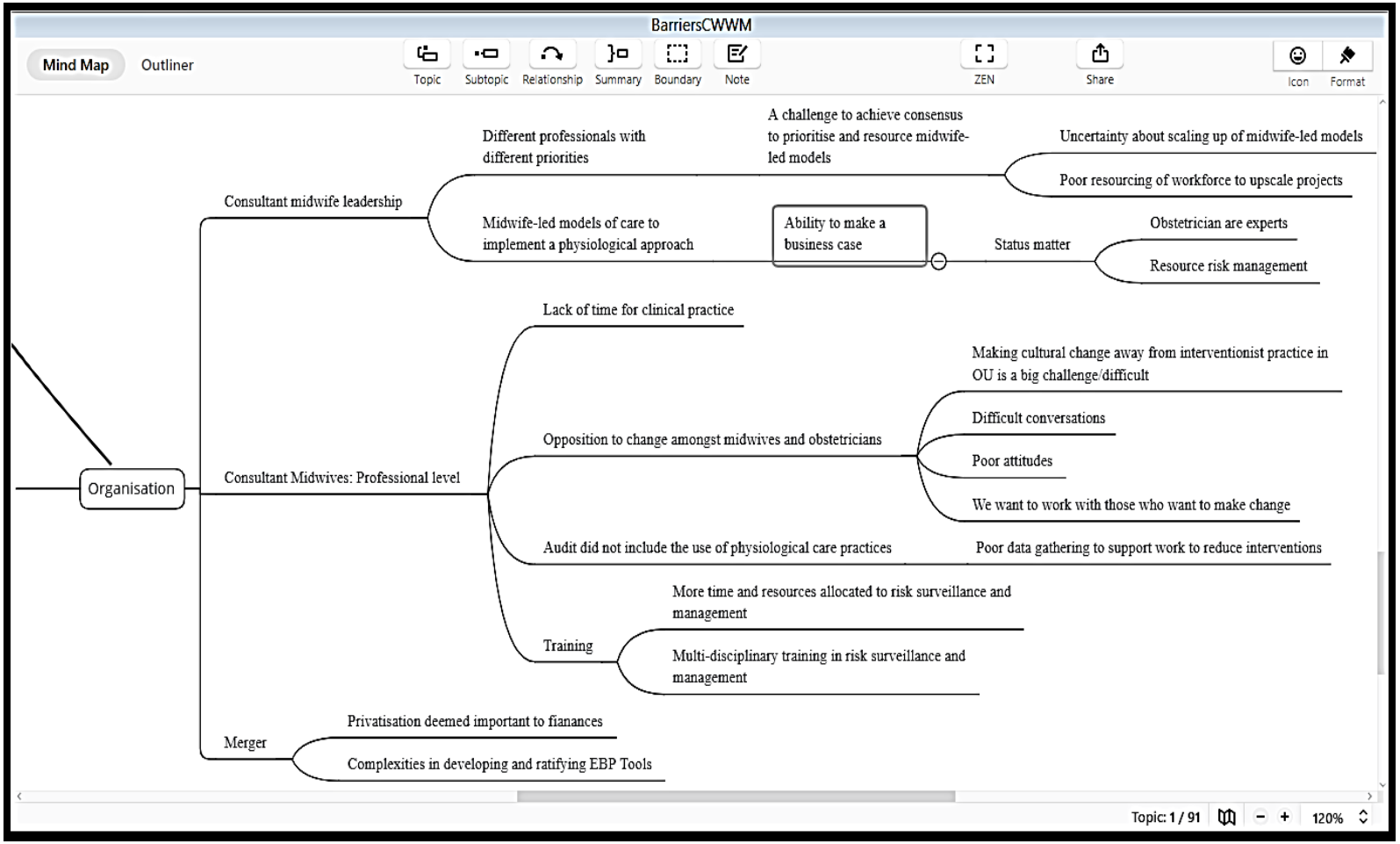
P: You could tell **OBN** had a lot of experience. She was and direct, and she knew exactly what was going on. I felt like everything was under control

