



Prolonged latent phase of labour

Prevalence, labour outcomes, quality of care, women's experiences and preferences, and psychometric properties of a questionnaire

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Nursing Science

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Abstract

Prolonged latent phase of labour: prevalence, labour outcomes, quality of care, women's experiences and preferences, and psychometric properties of a questionnaire

The overall aim of this thesis was to investigate the prevalence and labour outcome of a prolonged latent phase of labour, quality of care, women's experiences and preferences during labour, and to psychometrically test a questionnaire.

Methods: Qualitative and quantitative methods. Sixteen primiparous women's preferences for care during a prolonged latent phase of labour were studied with focus-group and individual interviews and analysed with content analysis (I). From a one-year cohort of 2660 women, 1554 women with a spontaneous onset of labour were invited to participate and 1389 women accepted invitation (II-IV). Data from 1343 women's birth records were analysed with descriptive and analytic statistics (II). 758 women (RR 64%), 343 primiparous and 415 multiparous, responded to the Intrapartal-specific Quality from Patients Perspective Questionnaire, QPP-I (III), the Early Labour Experience Questionnaire, ELEQ (IV) and additionally birth-related items. Data were analysed with descriptive, analytic, and psychometric statistics.

Main findings: According to women's self-reports, 23% of women with a spontaneous onset of labour had a prolonged latent phase (≥ 18 hours), which was associated with more obstetrical interventions and instrumental births (II). These women preferred individualised care (I), rated the quality of their intrapartum care lower, were less content with the birth experience, and had more negative feelings during labour and birth than women with a shorter latent phase (III). The ELEQ was translated and adapted to Swedish and resulted in two questionnaires, one for primiparous women, SWE-ELEQ-PP, and one for multiparous women, SWE-ELEQ-MP. Both are valid and reliable and can be used to evaluate early labour care in Sweden (IV).

Conclusions: A prolonged latent phase of labour can be regarded as a risk factor. It can result in more obstetrical interventions, more instrumental births, a lower perceived quality of care, and a more negative birth experience regardless of parity. Differences in parity must be considered when evaluating early labour care during the latent phase of labour, with special focus to primiparous women.

Keywords: parity, prolonged latent phase of labour, psychometric test, quality of care, women's birth experiences, women's preferences.

Sammanfattning

Förlängd latensfas av förlossning: förekomst, förlossningsutfall, vårdens kvalitet, kvinnors upplevelse och preferenser om vård samt psykometrisk test av ett frågeformulär

Det övergripande syftet var att undersöka förekomst och förlossningsutfall efter en förlängd latensfas av förlossningen, vårdkvalitet, kvinnors upplevelse och preferenser om vård samt psykometrisk test av ett frågeformulär.

Metod: Kvalitativ och kvantitativ metod. Sexton förstfödorskors önskemål om stöd under förlängd latensfas studerades. Data från fokusgrupper och individuella intervjuer analyserades med innehållsanalys (I). Ur en årskohort av 2660 kvinnor, inbjöds 1554 kvinnor med spontan förlossningsstart till deltagande, och 1389 kvinnor accepterade att medverka (II-IV). Data från 1343 kvinnors förlossningsjournaler analyserades med beskrivande och analytisk statistik (II). Totalt 758 kvinnor (svarsfrekvens 64%), 343 förstfödorskor och 415 omfödorskor besvarade frågeformulären Intrapartal Kvalitet från Patientens Perspektiv, KUPP-I (III), upplevelser i tidigt värkarbete, ELEQ (IV) samt ytterligare frågor relaterade till förlossningen (III, IV). Data analyserades med deskriptiv, analytisk och psykometrisk statistik.

Huvudfynd: För kvinnor med spontan start av förlossningen, hade 23% en förlängd latensfas ≥ 18 timmar, vilket baserades på kvinnans uppgift och var associerat med fler obstetriska interventioner och instrumentella förlossningar (II). Kvinnor med förlängd latensfas önskade en individualiserad vård (I) samt skattade vårdens kvalitet lägre, var mindre nöjda med förlossningsupplevelsen och hade fler negativa känslor under förlossningen, jämfört med kvinnor med kortare latensfas (III). ELEQ anpassades till svenska och resulterade i två frågeformulär, ett för förstfödorskor, SWE-ELEQ-PP och ett för omfödorskor, SWE-ELEQ-MP, vilka kan användas för att utvärdera vård under tidigt värkarbete i Sverige (IV).

Konklusion: En förlängd latensfas kan ses som en riskfaktor, eftersom det leder till fler obstetriska interventioner, fler instrumentella förlossningar, en sämre upplevd vårdkvalitet och en mer negativ förlossningsupplevelse för både förstfödorskor och omfödorskor. Skillnader mellan paritet måste beaktas när vården under tidigt förlossningsarbete skall utvärderas och förbättras, med särskilt fokus på förstfödorskor.

Nyckelord: paritet, förlängd latensfas av förlossning, psykometrisk test, vårdkvalitet, kvinnors förlossningsupplevelse, kvinnors preferenser

Origin “latent” (*adj.*)

*Late Middle English: from Latin - from the verb latere, ‘being hidden’, (quality or state) existing but not yet developed or manifest; ‘hidden’ or ‘concealed’.*¹

¹ Oxford English Dictionary

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PAPERS I-IV

ABBREVIATIONS

ANOVA	Analysis of variance
aOR	Adjusted Odds Ratio
BMI	Body Mass Index
CEQ	Childbirth Experience Questionnaire
CI	Confidence Interval
CTG	Cardiotocography
EDA	Epidural analgesia
ELEQ	Early Labour Experience Questionnaire
ICM	International Confederation Midwives
KMO	Kaiser-Meyer-Olkin
Md	Median
M	Mean value
N	Number
NICE	National Institute for Health and Care Excellence
NICU	Neonatal Intensive Care Unit
OR	Crude Odds Ratio
PR	Perceived Reality
PREM	Patient Reported Experience Measure
PreMaPEQ	Pregnancy and Maternity-care Patients' Experiences Questionnaire
PROM	Patient Reported Outcome Measure
OECD	The Organisation for Economic Co-operation and Development
QPP	Quality of care from Patients Perspective
QPP-I	The Intrapartal-specific Quality of care from Patient Perspective
RCT	Randomised Controlled Trial
RR	Response Rate
SD	Standard Deviation
SFOG	Swedish Society for Obstetrics and Gynaecology
SI	Subjective Importance
SIMP	Single-Item Measures of Personality
SPSS	Statistical Package for the Social Sciences
SOC	Sense of Coherence
SWE-ELEQ-PP	Swedish version of Early Labour Experience Questionnaire PrimiParas
SWE-ELEQ-MP	Swedish version of Early Labour Experience Questionnaire MultiParas
W-DEQ	Wijma Delivery Expectancy/Experience Questionnaire
WHO	World Health Organisation

Original papers

This thesis is based on the following papers, which will be referred to by their Roman numerals:

- I. Ängeby, K., Wilde-Larsson, B., Hildingsson, I., & Sandin-Bojö, A-K. (2015). Primiparous women's preferences for care during a prolonged latent phase of labour. *Sexual & Reproductive Healthcare*, (6), 145-150.
- II. Ängeby, K., Wilde-Larsson, B., Hildingsson, I., & Sandin-Bojö, A-K. (2018). Prevalence of Prolonged Latent Phase and Labor Outcomes: Review of Birth Records in a Swedish Population. *Journal of Midwifery & Women's Health*, 63 (1), 33-44.
- III. Ängeby, K., Sandin-Bojö, A-K., Persenius, M., & Wilde-Larsson, B. Women's labour experiences and quality of care in relation to prolonged latent phase of labour and early labour contact with the labour ward. In manuscript.
- IV. Ängeby, K., Sandin-Bojö, A-K., Persenius, M., & Wilde-Larsson, B. (2018). Early Labour Experience Questionnaire: psychometric testing and women's experiences in a Swedish setting. *Midwifery*, 64, 77-84.

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Introduction

During the twentieth century in the industrialized world, the birthing place moved from home to hospitals, and support from family and others for women during all stages of labour disappeared. Women labouring in hospital settings were available for observations, and notions of the length of each stage of labour, based on time and clinical features, became possible (McCourt & Dykes, 2009; McIntosh, 2013). Technological developments led to an increase in obstetrical interventions for improved labour outcomes and a more medicalized view over childbirth care (Healy, Humphreys, & Kennedy, 2016).

The outcome of labour is often measured in terms such as mode of birth, pain-relief methods used and perineal injuries, however an increasing number of research addresses women's experiences of birth as well (WHO, 2018). For the woman in labour, a central part of her birth experience is her relationship with the midwife (Lundgren & Berg, 2007). The midwife shall work in partnership with the labouring woman and have a woman-centred perspective. She should provide care tailored to individual women's needs (Fullerton, Thompson, & Severino, 2011; Renfrew et al., 2014)

Midwifery support is primarily provided during the active stages of labour and many women are left without any support from a midwife prior to being admitted to the labour ward (Eri, Bondas, Gross, Janssen, & Green, 2015; Janssen et al., 2009). However, it is not uncommon for women to be admitted to the labour ward during the latent phase of labour, especially if they are primiparous (Janssen, Iker, & Carty, 2003; Janssen & Weissinger, 2014; Sandin-Bojö, Larsson, Axelsson, & Hall-Lord, 2006). Management during the latent phase of labour has become a time of conflict between women's need for support and care and caregivers' guidelines recommending that women should stay at home until the active stage of labour has been established (Lauzon & Hodnett, 2001; Nunes, Gholitabar, Sims, & Bewley, 2014). Management of labour should be offered in partnership with women (Greulich & Tarrant, 2007; WHO, 2018). Women with a prolonged latent phase of labour dominated the group of women seeking care prior to being admitted to the labour ward (Lundgren, Andrén, Nissen, & Berg, 2013). There is no consensus in research or in clinical evidence regarding how long the latent phase of labour needs to be before it can be considered prolonged (Hanley et al., 2016; WHO, 2018).

Women's views of the quality of intrapartum care they have received and their satisfaction with the birth are often related (Larkin et al., 2009). The terms satisfaction and perceptions of quality of care are often used synonymously, but conceptual differences exist. Satisfaction is often described as the fulfilment of expectations, needs, and desires (Crow et al., 2002). Instead, by using the wording 'perceptions of experience', a more multidimensional aspect is given and descriptions of what is considered important about the care received can be captured (Kingsley & Patel, 2017).

Researchers have identified that many questions regarding the relationship between women's experiences during the latent phase of labour and birth outcomes need to be addressed (Janssen et al., 2009; Lauzon & Hodnett, 2001). Studies conducted on the prevalence of a prolonged latent phase are fairly old (Chelmow, Kilpatrick, & Laros Jr, 1993; Friedman, 1972; Gharoro & Enabudoso, 2006; Maghoma & Buchmann, 2002; Peisner & Rosen, 1985) and based on professional judgement only. The definition of labour onset could instead be based on women's descriptions, and decisions about the management of labour could be made in partnership with the woman giving birth and her partner (Greulich & Tarrant, 2007; Gross, Petersen, Hille, & Hillemanns, 2010; WHO, 2018)

When working as a practicing midwife on the labour ward, I often met women during the latent phase of labour and encouraged them to return home for their own wellbeing, without any knowledge of their preferences or the best way to manage their care. I was later a member in a group of midwives formulating clinical guidelines about evidence-based care during all stages of labour, and we 'got trapped' in the latent phase of labour. To improve intrapartum quality of care, it is essential that the woman giving birth is heard. The intention of this thesis is therefore to increase knowledge of the prolonged latent phase of labour and its impact on women's birth experiences, preferences, quality of care, and labour outcome.

Background

According to the standards of the International Confederation of Midwives (ICM) midwifery care takes place in partnership with women, recognises the woman's right to self-determination, and is respectful, personalized, and non-authoritarian. Midwives should work in collaboration with other health professionals to provide holistic care that meets each woman's individual needs (International Confederation of Midwives, 2017). In Sweden, midwives are the sole carers of women with an uncomplicated pregnancy and birth, and they cooperate with a multidisciplinary team that includes physicians in cases where complications occur during labour and birth (The Swedish Association of Midwives, 2018). Antenatal care is financed through the taxation system and is provided free of charge for all women. It is primarily offered through community-based public health clinics that employ midwives who are responsible for providing this care. Swedish national guidelines recommend a minimum of eight visits to a midwife during pregnancy. Additionally, a visit eight to twelve weeks postpartum should be offered as a part of the antenatal programme (Swedish Society of Obstetrics and Gynecology, 2008). During labour and birth, each woman is attended by hospital midwives who work in a multidisciplinary team together with enrolled nurses and physicians. Midwives are responsible for identifying, assessing, coordinating, and documenting the care provided, as well as for its evaluation (The Swedish Association of Midwives, 2018). Almost all women in Sweden give birth in hospitals and postnatal care is brief for most women. In 2018, the mean length of hospital stays was 1.8 days after a vaginal birth and 2.9 days after a caesarean section (The National Board of Health and Welfare, 2018). Continuity of midwifery care during the antenatal period in Sweden is prioritised, but there is a lack of continuity throughout the entire pregnancy, birth, and postnatal chain of care, meaning that the midwife who is responsible for care during labour is generally unknown to the woman giving birth (Swedish Association of Local Authorities and Regions, 2016).

