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Published in:
Women and Birth

DOI:
[10.1016/j.wombi.2017.07.013](https://doi.org/10.1016/j.wombi.2017.07.013)

Publication date:
2018

Document Version
Version created as part of publication process; publisher's layout; not normally made publicly available

Citation for published version (APA):
Johnsen, H., Clausen, J. A., Hvidtjørn, D., Juhl, M., & Hegaard, H. K. (2018). Women's experiences of self-reporting health online prior to their first midwifery visit: A qualitative study. *Women and Birth*, 31(2), e105-e114. <https://doi.org/10.1016/j.wombi.2017.07.013>



ELSEVIER

Contents lists available at ScienceDirect

Women and Birth

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



ORIGINAL RESEARCH – QUALITATIVE

Women's experiences of self-reporting health online prior to their first midwifery visit: A qualitative study

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ARTICLE INFO

Article history:

Received 22 December 2016

Received in revised form 25 July 2017

Accepted 28 July 2017

Available online xxx

Keywords:

Self-reported health

Health assessment

Digital

Antenatal care

Pregnant women

ABSTRACT

Background: Information and communication technologies are increasingly used in health care to meet demands of efficiency, safety and patient-centered care. At a large Danish regional hospital, women report their physical, mental health and personal needs prior to their first antenatal visit. Little is known about the process of self-reporting health, and how this information is managed during the client-professional meeting.

Aim: To explore women's experiences of self-reporting their health status and personal needs online prior to the first midwifery visit, and how this information may affect the meeting between the woman and the midwife.

Method: Fifteen semi-structured interviews with pregnant women and 62 h of observation of the first midwifery visit were carried out. Conventional content analysis was used to analyse data.

Findings: Three main categories were identified; 'Reporting personal health', 'Reducing and generating risk', and 'Bridges and gaps'. Compared to reporting physical health information, more advanced levels of health literacy might be needed to self-assess mental health and personal needs. Self-reporting health can induce feelings of being normal but also increase perceptions of pregnancy-related risk and concerns of being judged by the midwife. Although women want to have their self-reported information addressed, they also have a need for the midwife's expert knowledge and advice, and of not being perceived as a demanding client.

Conclusion: Self-reported health prior to the first midwifery visit appears to have both intended and unintended effects. During the midwifery visit, women find themselves navigating between competing needs in relation to use of their self-reported information.

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Statement of significance

Issue

Self-reported health has been used in antenatal care for a number of years. Little is known about the self-reported health of women outside of the clinical setting prior to the initial antenatal appointment, or of the midwife's use of this information.

What is already known

Self-reported health information can serve as a predictor for mental, social and physical health. Rating personal health is influenced by several factors.

What this paper adds

Some types of health information are more complex for women to self-report than others. The midwife's use of women's self-reported information during the first visit influences women's perception of their relationship with the midwife.

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<http://dx.doi.org/10.1016/j.wombi.2017.07.013>

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1. Introduction

Self-reported health information has been used in antenatal care for a number of years, and it has proven valuable to predict mental and physical morbidity as well as use of health care services.¹ In relation to screening, self-reported health has mainly been used within the physical boundaries of the antenatal care setting. Currently, Danish health care strategies aim to increase citizens' involvement in their own care by, amongst other things, expanding the physical boundaries of health care to also include patients' homes.² Since 2012 pregnant women in a large Danish regional hospital have reported their health status and needs using an online questionnaire prior to the first visit with the midwife.³ In antenatal care, self-reporting health seeks to meet simultaneous demands of efficiency and safety, while tailoring midwifery care to women's individual needs.³ However, increasing user involvement in antenatal care places new demands on women and midwives alike. Women will have to make use of existing knowledge and skills when undertaking the task of self-reporting, and midwives will need to adapt to new ways of inclusion during the antenatal visit incorporating the health information reported in advance.

1.1. Background

The World Health Organization (WHO) has defined health literacy as the cognitive and social skills which determine the motivation and ability to gain access to, to understand, and to use information in ways which promote and maintain good health.⁴ According to WHO, health literacy is critical to empowerment. Health literacy has proved an important personal asset for pregnant women to possess. For example, low levels of health literacy have been associated with less use of early screening programs in antenatal care.⁵ A multinational cross-sectional study by Lupattelli et al. found that low levels of health literacy is positively associated with smoking, having an unplanned pregnancy, and poorer compliance with medical treatment during pregnancy.⁶ Furthermore, low levels of health literacy have been related to less use of the internet as a source for pregnancy-related information.⁷

Within antenatal care, most studies have applied information from self-reported health for screening purposes, including as a method for detecting domestic violence during pregnancy.^{8,9} In a large randomized trial, MacMillan et al. found that women preferred to report domestic violence on paper or online compared to face-to-face interviews,⁹ which suggests that the method could play an important role in facilitating communication of intimate health information. Several studies have explored self-reported health as a screening method for postnatal depression. A review by El-Den et al. found that the majority of women reported high acceptability of using postnatal depression screening tools.¹⁰ However, a qualitative study by Godderis et al. found that although pregnant women expressed high acceptability of the Edinburgh Postnatal Depression Scale, these women would also interpret the scale items differently, and some women expressed concerns over disclosing thoughts of self-harm, including how health care professionals would respond to such replies.¹¹ Several factors impact self-reported health. Gender has been found to affect self-rated health, and men rate their health better than women during the pregnancy period.¹ Partner support seems to affect women's emotional and physical health during pregnancy and post-partum according to self-reported data.¹ In addition, a range of socio-demographic factors impact pregnant women's self-reported health negatively, such as low educational level and non-western origin.^{1,12} These factors have also shown to negatively affect women's health control beliefs and lifestyle during pregnancy.¹²