MW: Foetal distress is a get out clause

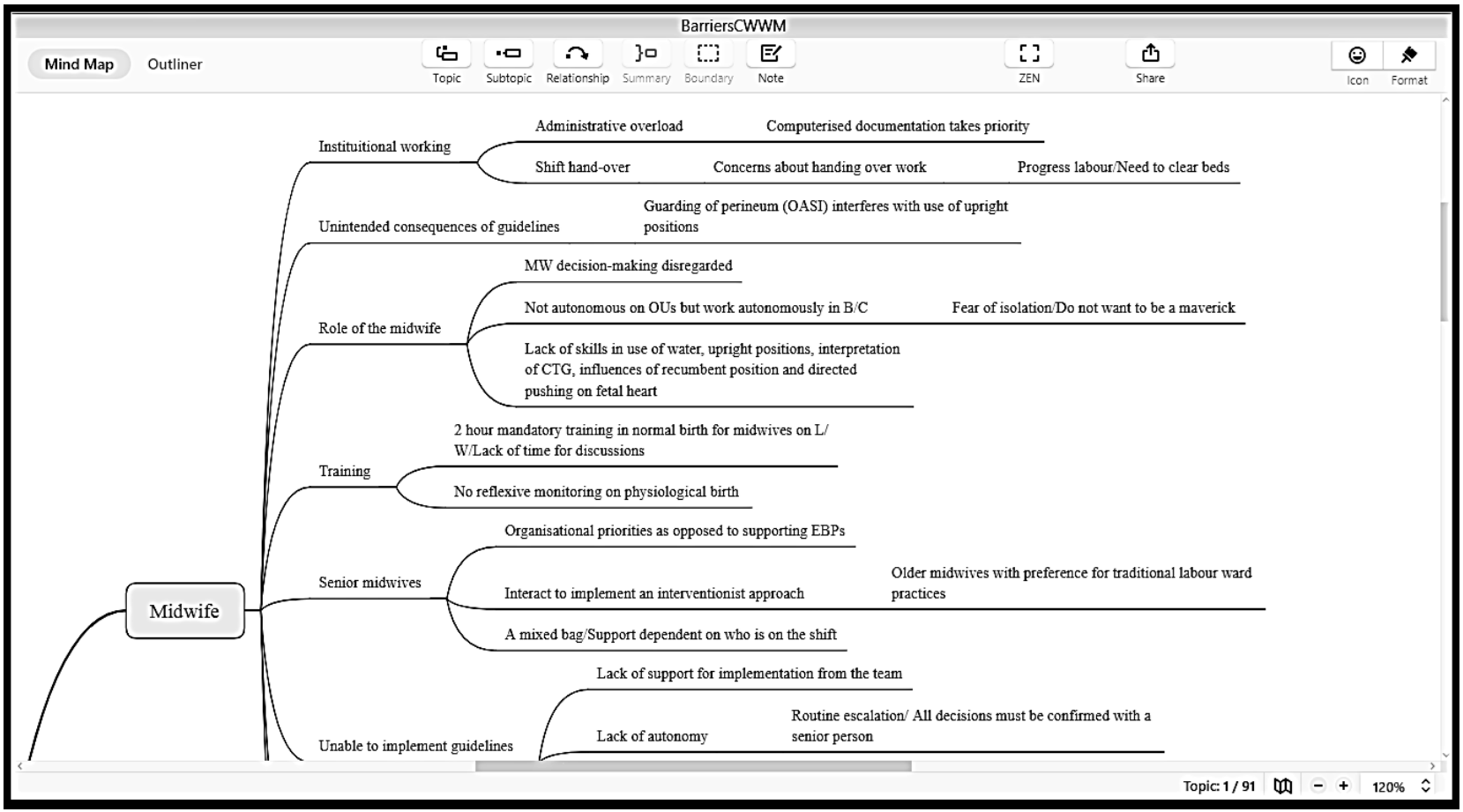
Appendix 22: Screen shot of mind map of facilitators at organisational leadership, professional groups and women