Latent phase, early labour, and labour onset

In obstetric literature, labour is traditionally divided into three stages that have been formulated in textbooks since the early 18th century, based on an increasing knowledge and understanding of anatomy (Dixon, 2011; McIntosh, 2013; WHO, 2018). The first stage of labour is described as the shortening and opening of the cervix, the second stage as descent of the baby into the birth canal

and the birth, and the third stage as delivery of the placenta. In the 1950's, the first stage of labour was divided into a latent phase and an active phase by Friedman (1955) who also developed a visual description of the labour curve, known as the Friedman curve.

The term early labour refers to the same period of labour as the latent phase, but is instead viewed from the woman's description (Dixon, Skinner, & Foureur, 2013; McIntosh, 2013). The latent phase of labour and early labour are concepts that each have a variety of definitions and there is a lack of consensus with these (Hanley et al., 2016). Both the terms latent phase of labour and early labour are used frequently in literature and occur simultaneously. According to WHO (2018), the concept latent first stage of labour should be favoured since this term is more established.

There is an organisational requirement to separate the latent phase from the active phase, to prioritise resources for women 'in labour', i.e. the active phase of labour. Women defined as 'not in labour' or in the latent phase of labour, do not require midwifery care on the labour ward (Barnett et al., 2008; Cheyne et al., 2007). Definitions of labour onset vary in literature and use different classifications according to parity. Some of the studies included in a review used the degree of cervical effacement as a marker for labour onset, while about one third of the studies indicated that the woman's self-reported symptoms were used to diagnose the onset of labour (Hanley et al., 2016). In previous studies, researchers have used the time of the first cervical assessment by professionals (Holmes, Oppenheimer, & Wen, 2001; Maghoma & Buchmann, 2002) or when strong, painful contractions are felt as the marker for the onset of labour (Chelmow et al., 1993). Women can define what they perceive to be the onset of labour, and they do not only describe contractions as the onset of labour (Dixon, Skinner, & Foureur, 2014; Gross, Haunschild, Stoexen, Methner, & Guenter, 2003). WHO (2018) recommends the following definition for labour onset: the latent first stage of labour is characterized by painful uterine contractions and variable changes of the cervix, including some degree of effacement and slower progression of dilatation up to 5 cm for first and subsequent labours (WHO, 2018).

This thesis uses both the terms 'latent phase' and 'early labour'. 'Latent phase' refers to the professionals' perspective of the latent phase of labour (Friedman,

1978), and ‘early labour’ refers to the women’s perspective of early labour (Dixon et al., 2013; McIntosh, 2013).

Prolonged latent phase, prevalence, and labour outcome

There is a lack of consensus in the literature regarding what is a normal length of the latent phase of labour, and it has been described to range between 2-20 hours depending on parity (Blix, Kumle, & Øian, 2008). Friedman described a normal length of the latent phase in primiparous women as up to 20 hours, and for multiparous women up to 14 hours (Friedman, 1978), and similar findings were described in a newly published review (Abalos et al., 2018). In this thesis the Swedish classification of a prolonged latent phase of labour is used, which is defined as painful irregular or regular contractions without rest, for 18 hours or more, in the presence of a cervical dilation of 3 cm or less, regardless of parity (Pihl, 2014).

The prevalence of a prolonged latent phase of labour ranges from 5% to 6.5% in previous studies (Chelmow et al., 1993; Friedman, 1978; Gharoro & Enabudoso, 2006; Maghoma & Buchmann, 2002; Peisner & Rosen, 1985). However, these studies are based on professionals judging the time of labour onset through clinical examinations. Studies also used different definitions for a prolonged latent phase. In studies where researchers use women’s descriptions for labour onset instead, prevalence is rarely examined (Gross et al., 2010; Janssen & Weissinger, 2014; Lundgren et al., 2013). WHO concludes that the time limit for what is considered normal for the latent phase varies, and that women should be informed that a standard duration of the latent first stage of labour has not been established and can vary widely from one woman to another (WHO, 2018).

Several studies report the association between being admitted to the labour ward during the latent phase and a higher rate of caesarean sections (Bailit, Dierker, Blanchard, & Mercer, 2005; Hemminki & Simukka, 1986; Holmes et al., 2001; Maghoma & Buchmann, 2002; Neal et al., 2014; Neal et al., 2018; Peisner & Rosen, 1985) or obstetrical interventions (Bailit et al., 2005; Holmes et al., 2001; Rota et al., 2018). Primiparous and multiparous women seeking admittance to hospital during the latent phase had a significantly higher caesarean section rate than women admitted during the active phase of labour (Lundgren et al., 2013). Several randomised controlled trials have tried to improve labour outcome by avoiding admittance during the latent phase, but the

results show no differences in caesarean section rates (Cheyne et al., 2008; Hodnett et al., 2009; Janssen et al., 2003; McNiven, Williams, Hodnett, Kaufman, & Hannah, 1998; Spiby et al., 2008). A prolonged latent phase was a predictor for a longer active phase according to a Swedish study (Dencker, Berg, Bergqvist, & Lilja, 2010) and women's perceptions of labour lasting more than 24 hours before admittance to the labour ward was a predictor for caesarean section in a Canadian study (Janssen, Stienen, Brant, & Hanley, 2016). In a randomised controlled trial in Denmark, women randomised to receive nine hours of antenatal training used significantly less epidural anaesthesia and arrived at the labour ward in the active phase more often than women in the group allocated to standard antenatal preparation. A similar result was shown in a case-control study from USA, where women could choose group training antenatally, consisting of eight group sessions, or standard antenatal care. The results showed that, once adjusted for background variables, women who participated in the more extensive group training arrived at the hospital in the active phase of labour more often than women who received standard care (Maimburg, Væth, Dürr, Hvidman, & Olsen, 2010; Tilden et al., 2016). Assessment and support in the latent phase of labour improved maternal satisfaction with labour care in a randomised controlled trial, where support at home was compared with support by telephone (Janssen et al., 2003). A more structured management of the latent phase of labour has been found to be positive and leads to a better birth experience for women (Hodnett et al., 2009; Janssen & Desmarais, 2013b; Spiby et al., 2008). A recommendation from WHO proposes that a woman who presents at the labour ward should be admitted and supported appropriately even if she is in the latent phase of labour, unless she would prefer to wait for the active phase of labour to start at home (WHO, 2018).

In summary, there is a lack of consensus in definitions of both labour onset and the latent phase of labour, and the prevalence of the prolonged latent phase of labour. More understanding is needed, and this should be based on women's descriptions. It has not been clearly explored if admitting a woman to the labour ward during the latent phase of labour leads to higher rates of obstetrical interventions being used and negative birth outcomes in terms of more instrumental births, or if it is a more painful, prolonged latent phase of labour that leads to an earlier admittance to the labour ward.

Women's experience of early labour and birth

The experience of labour and birth is described as multidimensional (Hodnett, 2002; Larkin, Begley, & Devane, 2009) and is influenced by personal expectations, support from caregivers, the quality of the caregiver-patient relationship, and involvement in decision making (Hodnett, 2002). The birth experience can have both instant and long-term effects on the woman's well-being (Lundgren, Karlsdóttir, & Bondas, 2009) and influence her future reproduction (Gottvall & Waldenström, 2002), fear of childbirth (Garthus-Niegel, Knoph, Soest, Nielsen, & Eberhard-Gran, 2014; Størksen, Garthus-Niegel, Vangen, & Eberhard-Gran, 2013), and lead to a request for a caesarean section at a subsequent birth (Lundgren, Karlström, & Hildingsson, 2012).

Most women are satisfied with the quality of intrapartum care and report a positive birth experience; in a Swedish study 81% of women described a very positive or positive birth experience (Sandin-Bojö, Kvist, Berg, & Wilde Larsson, 2011). The birth experience is linked to feelings as well, and most women reported positive feelings during labour and birth, and higher scores in the identity-oriented approach (measuring relationship with a caregiver) was a significant predictor of positive feelings in a Swedish study (Wilde Larsson, Sandin-Bojö, Starrin, & Larsson, 2011). In a Swedish national sample, 7% of women had a negative birth experience when measured one year after birth (Waldenström, Hildingsson, Rubertsson, & Rådestad, 2004). In a Norwegian cohort, 21% of multiparous women reported having a negative birth experience when investigated during a forthcoming pregnancy (Henriksen, Grimrud, Schei, & Lukasse, 2017).

A positive birth experience has been associated with positive feelings, being in control, a spontaneous vaginal birth, and having a positive experience of midwifery care (Hildingsson, Johansson, Karlström, & Fenwick, 2013; Wilde Larsson et al., 2011). Additionally, factors such as personal control, sense of security, having expectations about labour and birth met, continuous support, and satisfaction with one's own performance during childbirth were all associated with a positive birth experience (Bohren, Hofmeyr, Sakala, Fukuzawa, & Cuthbert, 2017; Carlsson, Ziegert, & Nissen, 2015; Christiaens & Bracke, 2007; Goodman, Mackey, & Tavakoli, 2004).

A negative birth experience has been associated with different background characteristics such as primiparity, less support from a partner, lower socio-

economic situation, lower level of education, and antenatal fear of childbirth (Elvander, Cnattingius, & Kjerulff, 2013; Hodnett, 2002; Waldenström et al., 2004; Wilde Larsson et al., 2011). A negative birth experience has also been associated with labour outcome, such as induction of labour, augmentation during labour, neonatal care for the new-born, pain, medical pain-relief during labour, and emergency caesarean section (Bergqvist et al., 2012; Bryanton, Gagnon, Johnston, & Hatem, 2008; Elvander et al., 2013; Hodnett, 2002; Waldenström et al., 2004; Wilde Larsson et al., 2011). Insufficient presence of the midwife and a longer latent phase of labour (>13 hours) were factors associated with a more negative experience of labour and birth for primiparous women (Ulfssdottir, Nissen, Ryding, Lund-Egloff, & Wiberg-Itzel, 2014) and a prolonged labour (>12 hours) has been associated with a negative childbirth experience (Nystedt & Hildingsson, 2014; Nystedt, Högberg, & Lundman, 2005; Waldenström et al., 2004).

The optimal place for women to allow labour to progress during the latent phase differs, and the perceived benefit of support and help offered by labour companions varies (Beake et al., 2018). The organisation of care varies in many settings and women are dissatisfied if they are denied access to care or sent home without professional support (Eri, Blystad, Gjengedal, & Blaaka, 2010; Janssen et al., 2009). A randomised controlled trial showed that women who received a home visit had a more positive experience of care than women who were given support by telephone (Janssen & Desmarais, 2013b). Women seeking hospital admission during the latent phase of labour for care and support often need this due to being in pain or feeling frightened (Carlsson, Hallberg, & Pettersson, 2009; Cheyne et al., 2007; Eri et al., 2010), or they have expressed uncertainty about labour onset, or have a higher perception of childbirth risk (Edmonds, Miley, Angelini, & Shah, 2018). In a study conducted in the UK, some background variables showed a statistically significant difference in women's experiences of care during the latent phase. There were significant differences in ethnicity regarding women's worries during the latent phase, with women from black and minority ethnic groups expressing higher levels of worry. Multiparous women were significantly more content with advice received from midwives during their initial telephone contact with the labour ward than primiparous women (Henderson & Redshaw, 2017).

In summary, several studies have investigated the birth experience and associated variables. Only a limited amount of research addresses the length of the la-

tent phase of labour, the experiences of early labour contacts in relation to the birth experience, the perceived quality of intrapartum care, and feelings. Previous qualitative studies explore women's experiences during the latent phase, but quantitative studies investigating contacts with the labour ward prior to admittance and experiences in relation to the length of the latent phase of labour are needed.

Quality of care, women's perceptions, and preferences

The concept "quality of care" differs according to time and cultures, as well as level of definition, from individual to societal level, and who is defining the concept, such as the patient, relatives, health care professionals, policy-makers, or researchers (Donabedian, 1988; Wilde, Larsson, Larsson, & Starrin, 1994). Quality of care is a multi-dimensional concept and the quality of medical care and patient satisfaction are linked together (Donabedian, 1988). Quality of care can be influenced by the external structure of the organisation, administrative qualities of the environment, as well as the individual patient's preferences about care (Wilde et al., 1994). A theoretical model of quality of care from the patient's perspective, QPP, was based on a grounded theory study (Wilde, Starrin, Larsson, & Larsson, 1993). The QPP model was based on interviews with patients admitted to hospital, and issues about importance and care received were addressed. Four different dimensions about quality of care are identified in the model; the medical-technical competence of caregivers, the physical-technical conditions, the degree of identity-orientations, and actions among caregivers and the social-cultural atmosphere of the organisation. The QPP model is based on the notion that the quality of care is being formed through the patient's preferences, norms, expectations, and the encounter with the structure of care. Patient's perceptions of the care received are labelled perceived reality (PR) and perceptions about the importance of different aspects are labelled subjective importance (SI) (Wilde et al., 1994; Wilde et al., 1993). When asking for both PR and SI, it may give the woman a deeper perspective of quality of care (Sandin-Bojö et al., 2011; Wilde et al., 1994; Wilde et al., 1993).

WHO (2015) states that quality of care for women should be safe, effective, timely, efficient, equitable, and women-centred (Tunçalp et al., 2015). Women's perceptions of the quality of care is a driver for quality improvement, on both local, national, and international level (Brown & Lumley, 1994; Renfrew et al., 2014; Swedish Association of Local Authorities and Regions, 2016; WHO,

2018) According to WHO, midwives are essential in the provision of quality of care for pregnant women and their children, in all settings globally (WHO, 2018). Renfrew et al. (2014) described a framework for quality of maternal and new-born care with five different aspects; practice categories, organisation of care, values, philosophy, and care providers.

