

ARTICLE

Oocyte or ovarian tissue banking: decision-making in women aged 35 years or older facing age-related fertility decline



BIOGRAPHY

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KEY MESSAGE

Most women who faced age-related decline preferred oocyte banking over ovarian tissue banking because of its relative convenience and because it avoids surgery. Future quantitative research in a larger cohort is necessary to confirm the findings and provide more insight into the relative importance of the different factors influencing women's decisions.

ABSTRACT

Research question: Women who face age-related fertility decline have the option to safeguard future reproductive potential by banking oocytes or ovarian tissue. What are the methods that women prefer and what factors are important in their decision-making?

Design: Qualitative interview study, participants were recruited through monthly information sessions at a university hospital on oocyte banking, postings on social media, websites and newsletters and snowball sampling. Women had to be aged 35 years or older, single, childless and with a possible future desire for motherhood. Key concepts of the Health Belief Model were used as framework for the analyses.

Results: In total, 15 women participated in this qualitative study. For oocyte banking, they mentioned chances of success, extra time and faith in the technique and healthcare professionals as benefits. Risks for themselves or future children and costs were considered to be barriers in decision making. For ovarian tissue banking, the chances of success, the possibility of natural conception, the time investment and effect on menopausal symptoms were seen as benefits, and lack of experience and lack of information were considered barriers for themselves or their future children. Overall, they considered the procedures involved in oocyte banking as relatively 'easy', whereas ovarian tissue banking was seen as a more invasive procedure.

Conclusion: Most women preferred oocyte banking over ovarian tissue banking because of its relative convenience. Future quantitative research in a larger cohort is necessary to confirm the findings and provide more insight into the relative importance of the different factors influencing women's decision.

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KEYWORDS

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Ovarian tissue banking
Patient preferences
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INTRODUCTION

The trend of delaying motherhood has led to more women facing subfertility at an advanced age (*Schmidt et al., 2012*). Fertility preservation is a means to increase the likelihood of a future genetically own child as it extends the fertility window. Currently, two methods for female fertility preservation are available: oocyte banking and ovarian tissue banking.

Several studies have addressed the general outlook of young women towards oocyte banking and the specific motivation of women who had banked their oocytes. In a Swedish survey (*Wennberg et al., 2016*), 70% of 987 randomly selected women aged 30–39 years had a positive attitude towards oocyte banking for age-related fertility decline. A survey in Belgium (*Stoop et al., 2011*) reported that 323 of 1024 women aged between 21 and 40 years (32%) would consider themselves as potential oocyte bankers. Most women who banked oocytes had done so to preserve future reproductive potential and to have more time available to find a suitable partner or to remove the pressure to find a partner (*Stoop et al., 2011; Hodes-Wertz et al., 2013; Stoop et al., 2014; Waldby, 2015*).

Hitherto, only one US study has reported on 113 women who banked ovarian tissue, including nine women who did so for age-related fertility decline. The reasons the nine women opted for ovarian tissue banking were lack of time to undergo multiple cycles of ovarian stimulation or concerns of going through ovarian stimulation (*Silber et al., 2018*). A Swiss study investigated the attitude of 248 women of reproductive age (15–35 years) for both fertility-preservation methods. In postponing family planning, acceptance rates were 19% for oocyte banking and 13% for ovarian tissue banking (*Woodtli et al., 2018*). Women, however, were not asked to indicate their preferences for one or the other method and the factors that were important in their decision.

As these studies only addressed the intentions or attitudes of women for only one intervention, either oocyte or ovarian tissue banking, it is still unclear how women decide on one option over the other, i.e. we do not know which factors are decisive and which trade-offs are made.

The aim of the present study was to identify, with the help of the Health Belief Model (HBM), which method women prefer, the ultimate trade-off, and which factors determine decision-making for women facing age-related fertility decline who consider fertility preservation. The HBM is a psychological model to understand individuals' health intentions and decision making (*Janz and Becker, 1984*).

