Stem [Stem en Ervaringen van Moeders]

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Voices and experiences of mothers

Maaike Vogels-Broeke

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Voices and experiences of mothers

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1

General introduction

Worldwide about 385.000 babies are born each day. A positive experience of this pivotal life-event matters greatly to birthing women.[1] Care providers, health care institutions, and policymakers are increasingly recognizing that the experience of childbirth is central to the quality of maternity care. Clinical outcomes are, of course, important, but they do not correlate directly with the experience of childbirth or its impact on parents. Between 5 and 20% of women giving birth report traumatic experiences, clear evidence of the need to improve the quality of maternity care. [2-4]

In this introduction, we explore the concept of patient experience in general and, more specifically, in maternity care. We summarise factors contributing to perinatal experiences, give an overview of trends in Dutch maternity care and briefly review previous studies that explored women's experiences during the perinatal period in the Netherlands. We close with a description of the aims of this thesis and a brief annotated outline of following chapters. In this introduction we use the term perinatal experiences as a shorthand for a woman's experiences before, during, and after childbirth.

THE CONCEPT OF EXPERIENCE

Patient experience defined

Despite the importance for quality care, patient experience is not a clearly defined concept, and is often mistakenly used as a synonym for patient satisfaction. Although patient experiences and satisfaction are related, they have different meanings and definitions.[5,6] The World Health Organization (WHO) reported that *"the patient experience is a process indicator that reflects the interpersonal aspects of quality of care received (p.563)."* [7] Patient experiences encompass the range of interactions between patients and care professionals across the continuum of care including experiences in and with health care facilities.[8,9] Patient satisfaction reflects whether a patient's needs and expectations are met and evaluates the care provided relative to expectations.[7,10-12] Satisfaction scores have several limitations. Because of their global evaluative nature, it is difficult to determine if differences in patient satisfaction scores reflect patient's perceptions, expectations or assessment of the value of health care.[7,13] Furthermore, satisfaction scores present a limited and optimistic picture since patients are slow to express dissatisfaction.[6,14,15] Moreover, satisfaction scores are coloured by previous experiences, expectations, and whether they were realized or not.[6] As a consequence, an overall satisfaction score may give an inadequate or limited overview of an experience.[6] Evaluating different components of patient experiences offers more concrete starting points to improve healthcare.[8]

Patient experience in maternity care

If we are to accurately assess quality of maternity care and improve woman-centred care, we must understand women's experiences with that care. WHO recommendations for antenatal and intrapartum care explicitly mention the *care experience* as a critical aspect of ensuring high-quality maternity care that improves woman-centred outcomes.[16,17] What is a positive care experience during pregnancy and childbirth? It is defined as care that fulfils or exceeds a woman's prior personal and socio-cultural beliefs and expectations about childbirth; care that is sensitive to women's needs, values, and preferences.[1,17,18]

How a woman experiences her pregnancy and birth have immediate and long-term implications for herself and her family.[19-21] Even though giving birth is an event that many women share, the experience is highly individual and has a significant personal meaning for a woman. Women remember this period for a long time.[2,4,22-24] Most women look back positively on the perinatal period, and experience it as a happy period in their life.[24-27] Positive experiences increase a woman's sense of accomplishment, self-esteem, and self-efficacy, encouraging maternal-child bonding and a mother's positive perception of her baby.[28-30] Negative or traumatic childbirth experiences can lead to psychological distress, feelings of anger, guilt, disappointment, postnatal depression, or even post-traumatic stress disorders.[3,31-34] This can subsequently have a negative impact on a woman's relationship with her child and her partner.[21,31] Women with a traumatic childbirth experience are often more fearful of further pregnancies and births and are at risk for experiencing their following birth again as traumatic.[35] This may have long-term implications for a woman's reproductive choices such as not having another child, delaying subsequent pregnancies, requesting a caesarean section in subsequent pregnancies without any medical indication, or choosing a homebirth in a high-risk situation.[22, 35]

Despite the fact that a positive childbirth experience has been recognized as a significant outcome of maternity care, most research about women's experiences during the perinatal period tend to focus on negative or traumatic experiences. Less attention is given to factors that contribute to well-being and positive experiences. The research done for this thesis was designed from a salutogenic perspective, which shifts the focus to women's wellbeing and positive experiences during the perinatal period.[36]

FACTORS CONTRIBUTING TO WOMEN'S PERINATAL EXPERIENCES

A woman's experience of pregnancy, childbirth, and the transition to motherhood is shaped by more than the quality of care she receives during the perinatal period.[37] The lived experience of a woman during the perinatal period includes interrelated physical and

psychological elements, which, in turn, are influenced by social, environmental, and organizational aspects.[21,38] Several systematic reviews, each with a particular focus, provide evidence for the variety of factors that contribute to women's experiences during the perinatal period. These include:

Expectations, including antenatal expectations about childbirth.[1,30,39-43]

- Active preparation,[41,42] including improving mental and physical health,[44] attending antenatal classes, and writing a birth plan.[45]
- Engagement,[41,46] including active participation and involvement in care,[47] and active participation in decision-making.[1,39,43,48]
- Control of the process of pregnancy and birth,[1,39,41,43,47,48] including the ability to cope with stressors and uncertainty of this life-changing period.[1]
- Organization and models of maternity care,[43,49] including accessibility,[46,47] availability of competent professionals,[48] and continuity of care.[43,47]
- Relationship and communication with care providers,[39,49] including trusting and respectful relationships,[42-44,46,47] seen as a unique individual,[42,47] responsiveness to women's needs and requests, and acknowledging preferences.[1,44]
- Support from care-providers,[39,41] including physical presence, and social, emotional, and psychological support.[1,42-44,46,48,49]
- Information provision, including understandable and reliable care providers, [42,43,46-49] antenatal classes,[43] or information of family and friends.[47]
- The clinical and psychological environment.[1,42,48]
- The safety of the baby and the mother, including a healthy pregnancy and birth for the woman and her baby,[1,49] and the response to the woman's concerns regarding her own and her baby's health.[30,48]
- The timing of first contact with the baby [43,48] including skin-to-skin contact and breastfeeding, and the baby rooming in with the mother.[41,43]
- Psychological wellbeing as shaped by past traumatic experiences,[30] depressive or anxious symptoms, perceived stress,[43] fear of birth,[41,43] positive mental attitude,[44] maternal self-esteem,[48,49] and self-efficacy.[43]
- Social support, presence, and support from partner, family, or friends.[1,30,41,43-45,48,49]
- Society and culture, respecting a woman's cultural background.[1,39,44,47,49]

Interestingly, demographic variables such as age, level of education, and socioeconomic status do not seem have a significant influence on women's childbirth experience.[39,41,43,45] Obstetric factors, such as: pain, medical interventions, and mode of birth are frequently related to women's perception of the childbirth experience, showing both positive and

negative effects on the experience.[39,43] Unexpected medical interventions, such as an instrumental vaginal birth or an unplanned caesarean section increase the risk of negative experiences, while spontaneous vaginal childbirth is associated with a positive experience.[41,43] The relationship between pain, pharmacologic pain relief, and the childbirth experience is complex. Pain and pharmacologic pain relief are associated with both positive and negative experiences.[39,45] These differences may be the result of women's expectations, the choice to (not) have pain relief, and her feeling of being in control.[43]

Identical obstetric factors are perceived differently by different women.[21] If they felt safe and received personalized care, most women who experienced complications or medical interventions did not negatively recall their childbirth experience. The opposite is also true: women with an uncomplicated birth may report a negative experience if they did not feel safe and cared for.[34,50] Some studies, therefore, suggest that care providers attitude and behaviour are more important for a woman's childbirth experience than medical interventions and mode of childbirth.[39,48]

Being pregnant and giving birth is a continuous process and a woman's perception of her pregnancy and childbirth can change over time. Some studies report that women tend to be more positive about their general childbirth experience as time goes by.[22,51] Other studies show less positive reports in the long term as compared to the early postpartum period.[4,52,53] A possible explanation could be that a halo effect colours the childbirth experience in the early postpartum period because of the relief that labour is over and the joy of giving birth to a healthy baby.[39,52,54]

MATERNITY CARE IN THE NETHERLANDS

Trends in Dutch maternity care

Women's experiences during pregnancy and childbirth are culturally framed [21] and influenced by the care they are offered during the perinatal period. Most maternity care systems in the western world are organized around the concept of risk rather than normality, corresponding to the biomedical model of childbirth.[55] The Dutch maternity care system is unique in this respect. Although the system is changing, it is known for the autonomous role of midwives and the emphasis on the normality of pregnancy and childbirth.[56] Healthy women can choose to give birth at home or in the hospital. Women's choice of birthplace and community midwives who practice autonomously are two of the central pillars of Dutch maternity care.[57]

Around the turn of the century, Dutch maternity care began to move in the direction of increased medicalization of childbirth. Home birth rates in the Netherlands remained relatively stable at, around 30% until 2006.[58] Since then the home birth rate has decreased rapidly, dropping to 14.6% in 2020,[59] accompanied by a persistent rise in referrals from midwife-led to obstetrician-led care.[60] In 2020, about 85 percent of Dutch women started their prenatal care with a community midwife, but only 25% gave birth accompanied by a community midwife.[59] This increased medicalization of childbirth may have a negative influence on the experience of childbirth.16

The medicalization of childbirth in the Netherlands gained momentum after the publication of Euro-Peristat data on Dutch maternity care, published in 2004 and 2008. These data showed that perinatal mortality rates in the Netherlands were above average compared to other European countries and were declining more slowly than rates in neighbouring countries.[61,62] Although, restrictions were made with regard to the comparability of the data, given the variety in definitions. [61,63] Follow-up analysis of the Euro-Peristat data did not support the claim that midwife-led care was responsible for these poor outcomes, nonetheless the Dutch system – with care shared by midwives and obstetricians – was held responsible.[63] The national media broadcast the results of the Euro-Peristat reports generating debate about the safety of home birth and midwife-led care with undoubted effect on women's attitudes about childbirth. Several studies show that risk perception, as reflected in women's birth beliefs, are important drivers of decisions made during pregnancy and childbirth.[64,65] The link between media attention to the safety of maternity care in the Netherlands and the increased medicalization of childbirth points to the need for a better understanding of the factors that influence women's birth beliefs.

Following the debate about the safety of Dutch maternity care, the Dutch Ministry of Health created the Steering Committee Pregnancy and Childbirth (2009) with the goal of improving the quality of maternity care and reducing perinatal mortality rates in the Netherlands.[66] The steering committee concluded that "honesty, integrity, transparency, respect, shared responsibility and especially patient-centeredness [should be] key concepts" in the maternity care system. This could be best accomplished by closer collaboration and better communication between maternity care providers.[66]

The recommendations of the committee were formalized in the Dutch interdisciplinary "Care Standard Integrated Maternity Care" [Zorgstandaard Integrale Geboortezorg], issued in 2016. The standard highlights the importance of woman-centred care for the optimization of the experience of pregnancy and childbirth.[67] Shared decision-making is also em-

phasized in the standard, noting that every woman has the right to clear and reliable information to support her in making decisions tailored to her individual needs and preferences. Moreover, maternity care providers were charged with the collection of data on women's experiences to be used for quality improvement, a difficult task given the number of factors that shape a woman's experience and the variety of tools available to assess that experience.

Women's experiences in Dutch maternity care

Several studies have explored the experiences of women in the Netherlands. Most Dutch women recall their pregnancy and birth positively, and are very positive about the quality of maternity care they receive.[68] They report good communication and a positive relationship with their care providers.[69-71] However, there is still a substantial group of women who report a negative birth experience. Rijnders et al. found that more than 16% of the women looked back negatively on their childbirth experience three years after birth,[24] and Baas et al. reported that 8% of the women had a 'less than good experience'.[70] Ineffective communication, lack of autonomy, and/or informed consent were mentioned most often by women with negative or even traumatic childbirth experiences.[72,73] Other factors associated with a negative experience are a lower sense of control, not being satisfied in coping with pain or not having a choice in pharmacologic pain relief, referral during pregnancy or childbirth, assisted vaginal childbirth or emergency caesarean, and woman's fear for her health or that of her baby.[24,70,73,74] These factors are not unique for the Dutch situation: worldwide, these are factors related to negative childbirth experiences.

Women are generally positive about their experiences with the unique characteristics of Dutch maternity care such as midwife-led care and a home birth.[71,75,76] Women experience more continuity of care in midwife-led care than in obstetrician-led care during pregnancy and childbirth.[75] Women who give birth at home are more positive about their childbirth experience than women who give birth in a hospital.[24,71,76,77] A recent study showed that women who planned to give birth in a birth centre or in a hospital with a community midwife have less favourable experiences than women who give birth at home.[78] Women giving birth at home with a community midwife report better interaction with their care providers and more autonomy.[69,78] Scores on general experiences with maternity care providers are significantly higher for women who know their care provider during childbirth, [68] and women giving birth at home have a known care provider more often.[71]

Even though Dutch women are generally positive about their experiences with the unique characteristics of Dutch maternity care, they do not score better than women elsewhere in Europe. Christiaens, a Belgian researcher, found that women in the Netherlands are less

satisfied with their birth care than their Belgium counterparts, regardless of birthplace and care provider.[76] This may be the result of different expectations. The Dutch model emphasizes the normality of childbirth. The emphasis on normality seems to be in contradiction with the fact that only 25 percent of women received care from a midwife for the whole perinatal period. This may lead to unfulfilled expectations. Maternity care in Belgium is organized quite differently and is more medicalized, creating a different pattern of expectations. A study comparing women in the Netherlands and in England found that irrespective of birth mode, women in the Netherlands had higher self- esteem and were less depressed, even though they reported more negative birth experiences three years after birth than women in England.[79]

There are several reasons to study women's experiences in today's Dutch maternity care system. Most notably, if we want to optimize woman-centered care – as called for in the Care Standard – a broader knowledge of women's experiences is essential. Existing research on women's experiences during the perinatal period (in the Netherlands and elsewhere) focus solely on care and its associated factors, ignoring the many other aspects that are important to women. This creates blind spots, limiting our understanding of the how and the why of women's experiences of being pregnant and giving birth. Finally, we can also gain important general knowledge about women's perinatal experiences by studying how those experiences are affected by the changing landscape of the Dutch maternity care.

AIM OF THIS THESIS

Given the importance of a woman's experience, the research done for this thesis was designed to gain a broad and holistic overview of the experiences and attitudes of pregnant women and women who recently gave birth in the Netherlands. This thesis reports the outcomes of the **StEM** study [**St**em en **E**rvaringen van **M**oeders], a cross-sectional survey of women living in the Netherlands inquiring about their perceptions, preferences, and experiences of pregnancy and childbirth. We used several existing and new instruments to build the surveys that would provide broader and deeper insights into women's attitudes, choices, and experiences during early and late pregnancy and after childbirth.

The following research questions are addressed in this thesis:

- What dimensions are relevant for women's experiences during the perinatal period? (Chapter 2)
- What factors are related to women's experiences during the perinatal period? (Chapter 3)

- What information sources do women use during their pregnancy, and how useful and trustworthy do they find these sources? (Chapter 4)
- How do women experience their autonomy in decision-making conversations with midwives and obstetricians in Dutch maternity care? (Chapter 5)
- What are Dutch women's beliefs about birth during pregnancy and after birth? (Chapter 6)
- How do maternity care professionals use women's voices and experiences in quality improvement? (Chapter 7)

OUTLINE OF THIS THESIS

Following this introduction *Chapter 2* provides a conceptualization of the relevant dimensions involved in women's experiences during the perinatal period.
Chapter 3 presents the results of a scoping study done to assess the validity of the newly developed Maastricht Perinatal Framework as described in chapter 2.
Chapter 4 describes the information sources used by women during pregnancy as well as their perceived quality.
Chapter 5 describes women's reports of autonomy in their decision-making conversations with Dutch maternity care providers and the factors associated with those reports.
Chapter 6 describes women's birth-beliefs in the Netherlands during pregnancy and after giving birth.
Chapter 7 presents the findings of a qualitative study of maternity care professionals' experiences with and opinions about the use of women's voices in quality improvement.
Chapter 8 reviews the main findings of this thesis, reflecting on its strengths and limitations and discussing the implications of this research for clinical practice and further research.

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2

Dimensions in women's experience of the perinatal period

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ABSTRACT

A positive experience of the perinatal period is significant for women in maternity care. The literature on women's experiences of the care in this period is extensive. However, a clear overview of the dimensions important for women's experiences is lacking. Consequently, care providers and researchers may ignore aspects significant to women's experience. In this short communication, we present a framework identifying the dimensions relevant for women's experiences of the perinatal period.

INTRODUCTION

A woman's positive experience of pregnancy and childbirth is a significant outcome of maternity care. Along with a focus on reducing maternal and perinatal mortality and morbidity, WHO-recommendations for antenatal and intrapartum care explicitly mention the *experience* of care as a critical aspect of ensuring high-quality maternity care and improved woman-centred outcomes.[1,2] WHO defines a positive care experience as one that fulfils or exceeds a woman's prior personal and sociocultural beliefs and expectations, i.e., care that is sensitive to women's needs, values and preferences. However, a woman's experience of pregnancy and childbirth involves more than the care she receives in the perinatal period. This period as a transition to motherhood implicate a dynamic process with physical, psychological and social aspects that shape women's experiences.[3,4]

Although the literature on women's experiences of pregnancy, childbirth and the postnatal period is extensive. A clear overview of the dimensions important for women's experiences of this period is lacking, which may imply that that we ignore aspects that are significant to women. This brief report presents our ideas of a framework identifying the dimensions relevant for women's experiences of the perinatal period.

THE PERINATAL EXPERIENCE AS A CONCEPT

Pregnancy and childbirth are both universal and unique to each woman, while women highly value the recognition of this uniqueness.[3,4] Repeatedly, women have described the perinatal experience as an intense powerful and changing life-event that affects their whole being.[5,6] The nature of the experience has short and long-term implications for the woman herself, her family, [4,7,8]and it leaves indelible lifelong memories.[9]

A woman's perinatal experience is shaped by her beliefs and values - the personal lens through which she sees and understand the world. These are created by her experiences during the years prior to her pregnancy, during the perinatal period itself and by interactions with her surroundings, including stories from her mother, other family members, friends and public images in the media. These beliefs and values shape her preferences and expectations. Expectations play an important part in a woman's experience of the perinatal period. Lower expectations are associated with poor psychological outcomes, while higher expectations and clear preferences are associated with achieving goals and with higher satisfaction.[10,11] Evidence contradicts the stereotype of a woman with high expectations who is bound to be disappointed.

Experience needs to be distinguished from satisfaction. These terms are often used interchangeably in the literature, but Larkin et al. pointed out that satisfaction is not adequate as a surrogate for experience.[4] Satisfaction is in fact the global evaluation and rating of different contextual components of an event.[12-14] It includes a cognitive evaluation and emotional reaction.[12] While experience refers to an observable process.[13] Evaluation of an experience is more concrete and offers starting points for optimization.[14,15] An experience incorporates subjective, psychological and physiological processes and is influenced by a broader context of societal, environmental, organizational factors.[4] To gain a deeper understanding of what e.g. childbirth means to women, they must be asked to describe their experience and not just their level of satisfaction.[4,16,17] As satisfaction may give an insufficient overview of an experience.[14,15]

ASPECTS RELEVANT FOR A POSITIVE EXPERIENCE

A growing body of evidence offers insight into aspects that are relevant for a woman's positive experience of the perinatal period. Studies from all over the world, show that women include physical elements (the course of the pregnancy and birth), emotional elements (their feelings, thoughts and behaviour) and social elements (the interaction with their surroundings, e.g. their partner and professionals) when evaluating their experiences.[18,19] It seems that most research focuses on aspects of the maternity care offered to women or on the relation between a woman's psychological health and the experience of the perinatal period. Only a smaller number of studies explore how the perinatal experience is influenced by a woman's connectedness with others and her direct social support system, as well as the larger society – via legislation, regulations, work and (social) media. In their concept analysis of the experience of labour and birth, Larkin et al. indicated that the experience incorporates interrelated subjective psychological and physiological processes, influenced by societal, environmental, organisational and policy contexts.[4] Their analysis makes clear that the experience of the perinatal period involves more than just, what happens at the event itself.

The need for an overview of dimensions

Women's experience of the perinatal period is clearly a multidimensional concept that is broader than just childbirth and the care offered during this period. However, a clear conceptualization of what is involved in the experience of the perinatal period and an overall view of the relevant dimensions is lacking. This gap creates possible blind spots, limiting our understanding of the pregnancy and childbirth experience.

We decided that such an overview was necessary for the study we are currently conducting, which explores women's experience of the perinatal period in the Netherlands – STEM, **St**em en **E**rvaring van **M**oeders [Voice and experience of mothers]. We began our study with a search for a conceptual framework describing the relevant dimensions of the experience of the perinatal period that could serve as a guide our research. We wanted a framework that went beyond the care aspect of childbirth to include the psychological, cultural and social dimensions that shape women's experience. Such a framework would help to explore all aspects that matter to women in this transition to becoming a mother. After an exhaustive search, however, we concluded that a framework outlining the experiential aspects of the perinatal period did not exist. Leaving us with the challenge of creating our own framework.

The first logical step in building a framework for analysing the perinatal experience is to collect and categorize the available studies of women's experience of maternity care and the perinatal period. However, we wanted go beyond the existing literature to uncover the unidentified aspects of women's experiences. Therefore, we decided to look at frameworks describing what is relevant for assessing the quality of maternity care and at frameworks for patients' experiences outside the perinatal period, to gain inspiration for a framework on women's experiences of the perinatal period.

Dimensions relevant for the experience of the perinatal period

In our search for frameworks linked to quality of maternity care, we considered the framework of the Lancet paper Midwifery 1.[20] This framework, describing quality maternal and new-born care, gives an indication of what is involved in care for all childbearing women and their babies. However, it lacks a focus on women's experiences during the perinatal period. Still, it is useful as a contribution to building a framework for the dimensions of the experience of the perinatal period. Another framework we considered was the Standard Set of outcome measures of the International Consortium for Health Outcome Measurement (ICHOM) Pregnancy and Birth.[21] ICHOM develops Standard Sets of outcome measures that focus on patient-centred results. The intent of ICHOM is to provide an internationally agreed upon method for measuring outcomes that enables comparison of performance globally, leading to improvement in the quality of care. In their Standard Set for Pregnancy and Birth, they include experience-related dimensions, such as role transition, mental health, satisfaction with care, healthcare responsiveness, and birth experience. They recommend assessing the birth experience with the Birth Satisfaction Scale-Revised (BSS-R). The BSS-R measures three distinct but correlated domains: (1) quality of care provision, (2) women's personal attributes, and (3) stress experienced during labour.[22] This

framework opens up more dimensions of experience, but does not include the larger environment of the woman that also plays a role in her experience of the perinatal period.[14,23,24]

Our search for frameworks of dimensions of patients' experiences outside the perinatal period, lead us to the Warwick Patient Experiences Framework (WaPEF).[25] The WaPEF was developed using a systematic review of key electronic databases including research papers that focus on exploring or identifying patient experiences in adult services in three clinical areas: cardiovascular disease, diabetes, and cancer. The authors identified seven dimensions: (1) patient as active participant, (2) responsiveness of services and an individualized approach, (3) lived experience, (4) continuity of care and relationships, (5) communication, (6) information and (7) support.

While the WaPEF is intended as a generic framework, it is designed based on three clinical areas that are far removed from maternity care and the perinatal period. Nevertheless, the framework gave us insight into relevant dimensions of care experiences that seemed transferable to maternity care. We decided to use it as a start for building a conceptual framework of women's experiences of the perinatal period. We translated the WaPEF-dimensions for the perinatal period and checked this with the frameworks from Renfrew et al. and ICHOM Pregnancy and Birth.[20,21] This resulted in a framework with seven dimensions that appear relevant for women's experiences of the perinatal period (table 1).

THE NEXT STEP

The current framework is a dynamic outline, open for new insights and further development. We are validating the framework with a scoping review of published studies on women's experience of the perinatal period and focus groups with women. Additionally, we have developed a survey for women in the Netherlands to fill out during pregnancy and within the first months after birth. This will help to validate the framework further and give broader insights into women's experiences of the perinatal period in the Netherlands.

Table1. Dimensions for women's experiences of the perinatal period based on WaPEF [25]

Perinatal framework	
Dimensions	**Narrative**
1. The woman as unique individual (maternal characteristics) *Not in WaPEF*	A woman's experience of the perinatal is influenced by the unique combination of her characteristics and individual circumstances. Her values, birth beliefs and risk perceptions play a central role in her expectations, preferences and experiences of the perinatal period.
2. Woman is an active participant in care. *Based on dimension 1 of WaPEF*	The woman is regarded as an active participant in her health care, co-creator and co-manager of her health and use of services. Enabling a woman to participate in decision-making tailored to her needs and wishes is important for her experience of care. Being an active participant is associated with issues of power and control, including a woman's right to her own body, responsibility for her health and wellbeing, active engagement in her use of services and maternity care. Internal and external attributes of empowerment are critical to fulfil this successfully.
3. Responsiveness of maternity care and health services – an individualized approach *Based on dimension 2 of WaPEF*	The philosophy and model of maternity care affect a woman's experience, e.g. organizational aspects as continuity of care. The responsiveness of health services at all levels and the attitude of each care provider include, seeing the woman as a person, recognizing her as an individual and tailoring services to respond to her needs, preferences and values. It comprises how well clinical needs are met and evaluates of how well services perform from a woman's perspective and satisfaction.
4. Lived experience of being pregnant, giving birth and the postpartum period. *Based on dimension 3 of WaPEF*	The perinatal period is a dynamic and ongoing process with several phases: conception and pregnancy, childbirth and postpartum period. In the woman's experience each phase affects the subsequent others. Women's thoughts and emotions can be ambivalent and not always clear. The perinatal period is related to bonding with the baby and closeness to relatives. Women's transition to motherhood and her adaptation to the role as mother can bring shifts in perspectives and priorities.

Table 1. (continued) Dimensions for women's experiences of the perinatal period based on WaPEF [25]

Dimension	Narrative
5. Communication and relationships with care providers	Effective communication requires two-way interaction and congruent verbal and nonverbal expression. Good communication among care providers throughout the care system is needed to make sure that women get consistent information and advice.
Based on dimension 4 and 5 of WaPEF	Competent and compassionate care providers are required to facilitate a woman's feelings of safety, trust, confidence and reassurance. Women prefer a personal approach and continuity of care that is respectful, supportive and actively involves the woman in decision-making. A woman should have the opportunity to talk about their childbirth experience and have her questions answered.
6. Information and childbirth education	Appropriate and congruent information from inside and outside the maternity care system has a positive influence on a woman's experience. A woman needs personalized information at the right time. Information enable a woman to be an active participant in her care and is related to informed choice and shared decision-making.
Based on dimension 6 of WaPEF	
7. Support from social environment	The perinatal period involves the woman's partner and her social network. She is part of a community that has its own cultural and/or religious traditions and values. Her personal environment and the large society affect her experiences of becoming a mother and of maternity care.
Based on dimension 7 of WaPEF	

CONCLUSION

The presented framework offers a valuable overview of the dimensions involved in women's experience of the perinatal period. It gives a conceptual foundation to our StEM study, and can offer guidance to healthcare providers, researchers, and policy-makers on aspects that need attention when wanting to improve women's experiences of the perinatal period.

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3

Validating a framework of women's experiences during the perinatal period; a scoping review

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ABSTRACT

Objective: The aim of this paper is to identify and explain the factors that make up a woman's experience of the perinatal period. We accomplish this by validating a framework, described in an earlier study, that identifies the distinct dimensions of the perinatal experience.

Design: We conducted a scoping review, using five online databases, to identify and categorize studies that investigate women's experience of the perinatal period.

Findings: We found 251 publications that focused on the experience of the perinatal period. Our review confirmed the seven dimensions of our framework describing women's experiences of the perinatal period – the woman as unique individual, the woman as active participant in care, the responsiveness of maternity care and health services, the lived experience of being pregnant, giving birth and the postpartum period, communication and relationships with care providers, information and childbirth education, and support from social environment. One new dimension emerged from the studies we identified: societal influence. The resulting eight dimensions provide a comprehensive overview of the important aspects of women's experience of the perinatal period. While each dimension is distinct, there are significant overlaps and close relationships between them.

Conclusion: The framework is a useful guide for healthcare providers, researchers, and policy makers who wish to improve the experience of the perinatal period. It is important to remember, however, that the current framework is dynamic, open to new insights and further development and refinement.

INTRODUCTION

In the last decades, the concept of woman- or family-centred care during pregnancy, childbirth and the postpartum period have received increasing attention, not only from caregivers, but from health care institutions, policymakers and women themselves. While "hard" clinical outcome measures – such as mortality, morbidity, and medical interventions – are important, they provide limited information about the experience of the perinatal period and its impact on, and significance for, women. The WHO recommendations for antenatal and intrapartum care explicitly mention the experience of care as a critical aspect of ensuring high-quality maternity care and improved woman-centred outcomes.[1,2] A positive care experience is defined as one that fulfils or exceeds a woman's prior personal and sociocultural beliefs and expectations, i.e., care that is sensitive to women's needs, values, and preferences.[3-5] All of these factors contribute to the effective transition to motherhood, a woman's sense of accomplishment, self-esteem, and well-being, and a woman's future reproductive choices.[6-8]

A woman's experience of the perinatal period involves much more than just childbirth and the care offered before, during, and after birth. This period – a transition to motherhood – is highly personalized and involves a dynamic and continuous process with physical, psychological, and social aspects that shape a woman's experience. The perinatal experience is influenced by the social, environmental, organizational, and policy contexts in which it occurs.[9-11]

Despite a large and diverse body of literature documenting the experience of the perinatal period, a clear overview of the dimensions of a woman's experience of that important transition is lacking.[12,13] Furthermore, the many factors that contribute to a woman's experience, and the inconsistent use of terminology to describe that experience, make accurate measurement difficult, limiting our understanding of the experience of the perinatal period. In an earlier study we addressed this knowledge gap by developing a framework that distinguishes the essential dimensions of the perinatal experience.[14] The objective of this scoping review is to validate that framework, thereby giving broader and deeper insight into women's experiences of the perinatal period.