Patients' views on the quality of care and patient satisfaction are commonly regarded as important outcomes when evaluating care (Crow et al., 2002). Experiences and perceptions are related to the patients' views on the quality of care and can be considered as person-related, and physical and administrative environmental qualities. Socio-demographic characteristics and personality influence the patient's expectations as well. Preferences or subjective importance express what is important to the person and how they want the world to be (Larsson & Wilde Larsson, 2010).

Since satisfaction is a relative concept and satisfaction for one patient differs from another (Crow et al., 2002), the trend has therefore moved towards assessing patient's perceptions of their experience of care quality and relates to multidimensional aspects of care given instead. Likewise, patient-reported outcomes are important to gain information about patients' views on a treatment or an intervention's outcome, since this can differ from the clinician's report (Chassany, Le-Jeunne, Duracinsky, Schwalm, & Mathieu, 2006). In Sweden, most national quality registrars collect patient-reported data and can be used for shared-decision-making in clinical encounters (Nilsson, Nilsson, Orwelius, & Kristenson, 2016). Measures of quality of intrapartum care as a part of women's birth experience are two-fold and can be classified as 'Patient Reported Outcome Measure' (PROM) which includes measures of patient reported outcome, whereas 'Patient Reported Experience Measure' (PREM) includes the assessment of patients' experiences, perceptions, and satisfaction with care received (Kingsley & Patel, 2017). In an obstetrical context, PROMs relate to a women's own experience of her health in connection to childbirth and the treatment she received, whilst PREMs relate to her experience regarding quality of care and her birth experience.

In summary, when exploring the quality of intrapartum care, it is important to measure both PROMs as well as PREMs.

Questionnaires and Instruments measuring labour experiences and quality of care during labour and birth

In a review measuring birth experience (Nilvér, Begley, & Berg, 2017), the authors identified 36 instruments covering a range in both purpose and content as well as psychometric properties quality. The highest ranked instrument in this review was the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ), which measures fear of childbirth, with one version used during pregnancy (version A) and one used after birth (version B). This instrument is often used to evaluate childbirth experiences in different settings but it was originally used to evaluate fear of childbirth (Wijma, Wijma, & Zar, 1998). Another Swedish questionnaire measuring primiparous women's childbirth experiences is Childbirth Experience Questionnaire (CEQ), but this instrument is only validated for primiparous women (Dencker, Taft, Bergqvist, Lilja, & Berg, 2010). A Norwegian questionnaire, the Pregnancy- and Maternity-care Patients' Experiences Questionnaire (PreMaPEQ) was tested with good psychometric properties, and measures both antenatal, intrapartum, and postnatal care (Sjetne, Iversen, & Kjøllesdal, 2015).

Sawyer et al. (2013) conducted a review that aimed to identify instruments measuring satisfaction and quality of care during labour and birth, including psychometric properties. The results showed that several of the identified questionnaires were poorly constructed and have insufficient psychometric properties (Sawyer et al., 2013). The authors identified the Intrapartum-Specific QPP-questionnaire (QPP-I) (Wilde Larsson, Larsson, Kvist, & Sandin-Bojö, 2010) as showing acceptable reliability and strong validity (Sawyer et al., 2013) and it can be used when a total measure of quality of intrapartum care is required (Blazquez, Corchon, & Ferrandiz, 2017; Sawyer et al., 2013).

The QPP-I version, which has been adapted to intrapartum care, is based on a selection of items from the short version of QPP (Wilde Larsson & Larsson, 2002) and combined with newly structured items. These items were derived from an instrument (Sandin-Bojö, Hall-Lord, Axelsson, Udén, & Wilde Larsson, 2004; Sandin-Bojö, Larsson, & Hall-Lord, 2008) based on WHO's recommendations of care during normal childbirth (WHO, 1996). In total, the QPP-I consists of 32 items and is designed to measure four different dimensions; *The medical-technical competence of caregivers*, *The physical-technical conditions of the organisation*, *The degree of identity-orientation in attitudes and actions from caregivers*, and *The socio-cultural atmosphere of the organisation*. It has been validated with acceptable

reliability and with meaningful subgroup differences (Wilde Larsson et al., 2010). It has been translated into Spanish and validated (Donate-Manzanares et al., 2017), and tested and validated in Swaziland (Gamedze-Mshayisa, Kuo, Liu, & Lu, 2018). Sawyer et al. (2013) recommends the QPP-I for an in-depth measure of perception of quality of intrapartum care.

In the review regarding childbirth experience questionnaires from Nilvér et al. (2017), the authors identified the Early Labour Experience Questionnaire (ELEQ) (Janssen & Desmarais, 2013a) as the only questionnaire that measures experiences in early labour and therefore suitable for use, but it needs further testing (Nilvér et al., 2017). ELEQ was developed in Canada for primiparous women seeking contact with the labour ward during early labour (Janssen & Desmarais, 2013a). The context of maternity care in Canada is mostly managed by obstetric nurses for women during labour and birth, and the number of registered midwives is lower than the OECD average (Roth & Lubold, 2015). The items included were derived from a literature review and were supported by qualitative analysis from a pilot-study, with items describing women's subjective experiences of care during the latent phase of labour. The questionnaire was tested for face and content validity. The ELEQ contains 26 items with three factors: *Emotional wellbeing*, *Emotional distress*, and *Perceptions of nursing care*. Items included in the ELEQ comprise both the women's affective experiences in terms of emotions, as well as their experiences of care prior to admittance to the labour ward (Janssen & Desmarais, 2013a).

In summary, two questionnaires were identified measuring PREMs. The QPP-I could be considered suitable to use for measuring quality of intrapartum care. In the questionnaire, women evaluate both the perceived reality (PR) and subjective importance (SI) of quality of intrapartum care, as a deeper understanding of quality of care is required. The ELEQ could be considered for measuring early labour experiences and care. However, this instrument has not been tested in a Swedish setting, nor has it been tested with both primiparous and multiparous women, and therefore a psychometric evaluation is needed.

Rationale

There is no consensus in the literature regarding the definition of a prolonged latent phase of labour. In Sweden, a prolonged latent phase is ≥ 18 hours according to classification. There is a lack of research investigating the prolonged latent phase of labour based on women's self-reporting and perception of the quality of intrapartum care. Patient-reported outcome measures (PROM) provide women's descriptions of labour onset, and patient-reported experience measures (PREM) provide a women-centred perspective, and these should also be considered.

Women's experiences of intrapartum care could be one outcome variable of importance to measure, as well as obstetrical interventions and labour outcome. Women's perceptions and preferences of care during labour and birth are important aspects to evaluate when attempting to improve the quality of intrapartum care. Previous studies state that women's preferences are not being adequately met during the latent phase of labour, and these women's experiences and preferences in contact with the labour ward need further exploration.

Previous research has found that some women have a negative experience when they are sent away from the labour ward during the latent phase of labour, as their need for support is still present. Previous research states that primiparous women experience more uncertainty and are less content with the care provided during the latent phase. More knowledge is needed about the preferences of primiparous women experiencing a prolonged latent phase of labour.

Earlier studies have used clinicians' definitions of labour onset and found associations between admittance to the labour ward during the latent phase of labour, obstetrical interventions, and instrumental births. Women spend a different amount of time in labour prior to being admitted to the labour ward, therefore it is important to address their own reports when determining labour onset. There is a lack of research investigating the prevalence of a prolonged latent phase of labour (≥ 18 hrs.) based on women's reports, obstetrical interventions, and labour outcome.

The Early Labour Experience Questionnaire (ELEQ) has only been tested for primiparous women in Canada. The questionnaire needs psychometric testing

in a Swedish setting with both primiparous and multiparous women before it can be used to evaluate experiences and care prior to admittance to the labour ward.

Overall and specific aims

The overall aim of this thesis was to investigate the prevalence and labour outcomes associated with a prolonged latent phase of labour, the quality of intrapartum care, women's experiences and preferences during labour, and to psychometrically test a questionnaire.

The specific aims were:

- I. To investigate primiparous women's preferences for care during a prolonged latent phase of labour.
- II. To describe the prevalence of the prolonged latent phase of 18 hours or more, in women intending vaginal birth and who had spontaneous onset of labour and based on women's report of the onset of labour. An additional aim was to compare obstetric interventions, labour, and neonatal outcomes in women with or without a prolonged latent phase.
- III. To describe and compare primiparous and multiparous women's birth experiences and their perception of quality of intrapartum care, in relation to background characteristics, length of latent phase of labour, and early labour contact with the labour ward prior to admittance.
- IV. To psychometrically test the Early Labour Experience Questionnaire among primi- and multiparous women giving birth in a Swedish setting, and to describe and compare their experiences during early labour in relation to background characteristics.

Methods

Design

The present thesis consists of four papers (I-IV). Paper I is a qualitative study based on focus-group and individual interviews exploring primiparous women's preferences for care during a prolonged latent phase of labour. Paper II is a descriptive and comparative study based on birth records from a one-year cohort of women who gave birth after a spontaneous onset of labour, in order to investigate the prevalence of a prolonged latent phase of labour and labour outcome. Papers III and IV are cross-sectional studies based on questionnaires completed by women post giving birth after the spontaneous onset of labour. Paper III examines birth experiences and perceptions of labour care in relation to early labour experiences and Paper IV tests the psychometric structure of a questionnaire designed to measure early labour experiences. See Table 1.

Table 1. Overview of the four research papers included in this thesis.

Paper	Participants	Data collection	Data analysis
I	16 primiparous women with a prolonged latent phase of labour	Focus-group and individual interviews	Inductive content analysis
II	662 primiparous women 681 multiparous women in a one-year cohort	Review of electronic birth records	Descriptive and analytic statistics
III	342 primiparous women 415 multiparous women in a one-year cohort	Questionnaire	Descriptive and analytic statistics
IV	344 primiparous women 410 multiparous women in a one-year cohort	Questionnaire	Descriptive, analytic and psychometric statistics

Sample and data collection

The participants in Paper I were identified by the midwife responsible for care in connection with birth. They were informed about the study and invited to participate. If they agreed, they provided informed consent. Inclusion criteria were: Primiparous women with a prolonged latent phase (≥ 18 hours) of labour based on women's self-reporting, women considered as low-risk of complications at admission to the labour ward, women who gave birth to a healthy baby, and women who were fluent in the Swedish language. Thirty-eight women were asked for consent and 20 women agreed to be contacted for an interview. Four of the participants did not show up to their interview or answer the telephone.

The women could choose between participating in a focus-group interview or being interviewed individually.

The sample consisted of four focus groups with two participants, and one focus group with three participants (Toner, 2009). Additionally, five individual interviews were performed. Focus-group interviews were performed in a private room at the hospital and the individual interviews were performed according to the preference of the women. Most focus-group interviews were performed by the author (KÄ) as the moderator and another author as the observer (AKSB) and the individual interviews were performed by KÄ. The interviews were performed between two and four and a half months after birth, during the period January to October 2012.

The focus-group interviews lasted between 49 and 85 minutes (md 61 min), and the individual interviews lasted between 28 and 43 minutes (md 36 min). All the interviews started with questions about background characteristics: age, mode of birth, and number of telephone contacts with the labour ward prior to admittance. Thereafter, two open-ended questions were asked: ‘How did you experience the prolonged latent phase of labour?’ and ‘What were your preferences for care during the latent phase of labour?’ Descriptions of participants are presented in Table 2.

Table 2 Descriptions of participants (n=16) in Paper I.

Age range (mean)	20-37 (30)
Mode of birth (number)	
Vaginal birth	10
Instrumental vaginal birth	4
Acute caesarean section	2
Number of telephone contacts prior to admittance	
1	2
2	7
3 or more	7
Number of check-ups prior to admittance	
0	2
1	9
2	3
3 or more	2
Admitted during latent phase (number)	
Yes	7
No	9

The sample used in Papers II-IV consisted of women giving birth at a mid-sized hospital in the western part of Sweden during the study period from September 1, 2013, to August 31, 2014. During the study period, pregnant women were informed about the on-going study by their antenatal midwife prior to the birth. At the time of hospital admission, eligible women were recruited by the midwife responsible for their care at the labour ward who asked for written consent for the birth records to be reviewed (II) and about receiving a questionnaire (III, IV). In total, 2660 women gave birth during the study period. See flowchart, Figure 1.

