Defining the latent phase of labour; is it important? An opportunistic online survey.

Abstract

Background and rationale: The latent phase of labour is recognised as a period of uncertainty for both women and midwives. There is evidence from the literature of considerable variation in labour definitions and practice. Stimulated by discussion at an international maternity research conference, we set out to explore opinions regarding the need for labour stage definitions.

Aim: to identify health professionals' views regarding the need for a definition of the onset and the end of the latent phase of labour.

Methods: This was an opportunistic, semi-structured, online survey of attendees at a maternity care research conference, which included midwives, other clinicians, academics, advocates and user representatives. Attendees (approximately 100) were invited to participate through a single email invitation sent by the conference committee and containing a link to the survey. Consent was sought on the landing page. Ethical approval was obtained from Bournemouth University's research ethics committee. Quantitative questions were analysed using simple descriptive statistics using IBM SPSS Statistics Version 24. Open questions were analysed using content analysis and where participants gave a more detailed answer, these were analysed using a thematic approach.

Findings: Participants in the survey (n = 21) came from twelve countries. Most of the participants thought that there was a need to define the onset of the latent phase (n = 15, 71%). Common characteristics were cited, but the main theme in the open comments referred to the importance of women's perceptions of labour onset. Most participants (n = 18, 86%) thought that there was a need to define the end of the latent phase. This was felt necessary because current practice within facilities is usually dictated by a definition. The characteristics suggested were also not unexpected and there was some consensus; but the degree of cervical dilatation that signified the end of the latent phase varied among participants. There was significant debate about whether a prolonged latent phase was important; for example, was it associated with adverse consequences. Most participants thought it was important (n = 15, 71%), but comments indicated that the reasons for this were complex. Themes included the value that women attached to knowing the duration of labour and the need to support women in the latent phase.

Implications for practice: The findings from this small, opportunistic survey reflect the current debate within the maternal health community regarding the latent phase of labour. There is a

need for more clarity around latent phase labour (in terms of both the definition and the support offered) if midwives are to provide care that is both woman centred and evidence-based. The findings will inform the development of a larger survey to explore attitudes towards labour definitions.

Key words: latent phase, labour, definition, women, childbirth, midwives, evidence based midwifery

Introduction

The latent phase of labour is recognised as a period of uncertainty for both women and midwives (Cheyne and Hundley, 2009). Admission to hospital in the latent phase has been shown to result in a cascade of unnecessary intervention (Holmes et al*,* 2001; Jackson et al*,* 2003; Klein et al*,* 2004; Cheng et al*,* 2010, Lundgren et al, 2013; Janssen and Weissinger, 2014); however identifying the transition to active labour and when to come into the hospital can be challenging for women (Cheyne et al, 2007; Barnett et al, 2008; Green et al, 2012). A recent systematic review of the literature indicates that there is also uncertainty among professionals regarding the phases of labour, with no clear definition of the latent phase of labour (Hanley et al*,* 2016). The question is whether prolongation of latent phase labour is important; that is, is it associated with adverse sequelae or of concern to women.

The concept of discrete phases of labour could be argued to be relatively new, introduced by Friedman, an American obstetrician in the 1950s (Friedman, 1955). Prior to this doctors and midwives were rarely involved in caring for a woman until later in her labour (McIntosh, 2013). Friedman suggested the terms 'latent phase' and 'active phase' labour (Friedman, 1955; Friedman and Kroll, 1969) and proposed a rate of labour progression for nulliparous and multiparous women (Friedman, 1972) that has subsequently been challenged (Albers et al, 1996; Zhang et al, 2002; Gross et al, 2006; Zhang et al, 2010). Studies of women's experience indicate that while most women can define what they perceive to be the onset of labour, they view labour as a continuous process rather than distinct stages (Gross et al*,* 2003; Dixon et al*,* 2014). Given that clinicians frequently have difficulty distinguishing between the phases (Lauzon and Hodnett 2009) and women do not recognise them, the utility of defining distinct phases remains uncertain.

