www.elsevier.com/midw

"Facing the wrong way": Exploring the Occipito Posterior position / back pain discourse from women's and midwives perspectives

Nigel Lee, Sue Kildea, Helen Stapleton

PII: S0266-6138(15)00183-7
DOI: http://dx.doi.org/10.1016/j.midw.2015.06.003
Reference: YMIDW1692

To appear in: *Midwifery*

Received date: 22 January 2015
Revised date: 8 May 2015
Accepted date: 5 June 2015

Cite this article as: Nigel Lee, Sue Kildea, Helen Stapleton, "Facing the wrong way": Exploring the Occipito Posterior position / back pain discourse from women's and midwives perspectives, *Midwifery,* http://dx.doi.org/10.1016/j.midw.2015.06.003

Title: "Facing the wrong way": Exploring the Occipito Posterior position / back pain discourse

Authors

Nigel Lee[1,2,] RM MMid PhD (Midwifery Lecturer / Research Fellow),

Sue Kildea[1,2,3] RM BHlthSc (Hons) PhD (Professor of Midwifery),

Helen Stapleton[1,2] RM PhD (Senior Research Fellow)

Addresses

1. School of Nursing, Midwifery and Social Work, University of Queensland, St Lucia Queensland, Australia 4072
2. Midwifery Research Unit, Mater Research Institute-UQ, Aubigny Place, Raymond Terrace, South Brisbane, Queensland, Australia 4101
3. Mater Mothers' Hospital, Mater Health Services, Raymond Terrace, South Brisbane, Australia, 4101

Corresponding Author

Nigel Lee

Address Midwifery Research Unit
Mater Research Institute-UQ
Aubigny Place
Raymond Terrace, South Brisbane, Queensland, Australia 4101,

Telephone (61 7) 3163 6118

Fax (61 7) 3163 1588

E-mail nigel.lee@mater.uq.edu.au

Abstract

Objective
To explore back pain in labour from the perspectives of women and midwives.
Design
A qualitative study, which generated data through individual semi-structured interviews with postnatal women and focus groups with midwives. Data were analysed thematically.
Setting
Two metropolitan maternity units in Queensland, Australia.
Participants
Nine postnatal women and 11 midwives, all of whom had participated in a randomized controlled trial investigating the use of sterile water injections for back pain in labour.
Findings
Two major themes were identified, including back pain in labour: accounts, rationalizations and coping strategies, and fetal position: destabilising the Occipito Posterior-back pain discourse. Key. conclusions
Back pain may be severe in labour, may impact negatively upon women's labour and birth experiences, and interfere with their ability to cope as planned. The assumed relationship between fetal position and back pain in labour is a dominant discourse, albeit one which is lacking in empirical credibility. Nonetheless, the information provided to women by maternity professionals tended to reiterate customary practices and beliefs rather than factual knowledge. Increasingly, women refer to other sources, which may challenge the information provided by health professionals. Implications for practice: Back pain in labour is an under-researched area and the lack of solid evidence underpinning the advice provided to women has implications for labour management, and possibly for maternal and fetal outcomes. Care providers might usefully consider back pain as multifactorial, not always associated with OP position, and continue to seek evidence-based management strategies which address women's needs.

Keywords

Back pain; Labour; Occipito-posterior; Sterile water injections; Childbirth

Introduction

Back pain in labour

As many as 70% of women may experience varying degrees of back pain during their labour (Melzack and Schaffeberg 1987; Tzeng and Su 2008), however surprisingly few studies have explored the incidence or causative factors. An early study (Melzack and Schaffeberg 1987) asked 46 women in early labour (cervical dilatation of 2–3 cm and contractions less than five minutes apart) to complete the McGill Pain Questionnaire, rating the quality and intensity of pain using a list of descriptors. The results from these participants indicated that there were three types

of labour pain that were characteristically different from each other and experienced by different proportions of women: abdominal contraction pain (96%) intermittent low back pain (74%); and continuous low back pain (33%). The highest pain levels were reported by women who had intermittent low back pain superimposed upon continuous low back pain. When this combination occurred the women described the contraction pain as *"riding on"* the continuous back pain and as being unrelenting and exhausting. A more recent prospective cohort study of 93 Taiwanese women using a self reported 100mm Visual Analogue Pain Scale stated that 75% of participants experienced low back pain during labour, with 45% reporting it as continuous (Tzeng and Su 2008). The most common area for back pain was the lumbar region, most likely occurring in the early phases of labour.

