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Women's perceptions of counselling on pain assessment and management during labour in Finland: A cross-sectional survey

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ABSTRACT

Background: The challenge is to identify pain assessment counselling that are effective and reliable to the woman during labour while also supporting appropriate management of labour pain.

Objective: This study aimed to describe women's perceptions of their counselling on pain assessment and pain management during labour.

Design: A descriptive, cross-sectional study.

Participants: The sample consisted of women who had given birth (n=204) at a university hospital in Finland; 250 parturients were recruited by convenience sampling.

Methods: Data were collected using a questionnaire (P-PAPM) between November 2018 and February 2019. The statistical significance of observed differences was analysed using the Chi-squared test and Fischer's exact test.

Results: Eighty percent of women reported that they had received counselling on pharmacological treatments from midwives, but only 33 % received counselling on pain assessment. The non-pharmacological methods for alleviating labour pain most commonly taught by midwives were proper breathing techniques, cold/heat treatments, and trying different positions and movements. Women were less commonly counselled to try listening to music, thinking about pleasant and positive things, or concentrating their thoughts on something other than pain. The two most commonly used counselling methods were demonstrations and written material and least used Internet-based resources. The personal issue that midwives discussed most frequently during counselling was the women's individual hopes concerning pain management (91%), while the issue discussed least often was previous experiences of pain (58%). The participants' experiences of fear, age, and education were significantly associated with aspects of counselling on pain assessment and management.

Conclusions: Women's counselling on pain assessment and management during labour varied widely. Therefore, to improve its quality, counselling should be routinely integrated into daily midwifery work. In particular, the counselling given on non-pharmacological pain relief methods during labour was inadequate. More varied counselling methods should be used in the future. Finally, the results indicate that midwives' knowledge of counselling should be increased and they should be encouraged to routinely offer counselling on pain assessment and management for parturient women.

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Introduction

Giving birth is one of the most important and special experiences in a woman's life. Satisfaction with the childbirth experience

is not only an indicator of the quality of maternity care; it also affects the well-being and health of the woman and her newborn (Mazúchová et al., 2020). Therefore, every woman giving birth should have a positive labour experience (World Health Organisation, 2018). Some important things that increase satisfaction during labour are active participation in decision-making during childbirth, a low level of pain, and good communication with the midwife or physician (Akca et al., 2017, Hodnett, 2002). Good communication should include high quality patient coun-

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selling (Akca et al., 2017; Bringedal and Aune, 2019). Professional guidelines clearly state that every pregnant woman has the right to base her maternity care decisions on accurate, comprehensible, and up-to-date information. This is important because adequate information on the treatments that are available as well as their risks and benefits is necessary for true informed decision making (Lally et al., 2014; Yuill et al., 2020), and because birthing woman need reliable information on labour and pain (Lowe, 2002).

Labour pain is intense, meaningful, and emotional (Whitburn et al., 2019). It is also acute but not dangerous and part of a normal birthing process (Lowe, 2002; Ullman et al., 2011) as well as something that is life-giving and has components that differ substantially from other kinds of pain (Lowe, 2002, 1996). The intensity of pain during birth often increases with the intensity of contractions (Lowe, 2002) and may include both visceral and somatic pain (Farnham, 2020). Women's experiences of pain during labour can vary greatly and may be heavily influenced by their position during labour, mobility, anxiety, fear, and confidence (Jones et al., 2012; Othman et al., 2012). Labour pain is a major concern for pregnant women but is also a professional issue for midwives (Borges et al., 2017). The normality of labour pain does not make the experience of pain any less severe but it may alter the way pain is perceived, both by the woman in labour and by those providing care (Ullman et al., 2011). In particular, labour pain may be more easily accepted than other types of pain and is unique in that it is considered necessary (Lowe, 2002; McCauley et al., 2018); many women focus on the eventual birth of their newborn as a coping strategy (Whitburn et al., 2019).

Pain assessment is the first step in pain management (Ohaeri et al., 2020) and must therefore capture both the multiple dimensions of pain and be aligned with the woman's preferences in order to ensure that subsequent management actions are consistent with the woman's desires in terms of timing and mode (Jones et al., 2015). Because pain is multidimensional, pain assessment should also include many dimensions, such as the type, intensity, location, and duration of pain, as well as option to choose pain assessment scale (Jones et al., 2015; Fink, 2000; The Finnish Medical Society Duodecim, 2017; Simkin and Bolding, 2004; Kimber et al., 2008; Arendt and Tessmer-Tuck, 2013), and alleviating and aggravating factors (Fink, 2000). Repeatedly assessing pain during labour can give important guidance to midwifery staff and may provide early warning of developing complications (Jones et al., 2015). The challenge is to identify assessment strategies that are effective, reliable and acceptable to the woman during labour (Jones et al., 2015) while also supporting appropriate management and assessment of labour pain to ensure that the woman's experience remains positive (Ohaeri et al., 2020). Only a few labour wards have developed specific guidelines concerning the documentation and assessment of labour pain; the comparative rarity of such guidelines and routine pain assessments may be due to the perception that pain during childbirth is normal and not life threatening (Bergh et al., 2015).

Objectively measuring pain is challenging in both clinical practice (Wagemakers et al., 2019; Bhardwaj and Yadav, 2015) and research (Dawson et al., 2002), partly because of the difficulty of selecting appropriate tools for measuring pain, evaluating and analysing their results, choosing endpoints, and interpreting the gathered data (Bhardwaj and Yadav, 2015). Additional complexity stems from the fact that pain is an inherently subjective and multi-faceted phenomenon (Wagemakers et al., 2019). Standardized techniques and tools for measuring pain are therefore needed. Two important pain-related variables are the intensity of pain and the clinically meaningful reduction of pain following treatment (Bhardwaj and Yadav, 2015). All healthcare providers must accurately assess patients' pain in order to provide appropriate care and avoid undertreating pain. This requires the ability to cor-

rectly determine the intensity of a patient's pain (Ruben et al., 2015), which is typically done by using a pain scale. Ideally there would be a standard scale with universal applicability; in the absence of such a scale, four key considerations when choosing a pain scale are accuracy, validity, reproducibility and acceptability (Bhardwaj and Yadav, 2015). The Visual Analogue Scale (VAS) and Numeric Rating Scale (NRS) are the pain scales most frequently used in the clinic, and their results are highly correlated (Whitburn et al., 2019; Jones et al., 2012; Wagemakers et al., 2019; Bhardwaj and Yadav, 2015). The McGill Pain Scale (Whitburn et al., 2019; Jones et al., 2012) is used less frequently.

