

A Grounded Theory Study of the Impact of Yoga for Pregnancy Classes on Women's Self-Efficacy for Labour and Birth

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Abstract

In addition to lower healthcare costs, straightforward birth has physiological and psychological benefits for women and families (Smith et al., 2016; Kassebaum et al., 2014; O'Mahony et al., 2010). Most women would prefer to birth their babies without medical intervention (Wharton et al. 2017; Care Quality Commission, 2015) and the reduction of birth interventions has been identified as an urgent healthcare priority (Amis, 2016). As pharmacological pain relief in labour results in more instrumental deliveries (Anim-Somuah et al., 2011), enabling women to use self-management strategies to cope with the sensations of labour should result in more women birthing their babies physiologically.

Antenatal education has the potential to teach women pain coping strategies which can help them in labour, but unanswered questions remain around which approaches are most effective (McMillan et al, 2009; Gagnon & Sandall, 2007). Yoga for pregnancy (YfP) has been suggested as an antenatal education intervention which may have an effect on women's perception of pain during labour (Jones et al., 2012) and may therefore enable them to birth their babies without pharmacological pain relief.

Self-efficacy beliefs affect women's ability to succeed in the tasks they set themselves and may be able to influence both labour pain perception and perinatal outcomes (Tilden et al., 2016). This thesis reports on a grounded theory study which explored which aspects of YfP delivered by a group of teachers trained by a national charity

(NCT) might be effective in enhancing women's self-efficacy, and therefore ability to manage labour. This two-part study compared the aims and content of YfP classes with the experience of women who attended them. Part 1 analysed YfP class observations and individual face-to-face interviews with a convenience sample of three YfP teachers. Part 2 was a longitudinal study of women attending YfP classes. Twenty-two women, recruited via the YfP teachers, volunteered to participate in semi-structured interviews at three time points. Two of the interviews were in the antenatal period, and one was held postnatally.

Four themes emerged from the part 1 analysis of class observations and teacher interviews: *'Creating a sisterhood'*, *'Enabling an easier or more positive labour'*, *'Building confidence'* and *'Enhancing learning'*. In the first interviews with the pregnant women in part 2, different themes emerged but with similar threads to the teacher interviews. An overarching theme of *'Looking after myself and the baby'* emerged with four subthemes: *'Hoping for a natural or easier labour'*, *'Preparing for something I can't prepare for'*, *'Being calm and in control'*, and *'Making friends'*. These themes developed and changed focus at the second interviews once the women had attended YfP classes and were close to their birth. An overarching theme of *'Gaining confidence in managing labour'* emerged. The subthemes *'Preparing for something I can't prepare for'* and *'Being in control'* remained, and two new subthemes emerged: *'Practising techniques for labour'*, and *'Learning from each other'*. Postnatally, the women attributed their positive birth experiences to having learned and practiced a variety of pain management strategies and hearing positive birth stories within the YfP classes. The resulting feelings of calm and confidence enhanced their ability to manage labour.

The overarching theme which emerged postnatally was *'Having a positive experience'* with subthemes *'Using techniques to manage labour'*, *'Being calm, confident and in control'*, and *'Enhancing the learning'*.

A self-efficacy framework was used to analyse the findings and showed that all four of Bandura's (1977) efficacy-enhancing techniques were present in the YfP class curriculum and matched the elements which the women said increased their self-efficacy for labour. This study demonstrates the value of integrating psychological theory within education interventions and adds to the overall body of knowledge in three areas: yoga during pregnancy, antenatal education and self-efficacy.

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1. Introduction

My interest in Yoga for Pregnancy (YfP) began in 1992. After being trained by The National Childbirth Trust (now called NCT), I was regularly facilitating eight-week antenatal courses for couples when a local yoga teacher who was emigrating asked me to take over the running of her women-only YfP class. I had personally practised yoga for many years and had attended her class when pregnant with my second child. For a time, each week I facilitated both NCT couples classes and a separate YfP class for women. Although the two class formats shared some content, the YfP sessions had more physical practice of self-management strategies and less discussion of medical interventions during labour. It quickly became apparent that the women who attended the YfP classes were not only more likely to birth normally (without epidural, forceps or caesarean) but also, whatever their birth experience, were more likely to perceive it more positively than the women from the standard couples classes. I began to question and compare the purpose and effectiveness of the two forms of antenatal education.

I often started both formats of classes by asking:

“In an ideal world, what would your perfect birth be like?”

The women would always reply with variations along the lines of:

“Quick, painless, easy”.

As an antenatal educator, I was motivated to help the women achieve the kind of birth they wanted. This was compounded by the knowledge that women’s perception of their birth experience has long-term effects on their health and the health of their

families (Maimburg et al., 2016). I wanted to facilitate classes which enabled women to have birth experiences which resulted in the most physically and emotionally healthy families. Over the next twenty years I collected outcome data from my YfP classes, building a picture which showed 62% of the 2,000 women who attended gave birth without medical intervention, versus a national rate of 42% (Dodwell, 2012). I published articles exploring the evidence (or lack of) around YfP and the nature of YfP classes (Campbell, 2010a, 2010b, 2010c). The fascination with the question of 'Does YfP make a difference, and if so, how?' was the starting point for this study and I am enormously grateful to the University of Worcester for giving me the opportunity to investigate it in a more formal way.

This study aims to explore how YfP provided by teachers trained by NCT, i.e. within a broad context of antenatal education, might affect changes in women's self-efficacy for labour and birth. The objectives are to:

- Identify aspects of teachers' language and actions in YfP classes which may impact on women's self-efficacy behaviour
- Explore women's experience of attending NCT YfP classes to generate a theory about which aspects, if any, are effective in enhancing self-efficacy for labour and birth.

Most women would prefer a normal birth and women who use non-pharmacological pain relief have lower rates of medical intervention and higher satisfaction with their labour (Care Quality Commission, 2015; Chaillet et al., 2014; Tamagawa & Weaver, 2012). YfP has been proposed as a mechanism which may help both calm women and distract them from tension and pain during labour (Jones et al., 2012). There are over

700,000 births annually in the UK (Office for National Statistics, 2016; ISD Scotland, 2016), so interventions which are effective in enabling women to manage labour without medical intervention have the potential to make large-scale impact on women's physical and psychosocial health and therefore in healthcare provision.

During the initial literature search for this study, it became apparent that the construct of self-efficacy was highly relevant to an investigation into how best to prepare women for labour. Self-efficacy beliefs affect people's ability to succeed in the tasks they set themselves and may be able to influence both women's labour pain perception and perinatal outcomes (Tilden et al., 2016). As a result, the initial question changed from 'Does YfP make a difference, and if so, how?' to 'How might YfP affect women's self-efficacy for labour and birth?' The themes which emerged from analysis of YfP class observations, interviews with YfP teachers and pregnant women who attended their classes were explored through a self-efficacy framework in order to generate a grounded theory. Little effort has previously been made to integrate psychological theory into antenatal education programmes (Ip et al., 2009) and so this study contributes to an under-researched field.

The present study draws on literature from several different fields and the thesis (figure 1) begins with three literature reviews drawing together the broad areas of investigation: antenatal education, yoga for pregnancy and self-efficacy. Chapter two is an overview of the main challenges facing trials evaluating the effects of antenatal education interventions on women's ability to birth. These challenges include heterogeneity in antenatal education aims, content and processes, the complex and

sometimes additive interplay between physiological, social, cultural and environmental characteristics affecting birth experiences (Beebe et al., 2007) and practical issues of blinding and women choosing to self-select their antenatal education. These issues have resulted in a lack of robust literature and inconclusive systematic reviews (Ferguson et al., 2012; McMillan et al., 2009). The same issues affect YfP trials, the literature around which is explored in chapter three. There have been five YfP systematic literature reviews published since 2012, demonstrating the current interest in YfP as an intervention (Jiang et al., 2015; Sheffield & Woods-Giscombé, 2015; Riley & Drake, 2013; Babbar et al., 2012; Curtis et al., 2012). All the reviews conclude with cautious optimism about a variety of possible beneficial effects, but stress the lack of robust research.

Although self-efficacy was the framework used to analyse the emergent themes from parts 1 and 2 and not the main focus of the present study, the strategies by which efficacy can be enhanced and how it is measured became increasingly of interest as the study progressed. Therefore for clarity, the history, current dilemmas and measurement of self-efficacy within childbirth are detailed in chapter four.

The reasons why grounded theory was chosen as the most appropriate methodology to achieve the study aim and the study methods are described in chapters five and six. The study consists of two parts. Part 1 is a grounded theory analysis of six NCT YfP class observations and three reflective interviews, during which NCT YfP teachers watched videos of themselves facilitating classes and spoke about the aims and content. The

themes which emerged are described in chapter seven and were published in a peer reviewed journal in 2015 (Campbell & Nolan).

Part 2 consists of a grounded theory analysis of interviews with twenty-two women at three time points. The first and second interviews were scheduled when the women were pregnant: once before they started YfP and a second after they had attended at least six classes. The third interviews happened postnatally, after the women had had their babies. This structure enabled the women's experiences and changing perspectives over time to be explored. The different themes emerging from these interviews are described in chapters eight, nine and ten. These chapters also show the similarities and differences between the women's and teachers' perspectives.

Chapter eleven synthesises the findings from parts 1 and 2, analysing them in the light of current literature and proposing a grounded theory around how YfP may affect women's self-efficacy for labour. Additional findings which emerged from the study relating to the measurement of self-efficacy are in chapter twelve. Chapter thirteen demonstrates how grounded theory techniques were applied in practice to generate a credible theory, grounded in the participants' experience. Reflexivity was an important aspect of the study and is explored in chapter fourteen before the study conclusions are presented in the final chapter.

Context

The Natural Childbirth Trust was established in 1956 with the aim of promoting Grantly Dick-Read's system for natural childbirth as described in his seminal text *Childbirth Without Fear* (1942). The first Natural Childbirth Trust antenatal classes began in 1959.

In order to expand the charity's reach and be more inclusive of all parents in the transition to parenthood, not just those hoping for a normal birth, the name was first changed to The National Childbirth Trust and then to NCT. NCT grew as a campaigning organisation and continues to be involved in many expert maternity groups, including the All-Party Parliamentary Group on Maternity Services, the development of the National Service Frameworks for Children (in England and Wales), and the Clinical Standards for Maternity Services in Scotland.

NCT antenatal classes have grown in popularity from 8,000 UK couples attending annually in the 1970s to more than 100,000 parents now attending paid-for courses each year (NCT, 2016a). NCT is the largest provider of private antenatal education in the UK, also providing antenatal education within the NHS to 8,000 parents annually. In addition to courses for couples, there are approximately 13,000 attendances at NCT YfP classes each year in the four UK nations. In contrast with most NCT and midwife-led antenatal education, which usually comprises a course of specific length aimed at couples, NCT YfP classes are women-only sessions where women can attend from the twelfth week of pregnancy and continue until they have their baby.

NCT YfP classes are unique in being facilitated by teachers who are not only trained in yoga but have previously completed a diploma or degree in antenatal education with NCT. NCT's YfP teacher training programme was the first such programme in the UK to be university validated. The programme had been running in-house at NCT since 2005 before being validated in 2010 as a 2 x 20 credit, level 4 programme at the University of Worcester. In 2016 it was revalidated as 2 x 15 credit, level 5 modules. The aim of

the training is to link evidence and theory with skills-based practical and reflective methods to enable YfP teachers:

‘...to work reflectively with women in the perinatal period to enhance their experiences and self-efficacy’ (NCT, 2016b)

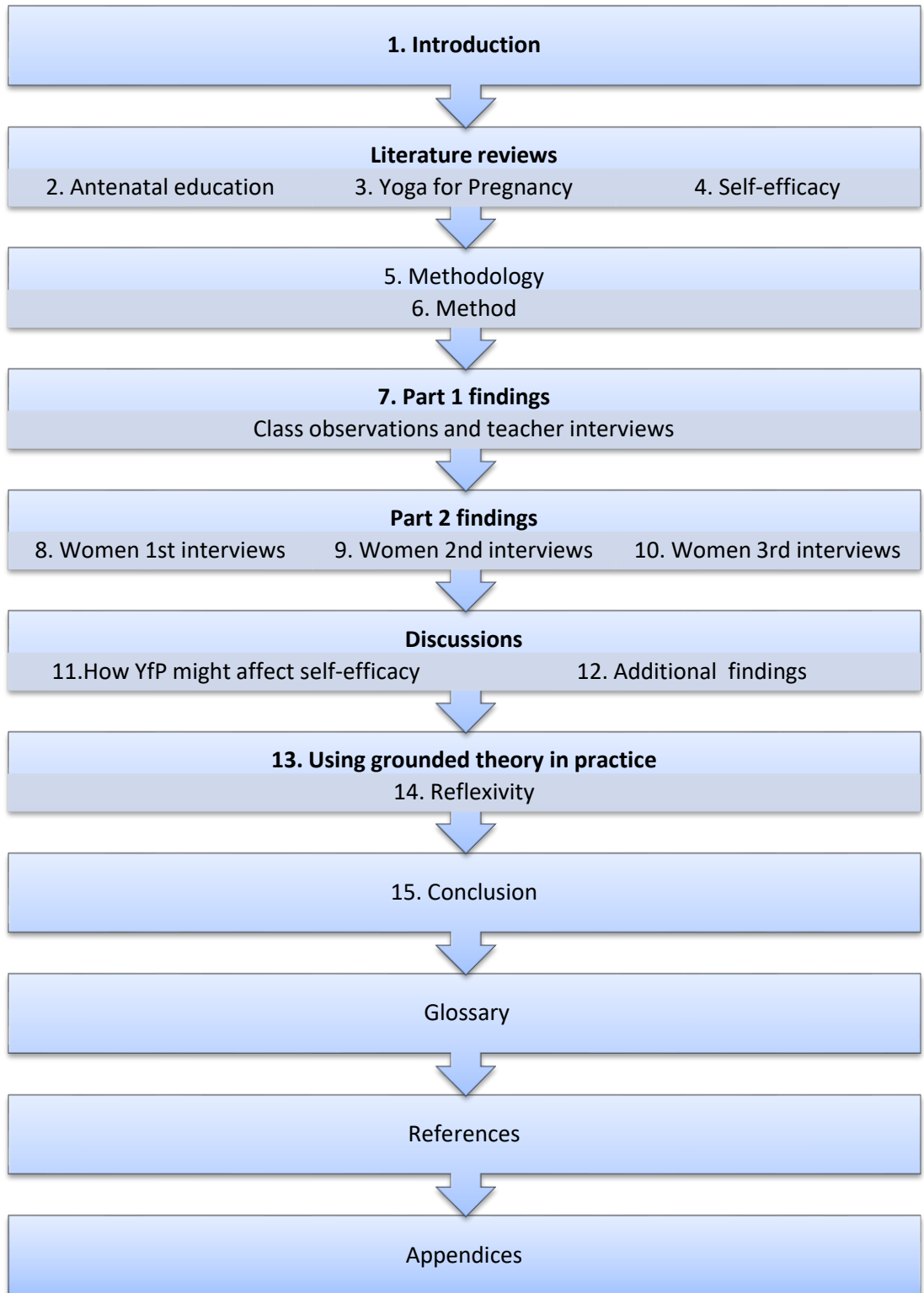
The extra antenatal education training NCT YfP teachers have received before they start their YfP training results in an important difference between the classes they run and those of YfP teachers qualified with other organisations. In addition to all the traditional elements of yoga, including postures, relaxation and meditation, NCT YfP classes explicitly contain elements to enable group bonding, increase knowledge of birth processes and practice of coping strategies for labour, which are not necessarily part of non-NCT YfP classes. The differences were summarised in a joint statement between NCT and The British Wheel of Yoga (BWY) (Campbell, 2010a):

The BWY and the NCT recognise each other’s individual strength with regard to what each brings to the wellbeing of pregnant women. It is mutually respected that each organisation offers a different emphasis in their yoga for pregnancy classes.

- The emphasis of the NCT Pregnancy Yoga Classes is on antenatal education
- The emphasis of the BWY Pregnancy Yoga Classes is on yoga.

The researcher is an employee of NCT. After training as an antenatal teacher with NCT, she taught antenatal courses for couples from 1989 to 1998 and women-only YfP classes from 1992 until 2013. In 2005, she co-wrote the NCT YfP training programme for the University of Worcester (NCT and The University of Worcester, 2013) and was a tutor on that course until 2013.

Figure 1: Thesis chapter structure



2. Antenatal education literature review

In order to provide context for the review of YfP literature in chapter three, this chapter gives an overview of the literature around general antenatal education's ability to affect women's self-efficacy for labour. It begins by exploring the challenges of producing robust research to evaluate antenatal education programmes and then discusses the nature and content of antenatal education interventions. Finally, there is a summary of systematic reviews of antenatal education and relevant individual trials.

For each of the three literature reviews in this thesis (antenatal education, YfP and self-efficacy), several databases were searched, including CINAHL, EMBASE, MEDLINE, MIDIRS and Pubmed. Only papers written or translated into English were included. In addition, throughout the period of study, papers were sourced from regular searches of the MIDIRS (Midwives Information and Resource Service) database. The MIDIRS database is the largest midwifery database in the world and is updated daily with information drawn from over 400 different print and online sources. Search terms were 'antenatal', 'prenatal', 'childbirth', 'education', 'intervention', 'yoga', 'pregnancy', 'self-efficacy'. As the study progressed, extra search terms such as 'coping strategies' were added. Additional papers were sourced from the MIDIRS Current Awareness Bulletin (CAB), a weekly roundup of new research relating to antenatal and postnatal care and education, and the transition to parenthood. Except for seminal works, preference was given to 21st century literature. All reference lists were checked for additional eligible studies.

The challenges of evaluating antenatal education

There are limitations and challenges when trying to conduct well-designed randomised controlled trials to investigate complex phenomena (Kotaska, 2004). These are apparent within the area of antenatal education:

- Differences in labour and birth experience are the result of a complex and sometimes additive interplay between individual physiological, social, cultural and environmental characteristics (Beebe et al., 2007).
- Antenatal education tends to be a self-selecting intervention accessed by highly motivated and well-educated women, a low percentage of whom are prepared to be randomised (Fabian et al., 2004; Rowe & Garcia, 2003; Nolan, 1995).
- Even when women are prepared to be randomised, if they are randomised to the non-intervention group they sometimes find their own private antenatal education courses. Conversely, there are sometimes high withdrawal rates as women find they do not like the intervention or find it inconvenient (Deshpande et al., 2013; Curtis et al., 2012).
- There is a heterogeneity in aims, content and processes of antenatal education, plus a lack of widely adopted standards or guidelines that makes evaluation difficult and meta-analysis impossible (Ferguson et al., 2012; Bergström et al., 2009; McMillan et al., 2009).

As a result, there is a lack of literature generally about the effectiveness of antenatal interventions and systematic reviews have proved inconclusive.

The aims and content of antenatal education

Self-efficacy theory (see chapter four) suggests that a multi-focused antenatal education programme including skills practice, real life stories, verbal persuasion and somatic awareness would lead to the highest increases in self-efficacy beliefs (Carlsson et al., 2015; Bandura, 1977). However, researchers (Nolan, 2009; Lally et al., 2008; Lowe, 2000) comment that rather than enabling women to increase their self-management resources, antenatal education tends to focus on conveying information about labour. There has also been a recent trend to focus antenatal education towards preparing for all births, including medicalised births, as well as parenting and postnatal life. This reduces the time available for birth preparation (Levett et al., 2016; Svensson et al, 2008). In order for women to remain in control and make best use of cognitive and behavioural strategies in demanding birth situations, there must be enough time spent on practising coping skills during the antenatal period (Howarth et al., 2010).

Very few studies have explicitly aimed to explore the effect of antenatal interventions on self-efficacy for labour. Instead, antenatal education research has tended to evaluate variables such as knowledge acquisition, anxiety, sense of control, breastfeeding or parenting outcomes (Gagnon & Sandall, 2007). Below are summaries of five systematic reviews of antenatal education interventions, followed by significant individual trials which relate to this study.

Antenatal education systematic reviews

2007

A seminal Cochrane systematic review evaluating 'Individual or group antenatal education for childbirth or parenthood, or both' (Gagnon & Sandall, 2007) found a lack

of high quality evidence in relation to antenatal education and included only nine trials involving 2,284 women. General methodological weaknesses included small sample size, lack of detail about randomisation procedures, participant recruitment and withdrawal. Whilst some benefits were found, for example, an increase in knowledge and perceived mastery for behaviour change, the review concluded that the effects of antenatal education are largely unknown. This has resulted in doubts about its value and debate about whether antenatal education inspires confidence in birthing women or promotes dependency and compliance with institutional policies and procedures (Walker et al., 2009; Murphy, 2008; Koehn, 2002). Self-efficacy was not one of the outcomes considered in Gagnon and Sandall's (2007) review.

2009

In another landmark review, McMillan et al. (2009) published *Birth and Beyond: A Review of the Evidence about Antenatal Education*. From an initial search yielding over 2,500 papers, 69 were included, comprising six systematic reviews and two reviews of reviews. Again, self-efficacy was not included as a separate element of the review. Individual studies included in McMillan et al.'s (2009) review which are relevant to this thesis are analysed in more depth later in this chapter, including Escott et al.'s (2005) study exploring the effect of a coping strategy enhancement method and Bergström et al.'s (2009) report of an antenatal intervention which measured self-efficacy. McMillan et al. (2009) found:

- Antenatal education appears to be associated with a more positive birth experience

- Little evidence that techniques taught in traditional childbirth classes can reduce pain in labour
- Some evidence that programmes responsive to individual participant needs have a positive effect on maternal well-being and confidence
- Antenatal education has an important role in creating social support for parents
- Parents value participative learning.

Relevant to the present study, McMillan et al. (2009) concluded that there is an urgent need for research in the UK to discover the most effective content and methods of antenatal education. This was echoed in the same year by Walker et al. (2009) in their examination of childbirth education models.

2011

Smith et al. (2011) included 11 studies (1,374 women) in their updated Cochrane review of relaxation techniques for pain management in labour. Similar to McMillan et al. (2009), Smith et al. included the Bergström et al. (2009) study which is analysed later in this chapter. Smith et al. (2011) also included a YfP intervention (Chuntharapat et al., 2008) which is explored in more depth in the YfP literature review (chapter three). The other trials satisfying Smith et al.'s (2011) inclusion criteria were not relevant to this thesis as they evaluated, for example, the effects of music therapy (Liu et al., 2010). Although there was no blinding and the risk of bias was unclear in most trials, Smith et al. (2011) concluded that relaxation and yoga may have a role in reducing pain and assisted vaginal delivery.

The same year, Marc et al. (2011) completed a Cochrane systematic review exploring the effects of mind-body interventions during pregnancy on women's anxiety. They included eight trials (556 participants) evaluating hypnotherapy, relaxation, using visualisations and one mindfulness intervention which included some yoga (Vieten and Astin, 2008). Of the eight trials, four were between twenty and forty years old. The only trial satisfying the inclusion criteria that specifically reported on self-efficacy was Ip et al. (2009) which is analysed later in this chapter. Due to the diversity of trials, no meta-analysis was performed. Marc et al. (2011) found several studies were at high risk of bias, had small sample sizes and high dropout rates. The only effect found was that imagery may have a positive impact on anxiety.

2012

In a structured review of the literature to determine the effect of antenatal education on labour and birth, Ferguson et al. (2012) reiterated previous concerns about possible *negative* effects of antenatal education. They found that while it may have some benefits, for example in reducing anxiety, there may also be negative effects, such as increasing acceptance of interventions. This conclusion was largely based on a cohort study of 1,197 Swedish women by Fabian et al. (2005) who identified higher epidural rates in women participating in antenatal education. Fabian et al. (2005) hypothesise that participation in classes made women more aware of the medical pain relief available, rather than improving their ability to cope with pain.

2015

A recent systematic review of studies exploring the effect of antenatal education in small classes on obstetric and psycho-social outcomes (Brixval et al., 2014) used

Cochrane review guidelines to investigate 5,708 possible publications. Brixval et al. (2015) found the same issues with study quality and heterogeneity of interventions and came to the same conclusions as earlier systematic reviews: there is insufficient evidence to conclude whether small group antenatal education has any effect on outcomes.

Individual antenatal education studies

Individual studies were initially selected for scrutiny in this chapter if they investigated antenatal education interventions specifically aimed at increasing women's self-efficacy. However, as the study progressed, the women's emphasis on taught coping strategies became increasingly important and so antenatal education trials which focus on taught strategies which aim to enable women to manage labour without medical intervention are also included here. Trials which explore complex systems, for example Pilates, Tai Chi and hypnotherapy where the components cannot be dismantled and transported into YfP classes are excluded, as are those exploring the effects of educational software on self-efficacy, and studies exploring antenatal education with narrow demographic groups, for example those with severe fear of childbirth.

2005 - England

Escott et al. (2005) compared the outcomes for 41 women receiving a coping strategy enhancement (CSE) intervention with outcomes for those attending standard antenatal education. This study was included in Birth and Beyond, McMillan et al.'s (2009) review of the evidence around antenatal education, but excluded from Gagnon and Sandall's (2007) Cochrane review as it was a comparison study with no control group. The intervention consisted of five two-hour midwife-led sessions. The women

receiving standard antenatal education were taught three coping mechanisms: 'sigh out slowly' breathing, positions for labour and the Laura Mitchell method of relaxation (Payne, 1995). Those receiving CSE were taught strategies based on their previously identified coping mechanisms. Although it was found that women receiving CSE were more likely to use pain coping strategies during labour, no significant differences were found in use of pain medication or mode of delivery.

2006 - Switzerland

Sieber et al. (2006) studied 61 low-risk primiparous Swiss women in a prospective longitudinal study of aspects of emotional well-being such as birth-anxiety, self-efficacy and psychosocial adaptation to pregnancy. Self-efficacy scores were calculated at three time points: 29-33 weeks gestation, 4-5 weeks later after attending childbirth classes, and 2-5 days postpartum. Sieber et al. (2006) found self-efficacy scores increased after attendance at classes. However, as there was no control group it is impossible to attribute this to attendance at childbirth classes. At the first time point, self-efficacy was negatively correlated with birth anxiety.

2009 - Hong Kong and Sweden

Building on their earlier work (2008, 2005) which is described in the self-efficacy literature review in chapter four, Ip et al., (2009) designed a randomised controlled trial drawing many theoretical elements of self-efficacy together. Ip et al.'s study was included in Marc et al.'s (2011) Cochrane review and is not only one of the strongest in methodological design, but also one of very few which have designed an antenatal education programme around Bandura's 1977 principles. It is therefore particularly relevant to the present study. Ip et al. (2009) evaluated the effect of a self-efficacy

enhancing educational programme (SEEEP) on self-efficacy, pain, anxiety and performance behaviours in low risk Chinese primiparous women. The SEEEP sessions embraced the four components of self-efficacy enhancement as described by Bandura (1977):

- Performance accomplishments
 - Demonstrating and actively encouraging the women to practise coping skills and pain management strategies, including breathing, relaxation, distraction and cognitive restructuring of pain
 - Making a verbal contract with the women to increase mastery by practising the coping techniques at home
 - Giving the women written guidelines summarising the self-coping strategies
- Vicarious experience
 - Showing a video where women successfully persevered with coping behaviours to regain control over their birth
- Verbal encouragement
 - Positive comments
 - Aiming to give the women a sense of confidence in their ability to cope with childbirth by reviewing their practice of coping strategies
- Somatic awareness
 - Giving the women psychological and physical information about childbirth
 - Asking the women to complete a daily log with the aim of building a sense of personal control and confidence through awareness of successful practice in challenging conditions.

The control group received the usual care provided in Hong Kong maternity services where there is no standard antenatal education programme. One hundred and ninety-two (52%) of the 366 eligible women recruited from one Hong Kong hospital agreed to participate in the trial. The attrition rate was relatively high, although not unusual for a longitudinal study in this field: 36/96 and 23/96 women withdrew from the experimental and control groups respectively. Reasons for withdrawing included medical (breech), personal (tiredness) and convenience (difficulty getting to the sessions). The group who received the SEEEP intervention demonstrated higher levels of self-efficacy for childbirth, lower perceived anxiety, lower perceived pain and greater performance of coping behaviours during labour than the control group. An increased level of confidence in the ability to manage labour was a predictor for use of labour-coping behaviours.

The same year, in a randomised controlled, multicentre trial to examine the effects of psychoprophylactic training versus standard antenatal education, Bergström et al. (2009) found no statistical differences in the experience of childbirth between the groups. In this methodologically strong trial which was included in *Birth and Beyond* (McMillan et al., 2009) and Smith et al.'s (2011) Cochrane review, both groups took part in antenatal programmes consisting of four two-hour sessions. The 'natural' model included 30 minutes practice per session of relaxation and breathing techniques plus partner coaching and the educator was encouraged to be in favour of natural childbirth. The 'standard' model included information and discussion on childbirth and parenting but no practical training or information on non-pharmacological methods of coping with labour pain. The epidural rate across the sample was high (52%) implying

an acceptance of epidural anaesthesia within the Swedish maternity culture or a lack of support during labour. Whilst 70% of the 'natural' group practised psychoprophylaxis during labour, 45% of the standard group also did so, implying influence from outside the trial, either from previous experience of coping with pain or attendance at other education classes.

2010 - Denmark

Maimburg et al. (2010) trialled an intervention consisting of three three-hour sessions: Birth, Parenting and The Newborn, with the Birth module consisting of 'lectures and discussion of labour onset, birth process, the attending father, pain relief, birth interventions, fear of childbirth and a film on giving birth'. One of the aims of the trial was that women would use less pain relief and receive less medical intervention during labour. Although there is no standard antenatal education programme in Denmark, the control group receiving standard care could choose to attend classes provided by other stakeholders, which were mainly relaxation classes. In the trial group, 72% of women received the intervention, often attending sessions with their partner, whilst 45% of the women in the control group attended sessions provided by external stakeholders. In contrast with earlier researchers (Bergström et al., 2009; Fabian et al., 2005), Maimburg et al. (2010) found that women receiving the antenatal training used less epidural analgesia during labour but not less pain relief overall. A five-year follow-up of this trial (Maimburg et al., 2016) showed that women who received the antenatal education programme reported a more positive birth experience compared with those in the control group. A strength of Maimburg et al.'s research was the relatively low

withdrawal rate: the participant response rates were 97% in the initial trial (2010) and 82% at 5 years (2016).

2011 - Taiwan

Gau et al. (2011) examined the effectiveness of a birth ball exercise programme on self-efficacy with a randomised group of 188 Taiwanese mothers. The programme consisted of a booklet and videotape, with follow-ups during antenatal appointments. The experimental group were asked to practise at home for at least 20 minutes three times a week. They were given a birth ball and encouraged to choose comfortable positions every hour in labour. Women in the experimental group had significant improvements in childbirth self-efficacy, shorter first-stage labour, less epidural analgesia, and fewer caesarean deliveries than the control group. However, fewer than half the women who started the trial completed it, making the results less reliable. In addition, women in the experimental group were encouraged to use the birth ball hourly throughout labour and their partners recorded the length of time they stood up during labour. As upright positions have been associated with shorter labour and a greater ability to manage labour without pharmacological pain relief (Lawrence et al., 2013), interpretation of the results may have been confounded.

2013 - Brazil

Miquelutti et al. (2013) conducted a phenomenological study of 21 Brazilian first time mothers, interviewing them 24-48 hours after delivery. The intervention group attended a women-only antenatal programme covering breathing, relaxation, stretching exercises and pharmacological pain relief. Non-pharmacological pain techniques were practised and doubts discussed. The control group had usual care

including information on breastfeeding, signs and symptoms of labour and the opportunity to attend a meeting which included physical exercise and coping techniques for labour. The women in the intervention group reported that they maintained self-control during labour, using breathing exercises, upright positions and other self-help strategies to control pain. They also reported satisfaction with their birthing experience. Women in the control group referred to difficulties in maintaining control with almost half reporting a lack of control. They were also more likely to be dissatisfied with labour. A limitation of this trial noted by Miquelutti et al. (2013) was that in the hospital where the women birthed their babies, the decision whether to give spinal anaesthesia is made by the medical staff rather than the women and so it was not possible to evaluate the effect of the antenatal programme on pain relief in labour.

2016 - Australia

A recent randomised controlled trial with 176 primiparous Australian women (Levett et al., 2016) evaluated a novel approach towards antenatal preparation by investigating the effect on epidural use of a two-day antenatal education programme based on six complementary medicine techniques. Relevant to the present study, three of the components taught on the two-day courses were relaxation, breathing and yoga techniques. Women who received the intervention showed a reduction of 63% in epidural use compared with the control group. They were also more likely to birth vaginally without surgical or mechanical assistance, had reduced rates of augmentation, shorter second stage of labour, less perineal trauma and reduced need for newborn resuscitation. In common with other antenatal education research, a

limitation of this trial was that the women who participated tended to be wealthy, well-educated and from higher socio-economic groups than the general population.

Antenatal education literature summary

Despite many individual trials, the effects of antenatal interventions on women's ability to manage labour remain inconclusive. Key themes are the complexity of factors affecting birth outcomes, heterogeneity of antenatal education aims and processes and the challenges of randomisation and participant compliance. Together these factors lead to a lack of robust trials and an inability to meta-analyse. Further research is needed to establish the impact of antenatal education on women's ability to manage labour and this thesis aims to fill some of the gaps in current knowledge.

The next chapter explores the literature around YfP, a form of antenatal education which is gaining interest as a possible intervention which may enable women to manage labour without medical intervention.

3. Yoga for Pregnancy literature review

This chapter explores the literature around yoga for pregnancy in order to summarise and identify gaps in current knowledge. The chapter begins with a brief description of the origins and general benefits of yoga before analysing pregnancy yoga literature in more depth.

There is limited research into yoga in pregnancy, with many studies taking place in developing countries where populations and yoga practice are so different from western demographics that transferability is debatable. Only one study has explicitly investigated YfP and self-efficacy in labour (Sun et al., 2010). However, others have explored related constructs such as maternal comfort during labour (Chuntharapat et al., 2008). The results of studies are complex and sometimes contradictory even within individual trials. For example, sometimes an association has been found between variables after the first session of YfP but not after a full course, or has been found if women start the intervention in their second trimester but not if they start in the third (Newnham et al., 2014; Field et al., 2012b; Mitchell et al., 2012; Beddoe et al., 2009). Another layer of complexity is added with some trials combining YfP with related techniques such as mindfulness (Muzik et al., 2012). No adverse effects have been found in any trials.

What is yoga?

Yoga is a Sanskrit word meaning 'union', commonly understood to mean the union of mind, body and spirit, or mind, body and breath (Medline Plus., 2014; British Wheel of Yoga., n.d.). Yoga originated from a description of physical postures allegedly written

around 3,000 BC by Patanjali, an Indian scholar and physician. A myriad of lineages, philosophies and schools of yoga descended from the original writings are currently offered. Whilst yoga was originally developed as a spiritual practice, most Westerners practise it for exercise or to reduce stress. Class content and emphasis vary between both schools and individual yoga teachers. Although there are no commonly accepted standards, most classes in the West include asanas (physical postures), pranayama (breathing), Dhyana (meditation) and yoga nidra (relaxation). Classes in Eastern continents tend to also include elements of lifestyle and spirituality (Rakhshani et al., 2015).

Has yoga been proved to be beneficial?

A recent research report into the therapeutic effects of yoga on non-pregnant populations (Harnan et al., 2013) showed that yoga was similar to, or more beneficial than, exercise for a range of outcomes including fatigue, heart rate, cholesterol levels, stress and quality of life. However Harnan et al. (2013) warn that the results should be interpreted with caution as generally the quality of trials is low. Yoga and medical websites (Medline Plus, 2014; British Wheel of Yoga, n.d.) list benefits including:

- Improved cardiovascular function
- Reduced stress, anxiety and depression
- Improved posture, flexibility and strength
- Improved concentration
- Enhanced feeling of well-being

- Better quality sleep

Within perinatal populations, mind-body interventions have been shown by Cochrane reviews to have possible benefits on antenatal anxiety and pain management in labour (Marc, et al., 2011; Smith et al., 2011), but these reviews recommend caution due to low quality trials, small sample sizes and lack of blinding.

Yoga for Pregnancy literature

This thesis does not include a systematic review of YfP literature as there have been five systematic reviews of YfP published since 2012 (Jiang et al., 2015; Sheffield & Woods-Giscombé, 2015; Riley and Drake, 2013, Babbar et al., 2012; Curtis et al., 2012).

These reviews and a Cochrane review of pain management techniques in labour are summarised below before a more in-depth analysis of significant individual studies.

Table 1 shows the individual YfP studies which are explored in this chapter and table 2 shows a summary of YfP research findings.

2011

One YfP trial (Chuntharapat et al., 2008), which is analysed in more detail later in this chapter, was included in Smith et al.'s (2011) Cochrane review of relaxation techniques for pain management in labour. This review noted that many women would like to avoid pharmacological or invasive methods of pain relief in labour. Although none of the included studies was judged to be well designed with a low risk of bias, the authors concluded that 'Relaxation and yoga may have a role with reducing pain, increasing satisfaction with pain relief and reducing the rate of assisted vaginal delivery' (Smith et al., 2011).

2012

In 2012, Babbar et al. published a systematic review evaluating the outcomes of YfP trials. Their electronic search covered 42 years but yielded only 53 publications in comparison with 3,015 on exercise in pregnancy. Babbar et al.'s (2012) review included both randomised and non-randomised studies. They identified five prospective observational studies, including 575 women (Sun et al 2010; Beddoe et al. 2010, 2009; Narendran 2005a, 2005b,) and three randomised clinical trials (n=298) (Rakshani et al 2010; Satyapriya 2009; Chuntharapat 2008) between 1970 and 2011 which satisfied their quality criteria. All of these studies are analysed individually later in this chapter. Of these trials, four were conducted in India, two in the USA and one each in Thailand and Taiwan. The non-randomised trials indicated a significant reduction in preterm labour, intrauterine growth retardation, low birth weight, pregnancy discomforts and perceived sleep discomforts in those who practised yoga during pregnancy.

The three RCTs reported that YfP interventions significantly reduced lower back pain and discomfort, perceived stress and improved quality of life. However Babbar et al. (2012) found that all three RCTS were poorly compliant with the Consolidated Standard of Reporting Trials (CONSORT) statement and generalisability across all studies was compromised by poor study design and lack of blinding. Babbar et al. (2012) also noted that low birth weight rates in India vs. America were 30% and 8% respectively in 2007. This implies reduced generalisability because of demographic differences. To show similar differences with an American population would require a study of over 2,000 women.

A systematic review of YfP research by Curtis et al. (2012) used more rigorous inclusion criteria. This review included only five of the eight controlled studies (six publications) considered by Babbar et al. (Rakshani et al. 2010; Sun et al. 2010; Satyapriya et al. 2009; Chuntharapat et al. 2008; Narendran et al. 2005a; 2005b). Curtis et al. (2012) noted several limitations in the statistical analyses of the trials, cross-contamination between groups and commented on the problems of using self-report. However, the review concluded that antenatal yoga programmes yield benefits during pregnancy, labour and also in birth outcomes. Curtis et al. (2012) drew two conclusions relevant to the present study. Firstly, they noted that research to date has primarily been conducted with Asian populations and recommend that new studies are conducted elsewhere. Their second recommendation is for investigation into the individual elements that make up YfP in order to establish which components are responsible for any observed effects. This present thesis aims to contribute towards answering this question.

2013

A year later, Riley & Drake (2013) published a systematic review of the effects of YfP on birth outcomes, dividing their analysis into studies involving healthy pregnant women from those with at-risk women. Unsurprisingly, their review included the same studies as Babbar et al. (2012) and Curtis et al. (2012) although they also had access to three newer papers (Field et al., 2012a; 2012b; Muzik, et al., 2012; Rakshani et al., 2012). The Field et al. (2012a; 2012b) and Rakshani et al. (2012) trials are explored in more depth below but the Muzik et al. (2012) is excluded from individual analysis in this chapter as the intervention was a combination of yoga and another modality

(mindfulness) which could not be dismantled. Although Riley and Drake's (2013) inclusion criteria specified that studies had to focus primarily on YfP, they also included a study by Vieten and Astin (2008) of a mindfulness intervention incorporating some yoga-based postures. Riley and Drake's (2013) review concluded that despite the studies varying in both the length and intensity of the yoga intervention, all demonstrated benefits to the women with no adverse effects. It was noted that most YfP research has focused on pregnancy variables rather than labour and birth, and that this seems counterintuitive as the mindful breathing and physical movement of yoga share fundamental aspects with the process of labour. Although Riley and Drake (2013) published little analysis of the quality of individual trials, similar to previous systematic reviews they note that many studies were limited by small sample sizes, lack of randomisation and uncertainty about compliance due to supervision of the intervention. Once again, the high numbers of studies from Eastern countries was noted, with a recommendation for further research into how YfP affects childbirth outcomes, women's experience and babies' outcomes in Western countries.

2015

In 2015, Sheffield and Woods-Giscombé published a systematic review of YfP in relation to women's mental health and well-being. Thirteen publications met their inclusion criteria, including seven randomised controlled trials. However nine of these combined YfP with another treatment modality such as mindfulness, Tai chi or Pilates. The Sheffield and Woods-Giscombé review (2015) is less pertinent to this thesis as two of the primary outcome variables assessed were depression and anxiety, and they also considered the effect of YfP on parenting. However, they were the only systematic

reviewers to include a qualitative study relevant to the present study (Doran & Hornibrook, 2013) which is explored later in this chapter. Sheffield and Woods-Giscombé (2015) found six of the seven studies which evaluated depression, and all five which evaluated anxiety, showed a significant decrease in symptoms post-intervention. Interventions which were longer than seven weeks were found to have more significant outcomes. The review concluded that while the small sample sizes meant limitations in the power of the statistical analyses, it was possible to make some generalisations. These included that YfP interventions were generally effective in reducing depression and anxiety regardless of the yoga intervention design, yoga style or measurement scale used. In evaluating the validity of included trials, Sheffield and Woods-Giscombé found relatively low threats from publication bias or attrition rates but higher threats from small sample sizes, sampling bias (all the trials used convenience sampling), lack of blinding and variations in content, dose and duration of the intervention.

The same year, a review of randomised controlled YfP trials (n=10) published by Jiang et al. (2015) concluded that YfP impacted:

- Antenatal disorders such as pre-eclampsia, pregnancy induced hypertension, intrauterine growth retardation and gestational diabetes
- Pregnancy-related back, lumbo-pelvic and leg pain
- Psychological health including anxiety, depression, stress and anger
- Duration of labour and mode of delivery
- Birth outcomes.

In addition to relevant trials included in previous YfP systematic reviews, Jiang et al. (2015) included a study by Deshpande et al. (2013) which examined women’s perceived stress after YfP. This is analysed in more detail later in this chapter.

Table 1: Significant YfP studies

Trials	Year	Country	Included in systematic reviews					
			*1	*2	*3	*4	*5	*6
Narendran et al.	2005a;b	India		✓	✓	✓		
Chuntharapat et al.	2008	Thailand	✓	✓	✓	✓		✓
Satyapriya et al.	2009	India		✓	✓	✓	✓	✓
Sun et al.	2010	Taiwan		✓	✓	✓		
Rakhshani et al.	2010	India		✓		✓		✓
Field et al.	2012a	USA				✓	✓	✓
Field et al.	2012b	USA					✓	✓
Rakhshani et al.	2012	India				✓	✓	✓
Mitchell et al.	2012	USA					✓	
Deshpande et al.	2013	India						✓
Doran & Hornibrook	2013	Australia					✓	
Satyapriya et al.	2013a;b	India					✓	✓
Bershadsky et al.	2014	USA						
Newnham et al.	2014	UK						
Reis & Alligood	2014	USA				✓		
Davis et al.	2015	USA						

*1 Smith et al., 2011; *2 Babbar et al., 2012; *3 Curtis et al., 2012; *4 Riley and Drake, 2013; *5 Sheffield and Woods-Giscombé, 2015; *6 Jiang et al., 2015

Individual YfP studies

This thesis aims to explore the effect of YfP on women's self-efficacy for labour and birth; therefore, only trials which investigate the effect of YfP on psychosocial constructs relevant to self-efficacy or birth outcomes are explored in depth in this literature review. For example, those exploring anxiety during pregnancy or labour are included, whereas those exploring postnatal depression are excluded. Inclusion criteria also include the robustness of the study and the ability to isolate the effects of YfP within the intervention. For example, studies which evaluate a combined YfP/Pilates intervention are excluded, whereas a study which compares a yoga intervention with a massage intervention is included. Table 2 shows a summary of overall YfP findings.

2005 - India

In a study to examine the effects of YfP on maternal health and pregnancy outcome, Narendran et al. (2005a) enrolled 335 women in Bangalore onto a prospective, matched observational study. The study used self-selected groups in order to increase compliance. Women who lived nearer the hospital were encouraged to join the yoga arm as it involved frequent trips to the hospital to learn yoga techniques. Yoga practices including physical postures, breathing and meditation (including mantra chanting) were practised daily for one hour from 18-20 weeks gestation until birth. Compliance was encouraged by frequent telephone calls. The control group walked 30 minutes twice daily, which was the standard obstetric advice in the area. The main results were a significant reduction in preterm labour, low-birth weight babies, growth retardation and pregnancy induced hypertension in the yoga group.

Using a subset of 121 high-risk women from the above trial, Narendran et al. (2005b) studied the effect of yoga on the outcome of complicated pregnancies. The results were similar, showing significantly higher birthweight and lower pregnancy complications in the yoga group. A limitation of these studies is the lack of randomisation and blinding.

2008 - Thailand

Chuntharapat et al. (2008) randomised 74 low-risk primiparous Thai women to either yoga or a control group. The experimental group received six one-hour sessions of pregnancy education, including yoga concepts and practice. They were asked to practise three times per week at home with an audio-tape. The control group received routine care plus 20-30 minutes of 'casual conversation' with the researchers during hospital visits. The women completed a visual analogue pain scale three times in active labour and a comfort questionnaire two hours after birth. The women in the YfP group had shorter labours, significantly higher maternal comfort and lower scores for pain during labour than the control group. There was no difference in Apgar scores, use of pethidine or augmentation between the two groups. Chuntharapat et al.'s (2008) study is one of the strongest methodologically, but a limitation was the lack of blinding of the labour caregivers who asked the women from the yoga arm to perform a squat during second stage. This could have introduced an element of bias as well as affect second stage duration.

2009 - India

Satyapriya et al., (2009) based in Bangalore and including some of the same researchers as the earlier studies by Narendan et al. (2005a, 2005b), explored the effect of YfP on stress and heart rate variability. This trial involved 122 low-risk women assigned either to yoga or standard antenatal exercises for one hour three times a week from 12 to 28 weeks of pregnancy. The women were asked to practise at home, complete an exercise diary and were supported by fortnightly/monthly refresher classes. The required yoga practice was detailed, incorporating specific elements such as 15 minute yogic counselling lectures to bring about 'perceivable lifestyle change with the proper understanding of oneself' and deep, guided relaxation with five phases of chanting in addition to asanas, pranayama and meditation. The exercise-only group also had lectures, but on 'modern scientific concepts of healthy lifestyle including thinking, feeling, diet and behaviour' rather than yogic concepts of healthy lifestyle. This study demonstrated some of the difficulties with assigning women to antenatal classes as compliance was low - nearly a third of both the control and intervention arm dropped out of the study, reducing the reliability and validity of the results. Some of the control group transferred to the yoga group as yoga became popular. The results showed a significant decrease in perceived stress in the yoga group against an increase in the control group. Healthier autonomic responses were also seen in the yoga group, implying an improved ability to return to a relaxed state after stress. Details of randomisation, blinding and withdrawal were all published making this one of the most robust YfP studies, despite the low compliance.

2010 - Taiwan and India

In the only YfP study to specifically include self-efficacy as a variable, Sun et al. (2010) published the results of a non-randomised controlled experimental study into the effects of yoga on pregnancy discomfort and labour self-efficacy in 96 low-risk primiparous women in Taiwan. The experimental group received a 30 minute film and booklet outlining a one-hour yoga programme including asanas, meditation and relaxation. Women were asked to follow the programme at home at least three times a week for 12-14 weeks. Compliance was checked by weekly/fortnightly phone calls. The study found no significant difference between women in the experimental and control groups in pregnancy discomfort at 26-28 weeks gestation but significant positive differences at 38-40 weeks. This study concluded that yoga significantly increased childbirth self-efficacy during the active and second stage of labour and that yoga is a factor in promoting a general sense of well-being. Women's heartbeat rates were checked after each session to evaluate yoga safety and were found to stay within a safe range when practising yoga. Although the authors stated this study was double-blind, the main investigator taught the women at their first YfP session, bringing the robustness of the reporting into question and introducing the possibility of bias. In addition, women who chose epidural anaesthesia or caesarean birth were excluded from the trial.

The same year, Rakhshani et al. (2010) reported on the potential effects of YfP on quality of life and interpersonal relationships. Although this is not noted in the text, the participants were the same as those from Satyapriya et al.'s study (2009) from the previous year. Rakhshani et al. (2010) found significant differences between the

standard exercise and yoga groups, with the YfP group showing higher improvements in general health as well as in the psychological and social domains (sense of belonging, wanting influence over their environment and desiring more warmth and closeness). Rakhshani et al. later published (2015) a detailed description of their antenatal model based on Vedic theory, covering the physical, psychological, social and spiritual domains. Details of randomisation, blinding and withdrawal were all published making this another of the more robust YfP studies.

2012 - America

Field et al. (2012a) randomly assigned 84 pregnant American women to yoga, massage or standard antenatal care to determine the effects of yoga and massage therapy on antenatal depression and neonatal outcomes. To explore whether the effects of YfP are independent of the known benefits of attending women-only groups in pregnancy, the researchers ran short (20 minute) yoga sessions containing only physical elements without any pregnancy education or time devoted to sharing personal information. Although a short relaxation was included in the YfP classes, meditation was not. Following 12 weeks of twice weekly yoga or massage sessions, both therapy groups showed greater benefits in relation to depression, anxiety, relationships and back/leg pain than the control group.

Working with Field and using a subset of depressed women from the 2012 study above, Mitchell et al. (2012) randomised 24 women to either YfP or a parenting education group. The YfP group showed benefits in terms of reduced depression but this result did not reach statistical significance.

The same year, Field et al. (2012b) published the results of a trial which randomly assigned 92 depressed pregnant women to either a yoga or social support intervention. Again, the YfP intervention was short (20 minutes) to reduce confounding factors and increase compliance and focused on asanas and relaxation. The social support groups were leaderless sessions where a staff member was present but silent. The YfP group showed improvements immediately post-intervention in depression, anxiety, and back/leg pain but over the full course of treatment there were no group differences in relation to depression, anxiety or relationship quality.

2013 - Australia and India

The study which is most similar in design to the present study was published by Doran and Hornibrook in 2013. It describes a qualitative study exploring women's experience of an Australian pregnancy and postnatal group incorporating yoga and facilitated group discussion. Fifteen women participated in individual, in-depth face-to-face interviews and thematic analysis was undertaken on the resulting data. Six themes, one with three subthemes, were developed. Some of these themes, for example '*The pregnancy and motherhood journey*', '*Feminine nurturing space*'; '*Watching and learning the mothering*', '*Preparation for Birth*', '*Connecting with the baby*' and, '*Sharing birth stories*' have resonance with the themes which emerged from the present study.

In a study exploring YfP in high risk groups, Deshpande et al. (2013), based in India with some of the same team of researchers from previous YfP trials (Rakhshani et al. 2010; Satyapriya 2009; Narendran 2005a; 2005b) studied the effects of YfP with 68 women. The women in the randomised controlled single-blind study were classified as high risk

if they had a history of previous poor pregnancy outcome, twin pregnancy, extreme maternal age, obesity or poor family history of obstetric outcome. The yoga group received a one-hour session three times a week from the 13th to the 28th week of pregnancy. The control group were given the standard care of advice to walk for 30 minutes morning and evening. Both groups received pamphlets about diet and bi-weekly follow-ups to check adherence to the programme. The yoga programme included breathing, asanas and deep relaxation using visualisation and guided imagery. High drop-out rates were encountered in the yoga group because when women returned to their home town for the birth, as is the cultural norm in India, they could not continue with the programme. In addition, medical data was often incomplete for the women who birthed in hospitals away from the research centre. Despite this bringing the participant numbers in each of the high-risk categories down, there were significant differences between the groups in three areas. The yoga group showed reductions in pregnancy-induced hypertension, intrauterine growth retardation and preterm delivery. There were two versus no cases of pre-eclampsia and fewer cases of gestational diabetes in the yoga group compared with the control group but these were not statistically significant. There were significantly fewer small for gestational age babies and babies with low Apgar scores at 1 and 5 minutes in the yoga group than the control group.

Satyapriya et al. (2013a; 2013b) published the results of a prospective randomised control study involving 96 low-risk women in Bangalore. The intervention was intensive, with two hours of daily instruction for one month followed by a recommendation of one hour daily practice with a pre-recorded CD for the remainder

of the pregnancy and two-hour refresher classes fortnightly/monthly. The yoga intervention was similar to Narendran et al.'s 2005a study and the control group had standard antenatal practice covering loosening and stretching exercises. Compliance was encouraged by phone and monitored by activity diaries. Both control and yoga groups were educated in the physical and psychological changes expected during pregnancy, lifestyle choices such as diet and exercise, improving emotional stability and preparation for labour. The compliance rate of 90% was higher than in previous studies.

