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Becoming a mother by non-anonymous egg donation: Secrecy and the relationship between egg recipient, egg donor and egg donation child

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Abstract
The object of the study was to investigate secrecy in non-anonymous egg donation, to explore some characteristics of this kind of egg donation arrangement and the relationship of the recipient with her non-genetic child. Forty-four egg recipients and 62 IVF patients with a child conceived through egg donation and/or IVF were recruited. A semi-structured questionnaire was sent to all the participants. Chi-square and T-tests were used to examine the differences between the groups. There were no significant differences on the following aspects. The same high proportion of egg donation mothers (77%) and IVF mothers (87%) had the intention of telling their child about the conception but most women thought disclosure at a later time preferable. Two thirds of the recipients and IVF mothers said the way of conception had no influence on the relationship with their child. The two groups differed however in their argumentation about secrecy and named different feelings. Egg donation mothers expressed more denial and showed more defensive reactions, anxieties and uncertainty. It is suggested that recognition of a certain difference between a natural conception and egg donation could be helpful in early disclosure and could help to diminish anxieties in egg donation mothers.

Keywords: *Egg donation, secrecy, relationships, egg donor, egg recipient, non-anonymity*

Introduction

In the Netherlands the first IVF baby was born in 1983, the first baby conceived through egg donation in 1986. The Health Council of the Netherlands estimated in 1986 that in the future 0.5% of children would be born by IVF [1]. In 2005, 3653 IVF children were born, nearly 2% of all the children born in that year [2]. The number of egg donation children is small and exact numbers are not available. In the Netherlands non-anonymity is standard for egg donation and Dutch women have to provide their own egg donor. In most western countries anonymous egg donation is much more common.

For several reasons anonymous and non-anonymous egg donation is thought of as a risk factor for family life. On a cultural level egg donation can be understood as a violation of the traditional family ideology. The use of genetic material of a third person can cause discomfort by disturbing the kinship ideology of the family [3]. A family relationship not supported by genetic relatedness is supposed to be fragile [4]. On an individual level it is suggested that parents may feel differently or behave less positively toward a non-genetic child than to their own, genetic child. On the other hand it is thought possible that the strong desire of infertile couples to create a family may cause parents to be overprotective or emotionally overinvolved [5]. These assumptions have stimulated much research into the psychological well-being of parents and their children, parenting capacities and the welfare of donors. The first studies on egg donation families carried out in the beginning of the 1990s were positive: children conceived by egg donation were doing better than naturally conceived children and mother-child relationship was 'excellent' [6–8]. In recent studies comparisons were made between egg donation families, surrogate families, donor insemination families, IVF families and natural conception families. Few and small differences were found between natural conception families and families created by different kinds of assisted reproduction procedures [9–13]. The differences identified pointed for the most part to more positive outcomes in assisted reproductive families. Golombok et al. (2004) concluded that egg donation parents and donor insemination parents did not differ from the natural conception parents in anxiety, depression, or stress

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associated with parenting or marital satisfaction. The children developed socially and emotionally well. Mothers of children conceived by gamete donation showed greater warmth toward their children, greater enjoyment of motherhood and greater pleasure in proximity to their children [10].

These studies focused highly on the welfare of the child and the parent-child relationship and in this respect the results were reassuring. But one aspect of the behavior of egg donations remains a point of worry and discussion: secrecy. Gradually the conviction has arisen that a child has the right to know his biological origins and that disclosure is better for the welfare of the child. As a result the law on gamete donation has changed in the direction of more openness in several Western European countries [14,15]. A study of Lycett et al. showed that in disclosing donor insemination families, children reported less tension in their relationship with their parents, and the mothers reported less frequent and less severe arguments and perceived fewer behavioral problems. They warned that this did not mean that non disclosure families had dysfunctional relationships [16]. Disclosure probably has the same effect in egg donation families. But studies showed that many egg donation parents do not have the intention of informing their children about their origin. In a study of Murray et al. (2006) only 35% of the egg donation mothers had told or planned to tell their egg donation children [13]. Although the children in this study were 12 years old, only 24% had been told about their donor origins. In the studies of Klock et al. (2004) and Golombok et al. (2006) respectively 59% and 68% of the egg donation parents had decided to inform their children [12,17]. In both studies the children were of age 3. In the study of Golombok et al. only 7% of the egg donation parents had started to inform their child while 44% of surrogacy mothers in this study started to inform their 3-year-old children. Murray et al. (2006) supposed that non disclosure could be explained by a social stigma surrounding the use of egg donation and anxiety about the origin of the donor [13].