Literature review

There is evidence of considerable variation between international guidelines with regard to the labour phases. For example, the United Kingdom (UK) guidance issued by the National Institute for Health and Care Excellence (NICE) defines the latent phase as:

> "a period of time, not necessarily continuous, when:
>
> - there are painful contractions and
> - there is some cervical change, including cervical effacement and dilatation up to 4 cm." (NICE, 2014 p 18).

A similar definition is used by the Society of Obstetricians and Gynaecologists of Canada (SOGC) (Lee et al, 2016). In the SOGC definition dilatation is also the primary criterion but

the Society acknowledges that dilatation at which active labour commences may vary slightly by parity:

> ‘Presence of uterine activity resulting in progressive effacement and dilatation of the cervix proceeding to active phase. It is complete when a nulliparous woman reaches 4 cm dilatation and a parous woman reaches 4 to 5 cm. Cervical length is generally less than 1 cm.” (Lee et al, 2016 p846)

The American College of Obstetrics and Gynecology (ACOG) changed their definition of labour phases in 2014 in response to evidence that suggests many women do not enter active labour until 5 – 6 cm (ACOG 2014). There is some indication that various countries in Central Europe are considering following this approach.

Our recent systematic review of the literature found only 14 studies that defined the latent phase of labour (Hanley et al, 2016). Of these studies, the majority (n = 11, 79 %) included cervical dilatation in the definition; however there was no consistency in definitions with dilatation ranging from 2 cm (one study), through 3 cm (three studies) to 4 cm (seven studies).In one study the end of the latent phase was defined differently for primiparous women (3 cm) compared with multiparous women (4 cm) (Ayangade, 1984).

We found more studies that included a definition of the onset of active labour (n = 33) (Hanley et al, 2016). Again cervical dilatation was the most common defining attribute (n = 27, 82%). Similar variation was seen in the definitions with two studies using 2 cm as the onset of active labour, ten studies using 3 - 4 cm, and fifteen studies using > 4 cm. In six of the studies there was a more flexible definition used, for example in four studies active labour was identified as being “as the point at which the cervix begins to dilate > 1 cm per hour” while two studies stated “contractions leading to cervical change” (Hanley et al, 2016, p5).

Cervical dilatation remains the predominant attribute for defining both the latent and active phases of labour; other attributes were found in our review (Hanley et al, 2016) and these are discussed later in the paper in relation to the findings of our survey.

Background

The uncertainty around the definition of the latent phase of labour has been brought into sharp focus by research evidence that suggests that such definitions could be contributing to rising rates of intervention (Zhang et al, 2010). In the United States of America the response

to this evidence has been to revise the 'threshold' for active labour and to recommend a more expectant approach in the latent phase (ACOG, 2017). However, recommending that women are 'not admitted' to hospital until 6 cm dilatation would appear to shifting the problem from hospital to community, and there is evidence that women view being sent home as a professional response rather than a woman-centred response to their need for early labour care (Nolan and Smith, 2010).

At an international maternity research conference we witnessed a heated debate regarding the issues of assessment and care in early labour. Delegates indicated that there was a need for clarification of labour definitions, with some questioning whether definitions of latent and active phases were needed at all. Many indicated that a survey of conference attendees would be a valuable first step and would set the context for future research. In this paper we report the findings of that survey.

Methods

Study Design

This was an opportunistic, online survey of attendees of a multidisciplinary conference where midwives comprise the majority of delegates. The intention was to build on the conference discussion regarding the latent phase of labour, and to identify views regarding the need for a clear definition of the latent phase of labour. The survey was conducted prospectively after the conference and following ethical approval.

Sample and data collection

Conference attendees were invited to participate in an online survey by way of a single email invitation sent through the organising committee. Attendees included midwives, clinicians from other fields, academics, advocates and user representatives. The email provided detailed information about the survey and contained a link to the online data collection tool. Participants were asked to consent by clicking either 'agree to participate' or 'don't want to participate' on the landing page.

Ethical approval for the survey was obtained from Bournemouth University's research ethics committee. Approval was obtained by expedited review and prior to approaching the conference committee to request their support. Participation in the survey was voluntary; attendees were reassured that they could withdraw at any time and that non-participation or withdrawal would not affect them in any way. Those who did not consent were directed away from the survey to a page thanking them for their time.