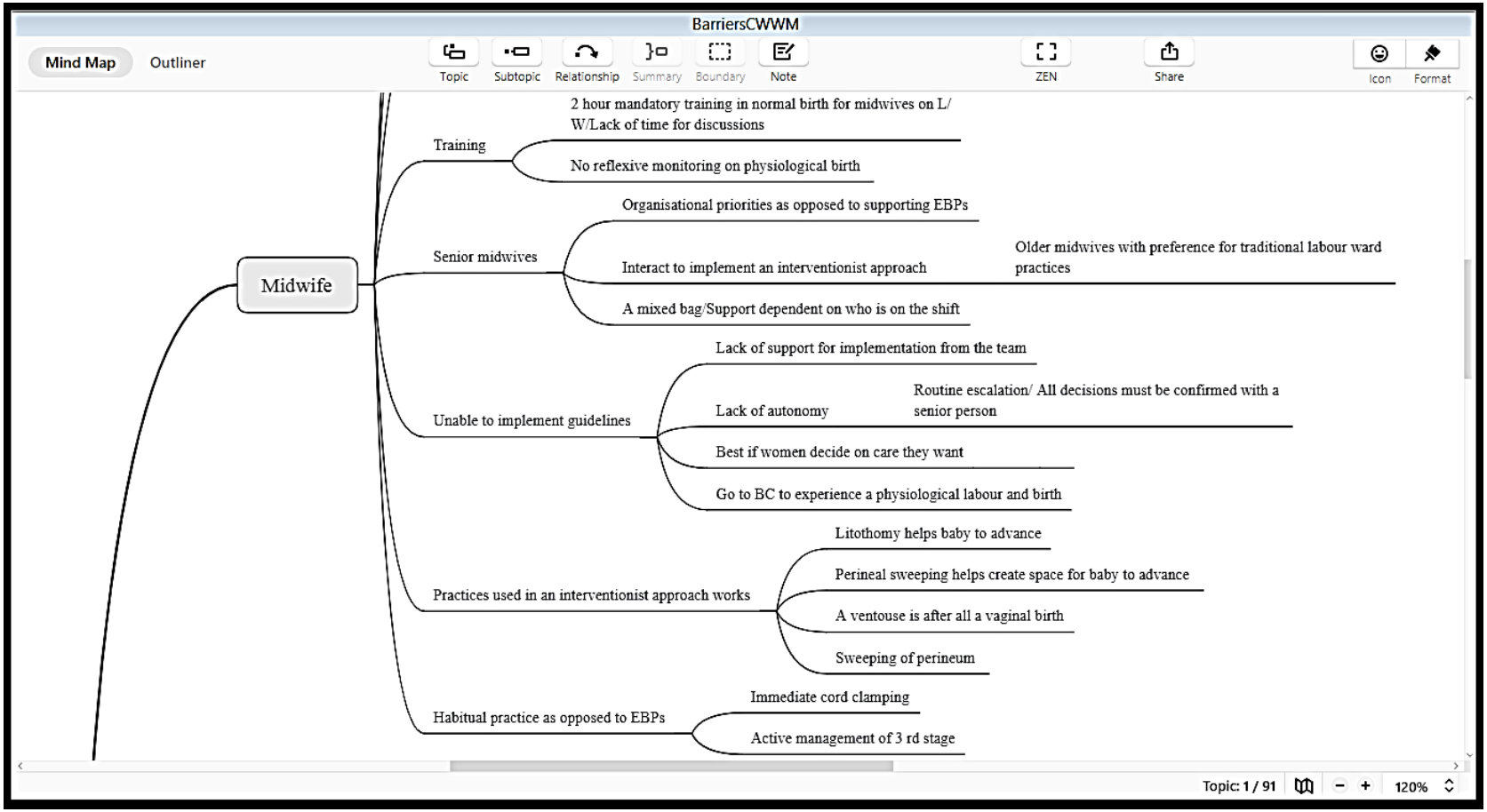
Appendix 23: Screen shot of mind map for barrier at the level of organisational leadership