Previous studies on self-reporting health during pregnancy have mostly utilized cross sectional and longitudinal designs. Only a few studies have explored self-reported health in maternity care using qualitative methods. With a rapidly increasing use of information and communication technologies in health care,² a better understanding is needed of how pregnant women feel that they adapt to new tasks of assessing both mental and physical health, and to reporting their personal needs within the setting of their own home. In addition, greater knowledge of how an increasing consumer involvement (i.e. client-reported health information for use in antenatal care) affects the client–professional relationship is needed.

The aim of this study was to explore women's experiences of self-reporting their health status and personal needs online prior to the first midwifery visit, and how this information may affect the meeting between the woman and the midwife.

1.2. Setting

In Denmark, antenatal care (ANC) is publically funded and free of charge, and almost all (>99%) pregnant women access the ANC program.^{3,13} For women with uncomplicated pregnancies, the program entails five to six visits to the midwife and three visits to the general practitioner.¹³ The present study was carried out in a large regional hospital in the Capital Region of Denmark. This hospital was the first in Denmark to implement (in 2012) self-reported health online prior to the first midwifery visit.³ When a woman signs up for the nuchal translucency scan, she receives an email with a link to a questionnaire, available in Danish and English. On average, women respond to the questionnaire in their 10th gestational week.³ The questionnaire collects information on the woman's socio-demographic characteristics, reproductive, obstetric, and medical history, general health status, intake of dietary supplements, lifestyle factors before and during current pregnancy, WHO-5 well-being index, and Cambridge Worry Scale. The women also have the possibility of stating personal needs by describing their thoughts and wishes for the pregnancy. The first midwifery visit takes place around the 15th gestational week.³

2. Participants, ethics and methods

The primary data source in this study was individual semi-structured interviews. Additional exploratory and structured observations were performed to allow for different perspectives of the same phenomena.¹⁴

Data were collected in 2015–2016 over three consecutive phases:

1. Exploratory observations (winter 2015)
2. Individual semi-structured interviews (summer 2015 to winter 2016)
3. Structured observations (winter 2016).

2.1. Participants

Participants for the interviews were recruited face-to-face by a midwifery department manager while waiting for their first midwifery visit at an antenatal care facility. The same person recruited midwives for the observations, and these midwives recruited participants for the observations. It was expected that women's experiences of self-reporting their health status would vary, and to ensure heterogeneity in the sample,¹⁵ both women expecting their first child and women who had given birth before were invited. In addition, a variation in maternal age was sought.

Out of 26 women who received information about the interview study, 15 women consented to participate. Women who responded to the initial study invitation but did not respond to an email concerning a date for the interview received one reminder by email or phone.

Only women who had completed the questionnaire were invited. Inclusion also required being in the second trimester of pregnancy, on a low risk pathway, and at least 18 years old. Ages ranged from 24 to 41 years. The average age among participants was 32 years. Nine women were expecting their first child and six women were expecting their second or third child. Highest educational level of the participants was college ($n=2$), graduate university level ($n=6$), and post-graduate university level ($n=7$). All women were Caucasian, and all lived with a male partner.

2.2. Ethical considerations

Before consenting to participate in the interviews, the women received written and verbal information about the study, and written informed consent was obtained prior to their participation in the interviews. For the observations, both women and midwives received verbal information about the study before acceptance of participation. All participants were guaranteed personal and institutional anonymity and informed that they could withdraw from the study should they wish to do so. According to national legislation, the study did not need submission to the Danish Scientific Ethics Committee. The study was submitted to The National Data Protection Agency for approval (J.NO. 2015-41-3998). However, after the agency's review of the study design, permission to undertake the study turned out not to be required.

2.3. Data collection

To reduce potential researcher bias,¹⁴ observations and interviews were performed by two researchers (HJ and JAC).

2.3.1. Observations

Observations were carried out with the role of the observer as participant, as described by Gold.¹⁶ This type of observation entailed minimal involvement in the social setting of the midwifery visit. Data were generated over shorter time periods of formal field observation.¹⁶ The observation sequences were supplemented by informal interviews with staff.^{17,18} Exploratory observations consisted of 30 h of observation at the antenatal care facility. The purpose of these observations was to collect information on the use of the questionnaire prior to and during the first midwife visit. Data from the exploratory observations were subsequently used to develop themes for the semi-structured interview guide in the second data collection phase of the study. Structured observations consisted of 32 h of the first midwife visit. The structured observations sought to nuance and contribute to the analysis of the interviews. Observations were initially documented in short form in the antenatal care facility. In order to ensure that observations were described accurately and extensively, they were written in full the same day they had taken place.¹⁸

2.3.2. Interviews

Due to the intimate nature of reporting personal health, individual interviews were used to collect data.¹⁹ A total of 15 individual interviews were performed. These interviews were performed at a time and place that was convenient for the participant. Nine interviews were carried out at the interviewing authors' workplace (a Midwifery Program at a University College), five took place in the participant's home, and one at the participant's workplace. As the online questionnaire

was lengthy, a printed version was used as a material prompt during the interviews to promote descriptions of experiences which would otherwise have remained tacit.¹⁷ A pilot test of the interview guide was performed with two women who fulfilled the study inclusion criteria. The pilot test did not result in any adjustments of the guide or the interview technique. During the interviews, women were encouraged to describe their experiences when they answered the questionnaire, and to describe how their personal health information had been utilized at their first midwifery visit. During the interview, follow-up questions enabled respondents to elaborate on their initial replies and allowed for flexibility in the collection of data.¹⁹ The average interview duration was nearly one hour (range 32 min to 1 h and 26 min). All interviews were audio recorded and subsequently transcribed verbatim by four research assistants.