MATERIALS AND METHODS

The study was presented to the Medical Research Ethics Committee (MREC) of the Amsterdam UMC (location AMC), University of Amsterdam. The MREC confirmed that the Medical Research Involving Human Subjects Act does not apply to this study and that an official approval of the study was not required (# W17_080 #17.099, 02-03-2017). All procedures were in accordance with the ethical standards of the *Helsinki Declaration (2013)*. Participating women gave written consent before the interview started. Semi-structured face-to-face interviews were conducted with women who faced age-related fertility decline. Ovarian reserve parameters were not assessed because this was not the scope of this study. In the Netherlands, oocyte banking for fertility preservation for age-related fertility decline is offered but reimbursed by health insurances is not. Ovarian tissue banking is not yet practised for this indication.

Recruitment

Women were recruited through three channels. First, women who signed up for the monthly information session on oocyte banking for age-related fertility decline at the Center for Reproductive Medicine of the Amsterdam UMC were asked to participate in the study. Second, participants were identified through social media posts on Twitter and Facebook, through newsletters of two private practices for advising single women who desire motherhood in the Netherlands and on websites about infertility and single motherhood. Third, snowball sampling was carried out in our own network and participating women were asked if they had female friends who might want to participate. Women aged 35 years or older, single, childless and desiring a possible future child were included. Women who were in a long-term relationship or who were already trying to conceive were excluded.

Women were included until no new insights and data saturation was achieved (*Boeije, 2002*).

Interviews

Before the interview, participants received written information on the study aim and a description of oocyte and ovarian tissue banking in layman's terms. Information about fertility preservation options was based on existing research (*Donnez and Dolmans, 2017*). At the start of the interview, the interviewer asked if the women understood the two methods of fertility preservation and answered questions if women needed further clarification. The interviews were conducted by one researcher (EB) who was familiar with all aspects of the two fertility-preservation methods and previously worked as fertility doctor at the Centre for Reproductive Medicine at the Amsterdam UMC, but was not involved in patient care at the time of the interviews. Women were interviewed at their own home or at the Center for Reproductive Medicine depending on their preference. During the interview, the interviewer made field notes. The interviews were audiotaped and transcribed verbatim.

Instrument and analysis

The interviews were guided through open-ended questions from a self-constructed topic list that was developed based on existing research on fertility preservation. The topic list consisted of questions about demographic and social characteristics, previous relationships, current and previous child-wish, questions related to factors that influenced their decision making for both treatments and to how important participants found the treatment aspects of the two fertility-preservation options in their decision-making process, and finally the preference for one of both treatments. The topic list was adapted during the interviews when new topics were identified.

After the first few interviews, the analysis started with highlighting meaningful text segments using the key concepts of the theoretical framework of the HBM (*Rosenstock, 1974; Janz and Becker, 1984*). The HBM proposes that individuals will be more likely to carry out specific health behaviour to prevent a certain disease if the individual believes themselves to be personally susceptible (perceived susceptibility), perceives consequences of

