Influencing factors in midwives' decision-making during childbirth

Women and Birth 32 (2019) e197–e203

Contents lists available at ScienceDirect

Women and Birth

journal homepage: www.elsevier.com/locate/wombi

Influencing factors in midwives' decision-making during childbirth: A qualitative study in the Netherlands

Meta Weltens[a,*], Jascha de Nooijer[b], Marianne J. Nieuwenhuijze[c]

[a] Research Center for Midwifery Science, Maastricht, Zuyd University, Universiteitssingel 60, 6229 ER Maastricht, The Netherlands
[b] Department of Health Promotion, Faculty of Health, Medicine and Life Sciences, Maastricht University, P.O. Box 616, 6220 MD Maastricht, The Netherlands
[c] Research Center for Midwifery Science, Maastricht, Zuyd University, Universiteitssingel 60, 6229 ER Maastricht, The Netherlands

ARTICLE INFO

Article history:
Received 25 November 2017
Received in revised form 31 May 2018
Accepted 13 June 2018

Keywords:
Midwifery
Referral
Intra-partum
Decision-making
Influencing factors

ABSTRACT

Background: Dutch maternity care is based on the principle that pregnancy and childbirth are physiological processes. However, the last decade an increase of intra-partum referrals to obstetric-led care has been observed. Most of these referrals are among nulliparous women, non-urgent and occur during the first stage of labour. The increase in referrals seems not associated with better perinatal outcomes.
Objective: Gain understanding of underlying factors in the decision-making process prior to referral to obstetric-led care among midwives attending childbirth in midwifery-led care.
Method: A qualitative study based on in-depth interviews with Dutch midwives (n = 10) working in midwifery-led care. We performed a thematic analysis based on the hypothetico-deductive and the intuitive-humanist theory.
Results: Midwives mentioned knowledge as the basis of a reasoned decision. This included both theoretical knowledge, and knowledge from clinical experience. Influences of others, like the needs and wishes of labouring women were another factor influencing the decision-making, especially in non-urgent situations. Under subjective factors, the fear of being held responsible for professional choices emerged.
Key conclusion: The decision-making process during childbirth is multi-factorial. The women's needs and wishes are recognized as of great influence on the decision-making process during childbirth, which is not included as a factor in the hypothetico-deductive or the intuitive-humanist theory.
Implication for practice: The influence of women's needs and wishes should be part of models about the intra-partum decision-making process. Midwives should find strategies to support women to make well-informed choices that include adequate information on the consequences of medicalisation in obstetric-led care.

Statement of significance

Problem or issue

We observe an increase of intra-partum referrals to obstetric-led care in the Netherlands. Most of these referrals are among nulliparous women, non-urgent and occur during the first stage of labour.

What is already known

Midwives' intrapartum decision-making is influenced by theoretical knowledge and knowledge from clinical experience.

What this paper adds

Intuition also influences midwives' decision-making. Intuition was described as factual, the sum of cues and objective parameters. Additionally, decision-making includes women's needs and wishes, especially in non-urgent situations. However, it appears this is restricted by midwives' fear of being held responsible for professional choices.

1. Introduction

Dutch maternity care is based on the principle that pregnancy and childbirth are physiological processes.[1] In 2014, independent

* Corresponding author.
E-mail addresses: m.weltens@av-m.nl (M. Weltens), j.denooijer@maastrichtuniversity.nl (J. de Nooijer), m.nieuwenhuijze@av-m.nl (M.J. Nieuwenhuijze).

https://doi.org/10.1016/j.wombi.2018.06.009
1871-5192/

midwives supervised 13.3% of all births at home and an additional 14.8% in a hospital setting.[2] Independent midwives provide care to healthy women with uncomplicated pregnancies. If an increase in risk arises or complications occur during pregnancy or childbirth, midwives refer women to obstetric-led care and the attending midwife has no longer a decision-making role in the woman's care.[3] This risk assessment is a continuous process based on the List of Obstetric Indications (LOI) ['Verloskundige Indicatie Lijst'],[1] a national, multi-professional guideline that specifies indications for referral from midwifery-led care to obstetric-led care based on evidence or the consensus among professionals involved in maternity care.

