

Stakeholders views on the ethical aspects of oocyte banking for third-party assisted reproduction: a qualitative interview study with donors, recipients and professionals

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STUDY QUESTION: What are the moral considerations held by donors, recipients and professionals towards the ethical aspects of the intake and distribution of donor bank oocytes for third-party assisted reproduction?

SUMMARY ANSWER: Interviews with oocyte donors, oocyte recipients and professionals demonstrate a protective attitude towards the welfare of the donor and the future child.

WHAT IS KNOWN ALREADY: The scarcity of donor oocytes challenges the approach towards the many ethical aspects that arise in establishing and operating an oocyte bank for third-party assisted reproduction. Including experiences and moral considerations originating from practice provides useful insight on how to overcome these challenges.

STUDY DESIGN, SIZE, DURATION: The project was set-up as a qualitative interview study and took place between October 2016 and August 2017.

PARTICIPANTS/MATERIALS, SETTING, METHODS: We conducted 25 semi-structured interviews with professionals engaged in the practice of oocyte banking ($n = 10$), recipients of donor oocytes ($n = 7$) and oocyte donors ($n = 8$). Key themes were formulated by means of a thematic analysis.

MAIN RESULTS AND THE ROLE OF CHANCE: Based on the interviews, we formulated four main themes describing stakeholders' views regarding the ethical aspects of the intake and distribution of donor bank oocytes. First, respondents articulated that when selecting donors and recipients, healthcare workers should prevent donors from making a wrong decision and safeguard the future child's well-being by minimizing health risks and selecting recipients based on their parental capabilities. Second, they proposed to provide a reasonable compensation and to increase societal awareness on the scarcity of donor oocytes to diminish barriers for donors. Third, respondents considered the prioritization of recipients in case of scarcity a difficult choice, because they are all dependent on donor oocytes to fulfil their wish for a child. They emphasized that treatment attempts should be limited, but at least include one embryo transfer. Fourth and finally, the importance of good governance of oocyte banks was mentioned, including a homogenous policy and the facilitation of exchange of experiences between oocyte banks.

LIMITATIONS, REASONS FOR CAUTION: The possibility of selection bias exists, because we interviewed donors and recipients who were selected according to the criteria currently employed in the clinics.

WIDER IMPLICATIONS OF THE FINDINGS: Respondents' moral considerations regarding the ethical aspects of the intake and distribution of donor oocytes demonstrate a protective attitude towards the welfare of the donor and the future child. At the same time, respondents also questioned whether such a (highly) protective attitude was justified. This finding may indicate there is room for reconsidering strategies for the collection and distribution of donor bank oocytes.

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Introduction

Today, people who depend on oocyte donation to fulfil their wish for parenthood can turn to donor oocyte banks in countries where this treatment is allowed. A shortage of donors is a problem in most countries in which payment beyond compensation for costs directly related to the donation is prohibited (Daniels, 2000). As a result, the search for donor oocytes is one of the main reasons for patients seeking cross-border reproductive care (Shenfield *et al.*, 2010; Harper *et al.*, 2014). To facilitate treatment with donor oocytes for Dutch patients in their own country, and diminish the need for patients to search for a donor in their own circle of acquaintances, three oocyte banks for third-party assisted reproduction have been established in the Netherlands in recent years (Bos *et al.*, 2012).

Oocyte donation is regulated in the Dutch Embryo Law. According to the Embryo Law, the decision of women to donate oocytes should be 'fully informed and altruistically motivated' which should be assessed by a gynaecologist and psychosocial counsellor (CBO Quality institute for healthcare, 2003). Payment and active recruitment of oocyte donors is prohibited, but donors currently receive a compensation of ~900 euros (Bos *et al.*, 2014). Legally, women can donate oocytes between the age of 18 and 40, but oocyte banks accept women up to 36 years of age. In contrast to sperm banking, childless women under the age of 25 are currently not accepted as donors (depending on the wish for a future pregnancy) (Table I). Due to the scarcity of donors, the waiting time for treatment can reach up to several years, and oocyte banks have adopted criteria for allocation. Only couples with a medical indication for oocyte donation and a stable relationship are currently accepted as recipients (Table I). Depending on the clinics' policy, recipients receive four to six donor oocytes per treatment attempt.