The results were published in two separate papers. The first (2013a) described the effects on labour outcomes and the second (2013b) on depression and anxiety. The 2013a paper describes significant reductions in labour duration, fewer caesarean sections, lower epidural rates and higher normal vaginal deliveries compared with the control group. The second paper (2013b) concluded that YfP is more effective than antenatal exercise in reducing anxiety, depression and pregnancy stressors and concerns.

2014 - America and England

In 2014, Bershadsky et al. published the findings from a study exploring depression and affect after a YfP programme with 51 pregnant women. The intervention participants were recruited from yoga studios in California and differed socio-demographically from the control group who were recruited via obstetric referral and community advertisements. The yoga group was more likely to be white, married and have higher levels of income and education, but did not differ on depressive symptoms from the control group. The intervention was a 90 minute Hatha yoga session including asanas,

relaxation, pranayama and a 10-15 minute 'dialogue' on pregnancy related concerns and specific adaptations. The study found that women who practised yoga had lower mean cortisol levels and more positive affect on days of yoga activity and concluded that YfP may improve current mood and be effective in reducing postnatal depression.

In one of the few UK YfP studies, Newnham et al. (2014) asked 59 primiparous, low-risk pregnant women to complete a questionnaire assessing their anxiety and depression levels before randomisation to either an 8-week course of antenatal yoga or usual care. The yoga group also completed pre and post-session state anxiety and stress hormone saliva tests at both the first and last session. The yoga intervention consisted of 1.5 hours Hatha yoga covering pregnancy ailments, labour and breathing. It specifically excluded any group or partner work in order to avoid a possible social dynamic confounding the results. The researchers concluded that yoga in pregnancy seems to reduce women's anxieties and prevent an increase in depressive symptoms. A limitation of this study is that the fidelity of the comparison groups was affected by some of the women in the usual care group choosing to attend alternative YfP classes outside the trial.

The same year, Reis and Alligood (2014) reported on a pre/post assessment survey study with a convenience sample of 27 American women. The study investigated the difference between women who started a six week YfP course at two different time-points in pregnancy. There was no control group. The 60 minute sessions included checking in, breathing and visualising, postures, relaxation and meditation. Both intervention groups showed improvements in the optimism, power, and well-being

scores. Reis and Alligood (2014) found that the timing of the intervention was not significant.

2015 USA

Davis et al. (2015) published the results of a randomised controlled trial of an 8-week YfP intervention for 46 women with depression and anxiety. Women from both the intervention and control groups reported reduced symptoms of anxiety and depression over time, but the YfP intervention only significantly outperformed usual treatment in relation to the reduction of negative affect (negative emotions and poor self-concept).

Table 2: Summary of YfP research findings

Variable	Association found	No association found
Pregnancy – Psychological		
Lower anxiety	Newnham et al., 2014; Satyapriya et al., 2013b; Field et al., 2012a, 2012b; Khalajzadeh et al., 2012; Beddoe et al., 2009	Davis et al. 2015
Lower depression	Uebelacker et al., 2016; Newnham et al., 2014; Mitchell et al., 2012; Satyapriya et al., 2013b; Field et al., 2012a, 2012b; Muzik et al., 2012; Battle et al., 2010	Davis et al. 2015
Higher psychological wellbeing, quality of life, reduction in negative affect	Davis et al. 2015; Reis and Alligood, 2014; Doran & Hornibrook, 2013; Satyapriya et al., 2013b; Rakhshani et al., 2010; Sun et al., 2010	
Lower stress	Deshpande et al., 2013; Beddoe et al., 2009; Satyapriya et al., 2009	
Higher self-efficacy	Sun et al., 2010	
Higher contentment, optimism, power	Bershadsky et al., 2014	
Pregnancy - social		
Improved relationships, making friendships	Doran & Hornibrook, 2013; Field et al., 2012b; Rakhshani et al., 2010	
Increased maternal-foetal attachment	Muzik et al., 2012	
Pregnancy - physical		
Fewer pregnancy discomforts including back and leg pain	Deshpande et al., 2013; Satyapriya et al., 2013b; Field et al., 2012a; Beddoe et al., 2009; Sun et al., 2010	
Reduced hypertension and pre-eclampsia	Rakhshani et al., 2012; Narendran et al., 2005a; 2005b	
Lower cortisol level	Bershadsky et al., 2014; Newnham et al. 2014; Field et al., 2012b	
Foetal blood flow		Babbar et al., 2015
Less bed rest	Moore, 2010	
Less gestational diabetes	Rakhshani et al., 2012	

Variable	Association found	No association found
Reduced foetal heart rate variability	Satyapriya et al., 2009	
Better sleep	Beddoe, et al., 2010	
Reduced pre-term labour	Kawanishi et al., 2016	
Labour		
Preference for less analgesia	Moore, 2010	
Less analgesia	Satyapriya et al., 2013a	Chuntharapat et al., 2008
Higher maternal comfort	Chuntharapat et al., 2008	
Fewer interventions	Satyapriya et al., 2013a	
Lower caesarean rates	Satyapriya et al., 2013a; Moore, 2010	
Shorter labour	Satyapriya et al., 2013a; Chuntharapat et al., 2008	
Labour augmentation		Chuntharapat et al., 2008
Fewer episiotomies	Moore, 2010	
Effects on the baby		
Reduced intrauterine growth retardation	Rakhshani et al., 2012; Narendran et al., 2005a; 2005b	
Fewer small for gestational age newborns with low Apgar scores	Rakhshani et al., 2012	
Newborn Apgar scores		Chuntharapat et al., 2008
Increased birthweight	Field et al., 2012a; Moore, 2010; Narendran et al., 2005a; 2005b	
Pre-term delivery	Narendran et al., 2005a; 2005b	

YfP literature summary

The majority of trials report that YfP has benefits for the physical and psychological health of women and their babies, positively impacts labour duration and improves pain management (table 2). However, a number of key issues affect the reliability, validity and transferability of YfP research, including:

- **Quality:** most trials are of low quality due to poor design, the challenges of blinding inherent in mind-body interventions and small sample sizes.
- **Confounding factors and dismantling:** some trials have combined YfP with other elements (Muzik et al., 2012), whilst others have tried to isolate or eliminate elements such as social support (Field et al. 2012a, 2012b; Newnham et al., 2014). There is debate around whether yoga is a holistic health practice and whether dismantling it in this way loses essential features (Rakhshani et al., 2015; Curtis et al., 2012).
- **Variety of intervention:** the number of classes attended by the women in the studies described in this chapter varies from 6 to 28 and the length of the YfP classes varies from 20-120 minutes. The yoga modality employed is also variable, with studies including for example Iyengar yoga (Beddoe et al., 2010; 2009), Integrated yoga (Satyapriya et al., 2013a; 2013b; 2009; Rakhshani et al., 2010;) and gentle yoga (Doran & Hornibrook, 2013). Some studies include videos, booklets and home practice while others do not.
- **Demographics:** the majority of trials have taken place in Asian populations where cultural and demographic variables as well birthing practices are different from Western countries.

- Self-reporting: many of the studies have involved home-based yoga practice and have therefore relied on self-reporting of adherence to the programme.
- Cross-contamination: in some of the studies, there has been the potential for women to switch from one arm of the trial to another, and nothing to stop women in the control arm practising yoga outside of the trials.

This chapter summarised current YfP literature and analysed individual trials relevant to this thesis. The present study aims to contribute towards the gaps identified in current knowledge, including the effect of YfP on women's ability to manage labour, women's experience of YfP and whether any of the elements of YfP classes could be dismantled for use in other antenatal education interventions.

As the findings of the present study are analysed through a self-efficacy framework, the next chapter summarises the literature around childbirth self-efficacy.

4. Self-efficacy literature review

After it became apparent that the construct of self-efficacy was highly relevant to the study aim, the initial question changed from 'Does NCT YfP make a difference, and if so, how?' to 'How might NCT YfP affect women's self-efficacy for labour?' Self-efficacy beliefs affect women's ability to achieve tasks they set themselves and YfP aims to enable women to achieve the birth they would like to have. The decision was therefore taken to analyse the emergent themes through a self-efficacy lens as part of the generation of a grounded theory. This chapter explores self-efficacy theory in relation to childbirth. How self-efficacy beliefs can be strengthened and also measured became of increasing interest as the study progressed and so these are explored in some depth in this chapter.

In 1977, Bandura defined his Unifying Theory of Behavioural Change: an integrative theoretical framework which explained and predicted how personal self-efficacy could be altered by psychological procedures. Self-efficacy is defined as a person's belief in their ability to succeed in specific tasks and can be divided into *self-efficacy expectancy* and *outcome expectancy*. Self-efficacy expectancy is the belief that one will be able to perform a certain task (*I will be able to relax during labour*) and outcome expectancy the belief that performing the behaviour will result in the required outcome (*If I relax during labour I will feel less pain*). There is conflicting evidence causing continuing debate around the correlation and influence of these two concepts on each other (Williams, 2010) which is explored later in this chapter; however, the general construct of self-efficacy has been validated internationally and shown to be a workable method

to account for human behaviour and motivation (Scholz et al., 2002). The Childbirth Self-Efficacy Inventory (CBSEI) (Lowe, 1993) has become the standard for measuring women's self-efficacy for labour. Additional findings arising from this thesis leading to suggestions for future research regarding self-efficacy measurement are described in chapter twelve.

Bandura's theory (1977) hypothesised that the initiation of and persistence with coping behaviours was dependent upon the expectation of personal self-efficacy. In Bandura's (1977) model, efficacy beliefs are derived from four principal sources: performance accomplishments, vicarious experience, verbal persuasion and physiological states. By analysing studies of phobic patients, Bandura (1977) concluded that self-efficacy beliefs are an accurate predictor of behaviour performance. Relating this to childbirth, the theory would imply that women with higher self-efficacy beliefs regarding their ability to manage labour pain without pharmacological medication would be likely to use a larger number of strategies for pain management, and persist with them for longer, than women with lower self-efficacy beliefs. This should lead in turn to fewer interventions (Jones et al., 2012; NICE, 2007) and better postnatal outcomes for women and their families (Tamagawa & Weaver, 2012).

Early self-efficacy research

Manning and Wright (1983) undertook the first and seminal study which ratified the construct validity of self-efficacy in relation to childbirth and explored the difference between self-efficacy and outcome expectancies. The results of their study with a group of 52 primiparous women supported the hypothesis that self-efficacy beliefs

affect how women behave in labour. By gathering data on self-efficacy before, during and after labour, they showed that use of analgesics was lower for women with higher self-efficacy scores. Women with higher self-efficacy beliefs also laboured for longer without pain medication. Manning and Wright (1983) found there was no distinction between self-efficacy expectancy and outcome expectancy - women's belief in their ability to control their labour pain was similar to their belief in taught pain coping techniques generally.

Bandura (1977) argued that self-efficacy is distinct from confidence. However, the relationship between the two constructs is complex and was first explored in depth by a key researcher Nancy Lowe, an American who published a number of seminal studies exploring women's ability to cope with labour pain.

In Lowe's early research (1991b, 1991c, 1989, 1987) she showed that up to half of the variance in perceived labour pain could be explained by a mother's confidence in her ability to cope. Lowe's first study of 50 women (1987) examined six predictors of labour pain experience and demonstrated that anxiety, confidence and fear of pain were significantly related. Her later, larger studies (1991b, 1989) with 165 and 134 women respectively, showed that confidence was the most significant predictor of labour pain. Crowe and Baeyer (1989) reported similar findings in a small longitudinal study of first-time mothers attending antenatal classes. Withdrawal rates in Crowe's and Baeyer's (1989) non-controlled study were relatively high, with only 21 out of the 30 enrolled women completing their third, post-birth, questionnaire. Crowe and

Baeyer (1989) found that women who demonstrated greater knowledge of childbirth and higher confidence after classes subsequently reported a less painful birth.

Lowe (1991c) argued that Manning's and Wright's (1983) study was too narrow in considering only the use of pharmacological pain relief to measure women's self-efficacy, and that a broader set of measures encompassing behavioural responses such as breathing techniques and relaxing should be included with self-efficacy investigations. By examining self-efficacy theory, Lowe (1991c) created a framework which broke down the trait of confidence into key correlates. She used this to create a theory around the components which might be sensitive to interventions and defined not only the relationship between self-efficacy theory and maternal confidence, but also sources of self-efficacy for labour (table 3).

Measuring women's self-efficacy for labour and birth

Lowe subsequently moved from the anxiety/confidence based models of her early studies (1989, 1987) to cognitive/behavioural models and the creation of her Childbirth Self-Efficacy Inventory (CBSEI). The CBSEI (1993) is a scale designed to measure women's self-efficacy beliefs for labour. To create the CBSEI, content analysis of interviews with 48 women was used to generate 56 items in eight behavioural categories. These were reduced by a team of six content experts and subsequently validated with a group of 351 women (Lowe, 1993). As hypothesised, Lowe (1993) found that self-efficacy was positively correlated with generalised self-efficacy, self-esteem and internal locus of control, and negatively correlated with chance locus of control and helplessness. This was the first of many studies which showed that, in

Table 3: Behavioural expectancies and sources of self-efficacy (Lowe 1991c)

Behavioural expectancies	Example
Outcome expectancy	I believe that being relaxed will reduce labour pain
Self-efficacy expectancy	I will be able to relax during labour
Sources of self-efficacy	
Enactive attainment (<i>performance accomplishment</i>)	Having successfully coped with childbirth or other pain experience
Vicarious experience	Observing other women coping successfully, for example attending a birth, or watching a film of a woman who copes with childbirth
Verbal persuasion	Confidence-building and encouragement by a childbirth educator or someone influential
Visceral arousal (<i>Somatic reaction, physiologic response</i>)	The autonomic responses when a woman thinks of labour (e.g. heart rate acceleration) in anticipation or experience of stressful event

contrast with Manning's and Wright's (1983) findings, women's outcome expectancies are higher than their efficacy expectancies: women believe more in the potential of pain coping strategies to ease pain than in their ability to perform them. However, Lowe (1993) did not find that women who expressed confidence in using more pain coping behaviours actually did so, and therefore there was no evidence to support 'the theoretical perspective that self-efficacy for childbirth may modulate pain perception through cognitive and behavioural mechanisms'.

The CBSEI has four components: two 15-item and two 16-item scales to assess outcome expectancies and self-efficacy expectancies for coping behaviours during the first and second stages of labour. Both outcome and efficacy components list specific behaviours which can be used in labour such as '*Think positively*' and '*Keep myself calm*'. The second stage of labour has one extra item concerning the support person. Each outcome component consists of a 10-point Likert scale ranging from 1 (not at all helpful) to 10 (very helpful) and each self-efficacy component is scaled from 1 (not at all sure) to 10 (completely sure).

In a secondary analysis, Lowe (2000) found an inverse correlation between self-efficacy expectancy and fear of childbirth, showing the greater a woman's confidence in her ability to use coping behaviours, the lower her fear of childbirth.

After the CBSEI was created, it became the standard scale for measuring women's self-efficacy beliefs for labour. While this aids synthesis of different studies, there is continuing debate around some of the CBSEI items. For example, questions have been raised about the use of both internally and externally focused items and the lack of behavioural strategy items. Although the measurement of self-efficacy was not the main focus of the present study, the items contained within the CBSEI became increasingly of interest when analysing the teachers' and women's interviews in parts 1 and 2. Therefore the issues and debates around the measurement of self-efficacy for labour and birth are discussed in detail below and explored further to make recommendations in the light of findings from this study in chapter twelve.

Later self-efficacy research

The literature exploring self-efficacy is complex, investigating a variety of areas (table 6). These include validating the CBSEI, translating it into other languages, testing it in non-English speaking cultures, and the relationship of self-efficacy to other psychosocial constructs or perinatal outcomes. The inclusion criteria for studies analysed in in this chapter are those which explicitly explore or measure self-efficacy around labour and birth. These are followed by a summary of the current debates in self-efficacy literature. Studies exploring parenting, breastfeeding or postnatal self-efficacy are excluded.

1997 - Australia and America

Drummond and Rickwood (1997) examined the predictive value of self-efficacy against parity, anxiety, knowledge and support with a group of 100 Australian primiparous (n=41) and multiparous (n=59) women. In contrast with Manning and Wright (1983) but consistent with Lowe (1993), Drummond and Rickwood (1997) found a clear distinction between outcome and self-efficacy expectancy: whilst still highly correlated, women could differentiate between the behaviours they believed could help in labour and how successfully they personally might perform them. However, they found a high correlation between outcome and self-efficacy expectancies in the first and second stages of labour and suggested that a unidimensional scale was likely to be acceptable as a self-efficacy measure across the whole of labour. Drummond and Rickwood (1997) found parity was unrelated to self-efficacy, but a previous good birth experience was associated with higher self-efficacy beliefs.

Drummond and Rickwood (1997) found predictors for self-efficacy scores could be put into a theoretically driven order with a previous positive birth experience (performance accomplishment) first, supporting Bandura's (1977) hypothesis on efficacy-enhancing mechanisms. However, inconsistent with Bandura, they found knowledge to be the second most important factor and that neither anxiety nor social support affected self-efficacy with their sample.

Drummond and Rickwood (1997) began the debate on the CBSEI item content, commenting that most of the CBSEI items measure internally focused means of coping with childbirth such as '*Use breathing*' and '*Think about relaxing*', and only a few externally focused coping strategies such as '*Focus on the person helping me*'. They conclude that combining both internally and externally focused coping statements into one scale could threaten the CBSEI's validity as women tend to use *either* internally or externally focused strategies to manage labour, not a combination of both. So for example, a woman who is confident in using an externally focused strategy such as visualisation would not have high efficacy belief in an item such as '*Tell myself I can do it*' as she would not choose to cope in that way. A limitation to the transportability of this study, in common with most studies which investigate self-efficacy for labour and birth, is the narrow participant demographic. The women were predominantly middle to upper class, suburban and married or de facto (97%). Over 80% were attending or had already attended antenatal classes.

A study by Dilks and Beal (1997) with 74 American women investigated whether a relationship exists between self-efficacy beliefs and choice of mode of delivery. This

study compared self-efficacy beliefs between three groups of women: first time mothers (n=30), women choosing vaginal birth for a subsequent child after a previous caesarean birth (n=24) and women choosing an elective caesarean after a previous caesarean delivery (n=20). This study was one of the few self-efficacy trials to recruit enough multiparous women to form robust conclusions. Consistent with Bandura's (1977) theory that self-efficacy beliefs affect personal choices, women who chose elective caesarean had lower self-efficacy beliefs for managing labour than the other two groups. Relevant to the present study, Dilks' and Beal's (1997) results add weight to the theory not only that performance accomplishments are an important element in increasing self-efficacy beliefs, but that those beliefs are also enhanced by various other sources, including hearing other women's stories, being verbally persuaded and by watching films of birth. Again, the generalisability of this study is limited by the socio-economic and ethnic homogeneity of the sample.

1999 - Northern Ireland

Two years later, a study by Sinclair and O'Boyle (1999) tested the potential impact of midwives knowing pregnant women's self-efficacy beliefs on the care they provided antenatally and in labour. The study employed a convenience sample of 126 Northern Irish women. The results confirmed the findings of Drummond and Rickwood (1999) and Lowe (1993) that women could differentiate between outcome and efficacy expectancies: again women believed more in the efficacy of pain management strategies than they did in their ability to perform them. In common with Drummond and Rickwood (1999), overall self-efficacy scores were significantly different from Lowe's (1993) sample, suggesting cultural differences in self-efficacy beliefs between

countries. Sinclair and O'Boyle (1999) concluded that self-efficacy scores would be a useful tool for discovering which women were more likely to need support in labour and that self-efficacy expectancies (women's confidence in their abilities) were better predictors of the actual behaviour of pregnant women than outcome expectancies. They called for confidence building techniques to be offered in antenatal classes. Sinclair and O'Boyle (1999) continued the debate around the CBSEI items, suggesting the addition of behavioural and emotional items.

2003 - America

Self-efficacy was one of the variables evaluated in Soet et al.'s (2003) longitudinal descriptive study examining the prevalence and predictors of women's experience of psychological trauma during childbirth. This study of 103 women from Atlanta found that 34% rated the childbirth experience as traumatic, 2% developed all the symptoms for post-traumatic stress disorder (PTSD) and over 30% were partially symptomatic for PTSD. The pain experienced during the birth, self-efficacy and internal locus of control were significant predictors of PTSD symptoms. This study was one of the very few in Europe or North America to recruit larger numbers of non-white participants (33%). In common with other longitudinal studies, there was relatively high participant attrition, and white women were more likely to complete the postnatal interview. Again, the majority of participants were married (83%), educated to degree level (70%) and had a relatively high household income. Although both nulliparous and multiparous women were included, too few multiparous women (8%) were recruited to allow comparisons between the groups. An additional limitation is that the postnatal data was collected up to 31 weeks after birth. Soet et al. (2003) concluded that due to the potential for

improving social support networks and providing women with the opportunity to discuss birth expectations, childbirth education classes may be particularly effective as an intervention to help prevent negative or traumatic birth experiences.

2005 - Hong Kong

The CBSEI has been widely translated and validated in non-English speaking cultures (table 4). Ip et al. (2005) translated the scales into Chinese before investigating self-efficacy with a convenience sample of 148 primiparous (n=86) and multiparous (n=62) mothers in Hong Kong. They confirmed findings from earlier studies suggesting there are no statistically significant differences in efficacy scores between the first and second stages of labour. Ip et al. (2008) used this finding to develop and validate the Chinese short form of the CBSEI, which consists of two 16-item scales encompassing outcome and self-efficacy expectancy across the whole of labour. Ip et al. (2008) demonstrated the short form CBSEI's reliability with 293 primiparous (157) and multiparous (136) women, recruited from a single hospital in Hong Kong. The multiparous women in this trial had higher self-efficacy expectancy beliefs than the first time mothers, although outcome expectancy scores were similar i.e. all the women believed equally in the efficacy of coping strategies, but women who had had a baby before had more belief in their ability to use them effectively. By this time, a consistent picture was beginning to form of women's outcome expectancies being higher than their self-efficacy expectancy, implying a need to focus efforts on increasing women's confidence in their ability to perform self-coping behaviours in labour successfully. Ip et al. (2009) went on to complete a study evaluating an

antenatal education intervention (SEEEP) focused on increasing women’s self-efficacy for labour and birth, which is described in chapter two.

Table 4: Studies translating the CBSEI into non-English speaking cultures

Researchers	Year	Country
Ip et al.	2005	Hong Kong
Khorsandi et al.	2008	Iran
Cunqueiro et al.	2009	Spain
Ip et al.	2009	Hong Kong
Gao et al.	2011	China
Tanglakmankhong et al.	2011	Thailand
Carlsson et al.	2014	Sweden
Gourounti et al.	2015	Greece

2007 - America

In 2007, Beebe et al. published the results of a longitudinal, prospective descriptive investigation into the relationships among biopsychosocial factors and pre-hospitalisation labour in a convenience sample of 35 American first time mothers. They found no relationship between self-efficacy beliefs and pain in early labour and were unable to replicate Manning’s and Wright’s (1983) findings of a significant correlation between self-efficacy and control of labour pain without medication. However, they confirmed Sieber et al.’s (2006) findings that antenatal anxiety is inversely related to efficacy expectancy but not outcome expectancy, i.e. the more anxious a woman is, the lower her confidence in her ability to perform coping behaviours during labour, but anxiety does not affect her belief in the efficacy of those behaviours. This is relevant to

the present study and adds weight to Lowe's (1991c) efficacy-enhancing sources (table 3) which include increasing women's awareness of their somatic responses to anxiety.

Beebe et al. (2007) continued and extended the earlier discussions about the CBSEI item content (Sinclair & O'Boyle 1999; Drummond & Rickwood, 1997) which had noted that the CBSEI includes virtually no behavioural strategies and that the cognitive strategies are mainly internally focused. Beebe et al. (2007) measured the use of both behavioural and cognitive self-management strategies and found that all the women in their study used both (table 5), with women using an average of 17 different strategies each (range 10-39). In contrast with the mainly cognitive strategies measured by the CBSEI, Beebe et al. (2007) found that women used an average of 14 behavioural strategies compared with five cognitive strategies.

Beebe et al. (2007) found a curvilinear relationship between anxiety and coping with pain, hypothesising that a very high level of anxiety contributes to a 'degree of motivation and mobilising resources to manage the tasks of labour and birth'. Again, similar to other self-efficacy studies, a limitation of Beebe et al.'s (2007) study is the narrow demographic. In particular, in order to take part in the trial, women needed to be married (or have a significant partner) and be enrolled in antenatal education classes. 89% of the participants were white and 89% had at least some college education.

Table 5: Strategies women use in labour (Beebe et al., 2007)

Behavioural	Cognitive
Routine activities (housework, errands, eating, drinking)	Meditation, visualisation, guided imagery
Timing contractions	Concentration/focusing
Distracting/diverting activities – watching TV, puzzles, reading, shopping	Inner dialog – self-affirmation, self-coaching
Resting, napping, lying down	Counting
Showering/bathing	Social withdrawal - quieting
Moving – walking, changing position, leaning, swaying, rocking	Remembering past learning experiences, stories, plans
Patterned breathing	Withstanding
Calling health care providers / visiting hospital	Giving up
Massage	
Gathering supportive persons – notifying, calling asking for help/advice	
Using props – pillows, blankets, heated pads, birthing balls	
Vocalising – moaning, yelling, laughing, crying	

2008 - Iran

Khorsandi et al. (2008) validated their Iranian version of the CBSEI with a random sample of 176 primiparous (122) and multiparous (54) married pregnant women who attended public antenatal clinics in Tehran. 94% of the women were not taking part in formal antenatal education, reflecting Iranian maternity services where there is no national provision. They confirmed earlier results (Ip et al. 2005; Drummond &

Rickwood 1997) that women could differentiate between self-efficacy expectancy and outcome expectancy but did not differentiate between the first and second stages of labour, implying that a short form CBSEI would be an effective instrument with which to measure women's self-efficacy. Khorsandi et al. (2008) added a new item to the Iranian version of the CBSEI questionnaire as they found a majority of women indicated that spiritual beliefs played a role in their ability to cope with labour. This confirmed Callister et al.'s (2003) and Abushaikha's (2007) findings about the importance of religion for some women in labour and shows the necessity of culturally sensitive self-efficacy measurement. No statistically significant difference was found between parity and self-efficacy scores.

2009 - New Zealand, Spain and Sweden

A longitudinal study in New Zealand (Berentson-Shaw et al., 2009) investigated whether beliefs about personal competency predicted labour pain, obstetric events and birth satisfaction. The 230 women in the sample were similar to other self-efficacy trials, with higher levels of education and household income than the general population, but the study is one of the few which included high risk women. Higher self-efficacy beliefs were found to predict reduced pain experiences in labour and higher birth satisfaction. The findings also showed that confidence and perceptions of control have a role in positive birthing experiences with the authors suggesting that these lead to more active participation in labour and a less painful, more satisfying experience. However, Berentson-Shaw et al. (2009) found no correlation between pain tolerance and self-efficacy beliefs, only that women interpreted pain as less intense and distressing. Berentson-Shaw et al. (2009) demonstrated that women with lower

self-efficacy beliefs were more distressed and perceived labour as more painful even after pain medication use was controlled for, suggesting that lower self-efficacy beliefs lead to a decreased ability to cope with labour pain whether or not pain medication is used. The study concludes that 'birth self-efficacy is an important psychological factor in achieving positive birthing experiences' and advocates taking every opportunity to build women's birth confidence. Relevant to the present study, the authors suggest that future research should investigate specific cognitive and behavioural skills which could be taught to women in the antenatal period enabling them to have more positive birthing experiences.

Also in 2009, Cunqueiro et al. published a study with a group of 146 low risk women recruited from various Spanish regions. Analysis of questionnaires returned by the women found childbirth self-efficacy to be positively associated with general self-efficacy, self-esteem and internal locus of control. Similar to Drummond and Rickwood (1997), Cunqueiro et al. (2009) found women who had had a positive previous birth had higher self-efficacy beliefs. Vicarious experience and perceived support were also positively associated with self-efficacy, and labour specific anxiety was negatively correlated. Knowledge was found to be the most influential variable on the development of self-efficacy expectancies, accounting for 12% of explained variance. This is in contrast with Bandura (1977) and Drummond and Rickwood (1997) who found previous experience to be the most influential factor. Relevant to the present study, Cunqueiro et al. (2009) concluded: 'self-efficacy can be strengthened through persuasion by... childbirth educators, and family and friends', supporting Lowe's

(1991c) efficacy-enhancing example of verbal persuasion: 'confidence-building and encouragement by a childbirth educator or someone influential'.

A qualitative Swedish study by Carlsson et al. (2009) compared the self-efficacy and experience of eighteen women who went to hospital in early labour versus those who stayed at home. The core category emerging from the women admitted to hospital in early labour was '*Handing over responsibility*' to a professional. Other categories included '*Having difficulty managing the uncertainty,*' '*Having difficulty enduring the slow progress,*' '*Suffering from pain to no avail*' and '*Oscillating between powerfulness and powerlessness*'. Carlsson et al. (2009) concluded that women admitted to the labour ward in early labour experienced a need to hand over responsibility for the labour, the well-being of the unborn baby, and for themselves.

2011 - Hong Kong, China and Thailand

In 2011, Gao et al. evaluated the Chinese short form CBSEI (Ip et al., 2008) and explored the differences between the self-efficacy of Chinese women in Hong Kong and those in mainland China with a convenience sample of 297 women. All the women were married, 81% were first-time mothers and household income was higher than the general population. Gao et al (2011) found women in mainland China generally had higher self-efficacy scores than women from Hong Kong and suggested this might be due either to higher attendance at antenatal classes, or to the need of mainland Chinese women to depend on themselves during labour as partners are usually not present at birth.

Tanglakmankhong et al. (2011) tested a Thai version of the CBSEI with a convenience sample of 148 pregnant women recruited from one antenatal clinic. Similar to Lowe (1993) but different from Drummond and Rickwood (1997) and Sinclair and O'Boyle (1999), they found self-efficacy scores were higher for multiparous than primiparous women. This study added more weight to the premise that women's confidence in their coping behaviours does not vary between the first and second stages of labour as results were not significantly different between the two. Tanglakmankhong et al. (2011) confirmed Lowe's (2000) findings that self-efficacy and fear have a significant inverse relationship.

2013 - Sweden

Salomonsson et al. (2013a; 2013b) published two cross-sectional studies exploring the relationship between childbirth self-efficacy, fear of childbirth (FOC) and preference for caesarean section. Their sample of 423 nulliparous women and a smaller group of women with severe FOC found lower efficacy expectancy was associated with higher FOC, while preference for a caesarean section was associated with severe FOC but not self-efficacy. This implies that women who prefer caesarean birth do so because of a fear of childbirth rather than low self-efficacy, contrasting with Dilks' and Beal's (1997) earlier study. A limitation of this study was that less than half the women invited to participate did so.

2014 - Sweden

Building on their earlier work (2012, 2009), Carlsson et al. (2014) translated and tested the CBSEI into Swedish. Twenty one women (19 primiparous, 2 multiparous) took part in the translation stage. Carlsson et al. (2014) changed some of the CBSEI wording,

aiming to bring it more up-to-date and make it more woman-centred, for example changing *'When you are pushing your baby out to give birth'* to *'When you give birth'* and using the word *'pain'* rather than *'contraction'*. They found three items could be excluded from the scale: *'Concentrate on an object in the room to distract myself'*, *'Not think about the pain'* and *'Think about others in my family'*. Demonstrating a difference in how Swedish women/midwives view labour in comparison with American women, or perhaps in how labour pain is viewed now in comparison with the 1990s, *'Staying on top of contractions'* was changed to *'Follow the rhythm of contractions'*. They tested the Swedish version with 406 primiparous women and found similar results to earlier studies: firstly, women believed more in the efficacy of pain management strategies than in their ability to perform them (Salomonsson et al., 2013b; Cunqueiro et al., 2009; Beebe et al. 2007; Lowe, 2000; Sinclair & O'Boyle, 1999; Drummond & Rickwood, 1997), and secondly, the scales measuring first and second stages could be combined (Tanglakmankhong et al., 2011; Ip et al. 2008; Khorsandi et al., 2008).

Carlsson et al. (2014) extended the discussions (Beebe et al., 2007; Drummond and Rickwood, 1997) around the choice and classification of the CBSEI items, suggesting classifying coping strategies into three categories: self-control, distraction and affirmations. In contrast with Drummond and Rickwood (1997), Carlsson et al. (2014; 2012) found women used both internally and externally focused coping strategies during labour. Again, similar to the majority of self-efficacy studies, a limitation of Carlsson et al.'s (2014) study was the homogeneity of the sample: the majority of the women lived with a male partner and there was little ethnic diversity.

An online survey of 334 young, single primiparous Australian mothers (D'Cruz & Lee, 2014) confirmed Dilks' and Beal's (1997) findings, but contrasted with Salomonsson et al. (2013a; 2013b), showing a preference for caesarean birth to be associated with low childbirth self-efficacy.

2015 - Sweden and Greece

Building further on their earlier studies, Carlsson et al. (2015) published the results of a study exploring the relationship between self-efficacy and aspects of wellbeing, birth interventions and birth outcomes in a cross-sectional study with 406 Swedish women. Their results showed self-efficacy was correlated with positive dimensions of wellbeing and negatively correlated with previous mental illness, negative mood states and fear of delivery. Women had higher self-efficacy if they had been told birth stories by their sisters, again supporting Lowe's (1991c) propositional theory of self-efficacy enhancement by verbal persuasion from influential people. An important result from this study was that women who reported high self-efficacy had less epidural analgesia during childbirth. This was only the second study to have shown a correlation between self-efficacy and pain medication since Manning and Wright in 1983. Limitations of this study were again the homogeneity of the sample: the women were all recruited from one region and nearly all reported living with a supportive partner.

Gourounti et al. (2015) translated and validated the CBSEI with a sample of 145 Greek women who were attending one maternity clinic. They found generally higher self-efficacy scores than other studies, hypothesising that this was due to recent attendance at antenatal classes. The women were able to distinguish between outcome expectancy and self-efficacy expectancy and between the two stages of

labour. In common with Carlsson et al. (2014), Gourounti et al. (2015) concluded that three items could be excluded from the CBSEI as other items measured the same underlying factors. They also supported Carlsson et al.'s (2014) recommendation for classifying coping strategies, which they expressed as 'coping/relaxing, self-distraction and self-control'. The women in Gourounti et al.'s (2015) trial were again a homogenous sample: married and with high educational levels.

2016

The Journal of Obstetric, Gynecologic, & Neonatal Nursing (JOGNN) recently published a review of quantitative perinatal self-efficacy literature by Tilden et al. (2016). Tilden et al. (2016) examined 23 studies in detail from the 619 which emerged from their initial search. Their analysis indicated that self-efficacy is a modifiable construct and that higher self-efficacy is associated with better perinatal outcomes. The two areas Tilden et al. (2016) found which showed the most consistent positive associations were firstly, increased self-efficacy after efficacy-enhancing antenatal education interventions, and secondly, the association between higher self-efficacy and decreased labour pain and distress. Tilden et al. (2016) described the consistency of positive associations between self-efficacy and higher birth satisfaction and lower fear of birth as 'compelling'. Enhanced childbirth self-efficacy was associated with better parenting outcomes and further study was recommended to explore whether psychosocial factors in the antenatal and postnatal periods are artificially separated and should be replaced by childbearing transition measures. However, they found design flaws in many of the trials they examined and a threat to external validity because of the homogeneity of samples. They also noted not only a lack of racial and

economic diversity but also that women who enrol and persist with intensive antenatal education may have different levels of ability to moderate their self-efficacy beliefs than women who do not.

Current debates within self-efficacy literature

The main ongoing debates can be divided into firstly; whether self-efficacy for labour and birth is related to other constructs, particularly pain and parity; and secondly, debates around the measurement of self-efficacy and elements within the CBSEI. These debates are summarised below and explored further in the light of the findings from this study in chapter twelve.

The relationship between self-efficacy and labour pain

The relationship between women's self-efficacy and the ability to manage labour without pharmacological pain relief is a primary area of investigation in this thesis. Studies evaluating the relationship between pain, pain tolerance and self-efficacy have had mixed results, reflecting the multiple inter-related emotional, social and environmental factors which affect pain perception. Whilst Manning and Wright (1983) found a negative association between labour pain medication and self-efficacy and Lowe (2002) asserted that women's self-efficacy had a powerful relationship with decreased medication use in labour, this association has been replicated in only two recent studies (Carlsson et al., 2015; Gau et al. 2011). Before 2011, most studies found a lack of association between self-efficacy and pain tolerance (Berentson-Shaw et al., 2009; Williams et al. 2008; Beebe et al., 2007; Stockman & Altmaier 2001).

However, although one study found no relationship between self-efficacy beliefs and pain in labour (Beebe et al., 2007), others have shown consistent correlations between higher self-efficacy beliefs and lower perceived pain during birth, whether or not medication is used (Schwartz et al., 2015; Berentson-Shaw et al., 2009; Ip et al., 2009; Larsen et al., 2001; Stockman & Altmaier, 2001; Lowe, 1989, 1987). As self-efficacy has been shown to be a modifiable factor, this indicates that it may be important in understanding and improving women's birth experience (Tilden et al., 2016).

The relationship between self-efficacy and parity

The relationship between parity and self-efficacy is complex. Some researchers have found multiparous women have higher self-efficacy (Schwartz et al., 2015; Gao et al., 2011; Tanglakmankhong et al., 2011; Sun et al., 2010; Lowe, 1993), while others have not (Khorsandi et al., 2008; Sinclair & O'Boyle, 1999). One explanation for this is provided by studies which have explored previous good and bad experiences of birth. Good experiences have significant positive effects on self-efficacy but bad experiences are associated only with increased anxiety (Cunqueiro et al., 2009; Drummond & Rickwood 1997). This implies antenatal education interventions should be tailored not only by parity but also by women's perception of their previous experiences.

Are outcome expectancy and self-efficacy expectancy separate constructs?

Outcome expectancy scores have consistently been shown to be strongly correlated with, but greater than, self-efficacy scores (Gourounti et al., 2015; Carlsson et al., 2014; Salomonsson et al., 2013b; Gao et al., 2011; Khorsandi et al., 2008; Sinclair & O'Boyle 1999; Drummond & Rickwood 1997; Lowe, 1993). Women believe more in the

effectiveness of coping behaviours than in their ability to perform them, implying that antenatal education aiming to increase women's self-efficacy should focus on increasing women's confidence in self-coping behaviour.

Are the self-efficacy scores between first and second stages of labour different?

While some studies (Gourounti et al., 2015; Carlsson et al., 2014; Lowe, 1993) have found women's efficacy scores to be different between first and second stages of labour, more researchers have found no significant differences, or that the scores are so highly correlated that a unified short form of the CBSEI is acceptable (Carlsson et al., 2014; Tanglakmankhong et al., 2011; Khorsandi et al., 2008; Ip et al., 2005; Drummond & Rickwood, 1997).

Is self-efficacy behavioural or cognitive?

Bandura (1977) defined self-efficacy as a cognitive process which affects behaviour. This can lead to confusion as cognitions affect the instigation of and persistence with both cognitive and behavioural strategies. There is no agreed classification for labour coping strategies and some, for example 'breathing' or 'relaxation', can be classified as either cognitive or behavioural depending on how they are used by individual women. The CBSEI (Lowe, 1993) is by far the most common measure of birthing self-efficacy but reports mainly on cognitive items. Researchers have questioned this, particularly Beebe et al. (2007) and Abushaikha (2007) who found women used more behavioural than cognitive strategies in labour. Other researchers have also found that women use a combination of cognitive and behavioural strategies (Karlsdottir et al., 2014; Spiby et

al., 2003; Slade et al., 2000) and some have designed self-efficacy scales which include behavioural elements (Larsen & Plog, 2012; Ford et al., 2001).

Is the CBSEI a valid tool for measuring self-efficacy?

Both the long and short versions of the CBSEI and its translated versions have been shown to be reliable and valid (Gourounti et al., 2015; Carlsson, 2014; Gao et al., 2011; Cunqueiro et al., 2009; Ip et al., 2008, 2005; Drummond & Rickwood, 1997). However, there is debate around the exact items of the scale with researchers suggesting the addition of some new items and the removal of others (Gourounti et al., 2015; Carlsson, 2014; Khorsandi et al., 2008, Sincliar & O'Boyle, 1999). A threat to its validity is the equal weight being given to, and no distinction being made between, internal and external coping strategies. This is explored further in chapter twelve.

Table 6: Summary of self-efficacy research

Variable	Association with self-efficacy	No association
General		
Age, cohabitation, occupation, education level		Schwartz et al., 2015
More supportive partners	Schwartz et al., 2015	
Previous good birth experience	Cunqueiro et al., 2009; Drummond & Rickwood, 1997	
Birth mode and early labour choices	Gourounti et al., 2015; Schwartz et al., 2015; Carlsson et al., 2014; D’Cruz & Lee, 2014; Dilks & Beal, 1997	Salomonsson et al., 2013b
Higher parity	Schwartz et al., 2015; Tanglakmankhong et al., 2011; Ip et al., 2009; Sun et al., 2010; Lowe, 1993	Khorsandi et al., 2008; Sinclair & O’Boyle, 1999; Drummond & Rickwood, 1997
Higher birth knowledge	Schwartz et al., 2015; Cunqueiro et al., 2009	
Psychological		
Higher generalised self-efficacy	Gao et al. 2011; Cunqueiro et al., 2009; Lowe, 1993	
Higher internal locus of control	Lowe, 1993	
Lower helplessness	Lowe, 1993	
Lower external locus of control	Cunqueiro et al., 2009	
Lower antenatal depression	Schwartz et al., 2015	
Higher optimism	Gourounti et al., 2015	
Higher self-esteem	Gourounti et al., 2015; Cunqueiro et al., 2009	

Variable	Association with self-efficacy	No association
Lower fear of childbirth	Carlsson et al., 2015; Schwartz et al., 2015; Salomonsson et al., 2013; Tanglakmankhong et al., 2011; Lowe, 2000	
Lower birth anxiety	Levett et al., 2016; Gau et al., 2011; Ip et al., 2009; Beebe et al., 2007; Sieber et al., 2006	
Intention to use coping behaviours	Slade et al., 2000	
Labour		
Higher pain tolerance (lower use of medication)	Carlsson et al., 2015; Manning & Wright, 1983	Berentson-Shaw et al., 2009; Williams et al., 2008; Beebe et al., 2007; Stockman & Altmaier 2001
Lower perceived labour pain	Schwartz et al., 2015; Berentson-Shaw et al., 2009; Gau et al., 2011; Ip et al., 2009; Larsen et al., 2001; Stockman & Altmaier 2001; Lowe, 1989, 1987	Beebe et al., 2007
Lower support needed in labour	Sinclair & O'Boyle, 1999	
Increased coping behaviours in labour	Ip et al., 2009	Escott et al., 2005
Postnatal		
Lower Post-Traumatic Stress Disorder	Soet et al., 2003	Goutaudier et al., 2012
Higher birth satisfaction	Berentson-Shaw et al., 2009; Soet et al., 2003	
Higher perinatal risk		Berentson-Shaw et al., 2009; Dilks and Beal, 1997

Self-efficacy literature summary

As Bandura (1986; 1977) hypothesised, perceived self-efficacy has been shown to be associated with a variety of psychosocial constructs (table 6). Although related to self-esteem, anxiety, confidence and optimism, it is distinct and separate (Gourounti et al., 2015; Cunqueiro et al., 2009; Lowe, 2000; 1993). Relevant to the present study, it influences choices, the use of coping strategies, birth experience and can be modified by efficacy enhancing interventions. However, measuring it has not proved to be straightforward and the results of studies are sometimes inconsistent. Studies of women's self-efficacy beliefs often have the same low recruitment and high attrition rates as those involving antenatal education: participants generally have an above average income, are motivated, well-educated and married. Generalisability into other communities may therefore be limited.

Key messages from the literature review chapters

Although antenatal education can increase knowledge, perceived mastery for behaviour change and the number of positive birth experiences, its effect on women's ability to manage labour without medical intervention remains unclear (McMillan et al, 2009; Gagnon & Sandall, 2007). Factors contributing to the lack of robust and generalizable research include the complex and often additive interplay of the variables affecting birth outcomes, heterogeneity of antenatal education aims and processes and the challenges of participant recruitment, randomisation, and compliance. Research into YfP is subject to the same challenges as other antenatal education research and therefore the reported benefits must be treated with caution. The very few trials which have explored the effect of YfP on women's ability to manage

labour report fewer interventions, lower perceived pain, higher maternal comfort and shorter labour (Satyapriya et al., 2013a; Smith et al. 2011; Chuntharapat et al., 2008; Moore, 2010). However, trials exploring the effects of YfP on use of analgesia have had contradictory results (Satyapriya et al., 2013a; Chuntharapat et al., 2008). Research specifically exploring women's self-efficacy for labour is further complicated by the debate around the validity of the CBSEI (Lowe, 1993). This is explored further in chapter 12.

The next chapter describes the methodology used for the present study.

5. Methodology

This chapter discusses the rationale for choosing grounded theory as the methodology for the study, grounded theory history and some of the debates which have defined it. How grounded theory worked in practice is discussed in chapter thirteen.

A qualitative paradigm was appropriate for the present study as it aimed to explore, firstly, YfP teachers' aims and perceptions around how their classes might affect self-efficacy and, secondly, pregnant women's experience of YfP. The study investigates how women responded to the group teaching intervention over time and how they perceived it changed their behaviour. It places the women, their teachers and the teaching processes at the heart of the research (Lincoln & Denzin, 2003). Ritchie et al. (2014) state that qualitative research is appropriate when research into a phenomenon is new, complex, specialist and sensitive - all of which are relevant here.

In formulating the methodology, various approaches within the hermeneutic paradigm were considered, including phenomenology and ethnography. Grounded theory was chosen as it places more focus on the development of an integrated theory of practical application, matching the study aim of moving beyond a qualitative descriptive analysis to the generation of a theory which captures the complex aims and outcomes of YfP classes (Hall et al., 2012; Birks & Mills, 2011; Moustakas, 1994). Grounded theory is also appropriate because in order to analyse the process by which possible changes in self-efficacy were effected, incidents (YfP class content) as well as people were the main units of analysis (Glaser & Strauss, 1967).

The study objective of exploring 'How YfP classes may affect women's self-efficacy for labour and birth' fits well with Bandura's (1977) recommendations that future research into self-efficacy is focused on the question of 'how' self-efficacy changes are effected. Grounded theory is also indicated when it is likely there is a process embedded in a research situation that could be explained by grounded theory methods (Birks & Mills, 2011).

Confusion can arise as grounded theory can be both a method and a methodology (Birks & Mills 2011). It combines and encompasses both the paradigm (theoretical framework underpinning research) and a pragmatic theory of action with methodological guidelines.

Grounded theory history

Glaser and Strauss (1967) asserted that by using a systematic approach, qualitative enquiry could advance from descriptive studies to abstract theoretical explanations. Instead of using a deductive approach, an inductive approach whereby a theory emerged directly from the data was advocated. Grounded theory studies begin with a social setting, and then through empirical data collection and analysis of the participants' experiences, they enable the construction of a theory to explain what is happening.

Two well-described and debated perspectives on grounded theory (Strauss & Corbin, 1998; Strauss, 1987; Glaser, 1978) developed after Glaser's and Strauss's original publication (1967). Glaser (1992) responded critically to a collaborative work Strauss produced with one of his former students (Corbin & Strauss, 1990) that proposed a

more prescriptive approach to grounded theory, as he felt such an approach forced the development of theory rather than allowing it to emerge. In turn, Strauss and Corbin (1994) asserted that their adaptations were necessary to meet the needs of researchers working with grounded theory on a practical, rather than theoretical, basis. Since then, grounded theory has evolved to reflect various perspectives, with Corbin (2009) describing it as a 'compendium of different methods'. Different theorists list what they consider to be the essential elements, often using different terms to describe similar things. For example, in Birks' and Mills' (2011:90) table comparing and contrasting grounded theory terminology, the concept 'core category' is used as an umbrella term for 'systematic substantive theory' (Glaser & Strauss, 1967), 'central category' (Strauss & Corbin, 1998) and 'core variable' (Glaser, 1978).

Using information from seminal grounded theory texts, Birks and Mills (2011:9) drew up a list of essential methods to be included within a grounded theory research study. That list was used as the starting point for the present study and a description of basic methods is below. Chapter thirteen demonstrates and analyses how using the method worked in practice.

Grounded theory methods

Initial (open or substantive) coding

This is the first step of data labelling which fractures the data (Glaser & Strauss 1967) to form the basis of the theory (Martin & Gynnild, 2012). Codes are often gerunds, for example '*modelling labour*', or in vivo phrases such as '*the stillness is really important*' which are used to anchor and gather conceptual incidents as they are identified. There

are typically several hundred incidents recorded in grounded theory studies which can be words, phrases, experiences, actions, patterns or characteristics. Reflexivity (see chapter fourteen) and awareness of theoretical preconceptions are particularly important during this initial phase (Charmaz, 2006) in order to avoid the researcher subconsciously directing coding towards pet theories. Theorists (Martin & Gynnild 2012; Birks & Mills 2011) recommend line-by-line coding as the most useful technique in the early stages of analysis as it provides evidence to support the impartiality of coding decisions.

Concurrent data generation or collection and analysis

Concurrent data generation and analysis are intrinsic to grounded theory research design (Elliott and Lazenbatt, 2005). The researcher generates some initial data with a purposive sample. The data from these early encounters are coded before more data are collected or generated. It is this concept that fundamentally differentiates grounded theory from other types of research.

Constant comparative analysis

Whereas grounded theory was originally described as an inductive research method (Glaser & Strauss, 1967), a more recent interpretation is that researchers use a combination of induction and abduction in order to integrate fully a grounded theory (Birks & Mills 2011; Charmaz 2006). When using abductive reasoning, the researcher decides:

'no longer to adhere to the conventional view of things... abduction is therefore a cerebral process, an intellectual act, a mental leap, that brings together things which one had never associated with one another' (Reichertz, 2007).

It is the dynamic combination of both inductive and abductive thought that enables grounded theorists to form hypotheses that are then proved or disproved during the process of analysis, leading to the creation of higher-level conceptual frameworks rather than purely descriptive ones.

Intermediate (axial, selective, focused, theoretical) coding

Intermediate coding is the process of integrating initial codes and concepts by weaving them into hypotheses that work together as a theory (Birks & Mills 2011). The researcher moves between initial and intermediate coding during the process of concurrent data generation and constant comparison of data. Intermediate coding is utilised in two ways: firstly, to describe the dimensions and properties of categories as they are built, and secondly, to link categories together. During intermediate coding the researcher identifies patterns and relationships in the data by using the most significant or frequent codes and memos to make decisions about which of these may be grouped to form higher level categories that best describe the data (Pope et al. 2000). After the data fracturing of initial coding, intermediate coding reconnects the data in ways that are conceptually more abstract than would be produced by thematic analysis.

As the study progresses, the researcher moves from line-by-line to conceptual-level coding (Bryant and Charmaz, 2007). The researcher uses the tentative core categories

to focus intermediate coding, checking whether emerging categories remain constant when data are analysed specifically against them (Elliott and Lazenbatt, 2005). This ensures the development of increasingly higher-level multi- rather than uni-dimensional concepts where the 'words used to describe what the data is saying are more than the sum of the data' (Gibson in Birks & Mills 2011:92).

Selecting a core category

Identifying a core category is a central idea in seminal grounded theory texts (Corbin & Strauss, 1990; Strauss, 1987; Glaser, 1978). Corbin and Strauss (1990:116) define a core category as 'the central phenomenon around which all the other categories are integrated'. The core category encapsulates as far as possible the processes in all the categories and sub-categories constructed as part of the theory. Birks and Mills (2011:100) describe how some initial codes have intellectual 'grab', being seen everywhere by the researcher. It is these codes that often later transcend into categories and one may well become the core category. Clarke (2005) accepts that a different phenomenon may resonate with another researcher working with the same data, reinforcing the anti-positivism stance (Cohen et al. 2013) that knowledge and social reality are individually interpreted.

The present study follows a constructivist approach described by later theorists (Charmaz, 2006; Clarke, 2005) where the importance of selecting a core category declines, with a broader approach being taken which describes how categories and sub-categories integrate to form an abstract grounded theory of a substantive area of enquiry.

Theoretical memoing

Glaser (1998) describes theoretical memoing as 'the core stage of grounded theory methodology'. Memos are a continuous set of written records of the researcher's thinking during the study. They hold the researcher's developing ideas on the data being generated, the comparison of incidents, and properties of codes and concepts as the theory emerges. Memos relating to coding relationships during data analysis form an important audit trail of decision-making as codes and categories are compared, created and collapsed. They assist in ensuring that preconceived assumptions are not imposed on the data.

Theoretical sampling

Theoretical sampling is the dynamic process driven by the developing categories to focus and feed constant comparative analysis (Elliott & Lazenbatt, 2005; Glaser & Strauss, 1967). The researcher makes strategic decisions to focus further data collection on relevant incidents, deciding what will provide the most information-rich source of data to meet analytic needs (Corbin & Strauss, 2008; Glaser, 1978). In this way, categories under development can be saturated and specific emerging concepts explored by finding out more about their properties. Continuing theoretical sampling through to the advanced stages of analysis enables theoretical integration by answering questions raised by gaps in the data (Birks & Mills 2011).