METHODS

To accomplish our objective we did a scoping review, a method that allows the inclusion of data derived from different study designs. We used the rigorous methodology proposed by Arksey and O'Malley,[15] and we analysed our data using the descriptive framework approach.[16]

Ethical approval was not required for this study.

Identifying the research question

This scoping review is a part of a larger research project. The goal of that larger project is to describe and understand the expectations, needs, experiences, choices, and decisions of pregnant women and women who recently gave birth in the Netherlands. In the process of developing a survey instrument for our study, it became clear that a comprehensive and concise description of the experience of the perinatal period was lacking. To guide our thinking, we constructed a framework that identifies the fundamental aspects of the perinatal experience.[14] Recognising the need to validate that framework with data from existing studies of the perinatal period, we initiated this scoping review.

Identifying relevant studies

In December 2016, we conducted a systematic search using five electronic databases (MEDLINE, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, SocINDEX and Psychology and Behavioral Sciences Collection). Our last update was done in August 2019**.**

We developed a unique search strategy for each database related to the subject headings of the database (a full account of the search strategy in each database is available in appendix A). Additionally, the reference lists of all included studies were scanned to identify further relevant publications. We also contacted experts in the field to check if relevant studies were missing.

Inclusion criteria were (1) primary research from peer-reviewed journals exploring women's experience of the perinatal period, and (2) full text availability in English or Dutch. To maximize the likelihood of identifying relevant studies, we did not impose a publication year. We excluded dissertations, non-original research, conference papers, and studies describing experiences or views of other stakeholders (for example healthcare workers, fathers or other family members). This scoping review is part of a larger study that explores women's experience of the perinatal period in the Netherlands – StEM, Stem en Ervaring van Moeders [Voices and experiences of mothers]. For this reason, we decided to include only studies from high-income countries.[17]

Study selection process

All search results were entered into reference management software EndNote for initial screening. Titles were screened to identify and remove all duplicates and titles that were clearly irrelevant for the topic of our review. Subsequently, the abstracts were screened to

identify studies that potentially met the inclusion criteria. The full text of potentially eligible studies were retrieved and independently assessed for eligibility by two authors. To ensure that the data collection method and analysis were robust, one author collected data and a second author independently audited the process. Any discrepancy was resolved through discussion. A third researcher was available for consultation if any issues remained unresolved, but this was not needed.

Data extraction and synthesis

Data on the characteristics of the included studies were extracted into a datasheet. Extracted fields were reported in a table (available as separate appendix). Each paper that met the inclusion criteria was read in full by one researcher. As each paper was read, aspects related to experiences of the perinatal period were identified, and coded using NVivo12. We developed codes inductively through immersing ourselves in the text and deriving codes from the data itself. As coding progressed and the number of aspects grew, they were grouped together into broader key aspects. Similar key aspects were then linked in broader dimensions. As new insights emerged from our analysis of the data the coding index was refined. The data extraction and synthesis process was undertaken by the first author and monitored by, and discussed with, the senior authors.

Identified initial framework

The descriptive framework approach we used requires the charting and sorting of findings from the literature against an a priori identified framework.[16] Recognising this, we considered the frameworks presented in the Lancet series on midwifery[18] and in the standard set of outcome measures for pregnancy and childbirth offered by the International Consortium for Health Outcome Measurement.[19] The Lancet series, however, lacks an explicit focus on women's experience during the entire perinatal period and the ICHOM measures do not include the larger environment of the woman, an important contributor to her experience of the perinatal period. We therefore broadened our search by looking for frameworks describing patients' experiences in other care contexts. We identified the Warwick Patient Experience Framework (WaPEF)[20] as a suitable model and adapted it to the perinatal period.[14] We used this framework to manage the process of synthesizing data and to compare and contrast the aspects of the perinatal experience found in this review, a procedure that would allow us to validate our framework.

Collating, summarizing, and reporting results

The flowchart of study selection is shown in figure 1. The sample of full text publications was reduced by excluding publications that did not meet the inclusion criteria (n=51), focused on rare or severe physical (n=11) or mental conditions (n=8), or described the development of a survey (n=34). In total 251 publications published between 1979 and 2019 are included in this review and taken forward for analysis and synthesis of the data.

Characteristics of included studies

The included publications focused mostly on obstetric related variables, including specific aspects of health care that women received, and psychological variables related mainly to expectations and experiences about childbirth. The studies included women from a wide range of sociodemographic groups. Among the 251 studies, only 14 explored the influence of cultural and social phenomena on women's experience.

The publications included studies conducted in Europe (n=137), Oceania (n=32), US and Canada (n=73), Asia (n=5), and intercontinental (n=4). The majority of included publications used quantitative data techniques (n= 162), mainly cross-sectional designs with surveys having sample sizes ranging from 31 to 15,276 women. Sixty-eight publications used qualitative data techniques, including both individual interviews and focus groups, and 21 used a mixed method design, and combined surveys with focus groups or interviews.

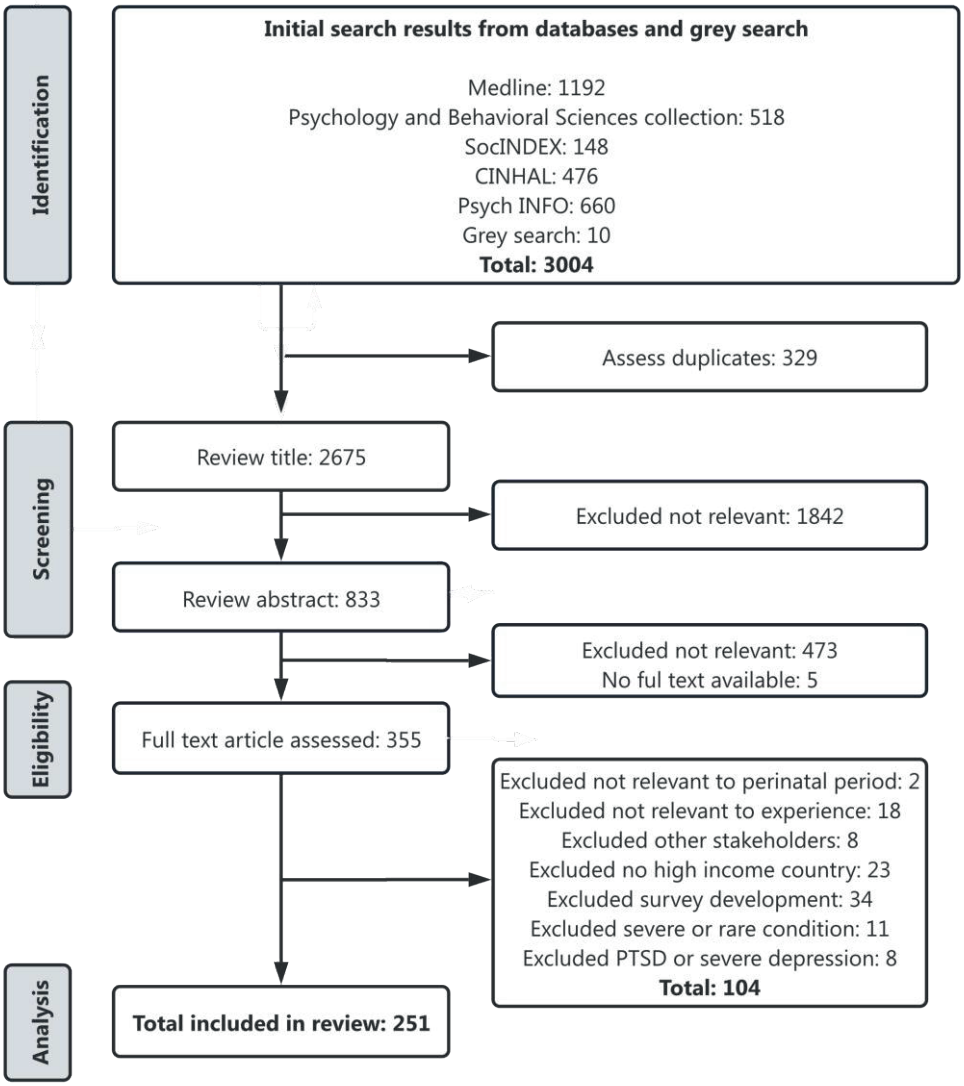

Figure 1. Flowchart study selection process.

RESULTS

We briefly describe what we found in Table 1, followed by more detail about each dimension, examining how the data fit with our framework, and reflecting on an additional dimension that was uncovered in this scoping study.

Table 1. The Maastricht Perinatal Framework

The Maastricht Perinatal framework	
Dimension	**Narrative**
1. The woman as unique individual (maternal characteristics)	A woman's experience of the perinatal is influenced by the unique combination of her characteristics and individual circumstances. Her values, birth beliefs and risk perceptions play a central role in her expectations, preferences and experiences of the perinatal period.
2. Woman is an active participant in care.	The woman is regarded as an active participant in her health care, co-creator and co-manager of her health and use of services. Enabling a woman to participate in decision-making tailored to her needs and wishes is important for her experience of care. Being an active participant is associated with issues of power and control, including a woman's right to her own body, responsibility for her health and wellbeing, active engagement in her use of services and maternity care. Internal and external attributes of empowerment are critical to fulfil this successfully.
3. Responsiveness of maternity care and health services – an individualized approach	The philosophy and model of maternity care affect a woman's experience, e.g. organizational aspects as continuity of care. The responsiveness of health services at all levels and the attitude of its care providers include seeing the woman as a person, recognizing her as an individual and tailoring services to respond to her needs, preferences and values. It evaluates how well services perform from a woman's perspective and satisfaction.
4. Lived experience of being pregnant, giving birth and the postpartum period.	The perinatal period is a dynamic and ongoing process with several phases: conception, pregnancy, childbirth, and the postpartum period. In the woman's experience each phase affects the subsequent others. Women's thoughts and emotions can be ambivalent and not always clear. The perinatal period is related to bonding with the baby and closeness to relatives. Women's transition to motherhood and her adaptation to the role as mother can bring shifts in perspectives and priorities.
5. Communication and relationships with care providers	Effective communication requires a two-way interaction and congruent verbal and nonverbal expression. Competent and compassionate care providers are required to facilitate a woman's feelings of safety, trust, confidence and reassurance. Women prefer a personal approach and continuity of care that is respectful, supportive and actively involves the woman in decision-making. A woman should have the opportunity to talk about their childbirth experience and have her questions answered. Good communication among care providers throughout the care system is needed to make sure that women get consistent information and advice.

Table 1. (continued) The Maastricht Perinatal Framework

Dimension	Narrative
6. Information and childbirth education	Appropriate and congruent information from inside and outside the maternity care system has a positive influence on a woman's experience. A woman needs personalized information at the right time. Information enable a woman to be an active participant in her care and is related to informed choice and shared decision-making.
7. Support from social environment	The perinatal period involves the woman's partner and her social network. She is part of a community that has its own cultural and/or religious traditions and values. Her personal environment and the larger society affect her experiences of becoming a mother and of maternity care.
8. Societal influence	The perinatal period is mediated by societal definitions that influence the perception and management of risk in pregnancy and childbirth, including what are acceptable choices and what are not. Political decisions, law, and regulations influence the organization of care, accessibility, and the allocation of resources available during the perinatal period.

We expand on each of the eight dimensions below. The numbers in parentheses refer to the reference list found in appendix B.

1. The woman as unique individual (maternal characteristics)

Numerous studies explored the influence of characteristics of individual women including socio-demographic background, physical and psychological wellbeing, expectations and preferences, and personal philosophy of birth on their experience of childbirth.

Socio-demographic background

Some studies indicate that certain background characteristics such as age, income, level of education, marital status and ethnic background are related to the way in which women experience the perinatal period (1). However, the effect sizes are generally small and show contradictory effects even in similar populations. Several studies found no relationship with respect to these background characteristics (2).

Physical and psychological wellbeing

Women's general physical health appears to be correlated with a positive childbirth experience (3). Women in good health feel better prepared for childbirth and report lower levels of anxiety and more positive birth experiences (4). Having mental health problems increases the risk of a negative assessment of the childbirth experience. Woman with higher

levels of anxiety, depressive symptoms or perceived stress have a higher chance of reporting less positive childbirth experiences (5), although a few studies did not find this relationship (6).

A wide range of previous constraining events, are associated with the experience of the perinatal period (7). These life events are frequently related to anxiety, worries, and depression (8). Which subsequently can affect the birth experience.

Expectations and preferences

Several studies show that a woman's perception of her experience is related to the expectations and preferences she brings to the event (9). A woman's expectations and preferences are based on her previous experiences, her general state of health (both physical and psychological) and the perceptions toward pregnancy and childbirth in her social environment and society (10).

Several studies found that positive expectations were associated with positive experiences (13) and the reverse accounts for negative expectations (12). Fulfilment of expectations and preferences makes a positive experience more likely (13). When a woman fails to realize her positive expectations, it colours her birth experience negatively (14) and this may lead to a sense of guilt or failure (15). Lower expectations are easier to realize, and as a consequence, women are more satisfied with their experience (16).

Birth philosophy and risk perception

Woman's risk perception and her basic beliefs about birth as a medical or natural process affects her preferences, expectations, decisions and experiences about care (17). Some studies report increased levels of anxiety or stress and low perceived control as a result of perceptions of high risk in pregnancy or childbirth (18).

Women with a more medical birth philosophy often see interventions as a way to minimize risk (19). When women expect medical interventions and their care provider intervenes, there is a sense of reassurance (20). While women who have confidence in their body to give birth naturally are more afraid of a cascade of interventions that can potentially create poorer outcomes. Those woman gain confidence and reassurance when their care providers take a more hands-off approach (21).

2. Woman is an active participant in care.

The possibility for a woman to actively participate in her own care is an important factor in her experience of the perinatal period (22). To develop and sustain active participation,

women need personal treatment and behaviour, consistent with their care providers offering respectful and supportive woman-centred approach and active involvement in decision-making (23).

Control and decision-making

A number of studies show that sense of control is a factor that influences the experience of the perinatal period. Women who felt that they were in control and had choices over procedures and the birth process report a more positive birth experience (24). Control is not always conceptualized in the same way. It includes two different dimensions, internal and external control. Both dimensions have an impact on women's feelings about the overall experience of the perinatal period. Internal, or personal, control includes women's control of her own behaviour, emotions, pain and physical functioning (25). External control reflects a woman's desire to control circumstances, decisions, and procedures affecting the perinatal period (26).

Woman are more likely to evaluate the experience as positive if they are satisfied with their own behaviour (27). Loss of internal control is related to sense of personal failure and a negative evaluation of the experience (28).

Women frequently interpret external control as active involvement in decision-making (29). Women who are actively involved in the decision-making process reported having a higher sense of control, and are more positive about their childbirth experience (30), although the desired degree of involvement in the decision-making process may differ between women (31).

Coping mechanism, self-confidence, and trust

The perinatal period is a life-event marked by uncertainty. There is a congruence between maladaptive coping strategies with life-events and high levels of anxiety, worries, and depressive symptoms (32). Good coping mechanisms help a woman to face the uncertainties of the perinatal period, stressful situations and pain, and can contribute to a sense of internal control (33).

A woman's feelings of confidence, trust, and perceived self-efficacy are important factors in achieving positive birthing experiences (34). Trust and confidence in herself – physically and mentally – and in others, allow her to relax, feel safe, and in control (35) contributing to enhanced self-efficacy (36). While self-efficacy is important for achieving a positive experience of the perinatal period (37).

3. Responsiveness of maternity care and health services – an individualized approach

The organization of maternity care and the (type of) care provider (e.g. midwife or obstetrician) are related to the perinatal experience (38). Important factors in the organization of care include easy access, good time management, continuity of care and good facilities. Related to accessibility are the distance to care (traveling time), accessibility of the practice by telephone, visiting hours during hospitalization, access to care during the early onset of labour, and access for partner (39).

Taking Time

Some studies showed that sufficient contact moments and time with care providers, including the time necessary to answer questions or to provide information and reassurance, contribute to a positive experience (40).

Continuity of care

Continuity of care improves the birth experience in various ways. Continuity of care gives a woman the possibility to build a personal relationship with her care provider and is associated with control and confidence (41).Three aspects seems relevant to continuity of care and a woman's experience: a) total number of care providers during the whole process from pregnancy to postnatal, b) a known care provider during birth, and c) continuous support during birth (42).

A referral during the perinatal period can have a negative effect on the experiences of women. Several studies mention that good communication, interdisciplinary collaboration, and a known care provider – who stays to provide supportive care – decrease the risk of a negative recall in those situations (43).

4. Lived-experience of being pregnant, giving birth and the postpartum period.

The experience of the perinatal period is life changing, a transition to being a new mother (44). Women need time to adapt to their role as mother as the experience of bonding with her baby occurs gradually (45). Both objective and subjective experiences of the perinatal period are related to psychological outcomes and contribute to feelings of accomplishment, fulfilment, empowerment joy, happiness, and pride (46). Although it can also have a negative impact leading to anger, guilt and disappointment and to feeling challenged, distressed, and traumatized (47). These emotional response can be ambiguous, as positive

and negative feelings can exist at the same time (48). Many women described moments of fear for their own life or the life of their baby (49).

Obstetric factors

In general, severe pain and obstetric factors such as medical interventions are frequently related to negative feelings (50 However, studies contradict each other over the influence of mode of birth and medical interventions on the experience of childbirth. Some studies have found that mode of birth itself and medical interventions play a role in the final childbirth experience (51), while other studies have found no association (52). It appears that the way in which women *experienced* obstetric factors is more related to expectations, communication and relationships with their care provider, and a sense of control and self-efficacy rather than to the obstetric factors themselves (53).

Changes over time

Women's memory of childbirth changes over time. The overall perception of experiences during the perinatal period is expressed as a motion through time (54). During subsequent pregnancies and births, contrasting memories may exist (55). One study suggest that measuring woman's experience with the perinatal period soon after childbirth is influenced by a halo effect of euphoria and joy where the woman is relieved that she and her baby have come through the experience safely (56).

5. Communication and relationships with care providers

Establishing empathic, trustworthy, and reliable relationships between the woman and competent care providers is important for a fulfilling experience of the perinatal period (57). A good relationship between the care provider and a woman underpins her feelings of being in control and engagement, and results in a sense of security (58).

Key aspects of constructive communication in maternity care are: keeping women informed, willingness to respond to questions, dialogue about choices, involvement in the decision-making process, and allowing enough time to discuss woman's concerns (59). A relationship that lacks sympathy and comprehension increases the risk that a woman will report a negative experience (60), whereas a 'human approach' – defined as respectful, empathic, encouraging, reassuring and emotionally supportive – is likely to increase a positive experience of the perinatal period (61).

In many situations, maternity care is offered by multi-professional teams. This may lead to strains in the communications that may affect women's perception of the childbirth experience negatively (62). Good communication and collaboration between all care providers is needed to make sure that care providers give consistent information and explanation

and even use the same approach to care (63). Woman-centred communication regarding decisions and procedures is essential to a positive experience, particularly when there are rapid or unexpected changes in clinical circumstances (64). Women want to be recognized and invited to talk about their childbirth experience, a process that is helpful for regaining control and strength to move on (65), as well as making them feel secure and more satisfied (66).

6. Information and childbirth education

Information is important to the experience of the perinatal period (67) and a woman's well-being (68).

Knowledge

A woman's response to the experience is shaped by what she "knows" and will be affected by what she believes to be possible (69). Women's experiences and preferences are shaped by knowledge about available options (70). Information and education have a positive impact on woman's knowledge and understanding of what is happening and can happen (71). A lack of knowledge is one of the reasons for not demanding more information or unquestioning acceptance of interventions that go against woman preferences (72).

Personalized information

Information can help decrease stress and anxiety, provide support, enhance self-esteem and internal control (73). However, if a woman desires more information than offered or if she feels overwhelmed by a flood of information, this can lead to disappointment or more anxious feelings (74).

Information will influence the attitude, expectations, preferences, decisions and choices of women during the perinatal period (75). Therefore, it is important to have the right type and amount of information at the right time, acknowledging women's individual needs (76). Appropriate information and explanation about medical procedures are associated with positive experiences during the perinatal period (77). Studies show that inadequate information, either limited, contradictory or false, are related to feelings of limited control and opportunity to participate in decision-making (78).

Women are interested in receiving information from multiple sources, in and outside the maternity care system. This includes reading books and magazines, searching the internet, and attending antenatal classes (79).

7. Support from the social environment

Support from the woman's own social network enhances her sense of security and is an important aspect for a fulfilling experience (80).Social support provided by a woman's own network ranges from informational support to physical and emotional presence (81).

Sociocultural context

A woman's social environment also includes the sociocultural context that defines and shapes a woman's perceptions of pregnancy and childbirth (82). Every woman is part of a community that has its own cultural and religious traditions and values. Women emphasize the importance of maintaining their cultural traditions, wishes, rituals and religion during the perinatal period (83). Despite the fact that ethnic groups differ, most women of ethnic minority groups face barriers in communication and lack of cultural sensitive support from family members and health care providers, resulting in decreased satisfaction and less positive experiences (84).

8. Societal influence

The experience of the perinatal period needs to be understood in a woman's sociocultural context, including societies' values about pregnancy and childbirth (85). The strong emphasis on risk in some societies clearly influences women's expectations, preferences and experience of the perinatal period (86). Political decisions about the allocation of health resources and benefits such as paid maternity leave, also influence a woman's experience of the perinatal period (87). Therefore, we add an eighth dimension to our initial framework called "societal influence".

DISCUSSION

Our review represents a synthesis of evidence on the experience of the perinatal period and validates the dimensions of our previously published framework.[14] The findings of our review support the multiple domains of the WHO Quality of Care Framework for Maternal and Newborn Health [4,5,21] and the Lancet Quality of Maternal and Newborn Care Framework,[18] but provide a broader and more holistic picture of the perinatal period by going beyond birth and care related aspects. Working from our framework, we defined the experience of the perinatal period as a woman's personal perception and interpretation of the physiological, psychological, and social processes during pregnancy, childbirth and the postpartum period.

The 7 themes of the patient experience framework of Warwick captured the perinatal experience. Not surprisingly, the WaPEF and our framework have common themes, but we

found some unique and important aspects that should be considered. Upon reflection, we realized that the framework focuses on the meso- and micro-level aspects influencing women's experiences of the perinatal period, giving less consideration to the effects of the larger society. The experiences of the perinatal period need to be understood also on a macro-level, an element that was not present in the earlier defined dimensions. Although studies of this aspect were limited in number, they are highly relevant and now included in our eighth dimension.

Secondly, our work underscores the importance of understanding how women gather information especially living in the digital society. Social media play a substantial role in the lives of young women today,[22,23] the preferred platform for seeking information, social support, and accounts of the experiences of others.[24] This information is used to make, and validate, women's choices during the perinatal period. Our review demonstrates a gap in studies exploring women's use of social media and its influence on their experiences during the perinatal period. Using social media and internet can lead to a sense of empowerment and confidence, giving woman the possibility to build a supportive network,[22,23,25] but it can also provide unreliable information.[22,25,26]

In the publications we reviewed the concept of experience was often poorly defined, and used interchangeably with satisfaction. However, experience and satisfaction have different meanings and definitions;[27,28] experience is more than satisfaction.[29] A woman's experience incorporates interrelated physiological and psychological processes in the broader context of social, environmental, organizational, and health policy influences[11] (Larkin et al., 2009). Satisfaction is the global evaluation and rating of different contextual components of an experience[30-32] and was frequently related to specific aspects of care in the publications we found. Due to its global evaluative nature, it is difficult to determine whether differences in scores on satisfaction reflect expectations, perceptions, definitions or experiences.[33] To fully understand women's satisfaction, it is important to evaluate different components of the childbirth experience, as a score for overall satisfaction may give an insufficient overview of the perinatal experience.[32,34] Therefore, it is better to ask for experiences instead of just overall satisfaction when evaluating the perinatal period or childbirth.[35,36] Satisfaction surveys ask, for instance, how did we do? While patient experience surveys ask, what happened?

The included studies identified direct, indirect, and contradictory effects of aspects of women's experience of the perinatal period, illustrating how complicated it is to understand the mechanisms implicated in a woman's experience of the perinatal period and how difficult it is to assess perinatal experience. A woman not only reacts to myriad factors

during pregnancy and birth, but there is continuous interaction between many of these factors and the woman. Findings from studies of the relationship between perinatal experiences and socio-demographic background characteristics are inconsistent, suggesting that these characteristics are probably a minor rather than a major predictor of perinatal experience. It is also possible that some factors, such as control, involvement in decision-making, support, and the relationship between care providers override the influence of background and other characteristics when women are asked to evaluate their experience of the perinatal period.[37-39] Research methods also influence the findings of studies of perinatal experience. The timing of the investigation (for example, direct postpartum or 6 months after birth), different sampling frames and contextual features, and the varied locations of the studies combine to make it difficult to describe the exact mechanisms at work. To address this complexity, future studies should take into account different dimensions simultaneously; the use of a longitudinal study design would also bring some clarity to the analysis of the perinatal experience.

Strength and limitations

A strength of our study is the systematic search and extensive use of publications on women's experience during the perinatal period. We tried to get a broad and holistic overview of the experiences during the perinatal period by including surrogate terms and concepts related to the experience of pregnancy, childbirth, and the postpartum period. The fact that we included studies using both qualitative and quantitative methods provided a comprehensive overview of the dimensions and aspects that are related to the perinatal experience. However, to keep the search results manageable, we did not include resources such as the grey and popular literature, an approach sometimes suggested as a benefit of a scoping review.[15] This may have limited our findings.

It is also possible that we missed relevant studies, especially related to the societal and cultural context of the experiences of the perinatal period. This may indicate a lacuna in the literature, or the need for a more specific search strategy for identifying these studies. Future research aiming to describe experiences during the perinatal period should incorporate more literature about the cultural and societal effect on the experience of pregnancy, childbirth and the postpartum period.

Our goal in this was to give an overview of the many factors that influence the perinatal experience. Because this is a scoping review, we cannot give insight into the strength of different effects or provide an overview of the most influential factors on the perinatal experience. Future studies should use what we have learned to pursue this information.

CONCLUSION

Our results offer a useful overview of the important dimensions of women's experience of the perinatal period. While each dimension is distinct, there are significant overlaps and close relationships between them. We have taken the first steps toward creating and validating a framework that assesses the multidimensional and dynamic phenomenon of the perinatal experience. Our framework offers a lens for interpreting the large number of studies on the perinatal experience, but like all frameworks, it must be tested and adjusted as new studies appear and we learn more about women's' experiences.

As research in this field moves forward, it is critical to note that the majority of the studies we found focused on the biomedical and psychological aspects of the experience of the perinatal period. Societal and cultural issues have not (yet) received the same level of attention, in spite of their important contribution to a woman's experience. We are confident that this framework, and future iterations, will serve as useful guide for health care providers, researchers, and policy makers, providing information needed to improve a woman's experience of the perinatal period.

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APPENDIX A. SEARCH STRATEGY SCOPING STUDY

Database	*Perinatal period*	*Experience*	*Factors*	*Woman*	*Limits*	*Total hits**
MEDLINE (OVIdSP)	**Subject Heading**	**Subject Heading**	**Text**	**Text**		
	Prenatal care OR Gravidity OR Parity OR Pregnancy, high risk OR prenancy, outcome OR prenancy, unplanned OR parturition OR labor, obstetric OR perinatal care OR peripar-tum period OR Postpar-tum period	Personal satisfaction OR attitude OR emotions OR patient sat-isfaction OR life change events	Factor$ OR influenc$ OR determi-nant$ OR compo-nent$ OR predict$ OR domain$ OR associat$	Wom$ OR mother$ OR mater-nal$ OR primipar$ OR multipar$ OR female	Human Female Language: Dutch, Eng-lish	1st search: 963 2nd search: 70 3rd search: 155

Database	*Perinatal period*	*Experience*	*Factors*	*Woman*	*Limits*	*Total hits**
CINAHL EBSCO*host*	**MJ word in major subject heading**	**MJ word in major subject heading**	**Text**	**Text**		
	prenatal care OR Pregnancy OR perinatal care OR intrapar-tum care OR childbirth OR labor (childbirth) OR postnatal period OR postnatal care	satisfaction OR experience OR emotions OR patient attitudes	Factor* OR influenc* OR determi-nant* OR component* OR predict* OR domain* OR associat*	wom* OR mother* OR maternal* OR primipar* OR multipar* OR female*	Peer reviewed Human Female Dutch/ Flemisch, English	1st Search: 351 2nd search: 48 3rd search: 77
SocINDEX EBSCO*host*	**Subject**	**Subject**	**Text**	**Text**		
	Pregnancy OR Prenatal care OR Childbirth OR birth OR intrapar-tum OR postpartum OR postnatal	client satisfaction OR experiences OR attitude (psychology) OR expectations	Factor* OR influenc* OR determi-nant* OR component* OR predict* OR domain* OR associat*	wom* OR mother* OR matenal* OR primipar* OR multipar* OR female*	scholary (Peer reviewd)	1st search: 124 2nd search: 11 3rd Search: 13

Database	***Perinatal period***	***Experience***	***Factors***	***Woman***	***Limits***	***Total hits****
PsycINFO **EBSCO*host***	**MJ word in major subject heading**	**MJ word in Major subject heading**	**Text**	**Text**		
	pregnancy OR prenatal care OR labor (childbirth) OR Birth OR Intrapartum period OR antepartum period OR postnatal period OR perinatal period	"client satisfaction" OR "client attitudes" OR emotions OR perception OR experiences (events) OR "life experiences"	Factor* OR influenc* OR determinant* OR component* OR predict* OR domain* OR associat*	wom* OR mother* OR maternal* OR primipar* OR multipar* OR female*	Peer reviewed Human Female Dutch, English	1st Search: 592 2nd search: 40 3rd search: 28

Database	***Perinatal period***	***Experience***	***Factors***	***Woman***	***Limits***	***Total hits****
Psychology and Behavioral Sciences Collection **EBSCO*host***	**Subject term** pregnancy OR prenatal Or childbirth OR birth OR intrapartum OR postpartum OR postnatal OR perinatal	**Subject term** satisfaction OR experiences OR attitude OR expectations OR emotion	**TEXT** factor* OR influenc* OR determinant* OR component* OR predict* OR domain* OR associat*	**TEXT** wom* OR mother* OR maternal* OR primipar* OR multipar* OR female	Peer reviewd	1st search: 356 2nd search: 53 3rd search: 109

* 1st search: December 2016, 2nd search: May 2018, and 3rd search: August 2018

APPENDIX B. REFERENCE LIST RESULT SECTION SCOPING STUDY

	1. The woman as unique individual (maternal characteristics)
	Sociodemographic background
1	1-36
2	9, 37-52
	Physical and psychological wellbeing
3	29, 40
4	53-56
5	1, 22, 28, 31, 38, 39, 50, 52, 56-61
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4

Sources of information used by women during pregnancy and the perceived quality

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ABSTRACT

Background: Access to reliable information is critical to women's experience and wellbeing during pregnancy and childbirth. In our information-rich society, women are exposed to a wide range of information sources. The primary objective of this study was to explore women's use of information sources during pregnancy and to examine the perceived usefulness and trustworthiness of these sources.