Midwives play an important role in assessing a woman's pain during childbirth, and the quality of the midwife-parturient relationship is of central importance in the assessment and management of labour pain (Lally et al., 2014; Lowe, 1996). A midwife must understand the woman's experience and provide pain relief only if the woman requests or desires it (Bergh et al., 2015). Importantly, a midwife can reduce the pain and anxiety of a woman giving birth simply by being present (Whitburn et al., 2019; Bohren et al., 2017). However, Van de Gucht and Lewis (Van der Gucht and Lewis, 2015) suggest that there is a dissonance between what women giving birth want to enhance their ability to cope with pain and the reality of clinical practice. Midwives do not generally assess pain during labour in a structured way; it is typically done through verbal communication between the midwife and the birthing woman. In a cross-sectional study, Bergh et al. (2015) found that the assessment of labour pain might be based on the midwife's own evaluation of women's pain. Additionally, midwives may sometimes underestimate labour pain (Borges et al., 201; Miron-Shatz et al., 2020).

A wide range of pharmacological and non-pharmacological labour pain relief methods are currently available to parturients in high-income countries (Seijmonsbergen-Schermer et al., 2020). As a result, pharmacological methods have been incorporated into the standard care process in many countries (Ullman et al., 2011) and effective management of labour pain has been classified as a fundamental human right (Hodnett, 2002; Ohaeri et al., 2020). Across countries, the proportion of women giving birth who receive pharmacological intrapartum pain relief ranges from 25 to 86%, while the proportion receiving epidural analgesia ranges from 10 to 64% (Seijmonsbergen-Schermer et al., 2020). In 2019 epidural analgesia (received by 53% of all parturients and 76% of the nulliparous) was the most commonly used pharmacological intervention during labour in Finland. Other commonly used pharmacological pain management tools include nitrous oxide (55%) and spinal analgesia (20%) (Finnish Institute for Health and Welfare, 2020). A high proportion of women who receive epidural analgesia report that it provides effective pain relief (Anim-Somuah et al., 2018). Pharmacological methods can reduce pain but may have negative side-effects (Thomson et al., 2019) including necessitating birth by caesarean section or instrumental birth (Anim-Somuah et al., 2018). It is also important to tailor the choice of pain relief method to the individual parturient's needs, wishes, and circumstances, including the anticipated duration of labour, the infant's condition, and any augmentation or induction of labour (Jones et al., 2012). An important part of a midwife's role during birth is supporting and encouraging women as well as informing them about pain management options (Bringedal and Aune, 2019). It is clear that women need information on the risks and benefits of all available pain relief methods in order to make informed decisions (Thomson et al., 2019).

Non-pharmacological pain management techniques suitable for parturients include immersion in water, acupuncture, relaxation, and massage. Relaxation and immersion also increase satisfaction with childbirth. (Jones et al., 2015) Massage, thermal manual methods, and warm packs may help to reduce the inten-

sity of pain and the length of labour, as well as improving the emotional experience of labour and women's sense of control (Smith et al., 2018). Listening to music (Buglione et al., 2020) and acupressure (Raana and Fan, 2020) also reduce pain during labour. There is insufficient evidence to conclusively state whether or not biofeedback, hypnosis, aromatherapy, sterile water injection, and TENS provide effective pain relief during labour. However, women should feel free to choose whatever pain management they feel would help them most during labour, and those who choose non-pharmacological treatments should feel free, if needed, to change their mind and move onto pharmacological intervention (Jones et al., 2015). Non-pharmacological pain management is used in 42% of births in Finland (Finnish Institute for Health and Welfare, 2020) and 34% of births in England (NHS, 2020).

Previous studies in this area have focused on information and education during pregnancy (Akca et al., 2017; Levett et al., 2016) and labour (Mazúchová et al., 2020; Bringedal and Aune, 2019; Bohren et al., 2017; Van der Gucht and Lewis, 2015; Hodnett et al., 2011), the use of different counselling methods (Toledo et al., 2017), the role of midwives (Bringedal and Aune, 2019; Farnham, 2020), labour pain assessment in general (Ohaeri et al., 2020; Jones et al., 2015; Bergh et al., 2015), and counselling on pain management (Thomson et al., 2019; Smith et al., 2018; Cole et al., 2020; Aune et al., 2021). However, there has been little research into counselling on the assessment and management of labour pain. One study (Toledo et al., 2017) examined patients' preferences concerning counselling on analgesia during labour. However, there is a clear knowledge gap relating to how women perceive the counselling they receive on pain assessment and management while giving birth. The current study aims to fill this gap by describing women's perceptions of the counselling on pain assessment and management that they received during labour.

Our research questions were as follows:

- 1 Which aspects of pain, its assessment and management were women counselled during their labours?
- 2 Which counselling methods were used to manage women's pain during labour?
- 3 To what degree were the women's individual features taken into account during counselling?
- 4 Which background factors were related to counselling on pain assessment and management during labour?

Methods

Sample and setting

The sample for this study consisted of 250 women who had given birth in one university hospital in Finland, representing a typical number of mothers giving birth over the course of one month at the hospital in question. Participants were recruited by convenience sampling. The inclusion criteria were as follows: (a) birth by vaginal delivery; (b) ability to independently complete the questionnaire (thus excluding the mentally disabled); and (c) ability to speak and understand the Finnish language.

There were 3,309 births at the studied hospital in 2019, of which 83% were by vaginal birth. The majority of the parturients ($n=2138$, 65%) were multiparous. Women usually arrive at the childbirth centre from home but may also come from a local maternity clinic, the hospital's maternity clinic, or an inpatient ward. The childbirth centre is open around the clock. Pregnant women can come to this centre when they start experiencing emergency symptoms or at a pre-scheduled time. Most of the women arrive when labour has already begun and are cared for by both midwives and physicians. The most common reasons for women to

come to the childbirth center in 2019 were contractions ($n=1833$, 58%), induction of labour ($n=750$, 23%), and rupture of the amniotic membrane ($n=289$, 9%). The non-pharmacological pain relief methods used most often in the studied hospital in 2019 were heat treatment (used in 44% of patients; $n=1445$) and TENS (32% of patients; $n=1057$). The most commonly used forms of pharmacological pain relief were epidural analgesia (48%; $n=1580$), nitrous oxide (46%; $n=1532$) and paracervical anesthesia (29%; $n=942$). After birth, a woman and her newborn can transfer to the maternity ward, where mothers can room-in with their newborns.

Data collection

Data were collected using a questionnaire between November 2018 and February 2019. Two midwives responsible for pain management in the ward served as contact persons for the study and organised the data collection according to information given by the researchers. Parturients were asked to participate in the study after they had given birth and completed the questionnaire while hospitalised in the postnatal ward. Data collection continued until 250 questionnaires had been distributed to the parturient women. The recruitment period lasted for three months. A total of 207 questionnaires were returned, giving a response rate of 82%, although three were excluded due to missing data. The final sample thus consisted of 204 parturients.