2.4. Data analysis

Due to the limited body of existing qualitative research on self-reporting health in antenatal care, conventional content analysis was chosen as the data analysis method. This method avoids the use of preconceived categories and instead allows categories to flow directly from the data.¹⁵ According to Graneheim and Lundman, content analysis can be used for different types of text, including interview transcripts and observational field notes.²⁰ In the present study, observations and interviews were initially analysed separately and then combined into categories.

Conventional content analysis consists of several analytical steps.¹⁵ First, field notes and transcripts were read and reread in order to enhance familiarity with the data and to get a sense of the data as a whole. Next, interviews and observations were coded separately using open coding and coding sheets. All codes were organized into emergent categories and subsequently grouped into meaningful clusters. Lastly, the clusters were organized into main categories and sub-categories.

Data were initially coded by HJ. To enhance the reliability of the authors' data interpretation,¹⁴ interview transcripts were read and analytical findings discussed with the co-authors. In addition, field notes were discussed with a senior researcher highly experienced in organizational studies within antenatal care. After analysis and discussion of the 15 interviews which formed the primary data source, consensus was reached among the group of researchers regarding data saturation. Findings were found to be diverse enough to establish main categories and sub-categories which covered the data as a whole and thus no additional interviews were performed.^{17,20}

3. Findings

During the content analysis of the interviews and observations three categories and 12 sub-categories emerged (Table 1).

3.1. Reporting personal health

This category describes women's experiences of reporting health information prior to the first midwifery visit, and how they distinguished between reporting different types of health information. The category illustrates the various strategies women used to attain the health related knowledge they needed to answer the questionnaire. The category also illuminates the challenges women encountered in relation to reporting certain types of health information.

3.1.1. Factual health information

The women appeared to distinguish between different types of questions. In general, they found the quantitative questions easier

Table 1
Categorization.

Main categories	Sub categories
Reporting personal health	Factual health information The importance of a correct answer Testing personal boundaries Assessing physical health vs. mental health and personal needs
Reducing and generating risks	Boxing the pregnancy Confirming normality Potential risks The right and the wrong answers
Bridges and gaps	Expectations of the midwifery role Being seen and acknowledged Feeling insignificant or ignored Contextual influences

to answer than the qualitative ones. Reasons for this were, among other things, that quantitative questions could be answered with e.g. 'yes', 'no', a number, a year, or in just a few words. Quantitative questions dealt with various forms of information regarding physical health and lifestyle, and the women were used to answering such questions in other settings, such as at the general practitioner's office or at the hospital. This meant that the women had accumulated some experience in answering these sorts of questions. Beth found that reporting her history of previous treatment and hospital admission was a straight-forward task.

"... have you been treated for or have you been to hospital before ... I thought, this is primarily about me, so I found these questions easy to answer ..."
(Beth, Int. 2)

Answering questions about personal lifestyle required the use of different skills, e.g. numeracy and decision-making skills. Some women found that the information they wanted to report did not have an appropriate response category. In these situations, they weighed the available categories against each other in order to find the most suitable reply category. Below, Tina explains how she answered a question about weekly exercise.

R: "... it's because you also run a lot when you are at the playground ... that's also exercising."

I: So some types of exercise did not fit into the categories?

R: Well, instead I put it under the category 'A brisk walk'." (Tina, Int. 12)

3.1.2. The importance of a correct answer

The women experienced the questionnaire as quite extensive compared to the questionnaires they normally completed in healthcare settings. At the same time, the women also found the questions to be relevant, and they stressed the importance of ensuring that their answers were correct. Generally, the women completed the questionnaire on their own. However, they also described situations where it was necessary to draw upon supplemental information sources. Women's partners and mothers were perceived to be important sources of knowledge. Some women also relied on friends as a source for help. In addition, the internet was used to retrieve information on health matters. Sue and Vicky explain situations in which supplemental information sources were necessary.

"I didn't know if anyone in my family had diabetes ... It was lucky my mum was around, it meant I was able to ask her". (Sue, Int. 2)
"I needed to look into the differences between a psychiatrist and a psychologist ... so I googled it." (Vicky, Int. 14)

Making sure that the answers were accurate was perceived by the women as important in order to improve the usability of their reported health information. The midwife's ability to give appropriate advice was believed to be enhanced by precise and truthful answers. This meant that the women wanted to do their very best when answering the questionnaire. Below, Kate describes how she saw her answers and the midwives' use of the questionnaire as a way of ensuring her baby's health.