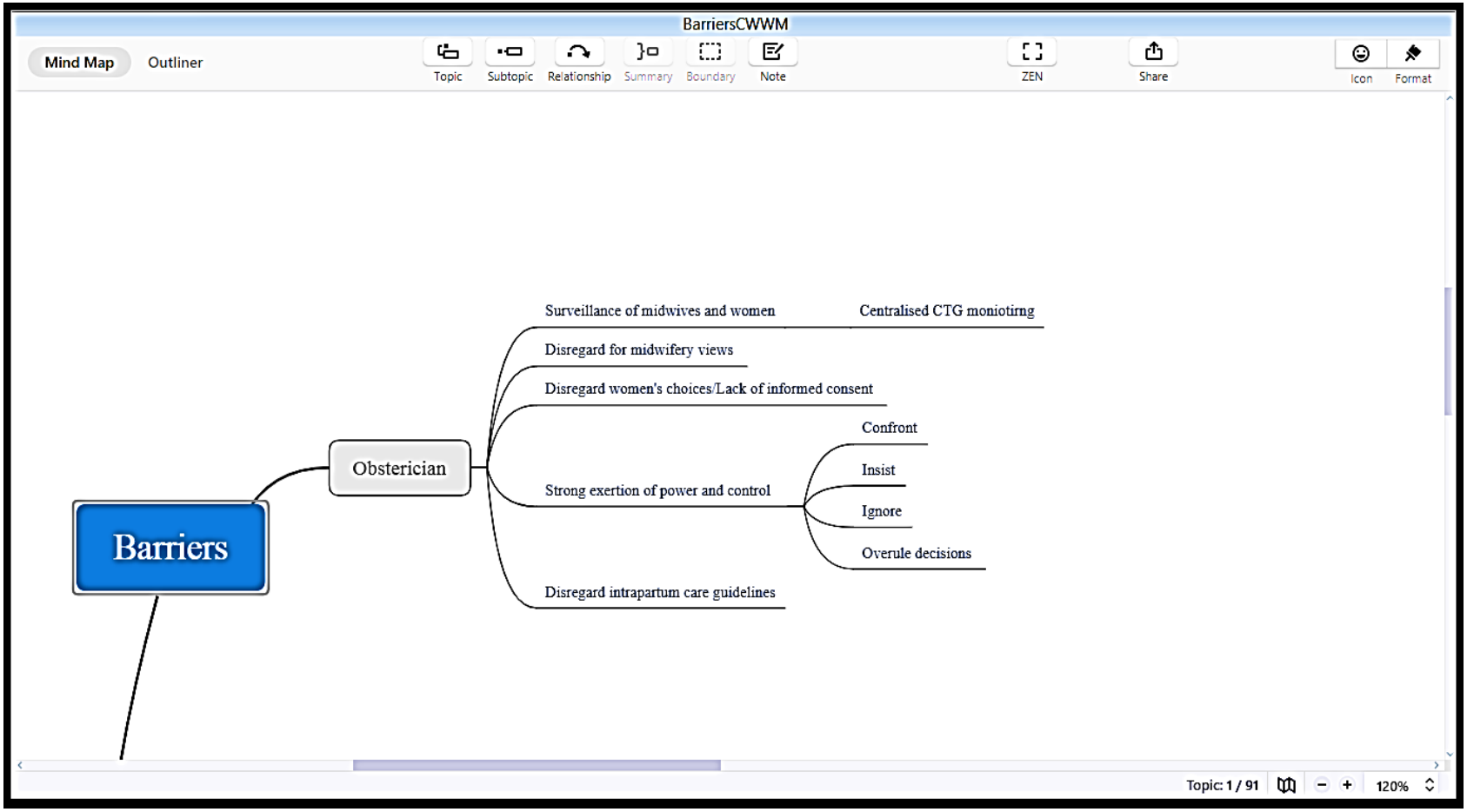
Appendix 24: Screen shot of mind map of barriers at the level of the midwives