The parturients were given a paper-based questionnaire but were able to submit their responses electronically (i.e., via a mobile phone, tablet, or laptop) via a website accessed through a hyperlink or QR-code. All of the parturients had the opportunity to obtain detailed information on the study from the two midwives who recruited the participants at the maternity ward. Completed paper questionnaires were returned in sealed envelopes to the main researcher (Tarja Pölkki, TP) at the end of the data collection period.

Questionnaire

The P-PAPM (Patients' Perceptions of Pain Assessment and Pain Management in hospitals) questionnaire was chosen for use in this work on the basis of earlier studies (Jones et al., 2012; The Finnish Medical Society Duodecim, 2017; Simkin and Bolding, 2004; Kimber et al., 2008; Arendt and Tessmer-Tuck, 2013) and the opinions of an expert panel including researchers ($n=2$) and health care providers ($n=15$) specialising in pain management. The questionnaire was pretested on several parturients, who also completed an evaluation form in which they were asked to assess the questionnaire's clarity and transparency, and to provide input on its content and response options. Some minor changes were made based on the results of the pretesting.

This study is part of a larger research project focusing on pain assessment and management. The questionnaire had four sections relating to the patient's background, pain assessment, pain management, and counselling; the analysis presented here is based on the responses to the fourth section dealing with patient counselling. Background questions included in section one provided information on the respondents' demographic characteristics including their age, education, and experiences of pain/fear. In one question, women were asked to evaluate the intensity of their pain and fear using a numerical rating scale (NRS) ranging from 0 to 10, with 0 representing no pain/fear and 10 representing severe pain/fear (Polit and Beck, 2017).

Section four included questions about the counselling that the patients received on pain assessment and management (in more detail about non-pharmacological methods), the counselling methods that were used, and the degree to which their individual characteristics were considered during counselling. Parturients were asked to answer questions about how midwives counselled them

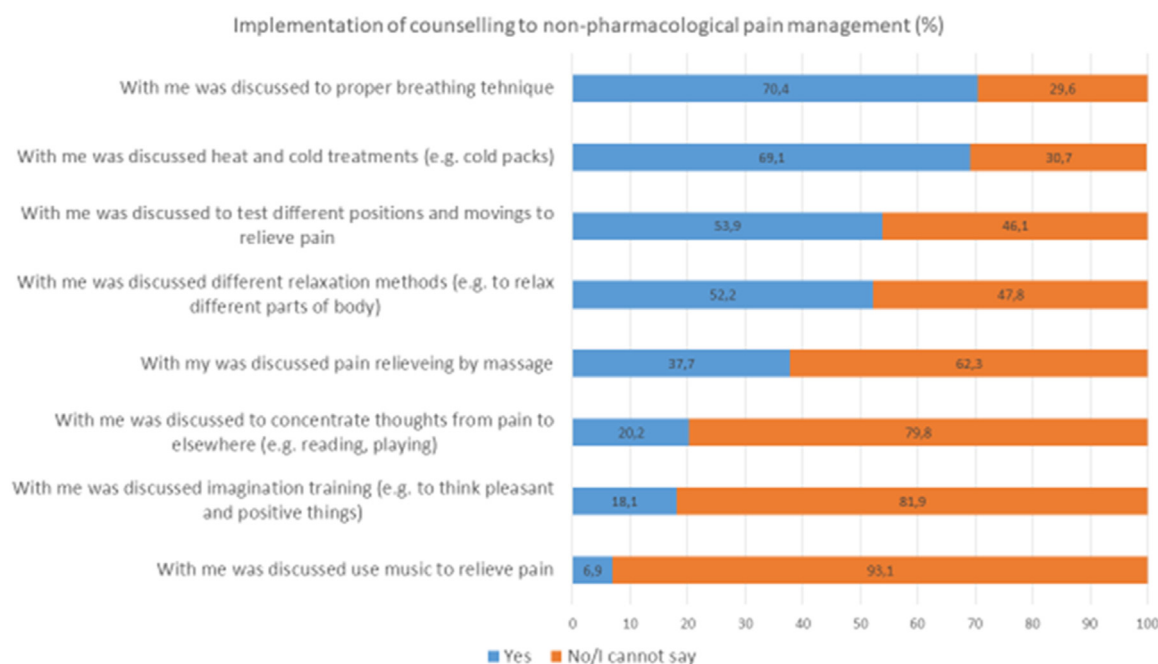


Fig. 1. Parturients' assessments of the implementation of counselling on non-pharmacological pain management during labour.

about pain, pain assessment, the importance of pain management, and the importance of the patient's own activity in pain management and pain medication issues. The fourth part of the questionnaire also included questions about non-pharmacological pain relief methods (Fig. 1) and the tools midwives used when counselling parturients (e.g., booklets, videos, Internet, mobile apps, demonstration). Finally, the last part of the section included four items pertaining to the consideration of the respondent's individual characteristics during counselling on pain assessment and management. These items were: *I feel that the midwives have taken my fears/anxieties into account if I have experienced it on this hospital visit; I have been assured that I have understood the given information (e.g. I have had the opportunity to ask more specific questions); I feel that I have been considered as an individual in my pain management (e.g., my potential hopes have been taken into account) and I have been asked about my possible previous pain experiences.* The parturients responded to the items using a dichotomous scale, with the possible responses being "yes" or "no/I cannot say".

Data analysis

The data were analysed using SPSS Statistics for Windows (version 27.0, IBM, Armonk, Ny). The data were first examined using descriptive statistics (frequencies, percentages, and differences between explanatory and outcome variables i.e. counselling of pain assessment/management). The data were then further analysed for statistically significant associations using the Chi-squared and Fisher exact tests. All of the presented results are statistically significant, with the threshold for significance set at $p < 0.05$ (Polit and Beck, 2017).

Ethical considerations

Permission was received from selected hospital through the hospital's own research permission system. A request for ethical approval was submitted to the ethics committee (ref no. EETMK: 26/2018) (Medical Research Act (No. 488/1999), 1999). The Helsinki Declaration was followed throughout the study (World Medical Association, 2013). Participation in the study was voluntary. The

pain management midwives who organised the data collection informed prospective participants about the study's purpose verbally and via a cover letter appended to the questionnaire. Participants gave knowledge-based oral consent on the basis of the information provided and gave informed consent to participate in the study while responding to the questionnaire (Polit and Beck, 2017). All participants responded to the questionnaire anonymously and it was not possible to link any personal data to the respondents. The researcher did not meet with any of the respondents. The data were saved to a researcher's private computer and analysed anonymously.