Despite years of unchanged risk identification and role division (the list dates from 2003), intra-partum referrals to obstetric-led care of women starting their birth in midwifery-led care increased from 26.1% in 2005 to 43.8% in 2014.[2,4] Most of these referrals are among nulliparous women, are non-urgent, occur during the first stage of labour and are mostly for reasons such as request for pain relief, failure to progress labour, and meconium stained fluid.[5] Changes in the midwifery-led care population (ethnicity/ > age) do not explain this increase, nor is the increase associated with better perinatal outcomes.[5] Since risk indications and population have not changed over the past decade, the decision-making process of the attending midwives might have altered, leading to more referrals.

Decision-making in maternity care is a complex, contextual process influenced by multiple variables, including the best available scientific evidence, the needs and wishes of labouring women, the midwives clinical experience and the environment in which they work.[6]

The decision-making process takes place in the continuum between physiology and pathology. Physiology and pathology in midwifery cannot be seen as a distinct dichotomy.[7] Between these two extremes there is a 'grey area' (in which required care is debatable) making the decision-making process more complex.[8]

In the field of midwifery, two main decision-making models are presented; one based on cognition and the other based on intuition. Clinical-reasoning based on cognition is called hypothetico-deductive reasoning and is characterized by an analytical, logical way of thinking based on knowledge.[8] The intuitive model of decision-making is rooted in the humanistic-intuitive theory and is influenced by clinical experience. Intuitive reasoning involves an automatic quick classification based on available cues (a sign said or observed that serves as a signal), is non-analytical and based on pattern matching. Midwives engage in pattern matching when they encounter a situation similar to a previous situation.[6,8,9] Therefore a difference in the decision-making process between junior and senior midwives can be expected.[10]

The current study aims at a better understanding of the decision-making process resulting in intra-partum referrals from midwifery-led to obstetric-led care in order to find an explanation for the increase in referrals. We therefore studied how intrapersonal (cognitive and intuitional) and contextual components are associated with midwives decision-making for intra-partum referral to obstetric-led care in the Netherlands.

2. Methods

2.1. Design

We used in-depth interviewing to explore underlying individual or contextual factors and motivations of midwives resulting in intra-partum decision-making prior to referral. Data were collected from June till August 2015. Ethical approval was obtained from the Medical Ethical Committee Zuyderland-Zuyd, in May 2015.

2.2. Setting and participants

Sampling of the research population was purposive. Included were registered midwives who were currently working in midwifery-led care in the Netherlands. Midwives were excluded when working in a hospital or outside The Netherlands. During the sampling, no distinction was made between midwives working as a locum in an independent practice and midwives working in their own independent practice.

Midwives were stratified based on work experience. Work experience of eight years or more was defined as senior experience; less than five years was defined as junior experience. The first ten midwives, who met the inclusion criteria, were selected. Analysis showed that ten interviews were adequate to reach data saturation.

2.3. Data collection

We used the main elements of the theoretical framework of the cognitive hypothetico-deductive theory and the intuitive humanistic-intuitive theory to create a semi-structured interview guide (for topic and corresponding example see Table 1). Identified key issues (the influence of the labouring woman, a colleague, the mass media) revealed during the interview process were used to refine the questions in the interview guide as the interviews progressed. During the interview prompts were use to seek further clarification.

The duration of the interviews varied between 45 and 70 min. The first author conducted the interviews in 'one-to-one'

Table 1
semi-structured interview guide.

Topic	Question
Introduction	Which factors play a role in your decision-making process prior to referral intra-partum?
Intrapersonal (hypothetico-deductive theory)	Can you describe intrapersonal influences that might have influenced your choice for a referral?
Cognitive (hypothetico-deductive theory)	Which obstetric substantive resources of knowledge are decisive for your decision-making process intra-partum?
Intuitional (humanistic-intuitive theory)	Can you describe what your understanding of intuition is?
Contextual (hypothetico-deductive theory)	Can you introduce yourself, by telling in which kind of practice you are working?
Autonomy (humanistic-intuitive theory)	To what extend do you experience independence in your decision-making process?
Experience (humanistic-intuitive theory)	What impact does experience have on your decision-making process? Has this changed over time?
Closing	We have discussed various influences on your decision-making process; do you think there are other influences, which we didn't discuss that play a role in your decision-making process?

conversations at a 'safe' setting chosen by the participant. The interviewer asked the questions in an open, empathic and non-normative way. All interviews were in Dutch, tape-recorded, with consent of the participant and transcribed verbatim.