Theoretical sensitivity

Theoretical sensitivity is the ability of the researcher to approach the research with awareness and understanding, seeing relevance and reflecting upon the data with reference to theoretical terms rather than preconceived ideas (Kelle, 2007a; Glaser,

1978). By using the insight that comes with theoretical sensitivity when considering empirical data, the researcher is more responsive to subtleties, ensuring codes emerge from, rather than being forced upon, the data. A researcher's level of theoretical sensitivity is deeply personal; it reflects both their level of insight into themselves and the area they are researching. Some grounded theory theorists (Corbin & Strauss, 2008) emphasise the importance of researchers continually testing developing concepts against the original data to ensure they are not imposing preconceived expectations. Others acknowledge the researcher's subjective role in the process and assert all findings are a co-construction of meaning between themselves and the participants, suggesting it is impossible for researchers to free themselves of preconceptions (Thornberg, 2012; Charmaz, 2006; Thomas & James, 2006).

Theoretical saturation

Theoretical saturation (Glaser & Strauss 1967) is defined as the point at which no new codes are identified when coding new data and each category is well developed to the point where its properties and dimensions are clearly delineated and described. Dey (1999) introduced the term 'theoretical sufficiency' for grounded theory studies, arguing that the term 'saturation' is incongruent unless all data is coded and that categories should be defined as being 'suggested' by the data rather than established. The latter definition is used in the present study.

Reflexivity

Reflexivity is a key tenet in ensuring quality and authenticity of qualitative research (Birks & Mills, 2011; Walshe & Downe, 2006; Doucet & Mauthner, 2002). Key methodological thinkers state that reflexive consideration is essential (Corbin &

Strauss, 2008; Charmaz, 2006; Clarke, 2005). The researcher must acknowledge and be sensitive to the way in which her prior assumptions and role influence all aspects of the research.

The present study adopted a post-positivistic reflexive approach, accepting that the researcher and participants had mutual influence on each other. Charmaz (2003:9) describes this as using 'basic grounded theory guidelines with twenty-first century methodological assumptions and approaches'. In terms of axiology (the role of the researcher's values in the scientific process), the aim was to use the knowledge and experience the researcher possessed effectively within the application of the grounded theory process (Strübing, 2007; Elliott & Lazenbatt, 2005). In their paper outlining the implications for research design in grounded theory studies, Mills et al. (2006a) define three requirements for a constructive approach, all of which were adhered to in the present study:

- A theory that is grounded in the participants' and researcher's experience, with a sense of reciprocity and co-construction of meaning
- Attempts to reduce power imbalances between the participants and researcher
- Clarification of the researcher's position within the study and how the participants' presence remains when their stories are rendered into theory.

How working within these requirements was experienced during the present study is explored further in the reflexivity chapter (fourteen).

Methodology conclusion

Grounded theorists have described a variety of methodological guidelines and perspectives. However, there are some essential elements which are included in all texts, for example concurrent data generation and analysis, theoretical sensitivity and memoing. The study described in this thesis follows the constructive grounded theory approach outlined by Charmaz (2006). How this worked in practice is described in chapter thirteen.

The next chapter outlines the study design and methods.

6. Research Methods

This chapter describes the design of the present study and the methods used, including details of the participants, sampling strategy, access methods, ethics, consent, data collection and storage. In this chapter and those that follow describing the study findings, the abbreviation YfP is used to refer to yoga for pregnancy classes run by trained NCT antenatal teachers.

Design

In order to achieve the study objectives of identifying aspects of teachers' language and actions in YfP classes which may impact on women's self-efficacy behaviour, and exploring women's experience of attending YfP classes to generate a theory about which aspects might be effective in enhancing self-efficacy for labour, the study used observation analysis and interviews in two parts (figure 2):

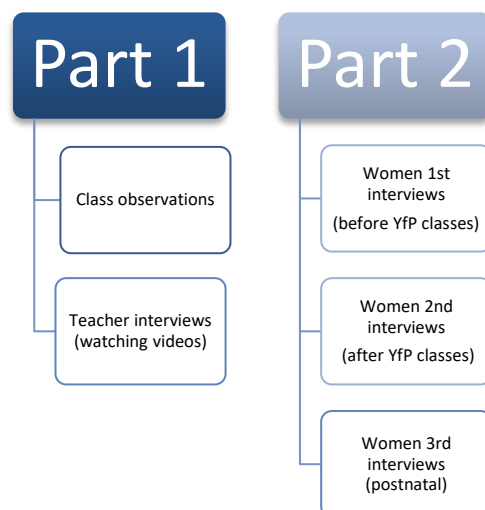
- **Part 1:** YfP class video recordings and interviews with YfP teachers
- **Part 2:** a longitudinal study of women attending YfP classes using interviews at three time points

Part 1 design: Two classes led by each of three NCT YfP teachers (see chapter one), six classes in all, were videoed and transcribed. Following this, the teachers participated in individual in-depth face-to-face interviews during which the videos were viewed. By viewing the videos with the teachers, listening to their observations, and asking open questions, the teachers' own assessment of their aims and how/whether they were achieved were explored.

This approach aimed to reduce the power imbalance inherent in an interview between a researcher and participant by the researcher working in partnership with the teachers to analyse the video recordings. Analysing the video recordings provided a reflective learning opportunity for the teacher, so making her a beneficiary of the study. In order to respect the teachers' voice and analysis of their classes, the videos were not analysed again separately by the researcher. However, the class transcriptions were analysed separately by the researcher. Triangulating data from the teacher interviews, class transcriptions and researcher observation of and participation in the YfP classes enhanced the rigour and trustworthiness of the study by enabling a greater depth of understanding of different perspectives (Taylor, 2005).

Part 2 design: Twenty-two women participated in semi-structured interviews at three time points. Antenatally, the women were interviewed shortly before they attended their first YfP class and 2-4 weeks before their estimated due date. Postnatally they were interviewed within ten weeks of the birth.

Figure 2: Present study design



Participant nomenclature

Both YfP teachers and pregnant women were participants in the study. To avoid confusion and distinguish between them, the words ‘teacher’ and ‘women’ are used rather than participant. Although the women in YfP classes were included in the class videoing, part 1 of the study was focused on the teachers’ aims, thoughts, experiences and facilitation methods. Part 2 was focused on the women’s experience at three time points during their journey into motherhood. Two interviews were before the women’s babies were born, and one afterwards.

Ethics

Ethical principles

The guiding principles of honesty, congruence and safeguarding the women’s well-being were embodied in the study design and process. The study adheres both to the principles outlined in the Framework for Research Ethics (ESRC, 2016) and the Charter for Ethical Research in Maternity Care, which was created by the Association for Improvements In the Maternity Services (AIMS) and The National Childbirth Trust in consultation with The Maternity Alliance (1997). This seminal charter was one of the earliest to consider the particular ethical challenges in conducting research with childbearing women, challenges such as when a woman who is pregnant agrees to take part in research she is consenting for two people, herself and her child. The guiding principles were summarised as ‘Research should be undertaken with women, not on women’. In their Handbook of Midwifery Research, Steen and Roberts (2011) state that studies must be designed with the awareness that pregnant women are considered to be a vulnerable group.

Parahoo (2014) drew on the International Code of Ethics for Nurses (ICN, 2012) to draw up six ethical principles for nursing research which were respected and observed during the study design and practice:

- Beneficence - the study should benefit the individual and society in general
- Non-maleficence - the study should not cause physical or psychological harm to participants
- Fidelity - researchers are obligated to safeguard the right of participants. If during the study a conflict arises between the needs of the study and harm to the participant, the researcher is obliged to safeguard the participant
- Justice - the researcher must treat all participants fairly and equally and ensure that the power relationship is not 'tilted in the researcher's favour' (Parahoo, 2014:103)
- Veracity - researchers must tell the truth, even if this means participants withdraw from the study
- Confidentiality - presentation of findings must not reveal information that the participants want to keep confidential.

Ethical risks

The Economic and Social Research Council (ESRC, 2016) does not specifically mention research with pregnant women, but lists categories which might need further ethical review. The following were relevant to the present study and were explored further with the aim of mitigating risks which could be predicted in advance:

- Research involving vulnerable groups

- Research involving sensitive topics
- Research which would or might induce psychological stress, anxiety... or cause more than minimal distress
- Research where participants are in a dependent relationship with the gatekeeper
- Research where participants or other individuals may be identifiable in the material used or generated.

Processes to embed ethical principles and reduce risk are described within individual sections in the methods chapter and are also explored further within the reflexivity chapter fourteen. In addition, the following six potential risks were identified before the study began:

1. Risk that YfP teachers feel pressure to participate.

The researcher aimed to create a respectful and trusting relationship with the YfP teachers by ensuring they had clear expectations and post-class debrief opportunities. All NCT teachers are regularly observed and assessed within a supportive framework as part of their ongoing continual professional development requirements. NCT classes are also often observed by NCT students, class supporters and midwives. Existing NCT guidelines for class observations were followed. Therefore it was predicted that the observations would not cause the teachers anxiety.

In practice, an ethical challenge in part 1 of the study was not the one predicted by the researcher of managing potential conflict between her insider and outsider status

when observing the YfP groups, but managing what proved to be the more complex relationship between herself as researcher and as a tutor/manager on the YfP teacher training programme when conducting interviews with YfP teachers. Considerable effort was made to conduct interviews in a way which reduced any anxiety and enabled the teachers to feel heard and understood. Birks (2008) describes this as working hard to 'get them to tell me about their reality, not what they thought I wanted to hear'. Although there was the opportunity for the teachers to reflect on their teaching, it was important that they did not feel the researcher was there to assess, judge, or aim to change their views or behaviour (Keats, 2000).

2. Risk that pregnant women would feel pressure to participate because of the relationship they had with their YfP teacher.

The researcher made efforts to ensure there was no explicit or implicit coercion so that prospective participants could make an informed and free decision on their possible involvement (ESRC, 2010). The study was designed so that data collection took place at classes where the researcher was not known to the pregnant women in order to reduce the risk of the women feeling unduly coerced.

The written consent form was available at least a week before both videoing and interviews, and the women were regularly reminded of their right to withdraw from the study whenever, and for whatever reason, they wished. The decision to participate was acknowledged to be an on-going and open-ended process. However, within the boundaries of a grounded theory study, it was acknowledged that once a woman's contribution had been included within the analysis, it was impractical to remove it at a much later stage, once theoretical sampling decisions had been made as a result. This

was particularly relevant after the women's first interviews where ten women did not progress to second interview for various reasons. Seven of these women confirmed that their first interviews could still be used in the study. After discussions with the DoS, it was decided that for the three women who did not respond to second interview requests, it was impractical to remove their data from the first interview analysis which by then had been completed.

If a woman chose to withdraw, there was no coercion of any kind to persuade her to re-engage. The Participant Information Sheet (PIS) was attached to the consent form and kept by the participants for reference.

3. Risk that the pregnant women feel less able to contribute to or participate in the YfP class because of the camera and therefore gain less benefit from the classes.

In order to minimise this risk, it was stressed that maintaining anonymity was paramount. Both in the PIS and verbally at the start of each class, the class members were reminded that they could sit outside of the camera's reach and that all participants' names, plus any other information which would reveal a participant's identity would be removed, for example hospital details, midwife names or address. In practice, two teachers mentioned that there were fewer women than expected attending their classes on the days when videoing was taking place.

4. Risk that the study increases psychological discomfort or uncertainty if unanticipated situations arise in the classes or interviews, for example: discussion of sensitive topics, painful memories being stirred, disclosure of personal information, or other class members voicing strong or unwelcome opinions.

Risk of psychological discomfort or uncertainty is a 'normal everyday' risk in NCT classes, since discussion on sensitive topics is planned with the aim of increasing parents' confidence and ability to make informed decisions by exploring personal values and beliefs within a safe group. NCT teachers routinely discuss difficult issues both antenatally and postnatally with individual parents in their classes. The skill and training of NCT teachers is to maximise benefits from such discussions whilst minimising risks of negative consequences. NCT teachers are trained to manage difficult and sensitive topics with both individuals and groups of parents. All the teachers were experienced in facilitating NCT classes and supporting the parents who attend them.

There is conflicting evidence on the effects of formal debriefing by health professionals (Selkirk et al., 2006; Phillips, 2003; Gamble et al., 2002) and its use is not recommended as part of standard care. However, the National Collaborating Centre for Primary Care (NCCPC) guidelines advise that a 'listening visit intervention may reduce emotional distress' (NCCPC, 2006). In addition, the NICE guidelines for Post-Traumatic Stress Disorder (PTSD) state that 'support delivered in an empathetic manner is important in promoting recovery' (Gaskell, 2005). The present study did not involve formal debriefing but, where necessary, the researcher used active listening skills to offer validation and witnessing of the women's experience (Stern et al., 1998).

Difficult discussions were perhaps less likely to take place in NCT YfP classes than a traditional NCT couples class as there is less emphasis on discussion and more on physical preparation for birth. The aim of the videoing was to increase knowledge of

the purpose and content of YfP classes and there was no reason to expect upsetting discussions to take place. However, it was possible to predict that some women would choose to attend YfP classes having had a previously distressing experience of pregnancy, labour or birth and would want to talk about this experience during the class. Any increased risk would be due to the class being videoed, resulting in women wishing they had not disclosed sensitive information where it was being recorded and potentially stored. No sensitive issues were apparent in the videoed classes, but if they had occurred, the following strategy had been written as part of the ethics approval process:

- Emphasise at the outset that the videoing/interview is voluntary and participants may withdraw at any time
- If a participant becomes distressed, offer to take a break or stop the videoing/interview altogether
- During interviews, offer the possibility of having a friend or relative present
- Use active listening skills (unconditional positive regard, reflecting back, giving time and affirming statements, eye contact) whilst listening to the individual's story
- Provide signposting as appropriate
- If the researcher is concerned about a participant, she will first discuss with the DoS, then recommend the participant contact her General Practitioner (GP) or midwife, or explore the possibility of contacting the participant's GP

on their behalf. If necessary, she will discuss the incident with NCT's safeguarding lead.

During interviews with the women, particular care was taken where there were instances of strongly expressed opinions, personal disclosure or where participants had distinctive characteristics such as an unusual background or personal history. It was recognised that this was important in the study as participant numbers were small so identification more likely.

The researcher has over 20 years' experience of facilitating antenatal groups and supporting parents. She has had specialist training in supervision, qualitative research interview methods and birth crisis counselling. She also worked regularly with a bereavement counsellor to train health professionals in supporting parents through loss. The researcher was aware of the potential for intrusion and the sensitivity with which the subject of previous traumatic birth experiences or current pregnancy anxieties needs to be handled and was capable of signposting where necessary.

Sensitive topics did arise in the interviews. Examples of these were women who had experienced close family bereavements which affected their feelings about their pregnancy and birth, previous miscarriages, and women who had negative feelings about previous births or very high anxiety about the imminent birth. In these cases, as soon as practically possible, the woman was asked if she would like the audio device switched off and the data deleted. In every instance the woman said she was happy for her words to be included as they may help other women in the future. In one case, the researcher took the decision to turn off the recording device while the woman spoke

as she felt the woman's wellbeing might be affected by continuing. When it was possible to confirm, the woman asked for the recording to be restarted. Feminist literature (Reinharz & Davidman, 1992) explores the 'closeness/distance' dilemma, contrasting interviewers who aim for a nurturing relationship with participants versus those who maintain a 'respectful distance'. The approach taken in the present study is explored further in the reflexivity chapter fourteen.

5. Risk that data analysis and reporting would be compromised by the researcher's employment by NCT.

The way in which the researcher's prior knowledge and insider/outsider status affected the data analysis are explored in depth in chapter fourteen.

6. Risk that participants fear any information they give may be publicised in an identifiable way or told to caregivers

In order to minimise this risk, it was repeated both verbally and in writing to the women that anonymity and confidentiality would be maintained. The PIS stated that all participants' names would be removed plus any other information which could reveal a participant's identity.

Ethical approval was gained from the NCT on 26th November 2012 and The University of Worcester Institute of Health and Society (IHS) Ethics Committee on 1st March 2013.

Sampling strategy

Rees (2011) states that there are three vital questions for researchers when considering sampling strategy:

- Who or what will make up the sample?
- How will they be chosen?
- How many will be chosen?

These questions are considered below for both parts 1 and 2 of the present study.

Part 1 sampling strategy (teachers):

Who or what made up the sample?

Part 1 analysed the content of YfP classes from observation, video transcriptions and interviews with the YfP teachers who facilitated them. Inclusion criteria were restricted to NCT YfP classes in order to ensure a degree of homogeneity in teacher training, class structure and content. Teachers were excluded if they had less than one year's experience of teaching YfP, if there were fewer than ten women regularly attending their classes and if any of the pregnant women were under the age of eighteen (as the inclusion of younger women was not allowed under the terms of ethical approval).

How were the teachers chosen?

The researcher had access to YfP teachers as she was both a YfP teacher and a tutor on the YfP teacher training programme at the University of Worcester. A part 1 participant information sheet (PIS1) (appendix 1) with the study title, aim, objectives and a brief description was published on an e-forum for YfP teachers. YfP teachers whose classes regularly had more than ten women attending were asked to contact the researcher directly if they were willing to participate. In order to reassure the

teachers that ethical considerations were intrinsic to the study design, the initial e-forum post explained that the study had been approved by the Ethics Committee at the University of Worcester and described, for example, what would happen if a woman in their classes chose not to be videoed.

How many teachers and classes were chosen?

Creswell (2012) recommends including 20-30 individuals in grounded theory studies in order to enhance the likelihood that saturation will be achieved but agrees with other authors, such as Charmaz (2006), that the depth, richness and relevance of the data obtained is more important than numbers. Guest et al. (2006) in their paper 'How many interviews are enough?' describe the paucity of research on qualitative sample size, the lack of evidence behind different authors' recommendations, and the disadvantages of fixing sample sizes in advance.

The part 1 sample size was three YfP teachers and two of each of their classes (six classes in total). It was estimated that this would give approximately six hours of audio transcribing from the teacher interviews, plus twelve hours of video from the classes; a total of eighteen hours of transcript for part 1 of the study. These decisions were taken in consultation with the Director of Studies (DoS), supervisors, Head of Graduate Research at the University of Worcester and course leaders at a qualitative research course (University of Oxford, 2012), and were based on a combination of factors:

- To gather sufficient rich data to develop analytic categories and establish what Morse (2010:235) describes as the 'trajectory' of the study

- A judgement made from personal experience on how many sessions it might take to achieve theoretical sufficiency given the relatively limited vocabulary base and structure of YfP classes
- The constraints of analysing more than eighteen hours of data within the scope of the first part of a time-limited study.

Six teachers volunteered and three were chosen on the basis of ease of access to the researcher.

Part 2 sampling strategy (women)

Who made up the sample of pregnant women?

Women were included if they attended classes run by the three YfP teachers from part

1. This was in order to control key aspects of their experience while seeking as much diversity as possible by including women who attended three teachers' classes rather than one teacher's, and keeping within practical time constraints (Gerson & Horowitz, 2002). To ensure the women had enough experience of YfP for it to have the potential to effect change, a minimum attendance at six classes was set for continued inclusion in the study at the second and third interview stages.

How were the women chosen?

The aim was to offer participation to every pregnant woman in each of the three YfP teacher's classes from September 2014 until the sample size was reached. The YfP teacher participants were asked to send a part 2 participant information sheet (PIS2, appendix 2) via email to every woman who requested to join their YfP classes. An example of one of the teacher's email to participants is copied below:

Hi there

Further to my previous email with details about my Monday night yoga classes

A friend and colleague of mine at NCT is doing a PhD study into yoga in pregnancy and has asked if I could ask the women planning to come to yoga to talk to her about why they are choosing to come to yoga.

She is keen to talk to anyone - whether they are a first-time mum or have had a baby before, and whatever type of birth experience they are hoping for - whether it is a hospital, home or caesarean birth.

There is more information attached and she would be very happy to provide more details if necessary, her details are virginia.campbell@nct.org.uk or 0208 752 XXXX. She would like to talk to you before you start your first class if possible.

Would you be happy for me to pass on your email to her?

With many thanks on her behalf

(Standard email to women booking T2's classes)

The PIS2 (appendix 2) outlined that participation in the study would mean 20-30 minute interviews at three time points and informed potential participants that:

- The study focused on general themes around why women attend yoga and their experience of the class, not specific people or situations
- Interviews would be audio recorded, transcribed and all identifying features (names, hospitals, towns, midwife/GP names) would be removed
- The study had received ethical approval from the University of Worcester and NCT
- Data storage would be secure

- If they agreed to participate, they had the right to withdraw from the study at any time with no pressure to continue and no need to provide an explanation for their withdrawal.

The women were asked to contact the researcher if they wanted more information or to see the full study proposal. If they were willing to take part, they were asked to sign the consent form and email it to the researcher.

The perceived benefits of working with the YfP teachers as gatekeepers were facilitating access to women attending YfP classes and reassuring the women of the researcher's credibility and trustworthiness. The risks of using gatekeepers (King & Horrocks, 2010) can include bias, where participants are consciously chosen by the gatekeepers in order to present a certain perspective. There is also an ethical danger that gatekeepers in a position of power may deny participants a genuine choice of taking part. The YfP teachers were not only gatekeepers, but also 'insider assistants', helping with recruitment. King and Horrocks (2010:32) produced guidelines for this research scenario, including considering the insider assistants' trustworthiness, keeping them briefed, being in regular contact and ensuring that, after the initial contact, participants respond to the researcher not the assistant. These guidelines were adhered to during the present study.

How many pregnant women were chosen?

For part 2, in order to achieve theoretical sufficiency, enough data needed to be gathered to show development over time as the women progressed from joining the YfP classes to having their babies. The researcher's experience led her to believe that only 30%-50% of pregnant women who booked the YfP classes would complete at least

six sessions; therefore, the preliminary design was to recruit twelve women to allow for at least six to have interviews at all three time points. The estimate was that this would yield eighteen interviews for analysis, approximately nine hours of transcript. This, combined with the part 1 interviews and observations/videos, would mean twenty-seven separate data sources in total for the study. In practice, forty-five interviews, totalling approximately fifteen hours were analysed, for reasons described in the 'part 2 participants' section below. Therefore fifty-one data sources were analysed for the study in total, which is higher than most recommendations.

Participants

Part 1 participants (teachers)

Six teachers volunteered of whom three were chosen (T1, T2, T3) using convenience criteria of the location of their classes. They had been teaching YfP for 1 (T1), 10 (T2) and 7 (T3) years and had been teaching NCT couples courses for 2 (T1), 9 (T2) and 18 (T3) years. All the classes were facilitated by the teachers on a self-employed basis with remuneration partly based on class attendance numbers. Six classes were videoed and three teacher interviews held between May and July 2013.

Part 2 participants (women)

Recruitment was piloted with one YfP teacher (T2) in August 2014. Following T2 sending PIS2s to women booking her classes, six women contacted the researcher in August and September 2014. Two of these women did not respond to email requests for an interview date. With the aim of avoiding coercion and in consultation with the DoS, the decision was taken to email each woman who had offered to participate once

and then follow with a second email (or telephone call if the woman had given a number), before stopping contact if she did not reply.

The first four interviews with pregnant women who were about to start T2's classes were held in August and September 2014. As the pilot access method appeared to be successful, on 29th September, T1 and T3 were also asked if they would send out the PIS2 to the women booking their classes which elicited the following responses from the teachers:

'Yes of course. Hopefully will get a few participants' (email from T1, 30th September 2014)

'Yes happy to do this and get newbies all the time so can send some out soon' (email from T3, 29th September 2014)

However, no participants from T1's and T3's classes contacted the researcher during October or November 2014. During that time, three more women from T2's classes volunteered to participate, two of whom responded to interview requests. Data collection challenges are not uncommon for grounded theory research; Birks (2008) talks about how data collection can take twice as long as expected, and Miller and Bell (2002) describe how researchers' principles at the outset of a study may be challenged by the realities of gaining a viable number of participants within deadlines. Personal reflective memos from this time show the researcher's dilemma around how to encourage recruitment without using her power within the NCT organisation or negatively affecting her working relationship with the teachers.

A reminder was sent to all the teachers in November 2014 which resulted in two women from T3's classes offering to participate. Another reminder to the teachers was sent in January 2015 followed by a phone call to ask if there was anything about the study that the teacher would like to discuss. T1 said she had forgotten to send out any invitations. Personal reflective memos from this time show that the researcher wondered if the YfP teachers were worried that the PIS2 might discourage women from joining their classes, leading to a consequent drop in teacher income, although this was not mentioned by the teachers. The researcher has no knowledge of how many invitations were sent out by any of the teachers.

The January 2015 reminder to the teachers resulted in thirteen more women offering to participate, ten from T2's class, three from T3's, and one from T1. In addition, a woman from T1's class heard about the study from another woman and requested to take part. As recruitment had been challenging and over a longer time-period than anticipated, the decision was taken to interview all the women who volunteered, although the original intention had only been to interview twelve.

In total, twenty-five women contacted the researcher but three did not respond to requests for an interview date. Consequently first interviews were held with twenty-two women between August 2014 and January 2015.

Participant consent

The design of both the PIS1 and PIS2 (appendices 1 and 2) were based on the Framework for Research Ethics Guidelines and the University of Oxford Health Experiences Research Group Healthtalkonline 'Personal experiences of health and

illness' consent form (DIPEX, 2016; Hislop, 2012; ESRC Economic & Social Research, 2010). The consent form contained the study title, aim and information about what participation would involve, benefits and risks, contact details, withdrawal and data storage information.

Part 1 consent: class videoing

Details of the distribution of the PIS1 are in the data collection section below. Aiming to ensure there was no coercion to participate and the women made an informed decision on their involvement, at the start of each videoed session the researcher reaffirmed to the class members that there was no pressure to participate and no negative consequences to non-participation. She explained to the group that the study focus was the teacher and class content rather than the women and that they could withdraw at any time, again with no negative consequences. Women were shown where they could place their mats in order to not be visible to the camera if they wished. All women chose to take part, although two of the teachers noticed there were fewer women than they had expected on the videoing dates.

Part 2 consent: women's interviews

Details of the initial distribution of the PIS2 (appendix 2) and gaining consent are in the data collection section below. Again aiming to ensure there was no coercion to participate, in addition to the women signing the PIS2, consent was renewed via email and/or phone with each woman before every interview and permission to record renewed verbally at the start of each interview.

Data collection

Part 1 data collection: class observation

Dates were set for both observation and interviews at the convenience of the three teachers who volunteered to take part. Two weeks prior to visiting the class, the researcher contacted each teacher by phone to confirm her consent, agree practicalities and answer questions. Despite the aim and objectives of the study having been articulated both verbally and in writing to the teachers, an unanticipated, yet consistent and, in retrospect, unsurprising, aspect of these telephone calls was the desire from the teachers for reassurance that it was not the quality of their teaching that was being assessed. The teachers were also keen to explain how the circumstances of particular women might affect the content of the class to be videoed. For example, one teacher commented how during the previous week's class, the women had been talking about their work-life imbalance so she had planned the next class around balance.

The researcher asked where the teacher would like her to sit during the class and where the camera might be best sited. Discussions were held about issues such as what would happen if a new woman arrived at the class unexpectedly without knowing about the videoing, or if new women asked to join in the week of videoing. In the latter circumstance, it was agreed that the teacher would let the women know about the study and email the PIS in advance of the class.

The original planned schedule was:

- Class one: the teacher informs the class that the researcher will be visiting the following week, gives a brief description of the study and hands out the PIS1 and consent forms
- Class two: the researcher visits, gives a brief overview of the study, explicitly mentioning confidentiality and withdrawal opportunities and stays to join in the class. The teacher collects the consent forms
- Classes three and four: researcher attends the class, reiterates confidentiality, videoing and withdrawal opportunities. Classes videoed.

On reflection, after the first class was videoed, step 2 above was felt to be unnecessary and the schedule was changed to:

- Class one: the teacher informs the women that the researcher will be visiting the following week to video, gives a brief description of the study and hands out the PIS1. The teacher collects forms at the end of the class. If any forms are not returned, the teacher contacts the women during the week to ascertain their views on participation. In practice, all the women completed the consent form
- Classes two and three: researcher attends the class, gives a study overview, repeats confidentiality and withdrawal opportunities and demonstrates the area in the room that is not visible to the camera if women prefer to sit there. Classes videoed.

Class videoing and interviews with the teachers took place between April and September 2013. The classes were recorded on a digital video camera mounted on a

tripod. In each class, the camera was only switched on once the researcher had verbally reiterated the women's option to not be filmed and to withdraw at any time. In each class, the camera was switched off after the final relaxation, before the women had refreshments.

During the classes, the researcher aimed to move from non-participant to a middle-ground position between non-participant and participant (Creswell, 2012), described as *observer-as-participant* (Brink & Edgecombe, 2003). In order that her presence disturbed the women's engagement with the class as little as possible, the researcher aimed to match the group in attire and demeanour and joined in with class activities such as breathing awareness and postures. Participative observation has both positive and negative aspects (Wallace, 2005). It was the favoured approach here as it was felt it would be less likely to affect the women's experience than if they were observed by a non-participating visitor to the group. Another benefit was the potential for the researcher to have a heightened understanding of the class if it were experienced rather than purely observed. These benefits were counteracted by the increased challenge for the researcher of retaining perspective and analytic distance (Steen & Roberts, 2011). Making brief reflective field notes where possible during the sessions helped with avoiding over-identification with events.

At the end of each class, the women and teacher were thanked and a gift of biscuits provided for refreshment at the next class. No other inducements or payments were made for participation. Unsolicited feedback was received from one of the teachers that the women in the class had commented that the videoing had been a positive

experience, with the researcher fitting into the group and being 'just like' the YfP teacher in her approach.

Part 1 data collection: teacher interviews

Face-to-face interviews

Interviews took place in the teachers' homes at a time of their choosing and lasted approximately two hours. At the start of each interview, in an attempt to make each teacher feel as comfortable as possible, the researcher explained the study again and reinforced the fact that this was not an assessment of the teacher but purely to explore her views about her classes. Permission to audio record was reconfirmed at each interview.

Each interview started by the researcher asking open questions around why the teacher chose to facilitate YfP and her aims and learning outcomes for the classes. The class videos were then played and the teacher encouraged to comment on any aspect that she felt might be relevant. After the initial topics, the researcher used active listening and reflective practice techniques to explore the teacher-led topics. As the research progressed, theoretical sampling guided the later questions asked at subsequent interviews to ensure the emerging theory was developed fully (Elliott and Lazenbatt, 2005). Examples of this are in chapter thirteen.

Part 2 data collection: women's interviews

Initially, the plan was to conduct face-to-face interviews in a place of the woman's choosing, either her home or a neutral venue such as a coffee shop. This was felt to be the best way to enable the women to feel comfortable. However, although the first

interview took place in the woman's home, it became apparent when trying to arrange interviews with further participants that they were often busy with work commitments and would prefer telephone interviews as these were less disruptive and time-consuming. Therefore, after the first interview, all future interviews with the women were by phone. A drawback of telephone interviews is that non-verbal communication cannot be seen which can lead to the interviews being 'task- focused' and lacking the richer, more nuanced communication which takes place face-to-face (Creswell, 2012; King & Horrocks, 2010). The researcher used her experience in using telephone-based active listening techniques for the women's interviews.

In practice, the best results were achieved by encouraging the women to arrange the interview at a time when they were likely to be able to speak in private and not be disturbed and beginning each call by repeating the email information which clarified the nature and expected length of the interview. This was particularly relevant in the postnatal interviews when three of the interviews were delayed or interrupted by babies crying or needing feeding. Where interviews were interrupted, further calls were arranged. Four of the postnatal interviews were held while a baby breastfed.

Interview guides (appendix 3) were prepared for the semi-structured interviews at each stage. These were used as thematic prompts rather than rigid scripts (Taylor, 2005). The aim was to be supportive and informal in order to capture the women's perceptions, feelings and thoughts as accurately as possible. Women were reassured that there was no 'right' answer and asked to describe and explore their own feelings, hopes and experiences. The interviewer aimed to remain open and non-judgemental.

Following grounded theory guidelines on theoretical sensitivity, questions were added to the guides as interviews progressed. This is described in chapter thirteen which analyses how grounded theory worked in practice. Ethical issues which arose in relation to the interview process are explored further in chapter fourteen.

Women's interviews

Figures 3 and 4 summarise the women's participation in the study.

Women's first interviews

Before starting YfP, twenty-five women contacted the researcher but three did not respond to requests for an interview date. Twenty two women participated in a first interview.

Women's second interviews

Between October 2014 and June 2015, thirteen of the twenty-two women who participated in a first interview participated in a second interview. Two of these women attended fewer than six classes but this was unknown during the interview setting process. These women were excluded from the second interview analysis and the protocol was amended to check how many classes the women had attended before arranging a second interview. As a result, four women were excluded from second interview on the basis of too little exposure to YfP. Two of these women had not attended any classes, the first because she developed a medical condition and was advised by her doctor not to attend YfP and the second because she developed symphysis pubis dysfunction which made it painful for her to exercise. The other two

women withdrew from the classes before attending six because of timings/distance to travel or because they preferred a more vigorous class.

One woman had her baby early before the second interview date was set. Three women did not respond to requests for a second interview. There was one incidence of researcher error: the woman's due date was recorded wrongly and so she was not contacted until after her baby was born. This woman did participate in a third interview, but her transcript was excluded at the third interview stage as she attended fewer than six classes. This left eleven participants at the second interview stage, exceeding the original design parameters of six.

Women's third interviews

Fourteen women participated in third interviews between November 2014 and August 2015. All eleven women who were included in the second interview analysis and the woman who had her baby early participated in third interviews. Two women who attended fewer than six classes had a third interview as these were arranged before the protocol changed, but their transcripts were excluded from analysis. Therefore transcripts from twelve women were included in the third interview analysis.

Interview totals and summary

- Three interviews were held with the teachers between May and July 2013
- Forty-nine interviews were held with pregnant/postnatal women between September 2014 and August 2015
- Forty-five of the forty-nine women's interviews were included in analysis. Thirty-five of these interviews were before the women had their babies and fourteen were held postnatally

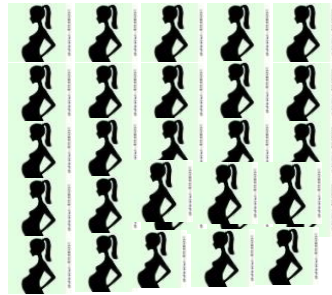
- Combining class transcriptions and both the teachers' and women's interviews, fifty-one incidents were analysed and coded line-by-line.

Figure 3: Part 2 interview schedule

			2014					2015							
		Interviews	August	September	October	November	December	January	February	March	April	May	June	July	August
		1st interview													
		2nd interview													
	Women	3rd interview													
1	Chloe	1,2,3													
2	Susannah	1,2,3													
3	Lisa	1,(3)			R'hr error	Excluded <6									
4	Aileen	1				No reply									
5	Grace	1,2,3													
6	Ailsa	1,(2,3)						Excluded <6		Excl<6					
7	Ann	1							Excl <6						
8	Adali	1,2,3													
9	Inge	1,3								Baby early					
10	Cassie	1,2,3													
11	Kirsten	1,2,3													
12	Wendy	1,2,3													
13	Terri	1,2,3													
14	Rachel	1,(2)									Excl <6				
15	Elizabeth	1									No reply				
16	Emily	1									Excl <6				
17	Haadiya	1									Excl <6				
18	Rebecca	1									Excl <6				
19	Josie	1									Excl <6				
20	Tessa	1,2,3													
21	Faye	1,2,3													
22	Paula	1,2,3													

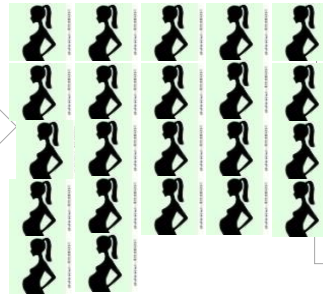
Figure 4: Part 2 interview participation

25 women contacted the researcher



3 no response to interview request

22 women participated in a first interview before starting YfP



4 no interview < 6 classes

3 no response to interview request

1 had her baby early

1 researcher error

13 women participated in a 2nd interview 2-4 weeks before their due date



Two were excluded from analysis due to < 6 classes



14 women participated in a postnatal 3rd interview



Two were excluded from analysis due to < 6 classes



Data analysis

A number of benefits are gained by combining manual and electronic methods to analyse qualitative data. These include organising and processing data more efficiently and systematically, reducing human error and mapping thematic relationships diagrammatically (Welsh, 2002). In the present study, NVivo 10 was used to store memos and for data analysis alongside manual methods. How this worked in practice is described in chapter 13.

Media and storage

Part 1: The classes were digitally video-recorded with a separate digital audio device as backup. Interviews with the teachers were digitally recorded on an audio device.

Part 2: Interviews with the women participants were digitally recorded with an audio device and the telephone on loud speaker.

All audio recordings were transcribed verbatim by a professional transcriber. All data was stored electronically on a password-protected electronic database on a secure university server accessible only by the researcher. The requirements of the Data Protection Act (1998) were met at all times

This chapter outlined the study design and methods used. The following chapter illustrates the findings which emerged from analysis of the class transcripts and teacher interviews.

7. Part 1 findings: class observations and teacher interviews

Four themes (figure 5) emerged from analysis of the rich data produced by teacher interviews and class recordings:

- **Creating a sisterhood**
- **Enabling an easier or more positive labour**
- **Building confidence**
- **Enhancing learning**

Each theme contained subthemes which are discussed in turn, illustrated by extracts from the data. All quotes are verbatim with text within square brackets providing extra information or clarification if needed. Quotes from teacher interviews (T1, T2, T3) are presented as italic, indented text whereas extracts from the transcriptions from class recordings (C1, C2, C3) are presented in shaded boxes.

Figure 5: Part 1 themes

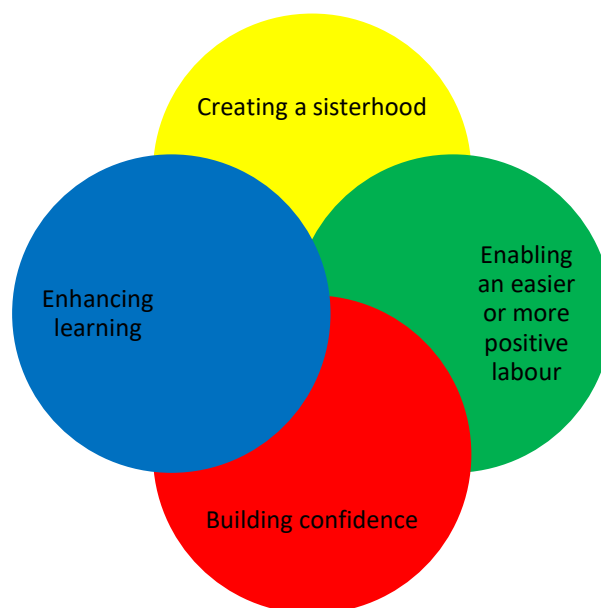


Figure 6: Part 1 themes and subthemes



Creating a sisterhood

A strong theme emerged of the teachers actively creating a sanctuary for pregnant women. This was more than just somewhere to make friends but also to:

Share ideas, experiences, views, feelings and concerns within a safe environment. (T3)

[Give] them the space to be pregnant and to be with other pregnant women... Women need to get together and talk to other women and that's how they learn about being a mother. (T2)

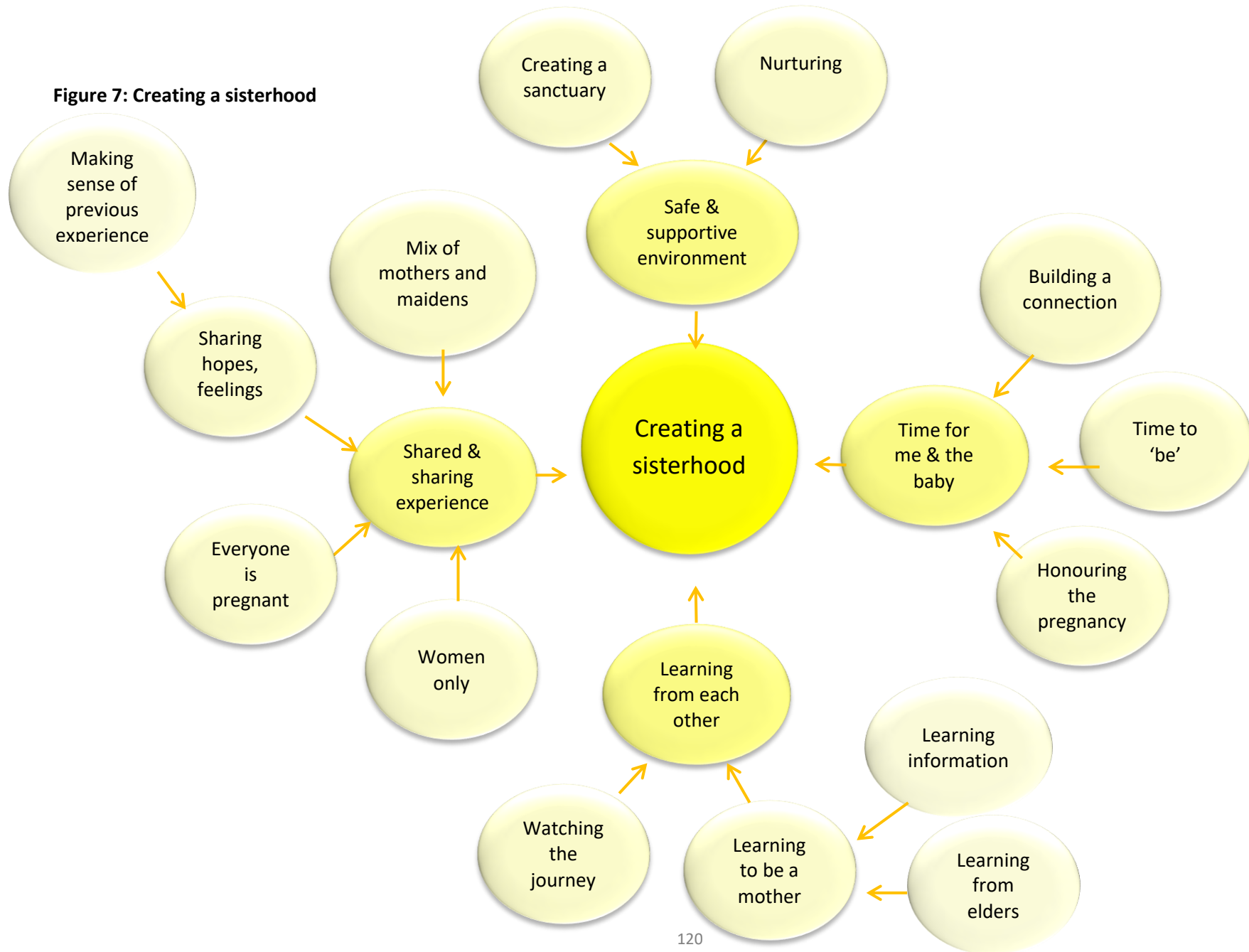
All the teachers wanted their classes to be an environment in which the pregnancy was honoured. There was a sense of something having been lost in the way that pregnant women now are often isolated from their families and other pregnant women.

This is how women used to learn; this is how women would sit together. They would be together; they would share their stories and the younger women would learn through... this story telling, this sitting together. (T1)

Four subthemes emerged within the theme of creating a sisterhood (figure 7):

- **Safe and supportive environment**
- **Shared and sharing experience**
- **Time for me and the baby**
- **Learning from each other.**

Figure 7: Creating a sisterhood



Safe and supportive environment

This sub-theme captures an emotional safety where women are able to share, but importantly, do not have to. Participation in a weekly 'Circle Time' where the teacher introduced a topic and encouraged individual contributions, gradually built confidence and security in the group as the women experienced continuous positivity, lack of criticism and acceptance of their choices modelled by the teacher and followed by the group. The teachers noted this was particularly useful for women who had had previous difficult or distressing birth experiences that they might not feel able to talk about in their everyday lives.

Sometimes you know something about a woman on week one and she doesn't share or doesn't divulge any of that information; and maybe by week 5 or week 6 in that introduction round, she'll say something – she had a stillbirth, or her birth before was really awful, or that she's really struggling with this baby – which means they've grown in that group where they've got the support of the others. It's just a safe environment to say... what they want to say and to respect that they don't have to say anything. (T1)

The teachers said the sense of group safety was increased by the relatively long period over which pregnant women attended YfP classes: up to six months in comparison with six to eight weeks for standard antenatal education.

Shared and sharing experience

The teachers stressed the importance of the classes being exclusively for pregnant women so everyone in the group could empathise with the other women's experiences and concerns in a way that friends and partners (even female partners) could not. The teachers recognised the need for multiparous women not only to be

given the opportunity to debrief previous experiences but also to use these positive or negative experiences to frame their hopes for the current birth. Sharing experiences allowed all women to get feedback from the group on current anxieties without seeming weak or incapable.

Women that have had babies enjoy having a safe place to talk about that... There's a nice sense of being able to share, whether it's very positive or being able to offload: 'This is what happened the first time and I want to do this, this time.' (T1)

The teachers noted that a significant difference between YfP classes and standard antenatal education was that women at varying stages of pregnancy attended the same class. This enabled women earlier in their pregnancies to watch and learn from women later in their pregnancies, making the transition to motherhood more real.

The sharing circle, the sharing of the stories from women who have left the circle, I think it all contributes. It's all part of a little jigsaw... this journey they are all going on... They are all at different stages of their journey, and what's wonderful is that someone at the start of their journey can see somebody halfway through and somebody towards the end of the journey; and then they see the mum coming back with their baby and they must think: 'Oh, gosh, that's going to be me in a few weeks or a few months.' (T2)

Time for me and the baby

All the teachers described an intention to provide time for women to 'be' with their babies. In contrast with traditional antenatal classes, which tend to have learning outcomes related to knowledge of medical procedures and making informed decisions about pain relief options and parenting, the YfP teachers described their aims as

enabling women to take time out from busy lives, to switch off from paid employment or other family commitments to focus on their bodies and babies.

It's probably the only time they get where they just nurture themselves... Especially for those who have already got children; they admit they spend very little time thinking about the current pregnancy and the current baby. It allows them to think about how their own body works, their own body's needs... Yes, it's just them and their baby and their body. (T1)

For the teachers, creating time in classes was multi-purposed, not just for relaxation but also to build communication between mother and baby, to nourish and care for the women and to allow their voice to be heard.

Linking how the baby might be feeling or responding to their breathing or their massage is important. (T2)

I love the way they do connect with their babies... [their] hand's there [on the belly] and it just makes that 'hello' thing go on... Somebody is listening to them... and isn't rushing them through... They often talk about: "You feel it's just a tick box; you go to appointments and it's just a tick box", and: "I come here and I get more support and help from these classes than I ever do from my midwife"... It's having the time and not feeling like it's irritating if you ask a question. (T3)

Analysis of the class transcripts showed how the women's connection to their baby was reinforced by regular references within posture instructions and also how teachers directed the women to move slowly through the postures, taking opportunity for reflection.

Resting your hands either on your knees or maybe around your baby. (C2)

Feel as you draw the baby up towards your spine... find that lovely C shape that the cat stretch gives you. (C3)

Just time to focus on your baby, and share your positive affirmation with your baby; spend the next few moments relaxing together; sharing anything else that you might want to share. Just enjoying the time with no one to interrupt the two of you together [calm music plays]. (C2)

In contrast with anecdotal evidence that teachers of standard antenatal classes often worry about 'trying to fit everything in', the YfP teachers demonstrated the value they placed on calmness by emphasising the settling, reflection and baby/body awareness time they aimed for at the beginning and end of each posture.

They've been aware of their body and how it might be feeling, and relaxed each part, but then I always... end up at the belly and focusing on their baby; and that's where I'll then leave them for a few minutes just to have that time. (T2)

Learning from each other

The teachers said their classes aimed to re-establish a more traditional form of learning about pregnancy, birth and mothering, where women could discover what they wanted to know from other women.

*That's what these classes are all about... It's central to what we do...
Recreating how women would have done it years ago where they would have just... been with each other, and learned from each other, and*

probably been with each other in labour and shared that, and been with each other and supported each other afterwards. (T3)

The teachers explained that questions were often aimed at the 'elders' within the group, particularly those women who had laboured before.

That sense of the 'senior woman' in the group. They look up to the women that have already had babies and they can ask them questions; and they know they are not silly questions... It tends not to be medicalised questions. It's not: "How many centimetres were you? How much did it hurt?" It's: "What did you do at this time? How did you know this was labour? What was your partner doing?" It tends to be more a support than specific medicalised information; they don't want to know that, they just want to know all the other stuff. (T1)

The 'elders' in the group also had a mothering or nurturing role for the newer mothers.

I have a woman coming back this week... she's had her baby, her fifth baby, and she was a bit like a mother hen, but in a really lovely way; and she was always really happy to be the voice of reason and sense to the first timer or the second-timer. (T3)

The teachers spoke about how learning happens in many ways: from questions, stories, discussion of medical conditions and hopes for (and fears of) particular birth experiences. The teachers read out birth news at the beginning of each class and women came back a few weeks later with their babies to 'show and tell'.

They all love the stories. They find them really helpful and they love to share the stories. (T3)

Every week for the last five weeks someone's brought a baby back and shared their story. So they are hearing it first-hand about this birth... they

might not have encountered a tiny baby that's three or four weeks old.

(T1)

What they get in the classes is a variety of stories; whether that's from the mothers in the class at the time or from mothers coming back with their babies to share their experiences... Last night we had a mum who shared that she had just been diagnosed with gestational diabetes in the Circle Time. And when we got round to one of the other mums expecting her second baby, she said: "Oh, that happened to me and my first." ...She was then able to share some of her experiences, and one of the other women contributed as well, so it made this mum feel that it wasn't just her; and I think she felt reassured by what she had heard from the other women. So I think it's sharing experiences in a safe and nurturing environment. (T2)

Enabling an easier or more positive labour

The second theme to emerge was *'Enabling an easier or more positive labour'*, a strong theme (figure 8) with three of the subthemes being in the top five most densely populated NVivo codes. The teachers aimed to enable the women to birth their babies in a way which was:

Straightforward... without complications, intervention free, using their natural resources. (T2)

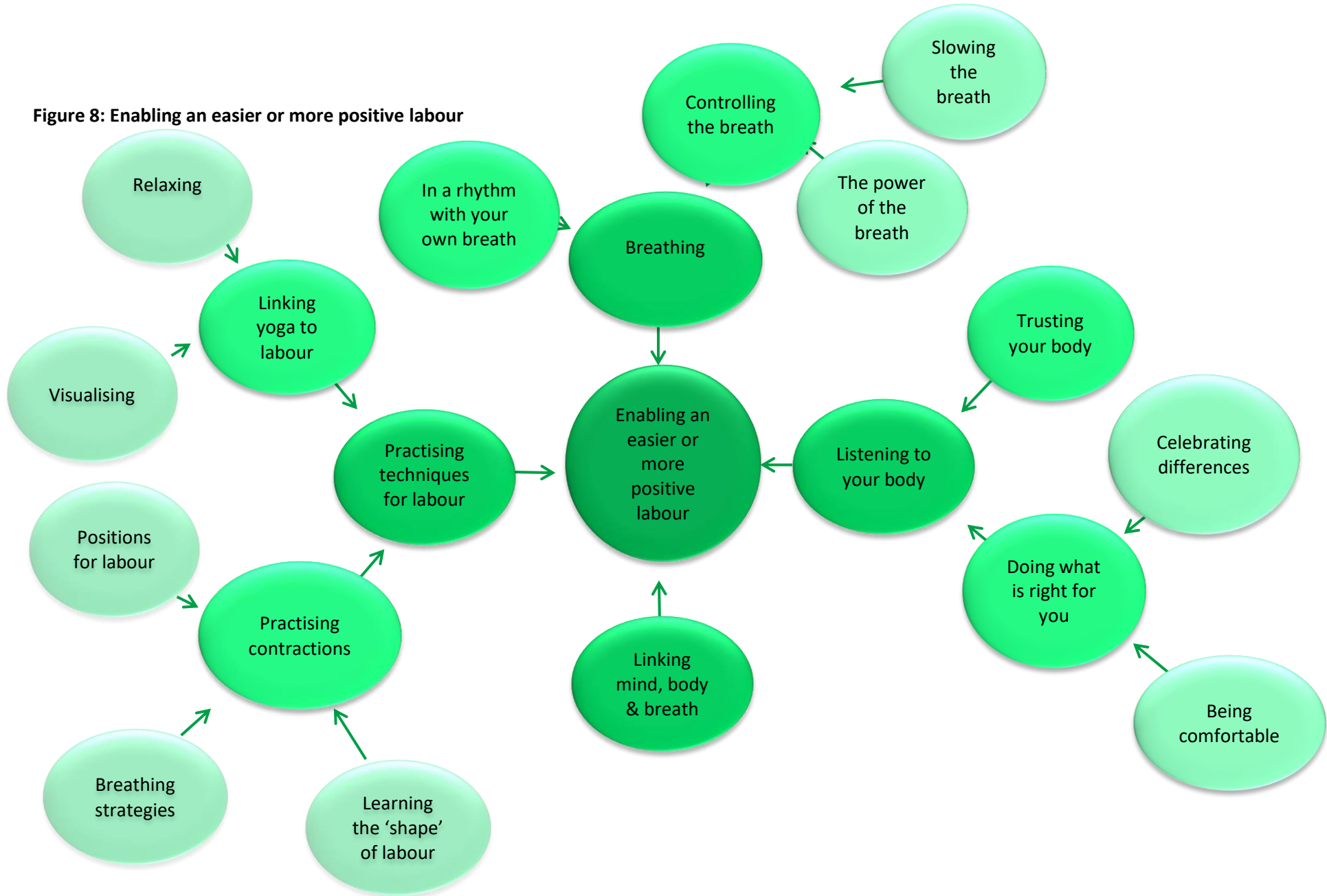
The sessions not only taught techniques for labour, but also modelled many aspects of the labour environment.