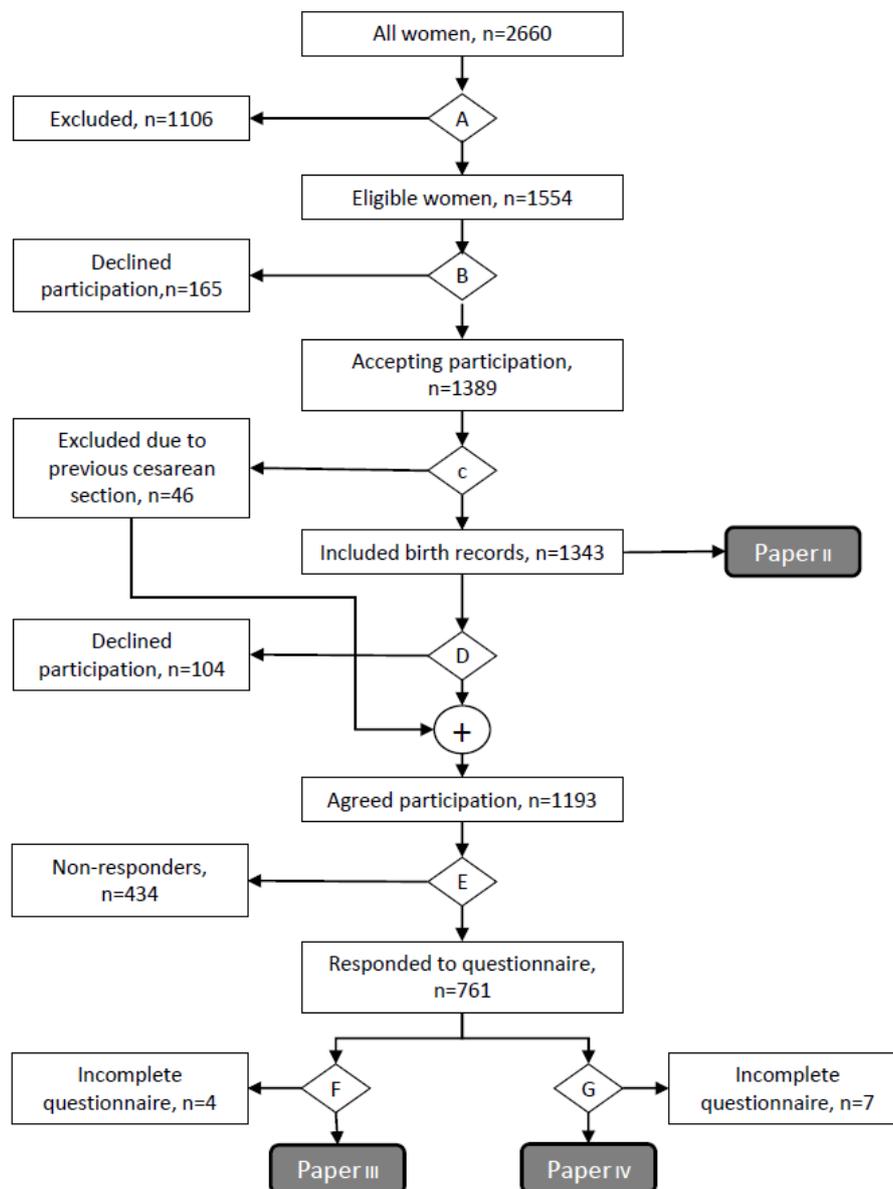


Figure 1. Flowchart of study participants in Papers II-IV

During the study period, 2660 women gave birth at the labour ward. **A)** Excluded birth records were from women with: premature labour less than 37 weeks (n=65), multiple pregnancies (n=58), induced labour (n=330), elective caesarean section (n=275), and emergency caesarean section due to medical reasons (n=89). In addition, birth records from women with stillborn and sick babies (n=38), pre-hospital births (n=29), and non-Swedish speaking women (n=222) were also excluded, leaving 1554 women eligible for participation. **B)** 165 women declined participation. **C)** 46 birth records from women with a previous caesarean section were excluded from the analysis of Paper II, leaving n=1343 birth records included. Descriptions of participants are presented in Table 3.

Table 3. Descriptions of participants in Paper II.

Parity	Primiparous women	Multiparous women
Number (%)	662 (49)	681 (51)
Age range (mean)	15-43 (29.1)	16-44 (29.5)
Gestational week, number (%)		
37-41	638 (96)	649 (95)
≥42	24 (4)	32 (5)
Mode of birth, number (%)		
Vaginal birth	599 (90)	616 (90)
Instrumental vaginal birth	46 (7)	40 (6)
Acute caesarean section	17 (3)	25 (4)

A study protocol based on variables used in earlier studies was designed by the authors (Chelmow et al., 1993; Gharoro & Enabudoso, 2006; Lundgren et al., 2013; Maghoma & Buchmann, 2002; Peisner & Rosen, 1985). The review of birth records was performed at the hospital by the author (KÄ) approximately 2 months after birth. The first 30 birth records were reviewed by two authors (KÄ and AKSB) and consensus was established. Two other midwives, experienced in monitoring birth records, tested the study protocol on 20 randomly selected records and agreement was assured. Labour onset was documented in the birth record by the midwives and based on the women's report.

For Papers III and IV, 1193 women agreed to participate. See Figure 1. Women with a previous caesarean section (n=46) were included in the sample. **E)** 434 women did not respond to the questionnaire. In total, 761 women responded to the questionnaire (RR 64%). **F)** Four women did not complete the QPP-I questionnaire leaving 757 women participating in Paper III. **G)** Seven women did not fulfil the ELEQ questionnaire leaving 754 women participating in Paper IV. Descriptions of participants are presented in Table 4.

Table 4 Descriptions of participants in Papers III and IV

	Paper III		Paper IV	
	Primipara	Multipara	Primipara	Multipara
Parity				
Number (%)	342 (45)	415 (55)	344 (46)	410 (54)
Age, range (mean)	19-42 (28.4)	20-44 (31.7)	19-42 (28.4)	20-44 (31.7)
Gestational week, number (%)				
37-41	310 (91)	388 (93)	312 (91)	383 (93)
≥42	32 (9)	27 (7)	32 (9)	27 (7)
Mode of birth, number (%)				
Vaginal birth	282 (82)	404 (97)	282 (82)	399 (97)
Instrumental vaginal birth	37 (11)	7 (2)	37 (11)	7 (2)
Acute caesarean section	23 (7)	4 (1)	23 (7)	4 (1)

Description of the questionnaire

The questionnaire was distributed by internet or by post 2-3 months after birth. The questionnaire started with background characteristics (5 items) and birth-related aspects (2 items), early labour contacts (5 items), and length of latent phase of labour prior to admittance (1 item). It continued with QPP-I (32 items), global items (4 items), items regarding feelings (4 items), and ELEQ (25 items).

The questionnaire also included the instrument Sense of Coherence (SOC), short version (13 items) (Antonovsky, 1993) and the Single-Item Measures of Personality (SIMP), (5 bipolar items) (Woods & Hampson, 2005). SOC and SIMP together with items about self-assessed physical health (1 item), self-assessed psychological wellbeing (1 item), and a study-specific item about symptoms labour started with (1 item) were not analysed in the present thesis. The QPP-I newly constructed 10 items regarding quality of intrapartum care were suggested by the authors (Wilde Larsson et al., 2010) and tested and validated in the Spanish version (Donate-Manzanares et al., 2017). They were requested but were not analysed in the present thesis due to a lack of validation for the extended version in the Swedish sample.

In total, the questionnaire consisted of 99 items and its printed version was 19 pages long. The web-based version was accessible in either a computer view or a smartphone view. The version was designed by Survey&Report², provided by

² Survey&Report <https://www.artologik.com/en/SurveyAndReport.aspx>

Artisan Global Media, and distributed from Karlstad University. It was a respondent-survey and only the invited participants could take part in the study. Women choosing the web-based questionnaire were given instructions and log-in details in a letter as well as in an e-mail. Women choosing to receive the questionnaire by post were also sent a prepaid return envelope they could use to return the questionnaire. Two reminders were sent out, both by e-mail and post. The women could again choose to answer the questionnaire either by e-mail or if they preferred they could request a paper questionnaire by post instead. The reminders were sent out after one and two months. The Artisan Global Media company is certified according to ISO/IEC 27001:2013 and has ensured that their information security management system fulfils the demanding requirements of international standards. Only the researcher KÄ had access to the log-in details in the Survey&Report system, and it was KÄ who managed the reminders and the returned questionnaires.

Background characteristics and birth-related aspects

Background characteristics; parity, age, educations, marital status and country of birth. Birth-related aspects were gestational week at birth and mode of birth.

Early labour contacts and length of latent phase of labour prior to admittance

Items about experiences of contacts with the labour ward during early labour were included in the questionnaire and were originally from the QPP-I questionnaire (4 items). These items addressed if the woman made a telephone call to the labour ward before admittance (Yes or No), if she answered “yes”, her satisfaction with this conversation was measured on a three-point scale; ranging from “Definitely” and “To some extent” to “Not at all”. Further items comprised check-ups prior to admittance to the labour ward (Yes or No) and satisfaction with the decision to leave the labour ward (without being admitted) was also rated on a three-point scale. A study-specific item about the length of labour prior to admittance was measured using a self-assessed item about the number of hours the woman was in labour before admittance (1 item).

Global items

The overall birth experience was measured using four global items that have been used previously together with QPP-I (Sandin-Bojö et al., 2011). The items included were as follows; if the woman had a positive birth experience, if her birth was considered normal, if she was in control of the situation during labour

and birth, and if she felt safe during labour and birth. The first two global items “I had a positive birth experience” and “I experienced my birth as normal” were answered on a scale from 1 (not at all) to 4 (completely agree). The last two global items “I was in control during labour and birth” and “I felt safe during labour and birth” were answered on a six-point Likert-type scale ranging from 1 (not at all) to 6 (to a very high extent).

Feelings

The questionnaire contained four items about feelings, which had previously been used together with QPP-I (Wilde Larsson et al., 2011). These items were originally constructed with the intention of measuring the extent to which the women experienced the following feelings; “To what extent did the staff contribute to you feeling proud in connection with the birth?”, “To what extent did you feel that the staff paid you positive attention in connection with the birth?”, “To what extent did the staff contribute to you feeling like a failure in connection with the birth?”, and “To what extent did you feel that the staff ignored you in connection to the birth?”. All four feelings were answered on a six-point Likert-type scale ranging from 1 (not at all) to 6 (to a very high extent).

Intrapartum quality of care, QPP-I

Data were collected using the Intrapartum-specific instrument Quality from the Patient’s Perspective questionnaire (QPP-I). The QPP-I is based on a theoretical model (Wilde Larsson et al., 2010) and is designed to measure four dimensions and represent 10 factors of quality of care in 32 items; the identity-oriented approach (7 factors, 19 items), the medical-technical competence (1 factor, 4 items), the physical-technical competence (1 factor, 5 items) and the socio-cultural atmosphere (1 factor, 4 items). The dimension of identity-oriented approach included questions about *Information procedures* (2 items), *Information self-care* (2 items), *Participation* (2 items), *Commitment from midwives* (5 items), *Commitment from enrolled nurses* (3 items), *Commitment from doctors* (3 items), and *Midwives present* (2 items). The dimension medical-technical competence comprised *Medical care/pain relief* (4 items), the dimension physical-technical conditions included *Care equipment/atmosphere* (5 items), and the dimension socio-cultural atmosphere included *Partner/significant others* (4 items) (Wilde Larsson et al., 2010).

The way in which quality of care is perceived by the individual was measured in two ways. The first way through each statement to measure perceived reality

(PR), this was related to the sentence “This was what I experienced...” on a four-point response scale ranging from 1 (do not agree at all) to 4 (completely agree). The second evaluation concerned the subjective importance (SI) the woman ascribed to various aspects of care. Each item was related to the statement “This is how important it was to me that...” For all items, the four-point response scale ranged from 1 (of little or no importance) to 4 (of the very highest importance). Both kinds of ratings also included a “non-applicable” response alternative. For the QPP-I factors, a mean value was calculated based on the individual women’s response to the items in each respective factor.

Early Labour Experience Questionnaire, ELEQ

The ELEQ contains three factors. *The Emotional well-being* factor includes statements such as feeling safe, happy, confident, excited, relaxed, in control, comfortable, and supported (8 items). *The Emotional distress* factor comprised feelings of being scared, tense, anxious, distressed, insecure, and confused (6 items). The third factor, *Perceptions of nursing care*, was simply about the care provider’s characteristics such as being reassuring, listening carefully, providing information, spending enough time, instilling confidence, respecting wishes, treating family with respect, and being at ease and calm (8 items). The single items were: If the caregiver treated the women rudely, if the woman would recommend this type of care to a friend, if the woman felt that she went to hospital in time, and if caregivers (midwives, nurses, and doctors) worked as a team (4 items) (Janssen & Desmarais, 2013a). The items were answered on a Likert-type scale, ranging from 1 (not at all) to 5 (yes definitely) and negative loaded items were reversed during analysis. In the Swedish version, a “non-applicable” alternative was added.

The ELEQ was translated into Swedish prior to use. The authors followed a modified five-step cross-cultural version (Beaton, Bombardier, Guillemin, & Ferraz, 2000). The item “Would you recommend this type of early labour care to a friend?” was removed before translation, as there were no other labour ward options in the county where the study was conducted. In the first step, a forward translation of the questionnaire from English to Swedish was performed by a translator, who made notes and comments to highlight challenging phrases or uncertainties. In the second step, the authors analysed the translated version and the translator’s comments, and a Swedish version was formulated. All items phrased “When you were in early labour at home, did the nurse...” were changed to, “did the midwife...”, and clarifying words were added, such

as “When you were in early labour at home and had telephone contact or visited the labour ward before admittance, did the midwife...”. These changes were made since midwives, rather than registered nurses, are responsible for intrapartum care in Sweden. In the third step, another translator, who was unfamiliar with the original English version of the questionnaire, translated it back into English. In the fourth step, the research group analysed and compared the translations to ensure no further adjustments were needed. In the fifth and final step, a Swedish version containing 25 items was established.

The translated version of ELEQ was pilot tested by 30 women, prior to it being used. These women, who were both primiparous and multiparous and had all recently given birth, answered the questionnaire. After each item, the women were asked if they thought it was difficult to understand the question or if the question was ambiguous. All questions were judged easy to comprehend and no comments were made in the pilot test.