"I am very interested in all aspects of the pregnancy and off course, how can I say, give my child the best possible start. This entails allowing others to help me ... in case anything needs addressing in relation to my lifestyle and my health ..." (Kate, Int. 7)

3.1.3. Testing personal boundaries

Although the questionnaire content in general was found to be important for the pregnancy, a few women felt that some of the questions were of a very intimate nature. This led to feelings of personal boundaries being tested. Questions relating to personal lifestyle and mental health were specifically described to be of a more personal nature. Even so, the women still felt obliged to answer these questions. This action was described as a kind of civic duty, i.e. if the health care system asked you to complete a questionnaire, you would do so, regardless of your personal feelings, as Sue portrays.

"Nowadays you really outsource things [tasks] to the internet ... I can see it makes sense for time consumption in health care. For me as a private person though ... there are many questions which are very personal, I wonder if they will be asking me about my sex life too ..." (Sue, Int. 1)

3.1.4. Assessing physical health vs. mental health and personal needs

The women talked of answering different types of questionnaires as part of everyday life. At the same time, performing self-evaluations of mental health were considered to be more challenging than providing factual health information. Data indicated that although questions concerning mental health took up less space in the overall questionnaire, these questions consumed the majority of the reply time. Women described taking time to reflect and use a gut feeling to answer these questions. Sometimes it could be challenging to understand how the reply categories regarding mental health differed from each other. Thus, answering mental health questions could raise additional questions, as the accounts from Helen and Kate illustrate.

"How much am I really worried? ... It's not like I can't think of anything else during the day. It may be a worry which occurs and then disappears again. Does that mean I am worried? ..." (Helen, Int. 11)

"I thought it was a little difficult to estimate my overall mood. I don't know if you have to be absolutely euphoric to score yourself at the top." (Kate, Int. 7)

The questionnaire enabled women to state their thoughts and wishes for the pregnancy. However, some of the women seemed reluctant to do this. Several reasons were given for choosing not to use this opportunity. One reason was that wishing for a healthy baby and a problem free birth was considered a common wish and therefore a trivial reply. Another reason was that women were uncertain about who would access this information and what the purpose of this information was, as Lisa explains.

"... what could I write? I need a purpose ... perhaps if you are a soft romantic you wish for a good pregnancy ... And who am I writing to? So no."
(Lisa, Int. 5)

Other women chose to make use of the opportunity to report worries and needs. This action was performed in an effort to prepare the midwife for their visit. For some women, the anonymity of online reporting made it easier to state a personal problem. It was considered to be better to write about these issues, than to sit face-to-face with the midwife and verbalize them. Great effort was put into phrasing the problem properly, as Penny describes below.

“Please describe your thoughts and wishes for this pregnancy” . . . I used a long time to think about this and write it . . . I wanted the words I used, the adjectives I used, to describe my feelings . . . If you use the wrong word, it can impact on the person reading it . . .” (Penny, Int. 6)

3.2. Reducing and generating risks

This category illuminates different dimensions of risk related to use of the questionnaire. Women's views of the questionnaire's functionality in antenatal care are described. Emotional reactions evoked by answering the questions are illustrated. In addition, the category entails women's distinctions between perceived acceptable and unacceptable answers.

3.2.1. Boxing the pregnancy

The women generally agreed that one of the main purposes of the questionnaire was to assess whether they could be at increased risk during pregnancy. They expected that after having submitted the questionnaire, antenatal health care personnel would determine which category of pregnancy they belonged. Some women termed this procedure as “boxing the pregnancy”. The women expected that their answers in the questionnaire would lead to either standardized or specialized antenatal care. They also compared their personal needs to the needs of other pregnant women. Several of the women mentioned having female friends who were less privileged than they were. Distinctions between standardized and specialized antenatal care were related to the amount of antenatal resources that were expected to be allocated to their individual pregnancy – where specialized care would entail more visits and more time during the antenatal visits. Women, who perceived themselves to have a normal pregnancy, anticipated a basic antenatal care offer, as Diane explains.

“I don't have any allergies . . . I have never taken drugs, I have never smoked, psychologically I have no issues and I have a large supportive network . . . [I] may be one of the easy ones . . . they assign me short antenatal visits and save resources.” (Diane, Int. 8)

3.2.2. Confirming normality

For some women the questionnaire served as a means to confirm a normal pregnancy. Here the word “normal” was used to describe several dimensions such as not being physically or mentally ill. Reporting an appropriate lifestyle also made women feel normal. Finally, normality was related to the possession of material goods such as adequate housing and a stable income to provide for the newborn. Thus, the questionnaire came to serve as a checklist, where answering the questions contributed to perceptions of being normal. For some women normality led to feelings of being privileged or lucky. Below, Ann describes how the questionnaire could decrease pregnancy related concerns and increase confidence.

“ . . . a lot of the questions made me think, this is great, because they make me see, that I am normal . . . they [the questions] actually had a calming effect on me.” (Ann, Int. 3)

Furthermore, the questionnaire served to remind the women of the importance of maintaining a healthy lifestyle during

pregnancy. Answering questions about personal lifestyle was described to increase awareness of how to live their everyday life, as Vicky explains.

“When you are asked . . . how healthy do you live and how much physical exercise do you do, it makes me think . . . perhaps I should eat a little more fish, perhaps I should exercise more.” (Vicky, Int. 14)

3.2.3. Potential risks

While answering the questionnaire increased perceptions of normality for some women, it raised questions of potential risk for others. Answering questions about previous illnesses seemed to make some women more aware of risks that they had not previously been aware. Cathy described how she, during her youth, had been diagnosed with appendicitis and consequently had had her appendix removed. An illness she had not found to have significance for her current pregnancy. However, confirming in the questionnaire that she had suffered from appendicitis, made her think more about how a previous operation might affect the pregnancy.