Method: A quantitative cross-sectional study of Dutch women's experiences with various information sources during pregnancy, including professional (e.g. healthcare system), and informal sources, divided into conventional (e.g. family or peers) and digital sources (e.g. websites or apps). Exploratory backward stepwise multiple regression was performed to identify associations between the perceived quality of information sources and personal characteristics.

Results: A total of 1922 pregnant women were included in this study. The most commonly used information sources were midwives (91.5%), family or friends (79.3%), websites (77.9%), and apps (61%). More than 80% of women found professional information sources trustworthy and useful, while digital sources were perceived as less trustworthy and useful. Personal factors explain only a small part of the variation in perceived quality of information sources.

Conclusion: Even though digital sources are perceived as *less* trustworthy and useful than professional and conventional sources, they are among the most commonly used sources of information for pregnant women. To meet the information needs of the contemporary generation of pregnant women it is essential that professional help in the development of digital information sources

BACKGROUND

Access to reliable information is critical to women's experience and wellbeing during pregnancy and childbirth. [1,2] Information and education help women understand what *is* happening and what *can* happen during this life-changing passage [3] and it improves women's satisfaction with the childbirth experience.[4] Pregnant women seek information to feel more confident and comfortable in their communication with healthcare providers, to make decisions during the perinatal period, and to prepare themselves for their maternal responsibilities.[4-8]

Adequate information helps to decrease stress and anxiety, provide support, and enhance self-esteem and internal control. [9-12] While inadequate information – either limited, contradictory, or false – is related to loss of control and limited participation in decision-making.[5,13,14] Not meeting women's information needs during pregnancy can increase their worries and anxiety, is a risk factor for isolation, and is a predictor of low confidence as a parent.[15] Therefore, it is important for pregnant women to have access to information suited to their needs, delivered in the right amount and at the right time.[9,16,17]

Fulfilling a woman's information needs depends on her access to adequate resources and her ability to comprehend what has been presented to her.[7] In the current context of our information-rich society, women are exposed to a wide range of information sources. This includes information sources from the healthcare system, conventional sources (e.g. family, peers, and books) and digital information sources (e.g., websites, apps, and social media).[18,19]

A woman's use and appreciation of information depends on its quality, an assessment influenced by concepts of perceived trustworthiness and usefulness.[20,21] While women express a desire for accurate information,[19] they are aware that what they encounter may be inaccurate or biased. The trustworthiness of information is a major concern for them.[7] Two antecedents of trust in health information are defined1) "trust as the evaluation of information quality" or 2) "the intention to use the found information." [22] Because the possibly negative consequences of making decisions on untrustworthy or flawed information, trustworthiness of information is notably serious.[23]

To assess trustworthiness of information, women look for information on one topic from a range of different information sources. If similar information is provided in different sources, they will perceive it as trustworthy. [7,19,24] A woman's perception of the trustworthiness of information is associated with her health-beliefs, her age, and level of educa-

tion.[25] However, even when information is perceived as trustworthy, it may not be considered useful.[7] Women judge the usefulness of information based on its appropriateness, evaluating it in the context of their personal circumstances, gestational age, personal beliefs, and values.[7]

Although several studies have focused on women's information seeking behaviors in maternity care, to our knowledge no study has compared formal, conventional and digital information sources, including women's perceptions of their perceived trustworthiness and usefulness. Gaining more insight into the information sources pregnant women use to satisfy their information needs and how they perceive the quality of these sources will help healthcare providers to more effectively meet women's preferences, contribute to improvement of decision-making based on correct information, and enhance the quality of woman-centred care. Therefore, the aim of this study is to describe women's use of different sources of information and to examine how they perceive the quality of that information, based on their view of its usefulness and trustworthiness. We also explored the degree to which personal factors are associated with the perceived quality of different information sources.

METHODS

Participants and settings

Data were obtained from StEM (Stem en Ervaringen van Moeders, [Voice and Experiences of Mothers]), a cross-sectional study of women's preferences and experiences during pregnancy, childbirth, and the postpartum period conducted in the Netherlands between February 2019 and February 2020.

Maternity care in the Netherlands is organised in primary and secondary levels of care. Community midwives offer primary care to healthy women with uncomplicated pregnancies, referring women to obstetrician-led hospital care when pathology is suspected or when complications occur. In obstetrician-led care, a woman may receive care from a hospital-based midwife, an obstetrician, or an obstetric resident, with an obstetrician having the final responsibility for care.

Women were invited to participate in the study through 81 midwifery practices and 7 hospitals across the Netherlands, and by social media. Women were eligible for this study if they were between 12 and 20 weeks pregnant (early pregnancy cohort), or if they were more than 32 weeks pregnant (late pregnancy cohort). Women could only participate once, either during early pregnancy OR late pregnancy.

Only women 18 years or older and with sufficient command of the Dutch language were included. We excluded women in cases of perinatal death or severe neonatal morbidity. Women gave their informed consent to participate and completed the questionnaire online, by post, or by telephone.

Ethical considerations

The study was carried out in accordance with the Declaration of Helsinki. Women gave their informed consent to participate. The Human Research Ethics Committee of METC Z, Heerlen (registry number: METCZ20180121) approved the study.

Measurement

We designed a self-administered questionnaire for each cohort. These questionnaires included validated tools, questions that had been used in previous studies, and additional questions about women's background characteristics.

In this paper, we use data from the two cohorts described above. Women in each cohort were asked about their use of various information sources during pregnancy, including their perceptions of the trustworthiness and usefulness of those sources.

Women were asked to indicate which information sources they consulted during pregnancy. We distinguished professional sources from maternity care providers, so-called professional sources (midwives, obstetricians, general practitioner, leaflets from care providers, websites from midwifes/hospital, and information meetings organized by midwives/hospital), and informal sources divided into conventional sources (antenatal classes, family / friends, peers, books and journals) and digital sources (apps, websites about pregnancy and childbirth, forums and blogs, social media and TV and Netflix programs) (box 1). Responses were measured on a 4-point Likert scale from never (1) to often (4). We then asked women to rate the perceived trustworthiness and usefulness of the sources. These were measured on a 5-point Likert scale from completely untrustworthy (1) to completely trustworthy (5), and completely useless (1) to completely useful (5).

We also collected data on psychological wellbeing, birth beliefs, social- and informational support, main healthcare provider, parity, age, level of education, marital status, and ethnicity.

The Patient Health Questionnaire (PHQ-4) was used to measure psychological wellbeing.[26] The PHQ-4 is a validated self-report questionnaire that consists of a depression scale

(PHQ-2) and an anxiety scale (GAD-2). The composite PHQ-4 total score ranges from 0 to 12. Higher scores on the PHQ-4 represent higher levels of depression and/or anxiety.

The *Birth Beliefs Scale* was used to measure women's basic beliefs about birth as a natural or medical process.[27] This validated scale consists of two subscales: beliefs that birth is a natural process (five statements) and beliefs that birth is a medical process (six statements), rated on a 5–point Likert scale. Higher scores indicate stronger beliefs about birth as a natural or medical process.

The *Patient Reported Outcomes Measurement Information System (PROMIS*) was used to measure (1) informational support as perceived availability of helpful information or advice, and (2) social support as perceived feelings of being cared for and valued as a person.[28] Each concept of support was measured with four items scored on a 5-point Likert scale with higher scores indicating more support.

Box 1: categories in sources of information

PROFESSIONAL SOURCES

Midwives, obstetrician, general practitioner, leaflets from care providers, websites from midwifery practice or hospital and information meetings organized by midwifery practice or hospital.

INFORMAL SOURCES

Conventional sources

Antenatal classes, family/friends, peers like other mothers and pregnant women, books and journals

Digital sources

Apps, websites about pregnancy and childbirth, forums and blogs, social media, TV and Netflix

Data analyses

Data are presented using frequencies and percentages for categorical variables and means and standard deviations (SDs) for continuous variables. Distributions of data about women's uses and perceived trustworthiness and usefulness of information sources are reported using percentages.

We used backward stepwise multiple regression to analyse associations between personal characteristics and reported quality of information sources. The dependent variable was perceived quality, based on a summation (range 2-10) of the usefulness and trustworthiness of the source. The included predictor variables were age, psychological wellbeing, birth beliefs, social and informational support, stage of pregnancy (early or late), level of education (low, medium, high), and parity (nulliparous and multiparous). Categorical variables were recoded into dummy variables. Missing values were designated to system missing and excluded from analyses. P-Values of <0.05 were considered statistically significant. The data were analysed using IBM SPSS Statistics for Windows version 23.0.

RESULTS

Questionnaires were distributed to 2630 pregnant women (978 in early, and 1652 in late pregnancy). In total, 2091 women returned the questionnaire, 808 (82.6 %) in early and 1283 (77.7 %) in late pregnancy (total response rate 79.5%). In total, 169 questionnaires (58 in early, 111 in late pregnancy) were not complete. This resulted in 1922 questionnaires for analysis (750 in early, and 1172 in late pregnancy). The characteristics of pregnant women who participated are presented in Table 1.

Information sources used during pregnancy

Almost all women in our study got information from a midwife at some point during pregnancy (early pregnancy 96.4% and late pregnancy 98.5%). Women were less likely to use other professional sources, like leaflets from care providers. Frequently used informal conventional information sources were peers, like pregnant women and other mothers (early pregnancy 86% and late pregnancy 91%), and family or friends (early pregnancy 92% and late pregnancy 93.3%).

A majority of women used digital sources, e.g. websites about pregnancy and childbirth (early pregnancy 86.9% and late pregnancy 90.9%) or apps (early pregnancy 75.3% and late pregnancy 70.3%), whereas social media - e.g. Twitter, Facebook, and Instagram - were less commonly used (Figure 1 and 2).

Table 1. Characteristics of the participants

Characteristics	**Early pregnancy (12-20 weeks)**		**Late pregnancy (≥32 weeks)**		**Characteristics general Dutch population***
	n=750		*n=1172*		
	n	(%)	n	(%)	
Parity[1]					
Nulliparous	258	(34.4%)	441	(37.6%)	43.9%
Multiparous	492	(65.6%)	731	(62.4%)	56.1%
Age[1]	Mean 30.4 years min 19 - max 43 years		Mean 30.4 years min 18 – max 43 years		N/A
< 20 years	2	(0.3%)	5	(0.4%)	0.7%
20-24 years	61	(8.1%)	107	(9.1%)	7.6%
25-29 years	254	(33.9%)	393	(33.5%)	29.3%
30-34 years	313	(41.7%)	454	(38.7%)	40.0%
35-39 years	106	(14.1%)	194	(16.6%)	18.8%
40-44 years	14	(1.9%)	19	(1.6%)	3.4%
Level of education[2]					
Low	46	(6.1%)	58	(4.9%)	9.9%
Middle	293	(39.1%)	431	(36.8%)	35.2%
High	410	(54.7%)	683	(58.3%)	53.7%
Marital status					
Married / living together	720	(96.0%)	1141	(97.4%)	N/A
Living apart together	6	(0.8%)	5	(0.4%)	N/A
Single	13	(1.7%)	19	(1.1%)	N/A
Unknown	11	(1.5%)	7	(0.6%)	N/A
Nationality					
Dutch	668	(89.1%)	1037	(88.5%)	N/A
Non-Dutch	82	(10.9%)	134	(11.4%)	N/A
Unknown			1	(0.1%)	N/A
Main healthcare provider					
Midwife	675	(90.0%)	963	(82.2%)	87.0% at start of antenatal care
Obstetrician	37	(4.9%)	116	(9.9%)	12.5% at start of antenatal care
Shared care	38	(5.1%)	93	(7.9%)	

*data source for characteristics of the general Dutch population:
[1] Peristat, Perinatale cijfers in Nederland, jaar 2019 [29]
[2] CBS Statline women's level of education between 25-45 years [30]

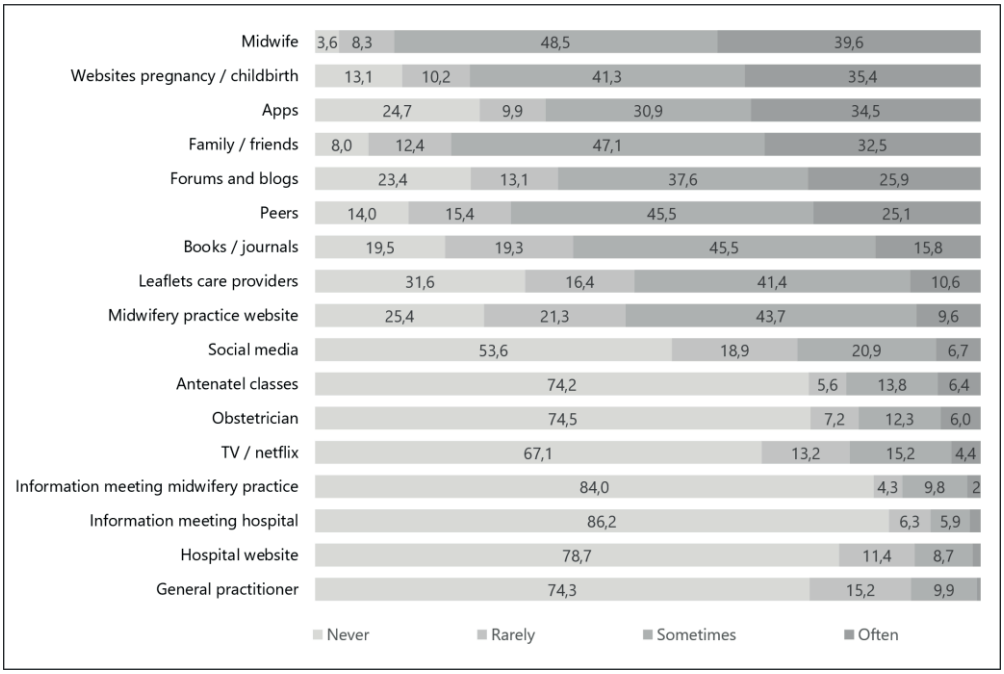

Figure 1. Information sources used during *early* pregnancy in percentage

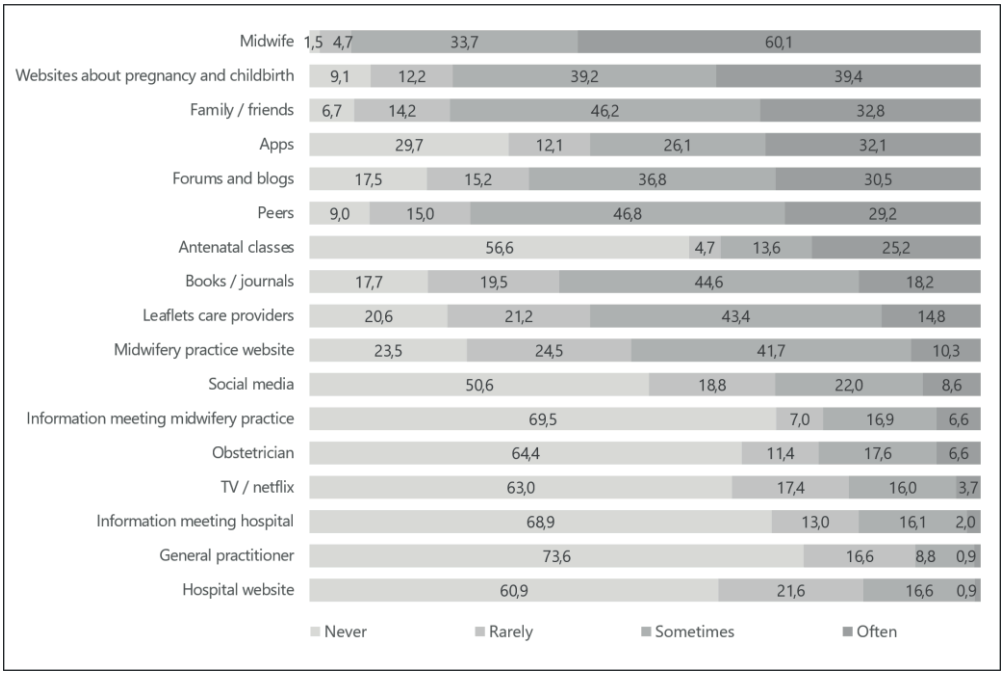

Figure 2. Information sources used during *late* pregnancy in percentage

PERCEIVED TRUSTWORTHINESS AND USEFULNESS

We asked women to rate the trustworthiness and usefulness of the sources they used, (Figures 3 and 4). Women expressed a high level of trust in professional information sources. More than 90% of all women identified their care provider (midwife or obstetrician) as a trustworthy source of information, while conventional sources like peers were given lower scores of trustworthiness. Digital information was perceived as least trustworthy (Figure 3).

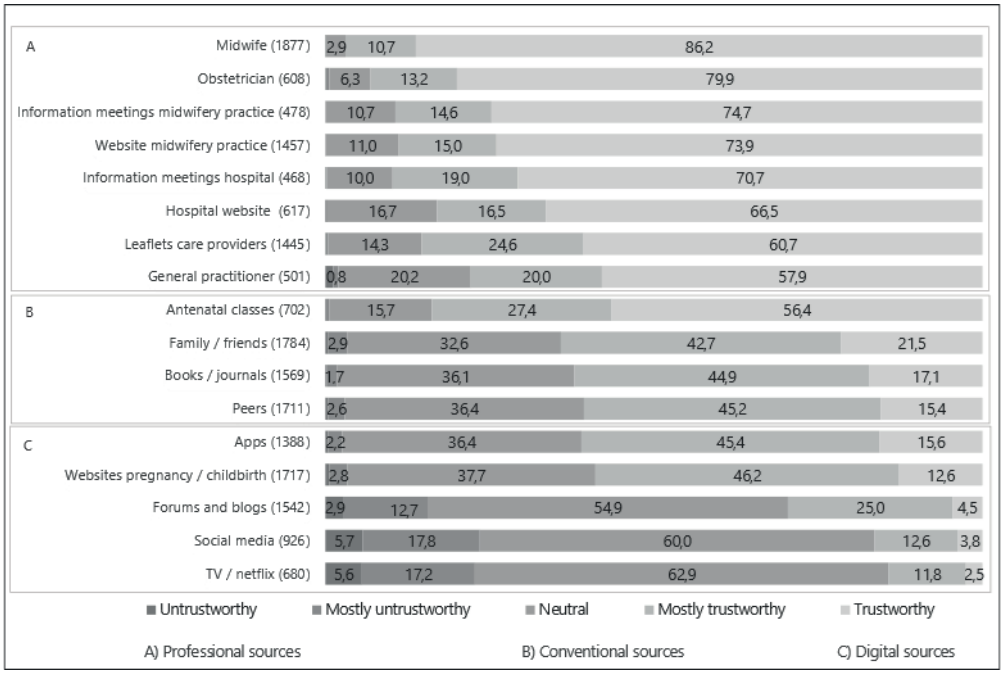

Figure 3. Trustworthiness of information sources in percentage

Most of the professional and conventional sources scored higher than digital sources on usefulness. More than 80% of women found information from their midwife, obstetrician, and antenatal classes (completely) useful, while about 60% found apps and websites to be useful (Figure 4).

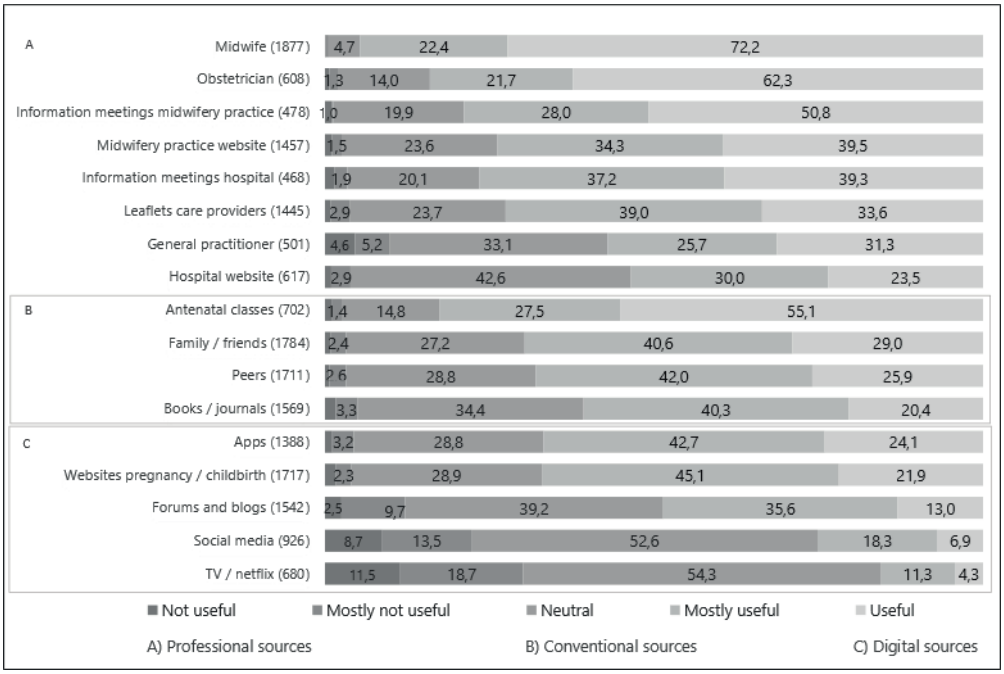

Figure 4. Usefulness of information sources in percentage

The effect of personal factors on use and perceived quality of information sources

We looked more closely at frequently used information sources in relation to women's personal characteristics (Table 2). Additionally, we looked at the association between personal characteristics and the perceived quality of information sources (table 3). We focused on one professional information source (leaflets from care providers), and four informal information sources, including two conventional sources (antenatal classes, and peers) and two digital sources (websites and apps), because all of these sources require active information seeking behaviour of women.

Table 2. Information sources and characteristics of frequent users

Characteristics	Leaflets care providers	Antenatal classes	Pregnant women and other mothers	Websites pregnancy and childbirth	Apps
	N=1072*	N=605*	N=1419*	N= 1498*	N= 1172*
	N (%)**	**N (%)****	**N (%)****	**N (%)****	**N (%) ****
Phase of pregnancy					
Early (750)	390 (52.0)	151 (20.1)	528 (70.6)	576 (76.8)	489 (65.4)
Late (1172)	682 (58.2)	454 (38.7)	891 (76.0)	922 (78.7)	682 (58.2)
Main healthcare provider					
Midwife (1638)	921 (56.0)	523 (31.9)	1212 (74.0)	1278 (78.0)	1007 (61.5)
Obstetrician (153)	78 (51.0)	40 (26.1)	114 (74.5)	122 (79.7)	89 (58.2)
Shared care (131)	73 (55.7)	42 (32.1)	93 (70.0)	98 (74.8)	76 (58.0)
Parity					
Nulliparous (699)	452 (64.7)	294 (42.1)	584 (83.5)	589 (84.3)	493 (70.5)
Multiparous (1233)	620 (50.7)	311 (25.4)	835 (68.3)	909 (74.3)	679 (55.5)
Age *mean (SD)*	29.9 (4.31)	30.6 (4.08)	30.1 (4.22)	30.2 (4.36)	30.1 (4.22)
< 20 years (7)	5 (71.4)	1 (14.3)	6 (85.7)	5 (71.4)	4 (57.1)
20-24 years (168)	116 (69.0)	37 (22.0)	126 (75.0)	144 (85.7)	107 (63.7)
25-29 years (647)	384 (59.4)	215 (33.2)	508 (78.5)	521 (80.5)	440 (68.0)
30-34 years (767)	420 (54.8)	252 (32.9)	557 (72.6)	580 (75.6)	453 (59.1)
35-39 years (300)	127 (42.3)	91 (30.3)	204 (68.0)	221 (73.7)	154 (51.3)
40-44 years (33)	20 (60.6)	9 (27.3)	18 (54.4)	27 (81.8)	14 (42.4)
Level of education					
Low (104)	46 (44.2)	20 (19.2)	74 (71.2)	71 (68.3)	62 (59.6)
Middle (724)	406 (56.1)	172 (23.8)	538 (74.3)	562 (77.6)	456 (63.0)
High (1093)	619 (56.6)	413 (37.8)	807 (73.8)	864 (79.9)	653 (59.7)
Unknown	1 (0.1)			1 (0.1)	1 (0.1)
Birth Belief Scale (Range 1-5)					
Natural process					
Frequent users, *mean (SD)*	3.83 (0.51)	3.96 (0.56)	3.83 (0.55)	3.81 (0.54)	3.80 (0.55)
Non-frequent users, *mean (SD)*	3.81 (0.60)	3.76 (0.54)	3.82 (0.55)	3.89 (0.58)	3.86 (0.55)
Medical process					
Frequent users, *mean (SD)*	3.03 (0.55)	2.92 (0.62)	3.04 (0.58)	3.06 (0.56)	3.06 (0.57)
Non-frequent users, *mean (SD)*	3.04 (0.62)	3.09 (0.56)	3.00 (0.61)	2.94 (0.65)	2.99 (0.60)

Table 2. (continued) Information sources and characteristics of frequent users

Characteristics	Leaflets care providers	Antenatal classes	Pregnant women and other mothers	Websites pregnancy and childbirth	Apps
	N=1072*	N=605*	N=1419*	N= 1498*	N= 1172*
	N (%)**	**N (%)****	**N (%)****	**N (%)****	**N (%) ****
PHQ (range 4-16)					
Frequent users, *mean (SD)*	5.45 (1.84)	5.33 (1.65)	5.45 (1.82)	5.50 (1.90)	5.52 (1.91)
Non-frequent users, *mean (SD)*	5.42 (1.92)	5.49 (1.97)	5.41 (2.03)	5.22 (1.82)	5.30 (1.81)

* N is the sum of women who sometimes or often used a specific information source (= frequent user).

** The percentages express the proportion of women with that specific condition or characteristic who frequently used that source of information

The associations between personal factors and the perceived quality of information sources are presented in Table 3. Multiple linear regression showed that a limited number of personal factors were associated with the perceived quality of information sources.

The quality of the leaflets from maternity care professionals was rated higher by women in the late stage of pregnancy, with a high level of education, a higher level of informational support, and stronger birth beliefs (both natural and medical).

For antenatal classes, a lower level of psychological wellbeing (i.e. higher levels of anxiety and depression), a higher score on birth beliefs as a natural process and being in the late stage of pregnancy were significantly associated with higher perceived quality.

The quality of information from peers – such as pregnant women and other mothers – was rated higher by nulliparous women, women in early pregnancy, and women with higher levels of informational support

The quality of websites was rated higher by nulliparous women, women with higher levels of social support, while apps were rated higher by nulliparous women who were older, with a higher level of social support and higher beliefs about birth as a medical process.

Table 3. Association between personal factors and perceived quality of information sources

	Leaflets			***Antenatal classes***			***Peers***			***Websites***			***Apps***		
Predictors	*Unstandardized β*	*Standardized Coefficients β*	*p-Value*	*Unstandardized β*	*Standardized Coefficients β*	*p- Value*	*Standardized Coefficients β*	*Unstandardized β*	*p- Value*	*Unstandardized β*	*Standardized Coefficients β*	*p-Value*	*Unstandardized β*	*Standardized Coefficients β*	*p-value*
Phase of pregnancy *(late)*	0.17	0.05	0.03	0.64	0.19	0.00	-0.16	-0.05	0.02	-	-	-	-	-	-
Parity *(multiparous)*	-	-	-	-	-	-	-0.39	-0.13	0.00	-0.28	-0.09	0.00	-0.29	-0.09	0.00
Age	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.06	0.03
Level of education															
Low	-0.65	-0.09	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Medium	-0.31	-0.11	0.00	-	-	-	-	-	-	-	-	-	-	-	-
PHQ	-	-	-	0.08	0.08	0.02	-	-	-	-	-	-	-	-	-
Support															
Social support	-	-	-	-	-	-	-	-	-	0.05	0.07	0.00	0.04	0.06	0.03
Informational support	0.05	0.09	0.00	-	-	-	0.09	0.16	0.00	-	-	-	-	-	-
Birth Belief Scale															
Natural	0.03	0.07	0.02	0.113	0.20	0,000	-	-	-	-	-	-	-	-	-
Medical	0.04	0.09	0.00	-	-	-	0.03	0.08	0.00	-	-	-	0.03	0.08	0.00
Adjusted R^2	3.0%		0.00	9.2%		0.00	5.3%		0.00	1.7%		0.00	1.7%		0.00

After stepwise backwards regression, factors with - were not statistically significant predictors in the final model and therefore removed.

DISCUSSION

Our study investigated the information sources used by women during pregnancy including their perceptions of the quality of that information, as measured by its reported trustworthiness and usefulness.

We found that midwives were the most frequently used source of information, followed, in order, by informal sources such as websites, pregnancy and childbirth apps, family and friends, forums, blogs and peers. Social media (e.g., Twitter and Facebook) were less often used to gain information. The number of women using obstetricians as information source is much lower in our study. We need to keep in mind that, in our sample, 95% of the women in early pregnancy and 82% of the women in late pregnancy received care from a midwife, while only 10% and 18% respectively received care from an obstetrician. These percentages reflect the care given to the whole pregnant population in the Netherlands.