In this study IVF mothers and non-anonymous egg donation mothers were compared. These groups of women share a history of infertility and both needed infertility treatment to become pregnant. But in contrast to egg donation recipients, IVF mothers can use their own biological material. This difference between the groups makes it possible to study the impact of the genetic missing link. The aims of this study are as follows. First, we wanted to investigate how non-anonymous egg donation mothers handle secrecy in comparison with IVF mothers. In most studies on egg donation non-anonymous donors are absent or underrepresented. Second, we wanted to study how egg donation mothers cope with the missing genetic link in relating to their child. As a non-anonymous donor most often is a friend or a family member, the donor will not disappear after the birth of the child. It is expected that she reminds the mother of the non natural conception and the missing genetic link. Do egg donation mothers experience different feelings towards their child than IVF mothers? Third, we wanted to explore some characteristics of the non-anonymous egg donation arrangement. What kind of relationship does the mother have with the donor, during pregnancy and after birth? What kind of agreements are made? Is the donor allowed to play a role in the life of the child?

Methods

Participants in this study were patients from the University Medical Center (UMC) in Utrecht. All women receiving one or more children by egg donation in the period from January 1991 until August 2003 were asked to be participants. During this period egg donation was successfully carried out in 77 women. Questionnaires were sent to 70 women, seven participants had to be left out due to language problems, because they had moved abroad or were untraceable. The response rate was 64%. The comparison group was formed by women who had a child after a successful IVF treatment in the same period, in the same center. Questionnaires were sent to 100 IVF couples; the response rate was 62%. The groups were matched on year of conception and singletons or multiple birth.

The same questionnaire was sent to both groups but questions relating to the donor and the egg donation procedure were left out from the IVF questionnaire. The first part of the 19-page questionnaire assessed demographic data such as age, marital status, education, occupation, religion and family constellation. Parts 2, 3, 4 and 5 assessed information about four periods: time before the egg donation (infertility diagnosis, relationship with the donor, decision process, agreements with the donor), egg donation (experience, stress and worries in the period of the intervention, informing other people, contact with donor), pregnancy and birth (medical complications, health of the child, thinking about the genetic mother, relationship with the donor, informing other people), period after the delivery (health and development of the child, worries about the child, relationship egg donation mother with the child, contact between donor and child, secrecy).

In the construction of the questionnaire questions were used from previous research on donor insemination at the same University Medical Center and new questions were formulated based on research literature on egg donation [18,19]. The questions were closed but some questions had an open end section to explain or comment on the answer. An example of this kind of question is: 'Do you still talk

with your partner about the egg donation? Never/Very seldom/Sometimes/Regularly/Often, Can you tell which subjects come up?'

SPSS was used for the analysis of the closed parts of the questions. To examine the differences between the groups, Chi-Square or, if possible, T-tests were used. For the answers in the open end sections we constructed categories based on analysis of the given answers.

Approval for the design and procedures of the study was obtained from the Medical Ethical Committee of the UMC.

Results

Characteristics of the sample

Table I shows the demographic characteristics of the two samples. Egg donation mothers and IVF mothers did not differ with regard to education, work, marital status or religion. Egg donation mothers were significantly older than IVF mothers. This can be explained by the more difficult intervention. The egg donation children and the IVF children did not differ with regard to the child's age or the child being a singleton or one of a twin.