Findings

Demographics

The average age of the participating parturients was 31 years (SD 5,5; range 20-47). Most of them (40%) had completed vocational education/training courses, but one-third (30%) had completed a college education/polytechnic education, one in five (21%) had completed a university education, and one in ten (9%) had no vocational education. The background of the participants are presented in Table 1.

Counselling on women's pain, its assessment and management

The participants evaluated the amount of counselling they received from midwives on pain assessment and management during labour. Overall, 77% ($n=157$) of respondents reported that they received counselling on the causes of pain during labour, 33% ($n=68$) were counselled on the assessment of pain (e.g., how the intensity of pain can be evaluated using a pain scale), 48% ($n=97$) were counselled on the importance of pain management (for example, in the context of its impact on recovery), 50% ($n=101$) were counselled on the importance of women's own activity in pain management, and 80% ($n=101$) received counselling on the pharmacological treatments available to them ($n=162$).

Women also evaluated the counselling they received from midwives on different non-pharmacological techniques for pain relief

Table 1
Background information of parturients (n=204).

Demographics	Scale	n	%	range
Age	19–29 years	80	40	20–47
	30–39 years	108	54	
	40–49 years	13	6	
Education	no vocational education	19	10	
	vocational education/training courses	82	41	
	college	61	30	
	education/polytechnic education/university education	39	19	
Experienced fear	yes	135	66	
	no	69	34	
Intensity of fear	mild 0–3	19	14	1–10
	moderate 4–6	49	37	
	severe 7–10	66	49	
Intensity of pain	mild 0–3	2	1	3–10
	moderate 4–6	15	7	
	severe 7–10	187	92	

lief during labour. The non-pharmacological pain management techniques discussed most commonly during counselling were breathing techniques (70%) and cold/heat treatments (69%), while those discussed least often were listening to music (7%) and thinking about pleasant and positive things (18%). Other non-pharmacological methods discussed by midwives during counselling are listed in Fig. 1.

Methods used during counselling on managing labour pain

The respondents provided information about the methods and materials used by midwives during counselling on pain management during labour. In total, 18% of respondents (n=35) said they received counselling using written material, 4% (n=7) said that videos were used, 10% (n=19) said that Internet-based resources were used, and 33% (n=64) said that they were given practical demonstrations by midwives. Internet-based resources used by midwives included virtual hospital sites such as Health Village (Terveyskylä; 4% of respondents, n=8).

Women's individual features

Most of the women (88%, n=179) reported that midwives noticed when they felt fear or anxiety, and 85% (n=173) agreed that the midwives took time to ensure that the women had understood the knowledge given to them during counselling. The vast majority of the participants (91%; n = 184) felt that Midwives took notice of their individual hopes, and slightly over half (58%; n = 117) of the women were asked about their previous experiences of pain.

Background factors related to counselling on pain assessment and management

Many factors were statistically significant related to different aspects of counselling on pain assessment and management. The severity of the experienced pain was not significantly associated with any aspect of counselling on pain assessment or management. Age (p=0.035) was significantly associated with one item in the *accounting for individual features during pain management counselling* item, namely taking time to ensure that the women understood the information provided given during counselling: the youngest women (aged 19–29 years, n=71, 89%) were asked most frequently whether they had understood the provided information, while the oldest women (aged 40–49 years, n=8, 62%) were asked least frequently. *Education level* was significantly associated

with one item in the *issues discussed during pain management counselling*, namely being encouraged to think about pleasant and positive things (p=0.036), and with one item in the *methods used during counselling*, namely the use of HealthVillage hubs on the Internet (p=0.021). Thinking about pleasant and positive things practice was most frequently recommended to women with no vocational education (n=8, 42%) and least frequently suggested to women who had completed a vocational education/training course (n=11, 13%). HealthVillage hubs were most frequently used as counselling tools when counselling women who had completed vocational education/training courses (n=7, 9%), followed by women with no vocational education (n=1, 6%); they were never used when counselling women with a college, polytechnic, or university education (n=0, 0%).

Experienced fear was significantly related to the frequency of receiving counselling on the use of massage for pain relief (p=0.047), ensuring that the counselled woman had understood the provided information (p=0.003), taking into account the woman's characteristics as an individual (p=0.039), and asking about previous experiences of pain (p=0.007). The use of massage to relieve pain was suggested more frequently during counselling for women who experienced fear (n=33, 48%) than for those who did not (n=44, 33%). In addition, the frequency at which midwives took care to ensure understanding of information conveyed during counselling was higher among women who experienced fear (n=66, 96%) than among those who did not (n=107, 80%). The taking into account the women's characteristics as an individual was suggested more frequently in counselling for women who experienced fear (n=67, 97%) than for those who did not (n=118, 87%). Finally, women who experienced fear (n=49, 71%) were asked about their previous experiences of pain significantly more frequently than women who did not experience fear (n=68, 51%). The *intensity of experienced fear* was categorized and found to be significantly related to counselling on the use of heat/cold treatments for pain relief (p=0.007): parturient women who experienced moderate pain (scores of 4–6, n=41, 84%) were counselled on the use of this method most frequently, followed by those experiencing mild pain (scores of 0–3, n=14, 74%) and then by those experiencing severe fear (scores of 7–10, n=41, 62%).

Discussion

This study provided new knowledge about counselling on parturient women's pain assessment and management during labour. It seemed that the counselling on pain assessment and management during labour provided to the respondents varied widely

even though they were all treated in the same hospital. Every labour and birth is a special and memorable experience for the parturient, so it is important to make great efforts to ensure that the experience is a positive one (World Health Organisation, 2018). Adequate information and communication during labour is an important factor that increases the likelihood that women will have a positive labour experience (Akca et al., 2017).

Only one third of the participants received counselling on pain assessment even though effective pain assessment is an essential first step in good pain management (Ohaeri et al., 2020). This study found that pain assessment is not a routine process in the hospital where the study was conducted. In maternity hospitals at the national level and above, treatment culture can excessively influence pain assessment (Aune et al., 2021). Consequently, it is important to provide adequate education on pain assessment and non-pharmacological pain relief methods. To meet this need, Bhardwaj and Yadav (2015) have argued that a universally applicable standard pain scale should be established. Tolerance of labour pain may be influenced by cultural contexts and an individual's acceptance of the place where they are to give birth as well as the choice of pain management strategy (Thies-Lagergren et al., 2021). Half of the parturients were counselled about the importance of pain management and women's own activity in pain management; the latter is particularly important because the parturient's active participation in pain management may influence the effectiveness of non-pharmacological pain relief methods (Thomson et al., 2019).