In a systematic review of the available literature, we demonstrated that multiple ethical aspects have to be taken into account when establishing and maintaining an oocyte bank for third-party assisted reproduction (Kool *et al.*, 2018). The identified aspects are, among others, the financial compensation for donors, the selection and informed consent process of donors and the selection process of recipients. For many of these aspects, there is no consensus regarding what approach

should be employed (Kool *et al.*, 2018). In countries with a persistent shortage of donors, as in the Netherlands, the already ethically sensitive practice of oocyte banking is challenged even more. Remarkably, how to fairly distribute the scarce supply of donor oocytes to recipient parents is almost not discussed in the literature. As such, we have only limited understanding of how to organize the practice of Dutch oocyte banks in an ethically responsible manner, in terms of both donor acceptance and recipient selection.

While donors and recipients are increasingly treated as stakeholders of interest in most practices involving tissue donation, such as biobanks for research purposes, they have only sparingly been included in debates about Dutch oocyte banks (Bos *et al.*, 2012). We started from the premise that including experiences and moral considerations originating from practice enriches ethics research and simultaneously enhances the involvement of stakeholders (Kon, 2009). Therefore, our study aims to uncover the moral considerations held by donors, recipients and professionals towards the ethical aspects of the intake and distribution of donor bank oocytes for third-party assisted reproduction.

Materials and Methods

Design

A qualitative interview study is most suitable to generate a rich understanding of the broad range of attitudes, opinions and experiences of individuals in a specific context or practice (Boeije, 2002). We performed semi-structured interviews with a predefined topic list based on the ethical aspects as identified in our systematic literature review (Kool *et al.*, 2018). When analysing the data, we filtered the morally relevant considerations of respondents using the four biomedical principles: 'respect for autonomy', 'non-maleficence', 'beneficence' and 'justice' (Beauchamp and Childress, 2013). Data collection is aimed at thematic saturation on a group level, i.e. ending when no new issues can be identified in the subsequent interviews (coding saturation) and all formulated themes are sufficiently understood (meaning saturation) (Hennink *et al.*, 2017). Our normative analysis of the interviews aimed to provide insight into an ethical problem by showing various perspectives, without engaging in argument of

Table I Current Dutch legal and consensus criteria for donor and recipient selection.

	Donors	Recipients
Legal	Aged 18–40 Competent Voluntary and altruistically motivated	Aged 18–49 Competent
Applied absolute criteria	Minimum age 23/25 ^a Maximum age 35/36 ^a Voluntary and altruistically motivated Good mental and physical health No contra-indications for IVF No untreatable STD Consents to registration in donor registry as donor Approval by ethics committee	Maximum age 40/49 ^a Stable mental and physical health Medical indication for oocyte donation Consents to registration in donor registry as recipients of donor oocytes
Applied relative criteria	No increased risk of genetic conditions present in donor ('s family) ^b Completed family/ at least one child/ wish to stay childless ^c	Stable relationship of minimally 1 year No repeated transplantation failure in previous IVF treatments Approval by ethics committee ^c

^aClinics employ different age limits.

^bRisks for diseases should not exceed population risk.

^cNot a demand of all clinics; different policies are employed by clinics.

any kind. Therefore, we provide a transparent description of respondents' reasoning and normative conclusions (Ives et al., 2018).

Sample

To obtain a broad range of perspectives on the topics, we conducted the study among stakeholders who are closely involved, but have different roles and experiences in the practice of oocyte banking, including: health-care professionals among which were gynecologists, fertility clinicians and counsellors ($n = 10$), recipients who had successfully completed treatment, whose treatment had been unsuccessful or who were waiting for treatment ($n = 7$), and women who had successfully donated oocytes or who had only entered the process of donation ($n = 8$). In total, we conducted 25 interviews with 29 respondents. In the recipient group, we interviewed three couples and four women individually because the woman preferred to be interviewed alone or her partner was not able to attend the interview. All respondents were associated with the three Dutch oocyte banks (University Medical Center Utrecht, Academic Medical Center Amsterdam and MCK Fertility Center). To equalize the number of clinicians and counsellors in the professional group, an additional counsellor from another Dutch fertility clinic, engaged in semi-anonymous, fresh oocyte donation, was interviewed. The gynecologists of each clinic introduced the study to their patients and asked permission for the researcher to contact them. The professionals were contacted by researcher EMK directly.