Nearly half (47%) of the donors were members of the family and more than a third (36%) were friends. The remaining seven cases (16%) involved three acquaintances, one colleague, someone met during a holiday trip and one donor found via a magazine. The data of one anonymous donor were not included in this study. The marital status of the donors resembled the status of the recipients as most were married (82%) or lived together (11%). In the recipient's view the donor saw donating as a friendly turn (43%) or helping a family member (50%).

Secrecy

In many cases agreements were made in the period before the egg donation. Disclosure was the most frequently discussed topic; nearly two thirds of the recipients (64%) agreed on how to deal with secrecy.

Twenty-nine recipients made one or more agreements about secrecy to the child and disclosure to other people. About half of the agreements (53%) were about disclosure to the child. Recipients who intended to tell their child, agreed beforehand that they would give the information themselves and at a point in time of their own choice. In one case it was decided to give the information together with the donor. In five cases it was agreed to keep the egg donation secret for the child. The other half of the agreements (47%) were about disclosure to other people: recipient and donor agreed to inform only a few members of the family or a few friends, not to tell anybody or to keep the identity of the donor secret.

Table II shows whom recipients and IVF mothers informed during pregnancy. IVF women talked to

Table I. Demographic variables of participants.

Variable	Egg donation $n = 44$	IVF $n = 62$	
Age mother, mean ($\pm$SD), years	40.2 $\pm$ 5.5	370 $\pm$ 4.4	T = 3.194*
Age target child, mean ($\pm$SD), months	42.6 $\pm$ 28.6	50.5 $\pm$ 27.3	T = $-$1.435
Education mother**			
Level I	10 (23%)	20 (32%)	$\chi^2 = 2.349$
Level II	16 (36%)	25 (40%)	
Level III	18 (41%)	17 (27%)	
Mother working			
>24 hours	7 (17%)	4 (7%)	$\chi^2 = 4.636$
9–24 hours	25 (61%)	33 (55%)	
<8 hours	9 (22%)	23 (38%)	
missing	3	2	
Marital status			
Married/cohabitation	44 (100%)	58 (93%)	Fisher's Exact test
Single/divorced		4 (6%)	
Religion			
None	25 (57%)	37 (60%)	$\chi^2 = 0.421$
Catholic	13 (30%)	15 (24%)	
Other	6 (14%)	10 (16%)	
Religious affiliation			
Pregnancy:			
Multiple	12 (27%)	20 (32%)	$\chi^2 = 1.929$
Singletons	32 (73%)	42 (68%)	

*$p < 0.01$. **Level I: vocational high school; level II: high school; level III: college.

more people of all categories than egg donation mothers. This difference is significant for mother-in-law, father-in-law and colleagues. Only a few women talked to nobody, three recipients and three IVF mothers.

Five egg recipient and six IVF women regretted their disclosure to other people because they feared their story would reach third parties and their child would be informed by other people.

Nearly all recipients and IVF mothers agreed with the statement that children have the right to know their biological or genetic origins, respectively 89% and 94%. At the same time 67% of the recipients and exactly half of the IVF women were opposed to the removal of anonymity of egg or sperm donor. IVF women were more in favor of removal of anonimity but this difference was not significant.

Recipients and IVF mothers were asked about their plans to tell their children about their biological origins (Table III). Most of the women of both groups planned to inform their children (82% and 88%) and few women wanted to keep the egg donation secret (18% and 12%).

Women were asked if they could give arguments for their decision. The egg donation mothers who wanted to inform their child, gave mostly ethical-juridical arguments: a child has the right to know his origins or you have to tell the truth ($n = 20$). Medical or psychological reasons were given seven times. Six women mentioned a certain pressure to tell the child as they had told other people of their decision and wanted to avoid disclosure by somebody else. Recipients who wanted to keep the egg donation secret found the information not important, pointed to an existing agreement with the donor or to the risk of an identity crisis or just 'misery'.