It was found that health providers in the labour room gave parturients very good counselling on pharmacological pain management techniques and the causes of pain during labour. Counselling on pharmacological pain management was given more frequently than counselling on non-pharmacological techniques, in accordance with previous reports (Thomson et al., 2019; Toledo et al., 2017). This reflects the incorporation of pharmacological pain relief techniques into standard care procedures for women in labour (Ullman et al., 2011), even though studies indicated that the use of epidural anesthesia (Jones et al., 2012; Murphy et al., 2020) and other interventions (Westergren et al., 2021) may increase the likelihood of assisted vaginal birth. Nowadays parturients often have their own labour plans (Westergren et al., 2021). During pregnancy, women get information about pain management at their local maternity clinics and also possibly from hospital websites or antenatal classes. Additionally, the importance of the media as a communicator has increased greatly in recent decades (Toledo et al., 2017). In many high-income countries including Finland, midwives and obstetricians work together to care for parturients at maternity hospitals during labour, and pain management is a central aspect of the care that is provided. Counselling on pain management is a part of a midwife's daily work, so midwives play a vital role in informing women about their pain management options (Bringedal and Aune, 2019). Previous studies have shown that different midwives estimate labour pain differently, which could influence daily midwifery care. However, midwives' preferences and interests concerning labour pain management should not influence women's choices (Aune et al., 2021). A midwife's role in counselling is to inform the parturient about her situation during labour, suggest various pain relief methods if the parturient so desires, and offer advice on the known risks and benefits of different pain relief methods (Jones et al., 2012; Thomson et al., 2019) while also taking into account the parturient's own desires. It is important to always remember that it is the mother rather than the midwife who is the protagonist during labour, and that care should always be centered on the parents to be (Öhrn et al., 2020). After receiving information, the mother can make informed decision about what pain relief method she wants to use (Yuill et al., 2020). Because women's experiences of pain during labour and their preferred pain relief methods can vary widely (Jones et al.,

2012), pain management is quite difficult. The interpretation of pain behaviours depends heavily on the cultural and social knowledge and understanding of both the person in pain and the observer (Whitburn et al., 2019).

The counselling that women received on non-pharmacological pain relief methods varied widely. Many were given counselling on breathing techniques and heat/cold treatments for relief of labour pain, and half of parturients were advised to test relaxation methods and different positions and movements. An earlier study concluded that while non-pharmacological methods do not necessarily reduce labour pain, they can enable women to actively work with their physiological responses and facilitate a 'team' approach with their birth supporters (Thomson et al., 2019). In addition, it has been suggested that establishing a homely atmosphere in labour wards may help women relax better and thus benefit more from the pain-relieving effects of the hormone oxytocin (Olza et al., 2020). During home births, women are encouraged to work through labour pain on their own terms and exercise autonomy together with the midwife and support persons (Thies-Lagergren et al., 2021). It is possible that adopting a similar approach in hospitals by offering parturients the continuous presence and support of a midwife could increase acceptance of pain as a normal part of labour (Van der Gucht and Lewis, 2015), and might encourage greater acceptance and use of non-pharmacological pain relief methods. In addition, health providers working with parturients should be trained in the use of non-pharmacological pain relief methods. This is important because the use of epidural anesthesia increases when midwives are busy (Aune et al., 2021). Therefore, sufficient health provider resources should be provided to ensure that adequate counselling on pain management is provided under all conditions. Although many other studies have shown that non-pharmacological pain relief methods are effective (Jones et al., 2015; Hu et al., 2021) and can increase women's satisfaction with the labour experience (Smith et al., 2018), the results presented here indicate that non-pharmacological pain relief methods were used much less frequently than pharmacological methods: only one third of women were counselled to try massage, only one fifth were counselled to think about pleasant and positive things or concentrate their thoughts on things other than pain, and fewer than one in ten were advised to try listening to music. Why are these methods used so little? The reasons for this were not investigated but warrant study in future.

Another notable finding of this study is that diverse counselling methods were rarely used in counselling on pain management. The most widely used method was demonstration, which was applied in the counselling of one third of the participants. The use of written material (used in one fifth of cases) and Internet-based resources (used in one tenth of cases) was less common. In accordance with these findings, previous studies have found that individual oral counselling is the most widely used method and that other methods are much less widely used (Kääriäinen and Kyngäs, 2010). There were no direct questions about oral counselling in the questionnaire, but one participant stated in her response to an open-ended question that she received oral counselling. An important aspect of good counselling is that the woman should trust the midwife and feel confident in the midwife's empathy, interest, and willingness to devote time to her (Krausé et al., 2020). The participants reported that Internet-based resources and videos were rarely used in counselling despite reports that they can help build confidence in the midwife-parturient relationship (Faucher and Kennedy, 2020) and may be good sources of information (Toledo et al., 2017). The limited use of the internet was surprising given that Finland has recently introduced many virtual hospital pages such as Terveyskylä (HealthVillage.fi), which is a publicly accessible website that contains 32 virtual houses built around different themes by health providers. The houses provide

reliable information and support to all patients. Unfortunately, it is difficult to accurately evaluate the quality of oral counselling well because each midwife takes an individual approach to oral counselling based on their own personality and knowledge. However, there is a clear need to increase the use of evidence-based approaches in order to ensure high quality counselling during labour.

The results obtained concerning the pain management counselling of parturient women who experienced fear during labour were as expected. Midwives providing counselling were very adept at recognizing when parturient women were experiencing fear or anxiety. However, when compared to women not experiencing fear, those who feared were more likely to receive counselling on the use of massage to relieve pain, to feel that the midwife took care to ensure that they had understood the information given during counselling, to have the midwife ask about their previous experiences of pain, or to feel that the midwife took their individual characteristics into consideration during counselling. The participants generally felt that the midwives did a good job of recognizing and reacting to their individual features during pain assessments. In particular, midwives were very adept at recognizing when parturients were experiencing fear or anxiety. This is important because fear of childbirth is an increasing problem worldwide (Dai et al., 2020), can increase the frequency of caesarean sections (Jenabi et al., 2020), and may have far-reaching impacts on mother-infant bonding (Simpson and Catling, 2016). Women's own individual hopes were also well recognized and accounted for by midwives during pain management. Previous study showed same that it should be addressed in the provision of appropriate, specific and individual care for women, to support them and so it is possible to improve their experience during childbirth (Henrique et al., 2021). To maximize the likelihood of satisfaction with the experience of childbirth, it is important for midwives to listen to parturients' preferences and expectations and try to ensure that they are met (Westergren et al., 2021). The midwives who counselled the women participating in this study generally did a good job of ensuring that the women understood the information given during counselling. This is an important part of the labour experience because it affects women's ability to make informed decisions (Akca et al., 2017). However, fewer participants were asked about their past experiences of pain; a woman who has previously suffered traumatic pain experiences may experience more severe pain, anxiety, and fear during labour, making it important to ask about this issue during counselling and address it if possible (Ertan et al., 2021).