Data collection

EMK performed the semi-structured in-depth interviews using a predefined topic list, which was refined with two pilot interviews (Table II). According to the technique of constant comparative analysis, the interview topics evolved as the interviews progressed alongside the data analysis (Charmaz, 2006). Data collection took place from October 2016 to August 2017. The interviews were audiotaped and transcribed verbatim, coded and stored anonymously. Written consent was obtained from all patient respondents. Professionals provided verbal consent on tape. Because no intervention was imposed on the participants, The Research Ethics Committee (REC) of the University Medical Center Utrecht assessed the study exempt from formal ethics review.

Table II Topic list.

Topics:
• Experience with donation of/treatment with donor oocytes
• Motives for donation /treatment with donor oocytes
• Attitude towards selection of donors
(a) Age
(b) Completed family
(c) Risk for heritable diseases
• Attitude towards compensation of donors
(a) Current compensation
(b) International differences
(c) Difference with sperm donors
• Attitude towards selection of recipients
(a) Age
(b) Medical indication
(c) Psychosocial aspects
(d) Waiting list procedures
• Attitude towards treatment guarantees

Data analysis

The collected data were thematically analysed by going back and forth between data collection and analysis to develop codes and concepts and, subsequently, more interpretative themes, identifying a meaning patterned across the dataset (Braun and Clarke, 2006). NVivo 11 software was used to organize the data and to develop a coding structure. By constant comparison and (re)labelling of codes, higher order themes were formulated by EMK. To enhance the validity of our results, RvdG read the full transcripts to check the consistency of the thematic framework. The themes were discussed with the greater research team. Furthermore, an expert meeting, including methodologists, professionals affiliated to the oocyte banks and patient representatives, was organized in the last phase of data collection to discuss the accuracy and interpretation of our preliminary results (Creswell and Miller, 2000). Thematic saturation was reached after 25 interviews. Finally, the relabelling and restructuring of the themes during the thorough review process after submission to Human Reproduction resulted in a fuller engagement with the data in the final manuscript.

Table III Demographic data patient interviewees.

Characteristics	Donors (n = 8)	Recipients (n = 11)
Gender		
Female	8	7
Male	N.A.	4
Age (years) ^a		
25–30	1	0
30–35	3	4
35–40	4	2
40–45	0	5
Marital status		
Single	3	0
Cohabitant	1	5
Married	4	6
Sexual orientation		
Heterosexual	6	11
Homosexual	1	0
Bisexual	1	0
Education		
Primary, lower secondary general or lower vocational	0	0
Higher secondary general or intermediate vocational	3	5
Higher vocational or university	5	6
Children		
0	0	10
1	2	1
2	5	0
3	1	0
Previous experience with ART ^b		
Yes	3	7
No	5	4
Number of oocyte retrieval cycles		N.A.
0	1	
1	3	
2	2	
3	2	
>3	0	
Treatment outcome ^c	N.A.	
Successful pregnancy		2
Miscarriage or (multiple) failed embryo transplantation		3
Waiting for treatment		2
Medical indication ^c	N.A.	
Severe diminished ovarian reserve		1
Ovarian failure due to cancer treatment		1
Poor oocyte quality		1
Primary ovarian insufficiency		2
Turner syndrome		1

Continued

Table III Continued

Characteristics	Donors (n = 8)	Recipients (n = 11)
Unclear		1
Treatment centre ^{c,d}		
A	5	2
B	2	4
C	1	0
A + B	0	1

^aRefers to age at time of the interview not at time of donation. Donor respondents did not exceed the age of 37.

^bTwo donors had experienced ART with donated sperm. One donor was born from anonymous sperm donation. Three recipient couples had experienced multiple IVF treatments. One recipient had a previous attempt with donated oocytes.

^cRefers only to the female respondent in case recipients were interviewed as a couple

^dA: University Medical Center Utrecht.

B: MCK Fertility Center.

C: Amsterdam University Medical Center.

Results

We formulated four main themes describing stakeholders' moral considerations regarding the ethical aspects of the intake and distribution of donor bank oocytes for third-party assisted reproduction. The views of donors, recipients and healthcare professionals are equally represented. Tables III and IV show the characteristics of the respondents. The motivations of donors for oocyte donation are shown in Table V. Representative quotations are outlined in Table VI to illustrate the identified themes.