Back pain as a normal variant of labour pain

There is little evidence to demonstrate whether, considering the relative frequency of occurrence, back pain represents a normal or abnormal variation of labour pain. Some authors (Leap et al. 2010) have proposed that labour pain is normal when it occurs to the degree that women are able to bear it without the need for pharmacological analgesia; severe labour pain requiring such analgesia may be indicative of abnormality or pathology, including malposition of the fetus. The occipito-posterior (OP) fetal position in particular has been reported as a cause of back pain in labour (Reynolds 2000). A systematic review of the use of sterile water injections (SWI) for the relief of back pain in labour (Fogarty 2008) noted the universal agreement amongst the authors of the studies that the OP position was a common contributing factor to back pain in labour.

This may be because an OP position nearly always includes some degree of deflexion of the fetal skull, presenting a larger diameter as it enters and progresses through the maternal pelvis. This results in delayed descent and reduced contact between the fetal skull and maternal cervix, with less effective contractions. Therefore, the OP position is often associated with labour dystocia, characterised by slow progress in the first and second stages of labour, and increased pain (Kjaergaard et al. 2008; Selin et al. 2008).

Optimal fetal positioning

Some care providers subscribe to the theory of Optimal Fetal Positioning (Sutton and Scott 1996), which advocates the use of antenatal exercises and forward leaning positions (including kneeling on 'all fours') to encourage the rotation of the fetus from the presumed OP to a more advantageous Occipito-Anterior position. The use of such interventions is not a recent phenomenon, in the 1930's the application of abdominal pads (placed against the maternal abdomen on the side of the fetal back) in the latter weeks of pregnancy, and lying in a semi prone position, were thought to reduce the incidence of fetal OP positions at the onset of labour (Tong et al. 2007). However, evidence to support the effectiveness of these exercises remains elusive (Kariminia et al. 2004; Hunter et al. 2007). Indeed, we currently lack any evidence that the position of the fetus at the onset of labour impacts upon the mode of birth (Ahmad et al. 2014), or is associated with the occurrence, or intensity, of the labour-related back pain reported by women (Lieberman et al. 2005).

The frequency and severity of back pain in labour presents significant challenges to labouring women and their care providers, and may contribute to an increased use of analgesia in labour (Hutton et al. 2009). To our knowledge, no studies have

examined the impact of back pain on women's labour and birth experiences, nor the advice and care provided by maternity professionals, particularly midwives. We suggest there may be important insights to be gained from exploring this issue. Hence, the aim of this qualitative study was to describe the experience of back pain in labour from the perspectives of labouring women and midwives enrolled in a randomised controlled trial examining the use of Sterile Water Injections (SWI) for back pain in labour (Sterile Water Injections Techniques Comparison: SWITCh trial) (Lee et al. 2013).

Methods

Study aim

The aim of this study was to describe women's experiences of back pain in labour and midwives' experiences of providing care for women with back pain in labour.

Study design

A qualitative sub-study of the SWITCh trial conducted at two metropolitan hospitals in Queensland, Australia (Lee et al. 2013).

Participants and data collection

Recruitment of women: Purposive sampling was used to recruit postnatal women who were already participants in the SWITCh trial. Women had been recruited, consented and randomised to the SWITCh trial when they requested analgesia for back pain in labour, including consent to be contacted by the research team to participate in the qualitative arm. Women in the SWITCh trial were excluded if they had received any pharmacological analgesia prior to receiving SWI however they were able to use any form of analgesia they requested following administration of

SWI (Lee et al. 2013). Participants were approached by a research assistant, either as inpatients prior to discharge from hospital, or by telephone following discharge, and invited to take part in the qualitative arm of the study. If they expressed continued interest in participation they were invited to complete a further consent form. The research assistant was blinded to which arm of the SWITCh trial the participants were originally assigned. Recruitment continued over a four month period until data saturation had been reached.

Recruitment of midwives: Midwives at both sites, who worked in birth suite and had experience of using SWI during the SWITCh trial, were also invited to participate in the study. Information emails were distributed to midwives with contact details of the researcher to notify interest in participation. Midwives signed consent forms prior to attending the focus groups.

Data Collection: Women and midwives from across both sites participated. Data were collected through individual, face to face interviews with women (n=9) and focus groups (n=3) with midwives (n=11). Individual semi-structured interviews with women took place in their homes, their preferred venue because it minimised the inconvenience of travelling with a newborn infant. The home provided a naturalistic setting to conduct the interviews. Midwives typically use birth stories, narratives and anecdotes to share information, reflect on practice and offer mutual support (Leamon 2009); focus groups therefore provided a familiar setting to discuss their experiences of using SWI. Individual interviews were conducted by the first author; focus groups were facilitated by the first and third authors. Interview guides for both the individual interviews and the focus groups were developed by the first and third author (Table 1) based upon domains identified in the literature. Prompting questions (e.g. “At what point in your pregnancy did you start thinking about preparing for birth’) were used to

introduce each domain if these did not arise spontaneously during the interview. Each interview lasted approximately 45 minutes. Guides for the focus groups covered the following domains: 'Supporting women in labour', 'Non-pharmacological analgesic strategies' and 'Back pain in labour' (Table 1). Each focus group lasted approximately one hour.