Many background factors were significantly associated with aspects of pain management counselling. For example, age was related to one item in the *accounting for individual features during pain management counselling*: younger women were asked more frequently whether they understood the information they were given. This is probably because younger women are more likely to be nulliparous, with limited knowledge of giving birth and no experience of labour, so midwives give them more information and take care to ensure they understand what they have been told. However, another study found that multiparous women, who are often older, need the same amount of information as primiparous women on issues such as breastfeeding (Hakala et al., 2021) because every breastfeeding and labour experience is unique. In addition, the participants' education level was related to the frequency of receiving counselling on thinking about pleasant and positive things to relieve pain: parturients who had not completed vocational education were most frequently given counselling on this approach. Midwives were also most likely to use HealthVillage Hubs when counselling parturients in this group. The reason may be similar to that suggested for age: parturients without vocational education may be more likely to be primiparous and to have a relatively prolonged labour, giving more time for counselling on

non-pharmacological pain management methods and the use of Internet-based resources.

Experiencing fear during labour was significantly associated with many aspects of pain assessment and management. Among other things, it was significantly associated with receiving counselling on massage for pain relief, feeling that the midwife had taken care to ensure that the parturient understood the information given during counselling, accounting for the parturient's characteristics as an individual, and asking about previous pain experiences. The trends observed in this work were similar those reported previously (Larsson et al., 2020; Nguyen et al., 2021; (Hildingsson et al., 2019)); more fearful participants received counselling on the above issues more frequently than those who did not experience fear. Other studies have found that women who fear childbirth need special continuing support, closeness, trust (Hildingsson et al., 2019), information, and preparation and counselling (Larsson et al., 2020). These mothers also benefit from a known midwife (Hildingsson et al., 2019) and individualized psychological counselling (Nguyen et al., 2021), all of which strengthen the woman-midwife relationship and thus increase women's confidence and security (Larsson et al., 2020). Intensity of experienced fear was related to counselling on heat/cold treatments to relieve pain; women who experienced severe fear were least likely to be counselled on this non-pharmacological pain relief method. It is possible that this may be because midwives are less willing to suggest non-pharmacological pain relief methods like heat/cold treatments or massage to fearful women whose fear is related to the pain of childbirth and its intensity because in such cases the woman's main desire may be to receive the most effective pain relief available, i.e. epidural anesthesia (Stoll et al., 2014). For women who fear childbirth, it is important that the midwife knows their story, their specific needs, and the reasons for their fear. Therefore, one might expect fearful women to be asked about previous pain experiences more frequently than their non-fearful peers. In addition, a midwife should be able to follow the progress of their birth and support them in giving birth normally. It is very important for women to feel that their midwives take their worries and fears seriously (Larsson et al., 2020). During labour, all counselling and discussion should happen between contractions so that women can concentrate on the information they are given. It is therefore vital for the midwife to always be aware of timing issues; it is possible that some of the women in this study forgot some of the counselling they received because it was poorly timed. Previous studies have found that fear of childbirth can be similarly intense in primiparous and multiparous women but for different reasons; the fear of multiparous women may be related to previous negative birth experiences (Dencker et al., 2019). Nevertheless, it is desirable for a combination of pharmacological and non-pharmacological pain relief methods to be used during labour. Parturients should therefore be offered individualized pain management plans tailored to their needs and preferences.

Limitations

This study included a limited number of participants and the results cannot be readily generalized. Additionally, the questionnaire was part of a larger research project focusing on pain assessment and management in the Finnish university hospital; thus, there may be missing some aspects specifically for parturients like parturicity. Parturients may also have responded in a socially desirable way. Consequently, the unique characteristics of parturient women were not fully accounted for in the questionnaire. Finally, pain assessment and management were only investigated from the parturient's perspective even though they could be considered the best experts on this subject, because the healthcare providers often judge the counselling to be better implemented than how the

patients experienced it. However, adding a wider range of perspectives could provide important information to guide the work of healthcare providers in midwifery nursing.

Conclusion

The results presented herein suggest that counselling should become a routine part of midwives' daily work during labour in order to improve the amount and quality of counselling. Counselling was most frequently offered on pharmacological pain management treatments which have become the most widely used tools for managing pain during labour. However, more attention should be paid to counselling on non-pharmacological pain management techniques because many parturients could benefit from their use and they are often cost-effective and easy to implement. Additionally, midwives should be trained in a variety of counselling methods because the diversity of methods used during labour was very limited. Nevertheless, the midwives did an excellent work of accounting for women's individual features when providing counselling on pain assessment, making it relatively easy for the women to get individualized needs-based treatment during labour. The background factor related to the greatest number of different aspects of pain assessment and management was the experienced fear, so in future more attention should be paid to ensuring that all parturient women receive counselling of similar quality. In the future studies, it would also be important to evaluate the effectiveness of different counselling methods and non-pharmacological pain management interventions during labour in women.

Ethical approval

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Declaration of Competing Interest

None declared.

CRediT authorship contribution statement

Mervi Hakala: Validation, Formal analysis, Investigation, Writing – original draft. **Arja Rantala:** Formal analysis, Writing – review & editing. **Tarja Pölkki:** Conceptualization, Methodology, Writing – review & editing, Supervision, Project administration.

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References

- Akca, A., Corbacioglu Esmer, A., Ozyurek, E.S., Aydin, A., Korkmaz, N., Gorgen, H., et al., 2017. The influence of the systematic birth preparation program on childbirth satisfaction. *Arch. Gynecol. Obstet.* 295 (5), 1127–1133.
- Anim-Somuah, M., Smyth, R., Cyna, A.M., Cuthbert, A., 2018. Epidural versus non-epidural or no analgesia for pain management in labour (Review). *Cochrane Database Syst. Rev.* (5) 1–150.
- Arendt, K.W., Tessler-Tuck, J.A., 2013. Nonpharmacologic labor analgesia. *Clin. Perinatol.* 40 (3), 351–371.
- Aune, I., Brøtmet, S., Grytskog, K.H., Sperstad, E.B., 2021. Epidurals during normal labour and birth – midwives' attitudes and experiences. *Women Birth* 34 (4), e384–e389.