Our findings are consistent with the results of a systematic literature review of 31 studies from 14 countries that found the most common information sources used by pregnant women to be health professionals, family, friends, and the internet.[31] Despite growing interest in digital sources among pregnant women in the Netherlands, the midwife as professional source was the most widely used source of information for pregnant women.[32]

Despite the high use of digital sources, such as websites and apps, women in our study rated these media as the least trustworthy sources of information. Professional sources were regarded as more trustworthy and seen as offering more useful information. Previous researchers have already suggested that it is unlikely that digital sources will replace the importance of the "human touch" of healthcare professionals.[33] As Camacho[32] points out, healthcare providers provide reassurance when pregnant women are confronted with contradictions in other information sources.

Other studies found that digital sources have a more complementary function, used by women as an extra source of information outside the healthcare system.[34,35] Easy accessibility and unlimited availability of digital information makes it a convenient source of additional information.[15,24,36,37] A study in the Netherlands reported that the minority of women who did not use the internet as an information source during pregnancy did not feel the need to do so as long as they received enough information from other sources.[24] There is some concern that women who use the internet as an information source for decisions concerning pregnancy and childbirth[24,38,39] rarely discuss that information with their maternity care providers.[40,41] Since our study pointed out a high use of digital sources, midwives should ask women what information sources they are using for their decision-

making and be prepared to recommend websites that are trustworthy and useful. By initiating conversations about the reliability of information sources, care providers can prevent inaccurate decisions based on misinformation, while, at the same time, strengthening the process of shared decision-making.

Social media may be regarded as less trustworthy because they are designed for social networking and support.[19] Social media create communication platforms where women may connect with other pregnant women to share experiences and acquire emotional or informational support.[37,42] Still, over time these media may become more influential as women appreciate information from interpersonal sources, especially from people like themselves.[43]

Compared to women with middle and high levels of education, women with a low level of education use written information sources like leaflets and websites less often. Higher levels of health literacy are often essential to obtain, understand, assess, and use health-related information and to make health-related decisions.[44] People with lower levels of health literacy are more likely to prefer text-limited sources to receive health information.[45] Using visual images next to plain language can lead to a better understanding of health information during pregnancy.[7] Even if there is equal access to leaflets and websites, the use of complicated language will limit its value to women with limited health literacy.

Another important finding of our study is that leaflets provided by maternity care professionals are used less often than peers, apps, and websites. An earlier Dutch study reported that women are given too many leaflets and they do not address the information needs of women in a "just-in-time" manner.[9] This may explain what we learned about the limited use of leaflets, regardless the educational level of the women.

We found that nulliparous women used a larger variety of information sources during their pregnancy than multiparous women. Most likely nulliparous women have higher information needs, because of the novelty of this life changing period. Our results are in line with the results of a previous study of Kamali[6] who reported that being a nulliparous women had a significant effect on the use of information sources, while multiparous women relied more on their prior knowledge and experience.

Personal factors explain only a small part of the variation in perceived quality of information sources, especially digital information sources. Personal factors account for only 1.7% of the variation in both the perceived quality of websites and the perceived quality of apps. We know from other studies that people judge the usefulness and trustworthiness of health information sources based on several features of that information including: 1)

the authority or professional source of information; 2) regency of the information; 3) use of plain language; 4) details of information; 5) customised or personalised information; 6) reassurance; 7) lack of bias; 8) inclusion of further contacts and sources for help 9) attractive and colourful design, and 10) user-friendliness, e.g. easy and immediately accessible.[20,21,37] However, such in-depth investigation about the features of the information sources was beyond the scope of this study. Further research on the drivers of perceived quality of information sources should use multiple items to measure characteristics of the information and of the users.

Study strengths and limitations

Our study has both strengths and limitations. To our knowledge, this is the first study that explores both the usefulness and trustworthiness of information sources used by Dutch pregnant women, including professional sources and informal sources like digital sources and conventional sources. Furthermore, our results are based on a large sample of 1922 women spread throughout the Netherlands. Our study is limited by the fact that we had little direct control over the inclusion process. We do not know the exact number of women who were eligible for this study, and we do not have information about the non-responders of the survey or women who refused to participate. Because part of our participants were invited through social media (like Facebook and Twitter), it may be that our study population uses digital media more frequently than the general population of Dutch pregnant women. However, a vast majority of our participants (90.4%) were recruited by healthcare providers and not via the internet. Like many survey studies, our participants are not completely comparable with the general Dutch population of pregnant women. The level of education of participants was slightly higher and we had more multiparous than nulliparous women in our study. Furthermore, the questionnaires were only available in the Dutch language, resulting in under-representation of ethnic minorities. Finally, it was beyond the focus of our study to explore men's experiences, even though we know that the opportunity to receive information addressing the needs and perspectives of fathers supports the transition to fatherhood. [46,47]

CONCLUSION

Professional sources of information, are perceived as highly trustful and useful. Interestingly, digital sources are one of the most commonly used information sources by pregnant women, even though they are perceived as less useful and trustworthy than professional sources. Midwives, as the most common main providers of maternity care in the Netherlands, are highly valued as an important personal source of information. We also found that the perceived quality of different sources of information did not vary across different

characteristics of our participants, suggesting that many additional factors play a role in the assessment of the quality of information. Our research points to the need to put more emphasis on developing professional information about pregnancy and childbirth in digital sources like websites and apps, as it seems that leaflets do not match the information needs of the contemporary generation of pregnant women. In their contacts with pregnant women, maternity care providers should explore and discuss the obtained information about pregnancy and childbirth and guide women to trustworthy and useful digital information sources. Through these discussions maternity care providers can prevent inaccurate decisions based on misinformation, while strengthening the process of shared decision-making.

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5

Women's decision-making autonomy in Dutch maternity care

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ABSTRACT

Background: A positive childbirth experience is an important outcome of maternity care. A significant component of a positive birth experience is the ability to exercise autonomy in decision-making. In this study, we explore women's reports of their autonomy in conversations about their care with maternity care providers during pregnancy and childbirth.

Method: Data were obtained from a cross-sectional survey of women living in the Netherlands that asked about their experiences during pregnancy and childbirth, including their role in conversations concerning decisions about their care.

Results: A total of 3494 women were included in this study. Most women scored high on autonomy in decision-making conversations. During the latter stage of pregnancy (32 weeks +) and in childbirth women reported significantly lower levels of autonomy in their care conversations with obstetricians compared to midwives. Linear regression analyses showed that personal treatment increased women's reported autonomy in their conversations with both midwives and obstetricians. Furthermore, 49.1% of the women who had at least one intervention during birth reported pressure to accept or submit to that intervention. This was indicated by 48.3% of women with induced labor, 47.3% who had an instrumental vaginal birth, 45.2% whose labor was for augmented, and 41.9% of women who had a caesarean birth.

Conclusion: In general, women's sense of autonomy in decision-making conversations is high, but there is room for improvement, seemingly most notably in conversations with obstetricians. Women's sense of autonomy can be enhanced with personal treatment, including shared decision-making and the avoidance of pressuring women to accept interventions.

INTRODUCTION

A woman's autonomy in decision-making about her own health and the health of her (unborn) baby is considered an essential part of quality in maternity care. The WHO recommendations for respectful maternity care underline the importance of a woman's autonomy in making decisions and choices about procedures in the perinatal period, including when complications occur or when medical interventions are necessary.[1,2]

Many women want autonomy in decision-making during this important period of their life, taking responsibility for their own health and well-being as well as that of their baby.[3-5] Women who are actively involved in the decision-making process, experience a higher sense of control, and are more positive about their childbirth experience, regardless of the outcome.[3,6,7] Lack of involvement in the decision-making process may contribute to a negative or even traumatic experience.[8-10] However, not all women want to participate in decision-making to the same degree.[11-13] Some women find participation in decision-making a heavy burden as it implies responsibility for the choices and outcomes.[13,14] Women's appreciation of involvement in decision-making depends, in part, on the trust a woman has in her care provider.[15,16]

Shared decision-making is an approach towards decision making, a collaborative process where a clinician works together with a patient to reach a decision about care.[17] Decision-making autonomy refers to a woman being able to make her own decisions free from coercion.[18,19] Women's perceived autonomy is significantly influenced by the nature of interactions with care providers,[20] and relationship building is important to create an autonomy supportive climate during consultations.[21] Elements of personal treatment such as open and respectful communication,[20] a trusting relationship,[15,16,21] shared decision-making[22] and personalized information[21] affect women's perceived autonomy during pregnancy and childbirth.

Maternal characteristics seem to influence the extent of perceived autonomy. Parity is associated with perceived autonomy by pregnant women,[22] more ambiguous are the influences of race or ethnicity on women's perceived autonomy.[20,22,23] Maternity care related factors associated with perceived autonomy are mode and place of birth and onset of labor (e.g. spontaneous or induced labor, and planned cesarean). Previous studies found no association between prenatal risk factors and perceived autonomy,[20,24] suggesting that personal treatment is more important than prenatal risk on women's autonomy.[20]

Even though women's autonomy is recommended as a norm in maternity care[25,26] it remains difficult to achieve. Several studies report that women frequently experience a lack

of control and limited choice or influence in the decision-making process during pregnancy and childbirth.[27,28] In the Netherlands, a consumer organization, stated that women regularly perceive pressure to accept certain interventions prior to or during childbirth.[29]

The organization of maternity care in the Netherlands is quite unique in the (Western) world and offers women several options for care, for example where to give birth.[30] However, we know very little about women's autonomy in their decision-making conversations with Dutch maternity care providers, including the factors that contribute to women's positive experience of the decision-making process. In this study we explore: (1) how women in the Netherlands perceive their decision-making autonomy in conversations about choices in pregnancy and childbirth with their midwife and/or obstetrician, (2) the factors associated with women's perceived autonomy in conversations about care in pregnancy and childbirth, and (3) if women felt pressured to agree to the use of interventions.

METHODS

We conducted a cross-sectional survey study of women's experiences during pregnancy, childbirth, and the postpartum period ('StEM' – **St**em en **E**rvaringen van **M**oeders, [Voice and Experiences of Mothers]) in the Netherlands. The survey asked about the preferences and experiences of women who gave birth in the Netherlands between February 2019 and February 2020.

Setting and participants

There are three levels of maternity care in the Netherlands: primary, secondary, and tertiary care. Primary care is offered to healthy women with uncomplicated pregnancies through registered community midwives. When pathology is suspected or complications occur, women are referred to obstetrician-led care which is offered in secondary and tertiary hospitals. In obstetrician-led care, a woman receives care from a hospital-based midwife or obstetric resident, with an obstetrician having the final responsibility for care.[31]

Women were invited to participate in the StEM-study through 83 midwifery practices and 9 hospitals across the Netherlands – a ratio that reflects the distribution of practices and hospitals in the Netherlands – and via social media. Women were invited for one of three cohorts. (1) If they were between 12 and 20 weeks pregnant *(early pregnancy cohort)*, (2) if they were more than 32 weeks pregnant *(late pregnancy cohort)*, and (3) between 2-12 months postpartum *(childbirth cohort)*. Only women who were 18 years or older and had a good command of the Dutch language were included. We excluded women who experienced a perinatal death or severe neonatal morbidity. Women were able to complete the

survey either online, by post, or via a telephone interview. If necessary, two reminders were sent: the first after one week, the second after three weeks.

Surveys were distributed to 5118 women (2630 in one of the two periods of pregnancy and 2488 during the postpartum period). Prior to initiating the survey all respondents signed a written or electronic informed consent form, depending on how they completed the survey. The Human Research Ethics Committee of METC Z, Heerlen (registry number: METC-Z 20180121) approved the study after review of the research proposal, the information letter for participants, the informed consent form and the surveys.

Instruments

We designed a self-administered questionnaire for each of the three cohorts. The questionnaires included questions about women's (background) characteristics, validated instruments, and, for the childbirth cohort, questions about the outcomes of birth.

The main outcome of interest for this study is women's perceived autonomy in conversations with their midwife and/or obstetrician, as measured with the validated Dutch version of *Mothers Autonomy in Decision-Making (MADM)* scale.[24] The *MADM* scale measures women's perceived autonomy in decision-making as a single construct.[32] This scale consist of seven statements and answers were scored on a six-point Likert scale from (1) completely disagree to (6) completely agree. *MADM* scores are the sum of the seven items (range 7 - 42). Higher scores indicate higher levels of perceived autonomy. Women scored the *MADM* scale separately for conversations with midwives and obstetricians. For women in the two pregnancy cohorts, the *MADM* scale focused on decisions during pregnancy; for women in the childbirth cohort, the scale focused on decisions related to birth.

We also examined whether women felt pressure to choose for a specific place of birth or to agree to the use of certain interventions. We asked women, "did you feel pressure from any health professional to accept [*intervention*]? Women scored their perceived level of pressure for each intervention on a six-point Likert scale ranging from (1) completely disagree to (6) completely agree. Women could tick 'does not apply' if the intervention did not come up in the conversation or during care.

As predictors of perceived autonomy we included personal treatment and educational information measured with the PCQ. The Pregnancy Childbirth Questionnaire *(PCQ)* measures the quality of maternity care in general and consists of two scales, a *pregnancy* scale that measures two dimensions: *personal treatment* (11 items) and *educational information* (7 items) and a *childbirth* scale that measures the dimension of *personal treatment* only (7 items).[33] Answers range from (1) totally disagree to (5) totally agree, with higher

scores indicating higher quality of care. PCQ scores are summing scores separate for the two dimensions of the pregnancy scale, and the childbirth scale. We also collected data of women's background characteristics, the outcome of birth (e.g. *place and mode of birth, referral during childbirth, pharmacologic pain relief, induction, and augmentation of labor*).

Statistical analyses

Results for categorical variables are presented as frequencies and percentages and results for continuous variables are reported as means and standard deviations. Linear regression was used to explore factors associated with perceived autonomy in conversations with maternity care providers. Due to the way Dutch maternity care is organized, women mostly have separate conversations with their midwife and obstetrician about their choices and decisions. Therefore, we stratified two regression analyses by provider type to prevent women being listed as two different respondents to the study.

In our linear regression analyses, categorical variables were recoded into dummy variables and missing values were designated "system missing" and excluded from analysis. We report standardised coefficients in the results to facilitate comparison and the interpretation of effect size for variables expressed in different measurement units.

As a result of an error in the questionnaire design, women in both pregnancy cohorts were given the possibility to answer 'not applicable' on three items of the PCQ pregnancy subscale personal treatment, resulting in missing data for 444 respondents. Therefore, we performed sensitivity analyses. We did complete-case linear regression analyses, excluding all participants who answered "not applicable" on the three items, followed by analyses with item mean imputation, in which the missing values were replaced by the mean of the available cases.

P-values <0.05 were considered statistically significant. The data were analysed using SPSS Statistics.

RESULTS

In total, 3821 women returned the survey (2091 during pregnancy and 1730 postpartum), resulting in a total response rate of 74.7%. We excluded 327 incomplete surveys from the final analysis. In total 3494 women were included in the analyses, 1922 (75.7%) during pregnancy and 1572 (63.2%) during childbirth. Figure 1 shows the flow chart of the response rate of the surveys.

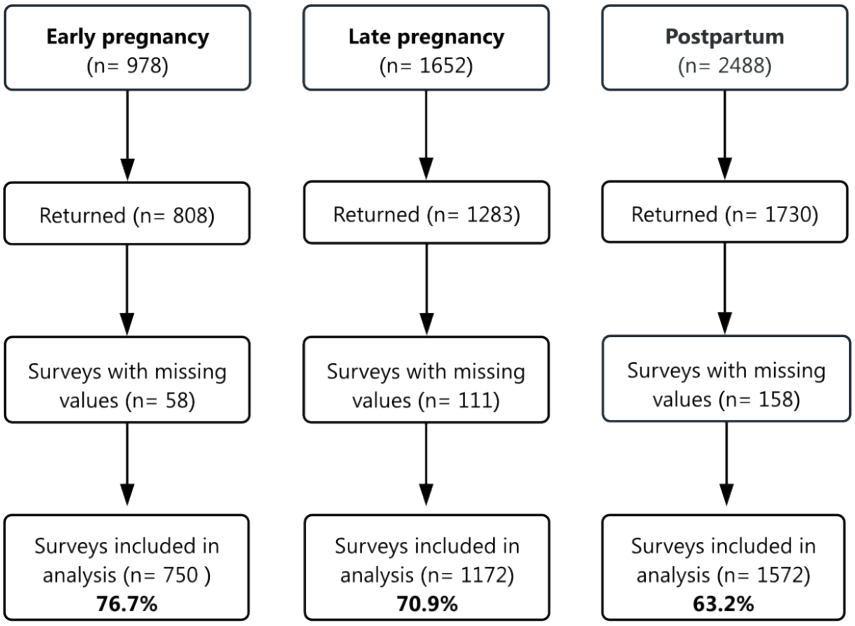

Figure 1. Response rate of the surveys

Table 1 shows the characteristics of our study population. The last column uses data from the Dutch perinatal registry to offer a comparison of our sample with the characteristics of the population of birthing women in the Netherlands.[34] Compared to all pregnant women in the Netherlands, our sample has slightly more women with a high level of education, more women who gave birth at home, and more women who had spontaneous vaginal childbirth. The distribution of women who received midwife-led and obstetrician-led care during pregnancy was comparable to the pregnant population in the Netherlands.

Table 1. Characteristics of study population

Characteristics	All women during pregnancy (n=1992)		All women during the pp period (n=1574)		Dutch population
	n	(%)	n	(%)	%
Parity[1]					
Nulliparous	699	(36.4)	751	(47.7)	43.0
Multiparous	1223	(63.6)	823	(52.3)	57.0
Age[1]					
< 20 years	7	(0.4)	5	(0.3)	0.8
20-24 years	168	(8.7)	71	(4.5)	7.9
25-29 years	647	(33.7)	490	(31.1)	29.8
30-34 years	767	(39.9)	675	(42.9)	39.7
35-39 years	300	(15.6)	295	(18.7)	18.5
40-44 years	33	(1.7)	38	(2.4)	3.2
Level of education[2]					
Low	104	(5.4)	40	(2.5)	9.9
Middle	724	(37.7)	526	(33.4)	35.2
High	1093	(56.9)	1007	(64.0)	53.7
Missing	1		1		
Marital status					
Married / living together	1861	(96.8)	1531	(97.3)	N/A
Living apart together	11	(0.6)	7	(0.4)	N/A
Single	32	(1.7)	30	(1.9)	N/A
Unknown	18	(0.9)	6	(0.4)	N/A
Ethnicity					
Dutch	1705	(88.7)	1404	(89.2)	N/A
Non-Dutch	216	(11.2)	169	(10.7)	N/A
Unknown	1	(0.1)	1	(0.1)	N/A
Main care provider[1]					
Community Midwife	1638	(85.2)			87.0 at start of antenatal care
Obstetrician	153	(8.0)			12.5 at start of antenatal care
Mixed care	131	(6.8)			
Place of birth[1]					
Homebirth			444	(28.2)	12.9
Midwife-led hospital			333	(21.2)	15.0
Hospital			797	(50.6)	71.0
Referral during child-birth[1]			497	(31.6)	55.6

Table 1. (continued) Characteristics of study population

Characteristics	All women during pregnancy (n=1992)		All women during the pp period (n=1574)		Dutch population
	n	(%)	n	(%)	%
Birth mode[1]					
Spontaneous			1271	(80.7)	73.7
Assisted vaginal			131	(8.3)	6.9
Caesarean			172	(10.9)	14.9
Medical interventions[1]					
Induction of labor			373	(23.7)	21.6
Augmentation of labor			341	(21.7)	N/A
Pharmacologic pain - relief			469	(29.8)	42.8
PCQ					
Personal treatment	Mean 46.6 SD 5.4		Mean 29.2 SD 4.6		N/A
Educational information	Mean 21.5 SD 2.9		N/A		N/A

[1] *Reference general Dutch maternity care population in the Netherlands: perinatale zorg in Neder-Land anno 2019, landelijke perinatale cijfers en duiding*[34]

[2] *Reference general Dutch population CBS statline women's level of education between 25-45 years Years*[35]

N/A = not available

Perceived autonomy in conversations with maternity care providers

We asked if women had discussed care-related choices and decisions (e.g. screening, treatment options) with a maternity care provider (midwife or obstetrician), to guide them to the correct MADM scale. In total 13.2% (n=99) of the women in early pregnancy reported that they did not, during late pregnancy that number was 10.2% (n=120), and during childbirth it was 10.7% (n= 169).

Overall, women reported higher levels of autonomy in conversations with midwives than with obstetricians. This difference is especially evident in late pregnancy and during birth (Table 2).

Table 2. Women's autonomy in decision-making conversations about choices concerning pregnancy and birth with midwives and obstetricians (MADM)

	EARLY PREGNANCY		**LATE PREGNANCY**		**CHILDBIRTH**	
	Midwife (627)	**Obstetrician (76)**	**Midwife (1024)**	**Obstetrician (175)**	**Midwife (1272)**	**Obstetrician (509)**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Very low (7-15)	0 (0)	3 (3.9)	4 (0.4)	5 (2.9)	7 (0.6)	18 (3.5)
Low (16-24**)**	8 (1.3)	3 (3.9)	13 (1.3)	10 (5.7)	24 (1.9)	46 (9.0)
Moderate (25-33)	148 (23.6)	16 (21.1)	250 (24.4)	58 (33.1)	234 (18.4)	181 (35.6)
High (34-42)	471 (75.1)	54 (71.1)	757 (73.9)	102 (58.3)	1007 (79.2)	264 (51.9)
Mean (*SD*)	36.2 *(4.66)*	34.7 *(7.61)*	36.0 (*4.80*)	33.5 *(6.56)*	36.8 *(5.27)*	32.8 *(7.29)*
Median	36	36	36	34	37	34

We also asked women in the childbirth cohort if they felt pressure to choose for a specific place of birth or to agree to the use of interventions. With regard to place of birth and attendant, a very small number of women who had midwife-led birth experienced pressure to make that choice (6.3% of those with a midwife-led home birth and 1.3% of those with a midwife-led hospital birth) while a higher number of women who had an obstetrician-led birth reported pressure to choose that option (19.4%).

In total, 947 women in the childbirth cohort had at least one intervention during childbirth, and in that group, 465 women (49.1%) reported pressure to accept or submit to an intervention. Among the women referred to secondary care during birth, 23.5% felt pressured to agree to the referral. For women whose labor was induced or augmented, more than 45% felt pressured to accept this intervention. 41.9% of the women who had a caesarean reported pressure to accept the procedure. Nearly half of the women (47.3%) who had instrumental vaginal childbirth felt pressure to agree to that intervention (Table 3).

Table 3. Experience of pressure among the group that had the intervention during birth

	Completely disagree	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	Completely agree	Don't talk about it	Experience of pressure among the group that had the intervention[1]
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	%
Place of birth								
Midwife-led home birth (n=444)	283 (63.7)	44 (9.9)	9 (2.0)	19 (4.3)	5 (1.1)	4 (0.9)	80 (18.0)	6.3
Midwife-led hospital birth (n=333)	28 (65.1)	1 (2.3)	1 (2.3)	1 (2.3)	1 (2.3)	2 (4.7)	9 (20.9)	1.2
Obstetrician-led hospital birth (n=797)	345 (43.7)	65 (8.2)	36 (4.6)	43 (5.4)	41 (5.2)	69 (8.7)	190 (24.1)	19.4
Intervention								
Referral during birth (n=497)	195 (39.2)	41 (8.2)	15 (3.0)	51 (10.3)	28 (5.6)	38 (7.6)	129 (26.0)	23.5
Induction of labor (n=373)	98 (26.3)	43 (11.5)	19 (5.1)	68 (18.2)	61 (16.4)	51 (13.7)	33 (8.8)	48.3
Pharmacologic pain relief (n=341)	211 (45.0)	59 (12.6)	30 (6.4)	54 (11.5)	22 (4.7)	18 (3.8)	75 (16.0)	20.0
Augmentation of labor (n=341)	98 (28.7)	35 (10.3)	19 (5.6)	6 (19.6)	47 (13.8)	40 (11.7)	35 (10.3)	45.0
Instrumental vaginal (n=131)	35 (26.7)	13 (9.9)	10 (7.6)	19 (14.5)	21 (16.0)	22 (16.8)	11 (8.4)	47.3
Caesarean (n=172)	46 (26.7)	24 (14.0)	7 (4.1)	22 (12.8)	25 (14.5)	25 (14.5)	23 (13.4)	41.9

[1] *Percentage of the combined score of somewhat agree, strongly agree, and completely agree.*

Factors associated with perceived autonomy in conversations about pregnancy and childbirth

We used linear regression analyses to examine the association between perceived autonomy (as dependent variable), PCQ, and characteristics of our respondents, looking at care conversations with midwives and obstetricians separately. The regression coefficients give the effect sizes on the total range of the dependent variables. The ranges are given in the notes of the respective tables.

Table 4 present the results of the regression analyses. There is a significant positive of personal treatment and educational information on women's perceived autonomy in conversations with midwives about pregnancy-related decisions (cohorts 1 and 2). After mean imputation for the missing items in the PCQ, personal treatment, educational information, late phase of pregnancy and being a multiparous woman were significantly correlated with autonomy in conversations with midwives. Looking at conversations with obstetricians regarding pregnancy-related decisions, we found that only personal treatment had a positive effect on perceived autonomy, both before and after mean imputation of missing items of the PCQ.

Table 5 reports on the regression analyses, looking at care conversations about childbirth. Looking at conversations with *midwives* regarding birth-related decisions, we found that personal treatment and a home birth had a positive effect on perceived autonomy. With regard to conversations with *obstetricians*, being a multiparous woman, having pharmacologic pain relief during birth, and personal treatment had a positive effect on women's perceived autonomy. A high level of education (compared to combined middle and low level of education) negatively affected perceived autonomy in conversations with obstetricians.

Table 4. Factors associated with women's perceived autonomy in decision making about pregnancy

	Complete case analysis						after mean imputation items of the PCQ					
	Midwife			Obstetrician			Midwife			Obstetrician		
Predictors	Unstandardized β	Standardized Coefficients β	*p*-Value	Unstandardized β	Standardized Coefficients β	*p*-Value	Unstandardized β	Standardized Coefficients β	*p*-Value	Unstandardized β	Standardized Coefficients β	*p*-value
Phase of pregnancy *(late vs. early)*	-.327	-.032	0.19	-1.445	-.096	0.13	-.422	-.043	**0.04**	-1.543	-.103	0.08
Parity *(multiparous vs. primiparous women)*	-.332	-.033	0.17	-.143	-.010	0.88	-.435	-.045	**0.03**	-.069	-.005	0.93
Level of education *(high vs. middle and low combined)*	.197	.020	0.41	.686	.049	0.44	.270	.028	0.171	.831	.060	0.32
Ethnicity	-.619	-.039	0.11	2,016	.104	0.10	-.391	-020	0.204	1.817	.093	0.12
PCQ												
Personal treatment	.408	.447	**0.00**	.366	.310	**0.00**	.429	.460	**0.00**	.396	.329	**0.00**
Educational information	.314	.182	**0.00**	.136	.060	0.39	.298	.182	**0.00**	.069	.031	0.64
Adjusted R^2	29.2%		0.00	11.6%		0.00	30.8%		0.00	11.9%		0.00

PCQ personal treatment: Min score 21 – Max. score 55, range 34
PCQ educational information: Min. score 7 – Max. score 35, range 28
MADM scale: Min score 7 – Max. score 42, range 35

Table 5. Factors associated with women's perceived autonomy in decision making about birth

	Midwife (n=1272)			Obstetrician (n=509)		
Predictors	Unstandardized coefficients	Standardized coefficients	*p*-Value	Unstandardized coefficients	Standardized coefficients	*p*-Value
Parity *(multiparous vs. primiparous women)*	-.204	-.019	0.50	1.313	.090	**0.04**
Level of education *(high vs. middle and low combined)*	-.477	-.043	0.10	-1.230	-.082	**0.05**
Ethnicity *(Dutch vs. non-Dutch)*	.333	.020	0.45	-.407	-.018	0.66
PCQ (Personal treatment)	.427	.326	**0.00**	.562	.373	**0.00**
Place of birth *(ref. obstetrician-led hospital)*				-	-	-
Homebirth	1.180	.102	**0.02**	-	-	-
Midwife-led hospital	.021	.002	0.96	-	-	-
Referral during childbirth *(yes vs. no)*	-.035	-.003	0.91	-.300	-.018	0.67
Birth mode (ref. spontaneous)						
Assisted vaginal	-.325	-.018	0.54	-1.952	-.077	0.08
Cesarean	-.192	-.010	0.72	.967	.058	0.20
Medical interventions						
Augmentation of labor	-.589	-.054	0.15	-.026	-.002	0.96
Pharmacologic pain relief	-.448	-.039	0.24	1.756	.121	**0.01**
Adjusted R^2	14.6%		0.00	15.2%		0.00

- Are not included as predictor variable
MADM scale scores midwife: Min. score 7 - Max. sore 42, range 35
MADM scale scores obstetrician: Min. score 7 - Max. sore 42, range 35
PCQ personal treatment scores: Min. score 7 – Max. score 35, range 28

DISCUSSION

Our study investigated women's perceived autonomy in conversations about their care with midwives and obstetricians and explored the factors associated with their reports.