Approval for the study was provided by the Hospital Human Resources Committees where the study was conducted, and by the University where the first author was enrolled as a Doctoral student at that time.

Data analysis

It is generally acknowledged that there are no universal procedures for analysing qualitative data; however, the approach selected needs to be consistent with the overall methodology (Polit and Beck 2004). Thematic analysis, the method chosen, can be described as a widely used, and essentially foundational, method for "identifying, analysing and reporting patterns (themes) within data" (Braun and Clarke 2006).

All individual interviews and focus groups were audio recorded, transcribed verbatim by a third party, and verified by the first author. Pseudonyms were then allocated to each participant to protect anonymity; other identifying features, including references to individual staff or the woman's partner/spouse, were similarly disguised. The analysis process was iterative as transcripts were read and re-read to identify and clearly define potential themes of relevance to the research aim, which were then clearly defined. Data were independently coded by the first and third author. Inconsistencies were reconciled and a final coding scheme agreed. Transcriptions were then uploaded to NVivo qualitative data analysis software (QSR International

Pty Ltd. Version 8, 2009), and analysed thematically (Mason 2002). Themes and definitions were reviewed against the transcribed text to ensure that they accurately reflected the data entered. A process of collapsing and merging of subthemes then occurred before the final thematic structure emerged (Tong et al. 2007).

Results

Participants had been randomised to either a single (n=5) or four SWI technique (n=4) and were blinded to their allocation (mean cervical dilation at allocation was 4cm, range 3-5 cm). The participating postnatal women ranged in ages from 22 to 38 years; six were nulliparous and three were multiparous. Three were educated to final school year (Grade 12) and six had completed tertiary education. Six women had received publically funded antenatal care shared with a General Practitioner, two through a publically midwifery group practice, and one woman had attended a private obstetrician. Five women had a spontaneous vaginal birth and four had a caesarean section for obstructed labour. Midwives were all female, aged between 25 and 55 years, with clinical experience ranging from three to 30 years. Five of the midwives had completed tertiary pre-registration degrees (of which three were direct entry), and six were hospital trained.

Data analysis identified two distinct themes: i) back pain in labour: accounts, rationalisations and coping strategies; ii) Fetal position: destabilising the OP-back pain discourse Quotes from women and midwives that are representative of the themes and subthemes are provided. Where necessary clarification and non-verbal content has been provided, for example: (laughs). Some quotes were edited to

maintain focus on the issue under discussion; the format […] indicates where this has occurred. Information on women's parity has been included to provide context around the influence of previous labour/birth experiences; this is indicated following the assigned pseudonym.

Back pain in labour: accounts, rationalisations and coping strategies

Women provided detailed descriptions of their experiences of back pain in labour. Many recalled that their back pain began in the early stages of labour and it was often a dominant factor in prompting them to seek professional advice and pain relief. Our data suggested that parity made little or no difference as women in labour for the first time provided similar accounts to experienced labourers. The sensation of pressure was a common theme:

> *I felt my spine was being squished sort of thing. It was a very specific point in my back. […] It was just quite intense. It's the worst pain I've ever had actually.* (Odette, third baby)

Odette's reference to a localised sensation of pressure was echoed by other participants such as Kerry, in labour with her first baby:

> *It wasn't like a zapping or a pinch or anything like that, it was like someone was trying to break your bone by putting pressure on it and that's what it felt like. It feels like that there's that much pressure that the only thing it can do is explode* (laughs). (Kerry, first baby)

The descriptions of the intense back pain women provided were very graphic, often containing references to bones being squashed or broken. The sensations appeared

to be all-consuming and so powerful as to completely distract even multiparous women from all other physical sensations:

> *I mean, as I said it's a whole body thing. […] It's your whole back and it overrides everything else that's sort of going on and stuff, because all that you can think about is that damn back pain. Yes I must say it was really, really horrible.* (Siobhan, third baby)

Hence, when it was present, back pain was frequently reported as the most dominant sensation. Many women in this study were able to clearly differentiate the back pain they experienced from what is generally considered as the more normal abdominal labour pain, or indeed, from any other labour-related discomfort. As previously stated, women participating in this study received sterile water injections for their back pain and when this was relieved they often reported little or no abdominal discomfort. A possible explanation in is that in the context of labour, back pain is referred uterine pain, which has no relationship to any pressure exerted by the fetal head on the bones of the maternal spine.

Women reported that the presence of back pain challenged their intended plans for coping with labour, and resulted in physical and mental withdrawal. Our data strongly suggested however, that women's strategies were largely directed towards coping with intermittent abdominal contractions, rather than the unrelenting, unexpected, and often severe, back pain.