Theme I: Gatekeeping in the interest of the donor and the future child

The interviews show that respondents consider oocyte banks to have a gatekeeping role in selecting donors and recipients. Healthcare workers of oocyte banks should prevent donors from making wrong decisions and safeguard the well-being of the future child by minimizing health risks and assessing parental capabilities of potential recipients.

Preventing donors from making a wrong decision

The respondents expressed a rather protective attitude towards donors. An argument provided by the respondents was that health workers should prevent a woman from regretting donation, i.e. being harmed as a result of donation, since the procurement of oocytes involves a low risk of negatively affecting fertility. Furthermore, the respondents emphasized that a donor should donate for the 'right reasons', namely because she grants others a child. In the respondents' reasoning, a pure financial motivation was frequently not considered a 'right reason' because donors could overlook the medical risks of donation and because of their responsibility towards the potential child who might seek contact in the future. It was widely believed that an altruistic motive is essential for a thoroughly considered decision for donation. Still, some donors expressed more detailed reasons for their donation altruism (Table V). At the same time, the respondents considered it important that, to prevent donors from regretting donation,

Table IV Demographic data professionals.

Characteristics professionals (n = 10)	
Gender	
Male	2
Female	8
Age	
30–40	6
40–50	3
50–60	1
Profession	
Counsellor	4
Fertility doctor	1
Gynecologist	5
Centre ^a	
A	3
B	3
C	3
D	1

^aA: University Medical Center Utrecht.

B: MCK Fertility Center.

C: Amsterdam University Medical Center.

D: Dutch fertility clinic engaged in semi-anonymous fresh oocyte donation.

they should be able to properly distance themselves from a potential donor child (Quote 1, Table VI). By combining these characteristics, several respondents argued that only women with children of their own could genuinely meet these conditions to donate (Quote 2, Table VI).

Minimizing health risks for the future child

Another moral consideration of the respondents was that oocyte banks have the responsibility to safeguard the well-being of the future child. The respondents argued for the selection of young healthy donors, without an increased risk for heritable conditions, to ensure the quality of the oocytes. Reasons for ensuring high quality donor oocytes were the responsibility of the clinic to exclude any knowable risk to the child and to meet recipients' expectations of 'receiving' a healthy child. During the interviews, the respondents acknowledged that, like in natural reproduction, a healthy child cannot be guaranteed. It was also considered that only accepting donors with no increased risk for any heritable condition, excludes many women who are otherwise suitable donors (Quote 3, Table VI). Subsequently, the argument to take the severity of possible heritable diseases into account was raised; minor treatable conditions will not diminish the well-being of the child to such an extent that life is not worth living. The respondents were unable to draw the line between acceptable and unacceptable conditions. Some argued to involve recipient parents in the decision to accept donors with an increased risk, if they are sufficiently informed about the implications. Others expressed hesitation; the desperation for a child may steer recipient parents towards accepting risks against the best interest of their future child.

Table V Donors' motivations for donation.

Motivation for donation in general
Granting someone else a child
Experience with ART or infertility in close surroundings
Returning the favour after receiving donor gametes or being born from donor gametes
Doing something with own fertility
Alternative for surrogacy
In line with being registered as a blood and/or organ donor
Motivation for donation to an oocyte bank
Appropriate distance towards recipient parents and donor child
Outsource the choice of recipient selection

Assessing parental capabilities of recipients

The respondents emphasized that health workers should safeguard the (emotional) well-being of the child when selecting recipients. Therefore, selection should be based on recipients' parental capabilities, which were described as the ability to provide love and stability to the child. The respondents considered 'relational status' not an indication for parental capabilities, and reasoned that single women should not be categorially excluded from treatment, as long as they thoroughly considered the impact of the absence of a genetic link between them and the child. Still, several respondents were critical about the influence of preconceptions about 'good parenting' in recipient selection (Quote 4, Table VI).

Theme 2: Strategies to diminish barriers for potential donors

The respondents suggested that with regard to the intake of donor oocytes, barriers for potential donors should be diminished by means of: (i) the provision of a reasonable compensation, sufficient care and expressing gratitude; (ii) increasing societal awareness regarding the need for donors; and (iii) re-evaluating the acceptability of financial incentives.