In general, women reported high levels of autonomy in conversations with their maternity care providers. These results are in line with previous studies that also found high scores for decision-making autonomy during pregnancy or childbirth.[20,24,36] However, our results suggest that women's autonomy was lower during conversations with an obstetrician in late pregnancy and during birth compared to conversations with midwives. These results are consistent with a previous Dutch study that showed that women experienced lower levels of autonomy in decision-making conversations when receiving care from an obstetrician.[24] There are several possible explanations for this finding. It could be that hospital policies restrict options for women (e.g., for clinical reasons) or that obstetricians are more likely to provide care during urgent situations. It is well known that an approach of shared decision-making as an important contributor to perceived autonomy, is not easy in urgent circumstances.[14] Some have suggested that obstetricians have a more paternalistic approach,[7,37] while others have found that women experience less continuity of care in obstetrician-led versus midwife-led care,[38] both of which would reduce a woman's sense of autonomy. It is worth noting that our models suggested that educational information significantly contributes to the perceived autonomy in conversations with midwives during pregnancy, while this contribution was not found for conversation with obstetricians. This finding mirrors the results of a study in the United States showing that women in midwife-led care experienced ongoing conversations about birth options during pregnancy, whereas women in physician-led care reported that physicians were not forthcoming with information on birth choices.[39]

Our results suggest that personal treatment as measured with the PCQ was the most consistent predictor of reported autonomy across all three cohorts in our study. The importance of a good relationship with maternity-care providers is highlighted in many studies,[6,27,40-42] and open and respectful communication between a woman and her care provider is an essential ingredient for autonomy in decision-making.[14,20] Several studies have found that factors such as good communication and a relationship with care providers strengthened perceived autonomy in decision-making. Some of those studies suggest that these factors are more strongly related to the childbirth experience than personal characteristics, obstetric interventions, and type of birth.[8,27,43] Perhaps personal treatment by care providers overrides the effect of obstetric procedures and mode of birth on women's experienced autonomy. In all our models, personal treatment was a predictor of autonomy

and we found no association between autonomy and obstetric interventions, with the exception of pharmacologic pain relief in care conversations with obstetricians. However, the relationship between pharmacologic pain relief and autonomy in care conversations with obstetricians is not remarkable, as pharmacologic pain relief during childbirth in The Netherlands is only available in obstetrician-led care at the request of the women.

Our results contradict Attanasio's study which investigated women's perceptions of involvement and satisfaction with the decision-making process about childbirth related decisions.[36] This study found an association between obstetric factors and women's characteristics on women's autonomy in decision-making.[36] Obstetric interventions such as induction of labor, instrumental vaginal birth, and caesarean section were associated with lower levels of autonomy in decision-making during childbirth, particularly for women in socially disadvantaged groups. Women with a bachelor's degree or higher, experienced higher levels of autonomy in decision-making than women with a high school degree or lower.[36] However, a direct comparison may not be accurate because of a significant difference in characteristics of the two study populations and measurement methods. It is important to be aware that low health literacy, more common among women with a low level of education or in socially disadvantaged groups, could be an obstacle to shared decision-making.[44] Therefore, it is essential that care providers give accurate and understandable information to a woman in a decision-making process that is tailored to her individual needs, circumstances, and capacities.[14]

Women want to participate in the decision-making process during childbirth, free from pressure, even if there is limited time or an urgent situation.[8,40] In the Netherlands, an accepted quality criterion of maternity care is that a "care provider makes sure that his or her preference is not forced upon the women".[14] However, almost half of the women in our study who had an induction of labor, assisted vaginal childbirth, or a cesarean, felt some pressure to accept this intervention.

These numbers are somewhat higher than those reported in studies from the US and Canada.[20,45] Informal coercion such as manipulating the given information or creating fear of women's health or the health of her (unborn) child might be used by some care providers to urge women to accept medical interventions around childbirth.[46] A previous Swiss study explored women's experience of informal coercion during childbirth and reported that instrumental vaginal birth, cesarean section, and referral during childbirth were all associated with an increased risk of informal coercion.[46] Trusting and respectful relationships with maternity care providers, taking time to briefly explain what is happening, talking with women about their childbirth experiences, and explaining the decisions again after birth

enhance a woman's feeling of involvement, particular after unexpected or urgent situations.[47-49]

Strength and limitations

Our study is the first to take an in-depth look at perceived autonomy in decision-making among pregnant and birthing women in the Netherlands – where the organization of maternity care offers women several options for care. Furthermore, we were able to collect information from a large sample of women throughout the Netherlands who received midwife-led and/or obstetrician-led care.

Our study does have limitations. We had little direct control over the inclusion process, resulting in a sample that was not for all characteristics representative of the population of pregnant women in the Netherlands. Like many survey studies, women with a low level of education, and women with a non-Dutch background were underrepresented in our study population. We found in our results a significant effect of women's level of education on women's perceived autonomy in conversations with obstetricians about birth. It is unclear whether this overrepresentation of higher educated women and underrepresentation of lower educated women may have contributed to more pronounced differences in perceived autonomy.

Our study population also consists of more women who experienced a physiological childbirth as compared to the larger Dutch population (e.g., more homebirths, less pharmacologic pain relief, and fewer cesarean sections). In our results, we found significant positive effects of homebirth on women's reported autonomy in care conversations with midwives. There was a similar positive association between autonomy in care conversations with obstetricians and the use of pharmacologic pain-relief. It is unclear if this overrepresentation of homebirths and underrepresentation of pharmacologic pain-relief may have contributed to more pronounced differences between autonomy in conversations about care during birth between midwives and obstetricians.

Our results suggest that nearly half of the women who had at least one intervention during birth reported pressure to accept or submit to an intervention, while at the same time, we found that almost 85% of all women scored moderate to high on autonomy in conversations about childbirth-related decisions. This result may be the result of the fact that the MADM scale we used explores women's autonomy in decision-making conversations, but it does not sufficiently consider pressure, such as informal coercion, applied by care providers in those conversations. Further research could focus on women's autonomy in con-

versations about pregnancy and childbirth-related decisions together with aspects of informal pressure to better understand and comprehend these decision-making conversations.

CONCLUSION

Our results confirm that women's perceived autonomy in care conversations with midwives and obstetricians is mostly high, but also points to areas that may need improvement. A substantial group of women reported a lower level of autonomy in care conversations with obstetricians during late pregnancy and childbirth, and felt pressure to accept medical interventions during birth. We also found that personal treatment increases women's perceived autonomy, pointing the way for maternity care providers to improve their practice and enhance the experience of childbirth for those in their care.

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6

Women's birth beliefs during pregnancy and postpartum in the Netherlands

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ABSTRACT

Background: Women and care providers increasingly regard childbirth as a medical process, resulting in high use of obstetric interventions, which could negatively affect a woman's childbirth experience. Women's birth beliefs may be key to understanding the decisions they make, and the acceptance of medical interventions about childbirth.

Aim: In this study we explore women's beliefs about birth as a natural and medical process and the factors that are associated with their birth beliefs.

Method: Data were obtained from a cross-sectional survey of women living in the Netherlands asking them about their experiences during pregnancy and childbirth, including their beliefs about birth as a natural and medical process.

Findings: A total of 3494 women were included in this study. Mean scores of natural birth beliefs ranged between 3.73 to 4.01 points and medical birth beliefs scores ranged between 2.92 to 3.12 points. There were significant but very small changes between prenatal and postnatal birth beliefs. Regression analyses showed that (previous) childbirth experiences were the most consistent predictor of women's birth beliefs.

Conclusion: Women's high scores on natural birth beliefs and lower scores on medical birth beliefs correspond with the philosophy of Dutch perinatal care that considers pregnancy and childbirth to be natural processes. Maternity care providers must be aware of women's birth beliefs and recognize that they as professionals influence women's birth beliefs. They have an important contribution to women's perinatal experiences, which affects both women's natural and medical birth beliefs.

INTRODUCTION

Understanding a woman's beliefs about birth – does she consider birth to be a natural or a medical event? – can help us better understand her decisions during pregnancy and childbirth.[1] Birth beliefs, including perceptions of risk, play a crucial role in decisions made during pregnancy and childbirth.[1-5] When considered in aggregate, the birth beliefs of individual women – and the choices they make – influence the shape and content of maternity care. When women and their care providers come to see childbirth as fraught with risk, there is an increased willingness to accept medical interventions in childbirth,[6,7] resulting in the medicalisation of pregnancy and childbirth.[8] Given the important link between birth beliefs and the shape of maternity care, it is critical that we examine the sources of those beliefs, a topic that remains underexplored.

Birth beliefs can be described as the view a person has on the physical nature of childbirth. These beliefs compromise two separate dimensions; seeing birth as a natural process and regarding birth as a medical event.[4,9,10] Although they are moderately (negatively) correlated with each other, they are independent concepts and not mutually exclusive. Most women do not have strictly "medical" or "natural" birth beliefs.[11,12] Women with more medical birth beliefs often see childbirth as a risky and dangerous process that is best managed with medical expertise and modern technology. For them, labour pain is a needless inconvenience.[3,13] Because they see interventions as a way to minimize risk, they are more willing to accept interventions[6,14,15] and consequently more likely to undergo interventions, such as pharmacologic pain relief, assisted vaginal childbirth, and caesarean section.[1,6] Women with more natural birth beliefs see childbirth as a physiological, safe process.[10,13] They have faith that their bodies know how to give birth and perceive pain as an inherent part of the birth process.[10,16-18] Women with stronger natural birth beliefs have a greater desire to avoid medical interventions. They fear a cascade of interventions that could result in poorer outcomes for themselves or their (unborn) child.[2,7]

Women's birth beliefs are shaped by a combination of variables including their physical condition, their psychology, and personal characteristics, e.g., fertility treatment, anxiety, and stress.[12] Women's birth beliefs and associated risk perceptions are also influenced by past and present experiences – her own and those of others – and cultural and societal ideas of risk and safety.[1,3,10,14,15,19]

The Dutch organization of maternity care is quite unique in the (Western) world and emphasizes the normality of childbirth. Despite increasing medicalization, the Dutch maternity care system, when compared with other high-income countries, is still a setting with a relatively high rate of homebirths and a low rate of interventions in childbirth.[20,21] Risk

selection, a clear distribution of professional responsibilities and tasks, and good cooperation between community midwives and obstetricians form the strength of the system. Community midwives provide care for women who are healthy (i.e., with a low risk for obstetric complications). When pathology is suspected, or complications occur, the midwife will consult or refer to obstetrician-led care in the hospital. Healthy women can choose between giving birth at home or in the hospital, under the care of a midwife.

As one of the few countries in the western world with a maternity care system that emphasizes the physiological process of pregnancy and childbirth, the Netherlands is an interesting place to study women's birth beliefs. In this study we explore women's birth beliefs in the Netherlands during pregnancy and the postpartum period and identify the factors that influence those beliefs.

METHOD

We conducted a cross-sectional survey exploring women's preferences and experiences during pregnancy, birth, and the postpartum period in the Netherlands between February 2019 and February 2020.

Participants

Women were invited to participate in the study via 83 midwifery practices and nine hospitals across the Netherlands – numbers that reflect the ratio of midwifery practices to hospitals in the Netherlands – and via social media. Women were invited for one of three cohorts: (1) between 12 and 20 weeks pregnant (early pregnancy cohort), (2) more than 32 weeks pregnant (late pregnancy cohort), and (3) between 2-12 months postpartum (postpartum cohort). All women in the late pregnancy cohort were asked if they also wanted to fill out a questionnaire after childbirth. If they gave permission, the postpartum questionnaire was sent to them eight weeks after their due date. Their responses provide a longitudinal dataset we used to explore the changes in birth beliefs before and after childbirth (pre-post childbirth cohort)

To be included, women had to be at least 18 years of age and have a good command of the Dutch language. We excluded women with a perinatal death or severe neonatal morbidity. All participants provided informed consent and were able to complete the questionnaire online, written (sent by post), or via a telephone interview. If necessary, two reminders were sent: the first after one week, the second after three weeks. Prior to initiating the survey all respondents signed a written or electronic informed consent, depending on

how they completed the survey. This study gained ethics approval through the researcher's institution Human Research Ethics Committee.

Data collection

We designed a self-administered questionnaire for each cohort. Each survey included questions about women's background characteristics and two validated tools measuring birth beliefs and anxiety/depression. We also asked women about their (previous) childbirth experience in the prenatal cohorts. In the postnatal cohort, we measured satisfaction with the childbirth experience, birth outcomes, and interventions during birth.

This study examines *women's natural and medical birth beliefs* with the Birth Beliefs Scale.[4] This scale, validated in Israel, has been adapted for the Netherlands [22] and consists of two subscales: five statements exploring women's beliefs in birth as a natural process and six statements exploring women's beliefs in birth as a medical process. Items of the birth belief scale are scored on a Likert scale with scores ranging from 1) completely disagree to 5) completely agree. Scores for each subscale are derived by calculating the mean scores of the responses, resulting in scores between 1 and 5. Those scores constitute the dependent variables *natural birth-beliefs* and *medical birth-beliefs*. A higher score indicates stronger beliefs about *birth as a natural or medical process*.

The Patient Health Questionnaire (PHQ-4) measures *anxiety and/or depression*.[23] The PHQ-4 is a validated self-report questionnaire that consists of a depression scale (PHQ-2) and an anxiety scale (GAD-2). The composite PHQ-4 total score ranges from 0 to 12. Higher scores represent higher levels of *anxiety and/or depression*.

Previous childbirth experience was measured in the prenatal cohort of all women who gave birth before. Women were asked to indicate how they experienced their previous childbirth. Responses were measured on a 5 point Likert scale from (1) overall, it was a very negative experience to (5) overall, it was a very positive experience.

C*hildbirth satisfaction* was measured in the postpartum cohort with the Birth Satisfaction Scale-Revised (BSS-R).[24] The BSS-R is a validated instrument globally endorsed for measuring the outcome of the childbirth experience.[25] The BSS-R measures women's perception of stress experienced during childbirth, quality of care, and women's personal attributes.[25] Items are scored on a Likert scale ranging from 1) strongly agree to 5) strongly disagree. The composite BSS-R scores range from 10 to 50. Higher scores indicate greater satisfaction with *childbirth*.

Furthermore we asked women in the postpartum cohort to indicate how their *experiences fitted with* their *expectations*. Women can give the following answers; 1) It was generally more negative or worse than I expected. 2) Overall, it was generally as I expected. 3) It was generally more positive or better than I expected. 4) I had no expectations at all about the course of my upcoming birth.

Statistical analyses

Results for categorical variables are presented as frequencies and percentages; for continuous variables we report means and standard deviations.

We used linear regression analyses to determine the factors associated with women's *natural birth-beliefs* and *medical birth-beliefs* in all four cohorts. Categorical variables were recoded into dummy variables. P-Values <0.05 were considered statistically significant. The variables in the regression models are presented as standardised coefficients allowing easier comparison of the effect size and hence the value and relevance for clinical practice.

To create dummy variables for the linear regression analyses in the pre-post childbirth cohort, prenatal scores on the birth beliefs scale (BBS) were split into three categories based on their distribution. The outcome constitutes the independent variable *Prenatal BBS*. *Low BBS* includes scores under the 33rd percentile, *average BBS* includes scores between 33-66 percentiles, and *high BBS* includes scores above the 66 percentiles. Paired-samples t-tests were used to compare prenatal and postnatal birth beliefs scores of women in the pre-post childbirth cohort.

The data were analysed using IBM SPSS Statistics for Windows version 23.0.

RESULTS

Response and participants

Surveys were distributed to 5118 women (978 during early pregnancy, 1652 during late pregnancy and 2488 during the postpartum period). In total 3821 surveys were returned (808 during early pregnancy, 1283 during late pregnancy, and 1730 during the postpartum period), resulting in an overall response rate of 74.7%. 327 surveys had missing data and were excluded for the final analysis. A total of 678 women completed both the late pregnancy and postpartum survey, resulting in a longitudinal dataset of 678 women (Figure 1).

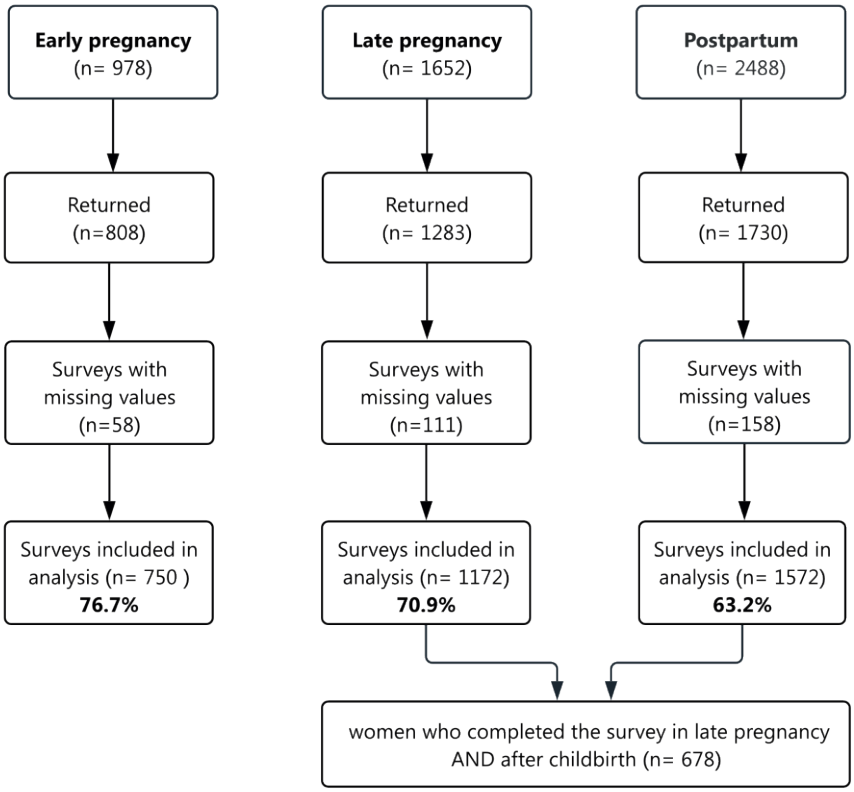

Figure 1. Response rate of the surveys

Table 1 shows the characteristics of our study population in comparison to the entire population of pregnant women in the Netherlands. Our sample has slightly more women with a high level of education, women who gave birth at home, and women who had a spontaneous vaginal childbirth. The distribution of women who received midwife-led and obstetrician-led care during pregnancy in our sample is comparable to that in the entire pregnant population in the Netherlands.

Women's birth beliefs during the perinatal period

Regardless the phase of the perinatal period, women in our study had higher natural birth-beliefs scores than medical birth-beliefs scores (Table 2).

Table 1. Characteristics of the respondents and characteristics of the general Dutch population of women giving birth in 2019

Characteristics	**Early pregnancy cohort** *n=750*	**Late pregnancy cohort** *n=1172*	**Post-partum cohort** *n=1574*	**Pre-post childbirth cohort** *n=678*	**Dutch population**
	n (%)	n (%)	n (%)	n (%)	%
Parity[1]					
Nulliparous	258 (34.4)	441 (37.6)	751 (47.7)	324 (47.8)	43.8
Multiparous	492 (65.6)	731 (62.4)	823 (52.3)	354 (52.2)	56.1
Age (years)	Mean 30.4	Mean 30.4	Mean 31.2	Mean 31.1	n/a
Level of education[2]					
Low	46 (6.1)	58 (4.9)	40 (2.5)	16 (2.4)	9.9
Middle	293 (39.1)	431 (36.8)	526 (33.4)	218 (32.2)	35.2
High	410 (54.7)	683 (58.3)	1007 (64.0)	444 (67.8)	53.7
Missing	1		1		
Marital status					
Married / living together	720 (96.0)	1141 (97.4)	1531 (97.3)	662 (97.6)	n/a
Living apart together	6 (0.8)	5 (0.4)	7 (0.4)	3 (0.4)	n/a
Single	13 (1.7)	19 (1.1)	30 (1.9)	11 (1.6)	n/a
Unknown	11 (1.5)	7 (0.6)	6 (0.4)	2 (0.3)	n/a
Ethnicity[1]					
Dutch	668 (89.1)	1037 (88.5)	1404 (89.2)	604 (89.1)	Caucasian 86.3
Non-Dutch	82 (10.9)	134 (11.4)	169 (10.7)	73 (10.8)	Non Caucasian 11.8
Unknown		1 (0.1)	1 (0.1)	1 (0.1)	
Main care provider[1]					
Midwife	675 (90.0)	963 (82.2)			86.9 start antenatal care
Obstetrician	37 (4.9)	116 (9.9)			13.1 start antenatal care
Mixed care	38 (5.1)	93 (7.9)			

n/a = not available

[1] General maternity care population in the Netherlands in 2019.[26]

[2] General Dutch population between 25-45 years in 2019.[27]

Table 1. (continued) Characteristics of the respondents and characteristics of the general Dutch population of women giving birth in 2019

Characteristics	**Early pregnancy cohort** *n=750*	**Late pregnancy cohort** *n=1172*	**Post-partum cohort** *n=1574*	**Pre-post childbirth cohort** *n=678*	**Dutch popula-tion**
	n (%)	n (%)	n (%)	n (%)	%
Place of birth[1]					
Homebirth			444 (28.2)	186 (27.4)	13.4
Midwife-led hospital			333 (21.2)	152 (22.4)	15.3
Hospital			797 (50.6)	340 (50.1)	71.3
Medical interventions[1]					
Referral during childbirth			497 (31.6)	232 (34.2)	21.9
Induction of labor			373 (23.7)	162 (23.9)	24.8
Augmentation of labor			341 (21.7)	164 (24.2)	n/a
Pharmacologic pain relief			469 (29.8)	216 (31.9)	42.0
Birth mode[1]					
Spontaneous			1271 (80.7)	546 (80.5)	74.1
Assisted vaginal			131 (8.3)	64 (9.4)	7.1
Caesarean			172 (10.9)	68 (10.0)	15.3
Birth Satisfaction (BSS-R) (range 10-50)			Mean 38.4 SD: 6.72	Mean: 38.4 SD: 6.51	

n/a = not available

[1] General maternity care population in the Netherlands in 2019.[26]

[2] General Dutch population between 25-45 years in 2019.[27]

Table 2. Women's birth beliefs during the perinatal period

	Natural birth beliefs *range 1-5*	**Medical birth beliefs** *range 1-5*
Whole dataset		
Early pregnancy cohort (n=750)	Mean: 3.75 SD: 0.56	Mean: 3.12 SD:0.54
Late pregnancy cohort (n=1172)	Mean: 3.87 SD: 0.54	Mean: 2.97 SD:0.61
Postpartum cohort (n=1574)	Mean: 4.01 SD: 0.62	Mean: 3.00 SD:0.67
Longitudinal dataset (n=678)		
Late pregnancy cohort	Mean: 3.91 SD: 0.53	Mean: 2.92 SD:0.61
Postpartum cohort	Mean: 3.73 SD: 0.47	Mean: 3.01 SD:0.67

Factors associated with prenatal birth beliefs

Regression analyses of women's birth beliefs during *early* pregnancy (Table 3) showed that a high level of education (compared to combined, middle and low levels of education) and a previous positive childbirth experience have a positive effect on women's belief in birth as a natural event. Age and being more anxious and/or depressive had a negative effect on natural birth beliefs. Having an obstetrician as main health care provider (compared to a midwife) and being more anxious and/or depressive had a positive effect on medical birth beliefs. Mirroring the findings on natural birth beliefs, having a high level of education and previous positive childbirth experiences had a negative effect on medical birth beliefs.

Looking at women's birth beliefs during *late* pregnancy, we found that a previous positive childbirth experience and attending antenatal classes had a positive effect on women's belief in birth as a natural event and having an obstetrician as main care provider had a negative effect on that belief. Having an obstetrician as main care provider, a previous negative childbirth experience, and being more anxious and/or depressive had a positive effect on medical birth beliefs. A high level of education and following antenatal classes had a negative effect on medical birth beliefs (Table 3).

Factors associated with birth beliefs after childbirth

In the regression models that we compiled to analyse women's birth beliefs in the *postpartum cohort* (Table 4), having a birth at home (compared to an obstetrician-led hospital birth), and childbirth satisfaction had a positive effect on women's belief that birth is a natural event. Being multiparous, having used pharmacologic pain relief, and having a caesarean section had a negative effect on one's belief in birth as a natural process. Age, being multiparous, use of pharmacologic pain relief, a caesarean section, experiences better than expected or having no expectation (compared to experiences that were the same as expected) had a positive effect on medical birth belief scores. Having a high level of education, a referral during childbirth, homebirth, and childbirth satisfaction had a negative effect on medical birth beliefs scores (Table 4).

Table 3. Factors associated with women's birth beliefs during pregnancy

	Natural Birth Beliefs						**Medical Birth Beliefs**					
	Early pregnancy cohort			*Late pregnancy cohort*			*Early pregnancy cohort*			*Late pregnancy cohort*		
Predictors	Unstandardized Coefficients	Standardized Coefficients	*p*-Value	Unstandardized Coefficients	Standardized Coefficients	*p*-Value	Unstandardized Coefficients	Standardized Coefficients	*p*-Value	Unstandardized Coefficients	Standardized Coefficients	*p*-Value
Age	-.015	-.117	**.003**	-.005	-.040	.21	.002	.014	.72	.005	.038	.24
Level of education (high)	.088	.078	**.04**	.056	.051	.09	-.146	-.136	**<.001**	-.148	-.120	**<.001**
Anxiety / depression (PHQ-4)	-.031	-.102	**.005**	-.008	-.028	.33	.032	.109	**.003**	.030	.094	**.001**
Fertility treatment	-.072	-.034	.35	-.102	-.046	.10	.127	.064	.09	-0.56	-.022	.43
Main healthcare provider *(ref. midwife)*												
Mixed care	.001	.000	.99	.001	.000	>.99	-.004	-.002	.96	.299	.147	**<.001**
Obstetrician	-.151	-.058	.10	-.256	-.142	**<.001**	.191	.078	**.03**	.132	.058	**.04**
Previous childbirth experience *(ref. no previous experience)*												
Negative	-.032	-.016	.67	-.063	-.033	.28	.018	.010	.80	.163	.075	**.01**
Neutral	-.016	-.010	.78	-.096	-.061	.06	.060	.041	.32	.023	.013	.69
Positive	.260	.228	**<.001**	.160	.145	**<.001**	-.123	.-113	**.001**	-.045	-.036	.30
Antenatal classes	-	-	-	.110	.197	**<.001**	-	-	-	-.083	-.131	**<.001**
Adjusted R^2	7.9%		<.001	9.5%		<.001	7.0%		<.001	8.4%		<.001

- not included as a predictor variable

Table 4. Factors associated with women's birth beliefs after childbirth

	Natural birth beliefs			Medical birth beliefs		
Predictors	Unstandardized Coefficients	Standardized Coefficients	*p*-Value	Unstandardized Coefficients	Standardized Coefficients	*p*-Value
Parity (multiparous)	-.089	-.072	**.001**	.077	.057	**.03**
Age	-.005	-.031	.19	.009	.059	**.02**
Level of education (high)	-.023	-.018	.43	-.117	-.084	**<.001**
Anxiety / depression (PHQ-4)	-.008	-.025	.26	.002	.007	.79
Medical interventions						
Referral	.037	0.28	.24	-.073	-.051	**.04**
Pharmacologic pain relief	-.213	-.157	**<.001**	.203	.138	**<.001**
Use of oxytocin	.016	.016	.56	.005	.004	.82
Mode of birth *(ref. spontaneous)*						
Assisted vaginal	-.036	-.016	.49	-.023	-.010	.70
Caesarean	-.295	-.148	**<.001**	.133	.062	**.02**
Place of birth *(ref. obstetrician-led hospital)*						
Homebirth	.184	.134	**<.001**	-.391	-.261	**<.001**
Midwife-led hospital	-.036	-.024	.39	.009	.005	.85
Experience versus expectation *(ref. the same)*						
Experience worse than expected	.062	.041	.23	-.068	-.042	.24
Had no expectations	-.048	-.036	.26	.112	.078	**.02**
Experience better than expected	-.017	-.012	.68	.113	.076	**.02**
Childbirth Experience (BSS-R)	.033	.362	**<.001**	-.023	-.231	**<.001**
Adjusted R^2	29.6%		<.001	22.1%		<.001

Prenatal to postpartum changes of women's birth-beliefs

We found significant, but very small, changes between mean scores of prenatal and postnatal birth beliefs in the pre-post childbirth cohort. The mean score of natural birth-beliefs declined 0.19 points (SD.072; 95% CI -.24 to -.13) and the mean score of medical birth-beliefs increased with 0.09 points (SD: 0.87; 95% CI .02 to .15) after the women had given birth (Table 5). There was a decrease in natural birth beliefs scores among 53.4% of the women, 11.9% had equal scores, and 34.7% had higher natural birth beliefs scores after birth. Furthermore, 42.6% of the women had lower medical birth beliefs scores, 7.4% had equal scores, and 50.0% had increased medical birth beliefs score after birth.

Change of women's birth beliefs scores in the pre-post childbirth cohort was calculated as the difference between the postnatal birth beliefs scores minus the prenatal scores. The outcomes of that calculation constitute the variables *changed natural birth beliefs* and *changed medical birth beliefs*. In these analyses, the changed natural birth beliefs and changed medical birth beliefs were the dependent variables.

Use of oxytocin during childbirth, an assisted vaginal childbirth, and childbirth satisfaction had a positive effect on the change of natural birth beliefs scores; this means postnatal higher natural birth beliefs scores than prenatal. A midwife-led home birth, a referral during childbirth, childbirth satisfaction, and a worse than expected experience (compared to an experience that was the same as expected) had a negative effect on the change of medical birth beliefs. Pharmacologic pain-relief and an experience better than expected had a positive effect on the change of medical birth beliefs scores. Both medical and natural prenatal birth beliefs had an effect on the change in women's beliefs after childbirth in the expected direction: women with low prenatal scores were likely to have higher scores after childbirth, and women with high prenatal scores were likely to have lower scores after childbirth, all other variables being equal (Table 6).