2.4. Data analysis

After data collection was completed we began thematic analysis. The full transcripts of the interviews were entered into *Dedoose*, an online software programme for qualitative data analysis. A preliminary coding scheme was developed by the first author based on the framework of the interview guide. Codes were attached to small segments of the transcript. Subsequently, the codes were grouped into subthemes by examining the commonalities, differences and relationships within and among the interviews. Categorisation of these subthemes identified key themes from the data.[11] All quotes used in this paper were translated forward and backward from Dutch to English by native speakers, to exclude linguistic discrepancies due to an incorrect translation. Supporting quotes will be presented in the result section in italics with a coding system (MJ1 to MJ4 and MS1 to MS6, the J indicating the junior midwives and the S the senior midwives) to ensure confidentiality of each midwife interviewed.

3. Results

All participants were Dutch and female, six of them were senior and four of them were junior midwives. Five worked as a locum and five were a practice owner. The midwifery practices where the participants worked were situated in urban, rural and mixed areas. Five themes emerged from the data: knowledge, experience, environment, influences of others, and subjective factors.

3.1. Knowledge

All participants mentioned knowledge as a leading factor in their decision-making. They referred to knowledge as their midwifery education, training, findings from research and (local) protocols and guidelines. They mentioned the LOI as a leading instrument for risk identification and as a base for (local) protocols. When uncertain about the protocols, some participants reverted to national guidelines such as the LOI, even though its content dates from 2003. All participants indicated protocols and guidelines as supportive for their day-to-day practice. Although participants mentioned that protocols and guidelines had a prominent place in the determination of the risk identification, they felt that in practice it is possible to deviate from the guidelines. The participants indicated that guidelines made them aware of the processes in childbirth and the possible risks involved, but still allowed them to make an autonomous decision between different pathways in care, adapted to the wishes or needs of the women in their care.

Participants mentioned that the availability of more research led to increased awareness about the impact of childbirth on women's health. According to some senior participants, new insights led to clearly defined protocols that limited options in midwifery-led care. Senior participants felt the expectation to refer women earlier and indicated less room for personal preferences of both woman and midwife. Others, mainly juniors, described the exact opposite: more research led to an expansion of midwifery-led care because midwives are capable of more comprehensive care through further training and continuous education. Meconium stained fluid is listed in the LOI as a referral indication. As such, women with meconium stained fluid are referred to obstetric-led care. A junior midwife suggested that the need for this is debatable and that perhaps, in the future with further education, midwives can attend these births in the hospital without a referral to obstetric-led care.

One junior midwife shared:

'I would prefer some development in midwifery on specific topics – for example, meconium stained fluid – I really think we midwives can attend a birth with this complication, . . . just give us the chance and then we'll go for it.' (MJ3)

Midwives in this study expected that new insights from research would come to them from the Koninklijke Nederlandse Organistatie van Verloskundige (KNOV [Royal Dutch Organization of Midwives]). None of the participants mentioned that they read research articles themselves.

Agreements between care providers on the midwifery approach were named to be especially important within the 'grey area', the continuum between physiology and pathology, where clear evidence-based knowledge on how to act is missing. Many participants indicated that the knowledge they had acquired during their training defined their way of thinking about this continuum and was still leading in their decision-making towards referral today. Some indicated a friction in the risk identification, between midwifery- and obstetric-led care, based on the way of thinking about the continuum.

One senior midwife shared:

'What is the traditional atmosphere in a hospital? I think that hospitals, which have a long history of midwives working in the obstetric department, have a different approach regarding normality of birth and everything around it, [this approach] is very different from hospitals where traditionally no midwives worked [. . .] And how the obstetrician sees physiology in childbirth, because I think what one obstetrician perceives as physiology, the other will not. [. . .] (MS6)

The educational background of all stakeholders (midwives in midwifery-led care and co-operating obstetrician in obstetric-led care) was said to be influential in the decision. Most junior participants mentioned that they find it very difficult to go against the opinion of the obstetrician on call. Conceding with a suggestion of the obstetrician was the rule rather than the exception. However, in non-urgent situations, senior participants indicate that they are able to navigate between the obstetricians' view and their own, when disagreeing about options in the 'grey area', by calling in later or reframing their referral indication, using the lack of uniformity in the 'grey area'.