Bea describes how her back pain immobilised her, to the extent that she could not even avail herself of the relief she had anticipated from standing in the shower:

> *Because all the pain was in my back there was not much I could do apart from just standing. I tried sitting for a little while, then standing. I couldn't walk around, I couldn't bend over, I couldn't have a shower so I just stood there and had to deal with the pain. […] I just stood there. I just stood there for hours in one spot*. (Bea, first baby)

Restriction on free movement also affected women's psychological responses to labour. In the following quotation Kerry describes withdrawing mentally to help her cope with the pain:

> *I couldn't be as active as I wanted to be because of the (back) pain and therefore it affected me mentally and there were times where I really had to sort of go deep within myself and remind myself what it was all for. […] It can be very tormenting on your mind, your thought process too*. (Kerry, first baby)

Kerry's remarks highlight the negative psychological impact of unremitting back pain on her experience of labour. Other participants talked about the need to focus and withdraw; to find solace deep within themselves as a new, and unexpected, method of coping.

Midwives also discussed how the enduring presence and unforseen severity of back pain often initiated a reappraisal of women's pre-labour considerations for analgesia, and their plans for a natural birth:

> *We (the woman and her carers) were aiming for a natural birth but then (the woman) experienced this back pain. I think then they (women) start to think, well, what have I got myself into? No one ever talked about this back pain. So*

then (women) start to think well, maybe I do need pain relief. (Kirstie, midwife five years)

Our data identified that the intensity and location of labour pain was not necessarily made explicit in the information accessed by, or provided to women during pregnancy and we suggest that this discrepancy may impact upon their expectations. Furthermore, Kirstie is of the opinion that the gap between women's expectations and the reality they experience may increase their fear and sense of uncertainty, which interferes with physiological labour processes, including hormonal release:

I think that if women experience bad back pain and it's unexpected they can have a sense of fear, that it's not supposed to feel like this and that may inhibit with their whole hormone release system as well. (Kirstie, midwife five years)

The experience of unexpected pain may also heighten the sensation of that pain, setting up a cyclical physiological response of pain, fear, more intensely felt pain, and greater fear of further pain, with further consequences for normal hormonal activity. The shift from the normal pain of labour, to pain that exceeds capacity and causes distress, may be challenging for midwives:

I feel really sorry for them. I feel sorry for them anyway, which I shouldn't, it's not about sympathy. But it's a bit of a rip-off getting back pain. (Alexandra, midwife eight years)

When labour pain exceeds a woman's expectations and coping abilities, it may be viewed negatively by both women themselves, and their care providers. As

Alexandra has suggested, the midwife's response may shift from feelings of compassion and sympathy, towards a need to relieve the woman of her pain and perhaps a concern that her labour is moving from the realm of normal, towards pathological. A change in the midwife's attitude may lead to a loss of confidence in women, and alter both expectations for all concerned regarding tolerance for the pain associated with labour, and analgesic requirements.

ii) Fetal position: destabilising the OP-back pain discourse

The association between back pain and fetal position, specifically occipito-posterior (OP) position where the fetal head and back are turned toward the maternal spine, is a prevailing and largely uncontested concept in pregnancy and labour (Simkin 2010). Numerous antenatal and birthing websites, message boards and online forums discuss 'back labour' and frequently cite the malposition of the baby in the uterus/pelvis as the main causative factor. Indeed, references to the causes and treatment of OP in the medical literature date as far back as the 1700's (Mason 2002). The concept continues to be broadly accepted by care providers working in contemporary settings, who typically present it to women as the primary cause of their labour-related back pain, their slow progress, and the need for intervention, including pharmacological analgesia. Perhaps unsurprisingly, women participating in this study reported being influenced by the information they received from their care providers during pregnancy and labour:

> *Well, apparently he* (baby) *was laying reverse. His spine was on my spine so that's what the midwives, the obstetrician, told me why I was experiencing pain. Because he was facing the wrong way.* (Bea, first baby)

In describing her baby's position as *"facing the wrong way"*, the obstetrician not only links Bea's pain to her baby's (mal)position but also hints at something out of the ordinary and possibly pathological. In this instance, the inference that Bea's back pain may have a pathological cause is likely to be ascribed greater significance by the authoritative position of the obstetrician and midwives, and the hospital environment in which the encounter took place. Being in a hospital setting (and being in labour) may add an imperative to the desire for information and action, but equally it may limit opportunities for reflection and further discussion of alternatives. The obstetrician's and midwives position (of power and authority) gives further weight to the inference that there is a 'right way' for the baby to face, without the requirement to provide either justification or evidence.