Table 5. Change in birth-beliefs scores after giving birth

	Natural birth beliefs *Range of change* Mean: -0.19 SD: 0.72 min: -2.00 max: +2.20			**Medical birth beliefs** *Range of change* Mean: 0.09 SD: 0.87 min: -2.67 max: +2.83		
	Decreased 53.4% (n=362)	Decreased 42.6% (n=289)	Decreased 42.6% (n=289)	Decreased 42.6% (n=289)	Equal 7.4% (n=50)	Increased 50.0% (n=339)
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**
Prenatal birth beliefs	4.21 (0.44)	3.27 (0.50)	3.27 (0.50)	3.27 (0.50)	3.04 (0.53)	2.61 (0.53)
Postnatal birth-beliefs	3.49 (0.44)	2.57 (0.59)	2.57 (0.59)	2.57 (0.59)	3.04 (0.53)	3.40 (0.51)

Table 6. Effect of sociodemographic and obstetric factors on the change of women's birth beliefs scores after giving birth

	Change of Natural Birth Beliefs			**Change of Medical Birth Beliefs**		
Predictors	Unstandardized Coefficients	Standardized Coefficients	*p*-Value	Unstandardized Coefficients	Standardized Coefficients	*p*-Value
Parity (multiparous)	-.043	-.030	.33	.123	.071	.06
Age	.007	.040	.17	.001	.005	.89
Level of education (high)	-.009	-.006	.83	-.093	-.051	.11
Anxiety / depression (PHQ-4)	.001	.002	.94	.009	.018	.55
Medical interventions						
Referral	.024	.016	.57	-.127	-.070	.04
Pharmacologic pain relief	.081	.053	.09	.257	.138	**.00**
Use of oxytocin	.147	.052	**.01**	.036	.021	.62
Mode of birth *(ref. spontaneous)*						
Assisted vaginal	.287	.069	**.00**	.102	.035	.30
Caesarean	.120	.050	.08	.182	.063	.06
Place of birth *(reference obstetrician-led hospital)*						
Homebirth	-.066	-.041	.30	-.266	-.137	**.00**
Midwife-led hospital	-.023	-.014	.67	.078	.038	.35
Experience *(reference the same)*						
Experience worse than expected	.020	.012	.70	-.177	-.088	**.02**
Had no expectations	.028	.017	.49	.030	.015	.61
Experience better than expected	-.053	-.033	.24	.157	.081	**.02**
Prenatal BBS *(reference average)*						
Low	.576	.377	**.00**	.682	.380	**.00**
High	-.619	-.402	**.00**	-.565	-.297	**.00**
Childbirth Experience (BSS-R)	.052	.475	**.00**	-.026	-.197	**.00**
Adjusted R^2	58.2%		.00	40.6%		.00

DISCUSSION

The aims of this study were to explore women's birth beliefs in the Netherlands during pregnancy and the postpartum period and to identify the factors affecting these birth beliefs. In general, the women in our study had stronger beliefs about birth as a natural process compared to their beliefs about birth as a medical process. There was a very slight shift in these beliefs after childbirth: women's belief in birth as a natural process decreased, and their belief in birth as a medical event increased. Our multiple regression analyses showed that women's beliefs about birth – as natural or medical – were strongly influenced by women's (previous) childbirth experiences.

Our findings are congruent with an earlier study of women in Israel that found that women had stronger beliefs about birth as a natural process and weaker beliefs about birth as a medical process.[4] However, the women in our study – from the Netherlands – generally had stronger natural birth beliefs and weaker medical birth beliefs compared to women in Israel and women in Turkey. [4,28] Birth beliefs and associated perceptions of risk are related to cultural norms and societal ideas about birth and its associated risk and safety.[1,10,14,15,19] The Dutch maternity care system is well known for its low rate of interventions and its emphasis on the normality of childbirth,[20,21] whereas Israel and Turkey have a more medicalized maternity care system.[29,30] The differences we found highlight the effect of cultural and social values about childbirth on the beliefs of women.

Not surprisingly, we found that women's childbirth experiences were the most consistent predictor of women's birth beliefs. Multiparous women with previous positive experiences had prenatally stronger natural and weaker medical birth beliefs than nulliparous women. Multiparous women with a previous negative experience had stronger medical birth beliefs during pregnancy. Women who were more satisfied with their actual childbirth experience had stronger natural, and weaker medical, birth beliefs after childbirth. Even though women's natural birth beliefs became slightly weaker after childbirth, the change was smaller if women were more satisfied with their childbirth experience. The change in women's medical birth beliefs became stronger after childbirth if they were unsatisfied with their childbirth experience.

Women's (previous) experiences both, positive and negative, are associated with the medicalization of childbirth.[31,32] Women's experiences during pregnancy and childbirth shape their birth beliefs and affect their choices and decisions during pregnancy.[12] Positive childbirth experiences are strong predictors for a wish for natural birth in a subsequent preg-

nancy.[3,33] Woman are more likely to prefer a caesarean section if a previous childbirth experience was not positive.[32] The more women believe birth to be a natural process and the less they believe it is a medical event, the more likely they are to avoid medical birth-related choices like an induction or an epidural.[4] These findings confirm that if we wish to counteract the medicalization of childbirth, we need to improve women's experiences. More postive experiences will strengthen natural birth beliefs and weaken medical birth beliefs, influencing women's birth choices.

Our study also suggests that women's overall perception of their childbirth experience has a greater influence on their beliefs about birth than do obstetric interventions. This may be explained by the fact that women perceived obstetric factors both positively and negatively. [34] Women who experience complications or medical interventions during childbirth do not have a negative recall of their overall childbirth experience if they felt safe and received good care during childbirth. The opposite is also true. A woman with an uncomplicated birth may have a negative experience if she felt unsafe and received poor care.[35,36] It is therefore likely that care-providers attitudes and behaviour are of more importance on women's birth beliefs than interventions and mode of childbirth.

We found that pregnant women with an obstetrician as the main care provider had stronger beliefs about birth as a medical process and weaker beliefs about birth as a natural process than women who received care from a midwife. The same is true for women with an obstetrician-led hospital birth compared to women with midwife-led home birth. In general, midwives and obstetricians have different attitudes about childbirth.[37] Midwives are seen as having greater faith in birth as a natural process than do obstetricians, who have a more medical approach to childbirth.[38] However, it is important to point out that women who receive care from a community midwife in the Netherlands are more likely to have uncomplicated pregnancies and births while women with more complicated pregnancies receive care from obstetricians. As a consequence, it is difficult to infer which underlying factors in our study – care providers' attitude and behavior or biomedical problems – influence womens birth beliefs. Notwithstanding, it is essential to be aware of the impact of care providers' behavior on women's birth beliefs. Women who have care providers with whom they shared their birth beliefs and who understood their preferences and choices increased their confidence and trust.[39] Yet care providers do not always investigate women's birth beliefs and the reasons women prefer medical over natural birth.[40] Being pregnant and giving birth is a process, and a woman's birth beliefs should be discussed before labor begins. By examining women's birth beliefs prenatally, care providers can increase women's confidence and trust, understand women's decisions, and

increase their knowledge. This will contribute to positive experiences and may strengthen women's belief in birth as a natural process.

Our regression analyses of the change in women's birth beliefs after childbirth produced some unexpected and counterintuitive results. Use of oxytocin and assisted vaginal childbirth increased women's belief in birth as a natural event. A previous Canadian ethnographic study found that women (and midwives as well) are flexible and can incorporate mainstream obstetric interventions within their views about birth as a natural process.[41] Brubaker suggests that a medical birth is so commonplace for the contemporary generation of pregnant women that it may *seem* natural for individual women regardless of interventions used.[42] However, based on our study, we cannot say whether this is a possible explanation for the unexpected effect of oxytocin and an assisted vaginal childbirth on changing women's natural birth beliefs. Further research is needed to explore women's views about what is "normal" and the acceptance of medical interventions during childbirth and how this shapes women's birth beliefs.

In addition, we found that prenatal birth beliefs were correlated with the change in birth beliefs after birth. An Israeli study noted the effect of self-fulfilling prophecies on beliefs after giving birth.[43] Women with stronger medical birth beliefs are more willing to accept and undergo interventions.[6,14,15] This subsequently strengthens their medical birth beliefs after childbirth.[43] Women with higher natural birth beliefs have a stronger desire to avoid obstetric interventions and are more likely to give birth naturally,[2,7] strengthening their natural birth beliefs.[43] However, our study found that women who had high natural birth belief scores before birth were more likely to have lower natural birth belief scores after childbirth. This is likely a ceiling effect: high scores prenatally make it impossible to rise further after childbirth and typically regress toward the mean.

Strengths and limitations

Our study has both strengths and limitations. The Netherlands is a unique place to study women's birth beliefs. It is one of the few countries in the western world with a maternity care system that emphasizes the physiological process of pregnancy and childbirth. To our knowledge, this is the first quantitative study that explores women's birth beliefs in the Netherlands during pregnancy and the postpartum period. Furthermore, our results are based on a large sample of 1922 pregnant women and 1572 women during the postpartum period spread throughout the Netherlands. At the same time, our longitudinal dataset of 678 women allowed us to investigate whether and how women's birth beliefs change after childbirth.

Our study was limited by the fact that we had little direct control over the inclusion process used by care providers and in responding to social media requests. Our participants are not entirely comparable with the general population of women who give birth in the Netherlands. The level of education of the women in our sample was slightly higher. Furthermore, the questionnaires were only available in the Dutch language, resulting in the underrepresentation of ethnic minorities.

Our study population also included more women who experienced physiological childbirth compared to the total Dutch population (more homebirths, less pharmacologic pain relief, and fewer caesarean sections). Our results found significant effects of homebirth, use of pharmacologic pain relief, and a caesarean section on women's birth beliefs scores. It is unclear if the overrepresentation of homebirths and underrepresentation of pharmacologic pain relief and caesareans may have contributed to more pronounced differences between natural and medical birth beliefs scores after childbirth.

CONCLUSION

Our results confirm that, in general, women in the Netherlands have strong natural and weaker medical birth beliefs, which correspond with the Dutch birth philosophy that pregnancy and childbirth are physiological processes. Childbirth experiences had a larger effect on women's birth beliefs than having had obstetric interventions. Maternity care providers need to be aware of what women believe about birth and how they themselves influence those birth beliefs. The contribution they make to women's perinatal experiences affects what women believe and the choices they make for care in the future.

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7

Using women's voices for quality improvement in maternity care

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ABSTRACT

Objective: To gain deeper insights into how professionals in Dutch Maternity Care Collaborations (MCCs) actually apply a national standard promoting the integration of women's voices in quality improvement of maternity care.

Design: Descriptive qualitative study, using semi-structured individual interviews and content analysis for an in-depth exploration of care professionals' experiences and opinions on integrating women's voices in quality improvement.

Setting and participants: Twelve maternity care professionals involved in quality improvement activities from eight Dutch Maternity Care Collaborations.

Findings: Four themes emerged. "Quality improvement based on women's voices is still in its infancy" and was experienced as an important but challenging topic. "Collecting women's voices" was applied, but needed more facilitation. "Using women's voices" was hindered by lack of expertise and a structured feedback and feedforward system. "Ensuring listening to women's voices" and integrating them in quality improvement would require facilitation.

Key conclusions: Care professionals emphasized that listening to women's voices for quality improvement is important but challenging due to lack of expertise, organizational structure, time, and financial resources. External support might boost actions of care professionals for integrating women's voices in quality improvement.

Implications for practice: A feasible implementation strategy including concrete support is recommended for care professionals in MCCs, for example from professional associations offering a national, validated survey and standard reports of the results. Additionally, actions and expertise of the care professionals should be stimulated.

INTRODUCTION

Twenty years ago, the US Committee on the Quality of Health Care recommended six aims for improving the healthcare system. One important aim was that healthcare in the 21st century should be patient-centred.[1] A strategy for stimulating patient-centredness is the collection of data on patient's experiences and satisfaction for the purpose of quality improvement.[2,3]

To achieve quality improvement in health care, it is essential to move towards measuring, reporting, and comparing patient experiences.[4-6] This move is also visible in maternity care. The content of women's experiences is conditional to improve quality of care. Downe et al. emphasized the need for moving from what professionals tend to think from their perspective is important to women, towards what women actual find is most important to them in maternity care.[7] Through collecting their experiences, the quality of care can be continuously improved.

The World Health Organization (WHO) recommendations for antenatal, intrapartum and postpartum care emphasize women's experiences of maternity care as meaningful and necessary to establish woman-centred care.[8-10] In 2016, to enhance a woman-centred approach in Dutch maternity care, the various professional organizations in maternity care jointly developed a national standard, the Integrated Maternity Care Standard.[11] This Care Standard addresses the need for a safe, effective, and woman-centred maternity care system with closer collaboration between maternity care professionals through integrated care organized around women. The Care Standard sets the norm for how to organize prenatal, natal and postnatal care and how the collaboration between maternity care professionals should be organized including the implementation of a quality system. Maternity Care Collaborations (MCCs) are accountable for implementing the care standard and improving regional quality of care.[12] Over the past decade, these MCCs have been established in many regions across the country and include at least regional maternity care services, such as a hospital, independent midwifery practices and organizations of maternity care assistants.[13]

One of the challenging aspects of the Care Standard is the implementation of a cross-organizational quality system for the region, for which each MCC is responsible.[11] This cross-organizational system must include women's experiences of their care and should give all professionals (e.g. midwives, obstetricians) within an MCC insight into how pregnant women experience integrated care during pregnancy, birth and the postnatal period, and how it can be improved. In this quality system, the woman as user of maternity care is central rather than the organization or the professional.

The nationwide dissemination of the Care Standard did not automatically result in the implementation of this quality system in the MCCs.[14] The aim of this study was to gain deeper insights into how maternity care professionals in MCCs integrate women's voices into quality improvement as part of the Integrated Maternity Care Standard and what role midwives can have in this.

METHOD

A qualitative, descriptive study with individual interviews allowed an in-depth exploration of motives, experiences, and opinions of care professionals on integrating women's voices into quality improvement within MCCs. As integrating women's voices in quality improvement is rather new in the Netherlands, this might be a sensitive topic for participants feeling uncertain about the uptake of their new task. Also, existing (hierarchical) positions between midwives, managers and obstetricians might influence the participants' responses. Therefore, individual interviews were more likely to offer them the safety to reveal their true motives.[15]

Setting and participants

The present study is part of a research project to explore the preferences and experiences of women who give birth in the Netherlands (StEM-study). The Human Research Ethics Committee of METC Z, Heerlen (registry number: METCZ-20180121) approved the study. Women, recruited through eleven MCCs across the Netherlands, filled out surveys that included several validated instruments on women's experiences, such as Nijmegen Continuity Questionnaire (NCQ),[16] Birth Satisfaction Scale (BSS),[17] and Mother's Autonomy in Decision Making Scale (MADM).[18] The Integrated Maternity Care Standard [11] obliges MCCs to measure women's experiences using validated instruments and use this for quality improvement. By participating in the StEM-study MCCs could meet this obligation. Each of the participating MCCs received a report with the anonymized results of women's experiences in their MCC.

For the present study, care professionals were asked how they used these data to improve quality of care within their MCC. Purposive sampling was used among the MCCs participating in the StEM-study.[19] Two care professionals per MCC (22 professionals in total) were invited, each having some experience with quality improvement in their MCC. We sought for variety in work experience, backgrounds (profession, gender, age), professional roles (midwife, manager, obstetrician), and levels of expertise implementing quality management. In the invitation e-mail, we informed them that participation was voluntary, that their

information would be handled confidentially, and that data would be securely stored at the university digital network with only the research team having access.

Data collection

Between June and September 2020, individual interviews were conducted with the participants lasting 45-60 minutes using videoconferencing because of Covid-19 restrictions. We used a semi-structured question route (Box 1) based on literature about quality improvement in healthcare and patient involvement.[2,3,20]

The first author, experienced in maternity care, policy advising, and quality management, conducted all interviews. The last author, experienced in qualitative research in maternity care, participated in the first two interviews and provided feedback. After each of the first three interviews, the question route was refined. All participants received their transcripts, five responded that they agreed with the transcript without further remarks, the other participants did not react.

Box 1: Examples from the semi-structured question route

- How do you think women's experiences can be implemented in quality improvement?
- What items do you find important to hear from women?
- How did you use the data from the report?

Analysis

A content analysis was performed using manual inductive and deductive coding to identify themes and patterns between the themes.[15,19,20] Subthemes were grouped into main themes by examining the commonalities, differences, and relationships within and among the interviews, and through reflective discussion among the research team consisting of the authors and student assistant researchers. After reading and rereading all transcripts and coding one interview, the first author developed an initial coding tree that was advanced together with the last author based on the data of three, randomly chosen, interviews. Next, the first author and student assistant researchers independently coded the other transcripts. The research team refined the coding tree several times and reached consensus about the final coding tree. Saturation was reached after ten interviews, which was confirmed by the last two interviews. Our findings are illustrated by quotes, which were translated using backward and forward translation. Participants are indicated with a letter, without naming their profession for anonymity reasons.

Rigor and reflectivity

To ensure trustworthiness, we followed the strategies recommended by Korstjens and Moser.[22] The research team was not professionally involved with the participants, and combined experience and expertise in qualitative research, maternity care, and quality management. We kept a logbook, including field notes from the interviews and the reflective discussions in the research team of organizational, scientific, and analytic processes. We identified quotes, which were translated backward and forward, assisted by a native English speaker. To secure anonymity, we present the quotes without reference to the participant's professional background. The standards for reporting qualitative research (COREQ) guided the writing.[15]

FINDINGS

Twelve participants from eight MCCs agreed to participate. Midwives represent the largest group of six people in total. Furthermore, two obstetricians, and four managers in close contact with the workplace were included in this study. This mirrors the distribution of professionals within the workgroups of MCCs, such as a workgroup for quality improvement. Two participants identified as male and ten as female, varying in age (33-58 years) and work experience (3-28 years).

The four themes that emerged from the analysis are listed in Box 2.

Box 2: Themes emerged from analysis

- Quality improvement based on women's voices in its infancy
- Collecting women's voices
- Feedback and feedforward: using women's voices
- Ensuring listening to women's voices

Quality improvement based on women's voices in its infancy

All participants emphasized that integrating women's experiences of care in quality improvement was a significant, but challenging topic. Most MCCs had a designated workgroup for quality improvement with care professionals, which devoted part of their time (beside their care duties) to developing and revising protocols, organizing perinatal audits and skills training. Some participants said they did not feel knowledgeable enough to structurally imbed women's experiences in quality improvement.

F: "We have a quality workgroup that deals with protocols and audits and so on, but not with patient input so to speak...on policy level... what patients think about protocols and care pathways and how they experience care things like that... I don't know what that would look like in practice."

A few MCCs had imbedded women's experiences in their quality system. In these MCCs, the quality workgroup used the collected data on experiences: the workgroup discussed the results, selected notable items, formulated actions for improvement, and presented a summary of their findings to the other care professionals in their MCC. These MCCs had a more formal organizational structure and more management experience. However, participants were unable to indicate whether going through the steps of the quality cycle led to actual improvements in the quality of care they offered.

I: "Well, we received the report with the results, we filtered out the most remarkable things: the real points for improvement and the things that were already very good. We translated the results into a kind of short analysis with points for improvement. These points were also included in our quality improvement plan and immediately converted into actions."

Although all participants acknowledged its importance, in most MCCs quality improvement based on women's voices was still in its infancy.

Collecting women's voices

For most participants, a quantitative survey was a good start for collecting women's voices and gaining insight into women's experiences. However, some participants expressed that they wanted more in-depth qualitative information from women to understand what really matters to them. Most participants found it difficult to articulate what topics needed further qualitative exploration. The lack of experience with structural quality improvement and how to include women's voices was indicated as a barrier. The will to collect women's voices was present, but care professionals lacked knowledge on how to do this effectively.

F: "...I'm not particularly trained for this, I mean, I know I can ask people how they experienced the care, but... to make a good survey..."

Several participants expressed a lack of self-confidence in interpreting quantitative data. For example, they did not know what to expect in terms of satisfaction and hesitated about whether an item should be marked as "this could be better" or "good enough" Younger midwives seemed more skilled but were less involved in quality improvement tasks. Therefore, the results of quantitative experience reports were often not used for quality improvement purposes.

C: "I don't know how to interpret this ... is this good or is it bad ... should we improve this item? Maybe you can explain it to me?"

A mother council was mentioned as a valuable addition to surveys for receiving in-depth qualitative information. Setting up a mother council is part of the Integrated Maternity Care Standard, but not easy to implement according to the participants as organizational structure and time were lacking. Next to that, participants lacked knowledge and experience on how to implement a mother council.

J: "...in our MCC, we also discussed how to increase patient participation. It would be good to set up a mother council, but that's not easy to do."

Feedback and feed-forward: using women's voices

Reports with MCC specific data were shared with each MCC as a return for the participation in the StEM study. Our participants mentioned that structured follow-up in quality improvement activities was low after these reports came available. Only some MCCs planned a discussion with women or made an action plan together with all care professionals within their MCC.

H: "...some results were at the top of our mind for a while and then...not much action was taken on it...and after a while everybody had forgotten about it...and they went on with their normal business."

Some participants considered revealing results on women's experience of care between professional groups within their MCC (for example between midwives and obstetricians) or between different MCCs as a sensitive issue, as this might reinforce a sense of competition. Others favoured sharing each other's results because this would provide insights into difference and could stimulate improving quality of care.

G: "Some practices think they are doing a good job, so they say: we can show our data to others. But some practices find it difficult to give insight into their data because they are afraid, they are being compared to others...and that benchmarking causes tension."

Ensuring the use of women's voices

Lack of time, financial resources, and expertise to interpret the results, were important barriers to collect and give meaning to women's voices. Suggested solutions were involve-

ment of external parties such as professional associations or parties funded by the government to support care professionals in the MCCs. Their task could consist of providing national, digital, validated surveys including mandatory questions for regional and national benchmarking, and optional questions to explore regional relevant topics. To actually use women's voices to improve quality of care a ready-to-use report, written by the same external party that collected the data, was suggested as a helpful tool to support the care professionals. Preferably, the results in this report are presented as visual factsheets and infographics.

L: "…how to implement? Less effort and maximum result so let others give us the information we need and tell us what to do with it…"

ANALYTIC FINDINGS

Overall, it seems that maternity care professionals are currently more focused on running and improving the quality of their own healthcare practice, rather than collaborating on a regional level in their MCC. For integrating women's experiences in cross-organizational quality improvement, a shared, structured, and formally embedded MCC quality system is needed. Establishing such a cross-organizational system requires different competencies, which most care professionals do not yet possess. Midwives did not always feel competent as it was not part of their regular daily care duties nor was it an extensive part of their midwifery education program in the past. Some participants noted that more recently graduated midwives did develop some of these competencies during their education. However, these midwives often did not participate in implementation of innovations, such as a MCC quality system as they were more focused on mastering their midwifery skills. These findings illustrate that a feasible implementation strategy, including a sound analysis of barriers and facilitators, should accompany the dissemination of national standards, such as the Integrated Maternity Care Standard, to make implementation successful. If not, care professionals opt for instrumental and limited approaches, such as seeking support from other parties and using random ready-made instruments.

DISCUSSION

The aim of this study was to gain deeper insights into how maternity care professionals in MCCs integrate women's voices into quality improvement as part of the Integrated Maternity Care Standard and what role midwives can have in this. As a way to improve the implementation of this aspect of the standard, participants suggested a survey, supplemented with qualitative approach, for collecting women's experiences.

This preference is also visible in other healthcare domains. Acceptance by care professionals of the way in which client experiences are surveyed is necessary to actually use the data for quality improvement [3, 20, 24]. Merely collecting and reporting experiences is not sufficient to achieve improvement of care, integrating them into the quality improvement system is essential [20, 24-26]. The care professionals in MCCs struggled with using women's voices for quality improvement, because there was no formally embedded cross-organizational quality improvement system. The barriers they experienced such as lack of time, expertise and organizational structure also exist in other healthcare domains [20, 25].

To provide care professionals with more insights into what women would like them to know, care professionals and women should also be involved in the macro-level of an organization. This involvement of people in organizations is reflected in Arnstein's ladder of citizen participation [28]. This ladder shows how citizens can participate at different levels of organizations. Arnstein describes that some public institutions deny power to citizens and keep them on a lower level, she also shows how these levels can be increased. In our study, the involvement of women did not go beyond the level of consultation. To involve women in the macro-level of an organization asks from MCCs to enhance women's involvement to partnership [20].

Moving from consultation towards partnership calls for a culture change within the MCCs [20], which requires a sense of urgency to become established [29]. For the care professionals, the national Integrated Maternity Care Standard [11] created this sense of urgency as an external motivator. Next to this, a guiding team is conditional for the culture change [29]. This team should consist of care professionals and women themselves [20, 25]. To facilitate MCCs in moving towards partnership, support from leaders and resources in terms of time, financial resources, and organizational structures are necessary [4, 20].

Next to the external motivator, care professionals also need expertise and motivation to implement women's voices in quality improvement. The professionals in our study were aware that they lack expertise in this area, even though they had the will (intrinsic motivation) to move forward. They saw a possible solution in an instrumental approach by asking external parties to provide surveys or reports. However, studies demonstrate that setting up external feedback systems rarely achieves quality improvement [30, 31]. Care professionals themselves must be motivated and skilled to engage in co-creation processes with their clients to reflect on what is important to clients in quality improvement. This requires a different mind-set on the part of the care professional. Stimulation of this motivation to take actions is missing in top-down implementation of standards. The lack of expertise can also be compensated by allowing more recently graduated midwife to play a significant

role in cross-organizational activities. These midwives seemed to develop more competencies needed to establish a structured quality system in a MCC during their education. Because a team approach is one of the prerequisites for successful implementation of quality systems [20], newly graduated midwives need the encouragement of the MCC in order to become more involved in quality improvement activities. This requires leadership and a culture that acknowledges the expertise of the midwife. In addition, this also calls for facilitating recently graduated midwives to use their skills in the field of quality management.

Strengths and limitations

Integrating women's voices in quality improvement in maternity care needs attention in many countries, in that sense the Netherlands is not unique. Although some countries or other medical fields are more advanced, others still seek ways to achieve this. A trend towards integration of various services in maternity care is increasingly seen in the Netherlands and in other countries [12, 32]. This means integration of care of regular maternity services with services, such as psychological or social care both involving various professionals working together but not being part of the same organization. In the Netherlands, a cross-organizational quality system is being introduced in maternity care. This cross-organizational system must include women's experiences of their care and should give all professionals within an MCC insight into how pregnant women experience integrated care and how it can be improved. In this quality system, the pregnant woman is central rather than the organization or the professional. This article provides insight into what maternity care professionals need, to use women's voices to improve integrated maternity care and to implement a cross-organizational quality system. Other strengths were that the participants, who were all involved in quality improvement, varied in professional and socio-demographic backgrounds. We reached saturation after ten interviews. No new analytical information arose after ten interviews suggesting that we attained maximum information on our topic [17]. We included a specific population as purposive sampling was used by approaching the 11 MCCs participating in the StEM study [17]. The included MCCs did not have a leadership role in integrating women's experiences into quality improvement but were willing when facilitated by StEM. Their motivation for participating in StEM was largely based on the Integrated Maternity Care Standard [9]. According to Rogers' theory of innovations [30], these characteristics are specific for early and late majority groups in implementing innovations, representing 68% of the population and called the mainstream. As our sample is likely to represent the mainstream, our findings are relevant for a large group and other early adopters who might consider transferring these findings to their

contexts. Another limitation of the study was that we did not interview women who are involved in quality improvement in some MCCs. This is a future area for exploration.

CONCLUSION

Care professionals in Dutch MCCs emphasized that using women's voices for quality improvement was important but challenging due to lack of expertise, organizational structure, time, and financial resources. An implementation strategy is needed to implement a quality system in a cross-organizational context. To facilitate implementation, the instrumental part, such as providing national, digital, validated surveys and a ready-to-use report, should be made available by external parties. Facilitating the instrumental part gives the care professional time to set up and implement the quality system within an MCC. This external support might also boost actions of care professionals for integrating women's voices in quality improvement. Encouraging this actions is lacking in top-down implementation of standards and should be included more from the development of standards onward. Finally, an implementation process requires identifying which competencies are needed for particular tasks and who has those competencies. Appointing the right people, in this case recently graduated midwives, to crucial positions can facilitate successful implementation of women's voices in maternity care quality management.

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8

General discussion

INTRODUCTION

In 2016, the Dutch Ministry of Health introduced the "Care Standard: Integrated Maternity Care" – a policy document intended to improve the Dutch maternity care system. Among other things, this policy highlighted the importance of optimizing the experience of childbirth for women,[1] a call that gave rise to the research reported here. In this thesis, we explored the many and complex factors that contribute to women's experiences during the perinatal period, with particular attention to the context of Dutch maternity care.

We begin the general discussion with a summary of the main findings of the thesis and move on to reflect on these findings, consider the strengths and limitations of our research, and present recommendations for maternity care practice, policy, and future research. We close with the overall conclusion of this thesis.

MAIN FINDINGS

A conceptual framework describing relevant dimensions of perinatal experiences

The literature on women's experiences during the perinatal period is extensive. However, when we began our research, there was no clear conceptualization of what is involved in women's perinatal experiences and no one had offered an overview of the relevant dimensions of those experiences. This gap in the literature presented the challenge of creating a conceptual model capable of capturing the many dimensions of the perinatal experience. Staniszewska's description of the essential elements of patient experiences[2] offered us a way to address this gap. We used this model to design a framework that includes critical aspects of women's experiences during the perinatal period: (1) The woman as a unique individual, (2) the woman as an active participant in care, (3) the responsiveness of maternity care and health services, (4) the lived experience of being pregnant, giving birth ,and the postpartum period, (5) communication and the relationship with care providers, (6) information and childbirth education, and (7) support from the social environment **(Chapter 2).** These dimensions go beyond care-related aspects and are purposefully broad in order to account for all aspects that need to be addressed if we are to improve women's perinatal experiences. We then conducted a systematic scoping review to allow us to refine and validate our framework and to use it to identify and categorize studies of women's perinatal experiences. As a result of this review, we identified a new, eighth dimension, 'societal influence,' which we added to our initial framework, now called the Maastricht Perinatal Framework **(Chapter 3).**

Voices and experiences of mothers

Based on our framework, we designed and conducted a cross-sectional survey of women's experiences during pregnancy, childbirth, and the postpartum period ('StEM' – **St**em en **E**rvaringen van **M**oeders, [Voices and Experiences of Mothers]) in the Netherlands. The survey investigated the attitudes and experiences of women who gave birth in the Netherlands between February 2019 and February 2020.