One senior midwife shared:

'What I find difficult . . . : for example, prolonged rupture of membranes. There are obstetricians who say: if the client has 24 hours of ruptured membranes around two/three o'clock at night, I would like to see her the evening before. And I think: Well that may also be the next morning. In this case, I often just wait until the next morning to call the obstetrician. Because if I make the call in the evening, then I know I need to refer them. In this, you indicate your own way of referring, and perhaps that is a little on experience, which allows you to deviate from the request of the obstetrician because you don't see the need'. (MS3)

3.2. Experience

Both junior and senior participants indicated the 'grey area' as the events in care where it was impossible for them, as attending midwife, to explain observed symptoms. Such events were described as provoking an unsafe feeling. Senior participants referred to this unsafe feeling as intuition. When participants were asked to explain the basis of the unsafe feeling, they mentioned that this was founded on the fact that the event could not be explained or interpreted precisely. Nonetheless, all senior

midwives referred to intuition as factual, the sum of different 'cues' and objective parameters. For them, intuition only differed from knowledge because they could not explain the facts. However, the facts were there and created a sense of discomfort. Their subsequent decision-making process was based upon trust in their own knowledge and previous clinical experience. This slightly differs from the junior midwives who referred for the difficult decision-making in the 'grey area' directly to knowledge. The junior midwives indicated that intuition could only emerge based on experience. Without this clinical experience the junior midwives had to rely solely on objective parameters and existing protocols.

One junior midwife shared:

'[. . .] the existing protocols and standards. To which you can hold on and by which you get it clear quickly this is an indication [for referral], or here I have to keep my eyes open. The objective parameters, those determine the safety of the mother and child. My reasoning will always have the upper hand when I have an odd feeling [intuition].' (MJ4)

All participants indicated that, over the years, they had gained more confidence in their own actions, but also more confidence in the normality of childbirth. Junior midwives expressed that less experience made them feel uncertain, in the sense of: "did I make the right choices?". However, this was not described as fear.

One junior midwife shared:

' . . . [trust] in normality of birth, but also in my own assessment, actually I am getting more experienced and I have seen more different cases. I have also seen the effects of my choices. More than in training, because in training you always have the backup of a skilled midwife. Now I am getting a level of confidence that tells me; . . . I dare to make this choice, I can do this'. (MJ2)

Almost all participants, junior and senior indicated that their (growing) experience, gained during practice, strengthened their identification of risks. They mentioned that experience allowed them to make better judgments because they experienced the implications of their choices. Both junior and senior said to recognized 'cues' easier when they had experienced a situation before. They indicated that a second time, in a similar situation, the decision whether something was normal or not was easier and faster. When they had seen an event in the 'grey area' before, it allowed them to dare to wait a little longer or not to refer at all.

Some senior participants also expressed the downside of experience, the likelihood of experiencing negative events. '*Without experience, you are still blank, without ballast*', in this they suggested that (negative) events will have their influence on the midwives' decision-making, some midwives are aware of these influences but others seemed not to be aware. This process was described as recognition of 'cues', not as distress.

3.3. Physical and social environment

The physical environment of the place of the birth, at home or in a hospital setting, was mentioned as a contributing factor to the decision-making. When labour was taking place in an out-patient hospital setting, midwives appeared to refer sooner than when they were at home. In a hospital setting, especially junior midwives said that consulting a hospital-based midwife or an obstetrician was more natural. In case of emergency or doubt, the possibility to call for help and automatically refer was mentioned. Participants noticed that women were quicker in requesting pain medication in a hospital setting, necessitating a referral. Some midwives found themselves also more indulgent towards a request for pain medication when a birth took place in a hospital setting and admitted that they were more convincing towards women to proceed in labour without pain medication when labour took place at home. In this example the setting in which childbirth takes place is influencing the decision-making process of the midwife (and of the woman).

One senior midwife shared:

'It is inherent to the place. For example while attending a home birth, and the labouring woman has 7 cm dilatation and she asks for pain medication, then I say yes . . . but we have to get in the car, [woman's reply] no then leave it, I'll go for a shower, but while they are in the hospital. Then I cannot say . . . I can say . . . I do not think . . . but then after a couple of times, I will have to [refer for pain medication].' (MS2)

The following quote from another senior midwife adds to this:

'And that I think makes it easier to refer, because you are already in the hospital. The referral is arranged easy and quick.' (MS1)

Costs of maternity care were not mentioned as an influencing factor in the decision-making process intra-partum.

The participants mentioned that despite national guidelines, there are many (regional) differences between practices, obstetricians and Verloskundig Samenwerkingsverbanden [regional obstetric collaboration platforms], which caused variations in the decision-making process, leading to (regional) differences in numbers and reasons for referrals.