Maybe picture yourself in labour in this position with support around you; creating that stillness that we've got in the room today... Begin to think about what it might feel to be in labour and those feelings of calm, of being in control and feeling empowered. (C1)

The subthemes were:

- **Breathing**
- **Listening to your body**
- **Practising techniques for labour**
- **Linking mind, body and breath.**

Figure 8: Enabling an easier or more positive labour



Breathing

When asked what their YfP classes did that might affect birth outcomes, all the teachers gave similar answers.

I think it's just the ability to breathe, to be in control of that breath. (T1)

Two of the teachers mentioned they had been uncertain about placing such a strong emphasis on breathing when they first started teaching YfP, but they had increasingly appreciated its importance as women returned to their classes saying it was 'the breathing' that had helped them in labour. The teachers all mentioned how satisfying it was to teach breathing when the feedback from women was so positive.

Oh, I love breathing, I love breathing and it's really interesting how the more my practice changes, the more women come back and say how useful and how important the breathing is. (T3)

The teachers emphasised the link between breathing, control and confidence, saying that although breathing strategies were useful for managing labour pain, they had value beyond this.

It's all about breath... if the woman is in control of her breathing then everything else tends to follow; she's more calm, she's more relaxed, more inward. Then the body just becomes more instinctive. (T1)

When they come back even when... they've had assisted births or something, they're still saying: 'Yes it was still really positive; and I felt really in control; and I felt empowered; and the breathing got me through.' (T3)

Having the confidence to breathe and to know what a difference it makes to them... So they come in and they're all rushed and breathing normally and just by slowing their breathing they know how that makes them feel,

so they take that with them... Most of the stories I've had mention the breathing. They tend to cope better at home for longer. (T1)

Breathing was a fundamental element of the classes observed; appearing to be the foundation upon which many other aspects of the sessions were built. It was used in myriad ways to settle, reassure, inspire, build confidence and facilitate connection between the women, their bodies and their babies. A word frequency analysis showed the words 'breath', 'breathing' or 'breathe' were used 428 times in three two-hour classes, and the teachers mentioned the same words another 161 times in their interviews. This constant reiteration meant that as well as being intrinsic to all the subthemes in the '*Enabling an easier or more positive labour*' and '*Building confidence*' themes, breathing also featured strongly in other subthemes such as '*Time for me and the baby*'. The breath was also often linked to positive imagery: a frequency chart (table 9) shows the number of times positive words appeared in the same sentence as the word 'breath'.

Even though that's their normal pattern, you're linking breathing with the word 'easy', there's some kind of message that breathing is easy. (T2)

That breath that helps to keep you calm and relaxed; your friend in labour that will help you keep calm and focused. (C2)

Imagine holding this baby for the first time, and how that might feel as you feel their warm body close to yours; feeling their soft gentle breath. Allow yourself to touch their face to kiss their head... This is a time when feelings of worry and anxiety may overwhelm you. As you breathe out, allow those worries and anxieties to leave your body and replace them with feelings of calm, of relaxation, of trust. (C1)

The teachers emphasised the importance of respecting each woman's individual breathing pattern as this increased the likelihood that learned strategies would be effective in labour.

Everybody breathes at different rates... I will regularly say that it's really important not to worry about anyone else but just to focus on their breathing rhythm... So I want them to work with their breathing rhythm because that's what they're going to be hopefully using throughout their pregnancy and through to the birth of their baby. (T2)

Listening to your body

'Listening to your body' was the sub-theme that emerged as the most densely populated NVivo code from line-by-line coding. Analysis showed an average of 35 reminders in each session for the women to notice how they were feeling, to make adjustments to be more comfortable and only to do what was right for them.

Thinking about your body this evening and how it's feeling and what it's saying to you... adjusting that movement and position as you need to. So not worrying about anybody else, just tuning into your body and what you need this evening. And if at any point you need to change positions then please do. (C2)

Using cushions... focus on your posture. So think about your spine, thinking how beautifully tall, allowing the shoulders to drop... make sure you're sitting evenly and comfortable. (C1)

The teachers acknowledged, and even celebrated, individual differences. All the teachers mentioned enjoying noticing women making the choice not to join in, or to do

something differently, taking this as evidence that the classes were effective in helping women listen to their body and take control of their decisions.

Some of them don't do everything, but they've made the choice not to do that, which is really empowered isn't it? 'I know I don't want to do that today for whatever reason and I'm not going to.' (T1)

One mum particularly, who has got pelvic pains, so she was using the stool which is brilliant, because it means she is listening to her body, she is not doing what I'm suggesting... I suppose it's getting them to tune in to how they are feeling physically and I hope that is something that they carry through [to labour]. (T2)

Constantly reminding them to listen to their bodies and to trust their bodies to tell them what feels right and what doesn't feel right is really, really important. (T2)

Practising techniques for labour

Related to the 'Breathing' sub-theme, the teachers wanted to give women practical strategies for helping to manage the sensations of labour. Throughout the observed classes, the teachers made implicit and explicit links between movements and positions that might help in labour and the standard elements of yoga classes: postures, breathing and relaxation.

At this point I'm beginning to link some of those things into labour. So it's: 'Imagine, could you imagine yourself being in this position in labour, think about how lovely your baby feels with this extra space. How the movement might help with your labour.' (T1, watching the video of her class)

A nice resting pose; and again you might find that you use it in labour and between the most intense points. (C2)

You may find that rocking from side to side helps you; you may find you want to circle your pelvis. (C3)

Lean against the wall and just make some lovely figure of eights with your pelvis... this is one for labour for opening the pelvis and working with the sensations of labour. (C1)

The teachers reported that women returning to the classes after having had their babies described using the techniques they had learned in the classes, although not always in expected ways.

Interestingly, from things we'd done... and it wasn't necessarily, I don't think, a practice contraction we'd done, it was the neck release exercise... She'd used that and made a visualisation of a beach. So she'd joined something we'd done with a visualisation of her special place and that's how she breathed through both of her labours... She'd taken something we do every week and adapted it as a coping measure for her labour. (T2)

The teachers regarded practice contractions as an essential and effective element in their classes, planning at least one, and often more, every week. These involved women practising a taught breathing strategy or visualisation for approximately the length of a typical contraction while in a position that might be used in labour.

My rationale, which I share with them, for doing [practice contractions] is that they get a chance to try a variety of different positions so that they can see how it feels. They decide whether they like them or not... When it comes to the labour they don't have to think too much about what position they are going to get into they just instinctively get into the position. (T2)

The women really like them... because it adds the breathing and what they are learning together with the thinking about positions; and it gives them something that they really feel like they can use for when labour starts; and they find themselves doing ones that they never thought they would, either a breathing thing or a position, or instinctively doing it. (T3)

The teachers described how practice contractions helped in other ways, for example showing women who were expecting their first baby the 'shape' of labour and introducing thoughts of birth place and support.

People probably don't realise that contractions are not continuous; that there is the wave, the peak, the coming away... then you'll have time to rest... I always spend a couple of minutes before going straight into a practice contraction about setting their own scene; so it's: 'Imagine yourself in labour, where might you be at this point, what might you be doing... think about who's supporting you.' (T1)

Rather than using one prescriptive breathing technique, the teachers aimed to provide a variety which the women could choose from. They felt this would increase the chance the women would find an approach which worked for them in labour. During the classes observed, in addition to the constant repetition and practice of long, slow breathing, seven other specific techniques were practised or discussed. When asked, the teachers said they aimed to:

Give women a wide range of practical breathing... skills (T3)

Blow that breath out in a steady stream... away from you across the room... Try and blow it out further each time.... Blow that breath away, let the in breath take care of itself just focus on the breath out (C2)

You might like to imagine... you are breathing in the lovely warm, calm, soothing colour that fills your body with a sense of peace and calm... As you breathe out the colour fades and disappears (C3)

Linking mind, body and breath

The Sanskrit word yoga means union or joining. It is perhaps therefore unsurprising that a sub-theme emerged around linking mind, body and breath and that this was clearly stated in the teachers' aims.

To create a time when women can connect with their breath, their body, their emotions and their minds through yoga practice. (T3)

The teachers said that joining yoga movements to the breath served a number of functions, including helping women to learn and practise 'the breathing' while modelling the rocking and repetitive movements women sometimes make in labour. The aim was for confidence to be built by physically reinforcing slow breathing rhythms thereby mitigating against the possibility of anxious breath-holding or hyperventilating in labour. Over 60% of the references to breathing were made at the same time as practising a yoga asana or position for labour, the remainder being during relaxation or meditation.

For some women, I think it takes them a while to get the breathing, and I think if they can link it to a movement it helps them to feel it a bit more and understand it a bit more... That just helps them work out or get into

that nice, long, slow breathing rhythm... It helps to remind them to keep breathing. (T2)

Building confidence

The third major theme (figure 9) arose from the teachers' objective to:

Build women's confidence and trust in their innate ability to give birth to their babies. (T3)

The teachers said that women who had attended their YfP classes tended not only to be more confident during their labours but viewed them more positively afterwards. One way the teachers aimed to increase confidence was by regular repetition of postures and techniques. By becoming confident in initially unfamiliar movements, positions and strategies, the women would learn to have faith in their body's abilities.

Women [from my YfP class] ... were experiencing their labours differently; not necessarily with hugely better outcomes, but the stories were always so much more positive than the ones who I've worked with in just standard antenatal classes... They just feel more confident, more positive. (T3)

It's giving back her confidence for her body to do these moves; therefore her body can be confident to labour this time... That is why none of the positions I do are really, really challenging because I don't want people to think 'that's really hard and I can't do it'. I want them to be able to do everything. (T1)

Every teacher demonstrated a deep sense of caring about the individual women in their classes and a desire to help them gain, or regain, confidence.

I want them to feel beautiful because they are beautiful... I want them to feel good about themselves. (T2)

[She] had been made to feel, for so many different reasons, that her body can't do this... She's older, she's struggled to get pregnant, struggled to

carry a baby and [here] she looks really strong and lovely. (T1, watching the video of her class)

The emergent subthemes around building confidence were:

- **Being in control**
- **Being positive**
- **Changing beliefs**
- **Reawakening innate knowledge.**

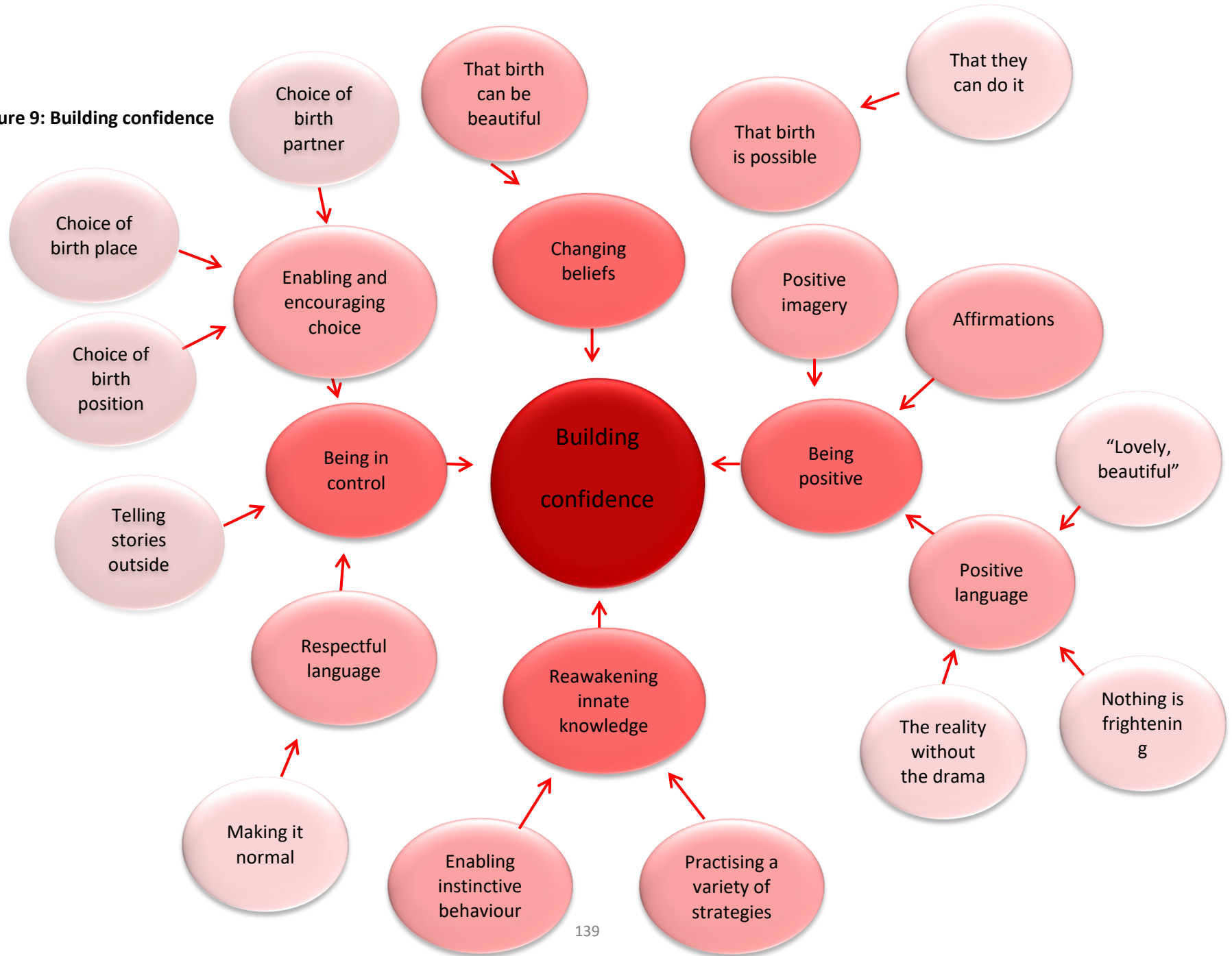
Being in control

This sub-theme describes the emphasis the teachers placed on encouraging and enabling the women to take control of all aspects of their birth experience if they wanted to. The teachers spoke of respecting the women's choices and aiming to be non-judgemental in their responses to the women's aspirations and decisions. The NVivo code 'Respecting their choices' was the second-most densely populated code after part 1 analysis of the teacher interviews and class transcripts, with 133 references.

They all want the same thing... whether they are having a planned caesarean or a home birth... They want to feel as if they are part of it; they have some say and some control over it. (T3)

So it's not about saying: 'You have to have a straightforward vaginal birth and that's the ideal birth and that's what you should all strive for'... You are not there to judge them or to try and change their mind, you are there just to honour what they say and support them. (T1)

Figure 9: Building confidence



This sub-theme relates to the *'Listening to your body'* sub-theme, extending it beyond choices about what feels right physically to respecting all the women's choices, such as place of birth and birth partner.

It's not 'You and your husband' here, it's 'Who's supporting you? Are they the right people?' (T1)

I always ask them to say their name and... when and where they are having their baby; and normally I then say 'if you've decided yet', just so that they realise that they can change their minds if they want to. (T2)

The teachers aimed to increase the women's confidence in taking control in a variety of ways, including: modelling respectful use of language, offering the opportunity to make decisions within the classes, telling stories of women who had made choices outside of 'the norm' and teaching active birthing positions that demonstrated how women's choices can have an effect on the progression of labour.

I hope that by using language that makes them feel cared for and that they matter, they will take that feeling [away with them] and that if people don't talk to them in that way, they'll be maybe more likely to challenge that, because they'll know that it is possible to be spoken to nicely... If I do too much of 'Do this, do that, I want you to', then I think there might be that... feeling of compliance. (T3)

It's an alert: 'I'm concentrating on my breathing, please don't interrupt me'... Empowering them to know they haven't got to respond to everybody all the time just because someone's telling them something. (T2)

You can decide how you would like to do it; you can use the wall, the window sills, the tables... so I'll leave it up to you to decide. (C2)

She had twins but both of them were breech and so they had chosen to have a caesarean; but she wanted to wait until she went into labour if possible. (Birth story read out in C3)

Roll your hips and move your pelvis, encourage your baby to come down into the birth canal. (C1)

Being positive

This sub-theme emerged from the positive atmosphere evident within the classes, created by the language teachers used and the uplifting nature of the stories told. During the classes, there was consistent use of reassuring language, imagery and affirmations to emphasise how strong and capable the women's bodies were and how beautiful birth can be. The teachers described consciously using affirming words.

I definitely think that... The language I use and the way that I express things in the yoga class... talk(s) about birth in a really different way... It just says natural, instinctive, joyous, fabulous, exciting. It says all those really positive things about birth that I often think that's the only place that they get it. (T3)

I always try to use... 'lovely', 'beautiful', thinking so nothing is frightening, nothing scary; nothing about birth is alarming, because they can watch EastEnders or One Born Every Minute to see that. (T1)

Even if you are using negative words: 'discomfort' rather than 'pain' I think, so that they are thinking about things in a positive way rather than in a negative way. (T2)

Imagine your pelvis is like a bowl, a lovely big bowl. (C2)

Remain strong in your position... feeling safe and comfortable... Just allow your body to be filled with sensations of calm, of relaxation, of being in control. (C1)

You already know everything you need to give birth to your baby, and know that you can trust in your body, trust in yourself to give birth to your baby... you are the best person, the only person who knows what is right for you and what is right for your baby. (C1)

The teachers said that women returning to tell birth stories to the YfP classes generally spoke more positively about their experience than women in their traditional couples classes. The teachers questioned whether the women's birth experiences were actually more positive, whether they just viewed them more positively, or whether having recently been in the classes changed the way they told their stories in order to put more focus on helping to increase the confidence of the pregnant women who had recently been their peers in the classes.

It's the woman who's been there and done it and has come back and is doing it again and is saying: 'This is amazing and having a baby is brilliant.' (T3)

Women hear a lot of horror stories... in the media and on television and unsolicited from people they meet, but I think what they get in the classes... is the reality but without the drama. (T2)

Some of them do have experiences that you could really see as quite difficult and challenging, but they are very rarely told in that way... Even when they say: 'I don't want... to share this bit because I don't want to upset people'... But it's still not that they say: 'Gosh, it was so completely dreadful, awful and hateful', they are not saying that – occasionally, but

that's usually about the care they were given rather than what happened.

(T3)

All the teachers mentioned that women often spoke postnatally of how the memory of the teacher's words had been helpful to them in labour.

The women nearly always say: 'And then I heard your voice just speaking to me and I remembered'. (T3)

Changing beliefs

This sub-theme captures how the teachers spoke of women coming to their classes lacking confidence in their ability to give birth, or believing birth to be a frightening or negative experience. The teachers aimed to offer an alternative perspective: that birth could be positive and the women could do it.

[Give] them the belief that birth is possible, that it can be beautiful, it can be an enjoyable experience; or they can be in control as much as they want. (T1)

The teachers described enabling a change in the women's beliefs through a combination of two factors. Firstly, by increasing the women's confidence in their ability to use birthing and pain coping strategies through repeated practice. Secondly, the confirmation of the efficacy of these strategies in stories told by the mothers returning to the class. In essence, the group norm became that women felt more confident in their ability to birth and therefore more motivated to make birthing decisions that were right for them.

Seeing whoever it was that came back with their baby, they've gone through it, they've done it, they've come out the other side. I suppose it is building confidence... Seeing them holding their baby, and hearing what

they did and how they did it, and thinking: 'Well, if she did it then I can do it too.' (T2)

They hear women's stories when they come back and they said: 'I just did my breathing and then I did those positions that we did'... It brings it back to seeing other people do it: 'I've heard other people talk about doing it, so I know it's effective; so I know it's okay for me to go into the birth centre, into the hospital or at home. I know it's okay for me to do it too because everybody's – we're all doing it.' (T3)

Reawakening innate knowledge

Facilitating the instinctive use of birthing positions and coping strategies was frequently mentioned by the teachers as one of the factors in achieving their aims of increasing straightforward birth.

To build women's confidence and trust in their innate ability to give birth... resulting in an increased number of straightforward vaginal births where women can work with their bodies in a way that leaves them feeling empowered and fulfilled. (T3)

They spoke of offering many choices of techniques and positions so women would feel comfortable with choosing from a variety that they had practised often. They stressed that teaching these as part of yoga practice over many weeks enabled them to be seen as natural, rather than being purely for labour, which meant they were more likely to be practised at home and embedded in normal behaviour.

When it comes to it they'll think: 'Oh, yes I know what I'm doing, we've practised this week in week out', and I think that's the joy of them coming for so many weeks is that it does become second nature... and so they think: 'Oh I know exactly what I'm doing, I can do this, I can breathe for a minute because I breathe for a minute in my class every week.' (T2)

It's just one of our sequences; it's just what we do. This is not a 'position for labour', this is how your body moves... So it becomes more fluid... They are just more confident in getting into those positions... So... it's not a strange thing that I'm getting into a labour position; it's more like: 'I'm getting into a position where I know that I'm comfortable, that I can think about what my baby is doing. I understand why it's important, but it's not that 'tick the position for labour box'' (T1)

The first couple of weeks when they come and... they really struggle... and then you watch and... over the weeks they just know... they are thinking about how they are going to be comfortable – so you know it's going in. (T1)

The teachers contrasted their YfP classes with the couples' antenatal courses they also taught, saying that in the YfP classes they aimed to increase confidence in instinctive behaviour by not challenging or testing the women, but enabling them to trust in what they knew already.

The other thing is, you are not asking them questions, so you are not testing their knowledge... Sometimes in antenatal classes when you have so many open questions, if somebody really doesn't know, I think sometimes they feel: 'Oh, I should know that, maybe I don't know enough'; but in this class you are not asking lots of open questions, it's just talking, they feel more confident in what they already know, they don't have to share what they don't know unless they want to. (T1)

Enhancing learning

The teachers' views on *how* they aimed to reach their goals rather than *what* they aimed to achieve emerged as a strong fourth theme comprising three subthemes (figure 10):

- **Creating the atmosphere**
- **Class rhythm and balance**
- **Learning in a different way.**

Creating the atmosphere

The teachers described the care they took to enrich the learning environment. This included not only aspects such as lighting and music but also the way they arranged the women in the room and the tone and pattern of their speech. These were all focused on enabling the women to relax and become familiar with a positive birthing ambience. The teachers often spoke repetitively and rhythmically, even when describing their practice during the interviews, and were aware of doing this deliberately during classes.

I like to keep the lights low and I use fairy lights... I want that sort of... almost womb like... that environment that you hope that they will labour and give birth in. So I always use music, I usually use a lavender room spray..... I want them to feel safe and comfortable. (T3)

It's the language, the words I use, the way I speak, the tone of voice. I hope that feels soothing to them... It's almost like 'sing song'..... What I hope is that the voice washes over them like some kind of blanket or some kind of warm fluid...to lull them into that relaxed state. (T2)

Figure 10: Enhancing learning



The teachers said that creating a quiet and calm stillness within their classes increased the women's ability to learn.

I think it does make a difference because ... they are really relaxed... There are so many subtle messages going in... This one was: 'You are the best person to know, to make a decision and choices for your baby'... At this point they must be in a receptive way to take that in, when nothing else is in their mind. They are not thinking about their shopping or what they are cooking for tea, they are just relaxing, and that must go in on different levels. (T1, watching the video of her class)

As well as the physical atmosphere, all the teachers cultivated a nurturing community by arranging the women in a circle or horseshoe shape and performing a 'mothering' role: checking often that they were comfortable, asking about specific ailments such as pelvic pain, offering blankets and cushions and making drinks at the end of the sessions. In addition, work in pairs was used to increase group bonding, a sense of support and 'togetherness'.

I wanted to create a... circle because that felt very safe... where people could... learn from each other as well as from me... Physically I like to give them enough space to move... but I don't want them to be too far away from each other because I actually want them to share. I want that bonding thing. (T3)

When they've done [pairs work]... there's just a bit more of a buzz because they've already touched and spoken... They've shared something very special... especially the back to back... when they're breathing together and they've got that warmth of someone, it's very intimate really. (T3)

This sitting together with our drinks is really important. And it's not a drink that they've had to make themselves... I've made them a drink... they're safe, they're warm. (T1)

The intention to build a supportive group culture was emphasised to the women.

Come into a circle together and do a supported tree. So make sure you have got enough space and you can just touch the person's shoulders.....You can do this individually but it's so lovely to do it as a group. It's good to know that your support is keeping the women outside strong and steady and their support is doing the same for you... You might like to think about that strength that we draw from those around... and the support of the women beside you this week pours into you. (C1)

Class rhythm and balance

Each class had a clear and well-defined structure. When watching the video of their classes the teachers emphasised the rhythm and importance of each section and the balance of social time versus quiet reflection. From the beginning of the class where the women made themselves comfortable, through Circle Time, breathing awareness, posture work then relaxation, each component had a purpose which contributed towards the whole.

[Circle Time] definitely gets them into the head-space....Sometimes they are working up to two weeks before their babies are born, so they are [coming in] still thinking about work... If they haven't come into the room and... engaged with the space then... I feel it's less beneficial for them. (T2)

[The breathing awareness] at the start of the class, it makes that distinction between: 'This is our social time, it's our time to say hello to everyone, to welcome everyone', to the: 'And now we are just going to spend some time breathing, relaxing, calming down, thinking about babies'. (T1)

It's important for them to talk to each other... but have a good balance... enough quiet stillness that they can focus on themselves, their baby, their breathing... If they are too busy chatting then they are not focusing inwards. (T2)

The teachers described two ways in which the women's ability to learn was enhanced by the familiarity and repetition of class structure and content. Firstly, they were able to relax more easily as they knew the 'shape' of each class. Secondly, in contrast to the 'Reawakening innate knowledge' sub-theme which represents instinctive female birthing behaviour, the teachers suggested that constant repetition of words, postures and techniques enabled them to become embedded in the women's minds.

I always do some similar ones every week so that they don't have to use their brains too much, so that they can just get into it. (T2)

I want them to be relaxed at the moment, but also... linking that. So when they are in that position later on... It's a bit like Pavlov and his dogs, they'll think: 'Oh, I need to get into that position I've practiced every week at yoga... I've got to relax my jaw, relax my shoulders'... It's the conditioning. (T2)

It's that positive reinforcement: if you hear it enough then you believe it. It's like if people tell you you're a naughty child enough you will believe you're a naughty child, and you will be a naughty child. If people tell you breathing is really good in enough different ways and you get to try it out yourself and it works, then you will believe that the breathing is good. (T3)

Aiming to increase the women's engagement, the teachers explained the rationale behind what they were asking them to do.

Last night ... two of the mums said they didn't like visualisation and I said: "Well there's evidence to suggest that no not everybody does, and I'm not

suggesting that this is the one and only. We try a variety so that you can decide which one works best for you". And I was quite happy to give them that rationale... It's back to understanding why they are doing something and I'm not just doing it for the fun of it; we are doing it to give them useful techniques and tools for labour. (T2)

Learning in a different way

A point stressed by the teachers was the way they built and integrated concepts, introducing them from a variety of perspectives but with very little didactic teaching. Each class was planned to cover one main topic area. For example a class arranged around the topic 'managing the sensations of labour' might introduce it in the initial Circle Time where the women would share their experience or views. Later in the class, the same topic would be referred during breathing awareness, visualisations, posture work and again during practice contractions and the relaxation. This structure ensured topics were explored in different ways, enabling women to absorb information and ideas from multiple sources. The teachers contrasted this with their more traditional couples' antenatal courses, saying that in their YfP classes knowledge became embedded without being formally taught.

It's... that layered approach. Just by dropping a little thing in, they might think: 'Actually yes, I can see how that might work'. (T1)

When I teach antenatal classes I know that there's a certain amount of information that they expect to learn and I'm expected to give... but this is in a far more subtle way... You reinforce the same message every week so you know it's going in, but just in a very different way. I don't think any of these women come to the classes expecting to learn something, I think they come just for themselves to relax, but I know that it's going in. (T2)

The ones that have already had a baby, if they share something about how birth was or, as someone said: "I was induced on my first birth, I really want to avoid that this time because ... "It just drip feeds information in that sits there, and they think: 'Oh okay, why might that not be a good thing? Maybe I need to find out more; maybe I can ask some questions'. (T1)

A repeated comment was how the physical learning which came from yoga practice enhanced what the women gained from the classes.

It's doing it; it's actually doing it and experiencing it rather than talking about it. (T3)

There's not a curriculum for the classes; there's no head stuff, there's no learning in the traditional way. It's a different kind of learning; it's a physical learning rather than a mental learning. (T2)

The teachers linked the elements together to form a cohesive whole which they said was greater than the sum of the parts. Learning was enhanced by linking the present to the future, the postures to labour and everything to the baby. The combination of women gaining confidence from hearing other women's stories and the rhythm of regular practice within the warmth and security of the group enabled them to learn what they needed to at the time when they were ready to learn it.

It's linking, making what we do relevant for now but also relevant for the future ... Some of them might be thinking about the birth but some might not ... Because I say it every single week, when they are then ready, they will listen... We were talking about second stage, pushing, yesterday and some of them were saying: "I haven't even turned the page, I haven't even thought about that", but then we've got others due in a couple of weeks' time. So it's important to link what you do to where they are at. (T2)

It always involves the baby and where the baby is and what the baby's doing, and it always lets them be comfortable with their body moving... Being comfortable with themselves, and feeling confident, and feeling at ease... Yes I do think the whole is bigger than the sum of the parts. (T3)

This chapter described the findings from part 1 of the study. The four themes which emerged from the teacher interviews and class observations (figure 6) were *'Creating a sisterhood'*, *'Enabling an easier or more positive labour'*, *'Building confidence'* and *'Enhancing learning'* (figures 7-10). Each of these themes had interconnected subthemes which combined to build a picture of elements within YfP classes which create a 'whole bigger than the sum of its parts' through which women's self-efficacy for labour and birth are enhanced.

The next three chapters outline the findings from the part 2 interviews with pregnant women at three time points: before they started YfP, when they neared their baby's birth, and after they had had their babies.

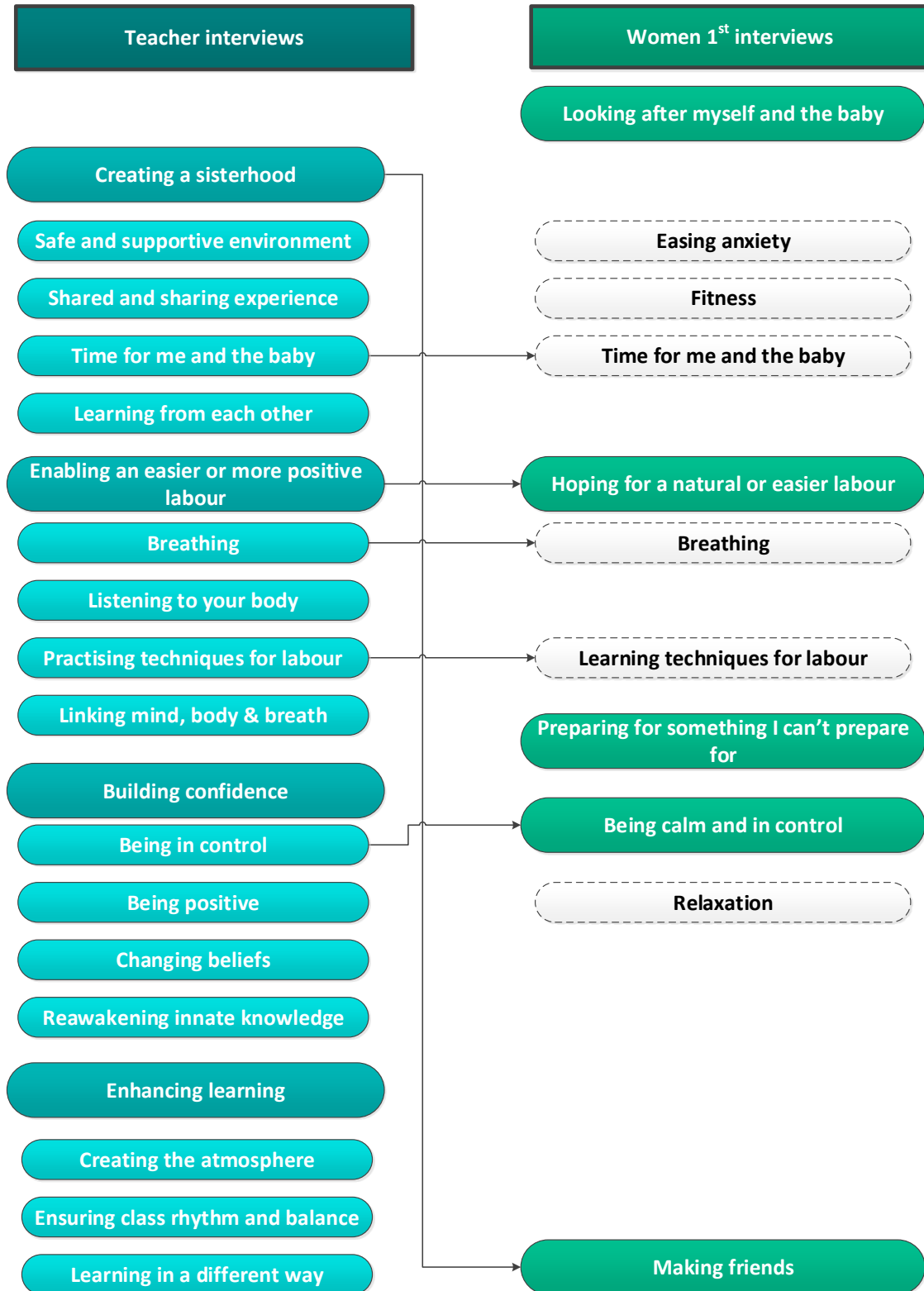
8.Part 2 findings: first interviews with the pregnant women

Twenty-two women between the ages of 29 and 48 were interviewed before they started YfP classes. The women were between 15 and 34 weeks pregnant at their first interview. Fourteen of the women were expecting their first baby, seven their second, and one her third. Three women mentioned one or more previous miscarriages which affected how they approached this pregnancy. All the women were attending classes run by one of the three YfP teachers from part 1 of the study.

A dilemma arose during the analysis of the women's interviews. As data was generated from interviews with the women and concurrent data analysis continued, it became apparent that, whilst there were many similarities in emergent themes between the teachers and the women, there were substantial differences in some themes and in the emphasis of some joint themes. By combining the women's and teachers' data to form one overarching analysis of YfP classes, essential elements and the 'voice' of each distinct group would be lost. Although it meant the results were more complex, the decision was taken to analyse the data sets separately (figure 11), enabling more accurate, richer separate themes to emerge which could then be compared.

Parallels with the teacher themes were, firstly, the women wanting to make friends, matching the teachers' aim of '*Creating a sisterhood*'. Secondly, the women expressed a strong desire to learn techniques for managing labour and to remain calm and in control in order to have an easier or more positive labour. These hopes closely relate

Figure 11: Links between the teacher and women's first interviews
 Threads are shown with dotted lines



to the *'Enabling an easier or more positive labour'* and *'Being in control'* themes from the teacher interviews. Elements which were consistently present in the women's first interviews but not strong enough to be labelled as themes were labelled as threads, for example *'Time for me and the baby'*.

Looking after myself and the baby

An overarching theme of *Looking after myself and the baby* emerged with four subthemes:

- **Hoping for a natural or easier labour**
- **Preparing for something I can't prepare for**
- **Being calm and in control**
- **Making friends**

The views the women expressed showed that they were starting YfP classes in order to look after themselves and therefore their baby. They echoed the teachers' views of YfP contributing to their overall health.

I want women to... have a good night's sleep and do exercises, breathing or physical, that will help them relax during pregnancy, but also... use during labour...also for afterwards as well. So to teach them life skills for breathing and relaxation. (T2)

The women's hoped YfP would be able to help with aims encompassing various physical and emotional aspects of pregnancy, birth and the postnatal period. Only one aim was common to all twenty-two women: they all wanted to attend YfP in order to learn techniques such as breathing and relaxation. For thirteen of the

women, this was to help them relax during their pregnancy as well as learning pain relief strategies for labour. The women wanted to learn techniques to practise at home, or just use the class as two hours of time out from a busy life. This was particularly true for women who had children already. The women were aware that being stressed themselves would impact upon their baby's health and wanted to mitigate against this.

Definitely the relaxation and breathing techniques... that little time to... focus on yourself. (Grace)

I thought I was busy and tired the first time round, but this time [relaxation is] really, really important. I work part time still, and then I'm with my son the rest of the time... He's very, very demanding and I don't get much time at the moment. (Terri)

I think the more you are stressed, the more you put your body under stress, and the more the baby will pick up on it. (Elizabeth)

Some women's anxiety had increased during pregnancy, often adding to their individual life circumstances. Others recognised their habitual worrying was not good for them or their baby. The women felt that being more relaxed would also help them to sleep better.

I've also suffered from panic attacks in the past... I need to try and relax more and not get very stressed about things. (Faye)

[Losing a previous baby at 24 weeks] it's taken all the naivety away... It suddenly goes, and makes you worry about every little aspect. So I'm trying... to be more in a positive frame of mind... I'm much more nervous. (Rebecca)

[I hope the classes will] help with sleep, because my husband works away... in Kazakhstan... So I've found the sleeping's sometimes, obviously when you go to bed you start thinking about things; and also my younger sister died last year. (Ailsa)

Although fitness had not emerged strongly from the teacher interviews, perhaps unsurprisingly, the women had a lot to say about yoga as a form of exercise when pregnant. For some women, YfP was a way of avoiding excess weight gain. Many of them had reached a high level of physical fitness pre-pregnancy and wanted to find an alternative which they felt was safe but would help them retain strength and flexibility. They were aware that many of their previous methods of exercise were not appropriate during pregnancy.

I've just started to feel that I'm putting on too much weight, so I wanted to make sure that I am staying fit; there are not many exercises that you can do during pregnancy. (Chloe)

I used to do quite a lot of exercise... like Zumba and stuff like that, but obviously I can't do that... I'm just looking forward to maybe keeping my body in reasonable shape while I'm pregnant. (Ann)

In addition to keeping emotionally and physically healthy, the women felt that being physically fit would help them during labour. Some of the second-time mothers attributed longer labours to having not been fit enough.

Fitness, definitely, flexibility and muscle tone... for labour ... I am conscious that labour can take a long time; you are going to need a longer endurance. So the more fit my body is, the better I'll be able to cope with it. (Cassie)

For my first, I didn't... do any sort of exercise at all... So this time round I decided to... take a different approach ... I was in early labour for probably a whole weekend, and then probably about 22 hours established labour, a long time pushing and she was pulled out in the end, I had a ventouse... I think maybe it was nothing to do to my fitness, but I did put a lot of it down to that. (Aileen)

Hoping for a natural or easier labour

This subtheme closely mirrored the teachers' aim to, wherever possible, enable the women to birth without complications by using their natural resources. In addition to helping them relax and sleep better during pregnancy, the women wanted to learn relaxation and breathing techniques to help with the pain they perceived they would feel in labour.

My friend... said they do relaxation and breathing exercises so I'm hoping that they will help me, because I could probably use them while I am in pain. (Kirsten)

To try and have some techniques or positions that... might calm me and put me back into a better sort of calm state rather than a panic... The midwife... said that it can be really helpful... to take your mind off the pain... keeps your mind focused on that, rather than on the fact that it really hurts'. [laughs] (Lisa)

Thirteen women articulated a strong desire to use these techniques to avoid medical intervention.

I want to... try the yoga and the breathing to maybe give me an advantage to have a natural birth... I just feel that, well we didn't use to have all the drugs; they can't be great for the baby so it's better to do it without if I can. (Chloe)

Doing something that's more specific about the breathing and relaxation... I'm aiming to have as natural a birth as possible. It's always been my goal... so anything that I can do that's going to help me relax and get into the right frame of mind to be able to do that. (Josie)

Five of the seven women who were expecting a second baby spoke of how they had not personally managed a previous labour in the way they felt happy with. They hoped attending YfP would give them practice in breathing and pain management strategies, enabling them to cope in a way which felt better this time.

I did NCT classes before, and they do teach you the breathing thing, but you kind of do it for 10 minutes as part of the class, whereas I think this will be better doing it once a week and you're getting practice. In [my last] labour I held my breath, I was absolutely rubbish. I don't know why I couldn't apply everything I'd been shown, or what I was told to do, but I think doing something weekly it will mean hopefully, it will stick. (Rebecca)

I thought I was prepared for it last time, and I really wasn't. (Rachel)

Despite wanting to manage labour without analgesia or intervention, the women were not confident they would be able to do so. Many of them quickly modified a preference for natural birth by saying they would accept or ask for pharmacological help if necessary. They spoke of not knowing whether the techniques would work.

If within an hour it goes out of the window, then never mind, at least I tried. But I think it's useful to have things like strategies for coping. (Cassie)

In contrast, five women were approaching the birth in a different way: they said they were not thinking about labour yet, but viewing their pregnancy on a week by week basis.

I haven't even thought about it in detail... Since I've fallen pregnant I've just sort of worked one milestone after another... Once the second trimester is over, that is when I imagine I'll start thinking about all of those things. (Haadiya)

Preparing for something I can't prepare for

There was a strong theme of the women feeling that despite their hopes for as easy a labour as possible, they were trying to prepare for something it was impossible to prepare for. The first-time mothers spoke of not being confident about managing labour pain as it was an unknown entity. Many of the second-time mothers spoke of how things did not go to plan with their first birth.

Ideally I would like to not have any intervention or not have any drugs – even though I don't know exactly what's going to happen or how I will react during the birth. (Tessa)

I had this whole plan of what position I was going to be in... I would be on all fours. And it got to the time, and all fours was the most uncomfortable place... So although you can plan for it; I think when it actually comes down to it, it all goes out the window. (Rachel)

I am just trying... as many different techniques as possible, and just try and be as prepared as I can be for something that I can't prepare for... You don't know what you are going into. (Cassie)

All the mothers recognised that complications might happen during the labour which necessitated medical intervention.

You can plan as well as you like but you don't know. There are certain things that are taken out of your hands, and obviously labour is going to be one of them. (Ailsa)

Whatever is best for the baby has to be done, so I'm not going to say no to any of the drugs if it needs to be and I need to have them... If the baby is struggling and I need this caesarean, then that's what I will do. (Chloe)

You can't really plan a lot anyway, you never know if there will be complications and they have to... (Adali)

The women considered that they were not the experts and described themselves as being 'realistic' when they spoke of their hopes of a natural labour possibly not being realised. For that reason, many of them did not write a birth plan.

I haven't really bothered to put anything down on a birth plan... because I think these then set your mind on one way, and then it's like a disappointment if it doesn't go that way. (Lisa)

I'm doing everything I can to prepare, but at the end of the day I'm not an expert in it. But I'll be surrounded by experts, you know, midwives who are experts to deliver babies... If they need to do something, I'll do whatever they say. (Cassie)

Mirroring the teachers' views about the classes playing an important role in overcoming women's negative beliefs around birth, the women said their sense of lack of control had been fuelled by stories they had heard. There was a feeling that few women got the birth they wanted anyway, so it was sensible to protect themselves by not raising their hopes too high. In some cases the stories they had heard had convinced them that birth could not be other than awful.

I want to have a natural birth. I know everybody says it and it never works, so if I have to have anything I will. But I want it to be as natural as possible. I'm not saying nobody has a natural birth, but I'm realistic at the end of the day. All the people I have known lately it hasn't gone the way they wanted, and they have had to have caesarean or extra things.

(Chloe)

Everyone tells you horror stories... Only one person said "Oh yes I went into labour naturally and went home the following day"; and that's the one I would probably prefer... So I think you can't really plan it too much, you just have to go with the flow. (Wendy)

I know it's going to be absolutely horrendous. (Elizabeth)

Even the second-time mothers lacked confidence that they could have the birth they hoped for. This was either because they had not had a good experience first time around, or they did not trust a second birth to go as well as their first.

I'm actually probably a little more nervous this time round than I was the first time because I kind of know now what it's all about... I had such a good birth that I am worried that... I am kind of out of my luck if you like, and that was a fluke. (Inge)

I'm trying not to be too confident about it, just because the first one went, what I can see now... it went well. I don't want to think 'well this one will be just the same', because I'm well aware that it could be completely different. So I am just trying to approach it the same way... take it as it comes and just try and stay really calm... be completely open to whatever needs to be done and accept that it might go very differently... I'm confident but trying not to be over confident. (Terri)

Being calm and in control

Again mirroring the teachers, but with a slightly different focus, a strong and complex subtheme arose around the women hoping yoga would help them remain calm and in control. They wanted an easy, and for most, as natural, a labour as possible and attending yoga was how they were trying to plan for that. But at the same time, they said that it was not only impossible to prepare for a natural labour but also that it was unlikely to happen. Despite accepting a lack of control over some events of their baby's birth, and that precedence would always be given to the safe birth of their baby, they wanted to be in control of their mental and emotional state, however the birth progressed.

[Feeling in control] is really important. Definitely I wouldn't want to feel out of control... That's part of why I'd rather not have an epidural... because I do feel you lose some control. (Terri)

My hope for the birth is... fundamentally obviously that we end up with a healthy baby at the end of it... I understand that my wishes would always be secondary... Ultimately just making sure that baby comes out fine. But in an ideal world, my hopes for the birth... is that I'll stay in control, that there won't be any intervention that I won't need to have any drugs just gas and air and it's all as natural and calm as possible. (Tessa)

One of my friends... had a baby... and she ended up having to have a C-section... but she really wanted a natural birth. So I've just kind of gone along the lines: well if I can have a natural birth that's great, and if not, well it wasn't meant to be. (Wendy)

There was an acknowledged tension between how far they could remain in control when they did not hold expert medical knowledge.

As a woman in such a vulnerable position that's giving birth, I mean there's a lot of well-meaning professionals... that have seen it all before, have been there, done that, you are one of many... It just puts women in a very, very difficult situation at times because obviously we haven't got the medical insights... You might actually consent to something that your heart isn't maybe a 100% in, and actually in retrospect you would maybe have chosen to do it differently. (Inge)

The second-time mothers spoke of the knowledge and confidence they had gained from their first labour. While still couching their hopes for this birth in tentative terms, they aimed to be more assertive during the second birth.

I'll try to be next time a bit more savvy... You hope for a different experience... It might be the wrong term to say - be more vocal this time, and I don't mean that in any kind of – just more ready to speak up... You do kind of feel you are out of control kind of thing aren't you, especially the first time round. So I think hopefully I'll be a bit more confident to ask for things or to move around. (Grace)

The women spoke of yoga practice helping them remain in control in two ways. The first closely matched what the teachers had said: that YfP would help enable them to be in the right frame of mind to manage the pain of contractions. The second was unique to the women: they hoped to reduce the chance and effects of intrapartum and postnatal emotional trauma by learning techniques to 'turn inwards' and not panic, no matter what course their labour took.

I can imagine trying to concentrate with my eyes closed, just really, really switching off, just really, really concentrating and taking my thoughts elsewhere. (Elizabeth)

So you know obviously it's going to hurt, but if I can... perhaps have a few sort of skills that I'll pick up during the yoga, and try to sort of take myself out of the situation rather than solely focusing on 'It hurts, it's painful'... I can use my mind to try and... zone out. (Emily)

Being able to sort of channel the breathing... I can try and relax and take myself to a more positive place. Because I think even if all is going crazy ... if you're in a calm place it's much easier to deal with those things. (Josie)

The women expressed varying levels of confidence around managing their labour. Some were very nervous whereas others felt much more confident that they would be fine. Two women were actually looking forward to the labour.

I'm pretty petrified, I guess that's normal. I can't watch those programmes any more like 'One born every minute', it's too scary. And I'm also scared about the fact that it's going to be very painful. (Kirsten)

I wouldn't say I'm overly nervous or freaked out about it I just – I come from a large family so I think if my mum had 4 children and my granny had 7 children so it will be all okay kind of thing. (Faye)

I'm actually really looking forward to the procedure of being able to say at the end of it that I have managed it and have joined however many other women in the world that have done it. (Josie)

Making friends

Validating the teachers' aim of *Creating a Sisterhood*, a strong theme arose around meeting other pregnant women, with 19 out of the 21 women expressing a desire to make friends. Many women did not have existing local support groups.

I'm from South Africa... and my husband is from Kenya... so we've got a very limited family support structure here in the UK; and a lot of people

say 'Oh it's amazing having family close by' and I'm thinking 'Okay, we don't necessarily have that, I need to manage'. (Haadiya)

My friends will all be at work, so it will be people... I can do things with while I'm off on maternity leave, when obviously most of my friends just won't be about. (Rachel)

Both teachers and women aimed for supportive friendships to be created through the YFP classes, enabling the women to avoid becoming isolated. However, there was a subtle difference between how the teachers and women expressed these friendships. The teachers spoke of a sisterhood of *all* pregnant women, whereas the women saw YFP as an opportunity to meet 'like-minded' people and spoke of a fear of competitive parenting. The yoga class was a place where they could meet women with whom they could satisfy their need to share experiences and anxieties both during pregnancy and after their babies were born.

I'm not that great at meeting other people but hopefully in an environment like that where you've all got something in common to talk about it will be slightly easier... It would be quite nice to know that I'm not completely isolated afterwards... I'm a bit worried about that, the competitive scary people. (Kirsten)

I'm normally quite self-sufficient, but I think since I've become pregnant you become – I don't know if vulnerability is the right word, but there's a need to sort of surround yourself with people ... going through exactly the same. Those things that you sit and worry about they are worrying about as well. (Ailsa)

In contrast, two people who already had a close friendship network valued the sessions as a form of antenatal class where there was the opportunity *not* to talk.

It's quite nice sometimes when you do yoga... not to talk to people... I've got quite a few friends... so that's less of a benefit for me. (Elizabeth)

This chapter summarised the findings which emerged from the first interviews with the pregnant women. There were many similarities and some differences between what the women said and what the teachers aimed for in YfP classes. Before they started YfP classes, the women hoped for a natural or easier labour but felt labour was something it was impossible to prepare for. They wanted to remain calm and in control through the birth of their baby and make friends who would support them both through the pregnancy and postnatally.

9. Part 2 findings: second interviews with the pregnant women

Thirteen of the twenty-two women who had given a first interview were interviewed a second time. Reasons for not having a second interview were:

- Five women had attended fewer than six classes. Two had not attended any and the others only one or two. Reasons included developing a medical condition and being advised by the GP not to attend, classes being too late in the evening, too far away, or perceived as having too little exercise
- Two women did not respond to requests for a second interview
- One woman had her baby early, before her second interview date
- One researcher error where the baby's due date was noted incorrectly and so the woman was not contacted until after her baby was born

Two of the thirteen women were interviewed before the decision was taken to exclude women who had attended fewer than six classes. These two interviews were excluded from the analysis, leaving eleven second interviews analysed. Second interviews were held when the women were between 35 and 41 weeks pregnant. Although all the women had attended at least six classes, it was not possible to ascertain exactly how many as most were vague with their answer:

I must have gone to about 10 or 11. I go once a week... actually it's probably more than that, probably about 15. (Tessa)

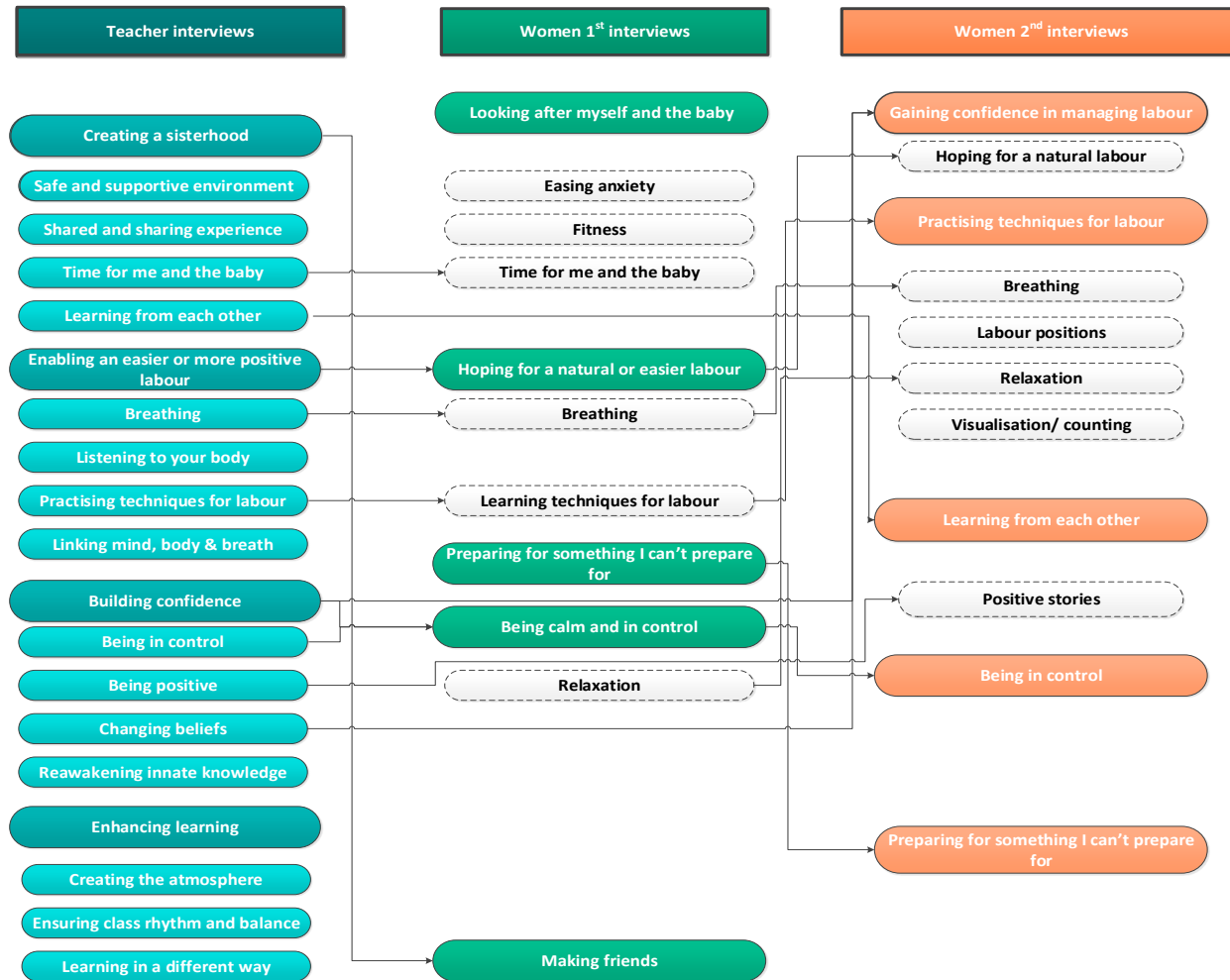
During the women's second interviews, a complex pattern of themes and subthemes across the study began to emerge. Figure 12 shows how the themes, subthemes and

threads between the teachers and women's first and second interviews inter-relate, with many remaining constant but emphasised with a different strength or focus. Two subthemes which had been present during the teacher interviews and first interviews with the pregnant women continued to emerge strongly: *'Practising techniques for labour'* and *'Being in control'*. Some themes which were mentioned by the teachers and women in their first interviews disappeared, for example those around making friends. In contrast, *'Learning from each other'*, a theme from the teacher interviews which the women had not spoken of before they started yoga, re-emerged at the second interview stage once the women had attended classes. The theme *'Preparing for something I can't prepare for'* which emerged from the women's first interviews was still present at the second interview stage. A network of underlying threads continued to run through the study, present as elements of many themes: confidence, positivity, hearing stories, breathing, positions and hoping for a natural labour.