“ . . . is it now an issue that I have had my appendix removed? . . . it got me thinking . . .” (Cathy, Int. 13)

Decreasing risk during pregnancy was related to ensuring optimal conditions for the baby. Some women described how the pregnancy had been a surprise and as such they had not practiced risk control during the early stages of pregnancy. Mary described how she, in the questionnaire, had been asked about dietary supplements. She had not adhered to recommendations of taking folic acid prior to becoming pregnant. This led to feelings of anxiety.

“ . . . folic acid, I didn't start taking it until I was pregnant, it made me feel “Uh” should I have taken it half a year in advance? . . . It made me think, am I doing it well enough?” (Mary, Int. 4)

Questions related to alcohol consumption prior to and during pregnancy evoked feelings of guilt among some of the women. Before their pregnancy had been confirmed they had consumed alcohol at various social occasions. The women described how they, from a rational standpoint, knew that the probability of harming the baby due to a small amount of alcohol intake was minor. Yet, as Ann describes, alcohol intake during the early stages of pregnancy continued to be a concern as the pregnancy proceeded.

“I keep thinking of those beers . . . I drank two beers and a cocktail, previously I had taken a pregnancy test which was negative . . . I thought “Oh God” wasn't that during the period where the neural tube . . .” (Ann, Int. 3)

3.2.4. The right and the wrong answers

The women regarded their questionnaire answers as a presentation of who they were, and how they lived their daily lives. They also seemed quite aware of the potential consequences of confirming an irresponsible lifestyle when answering the questions. One woman described this aspect as the distinction between providing the “right” and the “wrong” answers. Some women thought about how wrong answers might affect their first midwifery visit. Such thoughts affected the way these women chose to answer the questionnaire. Although women were generally devoted to stating the correct answers, bending the truth could serve to ensure self-protection during the meeting with the midwife, as portrayed by accounts from Sue and Cathy.

“I drank one glass of red wine after Christmas . . . I thought, should I write that? . . . you don't need to give me a lecture. I know I shouldn't have . . .” (Sue, Int. 1)

"My boyfriend doesn't smoke every day, but he does smoke at parties . . . I couldn't fit that answer into any of the reply categories, so I just wrote 'No'. To be honest I kind of thought, . . . is this because we need to have a moral talk? . . ." (Cathy, Int. 13)

3.3. Bridges and gaps

This category describes women's expectations of the midwife's role regarding the questionnaire. In continuance, the women's experiences of the use of their self-reported information during the midwifery visit are described. Finally, the category illuminates how the organization of work in antenatal care can affect the use of the questionnaire.

3.3.1. Expectations of the midwifery role

Data indicated that expectations of how the questionnaire would be used in antenatal care differed between the women. A few women saw the questionnaire as a data collection instrument, which contributed to quality improvement or research in maternity care. Generally, the women expected the midwife to use their self-reported information to prepare for their antenatal visit. The midwife was considered an expert within the field of maternity care. Positioning the midwife as an expert also meant that women expected the midwife to assess whether or not the health information they had submitted needed a follow-up, as Nancy depicts.

"I had the expectation that this person looked through my information and if there was anything alarming . . . then I would be told . . ." (Nancy, Int. 15)

Some women saw the questionnaire as an invitation to set the agenda for the coming midwifery visit. For these women, the questionnaire became a personal aid, which could ensure the visit to be tailored according to their individual needs. The women expected the midwife to use their self-reported information as a framework for dialog during the actual visit. Mary explains how she saw the questionnaire as a way to ensure a proper use of time during the first visit.

" . . . you place some of the preparation prior to the visit and then you use the time to talk about pressing issues . . . by doing this work at home, she [the midwife] . . . is able to see what we need to talk about . . . you get more out of the limited time . . ." (Mary, Int. 4)

3.3.2. Being seen and acknowledged

The midwife's use of information relating to wellbeing, worries, and needs were perceived to be very important among the women. Lisa described how she had been positively surprised when her self-reported information was addressed by the midwife during the visit. When the midwife used the information, this led to feelings of being heard and to establishing a partnership with the midwife.

" . . . I was surprised, when I met the midwife, how much we actually talked about it [the questionnaire] . . . it was great she followed up on my information. You feel heard. She gives you the impression that she wishes to cooperate with you to ensure the kind of care that's in your own best interest and for the good of the baby." (Lisa, Int. 5)

The women also saw the use of their information as a token of personal recognition, which contributed to feelings of having legitimate needs. At the same time, some women were also concerned of how the midwife would react to their information. Penny described how essential it was for her, that her information

had been taken seriously by the midwife. This had led to feelings of relief.

" . . . this is all about her [the midwife] acknowledging what I have written. Of course, I had been a little worried . . . that I would be told it was all nonsense and that I needed to get my act together . . . So when she acknowledged it . . . it was such a relief and since seeing her, I already feel better . . ." (Penny, Int. 6)

3.3.3. Feeling insignificant or ignored

Some women felt that their self-reported health information was used incorrectly by midwives during their visit. Improper use of the information was experienced in situations, where the midwife asked the woman the same questions she had already answered in the questionnaire. Other women described how the midwife had disregarded the worries they had reported in the questionnaire. Midwives had made comments about their worries being common or expected. In these situations women's worries were not further addressed by the midwife. Below, accounts from Mary and Helen portray these experiences.