Data analyses

For Paper I, data were analysed using inductive content analysis (Elo & Kyngäs, 2008). The analysis was conducted as a stepwise process as suggested by the authors, and further divided into three phases: preparing, organizing, and reporting. Firstly, the whole material was read through several times by the authors, so they would become immersed in the data. Secondly, meaning units were extracted, condensed, and labelled with a code. The codes were grouped into sub-categories based on similarities and differences. Thirdly, a main category was identified that encompassed all the sub-categories. The analysis moved back and forth between the condensed parts and the whole text. Each category included several codes that described the women’s preferences. All the authors were involved in the entire analysis process.

For Paper II, all data from the review of women’s electronic birth records were analysed with descriptive statistics with chi-square tests for dichotomous variables. The outcome variable, the length of the latent phase of labour, was dichotomized (<18 vs. \geq 18 hours). Crude odds ratios (ORs) and adjusted odds ratios (aORs) with 95% Confidence Intervals were calculated between the exposure variables and the outcome variable. The analysis was performed separately for primiparous and multiparous women.

For Paper III, descriptive statistics and chi-squared tests were used to examine women's background characteristics, birth-related aspects, the length of the latent phase of labour, and early labour contacts prior to admittance. Comparisons were made within parity, about length of latent phase and satisfaction with leaving labour ward prior admittance in relation to the QPP-I factors, global items, and items of feelings, with independent *t*-tests. Levene's test was used to analyse differences in variance between the two groups (Field, 2013). The length of the latent phase of labour prior to admittance was dichotomized (<18 vs. \geq 18 hours) and the item about satisfaction with leaving the labour ward was dichotomized into "Yes" or "To some extent/Not at all". Paired sample *t*-tests were used to investigate women's perceptions of care quality in terms of differences in perceived reality (PR) and subjective importance (SI). The internal consistency reliability was assessed by using the Cronbach Alpha coefficient values (Cronbach, 1951).

For Paper IV, exploratory factor analysis with principal axis factoring was used. The authors followed the three main steps as described by Pallant (2013). In the first step, data were checked for suitability by Bartlett's test of sphericity, which tests the overall significant differences in the correlation matrix, and for sample adequacy in accordance with Kaiser-Meyer-Olkin (KMO). Next was the extraction of factors and Kaiser's criterion was used for testing the eigenvalue of the factors; factors with an Eigenvalue >1.0 were obtained for further analysis. Coefficients <0.30 were suppressed, and the items were included in the factor where they loaded the highest. In the last step, Oblimin rotation was used to explore the structure of all items, since the factors might correlate. Descriptive statistics, such as frequencies, percentages, means, and standard deviations (SD) were used to describe the sample, whereas independent *t*-tests, and analysis of variance (ANOVA) were used to investigate the relationship between the background characteristics in relation to the variant factors of the questionnaire. The internal consistency reliability was assessed by using the Cronbach Alpha coefficient values, where >0.70 was recommended as desirable (Cronbach, 1951). The length of the latent phase of labour prior to admittance was dichotomized into two groups (<18 vs. \geq 18 hours). Answers from women satisfied with the telephone-contact they had with the labour ward and with leaving the labour ward were dichotomized into "Yes" or "To some extent/Not at all".

For Papers II-IV, the statistical significance was assumed at *p*-value <0.05 (Field, 2013). All statistical analyses used the Statistical Package for the Social

Sciences version 21.0 (IBM statistical software package for the Social Sciences (SPSS) for Windows, 2012).

Missing data, missed responses, and non-applicable responses

In Paper II, only variables documented in the birth records were obtained, and a number of variables could not be identified in all records. These were; artificial rupture of membranes (n=4), length of active phase of labour >12 hours (n=4), and blood sample from umbilical cord (n=98). The background variable BMI was missing in about one third of the journals (n=166). The mode of birth of women who declined participation (n=165) was checked in the official data register; 85% had a vaginal birth, 10.5% had an instrumental vaginal birth, and 4.5% had an emergency caesarean section. In the sample of birth records from participating women, 90.5% had a vaginal birth, 6.4% had an instrumental vaginal birth, and 3.1% had an emergency caesarean section.

In Papers III and IV, women who did not respond to the questionnaire (n=436) were 47% primiparous and 53% multiparous. Mode of birth was; 91% vaginal birth, 7% instrumental vaginal birth, and 2% gave birth by caesarean section. In the sample of women who did respond to the questionnaire, 90.6% had a vaginal birth, 5.8% had an instrumental vaginal birth, and 3.6% had an emergency caesarean section.

The “non-applicable” alternative in the QPP-I questionnaire gives the respondent the possibility to not evaluate every item, due to irrelevance. We also added this alternative in the Swedish version of ELEQ. A mean-value for every factor was calculated for the remaining items. Participants with incomplete questionnaires were excluded in principal axing factoring analysis (IV) but included in subgroup analysis (III, IV).

Ethical considerations

The studies have been conducted in accordance with ICM ethical principles stated in (International Confederation of Midwives, 2014) and in the ethical guidelines for nursing research in the Nordic countries (Northern Nurses Federation, 2003). The ethical guidelines are based on the Helsinki Declaration (World Medical Association, 2001) and include four ethical principles (autonomy, beneficence, non-maleficence, justice) of which have been considered in this thesis and in accordance to the Swedish Ethical Review Act (SFS 2003:460). All included studies were approved by the Research ethics committee in Uppsala, (no. 2011/177) and (no. 2012/490).

The first ethical principle, *autonomy*, includes the individual's right to decide on participation in the study as well as protecting the individual's dignity, integrity, and vulnerability. This was ensured by the provision of information about the on-going studies during antenatal care to all women. At the time of birth, eligible women were informed and asked to participate and give informed consent by the midwife responsible for their care during labour and birth. They were informed that participation was voluntary and that they could withdraw their consent prior to the paper being published, without any consequences in terms of care during labour and birth. The authors carefully considered the consequences of approaching women about participation so soon after birth. The written information stated that participation was voluntary, and that they could withdraw at any time without it affecting their care. Studies II-IV were performed simultaneously, so researchers could minimise the risk of sending questionnaires to women who had lost their baby or who had a severely sick baby. This was made possible as the health of the baby was checked in the review of birth records before the questionnaire was distributed. Women who were contacted for the interview study were given information about the recording of the interviews and that the information would be treated confidentially, including the focus-group interviews. When women received the questionnaire, about two months after birth, they could independently decide whether they wanted to participate or not.

The second ethical principle, *beneficence*, concerns the importance of research being useful from a professional and social perspective. The outcomes of the four studies will hopefully contribute to a greater understanding of the management of the latent phase of labour and bring valuable knowledge to the future care of women during labour and birth.

The third ethical principle, *non-maleficence*, was also carefully considered by the research group. If any of the participating women needed further follow up about their childbirth experience, they could communicate with the midwife responsible for their care during labour or to a special counselling group of midwives specialising in fear of childbirth.

The fourth ethical principle, *justice*, states that all women should be treated equally and be given the same opportunity to participate in research. Despite this, we chose not to ask women who did not speak Swedish, due to the risk of communication uncertainty. We also excluded women with stillborn and sick new-born babies, which is a common praxis with regards to their vulnerable situation. These groups are often excluded in research that does not address their specific situation, but a continued ethical discussion is essential in forthcoming research regarding the use of research designs that do not exclude any groups.

Main findings

The main findings of the four papers are presented in four different sections, with references to each study in Roman numerals. First, prevalence and labour outcome of a prolonged latent phase of labour (II), thereafter, psychometric testing of ELEQ in a Swedish setting (IV), women's preferences and experiences during a prolonged latent phase of labour and early contacts with the labour ward prior to admittance (I, IV), prolonged latent phase of labour and early labour contacts prior to admittance to the labour ward in relation to quality of intrapartum care, global items, and feelings (III, IV).

Prevalence and labour outcome of a prolonged latent phase (II)

The sample consisted of 1343 birth records from 662 primiparous and 681 multiparous women who had a spontaneous onset of labour. The length of the latent phase varied, with the duration for primiparous women between 0-96 hours, (M=13.9, SD 15.1) and multiparous women between 0-105 hours, (M=10.8, SD 12.7). Most women were aged 25-35 years and considered as 'low-risk' (e.g. low risk for complications) when admitted onto the labour ward. The prevalence of a prolonged latent phase of ≥ 18 hours was 29.2% for primiparous women and 17% for multiparous women, based on women's self-reported time of labour onset.

Similarities and differences in parity

Similar patterns regardless of parity were shown for most variables regarding background characteristics, obstetrical interventions, and labour outcome when comparisons were made between women with a prolonged latent phase of labour and women with a normal latent phase of labour. While different background characteristics such as distance to hospital, length of pregnancy, and fear of childbirth were not statistically significantly associated with a prolonged latent phase of labour (≥ 18 hours), two of the background variables were significantly associated with a prolonged latent phase. For primiparous women, a BMI of 30 or more was associated with a prolonged latent phase, (OR **1.84**, 95% CI, 1.01-3.34). Multiparous women under 25 years of age were more likely to experience a prolonged latent phase (OR **2.0**, 95% CI, 1.24-3.25).

Women with a prolonged latent phase of labour were more often admitted to the labour ward during the latent phase and were more exposed to obstetric

interventions during labour, such as amniotomies during the latent and active phases. For an amniotomy in the latent phase, the adjusted odds ratio (aOR) was **11.57** (95% CI, 5.25-25.51) for primiparous women and **18.73** (95% CI, 9.06-38.69) for multiparous women, and in the active phase, the aOR was **4.05** (95% CI, 2.53-6.47) for primiparous women and **3.93** (95% CI, 2.43-6.37) for multiparous women. Labour augmentation during all phases was more common for women with a prolonged latent phase, in particular, augmentation during the latent phase, with the aOR at **10.13** (95% CI, 2.82-36.39) for primiparous women and **11.9** (95% CI, 3.69-38.71) for multiparous women.

Women with a prolonged latent phase of labour, were more likely to use pharmacologic pain relief such as morphine, (primiparous aOR **2.46**, 95% CI, 1.56-3.86 and multiparous, **2.95**, 95% CI, 1.91-4.56). An epidural anaesthesia during labour was more common in women with a prolonged latent phase of labour, (primiparous aOR **3.87**, 95% CI, 2.52-5.95 and multiparous **4.18**, 95% CI, 2.72-6.42). Surveillance of the baby's condition using a scalp electrode was more common in women with a prolonged latent phase than in other women (primiparous aOR **2.42**, 95% CI, 1.60-3.65 and multiparous **2.69**, 95% CI, 1.58-4.61).

Women with a prolonged latent phase had a lactate sample taken during labour more often (primiparas aOR **2.18**, 95% CI, 1.27-3.74, and multiparas **2.69**, 95% CI, 1.58-4.61). In addition, they were more likely to have an active phase of labour exceeding 12 hours, (primiparas aOR **4.75**, 2.34-9.64 and multiparas **5.24**, 95% CI, 2.84-9.66). Having an episiotomy was more common for primiparous women with a prolonged latent phase (aOR **6.73**, 95% CI, 2.08-21.71), but this was not the case for multiparous women. A prolonged latent phase was associated with more instrumental vaginal births for multiparous women, with an aOR of **2.58** (95% CI, 1.27-5.26) and with emergency caesarean sections regardless of parity, (primiparous women, aOR **3.21**; 1.08-9.50, and multiparous women, **3.93**; 1.67-9.26).

An Apgar score less than seven at five minutes, excessive bleeding >1000 ml, and perineal ruptures were not associated with a prolonged latent phase.

Psychometric test of the questionnaire ELEQ in a Swedish setting (IV)

For primiparous women, the three-factor solution explained 47.5% of the variance, and the factors were labelled *Emotional wellbeing*, *Emotional distress*, and *Perceptions of midwifery care* with factor loadings between 0.47-0.82. Two items are presented as single items: “While you were in early labour at home did you feel supported” and the item “Did you feel you went to the hospital at the right time?”. The Swedish version for primiparous women, with a three-factor solution was named SWE-ELEQ-PP.

For multiparous women, the factor analysis yielded a four-factor solution, explaining 54.48% of the variance. The factors were labelled: *Emotional wellbeing*, *Emotional distress*, *Perceptions of midwifery care*, and *Teamwork*. The items had factor-loadings between 0.33 and 0.90. Two items had low loadings (<0.30) and are presented as single items and were identical to the primiparas, “While you were in early labour at home did you feel supported” and the item “Did you feel you went to the hospital at the right time?”. Additionally, the item “While you were in early labour at home, did you feel safe?” was only loading on the *Emotional distress* factor and was removed from the factor due to conceptual fit, and is presented as a single item. The Swedish version for multiparous women with four factors was named, SWE-ELEQ-MP.

Reliability testing for internal consistency using Cronbach alpha is presented in Table 5 for both primiparous and multiparous women.

Table 5. Cronbach alpha values in different factors of SWE-ELEQ-PP and SWE-ELEQ-MP

Parity	Emotional wellbeing	Emotional distress	Perceptions of midwifery care	Teamwork
Primiparous women ^a	0.84	0.86	0.81	
Multiparous women ^b	0.85	0.86	0.77	0.62

^a SWE-ELEQ-PP

^b SWE-ELEQ-MP

Women's preferences and experiences during a prolonged latent phase and early labour contacts prior to admittance to the labour ward (I, IV)

Primiparous women's preferences during a prolonged latent phase were encompassed in the main category "Beyond normality – a need of individual adapted guidance to understand and manage an extended latent phase of labour". Five categories emerged; "A welcoming manner and not being rejected", "Individually adapted care", "Important information which prepares for reality and coping", "Participation and need for feedback", "Staying nearby or being admitted for midwifery support". The category about the importance of a welcoming manner and not being rejected, highlights the importance of a satisfactory contact between women and the midwife at the labour ward (I). Most women were satisfied with their telephone contact prior to admittance, 70.9% of primiparous women and 81.5% of multiparous women were satisfied. Primiparous women who were not satisfied with the telephone-contact they had prior to admittance scored significantly lower on the *Emotional wellbeing* factor. More than half of primiparous women (56.4%) were satisfied with leaving the labour ward prior to admittance, and women who were not satisfied with this (43.6%) scored higher on the *Emotional distress* factor and lower on the *Perceptions of midwifery care* factor. Primiparous women with a prolonged latent phase of labour scored significantly lower on the *Perceptions of midwifery care* factor (IV). See Table 6. The category about staying nearby or being admitted for midwifery support, covers the concerns and personal needs that primiparous women expressed during a prolonged latent phase (I).