- Bergh, I.H.E., Johansson, A., Bratt, A., Ekström, A., Mårtensson, L.B., 2015. Assessment and documentation of women's labour pain: a cross-sectional study in Swedish delivery wards. *Women Birth* 28 (2), e14–e18.
- Bhardwaj, P., Yadav, R.K., 2015. Measuring pain in clinical trials: pain scales, endpoints, and challenges. *Int. J. Clin. Exp. Physiol.* 2 (3), 151–156.
- Bohren, M.A., Hofmeyr, G.J., Sakala, C., Fukuzawa, R.K., Cuthbert, A., 2017. Continuous support for women during childbirth. Review 5. *Cochrane Database Syst. Rev.* (7) 1–130.
- Borges, C., Jose, C., Sancho, P., Barros, M., Sim-Sim, M., 2017. Labor pain: perception of the parturient and midwife evaluation. *Am. J. Nurs. Sci.* 6 (2), 80–86 Feb 6.
- Bringedal, H., Aune, I., 2019. Able to choose? Women's thoughts and experiences regarding informed choices during birth. *Midwifery* 77, 123–129.
- Buglione, A., Saccone, G., Mas, M., Raffone, A., Di Meglio, L., et al., 2020. Effect of music on labor and delivery in nulliparous singleton pregnancies: a randomized clinical trial. *Arch. Gynecol. Obstet.* 301 (3), 693–698.
- Cole, L., Turnbull, D., Dahlen, H., 2020. How are decisions made to access a planned epidural in labour? Midwife-woman interactions in antenatal consultations. *Midwifery* 82, 102618.
- Dai, L., Zhang, N., Rong, L., Ouyang, Y.Q., 2020. Worldwide research on fear of childbirth: a bibliometric analysis. *PLoS One* 15, 1–13 7 July.
- Dawson, R., Spross, J., Jablonski, E., Hoyer, D., Sellers, D., Solomon, M., 2002. Probing the paradox of patients' satisfaction with inadequate pain management. *J. Pain Symptom Manage.* 23 (3), 211–220.
- Dencker, A., Nilsson, C., Begley, C., Jangsten, E., Mollberg, M., Patel, H., et al., 2019. Causes and outcomes in studies of fear of childbirth: a systematic review. *Women Birth* 32 (2), 99–111.
- Ertan, D., Hingray, C., Burlacu, E., Sterlé, A., El-Hage, W., 2021. Post-traumatic stress disorder following childbirth. *BMC Psychiatry* 21 (1), 1–9.
- Farnham, T., 2020. Reviewing pain management options for patients in active labor. *Nursing* 50 (6), 24–30 (Lond.).
- Faucher, M.A., Kennedy, H.P., 2020. Women's perceptions on the use of video technology in early labor: being able to see. *J. Midwifery Women's Health* 65 (3), 342–348.
- Fink, R., 2000. Pain assessment: the cornerstone to optimal pain management. *Proc. (Bayl. Univ. Med. Cent.)* 13 (3), 236–239.
- Finnish Institute for Health and Welfare, 2020. Perinatal Statistics – Parturients, Deliveries and Newborns 2019. Finnish Institute for Health and Welfare.
- Hakala, M., Kaakinen, P., Kääriäinen, M., Bloigu, R., Hannula, L., Elo, S., 2021. Maternity ward staff perceptions of exclusive breastfeeding in Finnish maternity hospitals: A cross-sectional study. *Eur J Midwifery* 5 (16), 1–11.
- Henrique, A.J., Rodney, P., Joolae, S., Cox, S., Shriver, A., Moreira, C.B., et al., 2021. Understanding childbirth pain in Brazilian women: a qualitative descriptive study. *Women Birth* 34 (4), e368–e375.
- Hildingsson, I., Rubertsson, C., Karlström, A., Haines, H., 2019. A known midwife can make a difference for women with fear of childbirth–birth outcome and women's experiences of intrapartum care. *Sex. Reprod. Healthc.* 21, 33–38.
- Hodnett, E., 2002. Pain and women's satisfaction with the experience of childbirth: a systematic review. *Am. J. Obstet. Gynaecol.* 186 (5), 160.
- Hodnett, E.D., Gates, S., Hofmeyr, G.J., Sakala, C., Weston, J., 2011. Continuous support for women during childbirth (Review). *Cochrane Database Syst. Rev.* 81 (2), 1–78.
- Hu, Y., Lu, H., Huang, J., Zang, Y., 2021. Efficacy and safety of non-pharmacological interventions for labour pain management: a systematic review and Bayesian network meta-analysis. *J. Clin. Nurs.* 30 (23–24), 3398–3414.
- Jenabi, E., Khazaei, S., Bashirian, S., Aghababaei, S., Matinnia, N., 2020. Reasons for elective cesarean section on maternal request: a systematic review. *J. Matern. Fetal Neonatal Med.* 33 (22), 3867–3872.
- Jones, L., Othman, M., Dowswell, T., Alfirevic, Z., Gates, S., Newburn, M., et al., 2012. Pain management for women in labour: an overview of systematic reviews. *Cochrane Database Syst. Rev.* 3, 1–131.
- Jones, L.E., Whitburn, L.Y., Davey, M., Small, R., 2015. Assessment of pain associated with childbirth: Women's perspectives, preferences and solutions. *Midwifery* 31 (7), 708–712.
- Kääriäinen, M., Kyngäs, H., 2010. The quality of patient education evaluated by the health personnel. *Scand. J. Caring Sci.* 24, 548–556.
- Kimber, L., McNabb, M., Mc Court, C., Haines, A., Brocklehurst, P., 2008. Massage or music for pain relief in labour: a pilot randomised placebo controlled trial. *Eur. J. Pain* 12 (8), 961–969.
- Krausé, S.S., Minnie, C.S., Coetzee, S.K., 2020. The characteristics of compassionate care during childbirth according to midwives: a qualitative descriptive inquiry. *BMC Pregnancy Childbirth* 20 (1), 1–10.
- Lally, J.E., Thomson, R.G., MacPhail, S., Exley, C., 2014. Pain relief in labour: a qualitative study to determine how to support women to make decisions about pain relief in labour. *BMC Pregnancy Childbirth* 14 (1), 1–10.
- Larsson, B., Rubertsson, C., Hildingsson, I., 2020. A modified caseload midwifery model for women with fear of birth, women's and midwives' experiences: a qualitative study. *Sex. Reprod. Healthc.* 24, 1–6.
- Levett, K.M., Smith, C.A., Bensoussan, A., Dahlen, H.G., 2016. The complementary therapies for labour and birth study making sense of labour and birth – experiences of women, partners and midwives of a complementary medicine antenatal education course. *Midwifery* 40, 124–131.
- Lowe, N., 1996. The pain and discomfort of labor and birth. *JOGNN* 25 (1), 82.
- Lowe, N.K., 2002. The nature of labor pain. *Am. J. Obstet. Gynecol.* 186, 16 5 supplement.