Providing compensation, care and gratitude

According to the respondents, the main barriers for women to donate oocytes are the time investment and physical invasiveness of oocyte retrieval. Reimbursement of lost wages and costs for travelling and day-care was considered to diminish these barriers. Additionally, the respondents argued to compensate donors for the physical discomfort. Especially compared to sperm donation, the process of oocyte donation was considered unpleasant and more demanding. Respondents could not pinpoint an exact amount for the financial compensation (Quote 5, Table VI). An argument provided by donors specifically was that the current financial compensation enabled them to donate (more than once). Although donors experienced the process of donation physically and emotionally different, they all considered the knowledge of successfully donating a significant number of oocytes gratifying, because 'that is what it is all about'. Moreover, the respondents argued that barriers could be diminished by optimizing the flexibility and comfort of the donation process and by expressing gratitude to donors more explicitly.

Table VI Quotes interviewees.

Theme	Respondent
1. Gatekeeping in the interest of the donor and the future child	Q1 I always ask a woman, 'what do you consider your eggs to be?' And if a woman sees it as a child that she will give away, rather than a cell or chance for a child... well. I prefer the latter. Otherwise she is too emotionally involved (R17—Professional)
	Q2 I believe I would not have donated my oocytes if I did not have children of my own. Only once you have children of your own can you empathize with people who are not able to conceive naturally. You are truly aware of what it means for recipients to receive egg cells, as well as for yourself to give them away (R5—Donor).
	Q3 There are few people who will truly fulfil the condition of having a risk of any genetic disease no higher than the population, everybody has something (R1—Professional)
	Q4 People used to think; two men, how can they possibly raise a child? But attitudes towards homosexuals having children have changed over time. Fortunately! And let's be honest, there are plenty of examples of heterosexual couples not being particularly able to do the job. So a criterion like that always builds on prejudices (R15—Recipient).
2. Strategies to diminish barriers for potential donors	Q5 [After donation] you have to fill in a form about how much discomfort you have experienced during the procedure. But you know... I do not think you can express that in terms of money. Should you then receive one euro for every injection because it hurts a little? (R13—Donor)
	Q6 In the Netherlands we do not dare to think about oocyte donation in a commercial sense, but sometimes I think, why not? If we need donor oocytes and a woman needs a little extra money, this seems like a win-win situation, don't you think? (R16—Recipient)
	Q7 The reason for the shortage of donor oocytes is not the fact that the financial compensation is too low, but because people are simply not aware of the possibility of oocyte donation! (R11—Recipient)
3. Choices in the allocation of scarce donor oocytes	Q8 I have looked for recipient parents on different fora. At some point I thought, how can I pick one couple out of all these 100 couples asking for the same thing? Who am I to make that decision? (...) I would prefer to donate my oocytes to a young woman who cannot become pregnant because of some medical reason. I was going through all those requests from that perspective. But it felt unfair. And if I donate to the bank then somebody else will decide. And that person is making a well-considered decision (R26—Donor)
	Q9 They should at least transfer one embryo. We had three embryo transfers... I know it sounds silly but I really considered myself pregnant those three times (...) Although all transfers failed, it really felt like we had done everything we could have (R27—Recipient)
	Q10 People opting for [oocyte donation] already have pushed their limits. You should not keep on trying after a failed attempt... at some point you have to stop (R15—Recipient)
4. The importance of good governance	Q11 Simply adding people to the [waiting] list without having any prospect on the availability of donor oocytes (...) is like opening a library without having any books on the shelves... If we could start over, we would have made sure that we had everything in place (R12—professional)
	Q12 The least you can do is make sure that everyone has an equal chance in all clinics. It should not be the case that if you have more money to spend, you can seek treatment at a clinic that provides more oocytes, and thus have a bigger chance to have a child (R4—Donor)

The need for increased societal awareness

The respondents articulated that many people are not familiar with the existence of oocyte banks or they misperceive the practice of oocyte donation. They emphasized that the visibility of the practice and the accessibility of centrally organized information should be improved. Furthermore, some respondents proposed encouraging donation amongst individuals who are expected to show solidarity towards recipient parents, including young mothers, or patients seeking (third-party) assisted reproduction.

Acceptability of financial incentives

A small group of respondents cautiously argued to implement financial incentives to recruit more donors (Quote 6, Table VI). Still, many respondents were hesitant towards financial incentives and stressed the problem of a lack of societal awareness regarding the shortage of oocyte donors once again (Quote 7, Table VI). Consideration against

high incentives provided by the respondents were twofold. First, such incentives attract 'the wrong donors' purely motivated by money which could negatively influence the child's well-being. Second, 'money should simply never be the reason to donate in the context of reproduction'.