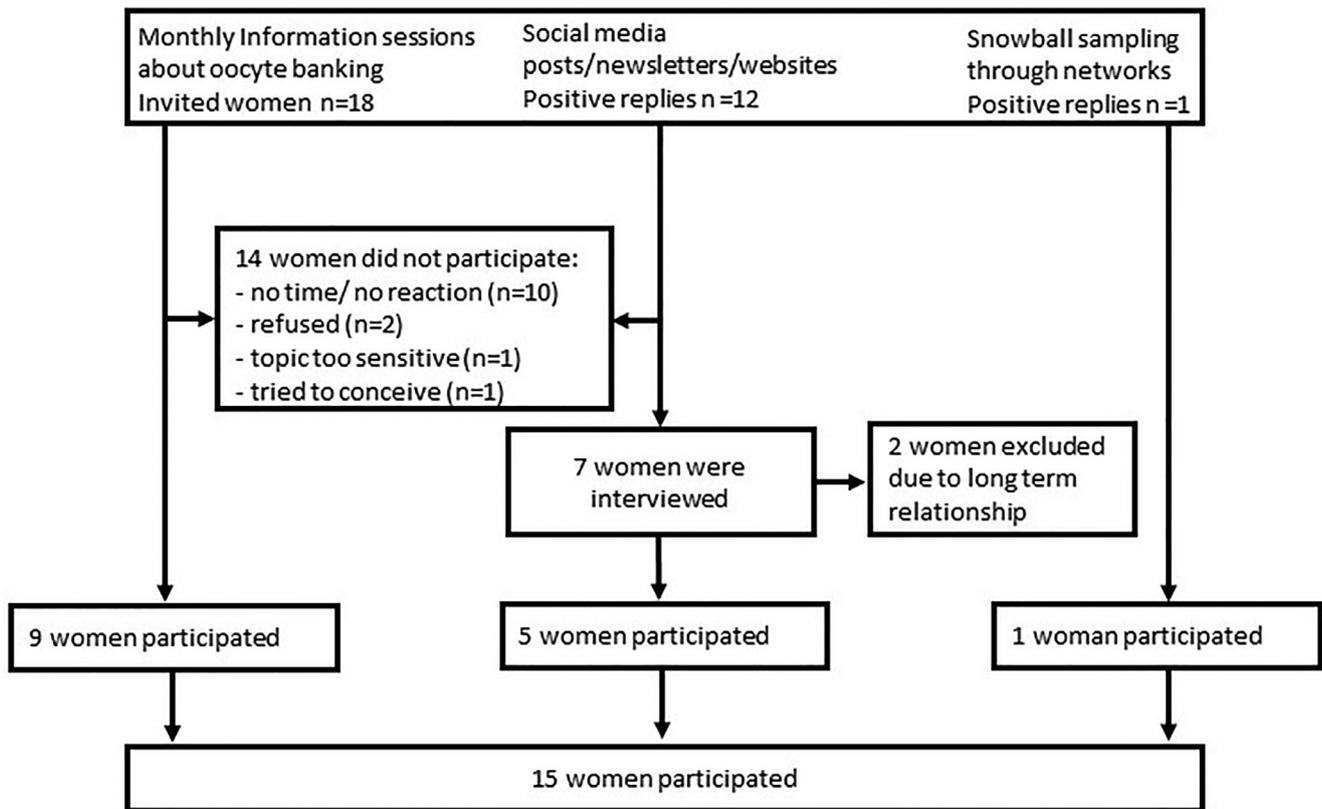


FIGURE 1 Selection of study participants.

a certain health risk as severe (perceived severity), perceives little potential negative aspects of a particular health action (barriers), perceives benefits in taking a specific action and a particular action would reduce the disease threat (benefits), and perceives a cue to action that can trigger the decision-making process (cue to action). These five key concepts will result in the likelihood of taking the recommended preventive health action (likelihood to behaviour). 'Perceived susceptibility' and 'perceived severity' are used to describe the context of the women. The key concepts 'benefits, 'barriers' and 'cue to action' are used to identify treatment aspects relevant for decision making, whereas 'likelihood of behaviour' includes a further exploration of their decision making based on the five key concepts. Next, using constant comparative method (Boeije, 2002), meaningful parts were further grouped into sub-themes. After this, meaningful parts were further compared, and new sub-themes were added during this whole process. The HBM has been shown to be able to explain the intentions for the use of fertility preservation (oocyte banking method) for age-related fertility decline (Ter Keurst et al., 2016; Sousa-Leite et al., 2019).

To ensure consistency, one author (EB) coded the interviews and discussed the coding first with a senior researcher (FvR). A medical student (IW) coded four interviews to check for inconsistencies between codes. Disagreement was resolved by discussion until consensus was reached. After the final code tree was developed, the coding of all interviews was rechecked. All transcripts were coded in MAXQDA (version 12). The transcribed interviews (14 in Dutch, one in English) and selected quotes were then analysed. Dutch quotes were translated into English and back translated by the first author. Any inconsistencies in translations were discussed and resolved within the broader research team.

The aim was to generate more meaning from our qualitative data and therefore also made our data countable by numbers (Sandelowski, 2001). Data were displayed in numbers as follows: all women ($n = 15$), almost all women ($n = 12-14$), most women ($n = 9-11$), several women ($n = 6-8$), some women ($n = 4-5$), a few women ($n = 1-3$) and none of the women ($n = 0$). Themes and sub-themes are supported by quotes from the participants.

RESULTS

Demographics

A total of 15 women participated in the study. Recruitment, inclusion and exclusion criteria are presented in [FIGURE 1](#). The mean age of the participants was 36 years, and 87% were highly educated. The demographics of participating women are presented in [TABLE 1](#).