The IVF women who wanted to inform their child mostly said they considered it obvious that they would inform their child: 'Why not?', 'No secret', 'Nothing to be ashamed of' ($n = 31$). The 'right of the child' argument was used by 11 of the IVF mothers and 'better for the relationship to tell the truth' in 8 of the cases. Those IVF mothers with no intention of telling their child said the way of conceiving was of no importance.

Only two recipients and two IVF mothers who had the intention to tell their children, had already done so at a young age (< 6 years). The rest of the women who had the intention to inform their children were asked 'When are you going to tell your child?'. Many women indicated they did not know: 11 recipients and 16 IVF mothers. Nine recipients and 12 IVF women said they would inform their children when they were old enough or could understand. Finally, 16 recipients and 26 IVF women mentioned a specific age. Only a few women wanted to inform their children at an age of less than six-years-old (Table III). The answers in both groups showed the same pattern.

Table II. Disclosure to other people during pregnancy.

To whom did you talk during pregnancy?	Egg donation $n = 44$	IVF $n = 62$	χ^2
Mother	32 (73%)	50 (81%)	0.575
Father	20 (46%)	39 (63%)	2.771
Mother-in-law	15 (34%)	37 (60%)	6.244*
Father-in-law	12 (27%)	32 (52%)	5.861*
Brothers/sisters	24 (55%)	45 (73%)	3.168
Other family members	12 (27%)	23 (37%)	0.956
Friends	27 (61%)	44 (71%)	0.775
Colleagues	10 (23%)	30 (49%)	6.800**
Physician/midwife	22 (50%)	43 (69%)	3.563

*$p < 0.05$, **$p < 0.01$.

Table III. Disclosure to the child.

	Egg donation $n = 44$	IVF $n = 61$	χ^2
Are you going to tell about egg donation/IVF?			0.636
No, never	8 (18%)	7 (12%)	
Yes, don't know when	11 (25%)	16 (26%)	
Yes, when the child is old enough	9 (21%)	12 (20%)	
Yes, when the child is < 6*	4 (9%)	3 (5%)	
Yes, when the child is between 6–12	5 (11%)	14 (23%)	
Yes, when the child is > 12	7 (16%)	9 (15%)	

*Including mothers who had already told their children at a young age.

Relationship between recipient and donor

Before birth some of the recipients and the donors made agreements about contact between donor and child: 10 explicit agreements, seven more implicit because, from the perspective of the recipient, agreements were not necessary. 'Because from the beginning it was clear that...' . Ten times recipients said it was agreed 'that it would be our (recipient's) child'. Further recipients mentioned that after egg donation 'the donor would be finished'; 'we would relate to each other as we were used to doing'; 'we would go on as if an egg donation had never taken place; 'the donor would not meddle in the education of the child', 'mutual obligations would not exist'. One agreement differed from all the rest: 'Eva (egg donor) would always have a special bond with our child'.

After the birth of the child the contact with the donor remained good and frequent. Exactly half of the recipients saw their donors daily or once a week. Nearly everybody (88%) called their relationship with the donor very tight and friendly or fairly tight

and friendly. In three cases problems between recipient and donor arose. Twice because of too much interference of the donor in the life of the child and once because the expectations of the donor were greater than agreed beforehand.

Most women saw the donor as a dear friend (50%) or family member (36%). Nearly one third (30%) saw the donor as the provider of the egg, only six (14%) women saw the donor as the genetic mother of their child. In most cases the children saw the donor as an aunt (48%) or friend (25%) of the mother.

Impact of non-genetic motherhood

During pregnancy a few recipients (16%) said they never thought about non-genetic motherhood; half of the recipients (50%) indicated thinking about this issue sometimes and a third (34%) regularly or always.