Theme 3: Choices in the allocation of scarce donor oocytes

With regard to the distribution of the scarce supply of donor oocytes, respondents emphasised the difficulty of defining criteria for prioritization of recipient parents and shared their views on what they considered reasonable chances for successful treatment for recipients. Criteria for selection determine which recipients get access to treatment with donor oocytes, independent of the quantity of available oocytes, while criteria for prioritization define how to prioritize the selected recipients if supply is limited.

Particular criteria for prioritizing recipients

The interviews demonstrated that the respondents considered the prioritization of recipients a tragic choice because 'they are all dependent on donor oocytes to fulfil their wish for a child'. In formulating criteria for prioritization, some respondents prioritized recipients who are expected to have a higher chance of successful treatment, to maximize the utility of the scarce supply. Others granted the oocytes to: (i) childless patients (because people without children should be given the chance to experience parenthood); (ii) young women (because 'older women have had their chances'); and (iii) patients with the most urgent need. Urgency was either understood as not having much time left, or as a medical need, namely if a woman never had the ability to become pregnant with her own oocytes due to a biological defect. Still others argued to allocate the oocytes according to the principle of 'first-come, first-served'. Some proposed to implement a model that gives weight to specific criteria, including primary infertility and medical urgency. Donors argued that not having to choose between the many recipients presenting themselves on online platforms was a motive to donate to an oocyte bank (Quote 8, Table VI).

A reasonable chance of successful treatment

The respondents argued that the success of treatment is affected by many factors and emphasized that professionals of oocyte banks have an obligation of best efforts rather than guaranting results. The number of oocytes to provide to recipients was considered a dilemma; should one provide more oocytes, and thus a higher chance of successful treatment for less recipients, or less oocytes, and thus a smaller chance for more recipients? Still, many argued that a reasonable chance should entail at least one embryo transfer (Quote 9, Table VI). 'Ending up with zero embryos while paying such an amount of money was considered 'unfair'. The interviews showed that recipient parents are (considered) realistic about the relatively small chances for successful treatment. Still for many, oocyte donation was the final resort after a long treatment history. Respondents argued to put a limit on treatment attempts for two reasons. First, the long trajectory of fertility treatment is 'an emotional rollercoaster'. Limiting treatment attempts would enable recipients to seek closure if treatment fails (Quote 10, Table VI). Second, limiting attempts enables to treat a larger number of people in need of donor oocytes.

Theme 4: The importance of good governance

The fourth theme concerns the need of good governance of oocyte banks facilitating exchange between oocyte banks and the ability to learn from each other's experiences, as well as establishing a homogenous policy on the intake and distribution of donor oocytes.

Facilitating exchange and learn from experience

The respondents expressed being overwhelmed by the high demand for donor oocytes, which ran clinics up against difficulties regarding fairly distributing the scarce supply of donor oocytes. Respondents argued that due to the relative novelty of the practice, procedures of donor and recipient selection are not well defined yet. With regard to the long waiting lists, professionals emphasized that 'if they knew what they know now' they would have organized it differently (Quote 11, Table VI). Because of the scarcity of donor oocytes, respondents

considered it important to facilitate co-operation between the three oocyte banks in recruiting donors as well as to share experiences of current practices to refine selection and treatment policies.

Implementing a homogenous policy

Many respondents were unaware of the different policies of donor and recipient selection, as well as the different treatment guarantees at the three oocyte banks. Although respondents to some degree acknowledged the competition between oocyte banks, they emphasized that the severe scarcity of donor oocytes demands standardization of the recruitment and selection procedures of donors and recipients in all clinics (Quote 12, Table VI). Furthermore, respondents argued that in order for recipients to have an equal chance for a child, oocyte banks should provide similar 'reasonable chances' of successful treatment.