Data were collected using a semi-structured survey tool delivered through SurveyMonkey. It contained four open and three closed questions relating to the latent phase of labour and took approximately 15 minutes to complete. Questions referred to the onset of the latent phase, the end of the latent phase, and the length of the latent phase. Demographic data were collected through questions on the discipline or field of expertise, location, age, gender and experience in maternal health; however to ensure anonymity the survey did not contain information that would personally identify participants, such as names, email or IP addresses. Reminder emails were not sent because of the need to distribute the survey invitation through the conference organisers.

Data analysis

Quantitative questions were summarised using simple descriptive statistics using IBM SPSS Statistics Version 24. Open questions were analysed using content analysis and where participants gave a more detailed answer, these were analysed using a thematic approach. For the more qualitative answers, two researchers (SW and VH) coded all of the transcripts independently. Emergent themes were then discussed and agreed.

Findings

Twenty-six participants consented to the survey on the landing page, but four did not answer any questions and one answered only the first question. These five participants were excluded leaving twenty-one completed questionnaires for analysis.

Participants

Participants came from twelve countries: United Kingdom (n = 6), Ireland (n = 3), Australia (n = 2), USA (n = 2), Germany (n = 1), Iceland (n = 1), Israel (n = 1), Netherland (n = 1), New Zealand (n = 1), Norway (n = 1), Spain (n = 1), and Switzerland (n = 1).

The majority of participants were midwives and researchers, female, aged over 50 and with more than 20 years' experience in the maternal health field (Table 1).

Defining the onset of the latent phase

More than two thirds of the participants (n = 15) thought that there was a need to define the onset of the latent phase (Table 2). Those in favour of a definition offered a wide range of characteristics to define onset with the most commonly cited one being contractions (Table 2). Other physical characteristics cited included show, pain and cervical change (length, consistency and position). More detailed analysis of the proposed characteristics identified differing opinions about whether contractions should be regular and progressive, or irregular.

Some participants' comments suggested more woman-centred definitions, which moved away from focussing on time, contractions and dilatation. For example, "In the same philosophy as "pain is what the patient says it is", latent phase should be defined by the individual woman's perception." (P7).

One response warned against measurement, saying: "Attaching a time to the onset so that length of latent labour can be measured is not important and may add to women and professionals' concerns." (P2)

Defining the <u>end</u> of the latent phase

The majority of participants (n = 18) thought that there was a need to define the end of the latent phase (Table 2). Characteristics defining the end of the latent phase most commonly included contractions and cervical changes. All participants that cited contractions mentioned that they should be regular and there were a number that included time-related measurements:

> "contractions that are at least 3 in 10 and have become longer and more intense." (P5)

> "When the active phase is reached (4 cm, regular contractions 2/10 minutes)." (P17)

Participants frequently mentioned the progressive nature of labour in relation to both contractions and cervical dilatation. The participants who cited cervical change focused on changes in dilatation, but could not agree on the degree of dilatation expected in order to diagnose the end of the latent phase. Six participants stated a dilatation at which the latent phase ended: one said 2 - 3 cm, one said 3 cm, three said 4 cm, while the sixth participant said 4 - 5 cm.

Several participants gave reasons for why they felt that a definition is necessary. These related to the demands of current practice (particularly when working in hospital or within a medical model of care) and avoiding unnecessary intervention.

> "…if we are to work within the current medical model where women's length of labour is timed and progress made is measured on the partogram we need to ensure that active labour is not incorrectly 'diagnosed' .This inevitably will lead to unnecessary interventions when 'appropriate progress' as per the partogram is not made." (P10)

> "I think it matters for the women and for us as midwives, especially when working in a hospital and being the one to decide when it's time to move the women in labour." (P15)

As with responses regarding labour onset, the importance of recognising progress through behavioural cues was also thought to be important:

> "visible and audible change in maternal behaviour e.g. cannot talk freely through a contraction, breathing is more laboured and requires concentration". (P5)

Interestingly one participant thought that a definition was important for teaching purposes:

> "A demarcation from latent to active phase may be necessary for teaching purposes" (P18).

It was evident from a number of comments that the definition of latent phase was poorly understood and required further research.