Table 6. Primiparous women's experiences of contacts and length of latent phase of labour prior to admittance, in relation to factors of SWE- ELEQ-PP with significant differences

Factors	Emotional wellbeing	Emotional distress	Perceptions of midwifery care
	Mean/SD	Mean/SD	Mean/SD
Satisfied with telephone contact			
Yes (n=244)	3.84/0.71		4.34/0.35
To some extent/not at all (n=95)	3.54/0.80		3.44 /0.72
<i>p</i> -value	.001		<.001
Satisfied leaving labour ward prior to admittance			
Yes (n=54)		2.58/0.85	4.25/1.02
To some extent/not at all (n=43)		3.00/1.02	3.92/0.77
<i>p</i> -value		.035	.014
Length of latent phase prior to admittance			
<18 hours (n=252)			4.14/0.55
≥18 hours (n=79)			3.80/0.81
<i>p</i> -value			.012

Response scale alternative, from 1 (not at all) to 5 (yes definitely)

Analysed with *t*-test and Levene's test for variance. The statistical level was assumed at $p < 0.05$

Women appreciated a welcoming manner when arriving at the labour ward and if the midwife said, "Come whenever you want", this was perceived positively and helped diminish their worries (I). The item about feeling tense was rated highest ($M=3.56$) in the *Emotional distress* factor for all primiparous women during early labour (IV). For primiparous women, it was important not to be rejected. The women were afraid that if they went to the hospital too early they would be sent home again. They wanted to be admitted because of their lack of coping ability. They wanted access to care according to their individual needs, and the category about individually adapted care was encompassing this (I). The item asking if the midwife respected her wishes to go to the hospital was perceived as highly important in both primiparous and multiparous women ($M=4.51$ vs. $M=4.75$) (IV). It was important for the women that they received relevant information in early labour, and the category about receiving important information to be prepared for reality and coping comprises this need (I). Primiparous women scored lower ($p < 0.001$) on the item "The midwife gave me the information I wanted" ($M=4.27$ vs. $M=4.61$) than multiparous women.

Multiparous women who were not satisfied with their telephone contact with the labour ward during early labour (n=56), scored lower ($p < 0.001$) regarding

the *Perceptions of midwifery care* factor ($M=3.64$ vs. $M=4.31$) and *Teamwork* factor ($p<0.001$; $M=4.01$ vs. $M=4.70$) than women who were satisfied ($n=330$). Multiparous women not satisfied with leaving the labour ward during early labour ($n=26$) scored higher ($p=0.013$) on the *Emotional distress* factor ($M=2.76$ vs. $M=2.22$) than women who were not dissatisfied with leaving the labour ward ($n=45$) (IV).

Background characteristics and birth-related aspects in relation to ELEQ

The background characteristics age, education, marital status was not related to any of the factors in SWE-ELEQ-PP for primiparous women. Nor were the birth-related aspects, length of pregnancy, and mode of birth. For multiparous women, age, length of pregnancy, and mode of birth showed no statistically significant differences. However, multiparous women with primary school/high school level education ($n=162$) scored higher ($p=0.009$) regarding the *Emotional distress* factor in SWE-ELEQ-MP, ($M=2.44$ vs. $M=2.21$) than women with college or university education ($n=241$). Multiparous women living alone ($n=7$) scored higher ($p<0.001$ vs. $p=0.012$) for the factors *Perceptions of midwifery care* ($M=4.46$ vs. $M=4.20$) and *Teamwork* ($M=4.92$ vs. $M=4.61$) (IV) than multiparous women living with a partner.

Statistically significant differences were found between parity and several of the items in ELEQ. Primiparous women scored lower on items regarding the factor *Emotional wellbeing*; feeling excited, confident, and in control. They scored higher on the item being confused, in the *Emotional distress* factor. In the factor of *Perceptions of midwifery care*, primiparous women scored lower on seven out of 10 items. They scored lower for the items if the midwife treated the woman's family and friends with respect and if they arrived at the hospital at the right time (IV). See Table 7.

Table 7. Mean scores for items in ELEQ with statistically significant differences between primiparous and multiparous women

Items	Primiparous women	Multiparous women	<i>p</i> -value
	n=344	n=410	
	Mean/SD	Mean/SD	
Excited ^a	4.59/0.71	4.71/0.62	.001
Confident ^a	3.71/1.08	4.13/0.98	.015
In control ^a	3.54/1.06	3.95/0.97	<.001
Confused ^b	2.22/1.28	1.63/1.04	<.001
Information ^c	4.27/1.01	4.61/0.76	<.001
Reassurance ^c	4.01/1.19	4.49/0.86	<.001
Enough time ^c	4.27/1.06	4.63/0.77	<.001
Listen carefully ^c	4.37/0.99	4.64/0.83	<.001
Respect wishes about timing ^c	4.51/1.00	4.75/0.71	<.001
Confidence in midwife ^c	4.56/0.83	4.68/0.76	.010
Rude ^c	1.38/0.92	1.24/0.77	.029
Respect to partner ^d	4.68/0.72	4.77/0.59	.005
Go to hospital at right time ^e	4.41/1.00	4.68/0.61	<.001

Response scale alternative, from 1 (not at all) to 5 (yes definitely)

^a Emotional wellbeing factor, SWE-ELEQ-PP and SWE-ELEQ-MP

^b Emotional distress factor, SWE-ELEQ-PP and SWE-ELEQ-MP

^c Perceptions of midwifery care factor, SWE-ELEQ-PP and SWE-ELEQ-MP

^d Perceptions of midwifery care factor in SWE-ELEQ-PP, Teamwork factor in SWE-ELEQ-MP

^e Single item

Analysed with *t*-test and Levene's test of variance. The statistical level was assumed at the $p < 0.05$ level

Prolonged latent phase of labour and early labour contacts prior to admittance in relation to quality of intrapartum care, global items, and feelings (III, IV)

Primiparous women with a prolonged latent phase of labour ≥ 18 hours prior to admittance to the labour ward scored lower than women with a latent phase less than 18 hours on five out of seven QPP-I factors; *Information procedures*, *Information self-care*, *Commitment from midwives*, *Commitment from enrolled nurses*, and *Midwives present* (Identity-oriented approach). They also ranked the factor *Partner/significant other* (Socio-cultural atmosphere) lower. In addition, they scored lower on three Global items; 'labour experience', 'normal birth', and 'safe during birth' than women without a prolonged latent phase. Their feelings were also related to lower assessments of 'the professionals contributed to feeling proud' and they felt ignored by professionals more often than primiparous women with a latent phase of labour less than 18 hours.

For multiparous women with a prolonged latent phase of labour ≥ 18 hours, only one QPP-I factor was related: *Commitment from midwives* (Identity-oriented approach). They also scored lower for ‘being in control’ and ‘safe’ (Global items) than multiparous women with a latent phase less than 18 hours (III). See Table 8.

Table 8. A prolonged latent phase of labour prior to admittance in relation to statistically significant differences for factors in QPP-I, Global items and Feelings

How many hours were you in labour prior to admittance?	Primiparous women			Multiparous women		
	<18 hours (n=248)	≥ 18 hours (n=79)	<i>p</i> -value	<18 hours (n=351)	≥ 18 hours (n=33)	<i>p</i> -value
Factor QPP-I ^a						
Information procedures (ID)	3.35/0.72	3.07/0.89	.015			
Information self-care (ID)	3.06/0.93	2.73/0.94	.008			
Commitment midwives (ID)	3.68/0.58	3.32/0.89	.001	3.69/0.55	3.26/0.99	.019
Commitment enrolled nurses (ID)	3.62/0.67	3.31/0.83	.004			
Midwives present (ID)	3.43/0.60	3.23/0.72	.029			
Partner/ significant others (SC)	3.55/0.59	3.33/0.76	.023			
Global items						
Satisfied with birth experience ^a	3.32/0.95	3.03/1.09	.023			
Experience birth as normal ^a	3.42/0.92	3.10/1.10	.025			
Control over situation ^b				4.93/1.08	4.39/1.27	.008
Safe during birth ^b	5.36/0.82	5.03/1.18	.005	5.44/0.83	5.09/1.13	.029
Feelings						
Feeling proud ^b	5.37/1.02	5.08/1.20	.050			
Feeling ignored ^b	1.46/1.06	1.76/1.24	.041			

a Answers scored from 1 (do not agree at all) to 4 (completely agree)

b Answers scored from 1 (not at all) to 6 (to a very high extent)

(ID) Identity-oriented approach

(SC) Socio-cultural atmosphere

Analysed with *t*-test and Levene’s test of variance. The statistical level was assumed at the $p < 0.05$ level.

Primiparous women who visited the labour ward during the latent phase of labour scored lower on the factor *Commitment from midwives* ($M=3.43$ vs. $M=3.65$; $p=0.021$) and higher on ‘feeling ignored by professionals’ during labour and birth ($M=1.78$ vs. $M=1.43$; $p=0.024$) than women who did not visit the labour ward prior to admittance. For multiparous women, a visit to the labour ward prior to admittance was not significantly related to any of the factors in the QPP-I, Global items, or Feelings (III).

Primiparous women who were not satisfied with the decision to leave the labour ward during the latent phase of labour scored lower on five factors out of seven in the Identity-oriented dimension than primiparous women who were satisfied with leaving the labour ward. They scored lower regarding *Information*

procedures, Commitment from midwives, Commitment from doctors, Midwives present, and Participation. They also scored lower on *Care equipment/atmosphere* (Physical-technical conditions). They scored lower on three Global items; ‘birth experience’, ‘normal birth’, and ‘in control during labour and birth’.

Multiparous women not satisfied with the decision to leave the labour ward during the latent phase of labour scored lower on four out of seven factors in the Identity-oriented dimension; *Information procedures, Commitment midwives, Midwives present, and Participation.* They also scored lower on *Medical care/pain-relief* (Medical-technical conditions) and on the Global item, ‘having a normal birth’. They scored lower on the Feelings item, ‘the professionals contributed to feeling proud’ (III). See Table 9.

Table 9. Satisfaction with leaving the labour ward in relation to statistically significant differences for factors of QPP-I, global items, and feelings

Were you satisfied with leaving the labour ward prior to admittance?	Primiparous women			Multiparous women		
	Yes, definitely (n=54)	To some extent/not at all (n=42)	<i>p</i> -value	Yes, definitely (n=45)	To some extent/not at all (n=28)	<i>p</i> -value
	Mean/SD	Mean/SD		Mean/SD	Mean/SD	
Factors QPP-I ^a						
Information procedures (ID)	3.53/0.65	2.94/1.02	.002	3.62/0.63	3.04/0.95	.007
Commitment midwives (ID)	3.65/0.70	3.19/0.93	.009	3.70/0.65	3.27/0.90	.037
Commitment doctors (ID)	3.61/0.59	3.15/0.90	.011			
Midwives present (ID)	3.43/0.57	3.13/0.81	.047	3.65/0.54	3.21/0.81	.014
Participation (ID)	3.34/0.88	2.89/1.04	.025	3.37/0.72	2.90/0.87	.019
Medical care/pain relief (MT)				3.67/0.59	3.26/0.80	.026
Care equipment/atmosphere (PT)	3.35/0.68	2.89/0.81	.003			
Global items						
Satisfied with birth experience ^a	3.41/0.92	2.74/1.09	.002			
Experience birth as normal ^a	3.51/0.85	2.85/1.79	.004	3.78/0.64	3.30/1.03	.035
Control over situation ^b	4.46/1.19	3.90/1.20	.026			
Feelings						
Feeling proud ^b				5.49/0.84	4.89/1.37	.045

a Answers scored from 1 (do not agree at all) to 4 (completely agree)

b Answers scored from 1 (not at all) to 6 (to a very high extent).

(ID) Identity-oriented approach

(MT) Medical-technical competencies

(PT) Physical-technical conditions

Analysed with *t*-test and Levene's test of variance. The statistical level was assumed at the $p < 0.05$ level

Similarities and differences in quality of intrapartum care (PR and SI)

For all women, regardless of parity, the factor *Information self-care* (Identity-oriented approach) had the lowest mean value (3.28 for primiparous vs. 3.49 for multiparous women) when rating the quality of care received (PR). There were differences in the highest ranked factor between parity, where primiparous women ranked the factor *Medical care/ pain relief* (Medical-technical competence) as the highest (M=3.61) and multiparous women ranked the factor *Commitment from midwives* (Identity-oriented approach) as the highest (M=3.67).

The subjective importance (SI) of quality of care showed a similar pattern; for both primiparous and multiparous women the factor *Information self-care* (Identity-oriented approach) was ranked lowest (M=2.88 vs. M=2.76) and *Commitment from midwives* was ranked highest (Identity-oriented approach) (M=3.82 vs. M=3.80).