" . . . she told me a story about herself, about her own pregnancy . . . this wasn't at all what I needed. I needed the two of us to talk about me and to discuss what I had written about my concerns in the questionnaire." (Mary, Int. 5)

"I felt it was a waste of time because I already knew these things and the brochure she handed me, my general practitioner had already given me . . . I already try to maintain a healthy lifestyle . . . so I had no need to talk about that . . . I wondered why she didn't address my concerns . . . I had expected her to initiate the subject and ask "How do you feel about your concerns?" . . . she said, I have read your questionnaire and have no need to comment any further on your information, I can see you have written that you have been very nervous, this is not uncommon . . ." (Helen, Int.11)

Observations indicated similar findings. Sometimes women would report worries in the questionnaire. Yet, midwives would not necessarily address this information during the visit (Obs. 6, 11, 16). One midwife explained, that it was common for women to be concerned about the baby during the first trimester of the pregnancy, and that she expected their worries to be diminished, when they returned for antenatal care visit in the second trimester, because their pregnancy had proceeded normally (Obs. 9).

When women experienced that their concerns were ignored by the midwife it was perceived to be a double betrayal. Women felt they had been invited to submit their personal worries, and reporting personal issues was perceived to be emotionally demanding. Being subsequently ignored during the visit led to feelings of neglect. At the same time, the women appeared reluctant to confront the midwife. Similar findings were demonstrated in the observations, where women rarely brought up worries they had reported in the questionnaire (Obs. 1, 7, 9). In the interviews, several explanations were given for not wishing to confront the midwife about their personal concerns. Some women perceived a midwife who ignored their worries to be lacking in empathy. Therefore, they chose to withhold any personal issues from the visit. These women also described turning to family and friends for support instead. They did not wish to jeopardize their relationship with the midwife by appearing too demanding during the visit. Furthermore, lack of time held women back from discussing their personal worries. Janet explained how she knew the midwife was a busy professional with a pre-set agenda for the visit, and that she had no wish to disturb her.

" . . . you don't feel like doing anything which will inconvenience the midwife and I am well aware of the existing time schedule." (Janet, Int. 10)

3.3.4. Contextual influences

Observations showed that midwives, in addition to using the questionnaire, undertook a wide range of tasks during the first visit. Documentation tasks were perceived to be especially time consuming. The midwives had various names for these tasks, e.g. administrative work, computer work, and paper pushing (Obs. 6, 8, 14, 16, 17, 21, 26). Paige (midwife) distinguished between administrative work and real midwifery work. When asked about what real midwifery work entailed, she described that the work of the midwife related to establishing a relationship with the woman, and that this could be difficult when she spent most of her time registering information on the computer (Obs. 18). Observations showed that communication between the woman and the midwife primarily consisted of the midwife asking the woman various questions and the woman replying. Some midwives would turn the computer screen to show the women what they had reported (Obs. 7, 15, 20, 25). The women's active participation in communication mainly consisted of asking questions when invited to do so by the midwife.

Time management appeared to be a key issue during the first midwifery visit, and time schedules were frequently compromised (Obs. 2, 3, 11, 12, 15, 21, 27), for example, when women had psychosocial issues or previous obstetric complications, and especially if they had not submitted the questionnaire in advance. This would result in the midwife running late for her following appointments, as Wendy (midwife) explains.

"If they haven't submitted the questionnaire, they only get part of the information I would normally provide during their visit. I was scheduled to have a few minutes to prepare for the next woman. These minutes are now lost, because I need time to register this woman's missing information on the computer." (Wendy, Obs. 21)

4. Discussion

The following discussion examines the relevance of the findings for the provision of antenatal care. Study findings will be further interpreted according to the concepts of health literacy, risk, and professions, and to existing research. The discussion is divided into four sub-themes: 'Health literacy as an asset', 'Perceptions of risk and responsibility', 'Client and professional boundaries', and 'Standardized versus individualized care'.

4.1. Health literacy as an asset

Findings in this study showed that women differentiated between questions regarding physical health and questions regarding mental health. Questions on physical health were considered easier to answer because they required factual medical information. This may be because transmitting factual medical/clinical information is part of functional health literacy, which is considered to be at a basic health literacy level.²¹ While women in the present study were somewhat used to reporting their physical health status, the task of scoring their own mental health was perceived as more challenging. Despite the majority of the questions being on physical health, the women had used the majority of the questionnaire-completion time on questions concerning well-being, worries, thoughts, and wishes. These findings suggest that some women may not have a ready set of skills which they can use to assess mental health status and personal needs. Furthermore, basic functional health literacy may be insufficient to undertake this task because it requires the ability to use existing knowledge and experience in the self-assessment process. This means that women from more vulnerable population groups, such as women with low

educational levels or women belonging to ethnic minorities, may be more challenged in self-reporting health issues, because they are less likely to search for and understand health information and apply health information to their personal pregnancy situation.^{7,8}