The overall aim of the present study was to explore *how* any putative changes in birthing self-efficacy were effected by YfP in addition to analysing any changes themselves. The second interviews offered the first opportunity to explore with the women both what they felt might have changed as a result of attending YfP classes and also *how* they perceived this had happened.

Figure 12: Theme progression from teacher to women's second interview

Threads are shown with dotted lines



Gaining confidence in managing labour

Closely matching the theme 'Building confidence' from the teachers' interviews, the overarching theme emerging from the women's second interviews was of them gaining confidence in their ability to manage labour. The women's hopes for a natural birth without intervention had not diminished and may have increased: at this point all the women stated a preference for a natural labour, even those who had not mentioned it in their first interviews. Resonant with the 'Changing beliefs' theme from the teacher interviews, the women said the yoga classes had helped them feel more positive about their ability to have the labour they hoped for.

Ideally I would like to have a natural birth... just doing the natural way.

(Adali)

It's made me feel more confident and a lot more positive and a lot more in control of my body. (Cassie)

In terms of... feeling that I'm going to be able to cope with the labour, I think it's all been very, very beneficial. (Tessa)

Unsurprisingly, attending yoga had not had an effect on the confidence of those women who had never been worried about labour.

I don't think [my confidence has] massively changed... I've never been particularly freaked out by labour and birth. (Faye)

Two discordant voices were heard. The first was a second-time mother who said that although the yoga had helped her feel more confident in her ability to manage contractions, she had a number of medical complications which made her fearful for her baby's health. This caused dissonance between what she hoped for and what she

felt she might need to accept. The third time mother was feeling anxious about her eldest child.

Far more apprehensive than the first time round... Found out last week that baby is on the larger side and they want to possibly intervene next week... That's not really what I wanted to hear. [I'm] still not completely convinced that induction is the right way forward, but don't want to go against medical advice. (Grace)

I have felt really good up until recently... I planned to have a... home birth and was doing really well, but 2 weeks ago [my son went] on a residential trip [which] has completely floored him... and is having a knock on effect on the whole family as he's... waking up screaming... I'm quite anxious at home... much more nervous than the entire rest of the pregnancy. (Paula)

Analysis of the women's second interviews enabled initial subthemes to emerge around how the women felt yoga might be increasing their self-efficacy. Three of these subthemes were closely related to themes from the teacher interviews. The fourth subtheme '*Preparing for something I can't prepare for*' had emerged in the women's first interviews and still remained as a strong presence:

- **Practising techniques for labour**
- **Learning from each other**
- **Being in control**
- **Preparing for something I can't prepare for**

Practising techniques for labour

The strongest subtheme which emerged in the second interviews was the women saying they had more confidence in their ability to manage the sensations of labour as

a result of having learned and practised pain management techniques in the yoga classes. This matches the *'Practising techniques for labour'* subtheme which emerged in the teachers' interviews. In answer to the question 'What do you feel has helped most?' all the women mentioned learning different breathing techniques in combination with practising positions for labour and relaxation.

Definitely the breathing, we do an awful lot of talking about the breathing. (Grace)

She teaches you about different positions that you can labour in, different breathing techniques you can use and we practise. (Cassie)

Having a few... calming and relaxation ideas is going to really help; and different positions to be in... during labour. (Susannah)

It was apparent that the repeated practising of a variety of pain management techniques had enabled the women to feel more confident and prepared for birth. The women showed an understanding of how the techniques might help, including distracting themselves from the pain.

I've got a little arsenal of tricks and things that I can try and pull together... So I feel confident I've got enough that I can sort of try and keep me occupied. (Wendy)

Concentrating on the breathing and slowing it down and counting through breaths... Last time... I was probably focusing on the pain more than anything else so... 'More pain coming, how do I stop the pain?'... Hopefully this will help to... distract myself from that... So I think it has helped. (Susannah)

Getting into a position for labour... was quite nice because I experimented with different positions that I might use. (Paula)

In part 1, the teachers spoke of their aim to embed various techniques by practice and repetition so the women had a 'toolkit' they could choose from and draw upon in labour. There was evidence to support that this had been effective as the women described specific techniques in detail, differentiating them and showing a clear awareness of which ones might work for them.

She gave me different options of what I can visualise during the contractions... She gave examples like 'Blow waves over the water' or 'Push a boat over the water'... Those kinds of things I definitely will try. (Adali)

There are certain techniques that I prefer to others... The counting one... I feel personally for me will work better than others. (Tessa)

I'm hoping to try out being on all fours and moving my hips and leaning on the wall, and leaning on my husband...; breathing out humming. We've done imagining 'blowing out candles' and a 'golden curl coming out', and sort of visualising that as opposed to visualising the pain. (Kirsten)

Learning from each other

During the teacher interviews, a subtheme '*Learning from each other*' emerged as the teachers spoke of the women sharing experiences in the classes. Although this had not been mentioned by the women at their first interview, by their second interview they described how their confidence had increased after 'show and tell' visits by women who had recently had their babies. The women said that hearing recently birthed mothers describing how yoga techniques had been beneficial to them in labour was influential in enabling them to believe the techniques could work for them too.

It definitely made me feel more confident to hear that someone... I sat next to the week before... had a positive birth experience... Obviously it helps instil confidence that you are doing the right thing; what you are doing is helping prepare your body... It worked for her, so why wouldn't it work for me? (Cassie)

She had her baby with her and said the breathing exercises and the pool and everything like that had really helped her... When you hear positive stories like that... it does make you think 'Oh this might work'. (Wendy)

All of them [are] very, very positive about the benefits of what the yoga brought to them... It puts faith in the fact that what you're doing in the sessions... are going to be beneficial. (Tessa)

In part 1, a strong subtheme emerged around positivity. The teachers used positive language, stories and affirmations in order to create an atmosphere where women's belief in their ability to birth their babies was enhanced. There was evidence that this had been a successful strategy as the women spoke of enjoying hearing positive stories, saying they helped counteract 'horror stories' they had heard from other sources.

We had one lady come back a couple of weeks ago now with her baby and she'd had like a really straightforward birth... She didn't need any pain relief and she described it as a really nice time... That really helped me to hear a positive story as opposed to people's horror stories. (Kirsten)

When you talk to the second-time mums... they are 'Don't worry, it's not as bad as everyone says'. So I think that helps as well, because quite often everyone is just keyed up to tell you their horror stories... It does help to hear positive stories. (Wendy)

One of the girls [who] came back 2 weeks ago... was quite relaxed about knowing when she needed to go into the hospital... She knew 'Okay this is an early stage, I don't need to go now' and she went in just on time... That gave me a little bit more confidence... It's calmed me down. (Adali)

The ethos of positivity was challenging for the woman who had had a difficult previous labour and was worried whether to accept the offer of induction with the upcoming birth. She felt unable to share her story.

I've not wanted to alarm... I try and protect others quite a lot... I don't feel I can be as honest... I'm thrilled to hear people having positive stories but... nobody particularly wants to hear that you end up in theatre and things are all a bit of a drama at the end. (Grace)

For that woman, support came from the teacher rather than the other women in the class.

I talked to... [T2] at the end... it's lovely being able to tap into a bit of advice... It would have been good if I could see the midwife a little bit more often... it's a long time in between appointments. (Grace)

In the women's first interviews, a subtheme emerged around wanting to make friends. The teachers had also hoped this would happen for the women and tried to enable it through class activities. However, whilst the women appreciated hearing and sharing experiences with other pregnant women, very few of them had made friends through the classes. The reasons they mentioned for this were the transient nature of drop-in attendance and women being at different stages in their pregnancy. Interestingly both the teachers and women felt this mix of due dates helped the learning about birth, but the women said it was a barrier to friendships being formed.

It's been nice to... be in the same position as everyone, and being able to... share experiences. (Susannah)

The social side hasn't been quite as good as I hoped. (Faye)

I met a mum in Lidl who was in the class... It's nice to make contact with pregnant mums who you may bump into, see some familiar faces. (Paula)

Being in control

Resonant with both the teachers' and women's first interviews, 'Being in control' continued to develop as a subtheme. At the second interview stage, it encompassed two elements for the pregnant women. Firstly, they said the yoga had helped them be in the right frame of mind to approach labour and so better able to work with their body. Secondly, they demonstrated they were making decisions about their labour which made it more likely they would have the birth they hoped for.

Yoga maybe puts you more in tune with your body... I certainly feel really aware of what's going to happen... I feel quite empowered in a way that birth isn't something that is going to happen to me: I can kind of be active in it. (Terri)

I know that I won't just have to sort of lie there and take it now because I've done the yoga. I know I can do different things to try and manage it... Before I didn't really have any concept of what you would do other than just sit there and let it happen. (Kirsten)

I'm hoping for a water birth as well now... that might have come out from what all the other girls were saying. (Chloe)

Preparing for something I can't prepare for

Although the women felt more confident, the theme of 'Preparing for something I can't prepare for' which was present at the first interviews continued to be strongly

represented. This anxiety meant none of the women felt *fully* confident or in control. Although their fear of labour pain had diminished, the first time mothers still spoke of not knowing how bad it might be, and all the mothers recognised the possibility of unforeseen medical complications.

The women spoke of their fear of losing control in hospital or if medical intervention was necessary. The time spent at yoga classes had helped them to reconcile the two opposing paradigms of retaining control and giving it to medical professionals. They spoke of how they might be able to retain control mentally even if their hopes for a natural labour did not happen.

I feel more confident. Whether I feel 100% prepared? Probably not because I have no idea what I really will go through. (Adali)

To be honest I'm petrified about the whole birth but I always have been. I feel more confident than I did but... I still don't think 'Yes this is going to be fine'... I still don't think I'll be completely in control, because you never know what's going to happen. (Kirsten)

I'm kind of consciously keeping aware that things will change and you can't control everything... One half of me is consciously aware that [labour] might not go exactly to plan; but the other part of me is sort of aware that if I can think about my breathing and... how I want to approach it from a kind of a mental perspective... that will help with the whole process. Yoga has helped me focus all those ideas. (Terri)

Although yoga was helping her to feel calmer, the dissonant voice of the woman who was feeling more anxious about the birth than the others was particularly evident when speaking about being unable to prepare and lacking control.

*You are always thinking the worst case scenario of what can happen.
[Yoga is] the only time in the week where I can feel completely kind of –
trying to stop all the thoughts running around in your head... so I do find it
a great kind of escape... It's really important to have that. (Grace)*

This chapter summarised the themes which emerged from the second interviews with the pregnant women, after they had attended YfP classes and were within a few weeks of their baby's birth. The women's hopes for a natural labour had strengthened and were more clearly articulated. They had gained confidence in their ability to remain calm and achieve the birth they hoped for due to the repeated practise of coping techniques. Despite this, a duality of thought persisted with the women believing that labour was not something it was possible to prepare for fully.

The next chapter summarises the themes which emerged from the third and final interviews with the pregnant women, held after their babies had been born.

10. Part 2 findings: third interviews with the postnatal women

Having a positive labour experience

Fourteen women had a postnatal interview: all thirteen who participated in a second interview and the woman who had had her baby early therefore missing her second interview date. Two of the women were interviewed before the decision was taken to exclude women who had attended fewer than six classes. These two interviews were excluded from the analysis, leaving twelve second interviews analysed. Third interviews were held when the babies were between 9 days and 10 weeks old. The difference in timescale was due to the practical difficulties of arranging a time to talk with new mothers.

During the third interviews, the pattern of themes, subthemes and threads across the whole study became clear (figure 13), with an overarching theme of *'Having a positive labour experience'*. Patterns were particularly evident around having a positive, natural or easier labour, using techniques, and feeling calm and in control.

In the teacher interviews, the theme *'Enabling an easier or more positive labour'* emerged, with subthemes *'Breathing'* and *'Learning techniques for labour'*. The teachers aimed to increase the women's chances of having the birth they hoped for by repeated and varied practice of strategies for managing contractions. Aligning with this, the women's first interviews saw a desire to learn techniques as part of the emergent theme *'Hoping for a natural or easier labour'*. By the second interview, when the women were close to birth, they were demonstrating confidence in using pain

management strategies and were more strongly focused on '*Hoping for a natural labour*'. The efficacy of the pain management techniques the women had learned was apparent when the women described the birth of their babies. Linked themes around confidence, control and calm were present at every stage. At the third interviews, the subthemes from the teacher interviews which had been present as threads throughout continued to emerge: practising breathing and positions, positivity, and hearing stories.

Three subthemes emerged:

- **Using techniques to manage labour**
- **Being calm, confident and in control**
- **Enhancing the learning**

The majority of the women were positive about the way in which they had managed labour, attributing this to the techniques they had learned in YfP and a resulting feeling of calmness.

Resonant with the teachers' aims and the women's hopes from their first and second interviews, eleven of the twelve women gave birth using only natural pain relief methods, some combining them with Entonox. All the women gave birth vaginally; there were no caesarean sections within the group. One woman accepted a syntocinon drip to speed up her labour and one had an epidural and forceps once she was in second stage of labour. Ten of the women described their labour in a very positive way.

It was... so calm, lovely... it was just really nice... I felt really lucky... amazing, like a really empowering experience. (Paula)

I was at ease and it was pretty pleasant... I'm really pleased that the actual birth happened the way I wanted it... I generally think of the whole experience with a real sense of calmness...and I definitely think that's from yoga. (Terri)

It went really well... It was just incredible it was so, so amazing. (Inge)

The two women who had been noticeably more anxious during their second interviews described their birth less positively than the other ten. Although Kirsten was proud of herself for having managed her contractions for as long as she did, she spent six hours in the second stage of labour before having an epidural and forceps to help her birth her baby. She felt disappointed in two ways. Firstly, her instincts during labour told her she would need medical assistance, and she asked for it a number of times before managing to persuade the health professionals that her labour had stalled. She wished she had been more assertive in order to get assistance sooner. Secondly, she wished she had birthed her baby without medical help. Conversely, although Grace birthed her baby without medical intervention as she had hoped, her fears that the baby would be large overpowered her attempts to be in a positive frame of mind.

I wish I'd been a bit more forceful, because they said that I didn't need [an epidural, that]... I'd be fine and it would all be over soon... I'm kind of proud that I got that far... that I didn't just give in. I was more confident than... before I did the yoga... But I was never confident that I'd be able to get to the end without more help... So yes I'm really glad that I did the yoga because I would have been panicking a lot earlier. (Kirsten)

Sadly the whole labour... I felt really quite anxious and frightened... even though I gave birth naturally. [I was anxious] that the baby was just going to be... a 12 pound baby... Being a nurse myself I kept thinking all the worst case kind of... Unfortunately it was quite detrimental I think to the actual labour... it was all I could focus on. (Grace)

Using techniques to manage labour

The present study aimed to explore how YfP affected women's self-efficacy for labour. When asked in their third interviews what helped with managing their labour, by far the strongest theme which emerged was the women saying learning and practising the breathing techniques and labour positions in YfP classes. These were described in detail by all twelve women. 'Practising techniques for labour' became the most densely populated NVivo code from the third interviews and relates to many densely populated codes from the teacher interviews, including 'Breathing', 'Practice contractions', and 'Enabling an easier or more positive labour'. Within this theme, using breathing techniques was the most frequently mentioned, again matching the women's first and second interviews, the teacher interviews and class recordings.

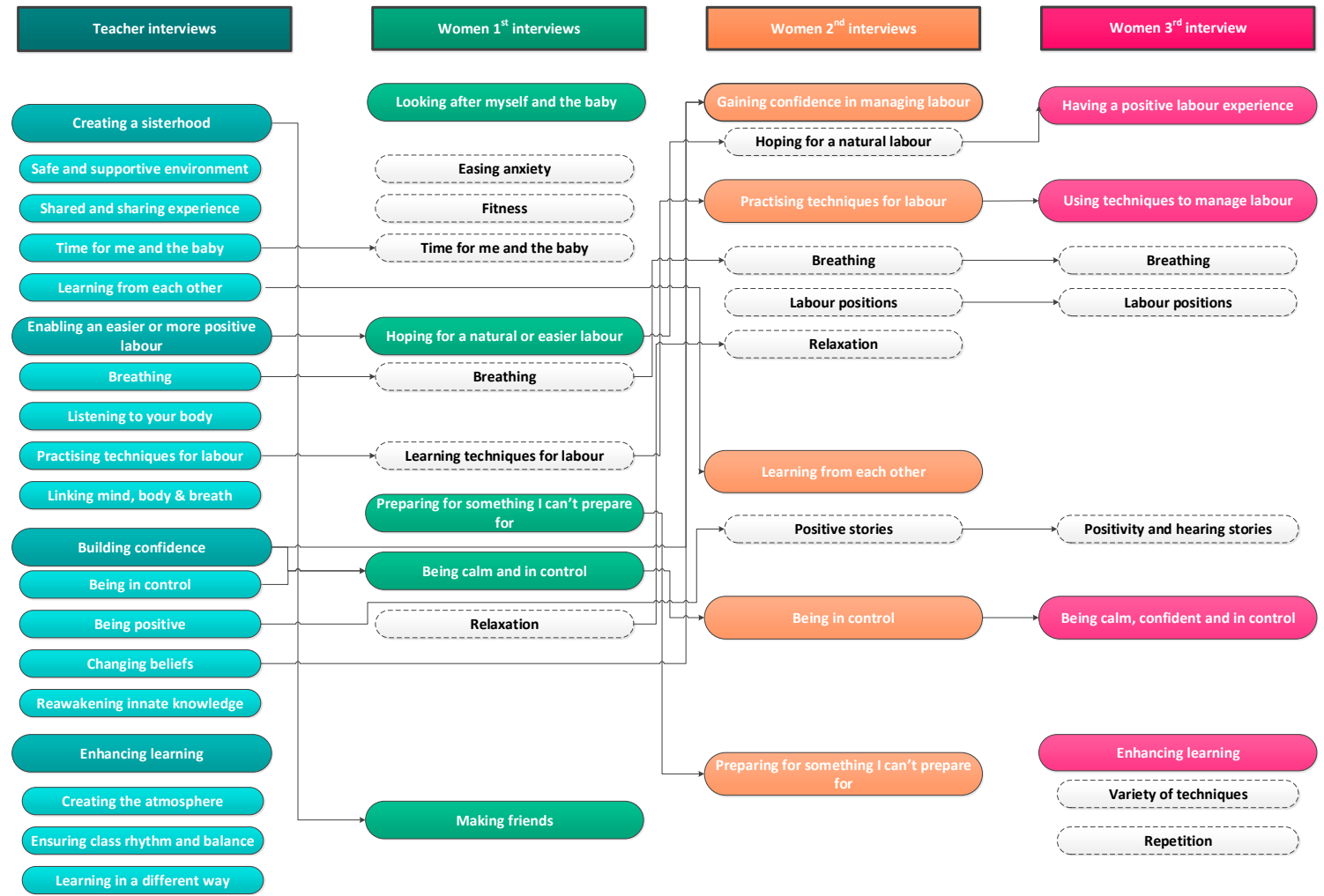
Just slow controlled breathing... it just takes the pain away... It was really just the breathing; that was really what got me through the entire labour. (Chloe)

It was just steady breathing actually all throughout... just keeping the steady breathing going was very helpful. (Faye)

Just the breathing that we practised in the yoga class really... I had a tens machine on but I chose not to use it because I felt I was actually managing alright just with the breathing. (Wendy)

Figure 13: Whole study theme progression

Threads are shown with dotted lines



The breathing... for me was very good, just kind of keeping you on track at that point when you think you can't do it. (Grace)

After the use of breathing techniques, the next most common strategy mentioned by the women was the labour positions they had practised.

I used some of the positions we were taught - different labouring positions like being on all fours and rocking backwards and forwards. (Cassie)

The thing with practising... is then things don't feel so alien, so... I got into positions I'd done in yoga, and because your body has been in that position before, there's something sort of familiar about it. (Paula)

I definitely did a lot of... the movements and swaying my pelvis round that we had practised in the yoga. (Grace)

During their second interviews, the women had shown an awareness of a variety of techniques they thought might work for them. After the birth, they were very clear about the specific techniques which had helped during labour. Some women used a single strategy throughout, whereas others consciously moved between techniques as a distraction strategy or when one was no longer effective.

The relaxation at the end about really connecting to the baby... really helped me because... it wasn't just me giving birth to a child, it was actually the two of us doing it together. So I was really trying to focus in on her. That was the thing that I remember very clearly because it really impacted on me. (Inge)

It was more like 'Okay, well this next hour I'll try and occupy myself like this'. It was almost like 'Okay so I'll try this [technique] for the next one'. (Wendy)

The visualisation I usually used was trying to blow waves over the water. (Adali)

A few women said that visualisations that helped early in labour were not effective as contractions became stronger. For very powerful contractions, they needed to use simpler techniques, for example focusing purely on breathing in and out. Five women mentioned specific techniques they tried but which did not work for them, and some techniques which worked for some women were mentioned by others as not working at all.

The stronger [contractions] got... it was more difficult for me to visualise...

You just try to go through it and continue breathing... When it got really strong I was focused on breathing in and out in general. (Adali)

I was trying to keep up the visualisations but it was harder in that car ride.

That was probably the worst bit and I was using noise a lot. I was thinking of one of the weeks where we talked about the 'Bee breath', the buzzing and the moaning, so that's what I used most in the car. I was really loud. (Terri)

We were taught to breathe in and then breathe out like a humming noise, and that really definitely helped. (Kirsten)

She did humming in the class and I gave that a go, but it wasn't really working. (Wendy)

Most of the women faced challenging times during their labour but still found the techniques they had learned helpful. For example Susannah gave birth in the triage room as there were no labour rooms available at the hospital.

The learning about breathing techniques and... positions... really helped... We were just crammed in a broom closet basically... The triage room was big enough to get one person standing either side of the bed... We did practise... moving hips and things... so I was using that whilst in labour... doing figures of eight and keeping it all fluid... to alleviate the pain, which was really good. (Susannah)

Being calm, confident and in control

A second strong theme which emerged was of the women saying how calm they felt through their labour. Although themes of confidence and control had been present throughout the study and remained strong in the third interviews, calmness had not been articulated as clearly as it was by the women postnatally. Before the birth, the women had expressed this as 'being in the right frame of mind', or hoping to be able to internalise and focus during the labour. Postnatally, it was articulated as having remained calm during the birth of their babies. Even Kirsten, who had the very long second stage, described feeling calmer than she would have been without YfP.

I did stay so calm during the labour... Everyone was amazed that I didn't want an epidural or pethidine... I literally spent the whole time with my eyes closed just in my own dream world... I didn't scream, didn't swear, just got on and did it. (Chloe)

I was ridiculously calm during the labour. (Tessa)

I felt really, really calm. Actually it was amazing... I was completely at peace and I think being relaxed then allowed it to all progress really nicely. (Paula)

The midwife kept saying to me "Oh you're being so instinctive, everything you are doing is so instinctive"; and I didn't correct her, but I just thought if I hadn't been taught any of this I wouldn't have been able to do it... It kept me calmer for longer, definitely. (Kirsten)

Discordant voices were heard when the women were not able to remain calm as their labour was either very quick or very long, although these women still described the pain coping techniques they had learned as helpful.

Although it was very fast... using techniques did help... to relieve some of the pain, or at least calm the situation down a little bit, so I think it was definitely useful. (Susannah)

Some women reported that their sense of calm meant that the midwife didn't realise how far their labour had progressed, or in second stage had to encourage them to push rather than just breathe through the contractions. It is possible that Kirsten's sense of calm contributed to her lengthy second stage, as it was only when she became distressed that the health professionals believed that her labour was not progressing.

It was all fairly manageable... I called the midwife again to come back in and she said things wouldn't have progressed that quickly, and she said to carry on; and I just really pushed her to examine me... When she examined me she said "Actually you're sort of nearly ready to push". (Cassie)

The whole thing was very calm and I definitely think that's from yoga... When I was pushing... I was so focused on the yoga breathing; and the midwife said "No you've actually got to push at this point". I was so kind of calm about the whole thing that I had to actually sort of step it up a gear and actually work a bit harder. (Terri)

By the end I definitely wasn't in control, I was begging for help and absolutely shattered, and just desperate for somebody to do something; but I definitely was in control up until about a couple of hours into pushing. (Kirsten)

The women said their sense of calm and relaxation in labour was due to using the pain management strategies they had practised in yoga.

Definitely the breathing... Without the yoga... I would have just been a bit more panicky... It just helped me stay relaxed. (Chloe)

I was calm and relaxed because of the practiced breathing and I knew what to do... I literally just did what I did in the classes. (Faye)

The calmness of the breathing ... how calm the breathing made me and the fact that I used that breathing the whole way through the labour, I think that was the main thing for me. (Tessa)

In addition to the sense of calmness which using pain management techniques gave them, the women said knowing they had mastered pain management strategies in advance had enabled them to approach labour with more confidence. This resonates with the 'Building confidence' theme from the teacher interviews and the 'Being confident and in control' theme from the women's second interviews.

I had in my head strategies that I could use if it got painful... The yoga helped me feel more that I could do it; and I actually felt quite confident going into the labour. (Tessa)

I had tried a couple of different kinds of breathing exercises and positions in the classes... They worked, and... I just kept on practising this week in week out. I felt quite confident and – yeah because I practised. (Faye)

[The classes] definitely increased my confidence... My confidence was definitely much higher than at the beginning when I was totally petrified of labour and I thought I'd never be able to get through it. (Kirsten)

Resonant with both the 'Listening to your body' and 'Changing beliefs' themes from the teacher interviews, the yoga classes had enhanced the women's belief in their ability to birth their babies through increased feelings of trust and being in tune with their body.

I felt really confident... not afraid at all... I had been practising yoga and so therefore had built a relationship up with my body... Having confidence in your body, because that's the most important thing: knowing that you can do it, believing that you can. (Paula)

For me the yoga... especially the breathing, really helped me... being able to refocus and be really in tune... I was just completely in trust of my body... It was just as though my body knew exactly what to do... it kind of blew my mind a bit. (Inge)

The women's birth stories, told during the third interviews, showed not only how they had felt in control, but also that they had felt empowered to act in a way and make decisions which felt right for them during labour.

The midwife and other people were telling me to get into certain positions and I did try... but... it was... more painful... So I chose the positions. I was standing up for the majority of it which I found easier... Even down to the end she told me I had to lay down to give birth, and I wanted to be in the position that I was comfortable with, and I think that was listening to my body... I kind of like to know that I'm in control... and I felt that I did with the preparation I'd done... Without that I think I would have been in pieces. (Chloe)

It definitely made a difference because I spent the vast majority of the time on my knees doing my yoga breathing and my yoga – like we were taught to sway your hips and do figures of eight... I spent the vast majority doing that... The midwife kept trying to persuade me to lie down and I just couldn't lie down because it was too... It helped very much being on my knees... the midwife was like "lie down"; "I can't!". (Kirsten)

Enhancing the learning

The aim of the present study was to explore *how* the yoga classes effected any changes in women's self-efficacy as well as *what* changes occurred. In the teacher interviews, aspects of the *how* emerged as the 'Enhancing learning' theme which described the class content and structure. Understandably, the women were less aware of class structure and curriculum than the teachers but were still able to verbalise how they felt the

teachers had enabled their learning. They emphasised how repeated practising of pain management strategies was important in making them feel comfortable and familiar. They were conscious that they had been taught a variety of strategies which enabled them to find the right ones for them.

What was really helpful was the different positions we used... She always encouraged us to try different kinds of positions... to see which position is the most comfortable for me... It was easier to try different things [in labour] because I had tried them already during the course... I knew what to do and which position I should... be in when a contraction comes. (Adali)

I'll tell you what was nice... the visualisations were sort of different each week... [T3] gave us different options... some of them I've forgotten because they didn't really speak to me, but obviously some of them really did... That would have helped everybody, because everyone has different kinds of ways of approaching it. (Terri)

It was the teaching it every week, because I would find that... between weeks I was forgetting what to do; but [T2] kept repeating them and kept emphasising "This is a good position for labour, you might want to do this when this happens"... It was just the calm... repeating... definitely increased my confidence. (Kirsten)

The findings from the first part of the study detailed ways in which the teachers wove learning from real birth stories through the classes. The teachers believed the women would find positive stories inspiring and helpful and so presented them in a variety of ways: through facilitated discussions, 'show and tell' visits, as part of relaxations/visualisations and by creating social media groups where the women could share experiences. The postnatal interviews demonstrated how the women had benefitted from the stories. It could be argued that the variety of approaches increased

the effectiveness of learning, as the women were exposed to positive stories in multiple ways so could absorb them in a way and at a time which worked for them.

Hearing other people's stories..., people coming in after the session talking about their birth experiences and what happened..., things that they were able to do that helped make things easier... That kind of gives you confidence that you can do it as well. (Tessa)

There's a difference between knowing it's going to happen and actually visualising it [as part of a meditation] so that you are mentally and physically prepared... She just opens your eyes up as to what... was actually coming... so it's not a big shock. (Chloe)

On the Facebook site as well where you can see mums posting their pictures and saying it was a good experience. (Wendy)

The women gained confidence from knowing that positive birth experiences were possible, as well as knowledge about what to expect and the choices available to them.

Hearing other people's positive birth stories, because then it wasn't all about everyone who wants to line up and tell you their horrific kind of tales of destruction... That just sort of calmed me down... made me feel more relaxed about the whole thing. (Wendy)

I knew all the facts around it: I knew the stages of the birth... the different kind of pain relief... the different options I have. I knew the advantages and disadvantages... So yes, I was confident because I had the knowledge. (Adali)

Hearing birth stories from other mums that came back to yoga class just sort of put you in the right frame of mind, and sort of focused me on the things I did want and the things I didn't. (Cassie)

An overall sense of positivity emerged as a strong subtheme in the teacher interviews and this was noticed and appreciated by the women. Again the variety of approaches

employed by the teachers to ensure a positive atmosphere emerged as a thread. The women remembered specific positive affirmations that had been helpful in labour and were aware of how the teacher had encouraged them to believe in their ability to have control over their birth experience.

[The affirmation] kept going through my mind... "We've done that push; that's over and done with and we don't have to do that push again; it's one step closer to meeting your baby"... That's just what I was thinking 'Yes, done that, just waiting for the next one', and I was actually willing the next one along - I wasn't dreading the next one actually, I was willing it along because he would be here sooner. (Chloe)

A lot of what we talked about in yoga was the fact that childbirth isn't something that's happening to you: you're doing it and it's very natural, it's something that you can do and you were designed to do... So I think I was very aware – and I made lots of choices: I wanted the Birth Centre, and I made other choices like I wanted to not cut the cord until it had stopped pulsing, and I wanted to have a natural third stage. (Terri)

All you've maybe have heard... is all these horrible stories... Whereas actually yoga... was much more kind of down the lines of empowerment, taking charge, feeling in control... It's all about positive affirmations. I definitely feel yoga helped in reiterating that... this is absolutely possible. (Inge)

Because [the teacher] sets off that vibe, everybody else keeps it positive. They don't really come in with any negatives. (Chloe)

Women's third interview conclusion

This chapter summarised the findings which emerged from the women's postnatal interviews. The women had notably positive labours and all said they benefited from attending YfP. The classes helped the women remain calm, confident and in control

throughout their labour. The class elements which the women said helped most were the practice of pain management techniques and positive real-life stories told by the teacher and other women in the class.

The next chapter draws together the findings from parts 1 and 2, explores them in relation to the literature and discusses the grounded theory which emerged from the overall study.

11. Discussion: how might YfP affect self-efficacy?

This chapter draws together the findings of the present study and interprets them in the light of existing literature in order to produce a propositional grounded theory. It shows how the elements of YfP which the women said helped them manage their labour relate to the four efficacy-enhancing processes defined by Bandura (1977). Figure 14 shows the complexity and inter-relationships between these processes and the findings from parts 1 and 2. All the elements which the women's said helped them manage their labour relate to Bandura's (1977) processes. In addition, all four of the efficacy-enhancing methods were included in YfP class content. Often, aspects of YfP that the women said were beneficial also potentially apply to general antenatal education. Where this occurs, the discussion is expanded to a more general level.

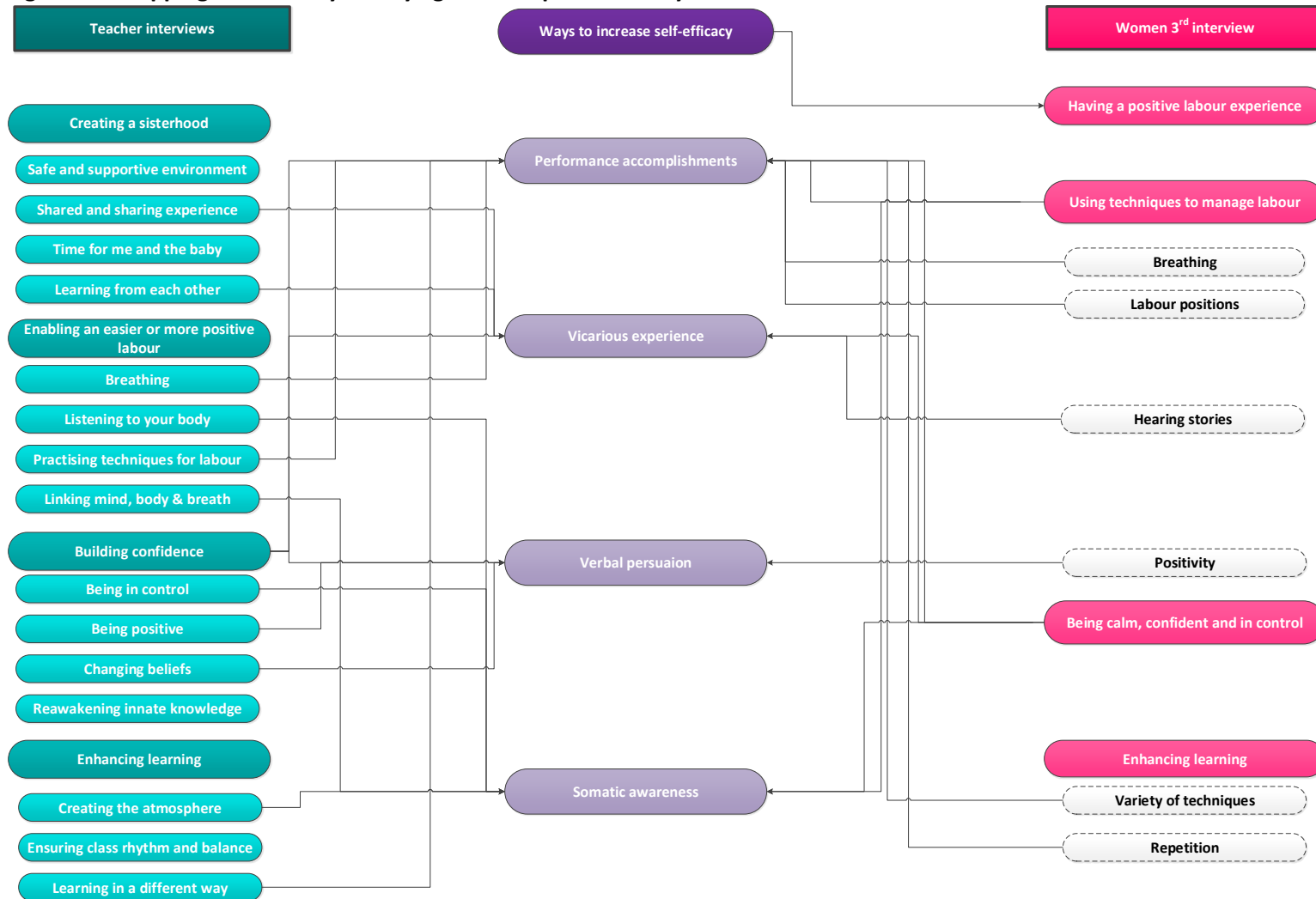
The congruence between teachers, classes and women

There was notable congruence between the findings from the teacher interviews, class recordings and what the women said worked for them. This was particularly evident in three areas:

- Pain management strategies
- Stories and positivity
- Being calm, confident and in control.

The teachers' aims were to enable natural or positive birth experiences where possible and to increase the women's confidence and sense of control. They planned multiple opportunities to practise a variety of labour-specific cognitive and behavioural pain coping strategies in each class in addition to the usual yoga breathing and posture

Figure 14: Mapping self-efficacy theory against the present study themes



practice. All the women reported feeling more confident after practising pain coping strategies and used them to manage the sensations of labour and enhance feelings of being calm and in control.

The theme which emerged in the teacher interviews around 'Creating a sisterhood' was more complex. The teachers said creating a safe women-only environment where women could share experiences was an important factor in facilitating learning. They went to some lengths to ensure the women felt secure and nurtured so they would feel confident in sharing personal information and stories. They felt strongly that the women-only aspect and nurturing elements of the classes enhanced the overall benefits:

[Give] them the space to be pregnant and to be with other pregnant women... Women need to get together and talk to other women and that's how they learn about being a mother. (T2)

[It's] because it's women only... I hate to say it but it is... if you've got a couples class and the woman comes in distressed... her partner is almost always trying to... stop her being upset... The partners... are trying to solve it: 'It will be fine... if that's what happens that has to happen, I don't want you to be upset in front of all these people'. Whereas with women they just – Whoosh - 'let me look after you'. (T3)

Whilst the women said they benefitted from the positivity and stories told by other women in the classes, in contrast to other YfP studies (Doran & Hornibrook, 2013), most appeared to be unaware of the idea of a feminine, safe or nurturing environment. It is possible they may have benefitted from it without awareness of the structure and care which had enabled it.

The mix of women at different stages of pregnancy and the drop-in nature of the sessions meant the women's aim of making friends was not achieved by as many women as had hoped for it. Other studies investigating fixed-length courses (Sheffield & Woods-Giscombé, 2015; Muzik et al., 2012) have found the social support groups made at YfP classes to be beneficial to women's social and emotional wellbeing.

Did YfP affect the women's self-efficacy for labour?

All the women in the present study said YfP enhanced their ability to manage their labour.

Definitely, it definitely made a difference. (Kirsten)

This is a qualitative study which does not aim to prove causality; however, the positive way in which the women described their labours was notable, as are the facts that they all gave birth vaginally, only one of the twelve women used more than Entonox as pharmacological pain relief, and only one woman had medical intervention where her baby's birth was aided with forceps. During 2014-15, nearly 40% of UK births were either by caesarean or instrumental methods, and a recent survey by The Royal College of Midwives (Downe & Finlayson, 2016) found the percentage of women who experienced a normal labour and birth (without pharmacological pain relief, instrumental delivery or induction) was 22%.

In line with current literature which shows that a majority of women would like to birth without pharmacological pain relief (Care Quality Commission, 2015) the women in the present study showed a preference for normal birth. Although two recent antenatal education intervention studies have shown higher self-efficacy to be

associated with reduced pain medication use (Carlsson et al., 2015; Gau et al., 2011), previous non-YfP interventions aimed at increasing women's self-efficacy for labour have had mixed results, with most showing increased use of coping behaviours, reduced anxiety and pain perception but no reduction in pharmacological pain relief (Miquelutti et al., 2013; Bergström et al., 2009; Ip et al., 2009; Beebe et al., 2007). YfP interventions have been found to have similar improvements in anxiety and pain perception (Sheffield & Woods-Giscombé, 2015; Riley, 2013; Curtis et al., 2012), but the very few studies which have considered the effect of YfP on medication during birth have had conflicting results with some finding an association (Satyapriya et al., 2013a) and some not (Chuntharapat et al., 2008). The results from the present study support those which have shown that women who feel confident in using pain management strategies use them in labour to reduce pain sensations and medical intervention. The results of the present study imply that the women's self-efficacy was increased by their attendance at YfP.

How might YfP have enhanced birthing self-efficacy?

Bandura (1977) identified four principal ways to enhance self-efficacy beliefs: *performance accomplishments, vicarious experience, verbal persuasion* and *understanding of physiological states*. Using this framework, Lowe (1991c) proposed ways in which women's self-efficacy for labour can be increased. Table 7 shows how the elements of YfP which the women in the present study said helped them manage labour map closely to Bandura's (1977) and Lowe's (1991c) processes. Figure 14 shows the multiple interconnections between these processes and the study themes.

Table 7: YfP content mapping against Lowe’s (1991c) categories

Bandura (1977)	Lowe (1991c)	Yoga for Pregnancy classes
Performance accomplishments	Successful coping experiences such as past childbirth or previous experience with pain	Secondary performance accomplishments (modelling labour): practising breathing, labour positions, visualisations and other coping strategies
Vicarious experience	Observing successful coping by others	Stories told by the teacher, other class participants and women returning to ‘show and tell’
Verbal persuasion	Being encouraged by influential others	Positive statements and affirmations spoken throughout the classes by the teachers and pregnant women
Physiological states	Learning to recognise and reduce reactions, such as panic, in response to the anticipation or experience of a stressful event.	Relaxation, meditation and practical work including modelling breathing through contractions whilst noticing and mitigating tension responses

The following sections explore each of Bandura’s (1977) efficacy-enhancing methods in detail, relating them to both what the women said and current research.

Performance accomplishments

Performance accomplishment, for example having successfully managed a previous labour, is the most influential source of efficacy beliefs. In addition to personal mastery experience, it gives the additional benefit of reduced fear levels as performance mastery lowers somatic response (Bandura 1977). For women who have not had a baby before, or not had what they perceive as a successful experience, self-efficacy theory hypothesises that modelling behaviour, or secondary performance accomplishment, is the most effective way to enhance self-efficacy perception (Ritchie, 2016; Zimmerman, 2000; Bandura, 1986).

This is reflected in the findings from the present study where all the women said the main factors enabling them to manage their labour were learning pain coping skills and the confidence they gained from repeatedly practising them in YfP classes. Susannah's response to the question 'How did you manage your contractions?' was typical:

The learning about breathing techniques and... positions... really helped... We did practise... moving hips and things... so I was using that whilst in labour... to alleviate the pain, which was really good. (Susannah)

There is an assumption that because a strategy is taught in antenatal classes it will be utilised in labour. However, in practice, although women's intention to use pain coping strategies does predict their subsequent use, there is a poor association between antenatal training and use in labour, where women use fewer strategies than predicted (Slade et al., 2000). In a study investigating the use of coping behaviours after an antenatal intervention, Spiby et al. (2003) found that only half the women used postural changes, although 88% used breathing.

It may be that women use fewer strategies than predicted because they believe more in the efficacy of coping strategies than in their ability to perform them (Salomonsson et al., 2013b; Cunqueiro et al., 2009; Khorsandi et al., 2008; Beebe et al., 2007; Ip et al. 2005; Lowe, 1993) and personal belief in the ability to control pain during labour predicts both intention and subsequent use of strategies (Escott et al., 2009; Ip et al. 2009; Slade et al. 2000; Lowe, 1989). In comparison, all the women in the present study mentioned using and benefitting from the breathing and positions they had been taught, which may reflect increased confidence in their ability to use them effectively as a result of attending YfP classes.

It has been suggested that women may not use the strategies they have been taught in classes as they have practised them insufficiently (Schwartz et al., 2015; Larsen & Plog, 2012; Escott et al. 2009; Slade et al., 2000). Previous antenatal education interventions aimed at increasing self-efficacy have provided fewer sessions in which to transmit skills and build confidence than the number of YfP sessions attended by the women in the present study (Larsen & Plog, 2012; Maimburg et al., 2010; Bergström et al., 2009; Escott et al., 2005). Slade et al. (2000) found the women in their study were dissatisfied with the level of pain coping skills practice in a five-week intervention. In contrast, all the women in the present study attended at least 12 hours of YfP and some attended at least 30. It is possible that the degree of strategy repetition and practice resulted in women feeling more confident about their ability to manage labour; therefore, they tried more coping strategies and persisted with them for longer, leading to increased success in pain management. The statements women made in their pre and post-birth interviews support this hypothesis.

*I've got a little arsenal of tricks and things that I can try... I feel confident.
(Wendy, second interview)*

*It was so useful... just having practised it every week... January to... May,
so actually for the majority of my pregnancy. (Faye, postnatal interview)*

Another possibility is that the variety and combination of strategies taught during YfP enabled women to become more aware of their own coping style, resulting in their using the strategies which suited them best. The women in the present study mentioned benefiting from eighteen distinct cognitive strategies they had learned in YfP (table 8), which they had often adapted to suit their own coping style. The women

mentioned using between two and twelve coping strategies each, which supports the work of Beebe et al. (2007) who found that women use multiple strategies in labour. The variety of breathing techniques employed by the women implies that in order to enable maximum effect, antenatal educators would need to offer women the opportunity to learn and practise a variety of methods, including:

- Controlling the pace, slowing the breath
- Focusing, concentrating on the breath, remembering to breathe
- Specific breathing patterns, including counting breaths
- Verbalising (humming, moaning, screaming, buzzing)
- Combining breathing with:
 - Labour positions (all fours, kneeling, standing)
 - Movement (swaying, rocking , figure of eight)
 - Props (birth balls, pillows, bean bags, chairs)
 - Visualisations
 - Focused internalisation (thinking about the baby, the uterus/cervix)
 - Affirmations
 - Partner coaching

Offering women the opportunity to familiarise themselves with this variety of pain coping strategies would have an impact on the duration and cost of any planned efficacy-increasing intervention.

Table 8: Pain coping strategies mentioned by the women in their third interview

Coping strategy	Sub-category	What the women said helped
Breathing techniques	Slowing down the breath (Ten women)	<p>'Breathe in for longer or breathe out for longer'</p> <p>'Slow controlled breathing'</p> <p>'Extend your out-breath'</p> <p>'Breathe in and out as long as you can and see how quickly a minute goes'</p> <p>'Steady breathing in through your nose and out through your mouth'</p> <p>'Controlling the breathing, making sure you've got nice long breaths out, to each shorter breath in'</p> <p>'Breathing in for 5 and out for 9'</p>
	Focusing, remembering to breathe (Eight women)	<p>' focused on breathing in and out'</p> <p>'You... get to a point... where you forget to breathe... you kind of force yourself into... thinking 'I've got to breathe''</p> <p>'Keep breathing and think about breathing'</p> <p>'Just breathing through them, I really focused'</p>
	Specific breathing patterns (Three women)	<p>'Refocusing on my down breathing when I was starting to push'</p> <p>'Take a breath now and make sure it's a deep breath, and just relax'</p> <p>'Trace out the letters of the alphabet... while you're breathing out'</p>
	With verbalising (Three women)	<p>'Breathe in and then breathe out like a humming noise'</p> <p>'The Bee breath, the buzzing and the moaning'</p> <p>'The more noise you make the more energy you... release'</p>
	Combined with partner coaching (Three women)	<p>'Focused on my partner and he always told me 'breathe in, breathe out'</p> <p>'My husband was counting through the contractions'</p> <p>'My husband... "get on all fours and try not to be on your back"'</p>
	Positions	(Three women)
	(Three women)	Kneeling/ kneeling and leaning forwards
	(Three women)	All fours
		Squatting
Using props	Kneeling (Seven women)	<p>'Build a mountain of pillows on the bed I can just sort of hug them'</p> <p>'Kneeling on the... back of... the sofa'</p> <p>'Elbows on the ball and my knees on the mat, or... on the bed with the pillows'</p>

Coping strategy	Sub-category	What the women said helped
		<p>'On the floor with my top over the gym ball'</p> <p>'The birthing ball and bean bags'</p>
	<p>Standing/ leaning over something</p> <p>(Five women)</p>	<p>'Walking... I would stop at either a tree or a lamppost and... lean my hand on the lamppost or the tree... and just take deep, deep pants'</p> <p>'Leaning against the work surface'</p> <p>'Leaning over the sofa'</p> <p>'Holding the door handle'</p> <p>'Holding the bed while standing'</p>
	Sitting	Sitting on gym ball
Movement	(Eight women)	<p>'On my knees doing my yoga breathing and... like we were taught to sway your hips and do figures of eight'</p> <p>'Changing positions and moving around'</p> <p>'Moving hips and doing figures of eight and keeping it all fluid '</p> <p>'Being on all fours and rocking backwards and forwards</p> <p>'being upright and swaying from side to side... holding on to the end of the bed'</p>
Internalising	(Two women)	<p>Music - spent the whole time with my eyes closed just in my own dream world</p> <p>'Keep calm and stay inside... my own mind... internalise it when you do your breathing [the teacher] says "try and shut out everything that's happening around you, try and let it go, let go of all your thoughts"'</p>
Visualisations	(Two women)	<p>'Blow waves over water'</p> <p>'Connecting to the baby... it wasn't just me giving birth... It was actually the two of us doing it together so I was... really trying to focus in on her</p>
Affirmations	(Four women)	<p>'We've done that push, that's over and done with and we don't have to do that push again'</p> <p>'When you feel like you can't do it anymore that's probably a really good sign'</p> <p>'They're separate contractions... 'that one was done, you've not got another one and you're one step closer to the... birth''</p> <p>'Breathing 'peace''</p>
	<p>Ignoring the pain (Two women)</p>	<p>'In my mind it didn't hurt'</p> <p>'Ignore the pain'</p>
Water	<p>Birthing pool/bath</p> <p>(Four women)</p>	

This resonates with studies indicating that women might benefit from antenatal education interventions which help them to choose and incorporate a wide range of coping strategies (Karlsdottir et al., 2014; Escott et al., 2009; Escott et al., 2004) because:

- Women use a variety of strategies in labour. Associations have been found between more strategies used and lower pain scores. Using combinations of strategies is most effective (Abushaikha, 2007; Beebe et al., 2007; Brown et al., 2001; Niven and Gijbers, 1996)
- Pain coping strategies used by women are related to factors such as their personal level of internal locus of control and their tendency to catastrophise (Veringa et al., 2011; Flink et al., 2009; Escott et al., 2004) and therefore antenatal preparation must respond to their individual needs
- Individuals have preferences for coping styles (Cunqueiro et al., 2009) and the ability to choose their preferred style improves pain tolerance (Rokke et al., 2004; Rokke and al'Absi, 1992).

Vicarious experience

Bandura (1977) stated that the second most influential method to enhance self-efficacy beliefs is through vicarious experience. This is particularly effective when the role model is a member of the peer group and someone who is seen to succeed by overcoming challenges. The hearing of birth stories was a recurring theme in the present study, resonating with Leap et al.'s (2010) finding that women remember birth stories they have heard in classes and use them as a frame of reference in labour.

*The stories... people just saying "I just did my breathing, had a bath..."
Then... when I was going through my own experience I thought 'Oh maybe
I could go in my bath for a bit'... Thinking 'what did those other people
do?'... That's what helped. (Wendy)*

Research on the impact on women's labours of having listened to birth stories during pregnancy is scant. Stories grounded in real life experience contain a vast amount of subtle knowledge which can have a powerful effect on behaviours and beliefs (Leap et al., 2010; Carolan, 2006; Worzer, 2006; Savage, 2001; McHugh, 2001; Farley & Widman, 2001). A qualitative study of pre and postnatal yoga identified the value women placed in the stories they heard as helping them to prepare for the birth of their own baby (Doran & Hornibrook, 2013).

Gauging the effects of story-telling on self-efficacy is complex, as effect is inextricably linked with the content and perspective of the story told (Thomson et al., 2017). Positive birth stories showing the courage and power of women and infused with a belief in normal birth inspire and boost confidence, whilst negative and threatening stories increase pessimism, catastrophising and reduce use of pain coping strategies (Bar-On et al., 2014; Fisher et al., 2006; Jackson et al., 2005). Taheri et al. (2014) found self-efficacy was strengthened when pregnant women heard stories of normal deliveries and Lothian (2010) found that most women planning a home birth had heard positive stories of natural birth from their mothers. Stories from close friends and sisters have been shown to be particularly useful in increasing self-efficacy (Carlsson et al. 2015; Fenwick et al., 2005; Weston, 2001). Ip et al. (2009) used films in their successful attempt to boost self-efficacy through antenatal education.