Perceived severity

The perceived severity of declined fertility and childlessness was shaped by the desire to have children and the acceptability of single motherhood.

Desire for motherhood

All women acknowledged that the desire to have children was frequently on their mind. Some women already had an active desire for motherhood but wanted to find a suitable partner first to start a family with. Some other women were hesitant about their desire for motherhood or mentioned that their desire for children might be not as strong compared with other women. Some women mentioned they were still too young to accept that they would never become a mother. A few women reported that their wish for children

TABLE 1 DEMOGRAPHIC CHARACTERISTICS OF STUDY PARTICIPANTS

Characteristics	n = 15
Female age, years (mean, SD)	36.4 (1.7)
Ethnicity, n (%)	
White	13 (87)
Asian	2 (13)
Education status, n (%)	
University	13 (87)
Profession, n (%)	
Unemployed	1 (7)
Working	14 (93)
Contract hours per week (mean, SD)	38 (6.9)
Living situation, n (%)	
Alone	14 (93)
With housemates	1 (7)
Relationship status, n (%)	
Single	14 (93)
In a new relationship (<6 months)	1 (7)

was so strong that they were currently evaluating their options to fulfil their desire for motherhood.

‘Yes, I’ve always known I wanted it [to become a mother]. I always believed that the situation would come naturally with a partner, that it was a logical situation with a partner. But now, at a certain moment you are at an age and then you realize that if I still want to [to become a mother], I have to do it by myself’ (Participant 15).

Some women reported that they had discussed their future desire for motherhood in previous relationships but never attempted to conceive. A few women mentioned that they had not discussed their desire for children in previous relationships because they considered themselves to be too young or their relationship too premature. None of the women had undergone any fertility treatments before the interview. During the interview, some women reported that they had ended a previous relationship because of a conflict with their partner about the wish for a child.

‘But at the end of last year I said let’s think about a baby because of my age. Then he suddenly freaked out kind of. He felt like it is the end of his world. Maybe it is middle age crisis for men. He said I wanted to have baby maybe later but not now’ (Participant 14).

Single motherhood

For several women, single motherhood was not an option.

‘Can I be a single mum? I think if it would happen to me, I could do it. But whether I would really make that choice myself, I would still be inclined to think that I would be more comfortable doing it with someone. Both for the child and for myself.’ (Participant 1).

Some women clearly stated that they wanted to have a partner and their wish for a child was only related to a possible future relationship. Some women mentioned that their wish for a child was very strong and that they were seriously considering single motherhood and thinking about the possibility of a sperm donor.

Besides those two dominant sub-themes, the desire to have children and the acceptability of single motherhood, a few women also mentioned other aspects that influenced their perception of the severity of declined fertility and childlessness: medical conditions, i.e. diabetes, which could influence the participants fertility, and other options to fulfill their desire for a child, i.e. shared parenthood with a male gay couple.

Perceived susceptibility

Perceived susceptibility included topics about women's own views about their

chances of forming a relationship in the future and their age-related fertility decline.

Relationships

At the time of the interview, one woman was in a new relationship and the other 14 women were single. Fourteen women stated that they been in a long-term relationship in the past, had one woman had never been in a long-term relationship. Some women had difficulties in meeting potential partners and had little confidence that they would find a suitable partner in the near future.

‘I assume that at first I just have to do it myself [raising a child] and if there is a man then it would be very nice. But since it has not happened in the last 20 years, it is an illusion that I will succeed within a few years now’ (Participant 12).

A few women indicated that, because of their desire to have children, it was more difficult to meet a possible future partner. These women felt they had to discuss their desire for children quite soon into the dating process but were afraid to scare off possible partners.

Age-related fertility decline

All women reported that they were aware of, and worried about, age-related fertility decline and possible difficulties in conceiving at an advanced age. Women reported that most of their friends already had children and that they had examples of other women who experienced difficulties of conceiving at an older age. A few women reported that they felt like a social failure because they had not secured a relationship and had not had children. Several women reported that they were not anxious about their own age and their chances of age-related fertility decline because they had faith in their own fertility potential. A few of those women had older mothers in their family and a few other women reported they felt younger than their calendar age and thought they would still be fertile at a more advanced age.