More than two thirds (68%) of the women thought egg donation had no influence on the relationship with their child, 14 (32%) thought it did (Table IV) In the event of an influence, this situation was not merely considered as negative. Three recipients saw this influence as positive. They experienced the birth by egg donation as a 'miracle of miracles', for which they were 'extra grateful' and made them experience the relationship more intensely. For three women the egg donation meant that they were interacting 'more consciously' with their child. Two women just indicated that the relationship felt 'different'. Six recipients felt uncertainty and anxiety now, but were more afraid of the future when they would inform their child.

Of the recipients (68%) who said egg donation did not have any influence on the relationship with their child, 15 recipients stressed that they considered the child as their own child and themselves as the real mother: 'one hundred per cent my child'; 'our son'; 'completely my child'; 'his real and biological mother'. Five women indicated that they never or very seldom thought about the egg donation or 'had gotten over it'. Three women thought that a natural pregnancy and an egg donation made no difference in relation to the child. Six women pointed to the fact that they themselves had been pregnant and had given birth to the child.

In the IVF group the same percentage of women said that IVF had an impact on the relationship with their child (Table IV). In the group of IVF mothers who noticed a(n) (little) influence nine women indicated they were (too) careful with their child. The other IVF women in this group called their child a miracle, found them very special and stressed that they were very grateful for the technology which made their pregnancy possible. The group who denied any influence said the conception was different and they were grateful for this chance. But once pregnant they felt the same and they did not think this method of conception influenced the relationship with their child.

With regard to the future, the same percentage of egg recipients and IVF women indicated that they had concerns about the future development of their child. But the kind of concerns differed significantly between the two groups. The egg recipients worried significantly more about future questions of the child and future identity problems, the IVF group about the unknown negative consequences of IVF on the health of the child. In the IVF group concerns about future questions (3%) or identity problems of the child (2%) were seldom mentioned.

Discussion

This study examined disclosure patterns of non-anonymous egg donation mothers, the mother's agreements and relationship with the donor and her relationship with her non-genetic child. First, from the quantitative data from this study we can conclude that the non-anonymous recipients of this study were not secretive about using an egg donor. Most of the

Table IV. Influence of egg donation and IVF on mother-child relationship and development of the child.

	Egg donation $n = 44$	IVF $n = 62$	χ^2
Influence of egg donation/IVF on mother-child relationship?			
Yes	6 (14%)	9 (14%)	0.167
A little bit	8 (18%)	13 (21%)	
No	30 (68%)	40 (65%)	
Worries about the future development of the child?			
Yes	15 (34%)	21 (34%)	0.718
About which issues?			
Unknown negative consequences on health of child	5 (11%)	21 (34%)	13.027**
Influence of egg donation/IVF on development of child	1 (2%)	7 (11%)	Fisher's Exact Test
Future questions form child about his/her origins	9 (18%)	2 (3%)	Fisher's Exact Test*
Future identity problems	8 (18%)	1 (2%)	Fisher's Exact Test*

*$p < 0.01$; **$p < 0.001$.

recipients had the intention of telling their child and told several other people about egg donation during pregnancy. Only a few regretted their openness. Lower levels of disclosure and more regret were found in studies with groups of anonymous egg donation mothers or groups of a mixed composition [13,17,20]. It seems quite likely that the use of a friend or relative as egg donor forces recipients to more disclosure. The disclosure patterns of the egg donation group did differ a little from the IVF group. The IVF group talked to more people, but this difference was only significant for mother-in-law, father-in-law and colleagues.

Second, it can be concluded that the donor-recipient relationship remained close after the birth of the child. Half of the mothers and donors saw each other on a daily basis or at least once a week and in most cases the relationship was judged as tight and friendly. Furthermore, two thirds of the recipients thought egg donation had no influence on the relationship with their child and few mothers saw the donor as the genetic mother of their child.

Does this mean that egg recipients behave exactly the same as IVF mothers and attach little importance to the biological contribution of the donor and do not care about their own missing link with the child?