> *The doctor from upstairs, the one who examined me in the wards, said she was concerned that he (baby) had actually turned around. […] and that could be the reason why I was having so much back pain.* (Odette, third baby)

Midwives, including those with many years' experience of caring for women in labour, also agreed that a direct relationship existed between OP position and maternal back pain:

> *Those* (babies) *in posterior positions cause a lot of back pain. One of the main reasons is the baby's position.* (Deena, midwife 20 years)

In comparing contemporary women with their forebears, some midwives suggested that OP positions were a modern malady, associated with sedentary occupations and lifestyles, increased use of technology, and changes in women's posture:

> *I remember when I worked in the labour ward in the early 90s, I don't remember people reporting as much back pain. I think more sitting occupations, […] more information age, more technology, more less uprightedness.* (Alexandra, midwife eight years)

Alexandra went on to suggest that contemporary lifestyle and demographic factors, such as an older age at conception and a tendency towards "*weight problems",* associated with reduced physical activity, had increased the incidence of OP positions:

> *Because we are seeing more older women having their first baby. And what sort of lifestyle you had before, flexibility, all of that comes into it. Because if you have weight problems, you are less active.* (Alexandra, midwife eight years)

Such commentary is suggestive of a moral judgement that privileges fitness and health in women's ability to labour successfully, without the back pain that both women and clinicians associate with an OP position.

In this study, the OP-back pain discourse, transmitted as accepted fact from one generation (of women and clinicians) to another, frequently dominated discussions. Midwives narratives made frequent reference to how this 'knowledge' was passed to them as students, citing authoritative figures such as senior clinicians and teachers as their primary sources. Interestingly, none of the midwife participants made reference to any empirical data that supported their claims to a relationship between OP position and back pain.

Following on from the association made between OP and back pain, the midwives discussed how women in their care often engaged in remedial exercises to correct or prevent an OP position, including kneeling on 'all fours' for repeated periods.. Whilst in labour midwives also advocated mobility and awareness of the baby's (mal)position to combat pain:

> *As one of the givens* (with back pain) *is that the baby is in the posterior position so you just try and do a bit more to try and get them* (labouring women) *up and mobile and educate them on what exactly is going on.* (Kirstie, midwife five years).

Kirstie emphasises the importance of *"educating"* women; of providing them with information and possible solutions for their back pain, which she assumes is related to fetal malposition. However, other midwives cautioned that an exercise regime raised women's expectations, possibly generating negative feelings, especially if the presumed OP position remained unchanged:

> *Sometimes they* (labouring women) *feel bad because they did all the special exercises and movements and they were unsuccessful.* (Marilynn, midwife 10 years)

Women sometimes expressed their disappointment when they were unable to practise the (optimal) exercises midwives recommended (antenatally and in labour), due to persistent back pain:

> *And that* (back pain) *also caused problems. I wasn't able to sit in the optimal positions for you know, when you're in labour, to try to get the baby in the right*

position. I had to lay down a lot and I think that's why, in the end, she was posterior. (Kerry, first baby).

Through the use of words such as "posterior" and "optimal positions", Kerry has incorporated technical language into her explanation. With a blending of lay and technical terminology, Kerry attributes the (posterior) position of her baby to her own inability to adopt the recommended optimal positions that she understood may have corrected this perceived (but unproven) malposition. Hence, her back pain becomes not only a symptom of presumed fetal malposition but also a causative factor.

Not all women, however, shared their midwife's belief in the power of exercises to achieve an 'optimal' fetal position. In the following quote, Odette expresses her doubt that as the 'all fours' position recommended by her midwife during pregnancy had not effected the desired change in fetal position, she was unsure about the value of maintaining it in the pool during labour:

Every appointment that I had they (midwives) kept saying […] "Maybe you should do some more exercises where you're on all fours". […] So that's like, on my tummy a lot in the pool floating and stuff, wondering if that was going to help […]so then I sort of looked that up (on the internet) and they said, Oh most babies move at the last little bit. (Odette, third baby)

The midwives rather singular focus on the relationship between fetal position and back pain, and the incorporation of this association into their antenatal advice, appeared to polarise women between those that accepted the explanations and those who more sceptical, and sought other opinions. However some midwives also acknowledged the very real risk that women may feel disenchanted and frustrated if

the suggested postural interventions failed to change the baby's position, and relieve their back pain,.

Discussion

To our knowledge this is the first study to explore back pain in labour from the perspectives of women and midwives. As with many qualitative studies the results are not intended to be generalisable to other populations, but instead provide insights into participants' personal experiences of the phenomenon in question and suggest, or question, relevant theoretical perspectives that may be explored in future studies.