Appendix 25: Screen shot of mind map of barriers at the level of midwives

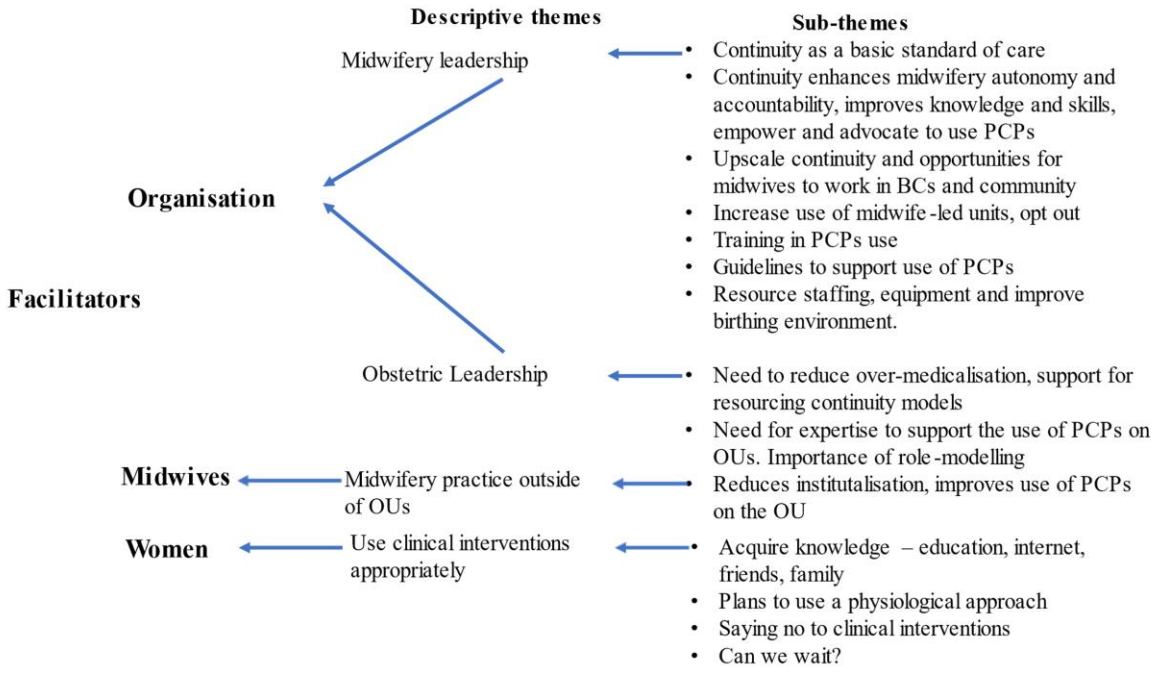


Appendix 26: Screen shot of mind map of barriers at the level of obstetricians

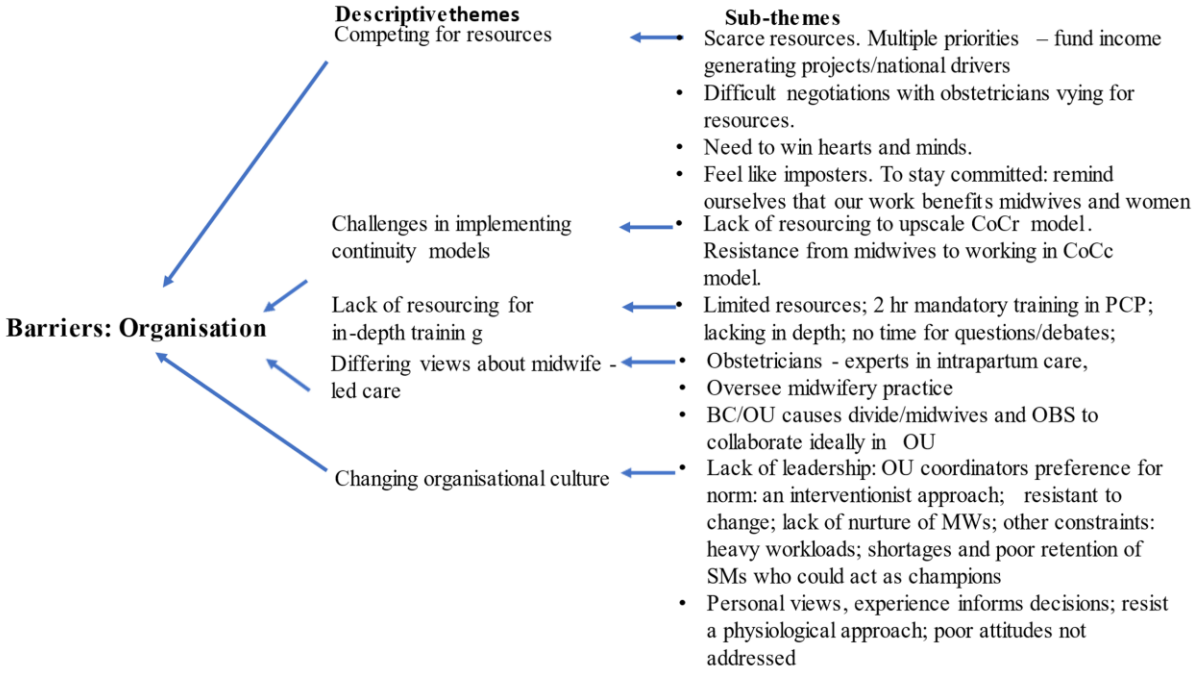


Appendix 27: A visual presentation of subthemes categorised as descriptive themes