When evaluating the differences between perceptions of care received (PR) and subjective importance (SI), eight factors showed to be statistically significantly different between PR and SI, with higher ratings for SI, but for the factor *Information self-care*, the opposite was found. For both primiparous and multiparous women, *Information self-care* had a higher value for PR than SI (M=3.00 vs. M=2.88 and M=3.05 vs. 2.76 respectively). For multiparous women, the factor *Information procedures* showed no statistically significant difference between PR and SI (M=3.49 vs. M=3.46) whilst for primiparous women PR was rated significantly lower than SI (M=3.28 vs. M=3.50).

Summary of findings

The summary of findings is presented according to the overall aim and the results.

- When using women's descriptions of labour onset, the prevalence of a prolonged latent phase ≥ 18 hours was 23%. For primiparous women it was 29% and for multiparous women it was 17% (II).
- Women with a prolonged latent phase of labour were more often admitted to the labour ward during this phase and were more exposed to obstetrical interventions, medical pain-relief, and surveillance during labour and birth. They had an instrumental birth more often than women with a latent phase less than 18 hours (II).
- The Swedish version of ELEQ for primiparous women, named SWE-ELEQ-PP, had three factors and was found to be useful in a Swedish setting with sufficient Cronbach alpha values (IV).
- The ELEQ questionnaire was validated for multiparous women as well and named SWE-ELEQ-MP. It contains four factors and has a different pattern than the version for primiparous women, which only has three factors. The fourth factor, teamwork, had a Cronbach alpha value of < 0.70 (IV).
- Regardless of parity, all women preferred individual adapted care (III and IV). Primiparous women with a prolonged latent phase of labour, valued midwifery support based on their individual preferences (I) and scored lower for midwifery care, prior to admittance to the labour ward, compared to primiparous women with a shorter latent phase of labour (IV).
- The prolonged latent phase of labour was related to primiparous women's birth experiences as well as their experiences of early labour. The perceptions of midwifery care, quality of intrapartum care, feelings, and labour experience were all related negatively (III and IV).
- Multiparous women with a prolonged latent phase of labour did not rate experiences in early labour differently but rated some aspects of quality of intrapartum care lower; commitment from midwives and commitment from enrolled nurses and felt less in control and safe compared to multiparous women with a shorter latent phase (III and IV).
- Primiparous and multiparous women perceived their early labour experiences differently. Multiparous women rated emotional wellbeing high-

er, felt less distress and experienced midwifery care more positively than primiparous women (IV).

- Women who were not satisfied with contacts with and visits to the labour ward during early labour scored significantly lower on the emotional wellbeing factor, scored higher for emotional distress, and reported lower scores for the midwifery care factor during early labour (ELEQ). Their experiences of intrapartum care quality were related to lower scores in several factors and dimensions (QPP-I), as well as birth experience and feelings (III and IV).
- Both primiparous and multiparous women scored lower on almost all QPP-I factors regarding perceived reality (PR) compared to their subjective importance (SI). Both primiparous and multiparous women scored the factor of commitment from midwives highest and information self-care lowest. Primiparous and multiparous women scored PR higher than SI for the factor information self-care. The factor information procedure showed no statistical difference for multiparous women between PR and SI (III).

Discussion

Discussion of the results

The main findings in this thesis showed that the prevalence of a prolonged latent phase of labour was more common than previously reported when it was based on women's self-reporting. A prolonged latent phase of labour was associated with admittance to the labour ward during the latent phase, more obstetrical interventions, medical pain-relief, and instrumental birth. The Early Labour Experience Questionnaire was adapted to suit both primiparous and multiparous women, with different patterns that must be considered when analysing data. The instruments SWE-ELEQ-PP and SWE-ELEQ-MP can be used to evaluate early labour care in Sweden. A prolonged latent phase of labour was related to women's perception of quality of care prior to admittance, during intrapartum care, the birth experience, and feelings during labour and birth. Primiparous women were less satisfied with midwifery care prior to admittance than multiparous women. For women not satisfied with leaving the labour ward during the latent phase, the quality of intrapartum care was scored lower, and it was more common to report a less positive birth experience and more negative feelings during labour and birth. All women perceived quality of intrapartum care lower than its subjective importance and areas for improvement have been identified regarding most dimensions and factors for quality of intrapartum care.

The results in this thesis have all been based on women's descriptions of labour onset, building on a women-centred concept that has been suggested by several authors (Gross et al., 2003; Hanley et al., 2016; WHO, 2018). This approach probably affected the higher prevalence of a prolonged latent phase of labour that is presented in this thesis than has been found in previous studies using clinicians' reports (Chelmow et al., 1993; Friedman, 1972; Gharoro & Enabudoso, 2006; Maghoma & Buchmann, 2002; Peisner & Rosen, 1985). Almost one quarter of all women giving birth after a spontaneous onset of labour were found to have a prolonged latent phase of labour. The present results showed that it is common for women experiencing a prolonged latent phase of labour to be admitted to the labour ward during the latent phase, despite recommendations to stay out of hospital until the active phase of labour has commenced, so as to avoid unnecessary intervention (Lauzon & Hodnett, 2001; Nunes et al., 2014). This finding has been presented in earlier studies as well

(Janssen & Weissinger, 2014; Lundgren et al., 2013). There is a lack of consensus about the normal length of the latent phase of labour (Hanley et al., 2016). In this thesis, the cut-off point of 18 hours or more was used, based on the Swedish classification code (Pihl, 2014). The WHO report avoids giving a definition and instead suggests that women shall be informed that the length of the latent phase of labour differs greatly (WHO, 2018). The results found here indicate that women in labour did not view a prolonged latent phase as normal, and the analysis of the interview data created a category labelled “Beyond normality”, based on primiparous women’s descriptions (I), and confirmed with the findings of lower scores for the global item ‘birth as normal’, for primiparous women with a prolonged latent phase (III). The result showed that women with a prolonged latent phase were exposed to more surveillance and obstetrical interventions during labour and birth, regardless of parity. The present thesis confirmed previous studies that showed an association between a prolonged latent phase of labour, obstetrical interventions, and instrumental birth (Janssen & Weissinger, 2014; Lundgren et al., 2013), however, the causes and origins need further exploration. The hospital birth environments are often designed to facilitate the use of interventions and the physical environment can unintentionally contribute to creating pathological space for labour and birth, which can be frightening for women. The hospital birthing environment can also affect the neurohormones leading to a disrupted labour as to access the labour ward, the woman must move from her familiar environment at home to the unfamiliar environment of the hospital (Stark, Remyne, & Zwelling, 2016; Stenglin & Foureur, 2013; Walsh, 2009). In a Nordic sample of women giving birth at home, the median duration from onset of labour until the birth of the baby was approximately 14 hours for primiparous women and 7.25 hours for multiparous women. This result indicated a shorter latent phase of labour, for women giving birth at home with midwifery support, regardless of parity. (Hildingsson et al., 2015).

The ELEQ questionnaire was developed and tested in Canada for primiparous women (Janssen & Desmarais, 2013a) and the findings in the present thesis show that it is useful also in Sweden. However, differences in experiences between parity exist and must be considered when meeting women during the latent phase of labour and when evaluating early labour care. The findings suggest a three-factor solution for primiparous women, identical to the ELEQ (Janssen & Desmarais, 2013a) and a four-factor solution for multiparous women. The fourth factor was labelled Teamwork and included items about if the

midwife and physician worked together as a team when managing care, and if the midwife treated family and friends with respect. This result needs further exploration. The questionnaire was developed in Canada where differences in context for maternity care exist with mainly registered nurses caring for women in labour, in contrast to Sweden, where midwives are responsible for women's care (Roth & Lubold, 2015).

The findings in this thesis show that women with a prolonged latent phase of labour seek contact with professionals more often and are more often admitted to the labour ward during the latent phase. They valued a welcoming manner and wanted to take an active part in making decisions about their further care. According to WHO, a woman that is presenting at a labour ward shall be admitted and supported appropriately even if she is in the latent phase of labour, or she can wait for the active phase of labour to commence at home, according to her own preferences (WHO, 2018). The organisation of intrapartum care is governed by care for women in the active phase of labour (Beake et al., 2018; Janssen et al., 2009), although efforts have been made to expand and improve early labour care, however, evaluation is still lacking (Bailey, Newton, & Hall, 2017; Spiby, Green, Richardson-Foster, & Hucknall, 2013). The best place for a woman in the latent phase of labour who presents at the labour ward could perhaps be in a separate lounge as suggested by Paul et al. (2017) and in the report from WHO (2018). In Sweden, midwifery care is fragmented, and models of care with continuity are not an option. A report that advocates the continuity model to be implemented in Sweden has been written (Swedish Association of Local Authorities and Regions, 2017), however, in settings where continuity of midwifery care is provided, the likelihood of presenting at the labour ward at a more advanced stage of labour increased, more spontaneous onset of labour occurred, and a reduction in the number of caesarean sections was seen (McLachlan et al., 2012; Tracy et al., 2013; Tracy et al., 2014). A Cochrane review with fifteen randomized controlled trials summarizes that the midwifery models of continuity care, such as caseload models, lead to a reduction in epidurals, less instrumental births and episiotomies, fewer babies born prematurely, and more spontaneous births. The review concludes that all women should be offered a midwife known to them during pregnancy, childbirth, and postnatal care (Sandall, Soltani, Gates, Shennan, & Devane, 2016).

The findings in this thesis show that primiparous women are more distressed during the latent phase of labour prior to admittance to the labour ward and

experienced more uncertainty in managing early labour than multiparous women. An individualized approach is necessary, as is reassurance for women in early labour, especially primiparous women, which has been previously reported (Henderson & Redshaw, 2017; Hosek, Faucher, Lankford, & Alexander, 2014; Kobayashi et al., 2017; Shallow, Deery, & Kirkham, 2017). The result finding that early labour experience differs between women of different parity shows that developing a guideline for all women is not the way forward if the aim is to improve early labour care, as has been suggested in previous research (Beake et al., 2018; Beebe & Humphreys, 2006; Green, Spiby, Hucknall, & Richardson Foster, 2012). A systematic review found that a more tailored management plan during the latent phase could improve management prior to admittance to the labour ward. The authors state that protocols and pathways to support labour management should be shared and discussed with women and their companions during pregnancy (Beake et al., 2018). It has been reported that primiparous women report higher levels of worry about getting to hospital in time (Eri et al., 2015; Henderson & Redshaw, 2017), and this was also a finding in the present thesis. It has also been found that primiparous women and their partners experience an asymmetric power relationship between themselves and the midwife, and their experience during the first encounter with the labour ward sets the tone for the rest of the birthing experience (Nyman, Downe, & Berg, 2011).

The results in this thesis revealed that a prolonged latent phase was related negatively to quality of intrapartum care, birth experience, and feelings for women giving birth. Some women are not satisfied with quality of care, and Haines et al. (2013) used cluster analysis and found distinct satisfaction profiles of characteristics for women who reported dissatisfaction (Haines et al., 2013). Women in the fearful profile were most likely to report deficiencies on intrapartum care factors and for the feeling of control, after adjustments for background characteristics and labour outcome were made. The intertwined connection between emotions and satisfaction has also been stated in a previous study (Wilde Larsson et al., 2011). The results here showed and confirmed the fact that midwives play an important role for women during labour and birth, and this is especially so for women with a prolonged latent phase of labour. A women's need for midwifery-support increased with the length of the latent phase. These findings are confirmed in previous research showing that some women who are asked to return home after a check-up feel empowered and confident, while others feel uncertain and unable to cope alone (Beebe & Humphreys, 2006; Eri

et al., 2010). Some women were not satisfied with the decision of not being admitted to the labour ward. Midwives are the coordinators at the labour ward (Cheyne, Dowding, & Hundley, 2006; Eri, Blystad, Gjengedal, & Blaaka, 2011) and the balancing act between the different ideas of birth being a normal event versus birth being a potential medical risk has been addressed in previous research (Blaaka & Eri, 2008; Bryar & Sinclair, 2011; Shallow et al., 2017). The results in this thesis showed that a women-centred perspective was not always considered and women who were not satisfied with decisions made prior to admittance often find that this influences the rest of their experience. According to Bryar and Sinclair (2011) the holistic model of birth as a normal event recognizes the woman as an active part of her own health (Bryar & Sinclair, 2011). Women value participating in their care and they want to give birth in settings where safety and psychosocial wellbeing are equally valued. If interventions are performed during labour and birth, it is important for women to retain control through actively taking part in decision-making (Downe, Finlayson, Oladapo, Bonet, & Gülmezoglu, 2018). According to WHO (2018), most women want a physiological labour and birth and to be actively involved in decision-making, even in cases where medical interventions are needed or wanted.

The results of the present thesis show that most women were content with the quality of intrapartum care they had received. This result is in line with previous research (Sandin-Bojö et al., 2011; Wilde Larsson et al., 2011). However, the results showed areas for improvement as well. Since birth experience is multi-dimensional, women can be more satisfied with some dimensions of the birth experience and less satisfied with others (Rudman, El-Khoury, & Waldenström, 2007). If only a general question about overall satisfaction is asked, most women respond that they are 'satisfied' with care. If instead specific questions about particular aspects covering all dimensions of care are asked, a more nuanced picture emerges (Brown & Lumley, 1994; van Teijlingen, Hundley, Rennie, Graham, & Fitzmaurice, 2003). The women's subjective interpretation of the birth experience may not be related to adverse events and if a woman feels safe and well cared for by professionals, her overall birth experience can still be experienced as positive despite serious complications (Garthus-Niegel et al., 2014; Størksen et al., 2013). Hildingsson (2015) found that if a woman's expectations of her birth experience are not fulfilled, and the experience is 'worse than expected', this was associated with a less positive overall birth experience. In an Israeli study, the authors reported that a higher level of perceived control over the birth environment was associated with positive emotions, less fear, and bet-

ter perceived care, and more perceived control over the birth process predicted less guilt as well (Preis, Lobel, & Benyamini, 2018).