‘I do not think I am very infertile, but basically I do not rely on that at all. My mother got her last child at the age of 41, but that was the third one, so that makes a difference’ (Participant 7).

Benefits of oocyte banking

Women indicated that the benefits of oocyte banking included the chances of success with the intervention, extra time to find a partner and faith in the intervention and healthcare professionals.

Although women indicated that chances of success could be seen as a benefit of this method, most women overestimated the overall chances of success.

'Yes they [the chances of success] are a bit smaller than I actually expected.... between 20 and 30 oocytes for one child, then I thought wow that is actually a lot for a child. Because of course you think 'oh one egg and you are ready', but yes that apparently does not work that way' (Participant 7).

A few women mentioned that the chances of success were acceptable and for some women it would be better than doing nothing.

'Yes it is low, but here I would think again the alternative is nothing' (Participant 11).

A few women indicated that banking oocytes would provide extra time and reassurance that they had created a back-up plan in case natural conception is no longer possible, although one woman mentioned that she would rather use her time to enjoy her life instead of undergoing a medical procedure.

'Because now I am 35 and who says that those eggs are still of good quality....So then I better enjoy the next 4 years of life and hope that I meet a nice man' (Participant 1).

Several women mentioned that they felt confident with the technique of oocyte banking because they had faith in the medical world or healthcare providers.

'Regarding the risks... if you really want something then you sometimes have to do something for it... and you just have to trust that you are doing your work well and that you are trying to have the lowest rate of complications as possible, you know. And I always have a lot of faith in the medical world'. (Participant 9).

In addition to the three dominant sub-themes, the chances of success with the intervention, extra time to find a

partner and faith in the intervention and healthcare professionals, a few women mentioned other advantages, such as the possibility of future donation of residual oocytes, possibility of transferring oocytes in a gestational carrier and the relatively easy procedure of oocyte banking.

Benefits of ovarian tissue banking

Women indicated that the benefits of ovarian tissue banking included the chances of success, the possibility of natural conception after transplantation, the time investment and effect on menopausal symptoms.

In general, chances after transplantation of ovarian tissue were difficult to understand. Several women mentioned that it was difficult to have thoughts about the chances of success because of the uncertainty about pregnancy rates after ovarian tissue transplantation. Some women mentioned the chances of success at this time were lower than expected before reading the information and for some other women the chances of success were acceptable.

A few women mentioned that a major advantage of ovarian tissue transplantation was the possibility of natural conception.

'The idea that you can still get pregnant naturally after replacing the ovarian tissue is also attractive. I always have such a romantic image that you just love your husband, have sex with each other and that you are pregnant and can say that you are expecting. That seems to me more fun than an IVF treatment' (Participant 13).

Nevertheless, a few other women did not consider this as an advantage because pregnancy chances were more important to them than mode of conception.

A few women mentioned that the time investment for ovarian tissue banking might be more efficient as the procedure requires a short hospital stay.

'It takes two days, but then you are done with it' (Participant 9).

A few women were enthusiastic about the possibility of postponing menopausal symptoms as a side-effect of ovarian tissue transplantation. In addition to the four dominant sub-themes, the chances

of success, the possibility of natural conception after transplantation, the time investment and effect on menopausal symptoms, women also mentioned faith in the medical profession, the possibility of future donation and the fact that, with ovarian tissue banking, oocytes remain in the ovarian cortex as potential advantages.

Barriers to oocyte banking

Women indicated that the barriers of oocyte banking included the risks for themselves, risks for the future child, time-investment and costs. Some women were afraid of the mood swings, which could be caused by the hormone injections used in IVF and intracytoplasmic sperm injection (ICSI) procedures. Most women said they were not in favour of hormone injections, but they understood that it would be inevitable for this type of fertility-preservation method. Several women mentioned that they felt that the procedure of oocyte retrieval was relatively simple. Some women mentioned that they were not scared by the risk of complications because it is part of the deal and they also had faith in oocyte banking and in the medical team.

A few women were not aware of the risks of an IVF/ICSI procedure for future children until they had read the information provided for the study. Several women reported that they were not impressed by these risks. They mentioned that only major malformations or for instance an increased risk for Down's syndrome would be an issue during decision making.

'If you would tell me it would cause a higher risk of for instance Down syndrome then it would be important' (Participant 14).