Women find stories to be a valuable way of learning and want to hear them in a way which gives them time to process them, enabling them to create their own meaning from the knowledge gained (Lathrop, 2013; Lothian & Grauer, 2012; Nolan, 2009; Savage, 2006; Davies, 2004). In the YfP classes examined in the current study, stories came from multiple sources and women were given time to discuss and reflect upon them. Opportunities for positive vicarious learning may be particularly important now that women tend to live further away from their families, work closer to the date of the birth and sensational stories are prevalent on the television and internet.

Verbal persuasion

Self-efficacy theory hypothesises that verbal persuasion is the third most effective way of increasing self-efficacy beliefs. Verbal persuasion has an enhancing effect when combined with mastery techniques (Bandura, 1977). It is most likely to succeed when the person persuading is someone regarded as influential and when it is used in conjunction with other methods of increasing self-efficacy. The impact of verbal persuasion is difficult to decouple from performance accomplishments and vicarious experience as it is easier to convince a mother that she can succeed if she is confident in her coping skills and has seen her peer group succeed before her. Women who believe that they cannot achieve the birth they want are likely to behave in a manner that reinforces this perception (Fisher et al., 2006; Lowe, 2000) and it is easier to weaken self-belief through negative persuasion than it is to increase it with positive encouragement (Bandura, 1986). The power of persuasion also depends on the power and belief of the persuader (Savage, 2001). It is notable that the YfP teachers

demonstrated a belief that birth could be a positive experience and that most women have the ability to birth their babies without medical intervention.

The women in the present study were aware of and valued the positive affirmations the YfP teachers used in every class and there was evidence that they were beneficial to them in labour.

You already know everything you need to give birth to your baby... you can trust in your body, trust in yourself to give birth (C1)

[The affirmation] kept going through my mind... 'We've done that push; that's over and done with and we don't have to do that push again; it's one step closer to meeting your baby'. (Chloe)

Pregnant women's self-efficacy can be strengthened through persuasion by childbirth educators and friends (Cunqueiro et al., 2009). Ip et al. (2009) included verbal persuasion as an element in their successful attempts to increase pregnant women's self-efficacy beliefs. Most yoga for pregnancy studies do not consider persuasion as an element in the study design; however, a small study by Reis and Alligood (2014) showed an increase in optimism after attendance at YfP classes. Although optimism has not been shown to affect women's ability to manage labour, pessimistic pre-birth perceptions of the ability to labour naturally have been shown to increase the risk of caesarean and predict intention to use epidural anaesthesia (Bar-On et al., 2014; Moyer et al., 2010).

Catastrophising has been found to be a potent predictor of labour pain (Veringa et al., 2011). Women who catastrophise anticipate more pain, fear more strongly that they will be overwhelmed by it, experience more pain and have longer labours (Whitburn, 2013; Flink et al., 2009; Van den Bussche et al., 2007; Wuitchik et al., 1990). Because of this, it has been suggested (Van der Gucht & Lewis, 2015; Whitburn et al., 2014; Escott et al. 2009) that antenatal education should include cognitive strategies which help women who catastrophise to understand that pain is a normal part of the physiological process, not an indicator that something is wrong or that they will be overwhelmed by it. The verbal persuasion in the YfP classes took many forms, for example linking coping strategies and breathing practice to positive words such as ‘*calm*’, ‘*comfortable*’ and ‘*easy*’ (table 9), and consistent positive statements about women’s ability to birth that could be adapted into individual aphorisms women used in labour:

A lot of what we talked about in yoga was the fact that childbirth... [is] very natural. It’s something that you can do and you were designed to do. (Terri, third interview)

Your body can... give birth; it’s what it’s designed to do. (Tessa)

Childbirth educators are often wary of using verbal persuasion in case they ‘set women up to fail’ (Campbell, 2014), but providing a choice of pain coping strategies alone does not benefit individuals who have low self-efficacy. The benefits of mastering a range of distraction and somatisation techniques are only realised in individuals who have a conviction that coping is possible. If an individual believes coping is not possible, the range of available strategies is immaterial and she is less likely to commence or continue with them (Rokke et al., 2004). The women in the present study appeared to

benefit from a combination of mastering techniques, vicarious experience and verbal persuasion.

Table 9: Positive words used alongside 'breath' or 'breathe' in the YfP classes

Positive words used alongside 'breath' or 'breathe'	Frequency
Ease/Easy	40
Centre/centred	40
Comfortable	41
Calm	39
Release/releasing	36
Soft/softly/soften	36
Nice	32
Baby	32
Slow	30
Deep/deeper	26
Focus/Focused	23
Gentle/Gently	19
Rhythm	16
Float/Flow	15
Relax/relaxed	15
Peace/peaceful	13
Supported	14
Joy/enjoy	11
Open/opens/opening	11
Power/powerful/empowered	10

Somatic response

The fourth source of self-efficacy is awareness of somatic arousal. Interventions to reduce somatic arousal are best combined with mastery techniques, vicarious experience and verbal persuasion (Bandura, 1982; 1977) as women who believe themselves able to cope with labour have a reduced stress response (Carlsson et al., 2015) and the use of pain coping strategies themselves reduces stress responses and increases feelings of control (Spiby et al., 2003; Slade et al., 1993). Huber et al. (2009) found that women hope to remain calm in labour and those who achieved a sense of calm felt more satisfied with their birth experience.

The YfP teachers in the present study put considerable effort into training the women to reduce anxiety responses through relaxation, breathing awareness and calming exercises. There were reminders to notice and be aware of the breath and body on average thirty times in each session. The women expressed a desire from the first interview to get themselves into the 'right frame of mind' for labour and during their postnatal interviews remarked how calm they had felt.

Let your awareness come back to your breathing... Notice how your body is feeling now, notice how you are breathing (C2)

I felt really, really calm. Actually it was amazing... I was completely at peace and I think being relaxed then allowed it to all progress really nicely. (Paula)

Pregnancy-related anxiety is a complex phenomenon (Bayrampour et al., 2016). Low efficacy expectancy is associated with anxiety (Schwartz et al., 2015; Salomonsson et

al., 2013b; Beebe et al., 2007; Sieber et al., 2006; Lowe, 2000). High levels of anxiety disrupt implementation of coping behaviours as the physical effects (raised heartbeat, breathing rate etc.) reinforce feelings of loss of control and helplessness, which in turn make women more likely to be negative and hyper-vigilant (Erwin, 2013; Fisher et al., 2006; Bandura, 1983). A woman's state of mind antenatally and during labour affects her pain experience, choices and birth outcomes (Koelewijn et al., 2017; Nieminen et al., 2017; Tilden et al., 2016; Whitburn et al., 2014; Alder et al., 2007; Beebe et al., 2007; Lowe, 1989; Dilks & Beal, 1997). An awareness of somatic response is therefore an important component in women's labour management as self-belief and an awareness of and ability to control somatic response are linked. It is notable that the two women who were most anxious at their second interview were least positive about their birth experience postnatally.

There is abundant evidence that anxiety has multiple negative effects on pregnancy and birth, but a relative paucity of evidence on non-yoga antenatal interventions to reduce it (Ryan, 2013). One Cochrane review (Marc, et al., 2011) showed that visualising a positive image may have a beneficial effect on labour anxiety.

The reduction in anxiety and stress suggested by the findings of the present study supports other research which shows YfP can benefit anxiety, including three systematic reviews (Sheffield & Woods-Giscombé, 2015; Jiang et al., 2015; Curtis et al., 2012). Two recent trials in Japan and the UK (Kusaka et al., 2016; Newnham et al., 2014) which were too late to be included in the systematic reviews, examined cortisol

levels in women attending YfP classes. Both showed a reduction in stress hormones after attending YfP.

Conclusion: how YfP might increase women's self-efficacy for labour

The present study aimed to explore how YfP might affect women's self-efficacy in order to generate a theory about which aspects, if any, are effective in enhancing self-efficacy for labour and birth. The women in the present study's descriptions of remaining calm, confident and in control through their labours were consistent and powerful, as were their stories of managing their labours without medical intervention. The women described benefitting from skills practice, positive stories and ethos, affirmations and learning to relax, elements which closely match the four efficacy-enhancing methods defined by Bandura (1977): performance accomplishments, vicarious experience, verbal persuasion and somatic awareness.

Previous antenatal interventions aimed at increasing women's self-efficacy have often focused on one or two methods of efficacy enhancement, for example mastery techniques, or somatic responses (Beddoe et al., 2009; Escott et al., 2005) without a recognition of the complex interplay between all four enhancement methods. Bandura (1997) stated that addressing the first three sources of self-efficacy in a multi-focused interventional programme produces the best effect and Carlsson et al. (2015) acknowledged the interplay between the four methods, concluding that interventions designed to increase women's self-efficacy should involve all four. After attending YfP classes in the present study, the women expressed a stronger preference for labouring naturally, which is a predictor for vaginal birth (Afshar et al., 2017; Wu et al., 2014).

The findings from the present study suggest that, by enabling greater mastery, the following elements in YfP classes enhanced the women's self-efficacy and the ability to make better use of coping strategies in labour:

- The inclusion of all four efficacy-enhancing strategies
- Multiple opportunities for practice and repetition
- Being taught a variety of pain management strategies.

Grounded theory

The propositional grounded theory arising from the present study is:

NCT YfP enhances women's self-efficacy for labour through a combination of Bandura's (1977) four efficacy-enhancing strategies. These include repeated practice of a variety of pain management strategies and the telling of positive stories, magnified by the effects of yoga to lower somatic response further. The increased confidence and competence enables women to remain calmer, mobilise their pain management skills and take greater control of their labour.

The next chapter discusses additional findings and recommendations for future research around the measurement of women's self-efficacy for labour and birth.

12. Additional findings and considerations for future research

This chapter discusses additional findings which emerged from the present study which contribute to the debates around firstly, the relationship of self-efficacy to other constructs and, secondly, self-efficacy measurement. Although not planned as an aim of the study, the measurement of women's self-efficacy became increasingly relevant as the study progressed. If there is to be further research into interventions which increase women's self-efficacy for birth, it is important to have as valid a tool for measuring self-efficacy as possible. Recommendations which emerged from the present study are described below.

The relationship of self-efficacy to other constructs

The relationship between self-efficacy and labour pain

Studies evaluating the relationship between pain, pain tolerance and self-efficacy have had mixed results. Over thirty years ago, Manning and Wright (1983) found a negative association between labour pain medication and self-efficacy but this association has only been replicated in two recent studies (Carlsson et al., 2015; Gau et al. 2011). Before 2011, most research found a lack of association between self-efficacy and pain tolerance (Berentson-Shaw et al., 2009; Beebe et al., 2007; Stockman & Altmaier 2001). In contrast with finding a relationship between self-efficacy and pain tolerance, Berentson-Shaw et al. (2009) found low self-efficacy beliefs predicted increased perceptions of pain and distress, suggesting that self-efficacy is an important factor in achieving positive birthing experiences.

In the present study, all the women said that their confidence for coping with labour pain had increased following YfP, and only one requested any pain relief in addition to Entonox in labour. The two women who described themselves as least confident in their second interviews described their labours as less positive overall, in line with the findings of Berentson-Shaw et al. (2009). The present study cautiously supports the findings from other studies of an association between self-efficacy beliefs, labour pain, pain tolerance and postnatal labour perception.

The relationship between self-efficacy and parity

Previous research has shown a complex relationship between parity and self-efficacy. Some researchers have found multiparous women have higher self-efficacy than first-time mothers (Schwartz et al., 2015; Gao et al., 2011; Tanglakmankhong et al., 2011; Sun et al., 2010; Lowe, 1993) while others have not (Khorsandi et al., 2008; Sinclair & O'Boyle, 1999). Two groups of researchers have suggested that good birth experiences have significant effects on self-efficacy but bad experiences are associated only with increased anxiety (Cunqueiro et al., 2009; Drummond & Rickwood 1997).

It is interesting to note that in contrast with other studies, all the multiparous women in the present study said that they were more nervous approaching this labour than their last, whether they had had a previous positive or negative experience.

Far more apprehensive than the first time round... she was an assisted delivery and forceps with ventouse so it wasn't a great delivery. (Grace)

I'm actually probably a little more nervous this time round than I was the first time... I had such a good birth that I am worried that that will not be the case again. (Inge)

It is impossible to know whether a quantitative scale would have shown the women to be more anxious than in their previous pregnancy or if this was just the women's perception.

The links between outcome expectancy and self-efficacy expectancy

Previous research has shown outcome expectancy to be strongly correlated with, but greater than, self-efficacy. Although the present study did not specifically investigate this issue, the findings add weight to previous research showing a correlation and that women believe more in the effectiveness of coping behaviours than in their ability to perform them (Gourounti et al., 2015; Carlsson et al., 2014; Salomonsson et al., 2013b; Gao et al., 2011; Khorsandi et al., 2008; Sinclair & O'Boyle 1999; Drummond & Rickwood 1997; Lowe, 1993).

The first interviews with the pregnant women resulted in strong themes '*Learning techniques for labour*' and '*Preparing for something I can't prepare for*', demonstrating the women's belief in the efficacy of coping techniques combined with a lack of confidence in the ability to use them effectively.

[I'd like to learn] some techniques to... help me... [Last time] in labour I held my breath, I was absolutely rubbish... I couldn't apply everything I'd been shown. (Rebecca first interview)

The strongest subtheme emerging from the second interviews was that women had more confidence in their ability to manage the sensations of labour as a result of having learned pain management techniques in the YfP classes. Although the theme '*Preparing for something I can't prepare for*' continued to be present, the women

clearly linked their confidence to manage labour pain with their ability to perform coping techniques.

I've got a little arsenal of tricks and things that I can try and pull together... So I feel confident. (Wendy second interview)

An implication of this is that the focus of antenatal education aiming to increase women's self-efficacy should be on enabling women to feel confident in their ability to use self-coping techniques successfully.

The measurement of self-efficacy for labour and birth

The CBSEI (Lowe, 1993) was created over twenty-five years ago in the USA from content analysis of interviews with 48 women. It has become the main scale used to measure women's self-efficacy and has four components: two scales each for first and second stage of labour to assess outcome and self-efficacy expectancies. Both outcome and efficacy component lists contain specific coping items such as '*Think positively*' and '*Stay on top of each contraction*'. Chapter four explored the CBSEI (Lowe, 1993) and summarised that although it has been shown to be a reliable and valid measure of self-efficacy, there is continuing debate about whether it should be updated, specifically in the following areas:

- Could the four scales be reduced to two?
- Does it contain all the strategies used by women to manage their labour?
- Should it include both internal and externally focused items?
- Does it describe strategies in the language used by women?
- Are there items which could be removed?

The data emerging from part 2 contributes to this debate and each of these questions is explored below.

Could the four CBSEI scales be reduced to two?

Some studies have found women's efficacy scores to be different between first and second stages of labour (Gourounti et al., 2015; Carlsson et al., 2014; Lowe, 1993). Others have found no significant differences, suggesting a short form CBSEI combining the first and second labour stage scales would be sufficient (Tanglakmankhong et al., 2011; Khorsandi et al., 2008; Ip et al., 2005; Drummond & Rickwood, 1997).

Although this was not an issue specifically investigated by the present study, none of the women distinguished first and second stage of labour when speaking about their confidence to manage labour, leading to cautious support for the proposal that a short form CBSEI would be sufficient to measure labour self-efficacy.

Does the CBSEI contain all the strategies used by women to manage their labour?

Researchers have questioned the validity of the CBSEI (Lowe, 1993), arguing that the items do not cover all the strategies used by women in labour (Carlsson et al., 2014; Khorsandi et al., 2008; Abushaikha, 2007). Beebe et al. (2007) created a table of techniques that were used by the women in their study (table 5) not all of which are covered by the CBSEI (table 10). Many of these techniques were also used by the women in the present study.

The CBSEI reports mainly on cognitive items such as '*Think about relaxing*' and '*Keep myself calm*'. Researchers have questioned this, suggesting that women use a combination of cognitive and behavioural strategies to manage the sensations of

labour (Karlsdottir et al., 2014; Larsen & Plog, 2012; Abushaikha, 2007; Beebe et al. 2007). Lawrence et al. (2013) found that women who remained upright and mobile in labour had both fewer epidurals and fewer caesarean sections, suggesting that although mobility is not included in the CBSEI, it is a useful pain coping strategy.

As all twelve women in the present study spoke of benefitting from adopting different positions and movements to manage pain in labour, the findings strongly support the addition of more items to the CBSEI; in particular those covering behavioural strategies. The women often described managing labour by combining cognitive and behavioural strategies:

I would stop... and sort of lean my hand on the lamppost or the tree in labour and just take deep, deep pants... then... I was in kind of all fours position with just very steady breathing in through the nose and out through the mouth. (Faye, third interview)

In addition to adding behavioural items, the findings from the present study support the addition of some new cognitive items to the CBSEI including vocalising, counting and visualisation. Some of these strategies could be considered to be covered by the CBSEI items such as *'Keep myself in control'* or *'Stay on top of each contraction'*, but when considering how to increase women's self-efficacy for labour through antenatal education, it would be useful to have a scale which clearly identified the coping strategies women use rather than one dealing in more general categories.

Table 10: Pain coping techniques not included in the CBSEI

Strategy used by women in the present study	Item in CBSEI?	Described by Beebe et al. (2007)
Positions - standing, all fours, leaning, kneeling, squatting	No	Yes
Movement – changing positions, swaying, figures of eight, rocking, walking	No	Yes
Using props –work surface, tree, lamppost, bed, door handle, sofa, bean bags, mat, pillows, birthing balls	No	Yes
Vocalising – humming, buzzing, moaning	No	Yes
Visualisation	No	Yes
Counting	No	Yes
Internalising	Partially	Yes

The addition of ‘spiritual’ items has been suggested by some researchers (Khorsandi et al., 2008; Abushaikha, 2007; Callister et al., 2003), but none of the women in the present study spoke of using religious ideas or spirituality to help with their labour. Although ethnicity data was not collected for the participants, this could reflect the fact that the study took place within a western, generally secular, culture. The findings of the present study might have been different had the YfP classes taken place in a culture where religion plays a major role.

Some researchers have expanded self-efficacy measurement to include items such as overcoming barriers (e.g. non-supportive partners) or accessing healthcare (Stockman

& Altmaier, 2001; Ford et al., 2001), but the present study found no evidence to support this.

Should the CBSEI include both internally and externally focused items? There is debate around the CBSEI's use of both internally and externally focused cognitive coping strategies. Some researchers (Cunqueiro et al., 2009; Drummond & Rickwood, 1997) recommend separating these, suggesting that women have a preference for using one or the other and so are likely to score low on the strategies for which they have no preference. However, Carlsson et al. (2014) found women used a combination of both internally and externally focused strategies and categorised these under three headings: self-control, distraction and affirmations. It can be difficult to classify a strategy as either internal or external. For example, using counting can be either internal or external depending on how a woman uses it. Counting can also be used as an affirmation: 'Count to 10 and this contraction will be over'.

Although this was not an area specifically explored in the present study, the findings from the women's third interviews support the recommendation of further research into the use of internally and externally focused strategies. Ten of the women spoke only of using either internally-focused or externally-focused strategies but two spoke of using a combination of both and affirmations, for example Chloe:

I spent the whole time with my eyes closed just in my own dream world.

... trace out the letters of the alphabet and things like that while you're breathing out.

[I used an] affirmation: 'We've done that push - that's over and done with and we don't have to do that push again'. (Chloe, third interview)

Does the CBSEI describe strategies in the same language used by women?

In their analysis of the CBSEI, Carlsson et al. (2014; 2012) recommend updating the way some items are phrased in order to reflect the way contemporary women speak about labour. Although the number of women in the present study is small, the findings add weight to Carlsson et al.'s (2014) proposal as many of the words they suggested were used by the women in the present study. In addition, it would be worth exploring through future research whether country-specific CBSEI items would be worthwhile as women in the UK may well describe their labours differently from those in America or Sweden. Three examples of where Carlsson et al. (2014) recommend a change and how they relate to the findings of the present study are:

- Changing the word '*contraction*' to '*pain*'.

The women in the present study used the word '*pain*' as frequently as '*contraction*'.

*Breathing in through the mouth and out through the mouth... just trying to remain calm really when I had a **contraction**. (Wendy)*

*I was able to ignore the **pain** for the first few hours and just carry on walking. (Cassie)*

- Changing the item '*Using breathing during contractions*' to '*Using breathing techniques during contractions*'

The women in the present study used both '*breathing*' and '*breathing techniques*' in their descriptions:

*I did a lot of **the breathing**. (Grace)*

*It's just the **breathing techniques**... that helped. (Cassie)*

- Changing the item '*Staying on top of contractions*' to '*Follow the rhythm of contractions*'

The women in the present study spoke of '*getting through*' or '*during*' contractions rather than '*Staying on top*' or '*following the rhythm*' of them.

*You hold your breath **to get through the contractions**, and actually it's more beneficial to keep breathing. (Susannah)*

*The other one that I definitely used from yoga was the figure of eight movements; I did quite a lot of that **during the contractions**. (Chloe)*

The women also spoke of '*internalising*' and '*staying inside my mind*' to manage their labour. Although the CBSEI has the items '*Keep myself in control*', '*Keep myself calm*' and '*Not think about the pain*', these do not exactly match this strategy as the women in the present study described it:

Stay inside... my own mind... internalise it. (Kirsten)

I literally spent the whole time with my eyes closed just in my own dream world. (Chloe)

Are there CBSEI items which could be removed?

Carlsson et al. (2014; 2012) suggest excluding three CBSEI items: '*Concentrate on an object in the room to distract myself*', '*Not think about the pain*' and '*Think about others in my family*'. Although the number of participants in the present study is small, none of them mentioned these strategies. It is possible that '*Not think about the pain*', could be a way of describing distraction/visualisation techniques such as '*Blowing waves over the water*' or counting, which were mentioned by the women. The results from the present study suggest that the CBSEI items '*Concentrate on an object in the*

room to distract myself and *'Think about others in my family'* might be able to be removed.

Conclusion: additional findings

The present study supports the findings from previous research which has suggested associations between self-efficacy, labour pain and medication use. It adds weight to calls for further research into how women's self-efficacy for labour is measured, in particular around the addition of behavioural items to the CBSEI (Lowe 1993).

The next chapter describes how grounded theory methods were used in practice to achieve the aim of exploring how YfP might affect changes in women's self-efficacy for labour and birth.

13. Using grounded theory in practice

This chapter aims to demonstrate how grounded theory methods were used in practice, enabling a plausible theory, grounded in the participants' experience, to 'explain what happened, predict what will happen and interpret what is happening' (Glaser, 1978:4). It is possible to use grounded theory methods without producing a grounded theory (Bryant, 2002). This can happen either when some of the method elements are used in isolation without consideration of the whole, or when the methods are prioritised over the voice of the participants (Thomas & James, 2006). This chapter will demonstrate how, in the present study, a grounded theory emerged while the teachers' and women's voices remained at the forefront and intact.

Data coding and analysis

Initial coding

Each transcript was anonymised and read through several times to enable familiarisation with the content. Inconsistencies and nonsensical phrases were checked against the audio tape. There were few changes made as a result, two examples being:

I was just upset that I had an epidural and everything because the endops couldn't cope. (woman speaking during T1's class)

Was changed to:

I was just upset that I had an epidural and everything because at the end I couldn't cope.

And

What I thought we might do now is a supported forward bunga. (extract from T2's class)

Changed to:

What I thought we might do now is a supported forward bend

Part 1: Each of the three two-hour interviews and class recordings produced approximately 40 pages of text.

Part 2: The forty-nine interviews with the women averaged 20 minutes long, producing approximately seven pages of text each (minimum, three; maximum, nine).

In total, approximately 500 pages of text were coded line-by-line using the qualitative data software NVivo. Figure 16 shows an example of early coding of T3's interview where she is describing her class.

When coding, the aim was, wherever possible, to use gerunds and in vivo coding to capture actions, stay as close to the data as possible and allow the participants' voices to be heard (Charmaz, 2006; Mills et al., 2006b; Glaser, 1978). An example of this from the teacher interviews was the initial code '*Learning, just in a different way*', a direct quote from T1 which over time became saturated, was relabelled and developed into the part 1 category, then subtheme '*Learning in a different way*'.

Charmaz (2006:48) says that '*speed and spontaneity help in initial coding*' and, in order to avoid over-thinking and making judgements at this data fracturing stage, the Grounded Theory Institute advice (2008) to code '*for anything and everything*' proved useful. Incidents were allocated to a number of different possible codes which could be revisited at a later stage of analysis. Examples of where phrases from T2's and T3's interviews were allocated to multiple possible codes are shown in Figures 15 and 16.

Figure 15: Coding example (T2)

Initial first codes shown in shaded boxes

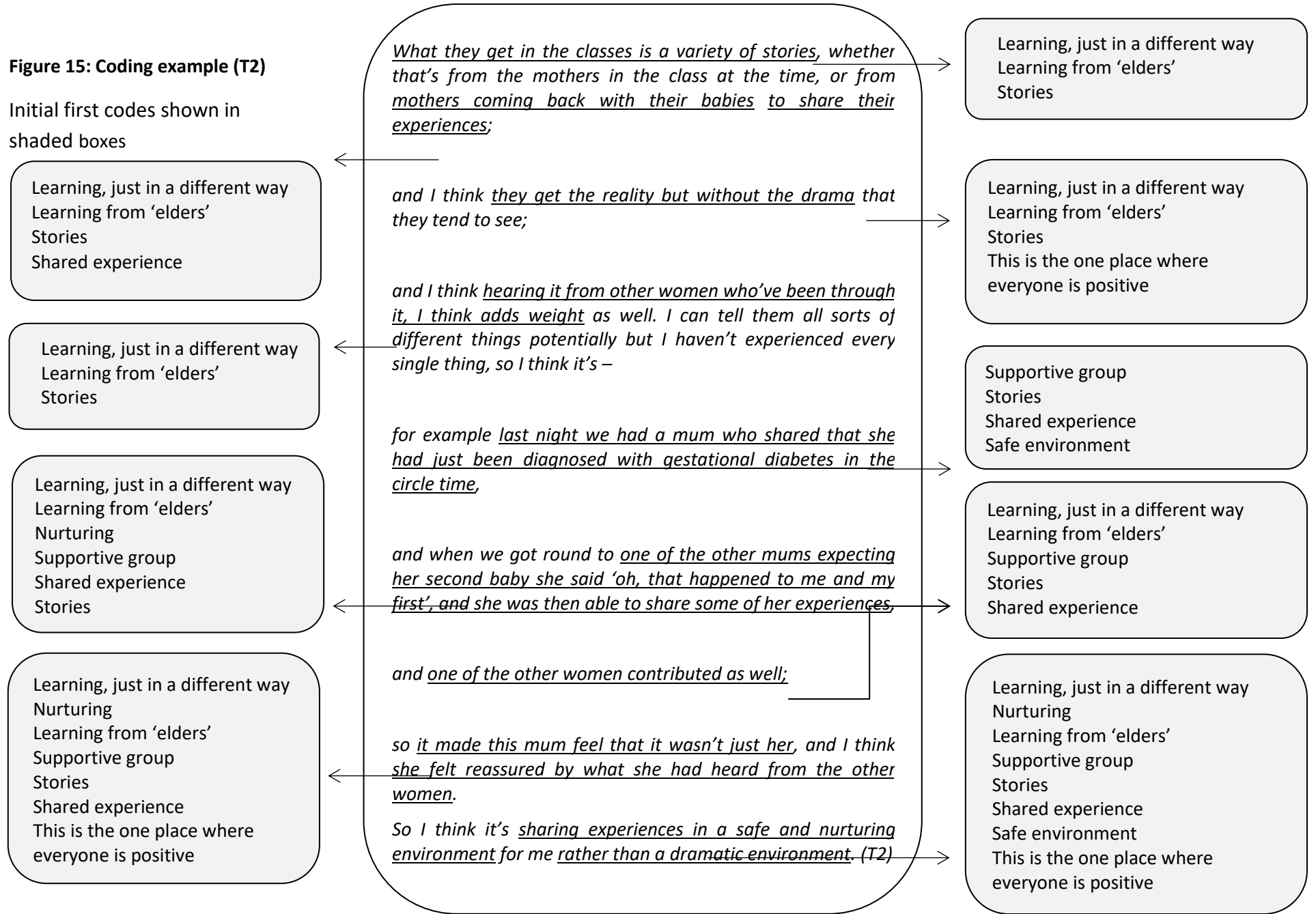


Figure 16: Early NVivo coding (T3 talking about her class)

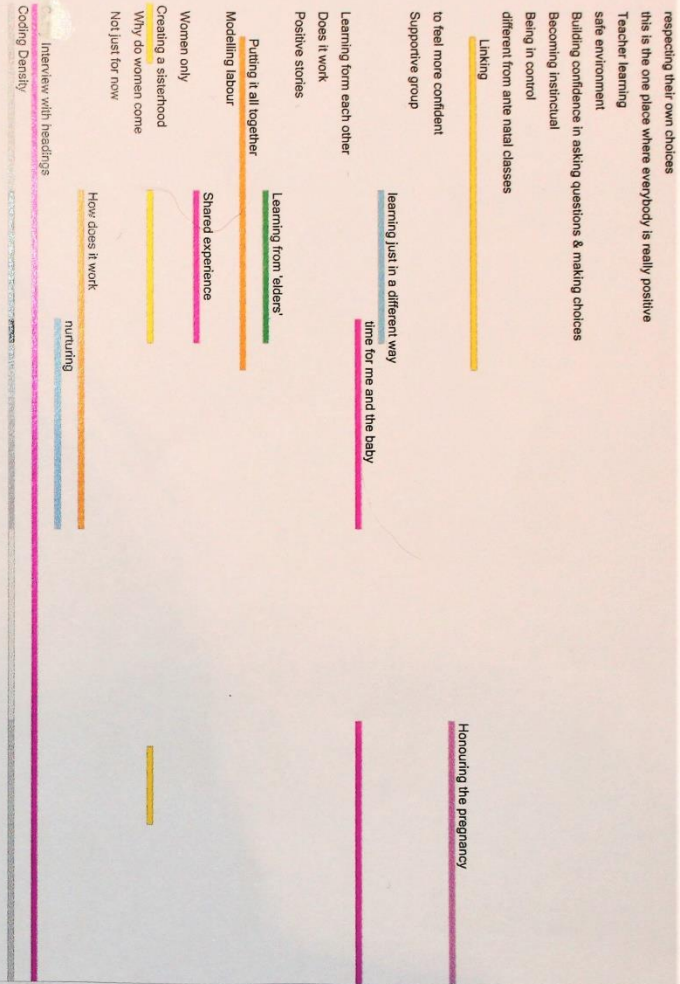
them to be too far away from each other because I actually want them to share – I want that bonding thing. We always do an opening round which usually has an idea that then tries to link in with the stretches and the poses and the breathing that we do throughout the session and the relaxation at the end so it has that sort of cohesion so whether the idea is space which this one is or last week we did birthing your baby so everything was around second stage and breathing for second stage and pushing and positions and opening and strengthening the pelvic area and so I try to do it so it has a link for them so they have got something to hook it on to but it also is an opportunity for them to introduce themselves and share knowledge and experiences which is something they always say they love it they feedback, they really like the circle time at the beginning because it gives them an opportunity to say a little bit if that's all they want to say or to share quite a lot, or to ask a question of me or of each other. I used to just do it with everybody saying and not speaking but it's involved into more of a dialogue between them and between me and them and that for me is about getting them into the space, settling them down, getting them into the head space of we're going to be talking about the pregnancy and the birth and sort of getting rid of the day that they've had and starting the yoga before we actually then do our quiet time at the beginning so it's about setting the scene and making them comfortable.

Interviewer IN1

It's interesting isn't it, that settling down word? Again, how important is it, what difference does it make circle time?

IN1

For me, I've never done it any other way so I don't have any comparison with it. At my own yoga class we have a settling time but it's an individual settling time so it's your own, whatever you want to do. But for me it's about – it comes back to that thing about giving them the space to be pregnant and to be with other pregnant women – for me it's about making them a group and it's about coming in and connecting with each other and leaving behind their day at work or their journey to get there or for those who've got smaller children who are waiting for their husbands to come home so that they can come to yoga and they often arrive late and in a flap, it's about saying 'okay, all of that can go now, because what we are going to talk about today is this' and it brings them into the head space and the emotional space of what we are now going to do. So does that answer your question?



Constant comparative analysis

During constant comparative analysis, the similarities and differences between data segments were explored, new codes formed and others relabelled. Although codes were often gerunds, other code types emerged and remained for ease of use. For example, the number of times words like 'calm' and 'relax' were said by the teachers both in the interviews and during the classes 'grabbed' the researcher and became the code '*Centred, calm, relaxed & focused*'. In addition, practical codes which answered specific questions also proved helpful. For example, in part 2 there were codes for 'Parity' and 'Number of weeks at first interview'. Seventy-two active codes emerged from part 1 (table 11). The table also shows the number of sources and references for all the codes which were active after analysis of the teacher interviews and class recordings. Memos created during coding and analysis also were stored in NVivo, resulting in the number of sources sometimes being greater than the sum of teacher interviews and classes.

Table 11: Part 1 active codes after completing the teacher interviews

	Code name	Sources	References	Date
1	Three most important	3	3	10/08/2013
2	Becoming instinctual	5	20	21/07/2013
3	Being healthy & sleep	5	11	22/06/2013
4	Helping with physical ailments	3	14	19/10/2013
5	Sleep	2	3	19/10/2013
6	Being in control	6	18	22/06/2013
7	Breathing	8	85	16/06/2013
8	Breathing with awareness	1	1	15/12/2013
9	Building confidence in asking questions & making choices	5	28	16/06/2013
10	Building confidence that it works	6	27	16/06/2013
11	Centred, calm, relaxed & focused	9	50	22/06/2013
12	Comfortable	8	78	23/06/2013
13	Creating a sisterhood	7	35	27/07/2013
14	Different from antenatal classes	3	20	21/06/2013
15	Different from other YfP classes	3	4	28/07/2013
16	Different from their medical experience	1	2	26/10/2013
17	Does it work	5	12	16/06/2013
18	Doing it not talking about it	3	9	19/10/2013
19	Expectation & outcome	3	12	06/06/2013
20	Fab quotes	5	12	26/10/2013
21	Help prepare for labour and birth	9	53	06/06/2013
22	Honouring the pregnancy	3	7	20/10/2013
23	How does it work	8	91	16/06/2013
24	How powerful what we are saying can be	6	10	21/06/2013
25	In a rhythm with your own breath	6	25	23/06/2013
26	Language embodying philosophy	5	16	21/07/2013
27	Layered learning	6	27	06/06/2013
28	Learning from each other	4	8	20/10/2013
29	Learning from 'elders'	4	25	16/06/2013
30	Learning information	5	10	22/06/2013
31	Learning just in a different way	9	60	06/06/2013
32	Learning techniques for labour	8	29	22/06/2013
33	Learning to become a mother	3	6	27/07/2013
34	Linking	5	29	21/07/2013
35	Linking body & breath	9	85	17/06/2013
36	Linking mind, body & breath	1	1	15/12/2013
37	Listening to their body	9	139	16/06/2013
38	Love from the teacher	1	2	10/11/2013
39	Lovely, beautiful	9	64	16/06/2013
40	Modelling labour	11	60	16/06/2013
41	Multips	2	4	26/10/2013
42	My individual story	3	4	22/06/2013
43	Not just for now	6	48	21/07/2013
44	Nurturing	7	84	27/07/2013

	Code name	Sources	References	Date
45	Positions	5	17	16/06/2013
46	Practice contractions	5	16	28/06/2013
47	Putting it all together	6	28	27/07/2013
48	Reawakening innate knowledge	7	27	16/06/2013
49	Relaxation	4	10	12/07/2013
50	Repetition	8	47	06/06/2013
51	Respecting their choices	9	133	06/06/2013
52	Safe environment	7	18	16/06/2013
53	Shared experience	3	19	19/10/2013
54	Supportive group	5	27	16/06/2013
55	Teacher aims	3	5	19/10/2013
56	Teacher learning	3	13	17/06/2013
57	The belief that birth is possible, that it can be beautiful	6	36	06/06/2013
58	The stillness is really important	7	24	17/06/2013
59	The teacher as mother	5	24	17/06/2013
60	This is the one place where everyone is positive	5	8	22/06/2013
61	Positive imagery	7	104	19/10/2013
62	Positive stories	5	19	19/10/2013
63	Positive thoughts	3	7	19/10/2013
64	Time for me and the baby	8	58	22/06/2013
65	to accept how they feel NOW	3	7	06/06/2013
66	To feel more confident	6	47	06/06/2013
67	Visualising labour	8	17	21/06/2013
68	Why do women come	2	12	19/10/2013
69	Why women don't come	2	2	20/10/2013
70	Wise woman	2	3	26/10/2013
71	Women only	5	19	16/06/2013
72	Women protecting women	1	2	26/10/2013

Concurrent data generation and analysis

Through each stage of analysis, constant comparison of data, codes and categories was used to enable the emergence of relationships between codes, concepts and propositional theories. Birks and Mills (2011) describe the cyclical, rather than linear, relation between data generation, initial and intermediate coding and analysis when progressing through grounded theory studies, and Birks (2008) describes how it is possible to 'drown' in the data. In order, firstly, to increase the possibility of answering the research question in a way which would be useful in implementing changes to

antenatal educators' practice, and, secondly, to avoid becoming overwhelmed, the researcher continued to identify and focus on elements of the data which might have relevance to, and be helpful in, answering the research question. The conceptual framework of self-efficacy was used as a guide and parameter throughout (chapter four).

The constructivist approach required emerging theories to be written in the participants' words as far as possible. This ensured that they were transparently grounded in the data, with an avoidance of over-abstraction (Mills et al., 2006b; Thomas & James, 2006; Bryant, 2002). For example, 'learning' was a concept that appeared frequently, and a number of related in vivo codes emerged as this was explored in more depth. These included '*Layered learning*', '*Learning from each other*', '*Learning from 'elders''*', '*Learning information*', '*Learning just in a different way*', '*Learning techniques for labour*' and '*Learning to become a mother*'. Some of these were discarded as analysis progressed, while others became the final themes and subthemes:

- Enhancing learning
- Learning from each other
- Practising techniques for labour
- Learning in a different way.

As new codes emerged, earlier transcripts were revisited to ensure all data was used during analysis. Reflective memos written after each interview were used to aid the ongoing development of the interview question guides.

Theoretical sampling and sensitivity

Theoretical sampling is the process of collecting data as theories evolve, rather than with predetermined parameters (Draucker et al., 2007; Strauss, 1987). Glaser (1978:46) suggests following up recurrent patterns in participant data and *'being led in all directions which seem relevant'*. An example of how theoretical sampling contributed to the results of the present study was the exploration of the indicator of positivity. The positive nature of the YfP classes had been obvious throughout all the class observations and so was explored with each of the teachers. They described how important they felt a positive class ethos was in overcoming the women's negative perceptions of birth and experience of hearing 'horror stories'. The concept of positivity evolved and ideas were refined as interviews progressed. This resulted in new codes being created in addition to the very early *'lovely, beautiful'* code, which was an in vivo code arising from the very first interview in the study:

I always try to use [words like] 'lovely, beautiful'... so nothing is frightening, nothing scary, nothing about birth is alarming. (T1)

An example of a code which emerged as positivity was explored further included *'This is the one place where everyone is positive'* (in vivo code from T3's interview). As the study progressed with a continued focus on the research question of 'how' YfP might affect women's self-efficacy, codes like *'Positive imagery'*, *'Positive stories'* and *'Positive thought'* emerged.

Linked to positivity, hearing and telling stories became a concept which was explored in depth. As a result of part 1 analysis, the women's second and third interview

question guides were modified to gain specific information. For example, the question below was added to the second interview guide:

- How do you feel about the stories told in the class?

As additional data emerged, it was added to existing codes to ensure theoretical sufficiency at each stage. The resulting similarities and differences in what the teachers and women said about the effect of both positivity and stories on self-efficacy were discussed in the interview summaries in part 2. How these relate to self-efficacy theory and a grounded theory on how they potentially contribute to enabling women's self-efficacy for birth through vicarious experience and verbal persuasion are discussed in chapter eleven.

The complex design of part 2 of the study created some challenges, as ten of the women who participated in the study had first, but not second or third, interviews. Consistent with the fundamental grounded theory concepts of concurrent data collection, analysis and theoretical sampling, their data was included even though it was limited only to the first interviews.

Intermediate coding

Another challenge of the complex study design was the dilemma created by the similarities and differences in data between both parts 1 and 2 and each of the three time points in part 2. When initially coding the first part 2 interviews, it seemed that many of the emergent themes would be the same as part 1, for example '*Building confidence*' and '*Learning techniques for labour*'. However, as interviews with the pregnant women progressed, different themes and subtle differences from part 1

began to emerge. It became apparent that separate codes for each stage would give a truer picture of the women's stories at each stage. As a consequence, while some codes, for example those around *'Breathing'* and *'Learning techniques for labour'* emerged easily (albeit with a different focus) at every stage, there were many which were exclusive to part 1 only, or to each interview stage. As a result, the codes within each part and stage were separated within NVivo to allow for distinct analysis and later comparison. Elements which were potentially important but not broad or strong enough to be classified as themes were termed 'threads'.

Field notes and memos were used to aid focus and theoretical sensitivity (Holton, 2007). Regular memo writing provided an audit trail of the data analysis process (Hall et al., 2012). Analytic memos from this stage (figures 17, 18, 19) show how the researcher moved from the position of reporting the study results as one set of themes covering parts 1 and 2 together, to reporting them as a sequence showing the similarities and differences between the teachers and the women at the three separate time points. Bryant and Charmaz (2007) describe this active process of continuing to ask questions throughout grounded theory studies, resulting in blind alleys before data is reorganised and recoded in order for a theory to emerge.

Figure 17: Analytic memo September 2014

After analysing three women's first interviews:

Lots of nodes overlap with part 1 (teacher interviews):

- *Learning from each other*
- *Shared experience*
- *Supportive group*
- *It's always nice to talk to others*
- *Making friends and social support*
- *Postnatal support*
- *Not just for now*

Figure 18: Analytic memo October 2014

After analysing four women's first and two women's second interviews:

Coding – lots of overlap where it works to combine with part 1:

- *'Control' and 'To be in Control'*
- *'Learning from each other' and 'Shared experience' - were separate in part 1 but might be joined in part 2*
- *'Hearing stories' and 'Stories'*
- *'Social support' and 'Socialising'*
- *'Learning techniques', 'Linking Mind Body & Breath', 'Modelling Labour', 'Breathing', 'Help prepare for Labour', 'Preparing Myself for Labour' - this also links to 'Being in Control for the women'*

But: worried that there will be too complex a mixture of codes from mixing part 1 and 2. Is it the right decision not to start again from scratch with part 2 codes? There are codes which were separate in part 1 that become more joined in part 2 e.g. 'Building Confidence that it works' with 'To Feel More Confident' and 'The Belief That Birth is Possible' and 'To Manage Without Pain Relief'

Figure 19: Analytic memo December 2014

After analysing eight women's first, two women's second, and three women's third interviews:

Need to look at the codes in a different way. There are more new codes than I expected from the women's interviews because of their different focus e.g.:

- *In part 1, 'Positions' was about what the teachers thought and how they taught them*
- *In part 2, 1st interviews, 'Positions' was about what the women might learn*
- *In part 2, 2nd interviews, it was what they had learned and thought might help them*
- *3rd interviews, it's about what actually did help.*

Still unsure how to do it - a whole new analysis? It relates so closely... Or maybe reinforce what part 1 said and then do differences? Show a similarity but change in emphasis?

Intermediate codes were created from the more significant or frequent initial codes (Charmaz, 2006). Whilst acknowledging her interpretation of the data was in itself a construction (Strauss & Corbin, 1994), the researcher aimed to gain multiple views of each concept and create categories which represented the data through both induction and abduction. When analysing the data, the number of individuals expressing an idea was usually taken as a better indicator of thematic importance than the number of times a reference appeared in a code. This is because one individual could express an idea many times, increasing the frequency of coding. For the same reason, once a code was saturated with a very frequent reference, for example 'Breathing', the researcher no longer coded it (Guest et al., 2006). Bias was avoided as far as possible by frequent revisiting of transcripts as potential new codes and

relationships emerged. This ensured constructs were deleted when not supported by the data.

An example of more abstract intermediate code creation was the complex picture which emerged during the women's first interviews. During these interviews, the women spoke about wanting to learn pain management and calming techniques to enable them to have as easy a labour as possible and remain in control, whilst often simultaneously expressing that they did not know what to expect and did not feel it was possible to be in control of their labour. This duality of thought which the women were expressing contributed to the emergence of the subthemes '*Hoping for a natural or easier labour*', '*Preparing for something I can't prepare for*' and '*Being calm and in control*'.

The next section contains fuller transcript extracts from 11 of the women's first interviews where they described why they had chosen to attend YfP classes. The extracts demonstrate the complex and multifaceted nature of the women's thoughts and the rich data which emerged at every stage. Words and phrases which were synthesised and quoted in the part 2 first interview analysis (chapter eight) are underlined.

These longer transcripts show how the themes were expressed and intertwined for the women. Whilst these extracts contributed towards the emergence of the themes '*Hoping for a natural or easier labour*', '*Being calm and in control*' and '*Preparing for something I can't prepare for*', the focus and strength of expression was slightly different for each woman. For example, Adali had not thought much about her labour

experience, only sharing her belief that it could not be planned. In contrast, Chloe and Wendy spoke in depth about how their hopes for a natural labour were tempered by the acknowledgement that they might need intervention, as the stories they had heard had led them to believe natural birth was unlikely if not impossible.

I quite like the breathing side of it... I know that yoga can focus on the mental exercises... You can't really plan a lot anyway, you never know if there will be complications and they have to...
(Adali)

To keep me a little bit more relaxed in the labour. Whether that will work or not I don't know... I want to maybe try the yoga and the breathing to maybe give me an advantage to have a natural birth... I want to have a natural birth, I know everybody says it and it never works, so if I have to have anything I will, but I want to be as natural as possible... I just thought the breathing techniques and everything to do with the yoga would hopefully calm me down... We didn't use to have all the drugs, they can't be great for the baby so it's better to do it without if I can.

Obviously your body and the baby takes over at the end of the day and whatever is best for the baby has to be done so I'm not going to say no to any of the drugs if it needs to be and I need to have them, not so much the pain. That's what I'm hoping to use all of this breathing... for; but yes... if it's best for the baby. I'm not saying nobody has a natural birth but I'm realistic at the end of the day, all the people I have known lately it hasn't gone the way they wanted and they have had to have a caesarean or extra things. (Chloe)

Some of the breathing, positions and things I think might be quite useful... Tips and bits that might actually come in handy when you're coming to the day... Having heard various horror stories and then other ones which have gone quite well... I'm pretty much just hoping to go with the flow of it and not making any specific plans. Just going through hopefully naturally, and then get a baby at the end of it.

However, whatever means they deem best for baby, and I'm just happy to go with the flow. Everyone tells you horror stories, and then I think only one person said 'Oh yes I went into labour naturally and went home the following day'; and that's the one I would probably prefer... So then you obviously get the people who have emergency C-sections like my sister did, and her little boy ended up in SCBU for a little while, so I think you can't really plan it too much you just have to go with the flow... So I would just rather have everything sort of – like breathing techniques and things that help and if you can get through with them then 'game on', and if not, just go with what the doctors and nurses tell me to do.

One of my friends most recently had a baby at work... and she ended up having to have a C-section because the baby was breech and she had various health issues, but she really wanted a natural birth. So I've just kind of gone along the lines: well if I can have a natural birth that's great, and if not well it wasn't meant to be... It's awkward isn't it because you really don't know what's going to happen until you are there. But in my head I would like to think I'm fairly focused getting to goals that I have in life, so if I want to be able to get through it then you do because you need to, but it's an awkward question isn't it because you just don't know until the day – I really don't know.

I just kind of think if I can do some classes and learn what I can from that... then hopefully I will just be alright and one of the lucky ones that can do the natural birth and not one of the ones that goes wrong: one of these horror stories that you hear. But I think it will just be whatever happens on the day in the end, because your body just has a different kind of agenda to what you might have in your head... Just treat it like a race and you just have to get to the end... I just – I don't know... every day I just kind of like 'what will be will be', because I know quite often you probably hear people that might – I don't know – water births – I'm just hoping to go in and come out with a healthy baby and be in one piece at the end of it. (Wendy)

Lisa, Tessa and Josie also spoke of wanting a natural labour while expressing uncertainty about whether that was a realistic hope. For these women, while they accepted intervention might be necessary, they wanted to use the techniques they learned in YfP to help them remain calm, positive and in control whatever happened.

To try and get myself in the right frame of mind, and try and be as relaxed as possible and in control during labour; because I would like to not rely too heavily on pain relief; whether that will be realistic or not I don't know. So I thought that this could be a good way to prepare myself; different sort of breathing techniques and things... I know what I can be like, and I do get a bit panicked, especially when things don't seem in your control, which from what I've heard from friends and reading things obviously, labour can very much be like that. So, I'd like to try and have some techniques or positions that I can use, that might calm me and put me back into a better sort of calm state rather than a panic, so I'll breathe...

The midwife just sort of said that it can be really helpful for getting you into different positions and to manage the pain during the early stages of labour, and obviously help with breathing techniques and yes, just things like that just really, keeping you nice and calm and relaxed and occupied. I think that was the big thing... to kind of take your mind off the pain. It's a kind of 'if you are doing these techniques and you are getting into these positions and doing these exercises it kind of keeps your mind focused on that rather than on the fact that it really hurts' [laughs]...

I think I'm okay, I'm trying to keep quite an open mind and everybody says just try and approach it in as calm a manner as you possibly can, to the point where I haven't really bothered to put anything down on a birth plan as such, because I think these then set your mind on one way, and it's like a disappointment if it doesn't go that way... So, I try and keep quite open about things. (Lisa)

Help with the labour and the relaxation part of it and the breathing... I would like, ideally I would like to not have any intervention or not have any drugs, so that if this yoga, by sort of maintaining a discipline throughout pregnancy, and it's a discipline that's both for the body and for the mind, that I'm hoping that will – I'll be able to take that into childbirth, so that when – even though I don't know exactly what's going to happen or how I will react during the birth, that it's going to give me some tools that at least I can mentally take a step back from the situation and continue on a path that I want to be on, which is to not go to drugs or for further intervention like an epidural or things like that so...

I know it's a physical thing but also pain is in your mind what you allow it to be as well, so it's taking control over it so you know obviously it's going to hurt, but if I can be mentally – not mentally ready, but perhaps have a few sort of skills that I'll pick up during the yoga can try to sort of take myself out of the situation rather than solely focusing on 'it hurts, it's painful', that I can use my mind to try, and yes, in a sense zone out, and I know it says with the breathing and things like that...providing me with some ways in which to cope!

My hope for the birth is... fundamentally obviously that we end up with a healthy baby at the end of it... I understand that my wishes would always be secondary... Ultimately just making sure that baby comes out fine. But in an ideal world my hopes for the birth of how a good birth will go is that I'll stay in control, that there won't be any intervention that I won't need to have any drugs just gas and air and it's all as natural and calm as possible... I want to try and do it obviously without the pain relief as much as I can ... it's more the relaxation and the breathing side of things that I'm really kind of looking at, you know the relaxation and the breathing through the pain rather than the actual pain itself. (Tessa)

Doing something that's more specific about the breathing and relaxation... I'm aiming to have as natural a birth as possible. It's always been my goal even before getting pregnant. It's always been something I've wanted to do as naturally as possible, so anything that I can do that's going to help me relax and get into the right frame of mind to be able to do that I think is only going to be beneficial... I'm actually really looking forward to the procedure of being able to say at the end of it that I have managed it

Well they say labour is the great unknown as much as I am sure we all go into it hoping that we are going to have as relaxed and as enjoyable procedure as possible there are obviously things that can go wrong or things that can take much longer than we would like them to and that sort of thing that actually being able to stay on top and not get worked up about the situation and just try and sort of go with the flow I think is a much more positive – it should develop a much more positive outcome. (Josie)

Ann had planned a caesarean birth, but wanted to learn coping techniques in case the unexpected happened and she went into labour before the date it was arranged.

There is a chance I could go into labour before I have my caesarean perhaps, so I will certainly be listening just in case; and I haven't spoken to my consultant about that, so I don't know what happens, whether I would still have a caesarean or maybe it depends on how I am at the time, I don't know. (Ann)

Cassie also was unsure of her ability to manage the sensations of labour. Her quote became an in vivo code and later theme '*Preparing for something I can't prepare for*'; as she acknowledged that she was not the expert and could not be in control.

I'm not a hippy or anything like that, but I think it's just helpful to have as many tools as you can; and if within an hour it goes out of the window, then never mind, at least I tried. But I think it's useful to have things like strategies for coping... I mean it's my first pregnancy, so obviously, I'm a little bit nervous about labour, and I guess the best thing to do is when you are going into the unknown is prepare yourself. So, I am just trying to try as many different techniques as possible, and just try and be as prepared as I can be for something that I can't prepare for...