Length of the latent phase

Participants were asked whether a prolonged latent phase mattered. The majority of participants answered yes to this question (n = 15), while a smaller number answered no (n = 6). However, comments indicated that the answer was anything but straightforward.

Most participants that responded positively clarified their answer by identifying it mattered to the women. Comments included that a prolonged latent phase meant women became 'fed-up', exhausted, as well as irritated with the midwife when not progressing well. For example:

> "Only if it matters to the mother. For some women, prolonged latent phase is associated with decreased confidence, increased anxiety about 'something being wrong' with their body." (P12)

Some suggested that defining the end of the latent phase of labour would enable strategies to support women through this stage if it became prolonged and so reduce the likelihood of any intervention:

> "I think we should rather try to define a latent phase and find a way to help the women cope with it, help them to rest, sleep and try to find a solution if there is a problem." (P15)

> "It matters because women need to know to prepare themselves for energy conservation during a (potential) long latent phase. It matters because if women are not supported to see a long latent phase as a variation of normal, then they are likely to present for intervention before they actually need it." (P4)

A number of participants who said no indicated that lack of understanding regarding the latent phase made identifying 'prolonged' difficult:

"We do not know what is prolonged "(P1).

"feel that it is too subjective to define onset and end anyway." (P3).

Additional thoughts on the latent phase

An opportunity was given to the participants to add any additional comments about the latent phase. A number of participants mentioned that women should be encouraged to stay at home during the latent phase, with some responding more forcefully than others:

"Keep them out of the labour ward! Stay at home, with telephone support, or in an ante-room of an MLU, or in a dedicated antenatal ward in hospital, without any fuss or pressure to move them into the labour ward too early." (P7)

One participant indicated that in his/her opinion the media was responsible for early admission:

"I think media coverage of labour is affecting this where women feel they need to go straight to the hospital at the first sign of a contraction." (P5)

One participant summed up the situation well:

"Latent labour is currently very poorly understood and a challenge that midwives face daily in the context of busy maternity units." (P2)

Discussion

This was an opportunistic survey with a self-selected sample from an international maternity research conference and as such it is limited in terms of its generalisability. The finding that two thirds of participants consider a definition of the latent phase to be important may simply reflect the fact that those who did not consider it important did not respond to the survey. That said the responses indicate the complex and confused state of our current knowledge and beliefs around the latent phase of labour, with the need for a definition being driven by a desire for evidence to inform current practice rather than being about woman centred care.

The characteristics identified as defining the onset of labour are consistent with those reported by women (Gross et al, 2003, 2009). Regular painful contractions were a consistent

criterion in all definitions of the latent phase reported in the literature (Hanley et al, 2016), but not all participants in the survey listed contractions as a criterion for either onset or end of the latent phase of labour.

Greater controversy surrounded the end of the latent phase. Cervical dilatation was identified as being the key criterion for transition from latent labour to active labour. However, there was disagreement on the degree of cervical dilatation at which active labour commenced, with responses ranging from 2 to 5 cm. This uncertainty reflects that noted in our recent literature review of labour definitions (Hanley et al, 2016). There is growing recognition of the impact that early hospital admission can have on women, with some professional organisations changing their guidance regarding the latent phase of labour. For example, the ACOG now recommend expectant management for women prior to 6 cm dilatation and suggest that for most women this is best managed outside of the labour unit (ACOG, 2017). This may require new approaches to providing women with information and support.

The problem is that cervical dilatation, as a defining characteristic of active labour, is difficult for most women to determine. Dixon et al (2013) found that women valued vaginal examinations to determine labour progress, but in most cases requesting a vaginal examination necessitates a hospital visit. Downe et al (2013) found that there had been little research into the relationship between routine vaginal examinations and outcomes for women and babies. They recommended that alternative ways of assessing labour progress, such as behavioural cues, should be explored. Indeed these were mentioned by participants in our survey; however, again such assessments are likely to be conducted by midwives or other health professionals and in many countries this takes place in a hospital setting. Providing support outside of the labour unit was something that a number of participants in this study agreed with and that has been a feature of some models of UK midwifery care and investigated in randomised controlled trials in Canada and UK (Janssen et al, 2003; Spiby et al*,* 2008; Janssen and Desmarais, 2013).