For several women, the frequent visits to the clinic would be difficult to combine with their work and their personal lives.

'Well look, yes I have a very busy schedule, I travel a lot and I have a lot of meetings at work. So that will be a challenge, yes' (Participant 5).

Nevertheless, several other women reported that it would be possible to combine the visits with their current jobs.

Most women mentioned that costs would be an important hurdle for them.

'Yes, because I have the money, but you really do not want to use it. You can also do so many other things with it' (Participant 13).

Several women reported that, if reimbursed by their healthcare insurance, the decision to bank oocytes would be much easier. A few women reported that their parents offered to pay part of the costs or that they would be able to borrow their money for the treatment. Beside those four dominant sub-themes, the risks for themselves, risks for the future child, time-investment and costs, a few women mentioned benefits were that they felt oocyte banking was not natural and that they would not know for sure if they would need their banked oocytes in the future.

Barriers to ovarian tissue banking

Women indicated that barriers for ovarian tissue banking were lack of experience with the technique and lack of information, risks for the women and risks for future children. Several women reported that the concept of ovarian tissue banking itself was difficult to understand. Also, several women felt they needed more information before they were able to decide. Also, the lack of experience with ovarian tissue banking with relatively few children born so far and the experimental label was seen as a disadvantage.

Surgery on a healthy body and oophorectomy was an important hurdle for most women.

'Yes something is removed. It's a big intervention, because it is all still uncertain' (Participant 5).

Women also mentioned that they were worried about the effect of removal of one ovary on their natural pregnancy chances with one remaining ovary.

'But imagine you have one ovary removed and you meet someone. Then you only have one left and the chance that you get pregnant in a natural way is a lot less than if you had two' (Participant 8).

The use of general anaesthesia during surgery was also mentioned as a hurdle for ovarian tissue banking by some women.

Several women mentioned that it was difficult to assess as few children are

born after ovarian tissue banking and the risks are still unknown.

'I find it difficult because the knowledge is not there yet. Then you worry about worrying' (Participant 15).

The risk of a possible IVF/ICSI procedure after transplantation was mentioned as a barrier by one woman. A few women would consider ovarian tissue banking if costs would be reimbursed by their healthcare insurance.

Cue to action

Female age was the only cue to action as all women were aware of age-related fertility decline. Several women had a specific age in mind at which they would have wanted to become a mother. This 'ideal' age varied between late twenties and early thirties and was sometimes similar with the age of their own mother when they gave birth. When discussing the maximum age at which they would want to become a mother, several women mentioned 40 years, although some women indicated that this maximum age was shifting as they got older and that they therefore did not have a maximum age and wanted to keep this open.

Decision making: likelihood of behaviour

The wish to reproduce was closely related to the wish for a partner. Women reported that the strength of the wish for a child, their own views about their personal risk of infertility, the expertise of healthcare professionals carrying out the treatment, the chances of becoming pregnant and the costs of both oocyte and ovarian tissue banking were important factors in decision making. Overall, after women received the information about oocyte banking, hormonal treatment and oocyte retrieval was considered more invasive than women had previously thought. Women were more familiar with the technique of oocyte banking if they had friends or relatives who had undergone IVF/ICSI procedures or who already banked oocytes. Most women considered oocyte banking as a relatively 'easy' procedure and ovarian tissue banking as more invasive. A few women mentioned that the time investment for ovarian tissue banking would be better because the number of outpatient visits is lower compared with oocyte banking. Also, for some women, the fact that 2 weeks of hormonal stimulation was not needed was seen as an advantage of ovarian tissue banking. Some women reported that there

were too many uncertainties with ovarian tissue banking, in relation to safety and in relation to the health of future children, chances of success and possible costs for transplantation. For these women, it was difficult to decide between both options. Therefore, additional experience and information about ovarian tissue banking would help women in making decisions about this treatment. Most women reported that the costs of ovarian tissue banking were not barriers because other benefits and barriers were more important to them.

Taken together, most women preferred fertility preservation than oocyte banking ($n = 11$), two preferred ovarian tissue banking and two women could not make a choice between the two fertility-preservation options.