Individual health literacy is both context and setting specific.^{4,21} In situations in which women answer the questionnaire outside of the clinical setting instead of during a meeting with the midwife, the self-reporting task may require more advanced levels of health literacy. In the present study, the women sought help from their partner, family and friends in situations in which their existing knowledge was insufficient to answer the questionnaire. A previous focus-group study by Beckham et al. found, that underserved women used female friends and relatives as important information sources during pregnancy.²² In the present study, the majority of the women were educated equivalent to graduate university level or higher. This suggests that women's social network may be an important aid in self-reporting health, even for well-educated women. Findings also showed that women used the internet as a supplemental information source when answering the questionnaire, which is in line with previous studies showing that pregnant women use the internet to assist and increase confidence in their decision-making processes.^{23,24}

4.2. Perceptions of risk and responsibility

According to Lupton, pregnant women have an elevated awareness of risk.²⁵ Lupton claims that a woman's body is positioned to be at double risk during pregnancy and thus, doubly responsible for maternal and fetal health. In the present study, women's accounts suggest that in addition to answering the questionnaire, the questionnaire itself could also evoke various emotional reactions. Consequently, the questionnaire came to have dual functions when identifying personal risk factors. For some women, the questionnaire served as a reminder of the importance of a healthy lifestyle, and it contributed to decreased concerns and increased confidence. For other women, the questionnaire increased perceptions of potential risks. The type of questions that triggered risk perceptions varied between the women. This suggests that risk related issues are central in understanding women's experiences of self-reporting their health status during pregnancy.

Lupton asserts that pregnancy has become re-moralized as an 'ethical practice'.²⁵ Morality in the present study was reflected in the women's high sense of duty to the unborn child, demonstrated in their accounts of trying to maintain a healthy lifestyle and avoid risky behavior during pregnancy. It was also seen in their extensive efforts to answer the questionnaire truthfully and correctly. Assuring that the pregnancy proceeded normally was to a large extent viewed as a personal responsibility which the women seemed to take upon themselves willingly and unquestioningly. The women saw the questionnaire as a digital representation of who they were, and how they lived their lives. Some women expressed concerns to how midwives would react to their questionnaire in cases when their answers did not fit the general behavioral norm. For a few women, the questionnaire produced dilemmas between being truthful and at the same time protecting themselves against professional reactions to alcohol intake or exposure to passive smoking. Although these women did not have a current alcohol intake and did not smoke themselves, they were still concerned that they would be judged by the midwife. Similar findings have been presented in a study on obese women's experiences of pregnancy, showing that the obese women were concerned about being judged or stigmatized during the client/professional meeting because of their lifestyle.²⁶ Interestingly, women in this study

were all resourceful, well-educated, and had a healthy lifestyle. Still, even a minor divergence from recommendations seemed to promote concerns of being perceived as irresponsible by the midwife.

4.3. Client and professional boundaries

The two last decades have increasingly placed the pregnant woman as a consumer within maternity care.²⁷ Health care reforms have put a greater political focus on women's rights and the provision of woman-centered care.²⁷ The pregnant woman is no longer seen as a passive recipient of care, instead she is seen as a reflexive consumer.^{27,28} In our study, women seemed to distinguish clearly between their client role and the role of the professional. In the home setting women used the questionnaire as a reflective instrument, illustrated by accounts of their awareness of their pregnancy behavior in relation to the health of the unborn child increasing because of completing the questionnaire. At the same time, the women also expected the midwife to sort through their reported information and to address any pending health issues during the first midwifery visit. Abbott characterizes professional practice as the application of formal abstract knowledge to specific situations.²⁹ He claims that diagnosis and treatment are important components of professional jurisdiction. Women's accounts in the present study showed that they expected their midwife to undertake the diagnostic task according to their self-reported information. Furthermore, women did not challenge the midwives' jurisdiction by demanding specific treatments during their first visit. These findings suggest that women differentiated between the application of lay knowledge and of professional knowledge in the assessment of their self-reported information. Findings also demonstrate pregnant women's dependence on the midwife's expertise. Although the questionnaire seeks to involve pregnant women more in the first midwifery visit, the women themselves may be hesitant to undertake a more proactive role within the antenatal care setting. Thus, the notion of the reflexive consumer in maternity care seems to be challenged by women's desire to maintain asymmetry between client and the healthcare professional. Related findings have been presented by Song et al. who found that women reduced feelings of risk and uncertainty during pregnancy by moving between dependence on established medical authorities and taking action on their own using the internet privately to manage their emotions.²⁸

4.4. Standardized versus individualized care

Informal interviews with midwives indicated that the midwives found the task load during the first midwifery visit to be considerable. Having to perform a number of tasks, especially documentation tasks, led to limited time to address women's individual needs. Furthermore, the midwives experienced difficulties in managing time in accordance with linear time demands. These findings indicate that structural factors impact the use of the questionnaire.

According to the midwifery philosophy, woman-centered care emphasizes partnership building and the provision of emotional and social support in addition to medical care.³⁰ Conflicting knowledge traditions have shown to affect midwives' care provision and to produce dilemmas between adhering to standardized procedures and meeting women's individual needs.^{31,32} In the present study the questionnaire produced expectations among women of the midwifery role at the first visit. Although the women knew that the questionnaire was a standardized procedure, they also saw the questionnaire as a

personal invitation, which could be used to tailor the first midwifery visit to their individual needs. Observations indicated that the questionnaire contributed to a decrease in the midwives' documentation tasks during the visit, and that midwives would use the questionnaire to confirm the women's self-reported information. However, women found it to be superfluous when midwives repeated questions on lifestyle, which they had already answered in the questionnaire. This suggests that midwives and women may have different expectations of the functionality of the questionnaire.