3.4. Influence of others

Consultation between midwives and obstetricians was mentioned as a contributing factor for mutual understanding and created an effective co-operation between these professional groups. However, most participants reported that they felt they had a more autonomous position in the home setting, where immediate colleagues or obstetrician had no influence. Their independence was more challenged in the hospital setting. Both junior and senior participants indicated that the general views in the region about physiology birth also had an (indirect) influence. At this point a positive attitude towards physiological birth in obstetric-led care was mentioned as important, because it gave the midwives in this study, support to practice midwifery-led care.

Independently of the setting, all participants mentioned it was never possible to just do what they wanted to do; they always felt they should be able to justify their clinical decisions. Some senior participants wondered — considering the protocols and the clinical justification — how big their professional autonomy really is, they noticed that they were only able to make their own decisions within a pre-defined context. Mentioning that no midwife is truly autonomous.

All the participants mentioned the wish of the labouring woman, as a very influential reason for referral. They also noted that this was a recent phenomenon. Senior midwives described women as being increasingly impatient with the duration of a physiological childbirth and mentioned that women asked for induction of labour or pain medication earlier. All participants indicated that women were aware of the sort of procedures available and insisted upon these as a 'right'. Some participants labelled these wishes on a particular societal norm, where everything is considered to possible.

One senior midwife shared:

'I do think that we are all very afraid, for everything. And that unrealistic fears lead to new thoughts. In particular the client, it seems that they always want the procedure available. [. . .] I think that the client can have a strong voice, but only when they are well informed and not informed by the media [television, newspapers and magazines]. They are all so anxious'. (MS5)

Senior participants identified the media (aiming at the extravagant publicity in newspaper or magazines) as a leading cause of this societal norm shift. They thought that these mass media present childbirth as a risky event that should take place in a hospital, whilst simultaneously accusing community midwives of being incompetent and the cause of the Dutch high infant mortality rate.[2] The participants said this information had caused a collective anxiety.

One senior midwife shared:

'A few years ago, the media [television, newspapers and magazines], were really on top of it; home birth [is unsafe]. People are getting frightened. And when that happens it is very difficult to turn it back. People just take it for granted and come to my practice and tell me: no, I won't let you sweep the membranes, I want to have an induction of labour'. (MS1)

Additionally, all participants mentioned that when it was safe for mother and child, they were all willing to meet the wish of the women, renouncing a referral. But everyone, junior and senior midwives, were very clear that if there was a life-threatening situation for mother or child, the will of the woman could not prevail.

One junior midwife shared:

' . . . It depends on the reason why you are referring, how acute it is. In an acute situation, I want to act the way I think is best and if she [the labouring woman] has a valid reason why I should not refer, I would consider that. But I cannot imagine that in an acute situation a woman has well-founded reasons why I should not do this [the referral]. She is actually not of influence in acute situations.' (MJ1)

3.5. Subjective factors

All participants said that their own uncertainties did not influence their decision to refer. However, half of the participants said, reluctantly, that they referred faster when the work pressure was very high or when they were tired after a busy shift.

Being held responsible for a decision by a disciplinary committee or an audit was mentioned as a reason to be extra cautious in the decision-making process. All participants felt responsible for the safety of mother and child, but also made sure to protect themselves against any liability. This approach resulted, for most, in an approach of *'better safe than sorry'*. In relation to this, senior participants noticed less trust in the physiology of childbirth by both clients and health care providers.

A senior participant mentioned that: "*we live in a society where we cannot deal with setbacks from nature anymore*". She thought this is often not a problem because many dangerous situations in healthcare can be anticipated. But, the desire of society that medical care should prevent all harm is not realistic. Some participants mentioned that women asked, directly or indirectly, for safety guarantees, they could not provide. Additionally, some senior participants pointed out that the strict protocols gave less room for variation in physiology and they felt forced to refer earlier. Senior participants expressed that they were afraid that junior midwives are becoming more and more uncomfortable with the full scope of physiology in childbirth, suggesting that early referral intra-partum seems increasingly the norm. Overall the participants feared that this trend shaped a mindset in midwifery-led care, which will shift the basis of the risk identification from a physiological approach to a more pathological orientation.