Women in this study provided powerful descriptions of their experiences of back pain in labour supporting the conclusions of the study by Melzack and Schaffeberg (1987) that this phenomenon had the potential to significantly impact upon their interpretations of labour. Narratives were provided by women in labour with a first and subsequent term pregnancy however, regardless of parity, their accounts shared similar characteristics, with no element particular to either nulliparous or multiparous women. Ongoing studies in this area suggest that while parity may affect perceptions of pain at different stages of labour, the overall intensity appears to be similar (Lowe 1987; Gaston-Johansson et al. 1988; Capogna et al. 2010).

The fetus lying in an OP position within the pelvis has often been cited as a common cause for back pain in labour (Hart and Walker 2007; Fogarty 2008), however there is currently no published evidence to support this association. Studies have indicated that back pain in labour may be related to the advent of technology (notably continuous fetal heart monitoring) and a tendency for women to labour in bed in a horizontal and fixed position, rather than be mobile and upright (Melzack et al. 1991).

An association between back pain in labour and women reporting a history of back pain occurring with menstruation has also been posited (Melzack and Belanger 1989). These research findings suggest that maternal position and/or referred uterine pain may be contributing factors. Other factors such as women's fitness levels and body weight were also cited by midwives as contributing to OP positions, and back pain in labour. Research does suggest an association between obesity and back pain generally (Leboeuf-Yde 2000) and in labour (Tzeng and Su 2008), with back pain in non-pregnant populations reported more frequently by those who lead more sedentary lifestyles (Heneweer et al. 2009). These studies suggest lifestyle factors may indeed be as important a contributory factor.

Women in this study frequently suggested that their back pain challenged their plans to be active during labour, resulting in physical and mental withdrawal. In previous studies women also described withdrawing to a *"private world"*, which acted to shield them from feelings of vulnerability and provide a sense of seclusion (Halldorsdottir and Karlsdottir 1996). However this withdrawal was often positively described in terms of providing privacy and calmness (Halldorsdottir and Karlsdottir 1996) or one of pleasant memories (Karlsdottir et al. 2014). Whereas the women in our study often viewed this need to physically and mentally withdraw more negatively; as a conscious coping strategy which they felt forced to adopt, in order to deal with pain that was unexpected. A phenomenological study of women's experiences of labour pain (Whitburn et al. 2014) described two states of mind that women may move between when interpreting labour pain; mindful acceptance and distraction. Mindful acceptance was associated with awareness and concentration, such as may be demonstrated with a preparedness to cope with abdominal labour pain, whereas when distracted by sensations that may be internally generated, such as an

unexpected back pain, women reacted with catastrophising thoughts and altered focus. All the women in our study described their back pain in negative terms, overriding and dominating their labour experience. Some of the midwives caring for women with back pain also appeared to alter their attitude from one of support to sympathy, and a greater propensity to contemplate the need for pharmacological analgesia.

The vivid descriptions of extreme pressure, sensations of crushing, and intense localised back pain provided by women reiterated midwives observations, possibly contributing to the widely assumed relationship between back pain in labour and an OP position. Pain is understood to be produced by the fetal occiput pressing against the maternal spine and surrounding structures, although there is little empirical evidence to support this assumption (Simkin 2010). Indeed, previous studies have suggested that back pain in labour is not exclusive to women with an OP position. For example, a cohort study, which used serial ultrasound scans (n=1562) to determine changes in fetal position in labour (Lieberman et al. 2005), reported no association between back pain and OP position in a participant sample where almost equal numbers (28% vs 26%) of women with an OP and an OA position respectively, reported back pain in labour.

Women in our study often reported receiving advice that their babies were *'turned around'* or *'facing the wrong way'* as the cause of their back pain antenatally, as well as during their labour. The unquestioned acceptance of this association was so total that rarely were any other reasons offered for the pain which women reported. Our results support the study by Simkin (2010) that reported this view was widely shared by maternity care providers. The inference that there was a right or wrong way for the baby to lie prior to, or during early labour, added a perception of pathology and a

need for a remedy that gives the explanation greater emphasis despite that lack of supporting evidence. Simpkin (2010) also points out that the assumed association between OP position and back pain may result in clinicians treating all women with back pain as having an OP position, and instigating which may be unnecessary interventions to prevent or treat the expected negative affect on labour. A number of women adopted some of the technical language (e.g. posterior position) in their descriptions of their baby's position, reflecting the influence of the explanations provided by clinicians. Other women disclosed that they used other information sources, such as the internet, to further explore the verbal information that had been provided to them. This supports findings from studies on women's use of the internet to verify the information provided to them by care providers, and that this process increased their sense of autonomy (Larsson 2009; Lagan et al. 2010).