I am trying to be quite philosophical about it, and just sort of think that it's going to happen, it's out of part of my control and just be as open minded as possible. So yes, I'm not going to go in there with a planned caesarean or planning to take epidural, but if those things have to happen in order to have a baby, then I am open to everything. So I am just trying to be as open minded as possible I guess... You don't know what you are going into. I think – oh I don't know what I think! [laughs]. I've done lots of thinking about it but I just keep coming to the conclusion that it's an unknown and I can only prepare – I'm doing everything I can to prepare, but at the end of the day I'm not an expert in it but I'll be surrounded by experts, you know: midwives who are experts to deliver babies. So I'll be at the helm of their care and if they need to do something I'll do whatever they say. (Cassie)

Rebecca and Rachel wanted to labour naturally, to learn techniques to help them have a different experience from their last birth. In contrast, Terri was hoping for the same experience as previously.

I try not to think about it too much. I'd like to try and do it as naturally as possible, but I had an epidural with my son and I have no problem with doing that again... I'd rather not have any intervention really. (Charlotte)

The idea of yoga in terms of learning some techniques to... help me, and I did NCT classes before and they do teach you the breathing thing, but you kind of do it for 10 minutes as part of the class, whereas I think this will be better doing it once a week and you're getting practice. In labour I held my breath, I was absolutely rubbish. I don't know why I couldn't apply everything I'd been shown or what I was told to do, but I think doing something weekly it will mean hopefully, it will stick, and it will be something I can then take forward, but just overall to help with that whole anxiety around pregnancy and then with the labour as well. (Rebecca)

I just thought, I think I very much take it as it comes and if I needed pain relief and if I need it next time round obviously because it could be completely different and I'm fully prepared that that's what I'll have to do ... I'm trying not to be too confident about it just because the first one went what I can see now I consider that it went well, I don't want to think well this one will be just the same because I'm well aware that it could be completely different so I am just trying to approach it the same way as I did the last one which is just take it as it comes and just try and stay really calm... try and sort of have the same mentality but just be completely open to whatever needs to be done and accept that it might go very differently and as I say I'm confident but trying not to be over confident. (Terri)

Use of computer software

A combination of both manual and computer assisted methods was used during data analysis. Once familiarity with NVivo was established, it proved helpful for extracting code segments for analysis and confirming code relationships, but the researcher found manual methods more useful for the higher-level abductive thinking. Welsh (2002) describes this as *'The software is the loom that facilitates the knitting together of the tapestry, but the loom cannot determine the final picture on the tapestry'*. NVivo was also useful for ensuring that nothing was excluded in error. For example, a manual check of all node tables such as table 11 ensured data for all codes had been included in the analysis. Similarly, electronically-produced code relationships such as figure 23 were compared against those produced manually (figures 20, 21, 22). As codes became categories, they were electronically combined to create composite higher-level codes which could be analysed as separate entities. Trustworthiness and rigour were ensured by this combination of manual scrutiny and systematic software analysis of the codes and their inter-relationships (Welsh 2002).

Modelling diagrams became more structured as categories became clear (figures 20 - 22)

Figure 20: Part 1 early manual analysis

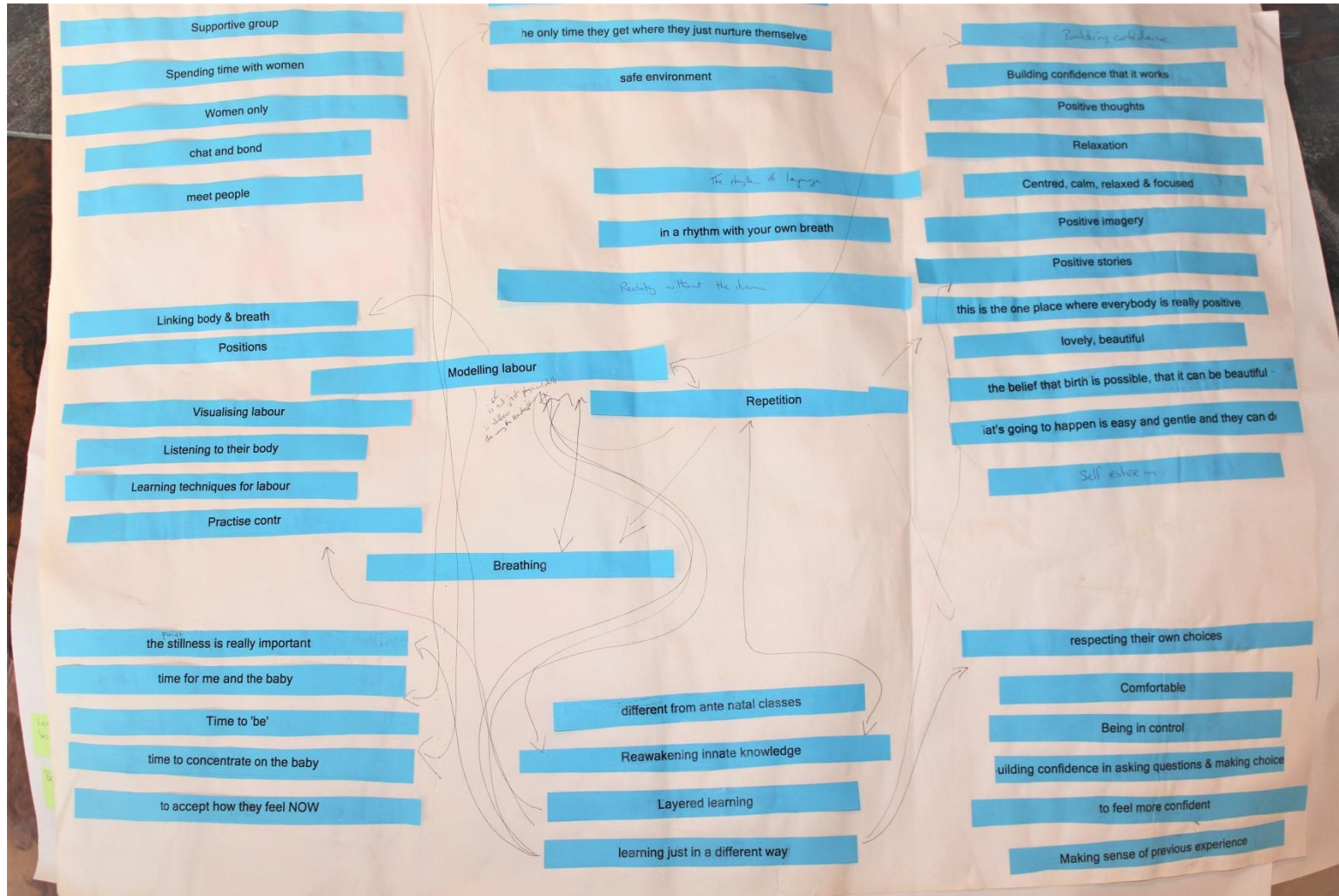


Figure 21: Part 1 mid-stage manual analysis

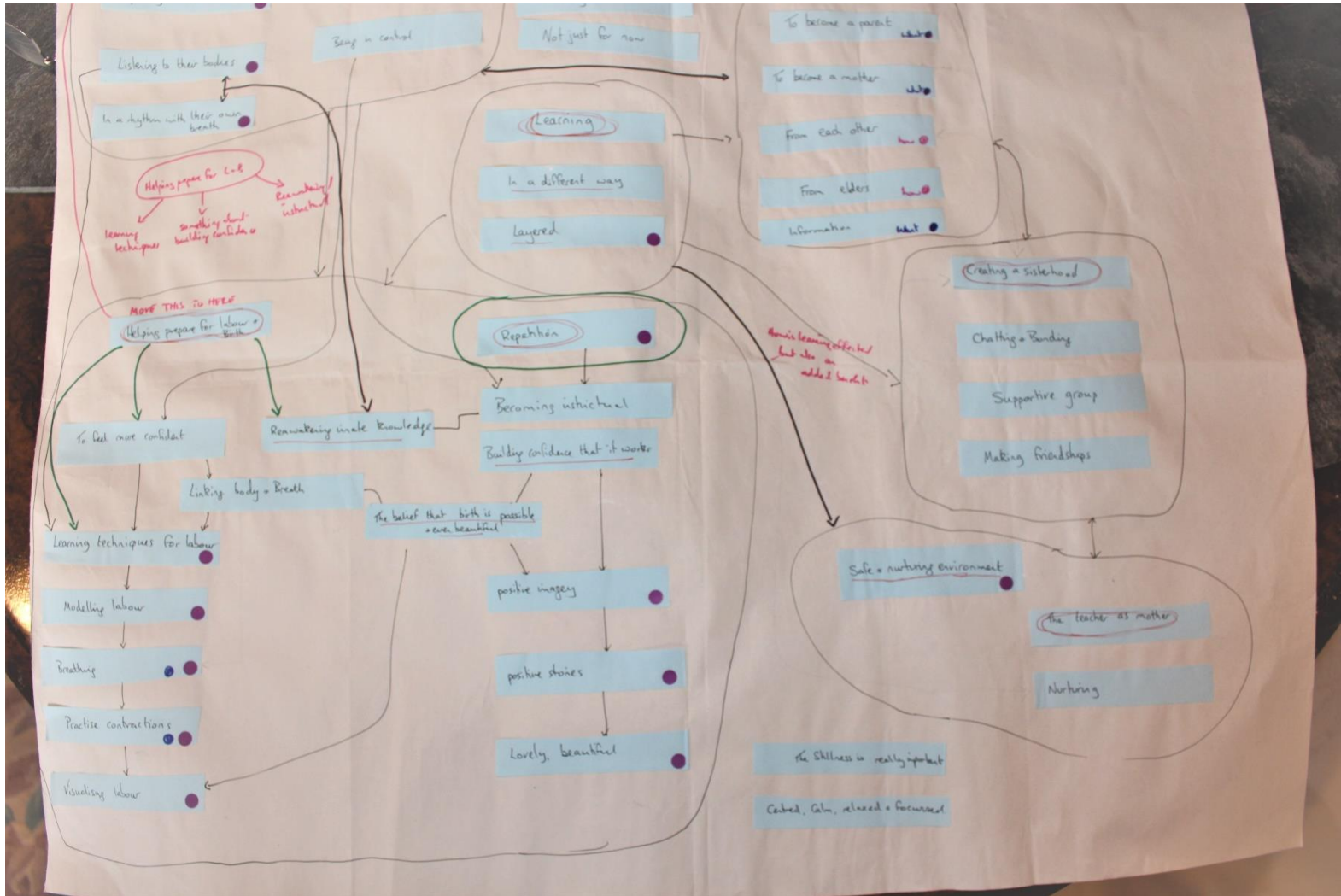


Figure 22: Part 1 late stage manual analysis

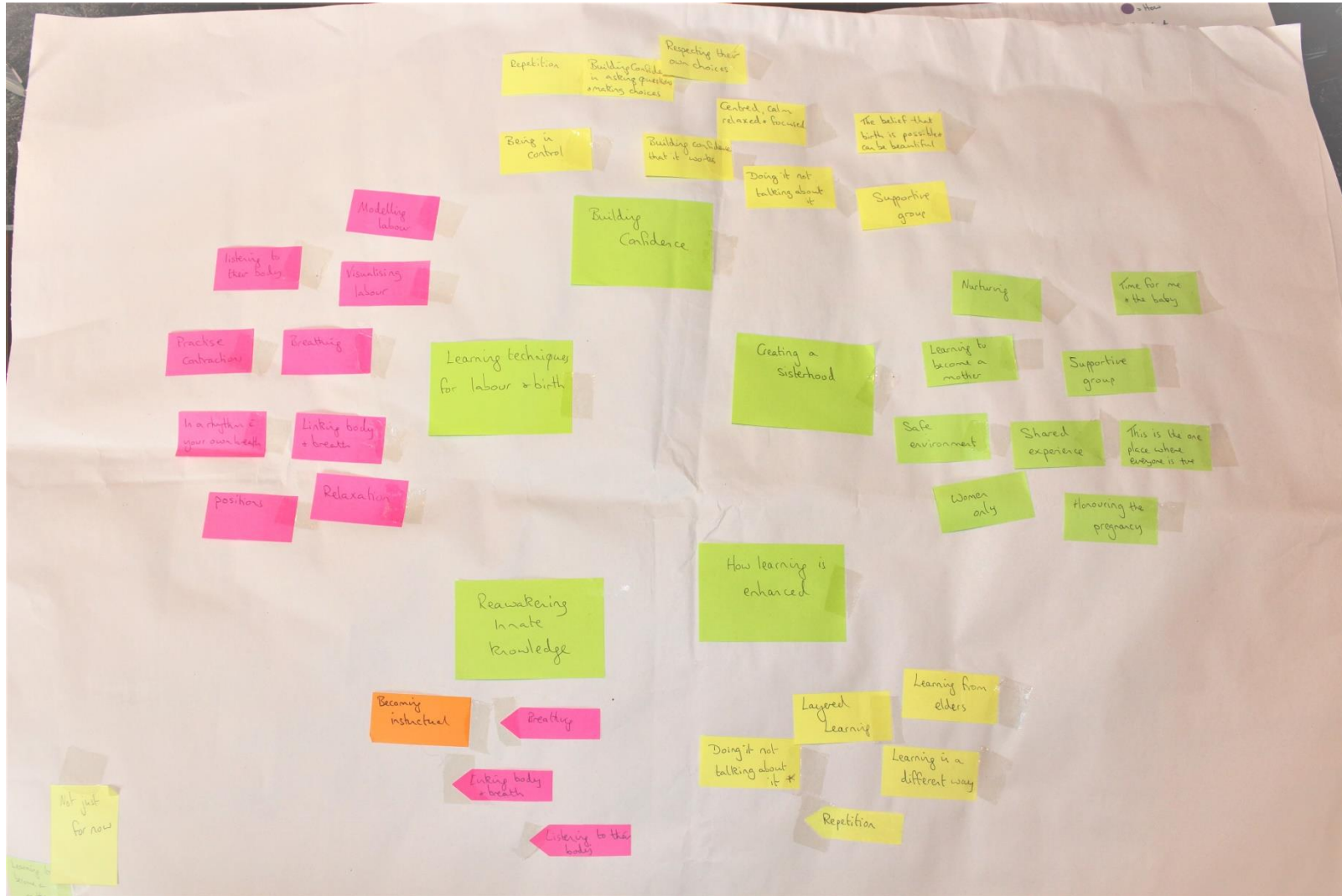
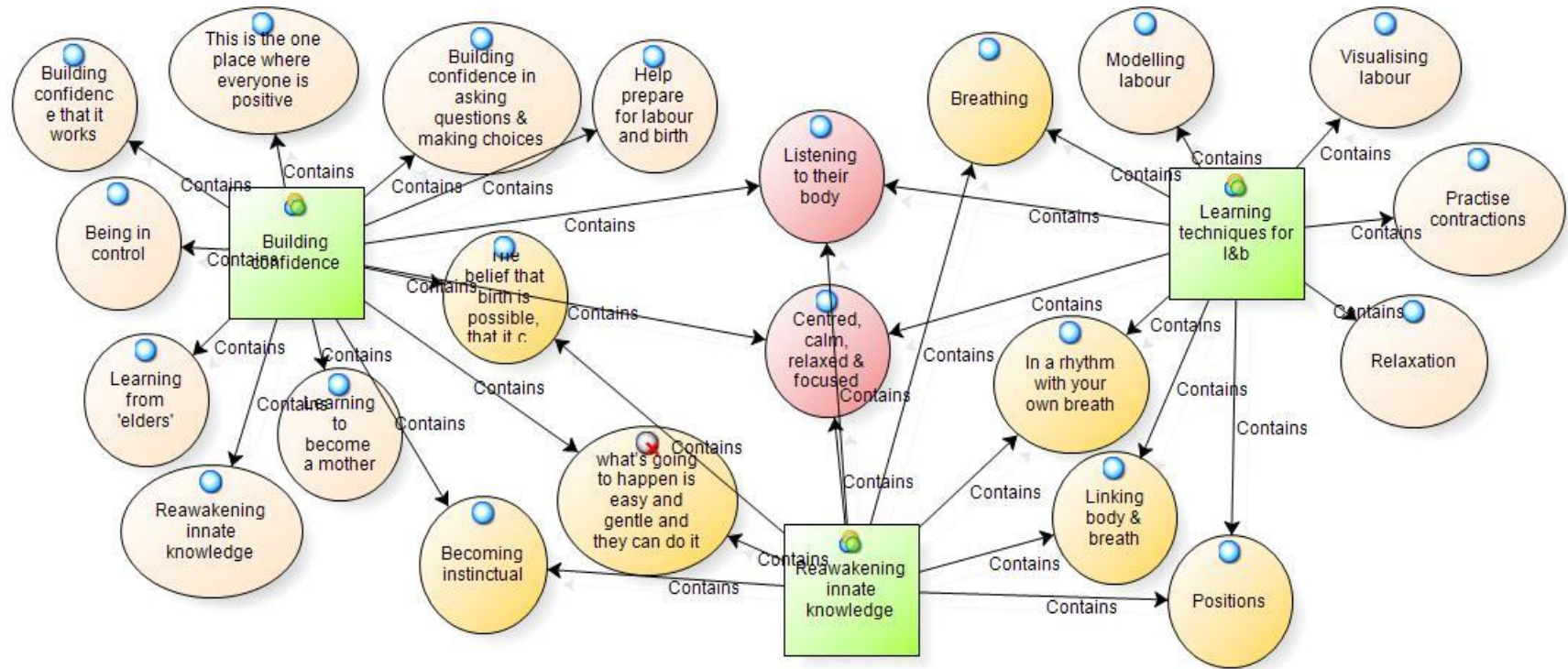


Figure 23: Part 1 NVivo analysis



Theoretical models showing possible relationships between codes, as described by Glaser (1978), were discussed with the DoS at every stage. This critical appraisal was useful in developing and refining categories and, as the study progressed, overarching themes.

Theoretical saturation/sufficiency

Theoretical saturation was originally defined as being reached when no new insights are gained from further data (Glaser & Strauss, 1967). However, the meaning of saturation within qualitative research has become diffuse and there is debate around whether it can ever be reached, as new insights could always arise either through reanalysis of data or extra participants (Nelson, 2017; Guest et al., 2006). By definition, within grounded theory, theoretical sampling and sensitivity lead to a narrowing of theoretical options and limiting of the unpredictability of new theoretical developments (Calman, 2006; Thomas & James, 2006). In the present study the concept of theoretical sufficiency (Dey, 1999) was used. This is defined as enough raw data to enable the researcher to build a sufficient depth of understanding and allow the emergence of a theory.

Part 1: Data sufficiency was reached relatively quickly with the YfP class observations as all of the classes followed a very similar format. Each class started with an introduction and recent birth news from class members. This was followed by Circle Time, where women were invited to share their names and offer thoughts on the week's theme. The class then progressed through:

- breathing awareness (5-15 minutes)
- gentle yoga postures incorporating practising techniques for managing labour and practice contractions(50-60 minutes)
- longer relaxation (10-15 minutes)
- refreshments and either free chat, a facilitated discussion or a visit from a mother who had recently had a baby. (20-30 minutes)

Very few new codes emerged from analysis of the second class, and none from the third class. Reading of the three further class transcripts showed continuing similar content and language being used implying nothing new would emerge except for more examples within the same codes. Classes four, five and six were therefore not coded or analysed in detail. Kuzel (1992) describes how sample sizes may be smaller where data items are homogenous.

Part 2: Although the women were a less homogenous sample than either the teachers or classes, they still had a lot of common factors: they were pregnant and attending self-funded YfP classes. The women were often generally in agreement and no new codes emerged when coding the last few interviews at any stage. This fits with Guest et al.'s (2006) analysis where they found 97% of codes were identified after twelve interviews. Analysing the data separately between part 1 and each of the three time point stages in part 2 enabled thematic variability within the datasets to be identified.

How effective was it to use a self-efficacy framework?

Using a self-efficacy framework in the present study was helpful in two ways. Firstly, grounded theorists describe the possibility of using frameworks in order to avoid becoming flooded by the data (Kelle, 2007b; Glaser, 1978). In the present study, the use of a general self-efficacy lens enabled interviews and constant comparative analysis to remain clearly focused towards the study aim.

A more theoretical and in-depth use of the framework was applied when analysing the themes which emerged from parts 1 and 2. The integration of both educational and psychological theories within the research methodology aided the emergence of a grounded theory which could be applied to practice (chapter eleven).

14. Reflexivity

There is no right or wrong way to be reflexive within research (Day, 2012; King & Horrocks, 2010), but how reflexivity is incorporated into practice has implications for results, quality and validity. Glaser (1992) stated that researchers must retain open minds in their study areas, but there has been much debate about whether this can, or should be done in reality. Authors argue that it is never possible for individuals truly to locate themselves within a study, or for knowledge to be objective and value-free (Birks & Mills, 2011; Thomas & James, 2006; Cutcliffe, 2003). The researcher was previously a YfP tutor with NCT. She co-wrote the NCT YfP training programme for the University of Worcester, and trained over 200 YfP teachers as well as teaching over 2,000 women at YfP classes between 1992 and 2013.

This chapter considers the approach taken to reflexivity within the present study, firstly through the lens of legitimate knowledge, and secondly, through the role of power, identity and positionality (Day, 2012).

Legitimate knowledge

A constructivist approach recognises that it is possible to create many equally valid versions of 'the truth' (Charmaz, 2006). All qualitative research is subjective and interpretative, some biases are inevitable and not necessarily indicative of problems with data analysis (Denzin & Lincoln, 2011; Hill et al., 2005). However, to mitigate the potential for bias in data collection and analysis, post-positivistic authors have devised reflexive methods to increase validity and reliability (Burns et al., 2012; Dwyer & Buckle, 2009; Brannick & Coghlan, 2007). Researchers must be accountable as well as

acknowledging and being sensitive to the way in which their prior assumptions and role influence all aspects of their research. By accepting existing beliefs as only one possible view amongst many, avoiding premature conceptualisation and continually revising themes according to the significant concepts emerging from the data, it is possible to generate theoretically sensitive results and avoid forcing a 'fit', resulting in what Glaser terms 'non-grounded' theories (Day, 2012; Birks & Mills, 2011; Brannick & Coghlan, 2007; Charmaz, 2006; Seale, 1999; Glaser, 1998).

In the present study, transparency was achieved by acknowledging pre-existing beliefs, expectations and assumptions. In order to sensitise herself to personal biases, the researcher 'interviewed herself' at the start of the study and wrote reflective memos throughout the constant comparative analysis (Speziale et al., 2011; Elliott & Lazenbatt, 2005). Memos were checked and, if concepts were not supported by the data, excluded from emerging themes. An example of this is that in the researcher 'self-interview', the women-only element of the YfP classes was a strong theme. While this was supported by the teacher interviews, it was not supported by the interviews with pregnant women and therefore was not carried forward into the overall analysis.

Hill et al. (2005) describe Consensual Qualitative Research which recognises the need for at least one auditor to check the work of the primary analyst. Throughout the data analysis, potential biases were discussed with the DoS. The DoS also reviewed the interview scripts to ensure they reflected emerging themes. Final themes from the YfP teacher interviews were sent to the teachers for validation. There were no suggested amendments and the teachers responded positively:

*[It] resonates strongly with my feelings and experiences of the YfP classes.
It certainly feels accurate. (T3)*

Due to the complexity and progressive nature of part 2, participant validation was not possible for the women's interviews, but first drafts of emerging themes containing all supporting quotes were discussed with the DoS to demonstrate that conceptual interpretations were driven by what the women said rather than imposed by the researcher.

Power, identity and positionality

Power

Power dynamics are a complex and ever-present dilemma in qualitative research (Anyan, 2013). Reflexivity can help researchers understand and make power differentials transparent, but there is debate around how far using reflexive strategies can reduce them (Day, 2012; Pillow, 2003; Shacklock & Smyth, 2002). Feminist literature (Maynard & Purvis, 1994; Reinharz & Davidman, 1992) discusses whether researcher disclosure during interviews can reduce power imbalances, but suggests that asymmetry can never be eradicated. Hoffmann (2007) recommends researchers pay attention to emotion during interviews, interpreting emotional shifts as a change in the power relationship.

In practice, an unanticipated event in the present study was that breaking down the hierarchies between the teachers and researcher proved more challenging than the relationship between the researcher and women. On reflection this may have been

due to the fact that more time had been spent on creating a safe experience for the women, whereas the effect on the teachers had received less consideration.

Identity

When researching sensitive topics, researchers may be emotionally affected, producing discomfort, anxieties and questions about where to place their loyalties (Day, 2012; Dickson-Swift et al., 2009). Recent scholarship challenges the concept of a single identity, emphasising the multidimensionality and mobility of researcher identity and how researchers may shift between multiple and sometimes conflicting roles when managing their own and the participants' emotions (Burns et al., 2012; Brekhus, 2008; Brannick & Coghlan, 2007).

In the present study, there were many occasions when the researcher found herself reflecting-in-action on her role (Schon, 1987), for example when participants described emotional experiences such as previous miscarriage, traumatic birth, or feelings of fear and powerlessness. To manage this, the researcher relied on her previous supervision and reflective practice training. It was also useful to return to the ethical values of the study (see chapter six), balancing the sometimes conflicting desire to empathise with and support the women against the need to not affect their experience within the study. On two occasions, the researcher contacted the DoS for a reflective dialog to discuss actions and decisions.

Positionality

Hermeneutic researchers have debated the moral and ethical dilemmas arising from 'insider' research, concluding that, whilst it is not inherently problematical, there are

challenges ensuring credibility, transferability and legitimacy (Day, 2012; Dwyer & Buckle, 2009; Brannick & Coghlan, 2007).

There are many advantages to being an insider. The insider researcher has easier access, knows how the organisation works and the language/dress used. She can draw on her own experience when asking questions and follow them up more easily. She often has shared values with participants, enabling her to achieve a trusting relationship more quickly. As she shares a frame of reference, she can focus on issues relevant to the participants without asking for clarification. All of these things make her a less obtrusive presence, able to gain richer data (Day, 2012; Brannick & Coghlan, 2007). Floyd and Arthur (2010) discuss how their insider status meant they felt more responsibility towards their participants, taking extra steps to protect them and ensure their anonymity, which they might not have done if they had no personal relationship.

Disadvantages are that insider researchers may seek out participants who support their own views or who are most 'like them'. They may not attain the distance and objectivity necessary for valid research as they have an emotional investment in the results or become too close to the participants. Participants may not feel able to discuss things with which they feel the researcher disagrees (Dwyer & Buckle, 2009). The researcher's familiarity with the data may mean she assumes results, not exploring experiences fully, or probing for deeper and alternative meanings. Her motivation to change practice may mean she does not report findings which are disappointing. One example to support evidence that this did not happen in the present study is around the theme of friendships, which are an important aspect of NCT courses. Although

both the researcher and teachers felt this was a strong theme and the women expressed a desire to make friends in their first interviews, in practice these hopes were not realised and this was reported accurately in the conclusions.

As with identity, the duality of the concept of researchers being either an insider or outsider has been challenged as restrictive and too simplistic (Mercer, 2007; Shope, 2006; Murray, 2003). Dwyer & Buckle (2009) stress the complexity of real-life experience and suggest instead a fluid and multi-layered status where researchers occupy the 'space between', which they represent as the hyphen between insider-outsider. In their study of reflexivity within midwifery, Burns et al. (2012) also discuss remaining in the middle ground, negotiating respectful relationships with colleagues whilst also keeping enough distance to remain analytical.

In the present study, the researcher was an insider by virtue of being a mother, YfP teacher and tutor. She was an outsider with the women as she was not 'their' teacher and an outsider with the YfP teachers as she was a senior tutor. During the PhD, the researcher withdrew firstly from teaching YfP, then from training YfP teachers and was promoted to a senior management position within NCT. The changing hierarchy and ability to influence organisational policy created its own insider-outsider and power imbalance challenges which demanded sensitivity (Floyd & Arthur, 2010; Brannick & Coghlan, 2007; Mercer, 2007). In particular, thought was given to the effect on the professional relationships between the researcher and the YfP teachers. Aiming to explore how the relationships affected the class and what the teachers said, a reflective question was added to the teacher interviews about how the teacher felt

about being observed and whether anything about the class changed as a result of it being videoed. The teachers responded in different ways. For example T2 said she felt comfortable with the videoing because she was familiar with the researcher, whereas T3 was more anxious.

I didn't feel self-conscious at all, which was interesting because I thought it would be... To begin with you feel a bit aware, but then once I got into my flow... I wonder if it would have been different if it hadn't been somebody I knew so well... or if it had been somebody who wasn't as familiar with what this is all about. (T2)

I don't even think it was about judgement actually... it was just not wanting... you to think 'God that was rubbish!' [laughs]... I just thought more about what I was doing... it wasn't different from what I would normally do... but... it probably changed how I explained things... I was aware of explaining it clearly because I knew I was being filmed... In the same way that... in a week were I've got a lot of new people... I teach with more awareness than I would maybe on a normal week. (T3)

This chapter outlined the reflexive approach which was taken in the present study. It discussed examples of dilemmas which occurred in practice and decisions which were taken in order to ensure bias and power imbalances were mitigated as far as possible.

The next chapter concludes this thesis by drawing together the findings and analysis which enabled the emergence of the grounded theory.

15. Conclusion

This thesis began by outlining the reasons why reducing birth interventions has become an urgent healthcare priority: normal births cost less, are preferred by women and have physiological and psychological benefits for them and their families (Adams et al., 2015; Care Quality Commission, 2015; Kassebaum et al., 2014; Tamagawa & Weaver, 2012; Anim-Somuah et al., 2011). Yet there is inconsistent evidence on how antenatal education can best enable women to have the normal birth which they both want and has advantages for them and their family (Tilden et al., 2016; McMillan et al., 2009; Gagnon & Sandall, 2007). The present study was designed to fill some gaps in understanding of YfP, an area which is attracting interest as a possible antenatal intervention through which women's self-efficacy for birth may be increased.

This chapter summarises and integrates the findings from the present study, showing how they contribute to, and expand on, current knowledge. It evaluates the study quality and discusses the strengths and limitations. Finally, it suggests implications for practice and makes recommendations for future research.

Does the study achieve the aim?

The aim of the present study was to explore how YfP delivered by NCT trained teachers might affect changes in women's self-efficacy for labour and birth. The objectives were to:

- Identify aspects of teachers' language and actions in YfP classes which may impact on women's self-efficacy behaviour

- Explore women's experience of attending NCT YfP classes to generate a theory about which aspects, if any, are effective in enhancing self-efficacy for labour and birth.

The aim and objectives were achieved through grounded theory analysis of YfP class observations, interviews with YfP teachers, and interviews with twenty-two different women at three time points. The propositional grounded theory which emerged from the rich data is:

NCT YfP enhances women's self-efficacy for labour and birth through a combination of Bandura's (1977) four efficacy-enhancing strategies. These include repeated practice of a variety of pain management strategies and the telling of positive stories, magnified by the effects of yoga to lower somatic response further. The increased confidence and competence enables women to remain calmer, mobilise their pain management skills and take greater control of their labour.

Summary of findings

Findings emerged which contribute to current knowledge in two areas, firstly around how NCT YfP might increase women's self-efficacy for labour and birth, and secondly, findings around the measurement of women's self-efficacy for labour.

How NCT YfP might increase women's self-efficacy for labour and birth
NCT YfP teachers create safe, nurturing, women-only spaces where there is a positive ethos around women's ability to manage labour and give birth. They build women's confidence through a combination of teaching pain management strategies, storytelling and calming exercises. Women come to yoga with slightly different aims from

the teachers'. Although the women hope for a natural labour and want to learn techniques to facilitate this, the stories they have previously heard lead them to believe it is impossible to prepare fully for birth. Therefore, they want to learn strategies which will help them remain calm and in control whatever happens in their labour. After attending NCT YfP classes, women attribute a stronger desire for, and confidence in their ability to have, a natural labour to having practised a variety of pain coping skills in classes. Postnatally, the women who attended YfP spoke powerfully and consistently about how they had used the skills they had learned in YfP to enhance their birth experiences. In line with the teachers' aims and class planning, the aspects of NCT YfP classes that the women said had proved most beneficial were learning and practising pain management strategies, acquiring skills for remaining calm, confident and in control, and hearing positive stories.

The present study demonstrated that NCT YfP classes contain all the elements described by Lowe's (1991c) theory on self-efficacy enhancing interventions for labour and birth (table 7). Performance accomplishment, which Bandura (1977) described as the most effective mechanism to increase self-efficacy, was also described as the most effective method by the women. The present study suggests that:

- YfP, and potentially other antenatal interventions designed to increase women's self-efficacy, should include multiple occasions when women can master a variety of cognitive and behavioural pain coping strategies (Karlsdottir et al., 2014; Salomonsson et al., 2013b; Cunqueiro et al., 2009; Escott et al., 2009; Beebe et al., 2007)

- Vicarious experiences in the form of hearing positive birth stories are an important contributing factor in increasing women's self-efficacy for labour. Consideration should be given to including them as part of antenatal education (Carlsson et al., 2015; Bar-On et al., 2014; Taheri et al., 2014; Doran & Hornibrook, 2013; Leap et al., 2010; Lothian, 2010)
- Verbal encouragement can be of benefit in antenatal education when it is given alongside realistic accounts of labour pain, positive birth stories and the teaching of a variety of coping strategies (Fisher et al., 2006; Lowe, 2000)
- YfP increases awareness of somatic response and therefore is a mechanism by which to increase self-efficacy, when combined with mastery techniques, vicarious experiences and verbal persuasion (Satyapriya et al., 2013a; Chuntharapat et al., 2008).

The measurement of women's self-efficacy for labour and birth

An additional contribution to existing knowledge emerged from the present study in relation to how the women managed their contractions in comparison with how self-efficacy for labour and birth is usually measured. The present study adds weight to suggestions by other authors that the Childbirth Self-Efficacy Inventory (CBSEI) (Lowe, 1993) would benefit from being reviewed and updated, particularly in relation to:

- the addition of more behavioural items such as using movement, positions and props as many women use these in labour (Karlsdottir et al., 2014; Larsen & Plog, 2012; Abushaikha, 2007; Beebe et al. 2007)

- The addition of cognitive items to include specific strategies such as internalising, vocalising, visualisations and counting (Carlsson et al., 2014; Beebe et al., 2007)
- The removal of some items such as '*Concentrate on an object in the room to distract myself*' and '*Think about others in my family*' (Carlsson et al., 2014; 2012)
- Updating the way some items are phrased to reflect the way contemporary women speak about labour (Carlsson et al., 2014; 2012).

Assessing the quality of the study

Debate continues around how best to evaluate the quality of qualitative research in general and grounded theory in particular (Dey, 2007; Elliott & Lazenbatt, 2005). Many evaluation checklists have been created for general qualitative research, each with differing focuses and items (Tong et al., 2007; Walshe & Downe, 2006; Devers, 1999).

Birks and Mills (2011:149) compiled a table showing the progression of evaluation concepts within grounded theory from Glaser's and Strauss's original (1967) criteria of fit, understandable, general and control; through to Charmaz's (2006) criteria of credibility, originality, resonance and usefulness. As the present study has followed a constructivist grounded theory approach, the subsections below describe how the present study satisfies each of Charmaz's (2006) four main criteria. Appendix four shows where each of the criteria is demonstrated within this thesis. In addition, as part of the publication process for the part 1 findings in the Australian midwives' journal '*Women and Birth*' (Campbell & Nolan, 2015; appendix seven), the Consolidated

Criteria for Reporting Qualitative Research checklist (COREQ, n.d.) was completed and has been updated to include part 2 of the study (appendix five) in preparation for further journal submissions.

Credibility

Quotes from the YfP class transcripts, teacher's and women's interviews in chapters seven to ten and chapter thirteen demonstrate the richness of the data and intimate familiarity with the topic. The class observations and interviews took place over thirty months, between April 2013 and September 2015, during which time the researcher spoke to many of the participants on multiple occasions. The themes which emerged from data gathered from interviews and class observations in parts 1 and 2 were then analysed within the lens of self-efficacy theory. Assumptions and emerging concepts were continually tested by repeated revisiting of the data and memo analysis. Discordant voices are explicitly acknowledged throughout. Data sufficiency was achieved with no new themes emerging by the final interviews at any stage. Chapter thirteen describes this in more detail, alongside examples showing the links and evidence of progression between the data and emergent themes.

Originality and contribution to current knowledge

The grounded theory which emerged from the synthesis of the parts 1 and 2 findings contributes to the existing literature in the under-researched area of increasing self-efficacy through antenatal education, specifically YfP. There is no other literature that:

- Develops a grounded theory by synthesising teachers' educational aims, class curriculum and women's perceptions of a YfP intervention

- Compares women's thoughts and shows the development of their birthing self-efficacy at three time points: antenatally before and after experiencing a YfP intervention, and after they have birthed their babies
- Demonstrates that it is feasible to combine grounded theory with a psychological self-efficacy for labour theory framework and how the two theories can be integrated and applied within research practice.

The study offers many new insights around how women feel about their birthing capabilities and how these change as women approach their labour after attending NCT YfP classes. It demonstrates the effectiveness of the YfP curriculum by showing the congruence between what the YfP teachers aimed to achieve, how they planned classes to achieve those aims, and what the women said helped most in labour. The emergent grounded theory challenges and extends current ideas by proposing that antenatal education practice changes to include all four of Bandura's (1977) efficacy enhancing methods.

Additional contributions to current knowledge were findings relating to the measurement of women's self-efficacy (chapter twelve).

Resonance

Charmaz's (2006) criteria for resonance within a grounded theory study are that:

- The categories portray the fullness of the experience
- Links are drawn between individuals and larger collectivities

- The theory makes sense and offers deeper insights to the participants or people who share their circumstances.

The categories in the present study emerged through a combination of inductive and abductive reasoning (chapter thirteen) allowing emergent themes which combined, encompassed and showed subtle differences between the women's and teachers' perspectives. For example, while both the women and teachers aimed for normal birth experiences where possible, the part 2 subtheme '*Preparing for something I can't prepare for*' (chapters eight and nine) demonstrates the complexity in the women's thoughts. The women's beliefs had been tempered by the negative stories they had heard, leading to a strong need to protect themselves emotionally, whatever their future birth experience. Figures 13 and 14 show how the complexity of separate themes and threads from each stage were represented and then synthesised to form a coherent theory.

The part 1 findings were returned to the teachers who commented on how they matched their perspective:

*[It] resonates strongly with my feelings and experiences of the YfP classes.
It certainly feels accurate. (T3)*

The teachers gained insight into their teaching practice as a result of the reflective discussion which followed the observation of their classes. They were surprised but pleased to have been reassured about their own skills from watching the videos.

It's been interesting to question why I do things the way I do... You do things week in week out and... don't necessarily always reflect on why... For me, what's highlighted in discussing it, is how important... what they are doing is, and how that contributes to their confidence. And then it was

interesting to hear them discuss afterwards why they come and what they hope to gain from the classes. (T2)

A recommendation for practice is that supportive observation, videoing and reflective discussion is a useful tool for YfP teachers' professional development.

Further evidence of resonance is demonstrated by two of the participant YfP teachers, who are now module tutors on the NCT YfP teacher training programme, choosing to list the journal article which summarised the part 1 findings (Campbell & Nolan, 2015) as 'essential reading' in the teacher training module specification (NCT and University of Worcester, 2017).

Usefulness

The findings from the present study have practice implications for two groups of antenatal educators: firstly NCT YfP teachers, and secondly, potentially, other YfP teachers and antenatal educators in general.

As the part 1 findings (Campbell & Nolan, 2015) are now an intrinsic part of NCT YfP teacher training, they are already being used to enhance future YfP teachers' practice, potentially enabling more women to realise their hopes for labour:

Many students this year... used the article and referenced it (T3, private communication; 1/6/16)

However, as self-efficacy theory applies to any learning task, the findings have potential reach beyond the training of NCT YfP teachers. Many of the conclusions around how efficacy-enhancing techniques may affect women's ability to birth could also apply to all YfP teachers and to antenatal education generally, although due to the

narrow study demographic and specific intervention, any generalisations must be treated with caution. Evidence that the study has resonance beyond NCT YfP training is demonstrated by the response the researcher has had to the publication of an overview, with practice recommendations, of self-efficacy within parent education in NCT's peer-reviewed journal 'Perspective' (Campbell, 2014; appendix six):

I just wanted to drop you a quick note to say how much I had enjoyed your article in Perspective. It has really got me thinking again, particularly about the difference in outcomes from my antenatal classes. (H, antenatal teacher, private communication; 1/9/14)

Just seen the first reference to your self efficacy article in a [non-YfP] student's work. (L, NCT tutor, private communication; 2/9/15)

As a result of presenting the study findings to both internal NCT and external audiences, the impact on self-efficacy is now included as standard in NCT curriculum design for antenatal, breastfeeding and postnatal courses where it was not previously.

The two peer-reviewed publications arising from the study to date (Campbell & Nolan, 2015; Campbell, 2014) have been disseminated widely and had periods of website open-access. It is impossible to know how widely they have been read, but Mendeley statistics show that the Women and Birth article (Campbell & Nolan, 2015) has been downloaded over 1,470 times worldwide (53 countries) and is included in fifty different researcher's Mendeley libraries. Although the Campbell and Nolan (2015) article is published with joint authorship, the majority was written by the researcher with the DoS offering a supervisory role. The article has been requested for review by a WHO perinatal guideline reviewer (V. Moran, personal communication, 24th July 2017). It is possible therefore that is already effecting change or contributing to current

research. Further journal articles, conferences and antenatal teacher training events are planned to disseminate the part 2 findings.

Strengths and limitations

The aim of the present study was to explore NCT YfP teacher and class participant views on how yoga in pregnancy might affect women's self-efficacy for labour and birth. A strength is the depth and richness of the data within the small demographic, but the findings cannot confidently be generalised to a broader population. A limitation to the trustworthiness of the data is that the researcher has no knowledge of how many women were initially invited by the YfP teachers to participate or whether the findings reflect the experience of women who chose not to participate or withdrew after the first interview.

The YfP teachers had all been trained by NCT and also had qualifications in, and experience of, facilitating antenatal education courses for couples. A strength of the study is therefore the consistency of the intervention as the YfP classes shared a common ethos, structure and curriculum. A corresponding limitation is that the results are not necessarily transferable to YfP classes which are facilitated by non-NCT YfP teachers.

The researcher's 'insider' status contributed to the strength of the study as she was able to fit in and be accepted by the women, therefore increasing the resonance of the data (Charmaz, 2006):

Because they knew you taught the classes yourself, I think that suddenly made it safe, rather than you being another researcher... They said how

nice it was at the end... last week. They felt safe and comfortable and they thought you were a very positive presence so they didn't feel inhibited.

(T2)

A potential limitation is the relationship between the researcher and the teachers, which was explored in chapters six and fourteen. It is impossible to know to what extent the teachers were saying what they thought the researcher wanted to hear, rather than articulating their own beliefs. The teachers gave mixed responses to specific questions about how they felt about being observed by the researcher; however, notably consistent data emerged from each of the three individual interviews and six class observations implying a congruence between practice and what was said at interview.

As discussed in chapter thirteen, the constructivist approach recognises that there are many equally valid versions of 'the truth' (Charmaz, 2006). All qualitative research is subjective and some biases are inevitable (Denzin & Lincoln, 2011; Hill et al., 2005). However, misinterpretation was mitigated as far as possible in three ways (see chapter thirteen). Firstly, each teacher's personal interview transcript and the complete part 1 findings were returned to the individual teacher for comment. None of the teachers suggested any amendments as a result of this.

Respondent validation of grounded theory studies is not always recommended (Elliott & Lazenbatt, 2005) and was not used for part 2 because the progressive nature of theoretical sampling meant that as data gathering and constant comparative analysis progressed with the larger participant group, the emerging narrative became more general and less appropriate for individual validation.

A second method used to mitigate against misinterpretation was by the use of both second-opinion and computer-aided graphic methods to verify emerging categories (see chapter thirteen). The DoS saw initial transcripts and parallel-coded the first interviews. Subsequent emerging theories were sent to the DoS initially showing all supporting quotes for verification. Automatically produced NVivo table and diagram representations (table 11, figure 23) were checked against emerging themes and all inconsistencies were explored.

Thirdly, researcher assumptions and biases were explored in memos and explicitly compared with emerging categories and discussed with the DoS.

Summary of recommendations

The present study supports recent literature which recommends more extensive trials of educational interventions in order to provide robust data on how to increase women's childbirth self-efficacy (Tilden et al., 2016). Research into antenatal interventions based on Bandura's (1977) four efficacy-enhancing strategies would be beneficial, in particular evaluating the effect of antenatal education which includes all of the following:

- Multiple opportunities for women to learn and practise a variety of cognitive and behavioural pain management techniques (Karlsdottir et al., 2014; Salomonsson et al., 2013b; Cunqueiro et al., 2009; Escott et al., 2009)
- Positive stories and verbal encouragement from the teacher and other women in the classes (Carlsson et al. 2015; Taheri et al., 2014)

- Exercises to increase somatic awareness and the reduction of stress responses (Marc et al., 2011; Whitburn et al., 2014)

In order to measure women's self-efficacy beliefs reliably, further research into updating the CBSEI would be advantageous (Carlsson et al., 2014; Cunqueiro et al., 2009). The present study adds weight to suggestions by other authors that the Childbirth Self-Efficacy Inventory (CBSEI) (Lowe, 1993) would benefit from being reviewed, particularly in relation to:

- Reducing the CBSEI (1993) to a short form which covers both first and second stages of labour (Tanglakmankhong et al., 2011; Khorsandi et al., 2008; Ip et al., 2005)
- Adding behavioural items such as using positions, movement and props to manage labour (Karlsdottir et al., 2014; Abushaikha, 2007; Beebe et al. 2007)
- Adding more cognitive items such as vocalising, counting and visualisation
- Reviewing the inclusion of both internally and externally focused items
- Updating the way some items are phrased to reflect the way contemporary women speak about labour (Carlsson et al., 2014; 2012)
- Removing some items such as '*Concentrate on an object in the room to distract myself*' and '*Think about others in my family*'.

The findings from the present study relate to a narrow demographic of women who choose to attend multiple sessions of a paid-for YfP class. This does not invalidate the findings which are gathered from the women's perspectives, but before being generalised they need cross-validation from studies with larger numbers and more

diverse populations. As a result of the present study, NCT has started an evaluation of the YfP classes run by all forty-four NCT teachers across the four UK nations. NCT's preliminary survey-based investigation uses a similar design to the present study, with questionnaires at three time points: before starting YfP, after attending at least six classes and postnatally. It aims to give broad insight into why women attend YfP and the benefits they report. The plan is to use the insight gained to fine-tune the design of more detailed research which will use self-efficacy, confidence and interaction scales to compare NCT YfP groups with other NCT antenatal groups. To date, responses have been received from 85 women about to start YfP classes and 16 who are near the end of their pregnancy.

Another possibility for further investigation would be to compare outcomes for women after attending NCT YfP classes and those run by non-NCT yoga teachers. However, as the practising of pain coping techniques is shown to be a central factor in the women's beliefs around how their labours were enhanced, similar results are not likely to be achieved with YfP classes which do not include this.

A recommendation for NCT YfP teachers' practice is that supportive observation, videoing and reflective discussion are useful tools for professional development.

Conclusion

There continues to be considerable interest in how antenatal education can best enable women to manage the sensations of labour (Levett et al., 2016; Finlayson et al., 2015; Byrne et al., 2014). The present study adds to the growing literature in the area and makes recommendations around the importance of practising more pain

management and calming strategies and including positive examples of women birthing normally as standard within antenatal classes in general and YfP classes in particular.

Word count 62,894

Glossary

Apgar: An index used to evaluate the health condition of newborn babies. Five characteristics rated on a scale from zero to ten.

Asana: Yoga posture.

Augmentation: speeding up labour if contractions slow or stop. Usually given via intravenous administration of chemical oxytocin.

Circle time: The opening activity of an NCT YfP class, where the teacher introduces the week's topic and women share their names and contribute their thoughts or feelings.

CONSORT: score derived from 50 separate items which should be reported in an RCT.

DoS: Director of studies.

Hatha yoga: Used as a general term for many yoga styles. Hatha refers to any yoga which includes postures, relaxation and breathing.

Intrapartum: the period from the start of labour until the placenta is delivered.

Iyengar yoga: a form of yoga that emphasises the use of props and places great attention to precise body alignment.

MIDIRS: UK based education charity: The Midwives Information and Resource Service.

Multigravida, multiparous, multip: A woman who has given birth before.

Nullipara, nulliparous: a woman who has never given birth.

Outcome expectancy: the belief that performing a task will lead to the desired outcome.

Perinatal: the time around childbirth. There is no agreed definition, but as a maximum, from the beginning of pregnancy until the child is age two.

Pranayama: conscious awareness and controlling of the breath .

Primigravida, primiparous: woman having her first baby.

Self-efficacy expectancy: the belief that one will be able to perform a certain task .

TENS, TNS machine: Transcutaneous electrical nerve stimulation, used for pain relief by women in labour. A small battery-operated device which is attached by wires to sticky pads which are placed on the back and which transmit small electrical pulses.

Vedic: the period in Indian history during which the Vedas, the oldest scriptures of Hinduism, were composed.

YfP: Yoga for pregnancy.

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Appendix 1 - Class filming PIS and consent form



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Research study information letter

Dear Yoga for Pregnancy class member,

I am an NCT Yoga for Pregnancy teacher from Petersfield in Hampshire currently doing a PhD with The University of Worcester called:

A Grounded Theory Study of the Impact of Yoga for Pregnancy Classes on Women's Self-Efficacy for Labour and Birth.

As part of this project I am hoping to film and analyse classes run by three different Yoga for Pregnancy teachers. If possible I would like to film two of your classes this term. You are not being asked to do anything but join in your class as usual. The aim of my research is to increase understanding of the impact of yoga in pregnancy and how it may affect women's ability to manage the sensations of labour. A potential benefit of the project is to improve the training of Yoga for Pregnancy teachers.

If you agree to participate in the project by allowing the class to be filmed, you will be free to withdraw consent at any time with no explanation. You can also request at a later stage that any input from you is removed. If you are happy for the class to be filmed but would prefer the camera to be angled away from you, just let me know on the attached form.

After the class, the film recordings will be transcribed and all identifying features (names, hospitals, towns, midwife/GP names) will be removed. The project will be written up using anonymous codes so that no-one can be identified. The film recordings and data will be kept in password-protected files on a locked computer. All data storage will conform to the Research and Data Protection Acts. The films will only ever be seen by me, my supervisor, a data transcriber or the university research team if necessary.

Written conclusions from the project may be submitted for publication in specialist journals, but your anonymity will always be preserved. The films will be destroyed at the end of the project and will not be used for anything else.

A potential risk of the project which has been identified is that you may not feel able to participate in the class as you would have done if it was not being recorded. I hope this is not the case and will try to minimise the risk by:

- Making the recording as unobtrusive as possible
- Angling the camera away from you so that you are not visible if you would prefer
- Stressing that the films will only be used by me for this research and will be destroyed at the end of the project. Until then any recordings will be kept secure
- Reassuring you that the films will be transcribed and the data anonymised. Any information containing identifying features (names, hospitals, midwife or doctor names) will be removed and all data will be stored with non-identifiable codes rather than personal names.

If you prefer not to participate in the project, there will be no pressure or consequences from me or your yoga teacher.

The research is being supervised by Professor Mary Nolan who can be contacted via The University of Worcester (address above). Ethical approval has been granted by both the University of Worcester and the NCT.

If you are willing to participate in the project, please sign the attached form and return to me. Your participation will be on a voluntary basis, although I will supply chocolate biscuits to share during the refreshment time! If you have any questions or would like to see a full copy of the project proposal please contact me, my contact details are at the top of this letter.

Please do let me know if you have any other questions which would help you to decide whether to take part.

Yours sincerely

Virginia Campbell

NCT yoga for pregnancy teacher and tutor
University of Worcester Teaching Yoga for Pregnancy Module Leader
University of Worcester Phd student

CONSENT FORM

Title of Project: A Grounded Theory Study of the Impact of Yoga for Pregnancy Classes on Women's Self-Efficacy for Labour and Birth

Name of Researcher: Virginia Campbell

Please initial
box

- 1. I confirm that I have read and understand the information letter for the above study, have had the opportunity to ask questions and have had these answered satisfactorily.

- 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reasons.

- 3. I understand that data collected during the class recordings , including audio and/or film material, will be available only to the research team for use in this project and members of the University Research Ethics Committee and I agree to this use.

- 4. I agree to take part in the above study.

- 1. I agree to take part in the above study but would prefer the camera angled away from me.

Signature of participant

Date

Signature of researcher

Date

Appendix 2: Part 2 PIS and consent form



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Research study information letter

Dear Yoga for Pregnancy class member,

I am a researcher and NCT Yoga for Pregnancy teacher from Petersfield in Hampshire currently doing a PhD with The University of Worcester called:

A Grounded Theory Study of the Impact of Yoga for Pregnancy Classes on Women's Self-Efficacy for Labour and Birth.

As part of this study I am hoping to interview a small number of women who are attending NCT Yoga for pregnancy classes in order to understand more about why they are choosing to do yoga in their pregnancy and how it affects them. I would very much appreciate it if you would consider taking part.

If you agree to take part, I would like to speak with you three times, for about 20-30 minutes each time. Firstly, before you start the yoga classes, then again when you are nearer to the birth of your baby and finally after you have had your baby. If you agree to be interviewed, you will be free to withdraw consent at any time.

I would like to reassure you that my study focuses on the general themes around why women attend yoga, not specific people or situations. To guarantee this it will be written up using anonymous codes so that no-one can be identified. I will ensure that no clues to anyone's identity appear anywhere and any quotes will be entirely anonymous. Although I will take notes, I hope also to audio record the interviews. These recordings will be transcribed and all identifying features (names, hospitals,

towns, midwife/GP names) will be removed. The study has had ethical approval from both the University and NCT.