4. Discussion

The current study aimed to gain insight into the decision-making process leading to intra-partum referrals from midwifery-led to obstetric-led care. For the midwives in the current study, knowledge was the basis of a reasoned decision for referral from midwifery-led care to obstetric-led care. Next to theoretical knowledge, the midwives mentioned knowledge from clinical practice as influential. In this study, a difference in the decision-making process emerged based on the level of experience between junior and senior participants. It is supposed that experience strengthen the identification of risks and in turn leads to a (self-reported) postponement of the decision-making leading to referral, relative to junior participants. Additionally, the wishes of the labouring women were a great influence in the decision-making process. The fear of being held responsible for professional choices emerged several times.

Care in childbirth requires a good clinical assessment and strong decision-making skills of the attending midwife. Decisions are made in a dynamic context that is influenced by the environment, the people involved in the situation and the fact that the decision can affect both mother and child.[6] Our study showed that the decision-making process during childbirth is multi-factorial and complex.

The finding that knowledge is a factor associated with the decision-making process is in line with the cognitive element of the hypothetico-deductive theory.[6,10] Overall, participants indicated skills and knowledge gained during their midwifery training as leading, even within the dynamic field of midwifery where new insights appear frequently. The national LOI guideline as basis for (local) protocols was mentioned as the leading source of knowledge.

Guidelines and protocols are associated with the linear progression of decision-making as described in the hypothetico-deductive theory. The content of the protocol is not based on emotions or interpersonal relations, but is rational and fact- or consensus-based. Most of the thoughts and considerations take place during the process of producing the protocol, allowing in practice a quick response in an urgent situation. When there is a lack of urgency there is more time to consider emotions and dialogues in the decision-making process.[8]

The midwives mentioned this difference in the decision-making process when referring to the wish of the woman. The process of shared decision-making in midwifery care is mentioned by all participating midwives as of great importance, in which the combination of woman's wishes, values and preferences and their own clinical expertise and knowledge are essential in the final decision- making. In this process the wish of the woman influences the decision-making process.[12] However, shared decision-making seemed only to occur in non-urgent situations, and seemed not to prevail in life-threating situations. In line with the cognitive element of hypothetico-deductive theory, possible reason for this shift can be that when the assessment and decision-making becomes more urgent, the approach becomes more rational. In acute cases, midwives tend to rely on information from objective parameters as other information cannot be sought.[8] Another possible explanation for the shift is the legal obligation midwives experience towards a disciplinary committee in the event of poor outcomes. However, Dutch law emphasizes the necessity of patients' informed consent for every decision and action taken in health care (Wet op de Geneeskundige Behandelingsovereenkomst [Law on Medical Treatment Agreement]). Therefore the responsibility towards the disciplinary committee is not a valid reason for not following the woman's wish, even if the wish differs from the recommendation in a guideline or protocol.

In wanting to meet the wish of the women, a shift in the norm of women away from normality of birth and a stronger wish for interventions was mentioned. Women are aware of the availability of technologies in childbirth, such as induction/augmentation of labour, caesarean section and pain medication.[13] The preferences of women for these technologies and treatments are influenced by

the popular media.[3,14,15] This suggests that the increased media representation of medicalized birth has made women more compliant with medical interventions and more suspicious of midwifery-led care. This approach creates an attitude in society where everything is considered to be both possible and feasible.[3,14,16] The studies of de Vries et al.[3] and Christiaens et al.[14] also suggest that technology has diminished the willingness of the labouring woman to endure in labour pain. As a result of this, increasing numbers of women request pain medication during childbirth.[13]

Offerhaus et al.[17] and Thompson et al.[18] suggest that there is a possible connection between women's attitude shift regarding normality of birth and the professional attitude of the midwife attending childbirth in midwifery-led care. However, the participants did not endorse the idea that their professional attitude regarding the decision to refer is changing. The midwives in this study said they stand out as the one that protects and promotes physiological childbirth, even when pregnancy and childbirth are (international) increasingly associated with risk and medical procedures.[14]

These Dutch midwives felt responsible for the safety of mother and child and were not willing to take any risk. This attitude puts forward a stricter adherence to existing recommendations. Amelink-Verburg and Buitendijk[13] explain this stricter adherence to protocols by the increase in scientific knowledge in the field of midwifery, leading to an improved understanding of the processes in childbirth, and correspondingly in the related risk factors. In line with the increased knowledge, options for monitoring, diagnosing, prevention and treatment have also increased.[13] These trends seem to provoke a tendency towards overestimating risks and the need for interventions.[17] The study participants labelled this not as fear or less trust in the physiological birth process but as a 'new' form of risk perception. However, fear was described in relation to being held responsible for a decision. Within this concept of being held accountable midwives are expected to base their decisions even more on evidence to be able to give plausible reasons when challenged.[10] For participants in this study, this leads to a style of '*better safe than sorry*' in which early anticipation of potential pathology and caution decisions need to protect them against potential accusations. Here we might consider that not the increase of scientific research itself but a lack of understanding of the research can be an important reason for the early anticipation and referral.