Themes (Facilitators) at the levels of the organisation leadership, midwives and women

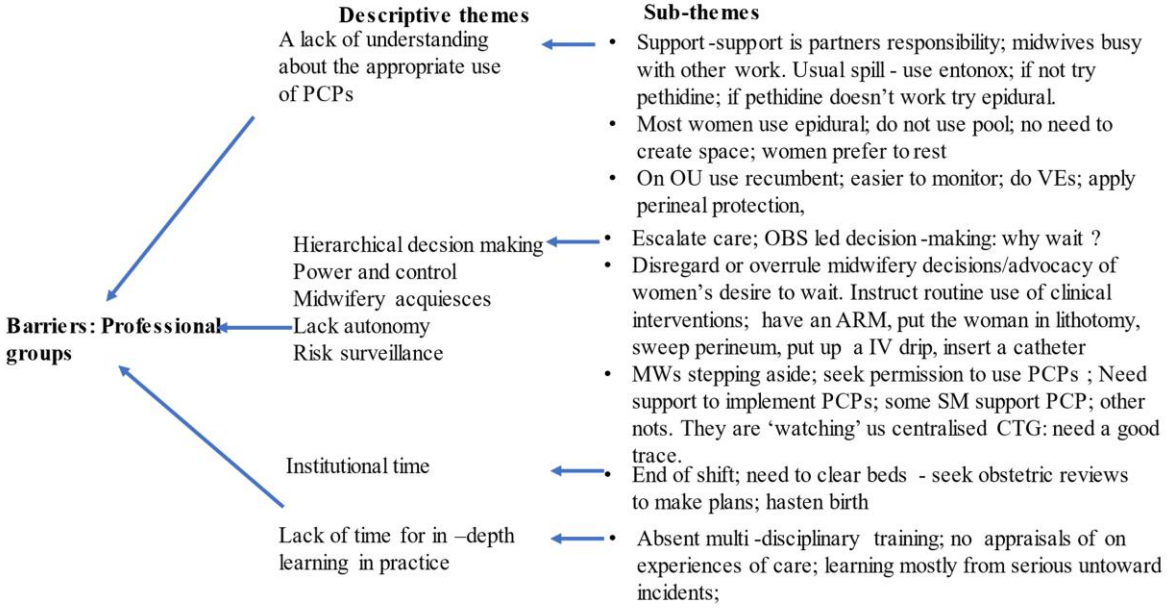


Themes identified at an organisational leadership level



Appendix 27 continued

Themes identified at the level of professional groups



Themes identified at level of the individual