1. Abstract

1.1. 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.

1.2. 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.

1.3. 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.

1.4. 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.

1.5. 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.
2. Keywords
Yoga, pregnancy, self-efficacy, antenatal, labour, birth

3. 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.

4. 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 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.\textsuperscript{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.\textsuperscript{12}

5. Setting

The NCT (formally the National Childbirth Trust) has run a university-validated YfP teacher training programme since 2005. Approximately 1,500 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.

6. 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.

7. Methods

Grounded Theory was chosen as it enabled incidents as well as people to be the main units of analysis.\textsuperscript{13} Charmaz’s constructed approach of flexible guidelines\textsuperscript{14} 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\textsuperscript{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.\textsuperscript{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 stance\textsuperscript{14} 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.\textsuperscript{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.

8. 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.

10. 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 shaded boxes.

10.1 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)

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

10.1.1 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)

10.1.2 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)

10.1.3 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 YfP 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)

10.1.4 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)

10.2 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

10.2.1 Breathing

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

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)

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)

10.2.2 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.

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
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)

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)

10.2.3 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)

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)
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)

10.3 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

10.3.1 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)

10.3.2 Being positive

During the classes, there was constant use of reassuring, positive language. Imagery and affirmations were used to 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)

10.3.3 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.

10.4 Enhancing learning

The teachers’ views on how they aimed to reached 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

10.4.1 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 lull 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)

10.4.2 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)

10.4.3 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)

9. Discussion

This study responds to the ‘urgent need’ expressed by the Cochrane systematic review by Marc et al. \(^\text{18}\) 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 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 group 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. 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 & Nutbeam and Deave et al. Nolan et al. 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, the latter also supported by studies of psychiatrically at-risk women.

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.

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 factors and that coping strategies used by women in labour are complex and multidimensional.

12. 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. 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.

**13. 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.

**14. Acknowledgments and Disclosures**

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