The midwives in our study mentioned that the intuitive decision-making process becomes predominant in the 'grey area' of the continuum between physiology and pathology. The 'grey area' can give an unsafe feeling when theoretical knowledge or knowledge from clinical practice is insufficient to revert to pattern recognition.[10] Intuition is sometimes thought of as a mystical force, a sixth sense, which has no rational explanation. Opposite to this view and in line with Raynor et al.,[8] study participants referred to intuition as an interpretive process in which intuitive judgements are based on visual and verbal 'cues' that are so rapidly observed that their contributions to the overall judgement are not remembered. There was no reference to intuition as 'gut feeling' or as an extern locus of control. Intuitive decision-making is a subconscious pattern-matching that develops with experience; as the level of experience increases so does the use of intuition in the decision-making process.[10] Though, knowledge and experience cannot completely be dissociated from one another because it is plausible that also knowledge grows with clinical experience.

The midwives in this study mentioned that a recent serious clinical event influenced their current decision-making process. Conforming to the experience element from the humanistic-intuitive theory the decision-making process can, especially when there is a lack of a rational or logical linear approach, get influenced by representativeness of previous cases (for example how recent was the previous experience), availability (how easy is the case to recall from previous experience) and anchoring (how deeply anchored is the previous experienced).[8] Hence, the decision-making process in both the hypothetico-deductive and in the humanistic theory is influenced by memories of similar cases and consequently influenced by previous experiences.

4.1. Limitations

Our study did not include data from observations of the decision-making process leading to referral. Therefore, the results are entirely based on the perceptions of the participating midwives. Decisions recalled in an interview setting differ from the real-life experience, though the reported situations were based on real-life experiences and not hypothetically elicited. Some social desirable answers may have emerged. It is notable that only a few intrapersonal factors emerged from the interviews as factors influencing in the decision-making process, even though we ensured that interviews were held in a safe environment with little distraction.

4.2. Recommendations

The rising trend in intra-partum referrals is a challenge for Dutch midwifery-led care in keeping a strong physiological approach to childbirth. Midwives themselves have an important and leading role in keeping this physiological approach.[13] Achieving change requires engagement with all the factors that have an impact on the decision-making process.

The women themselves were also identified as an important factor in the decision-making process for intra-partum referral. Structural changes in health education around birth need more emphasis on normality of birth combined with empowerment. More confidence in the ability of women to give birth can contribute to a cultural change in the meaning women have attached to medical interference in normality of birth.[14,18] This change can be a challenge with the current mass media influences. However, midwives have an important role in this health education by adequately informing the labouring women, prior to a referral, about the consequences of medicalisation in obstetric-led care.[17] Meeting this goal will require midwives to develop a better understanding of the available evidence, the competence of evaluating new research in the field of midwifery and the ability to challenge non-evidence-based care.[18]

Health education is a knowledge-based process of empowerment and involving the woman herself in her birthing process.[18] This way, women's control over childbirth can increase, as their ability to seek out objective information and the ability to take back the responsibility over their own birthing process.[7] Shared decision-making is one of the methods to facilitate this empowerment.[18] Health education needs to be better tailored to the modern women therefore we need a better understanding of why women make the requests of medical interference in normality of birth.

Further qualitative research on the labouring women's attitude regarding the birthing process is recommended, including the nature and the quality of the information labouring women receive prior to medical interference. Furthermore, observational studies can reveal nuances in the decision-making process of the midwives, giving more insight into the interaction between the decision-making process and the wishes of the labouring women.

Conflict of interest

None declared.

Ethical approval

Ethical approval was obtained from the Medical Ethical Committee Zuyderland-Zuyd, in May 2015. Number: 15-N-87.

Funding sources

Not applicable.

Clinical trial registry and registration number

Not applicable.