The majority of participants felt that the length of the latent phase of labour mattered, but they rationalised this by highlighting that it really only mattered to women. Indeed recent research suggests that women's perceptions of the length of labour may be an important predictive factor in determining the risk of caesarean section (Janssen and Weissinger, 2014; Janssen et al, 2016). This suggests a need for some form of definition for latent phase labour and an ability to identify those women who need additional support during this phase of labour. Indeed the recent Cochrane review on early labour has highlighted the limited

nature of the evidence around labour assessment and the need for further research in this area (Kobayashi et al, 2017).

Limitations

This was a small opportunistic survey and the response was limited by the method of distribution. Gatekeepers, that is those that stand between the researcher and the participant in the research (Lavrakas, 2008), are important to the conduct of research studies but are also known to have a significant effect on recruitment rates (McFadyen and Rankin, 2016). In our study the gatekeepers (conference organisers) kindly agreed to a single email contact, so as not to inconvenience those who had attended the conference. It is understood that the committee sent the email invitation to all attendees (approximately 100), but we were not able to verify that. The method of distribution also meant that we were unable to send a pre-notice to the survey link or to follow-up with a reminder notification, both of which have been shown to be important for generating a good response to internet based surveys (Kaplowitz et al, 2004).

The survey was conducted in English only as the opportunistic nature of the study did not allow the research team time to develop and test multiple versions of the survey tool. However, this was an English language conference so we do not envisage language to have limited participation. The survey was kept short, but we had a number of open questions to avoid leading participants. The study could therefore be considered to be a pilot and will enable the research team to develop a more sophisticated tool for future use. This tool would need to be tested to ensure that it is valid for use in different contexts. Cross-cultural research has been shown to be complicated by linguistic and contextual factors (Symon et al, 2013), and these would need to be considered in a future study.

Since participants came from across the globe, different terminology was used in the responses. Comparing pregnant women's experiences of pain to those of 'patients' may be uncomfortable to the UK based reader, but to maintain authenticity we have retained the language used by participants in the quotes (Corden and Sainsbury, 2006).

Conclusion

Despite the limitations, the findings of this small, opportunistic survey reflect the continuing debate within the maternal health community regarding the latent phase of labour. There is a need for more clarity around the latent phase of labour (in terms of both the definition and the support offered) if midwives are to provide care that is both woman centred and

evidence-based. The findings will inform the development of a larger survey to explore attitudes towards labour definitions.

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Table 1 Characteristics of participants (n=21)

	n (%)
Geographical location	
Europe	16 (76)
Asia/Pacific	3 (14)
North America	2 (10)
How would you define yourself? *(could choose more than one)*	
Midwife	18 (86)
Researcher	13 (62)
Academic	4 (19)
Service User	2 (10)
Other – not specified	1 (5)
Age group	
< 20 years old	0
20 - 29	1 (5)
30 - 39	4 (19)
40 - 49	5 (24)
50 - 59	10 (48)
> 60	1 (5)
Gender	
Female	19 (90)
Male	2 (10)
Length of time working in maternal health field	
< 5 years	1 (5)
5 - 10 years	6 (29)
11 - 20 years	2 (9)
21 - 30	7 (33)
31 - 40	5 (24)

Table 2 Defining the latent phase

	n (%)
Onset	
Do we need to define the <u>onset</u> of the latent phase of labour?	
Yes	15 (71)
No	6 (29)
If yes, what characteristics should we use to define the <u>onset</u> of the latent phase? (n=15)	
Contractions	13 (87)
- Regular	5 (33)
- Irregular	7 (47)
Cervical change	5 (33)
Show	4 (27)
Pain	4 (27)
Rupture of membranes	2 (13)
Woman's perceptions	3 (20)
Woman's behaviour (nesting, disturbed activities of daily living)	2 (13)
End	
Do we need to define the <u>end</u> of the latent phase of labour?	
Yes	18 (86)
No	3 (14)
If yes, what characteristics should we use to define the <u>end</u> of the latent phase? (n=18)	
Contractions	13 (72)
Cervical change	14 (78)
Pain	1 (6)
Rupture of membranes	1 (6)
Woman's perceptions	1 (6)
Woman's behaviour (coping)	3 (17)