The women's accounts showed that they felt seen and acknowledged for their concerns when the midwife addressed their pre-reported worries. In contrast, when the women's pre-reported worries were ignored by the midwife this led to discontent with the first midwifery visit and feelings of neglect. This concurs with previous findings showing that women in antenatal care have a need for emotional and psychological support, and that they wish to be taken seriously by the midwife.^{33,34} A previous review found that women who have their personal emotional concerns addressed are more likely to rate their antenatal care highly.³³

A longitudinal study found that women who suffered from pregnancy related anxiety were likely to experience the same level of anxiety throughout the course of pregnancy.³⁵ Thus, addressing women's self-reported concerns during the first midwifery visit appears to be important because it may prevent continuous concerns that could extend into the postnatal period.

The present study showed that although the women wished to have their concerns addressed, they were also reluctant to confront the midwife. Several reasons were given for this, including a wish to maintain a good relationship with the midwife, which suggests that women will weigh potential benefits from being a more demanding client against potential threats of harming the relationship with the midwife. The importance of building relationships with care providers in antenatal care is also reflected in previous studies.^{33,34} In the present study, women also expressed awareness of the midwives time schedule, indicating that women may be willing to take co-responsibility for institutional time demands in antenatal care by withholding their personal needs.

5. Strengths and limitations

Main strengths include triangulation of data sources and use of multiple researchers. This increases credibility and validity of study findings.^{14,17} The main limitation of the study regards the sample of participants included. A heterogenic sample of participants is recommended in studies using conventional content analysis, when it is expected that participant experiences will be diverse.¹⁵ Even though our study participants varied in age and parity, they all had educational levels equivalent to graduate or post-graduate university level. This is higher than the average educational level among Danish adults.³⁶ Participants were also Caucasian, and they lived in a cohabitate relationship with a male partner. Former studies have shown that educational level, ethnicity, and partnership can affect self-rated health.^{1,8} Hence, the characteristics of participants affect transferability of study findings to other groups.¹⁷ The antenatal care center was situated in a high-income area of Copenhagen. The inclusion of an additional recruitment center in a low-income area could have increased the possibility of a more heterogenic sample. Also, data were coded by only one of the researchers, which may affect the reliability of study findings.^{14,17} However, the analysis process was extensively discussed among the author group prior to establishment of categories and sub-categories.

6. Conclusion and recommendations

By illuminating women's experiences of answering an online questionnaire prior to their first antenatal midwifery visit, the study offers new insights into how women approach the task of self-reporting health outside of the clinical setting. Findings suggest that women find it easier to self-report physical health than mental health and personal needs, indicating that higher levels of health literacy may be needed for these tasks. Whilst seen as a tool to reduce risk, the questionnaire may also have unintended effects beyond the scope of the questionnaire's original purpose. The process of self-reporting health can increase the pregnant women's perceptions of risk during pregnancy and their concerns of how personal lifestyle may affect the midwife's attitude. This suggests that it might be useful for midwives to ask women about the process of answering the questionnaire rather than solely focusing on their replies.

Our findings show that organizational factors, such as task load and time management, play an important role in ensuring adequate space to discuss women's questionnaire answers. Hence, the use of the questionnaire cannot be viewed as an independent tool, but must be seen as one of several work procedures during the first midwifery visit. Women expect midwives to use their self-reported information to tailor the visit to their personal needs. When midwives address women's self-reported worries and needs it promotes the women's perception of being acknowledged. When personal worries and needs are overlooked by the midwife, it increases women's dissatisfaction and feelings of neglect in their care. Women may be apprehensive about bringing up their personal concerns during the visit, indicating that midwives need to address women's self-reported concerns regardless of the midwife's own perception of the relevance/irrelevance of these concerns.

During the midwifery visit, the women found themselves in different dilemmas regarding the use of their self-reported information. On one hand, the women were awarded the possibility to tailor their visit to their personal needs. On the other hand, the women simultaneously tried to navigate between competing needs, such as the need for expert advice or the need to establish a good relationship with the midwife (by not appearing to be a demanding client). More in-depth research is needed to explore the possible self-disciplinary actions that women undertake when they try to comply with the self-reporting task. In addition, research is needed on how vulnerable groups of pregnant women adapt to the task of online self-reporting and on possible barriers among non-users of online self-reported health in antenatal care.

Ethical statement

The study was submitted to The National Data Protection Agency for approval. However, after the agencies review of the study design, permission to undertake the study was not required (J.NO. 2015-41-3998). Before consenting to take part in the study, interview participants received written and verbal information about the study and information about the job affiliation of the researchers. Observation participants received verbal information about the study and information about the job affiliation of the researchers. Furthermore, all participants were guaranteed personal anonymity and told they could withdraw from the study at any time.

Acknowledgements

The authors thank Head of the Bachelor's Degree Programme in Midwifery, Bodil K. Møller, for supporting this study, Department

Manager at the University Hospital Rigshospitalet, Lisbeth Iversen, for recruiting participants, and PhD and Lecturer Anja S. Pors for valuable comments on observational study findings.

The study was awarded a Danish Ministry for Higher Education and Research government research grant. The funding source was not involved in the design, analysis, or writing of the study.

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