Midwives provided women with advice regarding exercises based on the theory of optimal fetal positioning (Sutton and Scott 1996) that aimed to treat or prevent an OP position prior to the onset of labour, despite no evidence of effect or benefit. Therefore, when these exercises are undertaken by women who then experience either back pain in labour, or are 'diagnosed' with an OP position, this may have a negative impact on their sense of self preparedness for birth. Findings from our study support this association, with a number of women suggesting that their back pain was a result of their inability to undertake the remedial exercises advocated by their care providers.

A possible limitation of the study is that women's recollections and interpretations of labour and pain may have changed in the weeks between the experience and the point in time in which the interviews were conducted (Tinti et al. 2011). Furthermore the emotions associated with personal experiences of labour and birth may combine

with pain recollections to construct memories of pain and painful events that may also change with time (Waldenström and Schytt 2009).

This study draws attention to an important, but under researched, area of clinical practice, and highlights challenges for both women and clinicians. The information and advice provided to women by care providers appears to be based on a long held, and presumed, relationship between OP fetal position and back pain. This association, and the implications for a correctable pathology, may negatively influence the woman's self-belief in her ability, and her sense of self-preparedness for labour and birth. Care providers should incorporate the possibility of causative factors for back pain in labour, other than fetal position, into their clinical assessments and information provision to women. Further research could usefully focus on (dis)confirming other causes of back pain in labour and effective strategies for management, and the effect and acceptability for childbearing women.

References

Ahmad, A., Webb, S. S., Early, B., Sitch, A., Khan, K. and MacArthur, C. (2014). Association between fetal position at onset of labor and mode of delivery: a prospective cohort study. Ultrasound in Obstetrics & Gynecology 43(2): 176-182.

Braun, V. and Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology 3(2): 77-101.

Capogna, G., Camorcia, M., Stirparo, S., Valentini, G., Garassino, A. and Farcomeni, A. (2010). Multidimensional evaluation of pain during early and late labor: a comparison of nulliparous and multiparous women. International Journal of Obstetric Anesthesia 19(2): 167-170.

Fogarty, V. (2008). Intradermal sterile water injections for the relief of low back pain in labour: a systematic review of the literature. Women & Birth 21(4): 157-163.

Gaston-Johansson, F., Fridh, G. and Turner-Norvell, K. (1988). Progression of Labor Pain In Primiparas and Multiparas. Nursing Research March/April 37(2): 86-89.

Halldorsdottir, S. and Karlsdottir, S. (1996). Journeying through labour and delivery: perceptions of women who have given birth. Midwifery 12(2): 48-61.

Hart, J. and Walker, A. (2007). Clinical rounds: Management of occiput posterior position. Journal of Midwifery & Women's Health 52(5): 508-513.

Heneweer, H., Vanhees, L. and Picavet, H. S. J. (2009). Physical activity and low back pain: A U-shaped relation? Pain 143(1-2): 21-25.

Hunter, S., Hofmeyr, G. J. and Kulier, R. (2007). Hands and knees posture in late pregnancy or labour for fetal malposition (lateral or posterior). Cochrane Database of Systematic Reviews 4.

Hutton, E. K., Kasperink, M., Rutten, M., Reitsma, A. and Wainman, B. (2009). Sterile water injection for labour pain: a systematic review and meta-analysis of randomised controlled trials. BJOG.

Kariminia, A., Chamberlain, M. E., Keogh, J. and Shea, A. (2004). Randomised controlled trial of effect of hands and knees posturing on incidence of occiput posterior position at birth. BMJ 328(7438): 490.

Karlsdottir, S. I., Halldorsdottir, S. and Lundgren, I. (2014). The third paradigm in labour pain preparation and management: the childbearing woman's paradigm. Scandinavian Journal Of Caring Sciences 28(2): 315-327.

Kjaergaard, H., Olsen, J., Ottesen, B., Nyberg, P. and Dykes, A. (2008). Obstetric risk indicators for labour dystocia in nulliparous women: A multi-centre cohort study. BMC Pregnancy & Childbirth: 1-8.

Lagan, B. M., Sinclair, M. and George Kernohan, W. (2010). Internet Use in Pregnancy Informs Women's Decision Making: A Web-Based Survey. Birth 37(2): 106-115.

Larsson, M. (2009). A descriptive study of the use of the Internet by women seeking pregnancy-related information. Midwifery 25(1): 14-20.

Leamon, J. (2009). Stories: using a narrative research approach in exploring stories about childbirth. MIDIRS Midwifery Digest 19(2): 169-174.

Leap, N., Dodwell, N. and Newburn, M. (2010). Working with pain in labour. Research Digest: National Childbirth Trust 49: 22 - 26.

Leboeuf-Yde, C. (2000). Body Weight and Low Back Pain: A Systematic Literature Review of 56 Journal Articles Reporting on 65 Epidemiologic Studies. Spine 25(2): 226.