Discussion

Our study aimed to uncover the moral considerations held by donors, recipients and professionals towards the ethical aspects of the intake and distribution of donor bank oocytes for third-party assisted reproduction. In total, four themes were formulated. First, the respondents articulated that oocyte banks have a gatekeeping role. Healthcare workers should prevent donors from making a wrong decision and safeguard the future child's well-being by minimizing health risks in the selection of donors and select recipients based on their parental capabilities. Second, they proposed to provide a reasonable compensation and to increase societal awareness on the practice of oocyte banking to diminish barriers for donors. Third, the prioritization of recipients in case of scarcity was considered a difficult choice, because they are all dependent on donor oocytes to fulfil their wish for a child. The respondents emphasized that treatment attempts should be limited but include at least one embryo transfer. Fourth and finally, the importance of good governance of oocyte banks was mentioned, including a homogenous policy and the facilitation of exchange of experiences between oocyte banks.

Emerging technologies like oocyte banks are accompanied with promises and concerns, that stimulate debate and challenge individuals' moral convictions (Swierstra and Rip, 2007). The moral considerations of the respondents relate to common patterns of argumentation of 'ethics of new and emerging science and technologies' (NEST-ethics). These patterns include arguments referring to (i) the consequences for the actors involved, (ii) basic values such as health and safety, (iii) fair access as well as distributive justice, and (iv) attitudes of 'the good life' (Swierstra and Rip, 2007).

In relation to the selection of donors, respondents argued from the potential risks for the donor and the future child. An altruistic motivation and the experience of motherhood, was considered important to prevent both the donor and the potential children from harm. Respondents' views of 'the right donor', and unease with regard to commercialization in ART, are arguments related to consequences as well as basic values. A purely financial motive for donation was considered undesirable because 'money should simply never be the reason to donate in the context of reproduction'. Previous studies regarding oocyte donation in the Netherlands identified that Dutch oocyte donors are altruistically motivated (Bos et al., 2014; Bakker et al., 2017). Our interviews seem to confirm these findings, although motives were more complex (Table V). Scholars have argued that if

altruism remains the central value of oocyte donation, the demand for donor oocytes may never be met, but a system allowing (partly) non-altruistic motivated donors could support alternative benefits encouraging donation (Pennings, 2005, 2015). Several respondents questioned why benefits are provided to oocyte donors, and donors being motivated by these benefits is currently not accepted. Reconsideration of established morals is commonly seen in relation to emerging technologies (Swierstra and Rip, 2007). Follow-up research should investigate more thoroughly to what extent offering modest benefits to oocyte donors is ethically desirable.

The considerations of respondents regarding the allocation of donor oocytes are arguments related to fair access to treatment and just distribution of oocytes. Currently, Dutch oocyte banks implement different criteria for recipient selection, and the criteria for prioritization are not yet (well-)defined. Respondents argued that relationship status is not an indication for parental capabilities. This argument corresponds with the findings of Golombok and colleagues, stating that family structure is not a safeguard for a good parent-child relationship (Golombok, 2015). Respondents expressed multiple considerations for the prioritization of recipients, based on different principles of distributive justice. The available, yet limited literature on fair prioritization of recipients, proposes to allocate scarce gametes by means of a point system, but remains ambiguous with regard to the formulation of substantial criteria (Pennings, 2001; Jenkins *et al.*, 2017). Additional analysis is necessary to examine whether ethically justifiable criteria to implement in a point system can be formulated in our pluralist society.

Finally, new and emerging technologies eventually give rise to discussions regarding 'the good life' fostered by the question 'what kind of life should human beings strive for?' (Swierstra and Rip, 2007). Conflicting attitudes of 'the good life' are illustrated in respondents' views on the acceptable risks for heritable diseases in donor selection, as it holds normative assumptions about what type of disease is considered to make a child's life unworthy of living. Also, attitudes of the good life are identified in respondents' views on recipient selection, in what they considered 'good parenting', as well as the limits of treatment and how far one should go to achieve this desired family life.

Overall, NEST ethics illustrates that new and emerging technologies coincide with conflicting values (Swierstra and Rip, 2007). In the current organization of oocyte banks this conflict results in a cautious attitude to donor recruitment. Given the relatively small risk of infertility as a result of the donation procedures, and the duty to respect women's autonomous choice to donate, it is debatable whether the protective attitude towards oocyte donors is just (Maxwell *et al.*, 2008; Beauchamp and Childress, 2013; Fauser and Garcia Velasco, 2017). These issues become especially relevant when compared to the more liberal practice of sperm banking (Almeling, 2011). Furthermore, our interviews show that the policies of collection and distribution of donor oocytes are intertwined: attempts to ethically govern oocyte collection give rise to ethical challenges for distribution. To illustrate, current protective donor recruitment strategies limit the number of donor oocytes available for recipients, causing dilemmas in recipient selection to occur. According to NEST ethics 'struggle and learning' as well as shifting morals are an inevitable component of governing emerging technologies (Swierstra and Rip, 2007). Therefore, good governance of oocyte banks should take on a learning approach and continue to actively involve stakeholders in the deliberation.