The results found in this thesis identify areas needing improvement that if adjusted could improve the quality of intrapartum care for women with a prolonged latent phase of labour. Primiparous women with a prolonged latent phase of labour scored lower on information about procedures and self-care in the present thesis. Information is an important aspect of the concept of support during labour and birth (Hodnett, 2002). The lower scores for Information procedures and the result that women with a prolonged latent phase were more exposed to obstetrical interventions, surveillance, and augmentation during all phases of labour could be discussed and further explored. Dencker et al. (2010) showed that women with a prolonged labour (>12 hours) and augmentation during labour, scored lower for all sub-scales measuring birth experience. Another area for improvement identified in this thesis is in the Identity-oriented dimension, where lower scores were seen for commitment from midwives and enrolled nurses who are the team closest to the woman giving birth and her partner, as well as those who should support the partner. In this thesis, primiparous women with a prolonged latent phase of labour scored support to partner significantly lower than primiparous women with a latent phase of less than 18 hours. These findings are supported by previous research, where the partner is a part of the labouring couple (Bäckström & Wahn, 2011) and partners experience being supportive to the woman as emotionally challenging (Johansson, Fenwick, & Premberg, 2015). The partner plays an important role prior to admittance to the labour ward and influences the decision of timing of travel to hospital as well (Barnett et al., 2008; Cheyne et al., 2007; Eri et al., 2010).

The quality of intrapartum care is also framed by the structure of the organisation (Wilde et al., 1993; Wilde Larsson et al., 2010). The context of intrapartum care in Sweden is exclusively at obstetrician-led labour wards, where midwives are independently responsible for the care of each woman who is considered as 'low-risk' and who does not experience complications during labour and birth. The midwives collaborate with obstetricians when complications arise, and are present for women during labour and birth (The Swedish Association of Midwives, 2018). Sweden has a national caesarean section rate of 17.6% (The National Board of Health and Welfare, 2018), which is considered as a fairly low percentage compared to other high-income countries (Roth & Lubold, 2015). Midwives are obliged to follow clinical guidelines and provide evidence-

based care (The Swedish Association of Midwives, 2018) whereas arguments about finding a balance for risk assessment are a key component of prenatal and birth care, with benefits in promoting improved outcomes (Jordan & Murphy, 2009). A paper in the Lancet series of Midwifery included the following key message, *“Women should be offered care that supports the safe physiological process of labour with the lowest level of intervention possible, to reduce over-intervention, and support woman-centred care. Countries, care systems, and providers need to consider how they will promote this”* (Shaw et al., 2016).

The progress of labour and the concept of time frames in the Western medical way of thinking and the ‘partogram’ of progress in labour was launched in 1972, with alert and action lines (Philpott & Castle, 1972). This linear graph does not allow an individual variation and has been questioned by several researchers (Lavender, Cuthbert, & Smyth, 2018; WHO, 2018). A physiological partogram was presented as an alternative, with a graph presenting a more stepwise progression allowing individual variation (Neal & Lowe, 2012). The complexity of linear thinking in labour and birth is problematic for women, as they describe labour as a continuous process without time-bound phases (Dixon et al., 2013). As stated previously, the use of patient reported outcomes when evaluating quality of care is essential (Kingsley & Patel, 2017). Larkin et al. (2009) defined the birth experience as an important life event that is complex and unique for each woman, and that is influenced by social, environmental, organisational, and policy contexts. Instead of a dichotomous evaluation of birth in terms of it being a positive or negative experience, it should shift to more subjective investigations explaining a broader variety of perspectives in a wider context (Larkin et al., 2009).

This thesis used PROMs and PREMs to measure women’s experiences in connection to labour and birth. These concepts are complementary and when used simultaneously they capture a more holistic picture. The health system could provide good outcomes but a poor experience, or a good experience but poor outcomes. When using information on both patient experience and self-reported outcomes, a broader understanding of health system performance from a patient’s perspective becomes available (Klazinga & Fujisawa, 2017).

The etymology of the word ‘latent’ is concealed or hidden. The latent phase of labour needs to be acknowledged. From a woman’s perspective, it is referred to as early labour. Labour is a continuing process without fixed phases and stages

and instead can be defined as ‘times when there ought to be a midwifery assessment’, as suggested by the New Zealand College of Midwives. This can be when the woman or her support person first lets the midwife know she is in labour, when the woman wants intermittent support from the midwife, or when the woman wants continuous support from a midwife (2015). The intention of this thesis is to increase the knowledge about a prolonged latent phase of labour and let the voices of women be heard as well, to improve intrapartum care quality as well as birth experience.

Methodological considerations

Design

This thesis comprised studies using different methods, both qualitative and quantitative, including factor analysis, to broaden the understanding of the studied phenomena (Polit & Beck, 2008).

The qualitative study (I)

Credibility, dependability, confirmability, and transferability

Qualitative research mainly refers to the four criteria of credibility, dependability, confirmability, and transferability to evaluate trustworthiness (Lincoln & Guba, 1985). They are discussed here in the context of this research. Credibility was established by only inviting primiparous women to participate in the study. These women were not influenced by earlier experiences of giving birth. All participants had experienced a prolonged latent phase of labour and the design of the study with both individual interviews and small focus-group interviews provided rich material for exploring the phenomena. The informants also had a variation in mode of birth, which is known to influence the birth experience (Hodnett, 2002; Waldenström et al., 2004). They also differed in their experiences of the latent phase and if they were admitted to the labour ward during the latent phase or not. Dependability and confirmability were ensured by having two researchers participate in the focus-group interviews, and all authors were involved in the entire analysis process. Confirmability was also concerned with the codes and categories that were derived from the data and the steps that described the process thoroughly to enhance credibility (Elo & Kyngäs, 2008). Quotations from informants were used to substantiate subcategories (Polit & Beck, 2008). Transferability was assured through descriptions of the participants as well as descriptions of the context of the individual and focus-group interviews. The description of the analysis process provides an opportunity for others to assess the relevance of the study.

The quantitative studies (II-IV)

Validity, reliability and generalization

For Paper II, data constituted a one-year cohort of women's birth records. All women and professionals were informed about the study and only a few women declined participation (n=165). The study protocol was designed according

to previous research and tested for content validity. The variables were easy to identify in the birth records; however, non-documented variables must also be considered. Reliability was ensured through inter-observer agreement, firstly 30 birth-records were reviewed by two authors and secondly by two other midwives outside the research team, and this process showed high consistency. We excluded non-Swedish-speaking women (n=222) due to the risk of communication problems, which has limited the generalizability to only apply to Swedish speaking women.

For Paper III, we used QPP-I (Wilde Larsson et al., 2010). As stated previously, some factors only have a small number of items, and adding more items has been suggested by the authors. However, most reliability coefficients were still acceptable. Sawyer et al. (2013) recommended the QPP-I and the questionnaire was tested with 10 items added in a Spanish setting, yielding eleven factors (Donate-Manzanares et al., 2017). Since most women give high scores on items about birth experience, the ceiling effect needs to be discussed (Terwee et al., 2007), but QPP is based on a qualitative study where patients were asked about what was most important regarding quality of care and these areas also need to be evaluated (Wilde et al., 1993). In the present thesis, Cronbach alpha values for perceived reality (PR) ranged between 0.66-0.94 for primiparous women, and between 0.69-0.92 for multiparous women. For subjective importance (SI) the Cronbach alpha values ranged between 0.67-0.93 for primiparous women, and 0.68-0.93 for multiparous women, which is considered to be desirable (Cronbach, 1951; Field, 2013) and somewhat higher than Wilde et al. (2011).

The COSMIN checklist is appropriate when measuring properties of scale. The authors suggest that four key aspects require consideration for a scale; reliability, validity, responsiveness, and interpretability (Mokkink et al., 2010). The QPP-I is based on a theoretical model and has been previously validated (Wilde Larsson et al., 2010). All women with a spontaneous onset of labour in a one-year cohort were invited to participate in the study. The response rate was 63%, which is in line with previous studies (Sandin-Bojö et al., 2011; Walker, Wilson, Bugg, Dencker, & Thornton, 2015; Wilde Larsson et al., 2011). A limitation in this thesis, however, is that the questionnaire used in Papers III and IV is only available in Swedish and women who are not fluent in Swedish were not invited to participate. In Papers III and IV, 2% of participants were born outside Europe. In the Swedish county where this research was conducted, 12% of women giving birth in 2017 came from countries outside Europe (The Swedish

Pregnancy Register, 2018). When comparing birthing experiences of white women and women from minority ethnic groups, a study from UK found that minority women were less likely to be treated with kindness, to be sufficiently involved in decisions, and to have confidence and trust in the staff (Henderson, Gao, & Redshaw, 2013). A Norwegian national study showed the opposite when it found that women from eastern Europe and countries outside Europe described their experiences more positively than Norwegian women (Sjetne & Iversen, 2017).

Paper IV used a previously tested questionnaire with sufficient validity in a Canadian sample (Janssen & Desmarais, 2013a). When testing a questionnaire in a new setting, a new psychometric test must be performed (Field, 2013). According to COSMIN (Mokkink et al., 2010), face validity was enhanced by prior pilot-testing and cross-cultural validity by using a stepwise cross-cultural adapted translation (Beaton et al., 2000). Construct validity was secured using principal axis factoring, and was identical with the original study (Janssen & Desmarais, 2013a) with a multidimensional result, with differences between parity and a fourth dimension in the questionnaire for multiparous women. Regarding responsiveness, a sufficient number of participants completed the questionnaire (Field, 2013). Concerning interpretability, missing items were excluded, and participants who did not answer the entire questionnaire were excluded in the factor analysis.

The labour experience is multidimensional; all aspects need to be covered when examining quality of care more thoroughly (Sawyer et al., 2013). The questionnaire QPP-I is based on quality of care from the patient's perspective and measures PREMs with both perceived reality and subjective importance. The ELEQ questionnaire also measures PREMs and is therefore appropriate to use when evaluating quality of care, as are global items about birth experience and feelings during labour and birth. The PROMs are also covered in this thesis. Women reported outcomes after birth, in terms of labour outcome, contacts with the labour ward, and length of the latent phase of labour prior to being admitted to the labour ward.

Conclusion and implications

- For women with a prolonged latent phase of labour, the birth experience, quality of intrapartum care, and feelings during labour and birth are related. These women can be considered as a risk group also in terms of more obstetrical interventions and instrumental births.
- More knowledge is needed about the quality of intrapartum care and midwives and physicians' considerations where women's preferences are included when further management is planned.
- Women's experiences of contact with the labour ward prior to admittance were related to the birth experience, perceived quality of intrapartum care, and feelings during labour and birth. Consideration must be given to individual experiences, preferences, and requests when managing care prior to admittance and a women-centred perspective should be adopted.
- Primiparous and multiparous women had different preferences and experiences during early labour. All women regardless of parity should receive individualised care to provide high-quality care. However, special focus should be on primiparous women experiences and preferences.
- The questionnaires SWE-ELEQ-PP and SWE-ELEQ-MP are valid and reliable and can be used to further evaluate and improve early labour care in Sweden.

Future research

- Further studies are needed to evaluate early labour care in different settings. The organisation of the labour care should be further studied, including an early labour lounge and different models of settings involving a continuity of care philosophy.
- An intervention study is needed to examine a women-centred perspective for contacts with the labour ward prior to admittance with regards to women experiences and preferences during a prolonged latent phase of labour.
- More knowledge about obstetrical management during a prolonged latent phase of labour is needed. A randomised controlled study with labour outcome, quality of intrapartum care, and birth experience could contribute with essential findings about best practice.
- Further research is needed to investigate how a prolonged latent phase of labour is related to a negative birth experience. Further if associations with a prolonged latent phase of labour lead to a higher rate of requests for elective caesarean sections in forthcoming births.
- The association between feelings and coping strategies during early labour must be further studied. More knowledge is needed about the relationship between a prolonged latent phase of labour and women's coping ability and personality.
- Further psychometric evaluation of SWE-ELEQ-PP and SWE-ELEQ-MP in a variety of settings in Sweden, with confirmatory factor analysis is suggested.

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Prolonged latent phase of labour

Women's preferences are not always adequately met during the latent phase of labour. Further exploration is needed to investigate the experiences, preferences, and labour outcome of women with a prolonged latent phase. The overall aim of this thesis was to investigate the prevalence and labour outcomes of a prolonged latent phase, quality of care, women's experiences and preferences during labour, and to psychometrically test a questionnaire. The prevalence of a prolonged latent phase of labour was 23% of women with a spontaneous onset of labour and was associated with more obstetrical interventions and instrumental births. These women preferred individualised care, rated the quality of their intrapartum care lower, were less content with the birth experience, and had more negative feelings during labour and birth than women with a shorter latent phase. A questionnaire about experiences during early labour was adapted and can be used to evaluate early labour care in Sweden for both primiparous and multiparous women. A prolonged latent phase of labour can be regarded as a risk factor, and differences in parity must be considered when evaluating early labour care. Special focus should be on primiparous women, and a women-centred perspective is required for management during the latent phase of labour, regardless of parity.

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