DISCUSSION

In the ultimate trade-off, most women preferred oocyte banking over ovarian tissue banking because of its relative convenience and because it avoids surgery. All women acknowledged that the desire to have children was frequently on their mind. For some women, the desire to have children was related to a future relationship, although a few women were already exploring other options to fulfill their desire for motherhood. Almost all women had been in a long-term relationship in the past. Some had little confidence in finding a suitable partner and a few women mentioned that meeting potential partners was more difficult owing to their desire to have children. All women were aware of age-related fertility decline and difficulties with conceiving at a more advanced age. For oocyte banking, the chances of success, extra time and faith in the technique and professionals were mentioned as benefits. For ovarian tissue banking, the chances of success, the possibility of natural conception, the time investment and effect on menopausal symptoms were seen as benefits. For oocyte banking, risks for the women, risks for future children and costs were mentioned as barriers to decision making. For ovarian tissue banking, lack of experience and information, risks for the women and risks for the future children were mentioned as barriers. Female age was the only cue to action that triggered the decision-making process.

As far as we know, this is the first study investigating decision making between

oocyte and ovarian tissue banking for women facing age-related fertility decline. With our qualitative approach, and by scheduling the location of the interview according to the women's preference, we created a safe environment for women to discuss this possible sensitive topic (Elwood and Martin, 2000). With the Health Belief Model, we were able to explore the decision-making process in more depth.

Our study has some limitations. We recruited nine participants who already signed up for an information session about oocyte banking, which may have led to selection bias. In our study, four out of the nine women who were recruited through this information session had already attended the session at the time of the interview. On the other hand, these participants do represent the group of interest, so the effect of this bias might be limited. Another limitation to our study is that, at the time of the study, oocyte banking was seen as a conventional method for fertility preservation and ovarian tissue banking had not been available for age-related fertility decline in the Netherlands. This was also reflected by the fact that there was more knowledge and information on safety and efficacy of oocyte banking compared with ovarian tissue banking. This asymmetry might have influenced, to a certain extent, the decision making in our study.

Some issues warrant further discussion. First, the costs for oocyte banking were an important barrier for the women, and indeed, in most countries, fertility preservation for age-related fertility decline is not reimbursed. In the Netherlands, the estimated costs for oocyte banking are around 3000–4000 euros per cycle (around 10,000–12,000 euros for three cycles). This includes ovarian stimulation, medication, monitoring, oocyte retrieval and oocyte banking. The estimated costs for laparoscopy and ovarian tissue banking are around 5000–6000 euros. Several women reported that reimbursement of both fertility preservation methods would facilitate their decision. Second, limited knowledge of the procedure and success rates of ovarian tissue banking were seen as barriers, whereas the success rate of oocyte banking was seen as a benefit. This reflects the importance of clear and correct information about fertility-preservation techniques (Sousa-Leite

et al., 2019). Many thousands of babies have now been born after warming of banked oocytes for several indications (Chian et al., 2014; Cobo et al., 2016). Ovarian tissue banking so far has mainly been used for women with cancer who have no time to undergo ovarian stimulation, but it has been proposed for age-related fertility decline as well (Stoop et al., 2014; Donnez and Dolmans, 2017; Kristensen and Andersen, 2018). The number of live births after transplantation of ovarian tissue is much lower (around 130) compared with the number of live births after warming of banked oocytes. Therefore, registration and systematic follow-up of fertility preservation is needed to be able to inform future patients who are interested in fertility preservation about adequate success rates for both methods of fertility preservation. We recently published our follow-up results; almost 80% of women who reported a pregnancy after oocyte banking for age-related fertility decline conceived naturally (Balkenende et al. 2018).

Our results are not comparable to other studies as, to the best of our knowledge, this is the first study comparing both methods and exploring factors influencing the decision-making process for fertility preservation for age-related fertility decline.

In conclusion, subsequent quantitative research is necessary to confirm or refute our findings and to gain more insight into the relative importance of the different factors influencing the decision and the trade-off women make during decision making in a larger group of women. Future research should ideally be carried out in more countries because of the differences in availability, experiences with both techniques and reimbursement might play a role as well. Our findings stress the value of registration and systematic follow-up of women who had fertility preservation to document whether women conceive naturally or return to the clinic to use their banked oocytes. This information could be used during counselling for fertility preservation.

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