In creating our framework we learned that access to reliable information is critical to women's experience and wellbeing during pregnancy and childbirth**.** Therefore we explored the use of information sources during pregnancy and the perceived quality of those sources **(Chapter 4)**. Midwives were highly valued as a personal source of information. More than 80% of women found professional information sources trustworthy and useful, while digital sources were perceived as less trustworthy and less useful. Nevertheless, digital sources (such as websites and apps) were the most commonly used information sources among pregnant women. We also found that the perceived quality of different sources of information did not vary across the personal characteristics of women. The results of this study point to the need to digitalise professional information about pregnancy and childbirth as it seems that printed information does not match the information needs of the contemporary generation of pregnant women. In addition, maternity care providers should ask women what information sources they are using for their decision-making and be prepared to recommend websites that are useful and trustworthy.

Another significant component of a positive birth experience identified in our framework is the ability to exercise autonomy in decision-making. Therefore, we explored women's perceived autonomy in decision-making conversations with maternity care providers (**Chapter 5**). We found that most women reported high levels of autonomy in decision-making conversations with their care providers. However, we found that during the latter stage of pregnancy (32+ weeks) and during childbirth women reported lower levels of autonomy in care conversations with obstetricians when compared to conversations with midwives. Importantly, we also found that nearly 50% of women who had at least one intervention during birth reported pressure to accept or submit to that intervention. Regression analysis showed that personal treatment of maternity care providers increased women's perceived autonomy in decision-making conversations. Taking these findings into consideration, women's perceived autonomy can be enhanced with personal treatment, including the avoidance of putting pressure on women to accept interventions.

Because women's birth beliefs are key to understanding their decisions and the acceptance to medical interventions during childbirth, we looked at women's birth beliefs during pregnancy and how they change after childbirth (**Chapter 6**). Birth beliefs can be distinguished as natural and medical beliefs. Although these two are moderately (negatively) correlated with each other, they are independent concepts and not mutually exclusive. Most women in our research scored high on natural birth beliefs and lower on medical birth beliefs, corresponding with the philosophy of Dutch maternity care that considers pregnancy and childbirth to be natural processes. Additionally, we found very small changes between prenatal and postnatal birth beliefs. Regression analyses showed that (previous) childbirth experiences were the most consistent predictor of women's birth beliefs during pregnancy and postpartum. Positive experiences strengthen natural birth beliefs and weaken medical birth beliefs. We also found that pregnant women with an obstetrician as the main care provider had stronger beliefs about birth as a medical process and weaker beliefs about birth as a natural process when compared with women who received care from a midwife. We concluded that maternity care providers need to be aware of what women believe about birth and how they, as provders of care, influence those birth beliefs. The contribution they make to women's perinatal experiences affects women's beliefs about birth which may influence the choices they make for care in the future.

Using women's voices for quality improvement in maternity care

The Dutch interdisciplinary guideline for integrated maternity care – the "Care Standard" mentioned above – encourages the use of women's experiences as a tool for quality improvement. In our final study we explored the implementation of using the voices of women as a tool for improving care by the Maternity Care Collaborations (MCC's [VSV's]) that participated in our StEM study (**Chapter 7).** While the importance of integrating women's voices into quality improvement was acknowledged by participating MCC's, quality improvement based on feedback from women is still in its infancy. Lack of expertise, organizational structure, time, and financial resources hinder the translation of women's voices into quality improvement by MCC's. To overcome these barriers maternity care professionals must be supported in their efforts bring women's voices into programs for quality improvement. For example, nationally validated surveys should be made available for use by MCCs, and MCCs should be given assistance in fielding and analyzing the results of survey and interview studies of women in their care.

REFLECTION ON THE MAIN FINDINGS OF THIS THESIS

Some interesting and important themes emerged from this thesis. Our work calls attention to the many and varied dimensions of women's experiences during the perinatal period,

the benefits of a salutogenic approach in maternity care, and the gaps in the implementation of the Care Standard in daily practice. We reflect on these themes in the following pages.

Dimensions of women's experiences during the perinatal period

Central to our work are the eight dimensions of women's experiences during the perinatal period as conceptualized in the Maastricht Perinatal Framwork. In this paragraph, we reflect on the results of the StEM study in the context of this framework. In our scoping review, we found that in spite of the fact that each dimension of our framework is conceptually distinct, there are overlaps and close relationships between the dimensions. This is something that also emerged in our explorative studies. Women being in control during their care is a factor found in several dimensions of our framework, a fact that was confirmed by our data. According to Meyer,[3] there are several attributes of control. Being an active participant in the decision-making process is identified as the first attribute of control. This attribute fits the dimension "the woman is an active participant in care." This dimension highlights that the possibility for a woman to actively participate in the decision-making process is an important factor in her experience of the perinatal period. We explored this attribute of control in the study presented in Chapter 5, where we observed that, in general, women perceived high levels of autonomy in conversations with maternity care providers. A second attribute of control is supportive, respectful, and trusting relationships with maternity care providers, all of which enhance a woman's security. This attribute of control fits with the fifth dimension of our framework, "communication and relationship with maternity care providers," and is also evident in the research reported in chapter 5. In that study, we found that women's experiences of personal treatment by care providers enhance women's preceived autonomy in decision-making conversations. Access to information is the third attribute of control and fits in the "information and childbirth education" dimension of our framework. We explored this attribute of control in the study of chapter 4. In chapter 5 we showed information provision to be an important predictor of perceived autonomy in decision-making conversations with midwives.

Together, our studies give a broad view of critical aspects of the perinatal experience. This thesis showed that the perinatal experience is a multidimensional concept that is influenced by a combination of biomedical, psychological, social, and societal aspects and is not restricted to the care a woman receives. While our scoping review did not allow us to offer a precise description of the extent to which each aspect influences a woman's perinatal experience, our StEM studies provide insight into those factors that weigh more

heavily in the experiences of women. The influence of socio-demographic and obstetric variables do not seem to be as important as the type of care provider (e.g. midwife or obstetrician), the nature of the care given, and a woman's perception of her experiences during the perinatal period. These findings underline the impact and importance of individualized, woman-centred care as a crucial facilitator of woman's autonomy in decision making and positive perinatal experiences.[4-7] Women-centered care prioritizes individual needs as defined by the woman herself. It also focuses on the health and wellbeing of the woman and her child, the woman's experience, and the meaning, and manageability, of the perinatal period for a woman.[8] Finally, our research allowed us to identify direct, indirect, and contradictory effects of aspects of women's perinatal experiences, illustrating how complicated it is to understand the mechanisms implicated in the way a woman experiences pregnancy and childbirth.

The benefits of a salutogenic approach in maternity care

A salutogenic orientation towards maternity care promotes the provision of woman-centred care.[9] Antonovsky's theory of salutogenesis calls for an orientation focusing on factors that support health and wellbeing in contrast to a pathogenic model that focuses on factors that cause illness or disease.[10] The salutogenic model, with its core concept of sense of coherence (SOC) reflects a coping capacity of people to deal with everyday life stressors.[11,12] This orientation has a strong resonance for maternity care as the majority of births are among healthy women.[13] Moreover, the perinatal period is an intense, powerful, and life changing event that affects a woman's whole being.[14] Midwifery care in particular includes several salutogenic qualities.[15] A series in the Lancet focusing on midwifery, stated that worldwide, regardless of the circumstances or healthcare system, the health and wellbeing of women and babies can be improved by midwifery care.[16] Our studies point to several benefits of midwife-led care that are linked to a salutogenic approach. For example, it has been noted that a salutogenic quality of midwifery is its ability to strengthen a woman's autonomy via the provision of care in a personalized relationship.[15] We found this to be true. We observed that women's reported autonomy was considerably higher during decision-making conversations with midwives in late pregnancy and birth than in conversations with obstetricians (Chapter 5). We also found that midwives are highly valued as a source of information (Chapter 4), which is a necessary condition for supporting decisions during pregnancy and childbirth and for promoting women's autonomy in decision-making.[17] Another salutogenic aspect of midwifery care is its support of the normal biopsychosocial processes in childbearing women.[15] Despite the increasing medicalization of childbirth, we found that women who received midwife-led care scored significantly

higher on natural, and lower on medical, birth beliefs than women who received obstetrician-led care. The same was true for women who gave birth at home, where community midwives provide care (Chapter 7). This is important to notice as women with more medical birth beliefs are more willing to accept, and more likely to undergo, interventions,[18,19] promoting the medicalization of childbirth and negatively affecting women's childbirth experiences and their wellbeing.

Implementation of the care standard in daily practice

To enhance woman-centredness in maternity care – a key recommendation of the Care Standard [20] – it is essential to recognize that perinatal experience is a multidimensional concept that is influenced by organizational, physical, psychological, and social aspects. In this thesis, we moved beyond a limited focus on the care-related aspects of women's experience to explore how the larger context of shapes the experience of the perinatal period. This broad approach offers critical insights needed if we are to implement certain recommendations of the Care Standard in (daily) practice.

The Care Standard mentions that every woman has the right to clear and reliable information tailored to her individual needs. Our results (**Chapter 4**) suggest that the current, mostly printed, professional information sources do not completely meet the needs of the contemporary generation of pregnant women. An important finding of our study is that leaflets provided by maternity care professionals are less often used than digital sources. Digital media are – besides midwives – the most commonly used information sources for pregnant women, even though they are perceived as less trustworthy than leaflets. Our results point to the need for maternity care providers to discuss the information sources women use and to support them in interpreting the value and reliability of this information in the context of their own situation. By doing this, care providers can prevent poor decisions based on misinformation, and help women to make well-informed, autonomous decisions. In addition, given their wide use, it is essential that professionals assist in the development of digital information sources.

An important recommendation of the Care Standard is that maternity care providers provide information and advice free from personal values and ensure that their preferences are not "forced upon the women".[20] We found (**Chapter 5**) that while women in general scored high on perceived autonomy in conversations with midwives and obstetricians, during late pregnancy and childbirth a substantial group reported lower autonomy in care conversations with obstetricians. Furthermore, among the group of women who had at least one intervention during birth, nearly 50% reported pressure to accept or submit to an intervention. These findings are especially relevant for maternity care policy as previous

Dutch studies reported that women frequently attribute their traumatic childbirth experience to loss of autonomy and use of pressure.[21,22] While care providers may think they are offering shared decision-making, women perceive that they had a limited role in decisions about their care.[23,24] It is worth noting that care providers often say that inadequate communication and behaviours that are not woman-centred are problems in *other* people's practice rather than their own.[25] Interventions like education, training, and collaborative team-based approaches including peer evaluation and peer support are essential steps for improving care providers' behaviour.[26,27]

Finally, the Care Standard recommends the collection and use of women's experiences for quality improvement. However, we found that while the importance of integrating women's voices into quality improvement was acknowledged in participating MCC's in our study, more work needs to be done to make quality improvement based on women's voices a reality (**Chapter 7**). Maternity care professionals indicated that their ability to use women's experiences to make structural changes that will improve quality is hindered by a combination of a lack of expertise, existing organizational structures, insufficient time, and limited financial resources. The diversity of methods used to assess experience and the myriad of factors that shape women's experience also present challenges for maternity care providers. PREMs (Patient Reported Experience Measurements) are commonly used to evaluate the quality of care. They offer a good starting point to explore women's experiences with the quality of maternity care. Two main purposes of PREMs are to compare performance across healthcare organizations and to provide information that can be used for local quality improvement.[28] However, the care professionals in our study reported that data about women's experiences are too sensitive to share with professional groups or between Maternity Care Collaborations. To support effective implementation, we suggest the use of a PREM in Dutch maternity care only for quality improvement at first. Once properly implemented, comparison of performance across maternity care organizations can be considered as a next step.

Our results suggest that several recommendations of the Care Standard have not yet been optimally implemented and point to areas that need to be addressed if maternity care in the Netherlands is to put the woman and her child at the centre of care.

STRENGTHS AND LIMITATIONS

The design and provision of good quality maternity care should incorporate what matters to women's experiences. Research on women's perinatal experiences is extensive. However, most studies of women's experiences focus only on childbirth or care-related aspects,

leaving the many other elements that shape perinatal experiences unexplored. A strength of this thesis is that we focussed on a broad and holistic overview of women's perinatal experiences that goes beyond care-related aspects and their associated factors. As a result, this thesis provides several new interesting insights into women's attitudes and experiences during pregnancy and childbirth in the Netherlands.

Another strength of our exploratory research is its use of a large sample of 1922 pregnant women and 1572 women who recently gave birth spread throughout rural and urban areas in the Netherlands. Still, it is important to note that our results represent general tendencies of childbearing women in the Netherlands. Even though giving birth is an event that many women share, each birth is a unique experience and has a significant personal meaning for a woman. As a consequence, different women will probably experience the same thing differently.

Recall bias is a methodological issue in all research involving surveys. Women in our StEM study reported retrospective experiences of their childbirth between six weeks and one year after birth, creating the potential risk of recall bias. However, recall bias should not be seen as a restriction of our study as recall bias is related to the facts and not the perception of an experience. A danger of drawing the wrong conclusions exists if we solicit only the facts of the perinatal period and not women's perceptions of that experience when using any large scale study as a basis for changing policies and practice of care.[29] Additionally, a strength of our study is that we chose to ask questions about the content of antenatal care *during* pregnancy – and not in retrospect – allowing women to focus on the antenatal care per se, rather than being influenced by their birth experience.

Our study is limited by our recruitment method. Women were asked to participate by their care providers or social media, resulting in limited control over the inclusion process and an inability to characterise non-responders. The characteristics of the respondents in our study were for the most part representative of pregnant and birthing women in the Netherlands. However, like many survey studies done in the Netherlands, the percentage of women with a non-Dutch background was smaller in our sample. While our scoping study mentioned that understanding women's experiences is culturally framed, we missed a significant group of women with a non-Dutch background as only women who understood the Dutch language were included. Nevertheless, the large sample of women in various stages of the perinatal period offers valuable insight into perinatal experiences of women in the Netherlands. Moreover, we had an overrepresentation of women giving birth in midwife-led care in our childbirth cohort. In our study, 49% of the women gave birth under the responsibility of a community midwife, and 28% had a home birth. Of all women in the

Netherlands, 29% gave birth under the responsibility of a community midwife, and 13% had a homebirth.[30] It is unclear if this overrepresentation of women in midwife-led care with physiological birth contributed to more pronounced benefits of midwife-led care during childbirth.

Finally, our StEM study was conducted in the Netherlands, reflecting the trends of a care system that emphasizes the normality of pregnancy and childbirth and the acceptability of women's free choice of birthplace.[31] Consequently, the findings may not be fully transferable to other maternity care systems, where values, care organization, and social context may be different.

RECOMMENDATIONS

Recommendations for practice and policy

- Maternity care providers and policymakers must be aware that perinatal experiences are influenced by more than the care a woman receives. It is essential to recognize that the perinatal experience is a multidimensional concept influenced by organizational, physical, psychological, and social aspects.
- To improve women's perinatal experiences, it is important to be aware that being pregnant and giving birth is a continuous process, with previous experiences affecting current and future experiences and choices.
- Awareness of the impact of maternity care providers' behaviour is essential to improve the woman-centredness of maternity care.
- Improvement of shared decision-making, information provision tailored to the needs of the contemporary generation of pregnant women, and exploring how women' want to make their care choices are key to improving maternity care and women's experiences in daily practice.
- Individualised woman-centred care and a salutogenic approach are essential aspects and must not be lost in the changing landscape of Dutch maternity care.

Recommendations for future research

- Women's experiences during pregnancy and childbirth vary across the organization of maternity care. In our studies, we made a distinction between midwife-led and obstetrician-led care. However, we were not able to make clear distinctions between several other organizational models of maternity care in the Netherlands. In the context of developments around integrated care it is important to evaluate new

models of care in relation to women's perinatal experiences. By comparing outcomes of a variety of organizational models of care, we can learn which models most positively affect women's perinatal experiences.

- Our framework underscores the importance of women's social environment and the societal influence on women's perinatal experiences. However, our exploratory studies gave less attention to these dimensions. Further research exploring women's experiences during the perinatal period needs to focus on societal influence and women's direct social environment.
- Political decisions about the allocation of health resources and implementation of guidelines impact women's experiences of the perinatal period. However, less is known how (national) policies and restrictions (for example, during the COVID-19 pandemic) affect women's experiences. Further research needs to focus on how particular policies and guidelines impact perinatal experiences.
- Finally, there is a need for in-depth research of women's experiences of the recommendations made in the Care Standard – like the use of a case manager and birth plan – which were not a part of the research done for this thesis.

CONCLUSION

This thesis showed that the perinatal experience is a complex, multidimensional concept encompassing biomedical, psychological, social, and societal aspects. Amidst this complexity, it appears that "being in control" and relational aspects of care are of more importance for shaping women's perinatal experiences than obstetric interventions and personal characteristics. To improve women's perinatal experiences, personalised woman-centred care and a salutogenic orientated approach must be structurally embedded in all levels of the changing landscape of Dutch maternity care.

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9

Summary
Samenvatting

CHAPTER 1

This chapter describes the background, rationale, and aims of this thesis.

A woman's experience during pregnancy and childbirth has long-lasting implications, not only for herself, but for her family, community, and the larger society. Studies of women's experiences during the perinatal period, in the Netherlands and elsewhere, have focused almost exclusively on care related aspects, ignoring the many other dimensions that are important to women, such as social aspects and the larger environment of the women.

It is only in the last few years that care providers, health care institutions, and policymakers have begun to recognize that the experience of childbirth is a central feature of quality maternity care. This is true in the Netherlands, where researchers and policy makers have started to pay attention to the fact that efforts to improve the quality of care must focus on how women *experience* the maternity care system. The interdisciplinary *Care Standard Integrated Maternity Care*, issued in 2016 [Zorgstandaard Integrale Geboortezorg, from now on: Care Standard] explicitly mentioned the experience of care as a critical aspect of ensuring high quality maternity care. This government policy intended to improve and protect the health of mothers and babies, calls for optimizing women's experiences of pregnancy and childbirth via the adoption of woman-centred care. This is a good first step. The next step – implementing and promoting woman-centred care – requires increasing our knowledge of how women experience their care.

The aim of this thesis was to gain a broad and holistic overview of women's perinatal experiences. The research focused on women's experiences in the changing landscape of Dutch maternity care.

CHAPTER 2

This chapter offers a valuable overview of the many dimensions of women's experience of the perinatal period. The literature on women's experiences during the perinatal period is extensive, however, after an exhaustive literature search we found that a clear conceptualization of what is involved in the experience of the perinatal period is lacking. Most literature focuses on the care a woman receives or on the biomedical and psychological aspects of the perinatal period. Other aspects significant to women are ignored.

In our search for frameworks linked to quality of maternity care, we considered the framework of the Lancet paper Midwifery and the Standard Set of outcome measures of the International Consortium for Health Outcome Measurement (ICHOM) Pregnancy and Birth.

However, these frameworks lacks a focus on women's experiences during the whole perinatal period or does not include the larger environment of the woman that also plays a role in her experience of the perinatal period. We therefore broadened our search by looking for frameworks describing patient experiences more generally. Our search for frameworks describing dimensions of patient experiences in other (health) care contexts led us to the Warwick Patient Experience framework (WaPEF). This framework offered insight into relevant dimensions of patient experiences that are transferable to maternity care and the perinatal period. We translated the WaPEF dimensions for the perinatal period and checked it against the frameworks of the Lancet papers Midwifery and ICHOM pregnancy and Birth. We identified seven dimensions that are relevant for women's experience of the perinatal period: (1) The woman as a unique individual (maternal characteristics); (2) Woman as an active participant in care; (3) Responsiveness of maternity care and health services – an individualized approach; (4) Lived experience of being pregnant, giving birth, and the postpartum period; (5) Communication and relationship with care providers' (6) Information and childbirth education, and (7) Support from social environment. The framework provided us with a conceptual foundation for the scoping review described in Chapter 3.

CHAPTER 3

This chapter presents the results of a scoping review of women's experience of the perinatal period, done to validate our earlier defined framework (Chapter 2). For this study, we conducted a systematic search using five electronic databases. In total 251 publications that focused on the experience of the perinatal period were included in this review. The findings of our review support the seven themes of the Warwick Patient Experience Framework. However, in the course of doing this review, we realized the focus of our framework was limited to the meso- and micro-level and that the experience of the perinatal period needs to be understand on the macro-level as well. As a result we added "societal influence" as an eighth dimension of our framework.

Moreover, we found that while each dimension of our framework is distinct, there are significant overlaps and close relationships between the dimensions. We were able to describe those interactions and to identify direct, indirect, and contradictory effects of aspects of women's experiences of the perinatal period, all of which illustrate how complicated it is to understand the mechanisms that drive a woman's experience of pregnancy and birth. The final result is the Maastricht Perinatal framework. This framework offers a lens for interpreting the large number of studies on the perinatal experience, but like all

frameworks, it must be tested and adjusted as new studies appear and we learn more about women's' experiences.

CHAPTER 4

'Information and education' was an important dimension in our Maastricht Perinatal framework (dimension 6). In this chapter, we examined pregnant women's use of information sources and their assessment of the quality of that information.

The data came from our 'SteM' Study ('StEM' – **St**em en **E**rvaringen van **M**oeders, [Voice and Experiences of Mothers]). This cross-sectional study of women's preferences and experiences during pregnancy, childbirth, and the postpartum period conducted in the Netherlands between February 2019 and February 2020. Women were invited for one of three cohorts; (1) If they were between 12 and 20 weeks pregnant *(early pregnancy cohort)*, (2) if they were more than 32 weeks pregnant *(late pregnancy cohort)*, and (3) between 2-12 months postpartum *(childbirth cohort)*. We designed a self-administered survey for each of the three cohorts. The surveys included questions about women's (background) characteristics, validated instruments, and for the childbirth cohort questions about the outcomes of birth.

A total of 1922 pregnant women were included for this study (*early* pregnancy 750, and *late* pregnancy 1172 women). Our results showed that the most used information sources were midwives (91.5%), family or friends (79.3%), websites (77.9%), and apps (61%). Leaflets provided by maternity care professionals were used less often than peers, apps, and websites. Despite the high use of digital sources, such as websites and apps, women in our study rated these media as the *least* trustworthy sources of information. Professional sources were regarded as more trustworthy and seen as offering more useful information. Personal characteristics of the participating women such as age, level of education and parity explain no, or only a small part of the variation in perceived quality of different information sources.

Our research points to the need to put more emphasis on developing professional information about pregnancy and childbirth in digital formats like websites and apps. Leaflets do not match the information needs of the contemporary generation of pregnant women.

We learned that maternity care providers should explore and discuss the information about pregnancy and childbirth that pregnant women are using and direct them to trustworthy and user-friendly digital information sources. These discussions will allow maternity

care providers to prevent inaccurate decisions based on misinformation and strengthen the process of shared decision-making.

CHAPTER 5

In this study, we explored another dimension of the Maastricht Perinatal Framework 'the woman as active participant in her care' by exploring women's perceived autonomy in decision-making conversations with maternity care providers during pregnancy and childbirth.

A total of 3494 women of our StEM study were included in this study (1922 during pregnancy and 1572 during the postpartum period).

We found that women's autonomy in decision-making conversations with midwives and obstetricians was mostly high, but with room for improvement, most notably in conversations with obstetricians during the latter stage of pregnancy (32 weeks +) and in childbirth. Our analyses showed that personal treatment was an important factor increasing women's reported autonomy in their conversations with both midwives and obstetricians about pregnancy and childbirth related decisions. We also found that many women who had at least one intervention during birth reported pressure to accept or submit to the proposed interventions: this was true for 48.3% of all women with induced labor, 47.3% with an instrumental vaginal birth, 45.2% with augmented labor, and 41.9% of women with a caesarean birth.

Our results showed that personal treatment, including shared decision-making and the avoidance of pressure to accept interventions increased women's perceived autonomy, pointing the way for maternity care providers to improve their practice and enhance the experience of childbirth for those in their care.

CHAPTER 6

In this study, we explored women's beliefs about birth as a natural and medical process as two separate dimensions, and the factors associated with those birth beliefs. Data were obtained from our StEM study. A total 3494 women were included in this study and 678 women completed both the late pregnancy and postpartum survey, providing us with a longitudinal dataset of 678 women that allowed pre- and post-partum comparison of responses.

We found, that in general, women were more inclined to see birth as a natural process than as a medical process, a finding that corresponds with the philosophy of birth, i.e., that

pregnancy and childbirth are physiological processes that guides policy in the Netherlands. Mean scores for natural birth beliefs ranged between 3.73 to 4.01 points on a 5-point scale and medical birth beliefs scores ranged between 2.92 to 3.12 points.

Pregnant women with an obstetrician as the main care provider had stronger beliefs about birth as a medical process and weaker beliefs about birth as a natural process than women who received care from a midwife. The same was found for women who had an obstetrician-led hospital birth compared to women with midwife-led home birth. On average, women's natural birth belief scores declined after childbirth and their medical birth-beliefs scores increased. Although this change was significant, the average change was minimal and strongly affected by women's prenatal birth belief scores.

Our regression analyses showed that (previous) childbirth experiences were the most consistent predictor of women's birth beliefs. Positive childbirth experiences had a positive effect on women's belief in birth as a natural process and a negative effect on women's beliefs in birth as a medical event. Our study also suggests that women's overall perception of their childbirth experience has a greater influence on their beliefs about birth than do obstetric interventions.

We conclude that maternity care providers must be aware of women's birth beliefs and recognize how they influence those beliefs. Their contribution to a woman's perinatal experiences will affect, her beliefs about birth and her choices for care in the future.

CHAPTER 7

This chapter presents the results of a qualitative, descriptive study of care professionals' experience with and opinions about integrating women's voices into the process of quality improvement. The Maternity Care Collaboration (MCC's) that recruited women for our StEM study, received a report of the anonymized results of women's perinatal experiences receiving care in their MCC. Using semi-structured interviews, we explored how maternity care professionals used the data about women's experiences to improve the quality of care in their MCC. Twelve maternity care professionals involved in quality improvement activities from eight MCC's were included in this study. A content analysis was performed using both inductive and deductive coding strategies to identify themes and patterns between themes.

We found that quality improvement based on women's voices was still in its infancy, and experienced as an important but challenging topic. Maternity care professionals in this study mentioned that structured follow-up in quality improvement activities was low after

the StEM reports came available. They indicated that their ability to use women's experiences to make structural changes that will improve quality is hindered by a combination of a lack of expertise, existing organizational structures, insufficient time, and limited financial resources. Furthermore, we found that transparency about data of women's experiences felt a sensitive issue as this might reinforce a sense of competition.

There is a need to develop strategies for implementing quality improvement in the cross-organizational context of an MCC. External support might boost actions of care professionals for integrating women's voices in quality improvement, for example from professional associations offering a national, validated survey and standard reports of the results. Additionally, actions and expertise of the care professionals should be stimulated.

CHAPTER 8

This chapter presents an overview of the main findings of this thesis and the implications for maternity care practice.

Together, our studies give a broad view of a number of critical aspects of women's perinatal experience. Central to our work is our conceptual model, the Maastricht Perinatal Framework, capturing eight essential dimensions of women's experiences during the perinatal period. This framework showed that the perinatal experience is a complex, multidimensional concept that involves much more than just childbirth and the care offered before, during, and after birth. It is essential to recognize that perinatal experience is a concept influenced by organizational, physical, psychological, and social aspects. Moreover, our research allowed us to identify direct, indirect, and contradictory effects of aspects of women's perinatal experiences, illustrating how complicated it is to understand the mechanisms implicated in the way a woman experiences pregnancy and childbirth. Amidst this complexity, it appears that "being in control" and relational aspects of care are of more importance for shaping women's perinatal experiences than obstetric interventions and personal characteristics. These findings underscore the impact and importance of individualized woman-centred care as a crucial facilitator of positive perinatal experiences. To improve women's perinatal experiences personalised woman-centred care must be structurally embedded in all levels of Dutch maternity care. A salutogenic orientation – with a focus on factors that support health and wellbeing, rather than responding to pathology – promotes the provision of woman-centred care. Midwifery care in particular includes several salutogenic qualities that must not be lost in the changing landscape of Dutch maternity care.

Finally, our results suggest that several recommendations of the Care Standard have not yet been optimally implemented and point to areas that need to be addressed, such as clear and reliable information tailored to women's individual needs and ensuring that maternity care providers preferences are not "forces upon the women".

In the context of developments around integrated care – as suggested in the Care Standard – further research is needed to evaluate women's perinatal experiences in relation to newly adopted and proposed models of care. By comparing outcomes of these models of care, we can learn which models most positively affect women's perinatal experiences, enhance the woman-centredness of Dutch maternity care, and optimize outcomes.

HOOFDSTUK 1

Dit hoofdstuk beschrijft de aanleiding en het doel van dit proefschrift.

De ervaringen van een vrouw tijdens haar zwangerschap, bevalling en kraamtijd [vanaf nu de perinatale periode] hebben langdurige gevolgen. Niet alleen voor haarzelf, maar ook voor haar familie, haar omgeving en de maatschappij waarin zij leeft. Studies naar ervaringen van vrouwen tijdens de perinatale periode, zowel in Nederland als elders, richtten zich doorgaans op zorggerelateerde aspecten. Hierbij wordt veelal geen notie genomen van andere aspecten die voor een vrouw van belang zijn tijdens de perinatale periode.

Pas de laatste jaren zijn zorgprofessionals en beleidsmakers gaan inzien dat ervaringen van vrouwen tijdens de perinatale periode een belangrijk uitkomstmaat is voor de geboortezorg. In Nederland zijn we steeds meer aandacht gaan besteden aan het feit dat inspanningen om de kwaliteit van de geboortezorg te verbeteren zich onder andere moet richten op positieve ervaringen. In 2016 werd de Zorgstandaard Integrale Geboortezorg in Nederland uitgebracht met als doel de kwaliteit en veiligheid van de Nederlandse geboortezorg te verbeteren. Deze zorgstandaard benoemt het optimaliseren van perinatale ervaringen door middel van persoonsgerichte zorg als een kritisch aspect voor het waarborgen van kwalitatief hoogwaardige geboortezorg. Dit is een goede eerste stap. De volgende stap - het implementeren en bevorderen van persoonsgerichte geboortezorg - vereist het vergroten van onze kennis over hoe vrouwen de perinatale periode ervaren.