- Mazúchová, L., Kelčíková, S., Štofaničková, L., Kopincová, J., Malinovská, N., Grendár, M., 2020. Satisfaction of Slovak women with psychosocial aspects of care during childbirth. *Midwifery* 86, 102711.
- McCauley, M., Actis Danna, V., Mrema, D., Van Den Broek, N., 2018. We know it's labour pain, so we don't do anything": Healthcare provider's knowledge and attitudes regarding the provision of pain relief during labour and after childbirth 11 Medical and Health Sciences 1117 Public Health and Health Services 11 Medical and Health Sciences 1110 Nursing. *BMC Pregnancy Childbirth* 18 (1), 1–9.
- Medical Research Act (No. 488/1999), 1999).
- Miron-Shatz, T., Ormianer, M., Rabinowitz, J., Hanoch, Y., Tsafir, A., 2020. Physician experience is associated with greater underestimation of patient pain. *Patient Educ. Couns.* 103 (2), 405–409.
- Murphy, D.J., Strachan, B.K., Bahl, R., 2020. Assisted vaginal birth: green-top guideline No. 26. *BJOG Int. J. Obstet. Gynaecol.* 127 (9), e70–e112.
- Nguyen, L.D., Nguyen, L.H., Ninh, L.T., Nguyen, H.T.T., Nguyen, A.D., Vu, L.G., et al., 2021. Fear of childbirth and preferences for prevention services among urban pregnant women in a developing country: a multicenter, cross-sectional study. *Int. J. Environ. Res. Public Health* 18 (10).
- NHS, 2020. 2019 Survey of Women's Experiences of Maternity Care: Statistical Release. Care Quality Commission.
- Ohaeri, B., Owolabi, G., Ingwu, J., 2020. Skilled health attendants' knowledge and practice of pain management during labour in health care facilities in Ibadan, Nigeria. *Eur. J. Midwifery*, 3, 1–7.
- Öhrn, U., Parment, H., Hildingsson, I., 2020. Quality improvement in postnatal care: Findings from two cohorts of women in Sweden. *Eur. J. Midwifery* 4, 45 Nov 23.
- Olza, I., Uvnas-Moberg, K., Ekström-Bergström, A., Leahy-Warren, P., Karlsdóttir, S.I., Nieuwenhuijze, M., et al., 2020. Birth as a neuro-psycho-social event: an integrative model of maternal experiences and their relation to neurohormonal events during childbirth. *PLoS One* 15, 1–15 7 July.
- Othman, M., Jones, L., Neilson, J.P., 2012. Non-opioid drugs for pain management in labour. *Cochrane Database Syst. Rev.* 7, 1–58.
- Polit, D.F., Beck, C.T., 2017. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*, 10th ed. Wolters Kluwer, Philadelphia.
- Raana, H.N., Fan, X.N., 2020. The effect of acupressure on pain reduction during first stage of labour: a systematic review and meta-analysis. *Complement. Ther. Clin. Pract.* 39, 1–12.
- Ruben, M.A., van Osch, M., Blanch-Hartigan, D., 2015. Healthcare providers' accuracy in assessing patients' pain: a systematic review. *Patient Educ. Couns.* 98 (10), 1197–1206.
- Seijmonsbergen-Schermer, A.E., van den Akker, T., Rydahl, E., Beekman, K., Boogaerts, A., Binfa, L., et al., 2020. Variations in use of childbirth interventions in 13 high-income countries: a multinational cross-sectional study. *PLoS Med.* 17 (5), e1003103.
- Simkin, P., Bolding, A., 2004. Update on nonpharmacologic approaches to relieve labor pain and prevent suffering. *J. Midwifery Women's Health* 49 (6), 489–504.
- Simpson, M., Catling, C., 2016. Understanding psychological traumatic birth experiences: a literature review. *Women Birth* 29 (3), 203–207.
- Smith, C.A., Levett, K.M., Collins, C.T., Dahlen, H.G., Ee, C.C., Sukanuma, M., 2018. Massage, reflexology and other manual methods for pain management in labour (Review). *Cochrane Database Syst. Rev.* (3) 1–75.
- Stoll, K., Hall, W., Janssen, P., Carty, E., 2014. Why are young Canadians afraid of birth? A survey study of childbirth fear and birth preferences among Canadian University students. *Midwifery* 30 (2), 220–226.
- The Finnish Medical Society Duodecim, 2017. Working Group Appointed by the Finnish Medical Society Duodecim, the Finnish Society of Anaesthesiologists. the Finnish Association for General Practice, Helsinki, Finland Pain Current Care Guidelines.
- Thies-Lagergren, L., Ólafsdóttir, Ó.Á., Sjöblom, I., 2021. Being in charge in an encounter with extremes. A survey study on how women experience and work with labour pain in a Nordic home birth setting. *Women Birth* 34 (2), 122–127.
- Thomson, G., Feeley, C., Moran, V.H., Downe, S., Oladapo, O.T., 2019. Women's experiences of pharmacological and non-pharmacological pain relief methods for labour and childbirth: a qualitative systematic review. *Reprod Health* 16 (1), 1–20.
- Toledo, P., Pumarino, J., Grobman, W.A., Wong, C.A., Holl, J.L., Hasnain-Wynia, R., 2017. Patients' preferences for labor analgesic counseling: a qualitative analysis. *Birth* 44 (4), 345–351.
- Ullman, R., Smith, L., Burns, E., Mori, R., Dowswell, T., 2011. Parenteral opioids for maternal pain management in labour. *Cochrane Database Syst.Rev* (9) 1–217.
- Van der Gucht, N., Lewis, K., 2015. Women's experiences of coping with pain during childbirth: a critical review of qualitative research. *Midwifery* 31 (3), 349–358.
- Wagemakers, S., van der Velden, J., Gerlich, S., Hindriks-Keegstra, A., van Dijk, J., Verhoeff, J., 2019. A systematic review of devices and techniques that objectively measure patients' pain. *Pain Physician* 22, 1–13.
- Westergren, A., Edin, K., Lindkvist, M., Christianson, M., 2021. Exploring the medicalisation of childbirth through women's preferences for and use of pain relief. *Women Birth* 34 (2), e118–e127.
- Whitburn, L.Y., Jones, L.E., Davey, M.A., McDonald, S., 2019. The nature of labour pain: an updated review of the literature. *Women Birth* 32 (1), 28–38.
- World Health Organisation, 2018. *Intrapartum Care for a Positive Childbirth Experience*. World Health Organisation.
- World Medical Association, 2013. *World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects*. *JAMA* 310 (20), 2191–2194.
- Yuill, C., McCourt, C., Cheyne, H., Leister, N., 2020. Women's experiences of decision-making and informed choice about pregnancy and birth care: a systematic review and metasynthesis of qualitative research. *BMC Pregnancy Childbirth* 20, 1–21.