References

1. Obstetric Vademecum. *Verloskundig Vademecum. Eindrapport van de Commissie Verloskunde van het College voor zorgverzekeringen. Final report of the Maternity Care Committee of the College of health insurance companies*. Diemen, The Netherlands: College voor Zorgverzekeringen; 2003.
2. Perined. *Perinatale Zorg in Nederland 2014 [Perinatal care in the Netherlands 2014]*. Utrecht: Perined; 2015.
3. De Vries R, Nieuwenhuijze M, Buitendijk S. What does it take to have a strong and independent profession of midwifery? Lessons from the Netherlands. *Midwifery* 2013;**29**:1122–8. doi:http://dx.doi.org/10.1016/j.midw.2013.07.007 Authors are members of Midwifery Science Work Group.
4. Stichting Perinatale Registratie Nederland (PRN) [Perinatal Registration Netherlands]. *Grote Lijnen 10 jaar Perinatale Registratie Nederland*. Utrecht: Stichting Perinatale Registratie Nederland; 2011.
5. Offerhaus P, Hukkelhoven C, de Jonge A, van der Pal-de Bruin K, Scheepers P, Lagro-Janssen A. Persisting rise in referrals during labor in primary midwife-led care in The Netherlands. *Birth* 2013;**40**(3):192–201. doi:http://dx.doi.org/10.1111/birt.12055.
6. Jefford E, Fahy K, Sundin D. A review of the literature: midwifery decision-making and birth. *Women and birth* 2010;**23**:127–34. doi:http://dx.doi.org/10.1016/j.wombi.2010.02.001.
7. Lindström B, Erikson M. From health education to health learning: implementing salutogenesis in educational science. *Scand J Public Health* 2011;**39**:85–92. doi:http://dx.doi.org/10.1177/1403494810393560.
8. Raynor M, Marshall E, Sullivan A. *Decision making in midwifery practice*. Edinburg London, New York, Oxford, Philadephia, St. Louis, Sydney, Toronto: Elsevier; 2005.
9. Jefford E, Fahy K. Midwives' clinical reasoning during second stage labour: report on an interpretive study. *Midwifery* 2015;**30**:519–25. doi:http://dx.doi.org/10.1016/j.midw.2015.01.006.
10. Mok H, Stevens A. Models of decision making. In: Raynor M, Marshall J, Sullivan A, editors. *Decision making in midwifery practice*. Edinburg London, New York, Oxford, Philadephia, St. Louis, Sydney, Toronto: Elsevier; 2005. p. 53–65.
11. Hennink M, Hutter I, Bailey A. *Qualitative research methods*. London: Sage; 2011.
12. Nieuwenhuijze M, Kane Low L. Facilitating women's choice in maternity care. *J Clin Ethics* 2013;**24**(3):276–82.
13. Amelink-Verburg M, Buitendijk S. Pregnancy and labour in the Dutch maternity care system: what is normal? The role division between midwives and obstetricians. *J Midwifery Womens Health* 2010;**55**:216–25. doi:http://dx.doi.org/10.1016/j.jmwh.2010.01.001.
14. Christiaens W, Nieuwenhuijze M, De Vries R. Trends in medicalisation of childbirth in Flanders and the Netherlands. *Midwifery* 2012;**29**:e1–8. doi:http://dx.doi.org/10.1016/j.midw2012.08.010.
15. Sanders J, Meijman F. "Jouw keuze". Media en voorlichting over bevalling. *Tijdschrift voor Taalbeheersing* 2012;**34**(3):229–50.
16. Offerhaus P, de Jonge A, van der Pal-de Bruin K, Hukkelhoven C, Scheepers P, Lagro-Janssen A. Change in primary midwife-led care in the Netherlands in 2000-2008: a descriptive study of caesarean sections and other interventions among 789,795 low risk births. *Midwifery* 2014;**30**:560–6. doi:http://dx.doi.org/10.1016/j.midw.2013.06.013.
17. Offerhaus P, Otten W, Boxem-Tiemessen J, de Jonge A, van der Pal- de Bruin K, Scheepers P, et al. Variation in intrapartum referral rates in primary midwifery care in the Netherlands: a discrete choice experiment. *Midwifery* 2015;**31**:e69–78. doi:http://dx.doi.org/10.1016/j.midw.2015.01.005.
18. Thompson S, Nieuwenhuijze M, Kane Low L, De Vries R. Exploring Dutch midwives' attitudes to promoting physiological childbirth: a qualitative study. *Midwifery* 2016;**42**:67–73. doi:http://dx.doi.org/10.1016/j.midw.2016.09.019.