Our qualitative interview study has a number of limitations. First, the possibility of selection bias exists, because the education level of our respondents was relatively high (Table III) and we interviewed donors and recipients who were selected according to the criteria currently employed by the clinics. Consequently, we interviewed donors who were selected for their pure altruistic motivation and heterosexual recipient couples only. We realize that this may have biased our results, because people who are presently rejected by the clinics, for instance donors with a financial motivation or single recipient women, might have different attitudes towards the discussed topics. We tried to recruit donors and recipients who applied to the oocyte banks but were excluded from donation or treatment. Unfortunately, these people did not respond or refused to participate in our study. Second, our methodological choices had an impact on the scope of the final results. Because we used a predefined topic lists to conduct the interviews, our results do not elaborate on all ethical aspects of oocyte banking for third-party assisted reproduction identified in our review, excluding, for example, the aspects of 'donor anonymity and disclosure' and 'cross-border reproductive care' (Kool *et al.*, 2018). Third, the fact that our themes have been slightly reformulated during the review process shows that a thematic analysis in qualitative research is an ongoing process and that the formulation of themes is rarely, if ever, completely finished (Braun and Clarke, 2006). Finally, our sample allowed us to include the perspectives of the different stakeholders involved in oocyte banking. Moral considerations between the subgroups might differ, and in some cases, we considered this difference important to explicate in the manuscript. However, these intergroup differences are not generalizable because our subgroups of donors, recipients and professionals were too small, therefore thematic saturation within subgroups did not occur. Follow-up research with homogenous samples could explore the possible variety of views regarding the ethical aspects within the different groups of respondents in more detail. Still, we believe our findings cover a great many of the ethical aspects involved and add important views to the literature that are valuable to both the current academic discussion as well as to future research on oocyte banking for third-party assisted reproduction.

To conclude, respondents' moral considerations regarding the intake and distribution of donor oocytes demonstrate a protective attitude towards the welfare of the donor and that of the future child. Among other issues, respondents are hesitant towards financial incentives in donor recruitment, arguing that donors must be altruistically motivated and that high standards in both donor and recipient selection should be maintained. At the same time, respondents also questioned whether such a (highly) protective attitude was justified. These findings may indicate there is room for reconsidering strategies for the collection and distribution of donor bank oocytes.

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Authors' roles

E.M.K., R.v.d.G., A.M.E.B., A.L.B., B.C.J.M.F. were responsible for the concept and design of the study. A.M.E.B., J.J.P.M.P. and I.M.C. were responsible for the acquisition of the patient respondents. E.M.K. collected the data and drafted the article. E.M.K. and R.v.d.G. analysed the data. E.M.K., R.v.d.G., A.M.E.B., B.C.J.M.F., A.L.B. interpreted the data. E.M.K., R.v.d.G., A.M.E.B., J.J.P.M.P., I.M.C., B.C.J.M.F. and A.L.B. made critical revisions for important intellectual content and approved of the final version of the article.

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Conflict of interest

A.M.E.B. and B.C.J.M.F. are the initiators of the UMC Utrecht oocyte bank. J.J.P.M.P. is the director of the MCK Fertility Centre. I.M.C. is working as a gynaecologist at the AMC Amsterdam oocyte bank. During the most recent 5 years period, B.C.J.M.F. has received fees or grant support from the following organizations (in alphabetic order): Actavis/Watson/Uteron, Controversies in Obstetrics & Gynecology (COGI), Dutch Heart Foundation, Dutch Medical Research Counsel (ZonMw), Euroscreen/Ogeda, Ferring, London Womens Clinic (LWC), Merck Serono (GFI), Myovant, Netherland Genomic Initiative (NGI), OvaScience, Pantharei Bioscience, PregLem/Gedeon Richter/Finox, Reproductive Biomedicine Online (RBMO), Roche, Teva, and World Health Organization (WHO). The authors have no further relevant financial, professional or personal competing conflicts to declare in relation to this research.

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