The recordings and data will be kept in password-protected files on a locked computer conforming to the Research and Data Protection Acts. The recordings will only ever be heard by me and the data transcriber or the university research team if necessary and will be destroyed on completion of the study.

Written conclusions from the project may be submitted for publication in specialist journals but your anonymity would always be preserved.

If you prefer not to participate in the study, there will be no pressure from me or Rachel your yoga teacher. Your participation would be entirely voluntary.

The research is being supervised by Professor Mary Nolan who can be contacted via The University of Worcester (address above). Ethical approval has been granted by both the University of Worcester and the NCT.

I would be very grateful if you were willing to participate in the study. If so, please sign the attached form and return to me at the email address Virginia.campbell@nct.org.uk. If you have any questions that would help you to decide whether to take part, or would like to see a full copy of the project proposal please let me know. My contact details are at the top of this letter.

Yours sincerely

Virginia Campbell

NCT Yoga for Pregnancy teacher and tutor
University of Worcester PhD student

CONSENT FORM

Title of Project: A Grounded Theory Study of the Impact of Yoga for Pregnancy Classes on Women's Self-Efficacy for Labour and Birth

Name of Researcher: Virginia Campbell

Please initial box

5. I confirm that I have read and understand the information letter for the above study, have had the opportunity to ask questions and have had these answered satisfactorily.
6. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reasons.
7. I understand that data collected will be available only to the research team for use in this study and members of the University Research Ethics Committee if necessary and I agree to this use.
8. I agree to take part in the above study.

Signature of participant

Date

Signature of researcher

Date

Appendix 3: Women's interview guides

Questions were used as a prompt and topic guide

1st interview

Before switching on the recorder: ask permission to record, remind about the option to withdraw and the study aims

1. Please could you repeat your name so it is recorded on the tape?
2. When is your baby due?
3. How many weeks are you now?
4. Would you mind letting me know how old you are?
5. Where are you choosing to have your baby?
6. Why are you choosing to go to YfP?
7. Anything else?
8. How are you feeling about the birth?
9. What is your approach to labour?

Questions added as part of theoretical sampling (only ask if appropriate/relevant)

10. If not mentioned: How confident are you feeling about the birth?
11. If not mentioned: Some other women have mentioned they would like to meet other pregnant women at the class, does that have any resonance with you?

2nd interview

Before switching on the recorder: ask permission to record, remind about option to withdraw and about the study aims.

1. Please could you repeat your name so it is on the recorder?
2. How many weeks are you now?

3. How many classes have you been to?
4. Are you still choosing same birth place?
5. How have you found the classes?
6. How are you feeling about labour generally?
7. How is your confidence generally?
8. What would be your ideal labour?
9. Are there any decisions or choices you have made as a result of anything you have heard or done at YfP?
10. Are you in contact with anyone outside the class, or is there anyone you might keep in contact with?
11. Anything from their 1st interview (at your first interview you mentioned... (fitness, meeting people , approach to birth etc.)
12. One thing you have gained from the classes

Possible topics if relevant/appropriate

1. How are you thinking you might/hoping to manage your contractions?
2. Why, and how important is it to you?
3. How confident are you that you will be able to use the techniques and that they will make a difference?
4. How does that differ from before you started, if at all?
5. How do you think classes might have influenced your approach to labour, if at all?
6. Has there been anything different in the classes from what you expected?
7. How do you think the classes have made a difference, if at all: is there anything about the class format, room, what you have done or anything that has been said you are aware of?

Questions added as part of theoretical sampling (only ask if relevant/appropriate)

8. How do you define like-minded? What made you decide in advance of coming to the classes that you might meet like-minded women there (what is important to you about the women at the classes)
9. How do you feel about the practice contractions in YfP?
10. How do you feel about any stories told?
11. What do you mean by not losing control – how do you feel about being in control?
12. What do you mean by the right frame of mind?

3rd interview

Before switching on the recorder: ask permission to record, remind about option to withdraw and about the study aims

1. Name
2. How many weeks old is the baby?
3. Could you tell me about the birth?
4. Where did you have the baby?
5. How did you manage your contractions? What things, if any, made a difference to your ability to manage contractions?
6. How would you describe your state of mind during labour?
7. How would you describe your confidence during labour?
8. What difference did having the level of confidence you had make?
9. Anything from their 1st/ 2nd interview

If topics don't occur, consider questions around:

10. Did any of your choices/behaviours change as a result of things you heard, experienced or learned at yoga?

11. Was there anything you did or learned at yoga that made a difference to your labour?
12. When you think about it now, was there anything you feel was effective in the way you were taught any techniques, or not?
13. Was there anything you learned from stories /other women?
14. Could the things you have spoken about have been learned in a different way?
15. How do you feel about YfP being a women-only group?
16. Are you in contact with anyone outside the class or is there anyone you might keep in contact with?
17. How might your labour have been different if you hadn't been to yoga?
18. If there was any difference, how did the teacher achieve that?
(structure/curriculum/atmosphere)
19. If YfP was useful, what was the most useful aspect?

Appendix 4: Charmaz (2006) quality evaluation criteria

Criteria	Subsection	Where demonstrated
Credibility	Has the data achieved intimate familiarity with the topic?	Chapters 7, 8, 9, 10
	Are the data sufficient?	Chapter 13
	Are there systematic comparisons between observations and categories?	Chapters 7, 8, 9, 10, 13
	Do the categories cover a wide range of empirical observations?	Chapters 7, 8, 9, 10
	Are there strong logical links between the data, argument and analysis?	Chapters 7, 8, 9, 10, 13
	Has the research provided enough evidence for the reader to form an independent assessment?	Chapters 7, 8, 9, 10, 13
Originality	Are the categories fresh? Do they offer new insights?	Chapters 7, 8, 9, 10, 11
	Does the analysis provide a new conceptual rendering of the data?	Chapter 11
	What is the social and theoretical significance of this work?	Chapters 11, 15
	How does the theory challenge, extend or refine current ideas, concepts and practices?	Chapters 11, 12, 15
Resonance	Do the categories portray the fullness of the experience?	Chapter 13
	Are both liminal and unstable taken-for-granted meanings revealed?	Chapters 7, 8, 9, 10, 13
	Are links drawn between larger collectivities or institutions and individual lives?	Chapters 11, 22, 15
	Does the theory make sense to the participants, or people who share their circumstances? Does the analysis offer them deeper insights?	Chapter 7, 15
Usefulness	Does the analysis offer interpretations that people can use in their everyday worlds?	Chapter 15
	Do the analytic categories suggest any generic processes?	Chapter 11, 12, 15
	Can the analysis spark further research in other substantive areas?	Chapters 12, 15
	How does the work contribute to knowledge/making a better world?	Chapter 15

Appendix 5: COREQ

(COnsolidated criteria for REporting Qualitative research)

Checklist

1. Domain 1: Research team

1.1. *Which author/s conducted the interviews?*

Virginia Campbell

1.2. *What were the researcher's credentials?*

BSc(Hons), BA

1.3. *What was their occupation at the time of the study?*

Initially University module leader, then NCT Operations Manager, then Head of NCT College

1.4. *Was the researcher male or female?*

Female

1.5. *What experience or training did the researcher have?*

The research was done as a PhD studentship. (See introduction chapter one)

1.6. *Was a relationship established prior to study commencement?*

Part 1: there was an existing peer/manager relationship with the teachers

Part 2: there was no prior relationship with the women

(See the introduction, method and reflexivity chapters one, five and fourteen)

1.7. *What did the participants know about the researcher?*

Part 1: the teachers had known the researcher in a work context for between 5-10 years

Part 2: the women had no prior knowledge of the researcher and gained information from the Participant information sheet (PIS).

(See the introduction, method and reflexivity chapters one, five and fourteen and PIS)

1.8. *What characteristics were reported about the inter viewer/facilitator?*

(See introduction, method and reflexivity chapters one, five and fourteen)

2. Domain 2: Study design

2.1. *What methodological orientation was stated to underpin the study?*

Grounded theory

2.2. *How were participants selected?*

Purposive, convenience and snowball (See methods chapter six)

2.3. *How were participants approached?* See methods chapter six

Email and phone

2.4. *How many participants were in the study?*

25

2.5. *How many people refused to participate or dropped out?*

Part 2: Two women dropped out (See methods chapter six)

2.6. *Where was the data collected?*

Part 1: Yoga class venues and teacher homes

Part 2: phone (See methods chapter six)

2.7. *Was anyone else present besides the participants and researchers?*

No

2.8. *What are the important characteristics of the sample?*

Part 1: YfP teachers

Part 2: Pregnant women attending YfP classes (See methods chapter six)

2.9. *Were questions, prompts, guides provided by the authors?*

Yes

Were repeat interviews carried out? If yes, how many?

Part 1: One interview with each teacher plus additional email/phone calls

Part 2: Interviews at three time points (See methods chapter six)

2.10. *Did the research use audio or visual recording to collect the data?*

Yes, both audio and visual recording (See methods chapter six)

2.11. *Were field notes made during and/or after the interview?*

Yes (see methods and Using grounded theory in practice chapters six and thirteen)

2.12. *What was the duration of the interviews?*

Part 1: Teachers - 2 hours

Part 2: Women - between 15-40 minutes

2.13. *Was data saturation discussed?*

Yes (see methods and Using grounded theory in practice chapters six and thirteen)

2.14. *Were transcripts returned to participants for comment?*

Part 1: Teachers - Yes

Part 2: Women - No

3. Domain 3: analysis and findings

3.1. *How many data coders coded the data?*

One. Coding discussed with supervisor at each stage (See methods chapter)

3.2. *Did authors provide a description of the coding tree?*

Yes (see Using grounded theory in practice chapter thirteen)

3.3. *Were themes identified in advance or derived from the data?*

Derived from the data (see Using grounded theory in practice chapter thirteen)

3.4. *What software, if applicable, was used to manage the data?*

NVivo (see Using grounded theory in practice chapter thirteen)

3.5. *Did participants provide feedback on the findings?*

Part 1: Teachers saw the findings and fed back

Part 2: No

3.6. *Were participant quotations presented to illustrate the themes/findings? Yes*

3.7. *Was each quotation identified? e.g. participant number Yes*

3.8. *Was there consistency between the data presented and the findings? Yes*

3.9. *Were major themes clearly presented in the findings? Yes*

3.10. *Is there a description of diverse cases or discussion of minor themes? Yes*

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp.349 – 357

Appendix 6: Published research overview (Campbell, 2014)

Research

📍 Research overview: self-efficacy – a key construct for antenatal education

Virginia Campbell, a development tutor for NCT's yoga for pregnancy training programme, is currently conducting a grounded theory study into the effects of yoga on women's ability to manage the sensations of labour and birth. Here she explores the literature on self-efficacy theory.

Introduction

In 1977, Albert Bandura, a Canadian psychologist working in the area of social behaviour and learning, introduced the concept of self-efficacy.¹ Self-efficacy theory attempts to explain how a person's belief in their ability to succeed affects their behaviour. In the four decades since Bandura's seminal work was published, many other researchers have used and developed his theory, and the concepts have been tested and validated in experimental studies.

This article explores the potential to increase the positive outcomes of antenatal education programmes by using self-efficacy theory and evidence. Literature was sourced using the term 'self-efficacy' with assistance from MIDIRS and NCT librarians who searched the Maternity and Infant Care and NCT databases. References from studies found which had not been previously identified were followed up.

What is self-efficacy?

Self-efficacy theory postulates that beliefs and expectations are crucial in human behaviour. Bandura showed there are two important factors which increase the likelihood that people will instigate and then persist with the behaviours needed to achieve their goals. He defined them as self-efficacy expectancy and outcome expectancy.

Self-efficacy expectancy is the belief that one will be able to perform a certain task. For example:

- I will be able to relax during labour
- I will be able to position my baby correctly at the breast
- I will be able to remain calm when my baby is crying.

Outcome expectancy is the belief that performing certain behaviours will achieve the desired outcome:

- If I relax during labour it will be less painful
- If I position my baby correctly at the breast I will be more likely to breastfeed my baby successfully for as long as I would like to
- If I remain calm when my baby is crying I am more likely to be the parent I would like to be.

Studies have shown that people with higher self-efficacy beliefs put more energy into mastering the behaviour which will enable them to achieve their goals and persist longer with that behaviour than those with lower self-efficacy beliefs. Those with lower self-efficacy beliefs spend more time worrying, persist for less time in behaviours which might enable them to succeed, and are more vulnerable to stress and depression.

How does self-efficacy theory relate to childbirth?

An example of using self-efficacy theory in childbirth is that women who believe they will be able to use breathing techniques in labour, and that those techniques will help them, are more likely to persist in learning them and use them effectively. The theory suggests that women with higher self-efficacy beliefs in their ability to manage labour are more likely to use a larger number of pain management strategies, and persist with them for longer, than women with lower self-efficacy beliefs. This would lead in turn to fewer interventions^{2,3} and better postnatal outcomes for women and their families.⁴

'Women with higher self-efficacy beliefs in their ability to manage labour are more likely to use a larger number of pain management strategies.'

Self-efficacy shares some characteristics with the related constructs of confidence, anxiety and locus of control (see for example, Green et al),⁵ which also affect women's ability to manage the sensations of labour. Research has shown these constructs to measure distinct and separate states of mind, and aspects of behaviour.^{6,9}

Women's previous birth experiences affect their sense of self-efficacy, which can then influence their future birth preferences. Birth experiences which are perceived negatively have been shown to reduce self-efficacy beliefs, and positive birth experiences to increase them.⁷ In a study of 74 American women, Dilks and Beal⁸ found that those choosing elective caesarean after previous caesarean had lower self-efficacy beliefs than either first-time mothers or women choosing vaginal birth after caesarean. They suggested that in subsequent pregnancies, women who had had a previous caesarean should attend antenatal classes incorporating self-efficacy enhancing techniques, concluding 'A woman must have the opportunity to learn that these behaviours will help lead to the desired outcome of a vaginal birth and that she is capable of mastering them'.⁸

How can self-efficacy beliefs be increased?

Bandura identified four principal ways in which self-efficacy beliefs can be increased.¹ These are by performance accomplishments, vicarious experience, verbal persuasion and understanding of physiological states. Using this framework, American researcher Nancy Lowe⁹ proposed ways in which women's belief in their ability to manage the sensations of labour can be increased:

1. Performance accomplishments: through successful coping experiences such as past childbirth or previous experience with pain;
2. Vicarious experience: by observing successful coping by others, such as watching a birth or film;
3. Verbal persuasion: being encouraged by influential others, such as childbirth educators;
4. Physiological states: learning to recognise and reduce reactions, such as panic, in response to the anticipation or experience of a stressful event. A sense of anxiety has been shown to be associated with reduced self-efficacy.

Research suggests that in the case of birth, previous performance accomplishment, i.e. a previous positive experience of vaginal birth, is the most important factor in a woman's belief in her ability to manage a future labour.⁹

Since its development for use with phobia patients, self-efficacy theory has been applied in many other areas of health and education, including weight management, smoking cessation, and the promotion of academic success,^{10,11,12} parenting skills and

breastfeeding,^{13,14,15} as well as antenatal education.

How are self-efficacy beliefs assessed?

In 1981 Jerusalem and Schwarzer developed a General Self-Efficacy scale to measure an individual's sense of personal agency, i.e. the belief that one's actions are responsible for successful outcomes.¹⁶ This included nine self-scoring items such as 'I can usually handle whatever comes my way'. In 2002, a meta-analysis by Scholz et al examined the General Self-Efficacy scale, to see whether the measure works consistently in different languages and cultural settings.¹⁷ The findings, based on studies from 25 different countries, confirm that there is a consistent underlying construct representing 'an optimistic sense of personal competence... accounting for motivation and accomplishments'.

Over time, as more research has been carried out, specialised self-efficacy scales have been developed for particular areas of study, enabling greater consistency and comparability between studies. For example, there is now an established Breastfeeding Self-Efficacy Scale,¹⁸ a 33-item scale measuring items such as 'Recognize the signs of a good latch', and 'Position my baby correctly at my breast', and also a Parenting Self-Efficacy Scale.¹⁹

In early studies on childbirth self-efficacy, the General Self-Efficacy scale was used in combination with various other inventories assessing pain, confidence, anxiety, stress, helplessness and locus of control.

Nancy Lowe created the Childbirth Self-Efficacy Inventory (CBSEI) in 1993.⁹ This is a 16-item scale where women self-evaluate firstly their confidence in performing behaviours such as 'Think positively' and 'Using breathing', and secondly their belief that the behaviours will be effective during labour. This was the culmination of several developmental studies exploring labour pain and its relation to confidence and coping mechanisms.^{20,21,22}

The CBSEI has been translated into many different languages and validated internationally.^{7,23,24,25} An interesting finding from these later studies is that cultural and religious beliefs, which were not part of the original CBSEI, play an important part in women's self-efficacy beliefs.^{23,25}

An ongoing discussion around the validity of the CBSEI questions its measurement of purely cognitive pain management techniques (counting, visualising, affirmations etc). Drummond and Rickwood⁷ suggested adding behavioural techniques

(showing, swaying, vocalising etc) and Beebe et al²⁶ found that all the women in their study used both cognitive and behavioural strategies, employing an average 17 different strategies. The CBSEI has not been amended to incorporate behavioural strategies but researchers such as Beebe have used additional tools to measure behavioural strategies in labour.

Do higher self-efficacy beliefs affect childbirth experience?

Despite some interesting and promising studies, research on self-efficacy theory and childbirth is still limited and so far there has been no meta-analysis of studies. However, most research has found that self-efficacy beliefs are positively correlated with use of coping behaviours and appears to support the idea that higher self-efficacy beliefs correlate positively with:

- Increased confidence and lower anxiety for labour and birth
- Increased birth experience satisfaction
- Lower labour pain perception.

Early American research on women's ability to manage labour pain, including a longitudinal study with 280 primiparous women, showed that up to half the variance in perceived labour pain could be explained by a mother's confidence in her ability to cope.^{21,22} Lowe also reported that maternal self-efficacy assessed in late pregnancy was associated with lower perceived pain intensity during labour.²⁷

'One study found that women with higher self-efficacy beliefs interpreted pain as less intense and distressing.'

More recent studies have presented a mixed and more complex picture. A small study of 35 American women found no relationship between self-efficacy beliefs and pain in early labour or control of labour pain without medication.²⁴ However, a recent longitudinal study of 230 women from New Zealand found stronger self-efficacy beliefs predicted reduced perception of pain in labour and higher birth satisfaction.²⁸ Interestingly, this study found no correlation between self-efficacy beliefs and women's ability to manage labour pain without analgesia. However, it did find that women with higher self-efficacy beliefs interpreted pain as less intense and distressing than those with lower self-efficacy beliefs, even after pain medication use was controlled for, leading them to conclude that women with lower

self-efficacy beliefs tend to find labour more painful regardless of analgesia. This might explain a 2003 study which demonstrated that low self-efficacy beliefs were one of the significant predictors of postnatal post-traumatic stress disorder symptoms.²⁹

Can childbirth education affect self-efficacy beliefs?

The Cochrane review of antenatal education for childbirth or parenthood included nine trials involving 2,284 women, none of which included self-efficacy as an outcome measure.³⁰ The review found insufficient evidence to determine the effects of antenatal education for childbirth or parenthood, as studies were generally small to medium sized, varied in design and used a range of different outcome measures. The review is currently being updated.

There is some evidence from other kinds of studies to support the hypothesis that antenatal education can increase self-efficacy beliefs. Manning and Wright in an early study designed to increase self-efficacy through a childbirth preparation course in America, gathered data on self-efficacy expectancies in 52 first-time mothers in three phases.³¹ Their results showed that self-efficacy expectancies affected behaviour in labour, as women with higher self-efficacy beliefs not only persisted longer without medication, but also used less analgesia overall.

Crowe and von Baeyer reported similar findings from their Canadian study with 30 women which examined a number of variables including childbirth knowledge, fears, locus of control, anxiety, expectation of pain and confidence in pain controlling ability.³² The results showed those who demonstrated higher confidence after antenatal classes reported a less painful birth.

Sieber et al showed that self-efficacy scores increased after antenatal classes.³³ However, as there was no control group with this study of 61 low-risk Swiss women, it was impossible to attribute this to class attendance.

One study with 146 Spanish women found knowledge to be the most influential factor in explaining self-efficacy beliefs, accounting for 12% variance in comparison with previous birth experience which accounted for only 4% variance.³⁴

Ip et al carried out a randomised controlled trial (RCT) in 133 low-risk Chinese primiparas on a two-session education intervention designed to increase self-efficacy for childbirth.³⁴ This was published after the 2007 Cochrane review, so not included. They measured self-efficacy, pain, anxiety

and performance behaviours, and found that women in the experimental group who received the educational programme demonstrated higher levels of self-efficacy for childbirth, lower perceived anxiety and greater performance of coping behaviour during childbirth. However, only a low percentage of eligible women completed the trial, and only that group had their data included in the analysis, which weakens the quality of the study. This highlights the challenges when conducting antenatal education RCTs with pregnant women. Firstly, many do not want to be randomised to antenatal education programmes; they understandably prefer to choose their birth preparation²⁹. Secondly, it is almost impossible for the intervention to be 'blind'.

Discussion

Many women find labour intensely painful.^{25,26} Antenatal education which includes preparing women for the strong sensations of labour involves consideration of psychological processes, yet the field of antenatal education has evolved with little reference to advances within psychology which attempt to explain how psychological factors influence experiences of anxiety and pain.²⁷ Self-efficacy theory may be useful for childbirth educators, as it considers how individual teaching strategies map onto current and potential course content.

The kinds of preparation which self-efficacy theory suggests will be effective are all essential elements of NCT's Signature antenatal courses, which are usually run over several weeks and have a substantial focus on labour and birth, in which preparation skills can be practised regularly, and positively reinforced by repetition and the teacher's continuing affirmations. In addition, the theory's emphasis on the importance of prior experiences (performance accomplishment) will match the experience of many childbirth educators who work with both first- and second-time mothers.

Pain in labour is affected by many physical, social and emotional factors, many of which are not under the woman's control. Antenatal educators will recognise the tension between encouragement or persuasion which builds women's confidence and 'setting women up to fail'. Bandura says: 'It is more difficult to instil high beliefs of personal efficacy by social persuasion alone than to undermine it. Unrealistic boosts in efficacy are quickly disconfirmed by disappointing results of one's efforts.'²⁸

There is a need for more primary research studies, including RCTs, on 'non-drug

interventions for pain management',² and on antenatal education designed to enhance self-efficacy and increase women's positive experiences of childbirth.

The Cochrane Collaboration overview of systematic reviews on pain management approaches² only looked at interventions used during labour with the specific aim of

What does this mean for antenatal educators?

Self-efficacy theory suggests that antenatal educators may be able to help women who would like a normal labour by facilitating an increase in their self-efficacy beliefs. It also suggests that antenatal preparation would need to facilitate an increase both in a woman's confidence in the efficacy of coping strategies and in her ability to perform them, since women consistently believe more in the effectiveness of coping behaviours than in their ability to perform them successfully in labour.^{7,9,23,25,24} Using Bandura's theoretical principles,¹ many self-efficacy enhancing techniques can be included in an antenatal course in order to help women become more confident in their ability to use pain-managing strategies:

Performance accomplishments

- Build in regular practice of both cognitive (visualising, focusing, distraction) and behavioural (positions, massage, movement) pain-coping strategies.²⁹
- Ensure women have had enough practice to feel confident in a variety of breathing techniques, such as counting, SÔS, visualising, vocalising, controlling.
- Encourage women to practice pain-managing techniques at home.

Vicarious experience

- Show or recommend video clips of other women managing labour successfully with the use of coping behaviours.
- Tell positive birth stories where women have used pain-managing strategies to overcome challenging situations.
- Discuss successful coping experiences with previous pain situations and suggest practising with any current pain experiences.
- Invite previous course attendees who found the birth preparation helpful to visit the class and describe how they used it during labour.
- Invite women who used both non-pharmacological and pharmacological pain relief to demonstrate how self-efficacy enhancing techniques are useful in different kinds of labour and can enhance experiences of women, however their labour develops.

Verbal persuasion

- Make positive statements (women's bodies are designed to give birth' etc).
- Encourage women to explore and choose their own helpful affirmations ('I can do this', 'Just one more contraction')
- Teach birth partners how to encourage the birthing woman sensitively and appropriately.

Physiological states

- Teach, and encourage regular practice of, relaxation techniques and positive imagery.
- Help parents acquire calming skills by using relevant imaginary situations.
- Raise awareness about how stress and adrenaline levels can be mitigated by relaxation, loving touch and oxytocin-producing behaviours.
- Emphasise the value of a calm environment and positive language.
- Explore ways in which stress responses, such as rising heart rate, are often interpreted as precursors to failure, which undermines self-efficacy and impairs performance, and ways to reverse these responses.

Techniques such as yoga^{40,41} and self-hypnosis,² which work at both a cognitive and a behavioural level, are consistent with elements of antenatal preparation that self-efficacy theory suggests will be effective.

relieving pain, so antenatal education was not included. However, it should be noted that educational programmes to enhance self-efficacy are highly relevant as a 'non-drug intervention' and would potentially show benefits in terms of sense of control in labour, being low-cost and facilitating breastfeeding.

NCT's course objectives are so closely aligned with self-efficacy theory that it would be worth all antenatal educators being familiar with the relevant literature and reviewing their course content with the aim of increasing their client's self-efficacy beliefs using Bandura's four principal methods.

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Appendix 7: Published article (Campbell & Nolan

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ORIGINAL RESEARCH – QUALITATIVE

A qualitative study exploring how the aims, language and actions of yoga for pregnancy teachers may impact upon women's self-efficacy for labour and birth

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ABSTRACT

Background: As women's anxiety and the rate of medical intervention in labour and birth continue to increase, it is important to identify how antenatal education can increase women's confidence and their ability to manage the intense sensations of labour.

Aim: To report a grounded theory study of how the aims, language and actions of yoga for pregnancy teachers may impact upon women's self-efficacy for labour and birth.

Methods: Yoga for pregnancy classes in three locations were filmed. Semi-structured interviews were undertaken with the teachers to explore what they were trying to achieve in their classes, and how. Interviews and classes were transcribed and analysed using grounded theory.

Findings: There was considerable consistency in the teachers' aims, the language they used in classes and in their thinking about class structure. Four main themes emerged: creating a sisterhood, modelling labour, building confidence and enhancing learning. Teachers see yoga for pregnancy as a multi-faceted, non-prescriptive intervention that enhances women's physical, emotional and social readiness for labour and birth, and supports women to make their own decisions across the transition to parenthood.

Conclusion: Women's self-efficacy for labour is complex and multi-factorial. This study offers insights into the factors which may be involved in increasing it. These include not only traditional elements of yoga such as postures, breathing and meditation, but also the creation of safe, women-only groups where anxieties, experiences and stories can be shared, and pain-coping techniques for labour learned and practised.

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1. Introduction

Women with higher self-efficacy beliefs have lower birth anxiety and pain perception and increased confidence for labour.¹ Lower self-efficacy beliefs are associated with maternal preference for epidural and caesarean.² Increasing pregnant women's self-efficacy beliefs through antenatal education should lead to fewer obstetric interventions as anxiety and pain perception are associated with increased use of pain medications and caesarean.^{3,4}

Yoga for pregnancy (YfP) may have the potential to increase women's self-efficacy by firstly enabling women to manage the intense physical sensations of labour^{5,6}; and secondly by increasing confidence which may enable ownership of care pathway decisions and enhance the internal locus of control.⁷

Variable use of YfP is reported worldwide,⁸ with a recent study showing it is accessed by 11% of pregnant women in the UK,⁹ but no study to date has identified specific factors of YfP which actively promote self-efficacy for labour. This paper reports on the first part of a study exploring how yoga in pregnancy may affect women's self-efficacy in labour by examining yoga teachers' aims and the content of their classes. The second part of the study will be a qualitative exploration of women's sense of how their self-efficacy has been affected by YfP.

2. Literature review

Despite interest over many years in the relationship between antenatal education and birth outcomes, the complex nature of this health intervention has made it difficult to assess its effects accurately. A Cochrane systematic review of group antenatal education concluded, 'The effects of general antenatal education for childbirth or parenthood, or both, remain largely unknown'.¹⁰ The body of research into YfP is limited with RCTs poorly compliant

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with the CONSORT statement due to poor study design and lack of blinding. However, recent systematic reviews show cautious support for benefits, including increased maternal confidence, shorter duration of labour and less reported pain.^{11,12} There is a need for better understanding of the mechanisms by which YFP leads to these reported effects and to inform the debate about whether yoga is inherently a holistic intervention or whether a reductionist approach could be taken to isolate its elements and employ them independently.¹²

3. Setting

The NCT (formally the National Childbirth Trust) has run a university-validated YFP teacher training programme since 2005. Approximately 1500 pregnant women each month attend NCT YFP classes which are held in 50 locations across the four UK countries. Women attend the classes in a private capacity in addition to their usual antenatal care which includes up to four hours of midwife-led group antenatal education, usually accessed only by first-time mothers. Participation in this study was restricted to NCT YFP classes in order to ensure a degree of homogeneity in teacher training, class structure and content. NCT YFP classes consist of an introductory name round followed by an hour of yoga postures, breathing and relaxation, before refreshments and time for socialising, which often includes a visit from a previous member of the class who has recently had a baby.

4. Participants

An invitation to participate in the study was published on an e-forum for NCT YFP teachers. Six teachers volunteered of whom three were chosen on a convenience basis relating to the timing and location of their classes. The teachers had been facilitating YFP for 1, 10 and 7 years, respectively.

5. Methods

Grounded theory was chosen as it enabled incidents as well as people to be the main units of analysis.¹³ Charmaz's constructed approach of flexible guidelines¹⁴ was used to reconcile the various grounded theory approaches. Constructed grounded theory rejects the positivist model of an objective reality documented by a neutral observer; instead recognising that data analysis is contextually situated. A reflexive approach is taken, acknowledging the inherent inclusion of researcher and participant values and beliefs within the created shared experience. Two classes led by each YFP teacher were filmed, after which the teachers participated in individual face-to-face, semi-structured interviews with the researcher (VC). Filming and interviews took place between April and September 2013. During the classes, the researcher occupied a middle ground position between non-participant and participant described as *observer-as-participant* by Brink & Edgecombe.¹⁵

All interviews took place in the teachers' homes and lasted approximately two hours. Each interview commenced with open questions from a topic guide, after which the class videos were played and the teacher encouraged to comment on what she saw herself doing and why. The teachers' aims for their classes and perceptions of how/whether they were achieved were explored. As the research progressed, later questioning was modified to ensure the emerging theory was developed fully.

Each interview and class recording was transcribed verbatim and iterative reading undertaken to enable content familiarisation before systematic coding was carried out using NVivo. Field notes and memos aided focus and theoretical sensitivity. Data were concurrently gathered and analysed following constant

comparative principles to create intermediate codes from the more significant or frequent initial codes.¹⁴

The authors met regularly to discuss emerging themes and theoretical models. Trustworthiness and rigour were ensured by a combination of manual scrutiny and systematic software analysis of the codes and their inter-relationships. Transcripts were revisited frequently as potential new codes and relationships emerged from the data.

A post-positivist stance¹⁴ was taken, acknowledging that the researchers' place within the study may have affected the questioning, interpretation and co-creation of meaning. One of the researchers (VC) is an NCT YFP tutor and one (MN) has no yoga training. Thus the benefits of both insider and outsider status could be realised.¹⁶ As an insider, the researcher had a better understanding of language and cultural norms and so was better able to integrate herself unobtrusively into the class setting. In order to minimise the potential bias of over-familiarity with the subject, reflexive memos drawing on the researcher's beliefs and sense of 'place' within the study were created before observations, interviews and analytic work.

Credibility was ensured by participating teachers' checking of transcripts and findings.

6. Ethics approval and informed consent

Ethics approval for the study was gained from The University of Worcester Institute of Health and Society Ethics Committee and NCT Research Advisory Group. A primary objective was to conduct research openly and without deception, with both teachers and pregnant women acting as active not passive participants. Guiding principles of congruence and safeguarding both the teachers' and pregnant women's well-being were embodied in the study design and process. The study adhered to the principles outlined in the Charter for Ethical Research in Maternity Care.¹⁷

In the classes prior to filming, the teachers explained the study to the women and gave them an information sheet emphasising their right to not participate. This was repeated verbally at the start of each filmed class with the explanation that it was possible to set the camera up so that an area of the room was not visible if any woman preferred not to be filmed. Written informed consent was obtained before the class filming and participants' right to withdraw without consequences was repeated prior to interviews.

7. Findings

Four themes with sub-themes (Appendix A) emerged from analysis of the rich data produced by the teacher interviews and class recordings:

- Creating a sisterhood
- Modelling labour
- Building confidence
- Enhancing learning

Quotes from teacher interviews (T1, T2, T3) are presented in italics; whereas extracts from the class recordings (C1, C2, C3) are presented in boxes.

7.1. Creating a sisterhood

The teachers wanted to create a sanctuary for pregnant women. This was more than just to enable friendships but also to:

[Give] them the space to be pregnant and to be with other pregnant women...

Women need to get together and talk to other women and that's how they learn about being a mother. (T2)

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Four sub-themes emerged within this theme:

- Safe and supportive environment
- Shared and sharing experience
- Time for me and the baby
- Learning from each other

7.1.1. Safe and supportive environment

The teachers wanted to create emotional safety so that women were able to share their feelings and thoughts, but importantly, did not have to do so. The teachers noted this was particularly useful for women who had had previous difficult or distressing birth experiences.

Sometimes you know something about a woman on week one and she doesn't share... that information; and maybe by week 5 or week 6, in that introduction round, she'll say something – she had a stillbirth or her birth before was really awful or that she's really struggling with this baby – which means they've grown in that group where they've got the support of the others. (T1)

7.1.2. Shared and sharing experience

The teachers stressed the importance of the classes being exclusively for pregnant women so that everyone in the group could relate to the others' experiences and concerns in a way that friends and partners (even female partners) could not. Sharing experiences allowed all women to get feedback from the group on current anxieties without seeming weak or incapable.

Women that have had babies enjoy having a safe place to talk... And I think sometimes there's a nice sense of being able to share, whether it's very positive or being able to offload: 'This is what happened the first time and I want to do this, this time.' (T1)

7.1.3. Time for me and the baby

All the teachers described aiming to provide time for women to 'be' with their babies. In contrast with traditional antenatal classes, which tend to have learning outcomes related to knowledge of medical procedures and making informed decisions about pain relief options, the YIP teachers described wanting to enable women to take time out from their busy lives to focus on their bodies and babies.

It's probably the only time they get where they just nurture themselves... Those who have already got children; they admit they spend very little time thinking about the current pregnancy... It allows them to think about how their own body works, their own body's needs... (T1)

For the teachers, time in classes was not just for relaxation, but also to build communication between mother and baby, and to nourish and care for each woman and allow her voice to be heard.

I love the way they do connect with their babies... [their] hand's there [on the belly] and it just makes that 'hello' thing go on... Somebody is listening to them... and isn't rushing them through. (T3)

Analysis of the class transcripts showed how the women's connection to their baby was reinforced by regular references to taking the opportunity for reflection.

Share your positive affirmation with your baby; spend the next few moments relaxing together; sharing anything else that you might want to share. Just enjoying the time with no one to interrupt the two of you together [calm music plays]. (C2)

7.1.4. Learning from each other

The classes aimed to model a way of learning about pregnancy, birth and mothering where women could discover what they wanted to know from other women. Questions were often asked of the more experienced mothers within the group.

That sense of the 'senior woman' in the group. They look up to the women that have already had babies and they can ask them questions. (T1)

The more experienced mothers in the group also took on a mothering or nurturing role in relation to the newer mothers.

I have a woman coming back this week... she's had her baby, her fifth baby, and she was a bit like a mother hen but in a really lovely way; and she was always really happy to be the voice of reason and sense to the first timer. (T3)

The teachers spoke about how learning happens in many ways: from stories, discussion of medical conditions and hopes for (and fears of) particular birth experiences. Birth news was read out at the beginning of classes and women who had recently given birth came back a few weeks later with their babies to 'show and tell'.

What they get in the classes is a variety of stories; whether that's from the mothers in the class at the time or from mothers coming back with their babies to share their experiences. (T2)

7.2. Modelling labour

Modelling labour emerged as a strong theme with the most densely populated NVivo codes. The teachers aimed not only to teach techniques for coping with labour, but also to prepare the women by helping them visualise the labour environment.

Maybe picture yourself in labour in this position with support around you; creating that stillness that we've got in the room today... Begin to think about what it might feel like to be in labour and those feelings of calm, of being in control and feeling empowered. (C1)

The sub-themes were:

- Breathing
- Listening to your body
- Practising for labour

7.2.1. Breathing

When asked what their YIP classes did that might affect birth outcomes, all the teachers gave similar answers.

I think it's just the ability to breathe, to be in control of that breath. (T1)

The teachers emphasised the link between breathing, control and confidence, saying that although breathing strategies were useful for managing labour pain, they had value beyond this.

It's all about breath... if the woman is in control of her breathing then everything else tends to follow; she's more calm, she's more relaxed, more inward. Then the body just becomes more instinctive. (T1)

A word frequency analysis showed 'breath' and related words (breathing, breathe) were used nearly 1000 times in three two-hour

classes, often linked to positive imagery, and described as easy or powerful.

This is a time when feelings of worry and anxiety may overwhelm you. As you breathe out, allow those worries and anxieties to leave your body and replace them with feelings of calm, of relaxation, of trust. (C1)

7.2.2. Listening to your body

Analysis showed an average of 35 reminders in each session for the women to notice how they were feeling, to make themselves more comfortable and only to do what was right for them.

Thinking about your body this evening and how it's feeling and what it's saying to you... adjusting that movement and position as you need to... Not worrying about anybody else, just tuning into your body and what you need this evening. And if at any point you need to change positions then please do. (C2)

The teachers acknowledged and celebrated individual differences. All the teachers said they were pleased when women chose not to join in, or to do something differently, taking this as evidence that the classes were effective in helping women listen to their body and take control of their decisions.

Some of them don't do everything, but they've made the choice not to do that, which is really empowered isn't it? 'I know I don't want to do that today for whatever reason and I'm not going to.' (T1)

7.2.3. Practising for labour

The teachers wanted to give women practical strategies for helping to manage the sensations of labour. They encouraged the women to learn and practise 'the breathing' while modelling the rocking and repetitive movements women sometimes make in labour.

Throughout the observed classes, the teachers made implicit and explicit links between movements and positions that might help in labour and the standard elements of yoga classes: postures, breathing and relaxation.

At this point I'm beginning to link some of those things into labour. So it's: 'Could you imagine yourself being in this position in labour? Think about how lovely your baby feels with this extra space. How the movement might help with your labour.' (T1)

Lean against the wall and just make some lovely figure of eights with your pelvis... this is one for labour for opening the pelvis and working with the sensations of labour. (C1)

The teachers stressed that teaching these positions as part of yoga practice over many weeks built the women's confidence and made it natural to employ them during labour.

It's just one of our sequences... so... it's not a strange thing that I'm getting into a labour position; it's more like: 'I'm getting into a position where I know that I'm comfortable.' (T1)

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The teachers reported that women returning to the classes postpartum described using the techniques they had learned in the classes in labour, but not always as they might have expected.

She'd joined something we'd done with a visualisation of her 'special place', and that's how she breathed through both of her labours... She'd taken something we do every week and adapted it as a coping mechanism for her labour. (T2)

7.3. Building confidence

The third theme arose from the teachers' aim to:

Build women's confidence and trust in their innate ability to give birth to their babies. (T3)

Every teacher voiced a deep sense of caring about the individual women in her classes and a desire to help them gain, or regain, confidence.

I want them to feel beautiful because they are beautiful... I want them to feel good about themselves. (T2)

[She] had been made to feel, for so many different reasons, that her body can't do this... She's older, she's struggled to get pregnant, struggled to carry a baby and [here] she looks really strong and lovely. (T1, watching the film of her class)

The teachers spoke of aiming to build the women's confidence by respecting their choices and being non-judgemental about their decisions.

So it's not about saying: 'You have to have a straightforward vaginal birth and that's the ideal birth and that's what you should all strive for'... You are not there to judge them or to try and change their mind, you are there just to honour what they say and support them... It's not 'You and your husband' here... it's 'Who's supporting you?' (T1)

The sub-themes related to building confidence were:

- Being in control
- Being positive
- Changing beliefs

7.3.1. Being in control

Emphasis was placed on encouraging and enabling the women to take control of all aspects of their birth experience if they wanted to. Various strategies were employed to achieve this; including telling stories of women who had made choices outside 'the norm', and teaching active birthing positions that might impact the progress of labour.

*She had twins but both of them were breech and so they had chosen to have a caesarean; but she wanted to wait until she went into labour if possible. (Birth story read out in C3)
Roll your hips and move your pelvis, encourage your baby to come down into the birth canal. (C1)*

7.3.2. Being positive

During the classes, there was constant use of reassuring, positive language. Imagery and affirmations were used to

classes, often linked to positive imagery, and described as easy or powerful.

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emphasise how strong and capable the women's bodies were and how beautiful birth can be.

You already know everything you need to give birth to your baby, and know that you can trust in your body, trust in yourself to give birth to your baby. . . you are the best person, the only person who knows what is right for you and what is right for your baby. (C1)

I definitely think that. . . The language I use and the way that I express things in the yoga class. . . talk(s) about birth in a really different way. . . It just says natural, instinctive, joyous, fabulous, exciting. It says all those really positive things about birth. (T3)

7.3.3. Changing beliefs

The teachers spoke of women arriving at their classes believing birth to be a frightening or negative experience. They aimed to offer an alternative perspective: that birth can be positive and the women can cope with it.

[Give] them the belief that birth is possible, that it can be beautiful, it can be an enjoyable experience; or they can be in control as much as they want. (T1)

The teachers described enabling change in the women's beliefs, firstly by increasing the women's confidence through repeated practice of pain-coping strategies; and secondly, by confirming the efficacy of these strategies through stories told in class.

7.4. Enhancing learning

The teachers' views on how they aimed to reach their goals rather than what they aimed to achieve emerged as a strong fourth theme comprising three sub-themes:

- Creating the atmosphere
- Ensuring class rhythm and balance
- Learning in a different way

7.4.1. Creating the atmosphere

The teachers gave attention to lighting and music to enable the women to relax and become familiar with a positive birthing ambience. They often spoke repetitively and rhythmically, and were aware of doing this deliberately.

I like to keep the lights low and I use fairy lights. I want that sort of. . . almost womb like. . . environment that you hope that they will labour and give birth in. So I always use music, I usually use a lavender room spray. . . I want them to feel safe and comfortable. (T3)

It's the language, the words I use, the way I speak, the tone of voice. I hope that feels soothing to them. . . What I hope is that the voice washes over them like some kind of blanket. . . to hull them into that relaxed state. (T2)

As well as the physical atmosphere, all the teachers cultivated a nurturing community by arranging the women in a circle or horseshoe shape, and performing a 'mothering' role - checking that they were comfortable, offering blankets and cushions and making drinks. Work in pairs was used to enhance group bonding, support and 'togetherness'.

Physically I like to give them enough space to move. . . but I don't want them to be too far away from each other because I actually want them to share. I want that bonding thing. (T3)

This sitting together with our drinks is really important. And it's not a drink that they've had to make themselves. . . I've made them a drink. . . they're safe, they're warm. (T1)

The intention to build a supportive group culture was emphasised to the women.

Come into a circle together and do a supported tree. So make sure you have got enough space and you can just touch the person's shoulders. . . You can do this individually but it's so lovely to do it as a group. It's good to know that your support is keeping the women either side strong and steady and their support is doing the same for you. (C1)

7.4.2. Ensuring class rhythm and balance

Each class had a clear structure. The teachers emphasised the rhythm of each section and the balance of social time versus quiet reflection.

It's important for them to talk to each other. . . but have a good balance. . . enough quiet stillness that they can focus on themselves, their baby, their breathing. (T2)

The teachers described two ways in which the women's ability to learn was enhanced by a familiar structure. Firstly, the women were able to relax more easily as they knew the 'shape' of each class. Secondly, the constant repetition of words, postures and techniques enabled them to become embedded in the women's minds.

It's that positive reinforcement: if you hear it enough then you believe it. . . If people tell you breathing is really good in enough different ways and you get to try it out yourself and it works, then you will believe that the breathing is good. (T3)

7.4.3. Learning in a different way

Birthing concepts were introduced from a variety of perspectives but with very little didactic teaching. For example, a topic such as 'managing contractions' might be introduced in the opening name round, where the women would share their experiences and views. It would then be addressed again practically through visualisations, posture work, practice contractions and relaxation exercises before perhaps being discussed during the refreshment break or visitor time. This process enabled women to absorb information and skills in different ways. The teachers explained how knowledge became embedded without being formally taught and contrasted this with traditional couples' antenatal courses.

When I teach [non YFP] antenatal classes, I know that there's a certain amount of information that they expect to learn and I'm expected to give. . . but this is in a far more subtle way. . . You reinforce the same message every week so you know it's going in, but just in a very different way. (T2)

There's not a curriculum for the classes; there's no head stuff, there's no learning in the traditional way. It's a different kind of learning; it's a physical learning rather than a mental learning. (T2)

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8. Discussion

This study responds to the 'urgent need' expressed by the Cochrane systematic review by Marc et al.,¹⁸ to reduce pregnant women's anxiety. It set out to explore YFP teachers' aims and their perceptions of the mechanisms by which their classes might affect women's self-efficacy for labour and birth. Interview data was enriched by virtue of the fact that teachers were talking about their classes while watching them on video. The three NCT YFP teachers who participated in the study aim to increase women's self-efficacy for labour through an integrated approach combining not only the benefits of yoga, but the creation of a safe space where pregnant women can learn from each other and gain confidence through the use of story-telling, sharing experiences, positive affirmation and teacher-led exercises to facilitate the use of pain-coping strategies in labour.

The study adds to the body of work around YFP conducted in groups. Most YFP research^{5,6} does not discuss the benefits of women-only learning environments but stresses instead aspects of yoga practice such as postures, breathing, meditation and relaxation.

The findings of the present study resonate with the work of other researchers. Doran & Hornibrook in their study of a pre and postnatal yoga group¹⁹ in Australia identified similar themes of *Feminine nurturing space* and *Watching and learning the mothering*. The importance of safe, nurturing female spaces for pregnant women is well described in antenatal education and midwifery literature.²⁰ Findings that pregnant women like to learn in small peer groups, gaining emotional insight and reassurance from sharing experiences, hints and tips with other women have been presented by Renkert and Nutbeam²¹ and Deave et al.²² Nolan et al.²³ describe how the unique friendships formed in antenatal classes confer multiple social and psychological benefits. Rakhshani et al. found that YFP enhanced quality of life and personal relationships,²⁴ the latter also supported by studies of psychiatrically at-risk women.²⁵

Our findings regarding YFP teachers' estimate of the importance of sharing stories supports the work of researchers who have found that stories enable a sense of connection with other women, pass on women's birthing culture and significantly affect beliefs about birth.²⁶

Embedding the teaching of various pain-coping strategies within yoga practice was one of the main methods employed by the YFP teachers to increase women's self-efficacy for labour. Their approach reflects the findings that pain in labour is a subjective, multi-faceted experience affected by the interplay of physical, emotional, social and intellectual factors²⁷ and that coping

strategies used by women in labour are complex and multidimensional.²⁸

9. Limitations

To the best of our knowledge, this is the first in-depth study exploring YFP teachers' perceptions of what they are trying to achieve in their classes and how. The study makes a contribution to the literature in an under-researched area. The use of pharmacological pain relief in labour is associated with higher rates of surgery and lower postnatal mental and physical wellbeing scores for women and their families.^{29,30} The present study, together with the second part which explores women's accounts of attending the same three YFP groups, will give a 360 view of the experience of delivering and receiving this antenatal intervention. The findings aim to inform strategies for reducing the rate of intervention in labour and birth which has continued to increase and has been significantly resistant to change.

The study is limited by the small number of participants and the fact that all the YFP teachers had been trained by the NCT. Future studies should aim to include a larger number of teachers with backgrounds in different yoga philosophies.

10. Conclusion

As a holistic intervention affecting the physical, psycho-social and spiritual domains, yoga appears to be ideally placed to influence women's ability to manage labour pain. This study adds to the debate around how YFP may facilitate an increase in women's self-efficacy for labour and birth and highlights the need for further research into whether YFP can be 'dismantled' and if so, which underlying mechanisms are effective. Findings suggest any changes to women's self-efficacy beliefs after YFP classes may not be due purely to yoga practice but also to time spent with other women in a safe environment where hopes, fears and practical aspects of managing labour and birth can be discussed in a positive way. A follow-on study will explore women's experience of YFP classes to ascertain which aspects they find helpful in labour. Their lived experiences will be compared with the teachers' understanding of how YFP classes enhance women's self-efficacy for labour and birth.

Acknowledgments

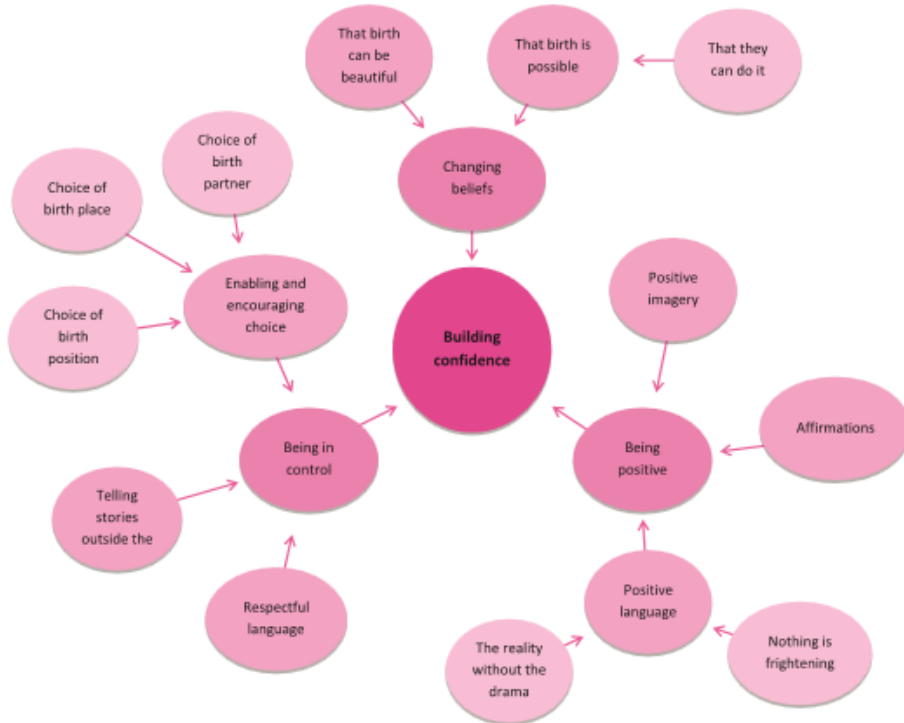
The study was part of a PhD studentship supported by an HEI. Some expenses were paid by the NCT.

Appendix A



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Creating a sisterhood

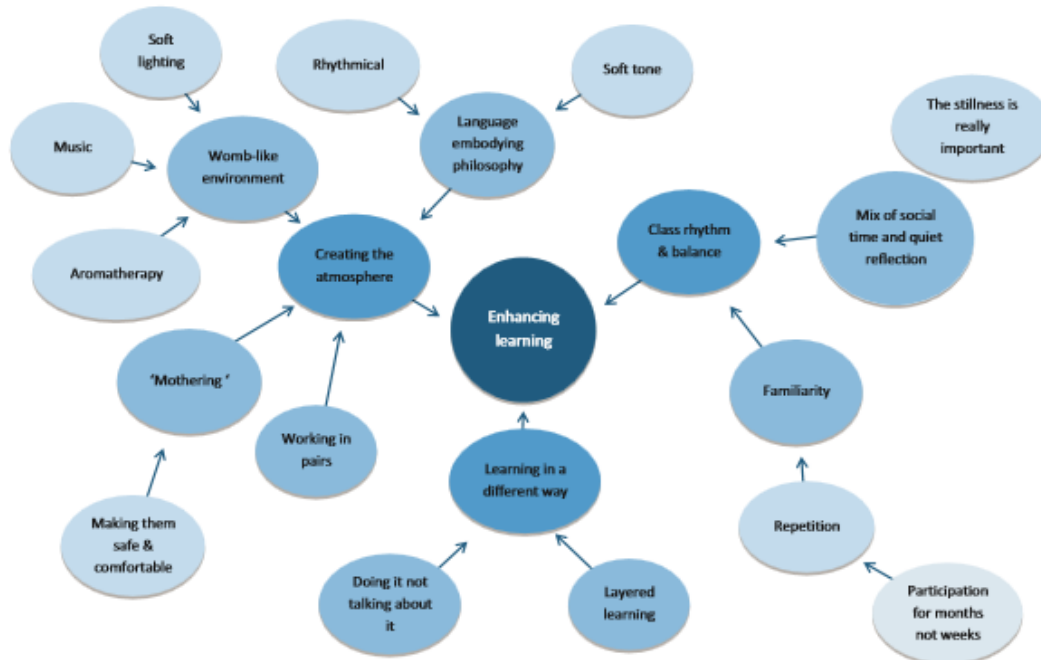


Building confidence



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Modelling Labour



Appendix B. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.wombi.2015.04.007>.

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