Het doel van dit proefschrift was dan ook om een breed en holistisch overzicht te krijgen van de ervaringen van vrouwen tijdens de perinatale periode. Het onderzoek richtte zich daarbij voornamelijk op de ervaringen van vrouwen in het veranderende landschap van de Nederlandse geboortezorg.

HOOFDSTUK 2

Dit hoofdstuk biedt een overzicht van verschillende dimensies die relevant zijn voor de ervaringen van vrouwen tijdens de perinatale periode. De literatuur over ervaringen tijdens de perinatale periode is omvangrijk. Na een uitgebreide literatuurstudie vonden wij echter dat het ontbrak aan een duidelijke conceptueel model dat een overzicht biedt van alle relevante dimensies die van invloed zijn op de ervaring van een vrouw tijdens de perinatale periode. De meeste literatuur richt zich op de zorg die een vrouw ontvangt, of op de biomedische en psychologische aspecten van haar zwangerschap en bevalling. Andere aspecten die voor een vrouw van belang zijn, worden veelal buiten beschouwing gelaten.

Tijdens onze zoektocht naar een conceptueel model dat verband houdt met de kwaliteit van de geboortezorg, hebben wij het framework van de Lancet papers of Midwifery en de uitkomstenset Zwangerschap van het International Consortium for Health Outcome Measurement (ICHOM) bestudeerd. In deze sets ontbreekt echter de focus op de ervaringen van vrouwen tijdens de *gehele* perinatale periode of wordt er geen rekening gehouden met de sociale omgeving van de vrouw die ook een rol speelt in de beleving van haar zwangerschap, bevalling en kraamtijd. Daarom hebben we onze zoektocht verbreed naar kaders die patiëntervaringen meer in het algemeen beschrijven. Deze zoektocht leidde ons naar het Warwick Patient Experience framework (WaPEF). Dit framework biedt inzicht in relevante dimensies van patiëntervaringen die overdraagbaar zijn naar de geboortezorg. Vervolgens hebben wij de WaPEF dimensies naar de perinatale periode vertaald en deze getoetst aan de Lancet papers of Midwifery en de uitkomstenset Zwangerschap en Geboorte van de ICHOM. Daaropvolgend hebben wij een framework ontwikkeld dat zeven dimensies beschrijft die relevant zijn voor de ervaringen van vrouwen tijdens de gehele perinatale periode. Deze zeven dimensies zijn: (1) De vrouw als uniek individu (persoonlijke kenmerken); (2) De vrouw heeft een actieve rol in het zorgproces; (3) Geboortezorg waarbij de zorgvraag centraal staat – zorg passend bij de individuele situatie; (4) Zwangerschap en bevallen is een ingrijpende levensgebeurtenis dat doorleefd en doorvoelt wordt; (5) Communicatie en relatie met zorgverleners; (6) Informatie en voorlichting over zwangerschap, bevalling en kraamtijd; en tot slot (7) Steun van de sociale omgeving. Deze zeven dimensies verschaften ons een conceptuele basis voor de scoping review die wordt beschreven in Hoofdstuk 3.

HOOFDSTUK 3

Dit hoofdstuk presenteert de resultaten van een scoping review, die wij hebben uitgevoerd om de zeven dimensies uit hoofdstuk 2 te valideren en te verifiëren. Voor deze studie hebben we een literatuursearch uitgevoerd in vijf elektronische databases. In totaal werden 251 publicaties die betrekking hebben op de ervaring van vrouwen tijdens de perinatale periode geïncludeerd. De bevindingen van deze scoping review ondersteunen de eerder gedefinieerde zeven dimensies die wij in hoofdstuk 2 hebben gedefinieerd. In de loop van deze review realiseerden wij ons dat de focus van deze dimensies zich beperkte tot factoren op meso- en microniveau. Ervaringen tijdens de perinatale periode moeten echter ook op macroniveau worden bezien. Daarom hebben we "maatschappelijke invloed" als achtste dimensie aan ons initiële framework toegevoegd.

Daarnaast ontdekten we dat, hoewel elke dimensie van ons framework uniek is, er nauwe relaties en aanzienlijke overlap bestaat tussen de verschillende dimensies. Tot slot identificeerden wij zowel directe als indirecte en tegenstrijdige effecten van aspecten die van belang zijn voor de ervaringen van een vrouw tijdens de perinatale periode. Dit illustreert hoe ingewikkeld het is om de mechanismen van perinatale ervaringen te begrijpen.

Met dit framework hebben wij een eerste stap gezet een kader te creëren en te valideren, dat het multidimensionale en dynamische fenomeen van perinatale ervaringen beschrijft. Het zal echter getest en aangepast moeten worden naarmate er nieuwe studies verschijnen en we meer te weten komen over de ervaringen van vrouwen tijdens de perinatale periode.

HOOFDSTUK 4

In de studie beschreven in dit hoofdstuk onderzochten we de derde dimensie "voorlichting en educatie" van ons framework dat is beschreven in hoofdstuk 3. In deze studie onderzochten we het gebruik van informatiebronnen door zwangere vrouwen en hun oordeel over de betrouwbaarheid en bruikbaarheid hiervan.

De data voor deze studie was afkomstig uit onze 'SteM'-studie [Stem en Ervaringen van Moeders]. Deze kwantitatieve studie naar de voorkeuren en ervaringen van vrouwen tijdens de zwangerschap, bevalling en de kraamtijd werd uitgevoerd in Nederland tussen februari 2019 en februari 2020. Vrouwen werden uitgenodigd als ze (1) tussen 12 en 20 weken zwanger waren, (2) als ze meer dan 32 weken zwanger waren, en (3) 2-12 maanden na de bevalling. Voor elk van deze drie groepen werd er een aparte vragenlijst ontwikkeld. Deze vragenlijsten bevatte vragen over (achtergrond)kenmerken van de vrouw, enkele gevalideerde meetinstrumenten, en voor het bevallingscohort vragen over de uitkomsten van de bevalling.

Voor deze studie werden in totaal 1922 zwangere vrouwen geïncludeerd (750 vrouwen bij een zwangerschapsduur tussen de 12-20 weken, en 1172 vrouwen na een zwangerschapsduur van 32 weken). Onze resultaten toonden aan dat de verloskundige de meest gebruikte informatiebron was (91,5%), gevolgd door familie of vrienden (79,3%), websites (77,9%), en apps (61%). Folders die door verloskundige zorgverleners werden verstrekt, werden minder vaak geraadpleegd dan familie of vrienden, websites en apps. Ondanks het veelvuldig gebruik van digitale bronnen, zoals websites en apps, beoordeelden de vrouwen in dit onderzoek deze digitale bronnen als minst betrouwbaar. Bronnen die door verloskundige zorgverleners werden aangeboden, werden als betrouwbaarder en bruikbaar-

der gezien. Desalniettemin werden deze bronnen veel minder vaak geraadpleegd dan digitale informatiebronnen. Tot slot vonden wij dat de persoonlijke kenmerken van de deelneemsters aan ons onderzoek (bijvoorbeeld leeftijd en opleidingsniveau), geen of slechts een klein deel van de variatie in beoordeelde kwaliteit van de informatiebronnen verklaarden.

Dit onderzoek wijst op de noodzaak om meer nadruk te leggen op het ontwikkelen van professionele informatie over zwangerschap en bevalling in digitale bronnen, aangezien folders niet lijken aan te sluiten bij de informatiebehoefte van de hedendaagse generatie zwangere vrouwen. Tevens leerden wij van dit onderzoek dat het belangrijk is dat verloskundige zorgverleners bespreken welke informatie vrouwen reeds hebben verkregen en welke bronnen zij hiervoor gebruikten. Verloskundige zorgverleners spelen een belangrijk rol in het aanbieden van betrouwbare en gebruiksvriendelijke informatiebronnen. Dit kan het proces van gezamenlijke besluitvorming versterken en tevens worden vrouwen hierdoor in staat gesteld om beslissingen gebaseerd op verkeerde informatie te beperken of te voorkomen.

HOOFDSTUK 5

In de studie beschreven in dit hoofdstuk onderzochten we de tweede dimensie van ons framework 'de vrouw speelt een actieve rol in de zorg'. Hierin geven wij de resultaten weer van een studie over de ervaren autonomie van vrouwen tijdens besluitvormende gesprekken met verloskundigen en gynaecologen tijdens hun zwangerschap en/of bevalling.

In totaal werden 3494 vrouwen uit onze StEM-studie geïncludeerd voor dit onderzoek (1922 vrouwen tijdens hun zwangerschap en 1572 vrouwen na hun bevalling).

In deze studie vonden wij dat de ervaren autonomie van vrouwen in besluitvormende gesprekken met verloskundigen en gynaecologen over het algemeen hoog was, maar dat er ruimte was voor verbetering. Dit kwam vooral naar voren tijdens gesprekken met gynaecologen in de laatste fase van de zwangerschap (32+ weken) en tijdens de bevalling. Deze studie toonde aan dat persoonlijke behandeling een belangrijke factor is die de autonomie van vrouwen in besluitvormende gesprekken vergroot met zowel verloskundigen als gynaecologen. Tevens vonden wij dat veel vrouwen bij wie ten minste één ingreep tijdens de bevalling plaatsvond, druk rapporteerden om de voorgestelde ingreep te accepteren of te ondergaan: Dit gold voor 48,3% van alle vrouwen bij wie de bevalling werd ingeleid, 47,3% van de vrouwen die een vaginale kunstverlossing ondergingen, 45,2% van de vrouwen waarvan de bevalling werd bijgestimuleerd (weeënopwekkers kregen) en 41,9% van de vrouwen die een keizersnede ondergingen.

Dit onderzoek liet zien dat een persoonlijke behandeling, met inbegrip van gezamenlijke besluitvorming en het vermijden van druk om interventies te aanvaarden, de waargenomen autonomie van vrouwen vergroot. Dit biedt belangrijke aanknopingspunten voor zorgverleners hoe zij hun zorg kunnen optimaliseren en de perinatale ervaringen kunnen verbeteren voor degenen die zij onder hun hoede hebben.

HOOFDSTUK 6

Hoofdstuk 6 beschrijft een studie waarin wij de opvattingen van vrouwen over het zien van een bevalling als een natuurlijk en een medisch proces onderzochten, en de factoren die die hiermee samenhangen. De gegevens voor dit onderzoek werden verkregen uit onze StEM-studie. In totaal werden 3494 vrouwen geïncludeerd voor deze studie. Daarnaast vulden 678 vrouwen zowel de vragenlijst in na de 32^{e} week van hun zwangerschap, alsmede de vragenlijst na hun bevalling. Hierdoor beschikten wij over een longitudinale dataset van 678 vrouwen. Dit maakte een vergelijking mogelijk hoe opvattingen over bevallen als een medisch en natuurlijk proces veranderden na de bevalling.

Wij vonden in deze studie dat vrouwen over het algemeen geneigd waren een bevalling meer te zien als een natuurlijk proces dan als een medisch proces. Deze bevindingen komen overeen met de algemeen geldende filosofie in Nederland dat zwangerschap en bevallen natuurlijke (fysiologische) processen zijn. In ons onderzoek varieerden de gemiddelde scores met betrekking tot de overtuiging dat bevallen een natuurlijk proces is van 3,73 tot 4,01 punten (op een 5-puntsschaal) en voor de scores met betrekking tot de opvatting dat bevallen een medisch proces is, was dit 2,92 tot 3,12 punten (op een vijfpuntschaal). Daarnaast vonden wij dat zwangere vrouwen met een gynaecoloog als hoofdbehandelaar hoger scoorden op de opvatting dat bevallen een medisch proces is ten opzichte van vrouwen die zorg ontvingen van een verloskundige. Tevens scoorden deze vrouwen lager op de opvatting dat bevallen een natuurlijk proces is. Hetzelfde gold voor vrouwen met een ziekenhuisbevalling onder leiding van een gynaecoloog in vergelijking tot vrouwen die thuis bevielen onder leiding van een verloskundige. Gemiddeld gezien daalden na de bevalling de scores met betrekking tot de opvatting dat bevallen een natuurlijk proces is en stegen de scores met betrekking tot de opvatting dat bevallen een medisch proces is. Hoewel deze verandering significant was, was de gemiddelde verandering zeer minimaal en werd deze verandering sterk beïnvloed door de scores voorafgaand aan de bevalling.

Regressieanalyses in dit onderzoek toonden aan dat (eerdere) bevallingservaringen de meest consistente voorspeller was voor opvattingen over bevallen als medisch en natuurlijk proces. Positieve bevallingservaringen hadden een positief effect op de opvatting dat bevallen een natuurlijk proces is en een negatief effect op de opvatting dat bevallen een medische proces is. Tot slot toonde deze studie aan dat de daadwerkelijke bevallingservaring van een vrouw een grotere invloed heeft op haar opvattingen over bevallen als een natuurlijk en medisch proces dan ondergane medische interventies.

In dit onderzoek concludeerden wij dat verloskundige zorgverleners zich bewust moeten zijn welke opvattingen vrouwen hebben met betrekking tot bevallen. Daarnaast is het belangrijk dat zorgverleners herkennen hoe zij deze opvattingen beïnvloeden. De bijdrage die zij leveren aan de ervaringen van een vrouw tijdens haar zwangerschap en bevalling, zijn van invloed op haar opvatting over bevallen als een natuurlijk en medisch proces en de daaruit voortvloeiende keuzes die zij maakt met betrekking tot haar bevalling.

HOOFDSTUK 7

Dit hoofdstuk presenteert de resultaten van een kwalitatief, beschrijvend onderzoek naar de ervaringen en meningen van geboortezorgprofessionals over het integreren van de ervaringen van vrouwen in het kwaliteitsverbeteringsproces. De verloskundige samenwerkingsverbanden (VSV's) die vrouwen includeerden voor het StEM-onderzoek, ontvingen een geanonimiseerd rapport over de ervaringen van vrouwen die zorg ontvingen binnen hun VSV. Met behulp van semi-gestructureerde interviews onderzochten we hoe verloskundige professionals deze gegevens gebruikten om de kwaliteit van zorg binnen hun VSV te verbeteren. Twaalf professionals die betrokken waren bij kwaliteitsverbeteringsactiviteiten uit acht VSV's namen deel aan dit onderzoek. Een content analysis werd uitgevoerd met behulp van zowel inductieve als deductieve coderingsstrategieën om thema's en patronen tussen deze thema's te identificeren.

We ontdekten dat alhoewel kwaliteitsverbetering op basis van de ervaringen van vrouwen waardevol werd bevonden het veelal nog in de kinderschoenen stond. De deelnemende professionals in dit onderzoek gaven aan dat de gestructureerde follow-up in kwaliteitsverbeteringsactiviteiten gering was, ook nadat de StEM-rapporten beschikbaar waren gekomen. Het vermogen om de ervaringen van vrouwen te gebruiken voor structurele veranderingen binnen het VSV wordt veelal belemmerd door een combinatie van gebrek aan deskundigheid, de organisatiestructuur, onvoldoende tijd, en beperkte financiële middelen. Daarnaast vonden wij dat transparantie over ervaringen van vrouwen een gevoelige kwestie is omdat dit een gevoel van concurrentie binnen een VSV zou kunnen versterken.

Dit onderzoek laat zien dat er behoefte is aan de ontwikkeling van strategieën voor de implementatie van kwaliteitsverbetering in de organisatie-overschrijdende context van een VSV. Externe ondersteuning kan zorgverleners stimuleren de stem van vrouwen structureel te integreren in kwaliteitsverbetering. Dit kan bijvoorbeeld gebeuren door support ven externe partijen. Bovendien moeten acties en deskundigheid van zorgverleners om de stem van vrouwen te integreren in kwaliteitsverbetering worden gestimuleerd. Beroepsverenigingen of andere landelijke partijen kunnen hiertoe bijdragen door bijvoorbeeld een nationale, gevalideerde enquête aan te bieden met rapporten van deze resultaten.

HOOFDSTUK 8

Dit hoofdstuk geeft een overzicht van de belangrijkste bevindingen van dit proefschrift en de implicaties voor de (Nederlandse) geboortezorg.

Gezamenlijk geven onze studies een breed beeld van een aantal cruciale aspecten van de ervaringen van vrouwen tijdens de perinatale periode. Centraal stond ons conceptueel model, het 'Maastricht Perinatal Framework', waarin acht essentiële dimensies van de ervaringen van vrouwen tijdens de perinatale periode zijn beschreven. Dit framework laat zien dat de ervaringen van een vrouw tijdens de perinatale periode een complex, multidimensioneel concept is dat veel meer omvat dan alleen de bevalling en de zorg die voor, tijdens en na de bevalling wordt geboden. Het is essentieel te erkennen dat perinatale ervaringen beïnvloed worden door organisatorische, fysieke, psychologische en sociale aspecten. Bovendien stelde dit onderzoek ons in staat directe, indirecte en tegenstrijdige effecten te identificeren van aspecten die van invloed zijn op de ervaringen van een vrouw tijdens de perinatale periode. Dit illustreert hoe ingewikkeld het is de mechanismen te begrijpen die van invloed zijn op de manier waarop een vrouw de perinatale periode ervaart. Te midden van deze complexiteit blijkt echter dat "in controle zijn" en relationele aspecten van de zorg die een vrouw ontvangt, van groter belang zijn voor de vorming van ervaringen tijdens de perinatale periode, dan ondergane medische interventies en de persoonlijke kenmerken van de vrouw.

Onze bevindingen onderstrepen de impact en het belang van geïndividualiseerde persoonsgerichte zorg als cruciale facilitator voor positieve ervaringen tijdens de perinatale periode. Om de ervaringen van een vrouw tijdens de perinatale periode te verbeteren moet geïndividualiseerde persoonsgerichte zorg structureel worden ingebed in alle lagen van de Nederlandse geboortezorg. Een salutogenetische benadering - met een focus op factoren die de gezondheid en het welzijn ondersteunen, in plaats van te acteren op pathologie - bevordert de implementatie van persoonsgerichte zorg. De zorg die geboden wordt

door verloskundigen heeft verschillende salutogenetische kwaliteiten die daarbij niet verloren mogen gaan in het veranderende landschap van de Nederlandse geboortezorg.

Ten slotte wijzen onze resultaten er op dat verschillende aanbevelingen van de Zorgstandaard Integrale Geboortezorg nog niet optimaal zijn geïmplementeerd in de dagelijkse praktijk. Punten die nog moeten worden aangepakt zijn: het verstrekken van duidelijke en betrouwbare informatie die is afgestemd op de individuele behoeften van een vrouw, en de garantie dat de voorkeuren van de zorgverlener niet aan de vrouw wordt opgedrongen.

In de context van ontwikkelingen rond integrale zorg - zoals vastgesteld in de Zorgstandaard Integrale Geboortezorg - is verder onderzoek nodig om de ervaringen van vrouwen in relatie tot nieuw ingevoerde en voorgestelde verloskundige organisatiemodellen te evalueren. Door de uitkomsten van deze organisatiemodellen met elkaar te vergelijken, kunnen we leren welke modellen de ervaringen van vrouwen het meest positief beïnvloeden, de persoonsgerichtheid van de Nederlandse geboortezorg vergroten en uitkomsten verder optimaliseren.

Impact paragraph
Curriculum Vitae
Dankwoord

IMPACT PARAGRAPH

This paragraph reflects on the achieved and expected scientific and societal impact of the results of this thesis.

Outcomes measures used to evaluate maternity care traditionally focus on prevention of adverse outcomes and do not include consideration of women's wellbeing during the perinatal period.[1] The key task of maternity care is to ensure that women and their (unborn) child not only survive pregnancy and childbirth but also that they achieve their full potential for health and well-being during pregnancy, childbirth, and their transition to motherhood.[2] Although "hard" clinical outcomes, such as morbidity and mortality, have an enormous impact on people's lives and society as a whole, they are too limited to capture the total impact maternity care and childbirth have on women, their newborns and their families. The salutogenic focus of this thesis is an emerging concept within maternity care, with the power to refocus on health and wellbeing during the whole perinatal period rather than on risk and pathogenesis during pregnancy and childbirth. Using this approach our research provides information necessary to improve women's experiences, allowing them to realize the full potential of health and well-being during the perinatal period.

This thesis helps to fill a gap in our understanding of the dimensions important for women's experience of the perinatal period. We have taken a first step by creating and validating a framework that assess the multidimensional and dynamic phenomenon of women's experiences during pregnancy, childbirth, and postpartum. This framework provides a broader and more holistic picture of women's experiences than earlier frameworks by going beyond birth and care-related aspects. Accordingly, our framework can guide future research, and policies that shape women's experiences during the perinatal period.

Impact on Dutch maternity care

How women experience pregnancy and childbirth in the Netherlands will likely evolve as a result of changing perceptions and organization of maternity care. This change – promoted by the Care Standard Integrated Maternity Care (ZIG) – aims to improve the quality of Dutch maternity care.[3] The policy described in the ZIG is mandatory for all maternity care professionals in the Netherlands. However, the nationwide dissemination of the ZIG did not automatically lead to effective implementation of all aspects of this Standard. This thesis adds value to the recommendations of the ZIG as it provides new insights into women's experiences in the changing landscape of Dutch maternity care. Accordingly, our findings can be used to improve several recommendations of the ZIG in daily practice and improve the woman-centredness of Dutch maternity care.

The need to promote women's autonomy in decision-making is stressed in the ZIG. Our findings about women's autonomy in decision-making conversations point to areas that need improvement. For example, we found that a substantial group of women reported lower autonomy in care conversations with obstetricians during late pregnancy and childbirth and felt pressure to accept medical interventions during birth. We also found that personal treatment, such as a trusting relationship and shared decision-making, increases women's autonomy. These findings point the way for maternity care providers to improve their practice and accomplish one of the goals of the ZIG by enhancing women's autonomy in decision-making conversations.

Moreover the Care Standard notes that every woman has the right to clear and reliable information tailored to her individual needs. Our research on women's use of information sources during pregnancy contributes to an increased awareness that we need to change the way we provide professional information to the contemporary generation of pregnant women. Our results point to the need for professionals to share information in digital media. Providing professional information in digital media could enhance women's empowerment, support decision-making, and foster their autonomy during the perinatal period.[4]

After dissemination of the ZIG, Maternity Care Collaborations [VSV's] were charged with collecting data on women's experiences for quality improvement. Integrating women's experiences in quality improvement is an important but challenging topic for Maternity Care Collaborations. These challenges have prevented the use of women's experiences for quality improvement in Maternity Care Collaborations. Participating Maternity Care Collaborations in our StEM study received a report with their results in exchange for participation in our study. These reports could be used for quality improvement. We also performed an in-depth analysis of maternity care professionals' experience of, and opinions on, integrating women's experiences in quality improvement. Our analysis of barriers and facilitators of using women's experiences for quality improvement could accompany the dissemination of the ZIG, facilitating the structural changes required for the successful use of women's experiences for quality improvement.

Lastly, we are facing increased medicalization of childbirth in the Netherlands without clear benefits for health outcomes or costs.[5,6] Women's birth beliefs and their past and present experiences affect their belief in the value of the medicalization of childbirth. This thesis contributes new knowledge about women's experiences and their birth beliefs, providing information needed to turn the tide of unnecessary medicalization of childbirth in the Netherlands.

TARGET GROUPS

This thesis explores women's experiences in the changing landscape of Dutch maternity care. Accordingly, our findings are first of interest to maternity care professionals, researchers, and policymakers in the Netherlands. Because the College Perinatale Zorg (CPZ) creates and facilitates the implementation of the ZIG, this thesis is of particular interest for CPZ.

Although our research had a strong focus on Dutch maternity care, a positive childbirth experience is a significant endpoint for all childbearing women worldwide.[7] Therefore, the results of this thesis are also of interest to an international audience of maternity care professionals, researchers and policymakers who wish to improve women's experiences during the perinatal period. With adjustments for local context, our findings can be applied to strengthen the woman-centredness of maternity care worldwide.

ACTIVITIES

The results of this thesis will be shared with others in several ways. First, we have and will publish the results of our studies in peer-reviewed scientific journals, reaching a broad range of maternity care professionals and researchers. Secondly, we have and will present our results, including oral and poster presentations, at various national and international conferences.

As mentioned earlier, the outcomes of this thesis are of particular interest for maternity care professionals and policymakers in the Netherlands. What we have learned is disseminated with the PREM (Patient Reported Experience Measurement) workgroup of CPZ. By participating as a member of this workgroup, knowledge gathered from our research, was used to develop a national Quality indicator of women's experiences with Dutch maternity care. The primary researcher of this thesis will also participate in a webinar about the development of this PREM which will be available for a national audience of maternity care professionals. After the publication of this dissertation, we will disseminate our results with policymakers (CPZ, Zorginstituut Nederland) and organizations which are committed to maternity care in the Netherlands, such as professional maternity care organization (KNOV, NVOG, Federatie VSV's), and patient- and client organizations (Patiëntenfederatie Nederland, Geboorte Beweging).

PRESENTATIONS

October 2017: Normal Labour and Birth Conference,
Grange-over-Sands, United Kingdom
Dimensions of women's experiences during the perinatal period.

April 2019: VSV Preall
Spiegelbijeenkomsten, welke lessen kunnen wij hieruit trekken voor het VSV

May 2019: ICHOM conference, Rotterdam, The Netherlands
Poster presentation: Women's experiences during the perinatal period; a conceptual framework.

June 2019: Q & A-VM dag, Maastricht, The Netherlands
Acht dimensies in perinatale ervaringen van vrouwen.

February 2020: Kennispoort Verloskunde Academiecongres, Utrecht, The Netherlands
Van ellende naar eureka: samen werken aan oplossingen.

May 2021: VIDM 2021 "Birth Equity for All" online conference
Women's decision-making autonomy in Dutch maternity care.

February 2022: CARE4 – International Scientific Nursing and Midwifery Congress,
Ghent Belgium
Women's information seeking behaviour during pregnancy - a descriptive cross-sectional study in the Netherlands.

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CURRICULUM VITAE

Maaike Vogels is geboren op 13 november 1977 in Utrecht. Na het afronden van haar middelbare school in 1995 begint ze met de studie verpleegkunde. Nadat ze haar propedeuse verpleegkunde heeft behaald gaat ze vervolgens in België verloskunde studeren. In 2000 studeert zij cum laude af als verloskundige. Vervolgens verhuisd ze terug naar Nederland. De eerste 4 jaar als verloskundige heeft ze als eerstelijns verloskundige gewerkt en was zij maatschapslid bij verloskundigenpraktijk de Heuvelrug te Rhenen. Vanaf 2004 werkte zij achtereenvolgens als klinisch verloskundige in het Canisius Wilhelmina Ziekenhuis te Nijmegen en het Universitair Medisch Centrum Utrecht. Ondertussen rond zij in 2007 de Masteropleiding verloskunde af aan de Universiteit van Amsterdam. Daarnaast start Maaike in 2006 met de masteropleiding physician assistant - klinisch verloskundige die zij in 2009 cum-laude afrondt. Voor haar afstuderen ontwikkelde zij een kwaliteitsindicator patiënttevredenheid. Vanaf 2006 tot 2021 werkte Maaike als klinisch verloskundige/ physician assistant in het St. Elisabeth Ziekenhuis (thans ETZ) te Tilburg. In die jaren was zij nauw betrokken bij de ontwikkeling van een centrum voor integrale geboortezorg (Livive) en vervulde zij diverse bestuursfuncties voor Verloskundige kring Tilburg e.o. In 2016 verkreeg Maaike een promotiebeurs van de KNOV voor het StEM onderzoek, wat heeft geresulteerd in dit proefschrift. Helaas heeft Maaike door fysieke omstandigheden haar loopbaan als verloskundige moeten beëindigen. Momenteel werkt ze als adviseur geboortezorg voor het Zorginstituut Nederland. Maaike woont samen met haar man Niels in 's-Hertogenbosch.

Maaike Vogels was born on November 13th, 1977 in Utrecht. After graduating from secondary school in 1995, she started studying nursing. Maaike obtained her propedeuse nursing, after which she entered a Training school for Midwives in Belgium. She graduated cum laude as a midwife in 2000. She moved back to the Netherlands and started working as a community midwife at midwifery practice "de Heuvelrug", Rhenen. From 2004 she worked as a hospital-based midwife at Canisius Wilhelmina Hospital Nijmegen and University Medical Centre, Utrecht. She completed her Master's degree in Midwifery at the University of Amsterdam in 2007. In 2006 she started a training program as a physician assistant / clinical midwife, which she completed cum-laude in 2009. For her graduation, she developed a quality indicator for patient satisfaction. She worked as a clinical midwife/physician assistant at St. Elisabeth Hospital Tilburg (now ETZ) from 2006 until 2021. During those years, she was closely involved in developing a centre for integrated maternity care, and she held various board positions for Verloskundige kring Tilburg e.o. In 2016 Maaike obtained a Ph.D. scholarship from the Royal Dutch Organisation of Midwives for the StEM study, which resulted in the scientific work presented in this thesis. Unfortunately, physical circumstances caused Maaike to end her career as a midwife. Currently, she is a maternity care advisor for the National Health Care Institute (Zorginstituut Nederland). Maaike lives in 's-Hertogenbosch with her husband Niels.

DANKWOORD

Support behoort niet alleen tot één van de acht essentiële dimensies voor perinatale ervaringen, het is ook een essentiële dimensie voor de ervaringen die je opdoet tijdens een promotietraject. Op deze plaats wil ik dan ook aan aantal mensen bedanken voor de support die de afgelopen jaren onontbeerlijk was om alles tot een goed einde te brengen.

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Darie doordat je pas later als co-promotor in het StEM onderzoekbent bent ingevlogen is het niet altijd makkelijk voor je geweest. Maar wat vond ik het fijn dat ik een sparringpartner had die letterlijk maar een deur of appje van mij verwijderd was. Daarnaast heeft jouw frisse blik ertoe geleidt dat we altijd weer even kritisch keken welke stip we op de horizon wilde zetten.

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