Lee, N., Webster, J., Beckmann, M., Gibbons, K., Smith, T., Stapleton, H., et al. (2013). Comparison of a single vs. a four intradermal sterile water injection for relief of lower back pain for women in labour: A randomised controlled trial. Midwifery 29(6): 585-591.

Lieberman, E., Davidson, K., Lee-Parritz, A. and Shearer, E. (2005). Changes in fetal position during labor and their association with epidural analgesia. Obstetrics & Gynecology 105(5 Part 1): 974-982.

Lowe, N. K. (1987). Parity and Pain During Parturition. Journal of Obstetric, Gynecologic, & Neonatal Nursing 16(5): 340-346.

Mason, J. (2002). Qualitative researching, Sage.

Melzack, R. and Belanger, E. (1989). Labour pain: correlations with menstrual pain and acute lower back pain before and during pregnancy. Pain 36(2): 225-229.

Melzack, R., Bélanger, E. and Lacroix, R. (1991). Labor pain: Effect of maternal position on front and back pain. Journal of Pain and Symptom Management 6(8): 476-480.

Melzack, R. and Schaffeberg, D. (1987). Low-back pain during labour. American Journal of Obstetrics and Gynecology 158: 901 - 905.

Polit, D. F. and Beck, C. T. (2004). Nursing research : principles and methods. Philadelphia, Lippincott Williams & Wilkins.

Reynolds, J. L. (2000). Sterile water injections relieve back pain of labor. Birth 27(1): 58-60.

Selin, L., Wallin, G. and Berg, M. (2008). Dystocia in labour - risk factors, management and outcome: a retrospective observational study in a Swedish setting. Acta Obstetricia & Gynecologica Scandinavica 87(2): 216-221.

Simkin, P. (2010). The Fetal Occiput Posterior Position: State of the Science and a New Perspective. Birth 37(1): 61-71.

Sutton, J. and Scott, P. (1996). Optimal Foetal Positioning. Birth Concepts, New Zealand.

Tinti, C., Schmidt, S. and Businaro, N. (2011). Pain and emotions reported after childbirth and recalled 6 months later: the role of controllability. Journal of Psychosomatic Obstetrics & Gynecology 32(2): 98-103.

Tong, A., Sainsbury, P. and Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care 19(6): 349-357.

Tzeng, Y.-L. and Su, T.-J. (2008). Low Back Pain During Labor and Related Factors. Journal of Nursing Research 16(3): 231-240

Waldenström, U. and Schytt, E. (2009). A longitudinal study of women's memory of labour pain—from 2 months to 5 years after the birth. BJOG: An International Journal of Obstetrics & Gynaecology 116(4): 577-583.

Whitburn, L. Y., Jones, L. E., Davey, M.-A. and Small, R. (2014). Women's experiences of labour pain and the role of the mind: An exploratory study. Midwifery 30(9): 1029-1035.

Acknowledgements

We gratefully acknowledge the women and midwives who participated in the trial. We would also like to thank Rebecca Cavallaro for her support with recruitment and Kathy Hassed for assistance with audio transcription.

Nigel Lee was supported by a Mater Medical Research Institute, Golden Casket Research Scholarship and The National Centre for Clinical Outcomes Research (NaCCOR), Australia Postgraduate Clinical Research Scholarship

Table 1: Guides for individual interviews and focus groups

Individual interviews with postnatal women

Domain	Guiding prompts
Context of pain	Thoughts and experiences of pain (prior to labour) History of back pain: menses, migraines (chronic pain) Analgesia / pain coping strategies
Preparation for birth	Information about birth (sources: classes; internet; magazines family/friend/work colleague/maternity profession) What influence on did your antenatal care provider have on your birth preparation
Expectation about labour & birth	Thoughts about labour: Excited; anxious; didn't want to know Identified support persons Did you write / prepare a birth plan?
Labour	How labour started and what happened What you thought about being in "labour" (actuality vs expectations) Coping with labour Things that made it easier / feel better / affected confidence Things that made it harder (Birth Suite routine practices; the general environment
Back pain in labour	When did it start / where located / what made it better or worse (position; movement; water) Intensity (stronger than contractions?) Coping strategies & changes to intended plan
Focus groups with midwives	
Supporting women in labour	Thoughts and ideas about supporting women in labour
Non-pharmacological analgesic strategies	Strategies etc used to help women cope with pain in labour especially those specifically wanting to have a normal (drug free) birth
Back pain in labour	Causes of back pain in labour Whether, and to what degree, back pain changes your approach to care Whether, and to what degree, back pain changes the way women approach (& cope with) labour

- Back pain may have a negative impact on the labour and birth experience
- Studies do not support a relationship between back pain and fetal OP position
- Clinicians often accept that back pain is indicative of a fetal OP position
- Antenatal information provided about back pain may not be evidenced based