If we look at the other data of this study a different picture arises. From the arguments and the explanations egg donation mothers provided, it becomes clear that the different structure of families created by egg donation in a number of cases causes difficult feelings which the recipients have to cope with. Egg donation seems to require from the mother a continuous effort to consolidate her motherhood and to become the 'real' mother.

In the first phase, during pregnancy, only a few women said they never thought about the issue of a missing genetic link. A third of the women thought almost continually or regularly about this issue. The explicit or implicit agreements made on custody, contact and education can be understood as a way to deal with this issue of uncertainty. All but one of the agreements were about restricting the influence of the donor. It was agreed that the child should be exclusively the child of the egg donation parents and that they should pretend there had never been an egg donation. Only once a special bond with the donor was mentioned. Another way to deal with awkward feelings is to stress the similarities between a natural pregnancy and one by egg donation. A fifth of the recipients denied that a difference existed between the two kinds of pregnancies or pointed to the fact that they themselves were pregnant, gave birth to or nursed the child.

The same large proportion of egg recipients and IVF mothers indicated that the medical intervention did not have any influence on the relationship with their child. But as to be expected the explanations of the two groups differed greatly, egg donation mothers had to deal with a non-genetic link, IVF mothers only with the medical intervention of IVF. Two thirds of the recipients denied any influence because, in their view, the situation was totally normal: 'my own son', 'my biological child'. In many cases the answers were written with capital letters, exclamations marks and underlining. The IVF mothers simply admitted that the conception had been different and the procedures difficult but once pregnant they did not experience any difference from a natural conception. No IVF women defended her position as a mother.

A third of the recipients and IVF mothers did recognize an influence. Some of the egg recipients reported feelings of anxiety, uncertainty or said that the children 'felt different'. Most IVF mothers who indicated that IVF influenced the relationship said that their children were very special to them and that they treated them very carefully, consciously and were perhaps overprotective. No feelings of anxiety or uncertainty were mentioned. The concerns about the future development of the child differed significantly between the recipients and the IVF group. Recipients worried about future questions and the identity of the child, the IVF group had more concerns about the health of the child. On the whole egg donation mothers presented more defensive reactions, more denial and more anxiety and uncertainty.

The majority of both groups had the intention to tell their child about the conception and/or their origins. But in both groups only a few mothers had already informed their child. The reasons given for the intention to tell differed in the two groups. Most recipients referred to 'The right of the child', a heavy ethical-juridical argument. Compared with the recipients, most IVF mothers did not seem to feel strongly about disclosure. They simply asked 'Why not' and explained that they did not feel ashamed of IVF. Most mothers of both groups said that they intended to tell their child when he or she is 'old enough', often meaning in adolescence. Mac Dougall et al. (2006) distinguish two disclosing strategies of parents of children conceived by gamete donation: 'the seed-planting strategy' and 'the right time strategy' [21]. Parents adopting the 'seed-planting strategy' are convinced that early disclosure is of paramount importance so that children would grow up having always known about the circumstances of their conception. Both our groups belong to 'right time strategy' parents. These parents consider a disclosure at a later point in time preferable, when the child can understand the biological facts and circumstances of his conception. Mac Dougall found that these parents 'expressed a greater level of uncertainty about the disclosure plans and more

concern about how the children would react than did the seed-planting parents'. The same is true for a part of our group of egg donation mothers who worry about the future and wonder how the relationship and identity of their children will develop when they are told about their origins. These concerns were not found with IVF mothers. They postpone disclosure because they want to be sure their child understands the medical technical details of IVF.

How many egg donation mothers will abandon their plans to tell their child, for instance because of a doubt about whether adolescence is 'the right time'? For them secrecy can be a way to avert existing anxieties and ambivalence.

This discussion is not meant to imply that egg donation mothers are not happy with the child and ungrateful to the donor; the opposite is true. But this study also found a need to control, denial behavior and defensive reactions, which can be interpreted as a way to deal with anxieties and ambivalences in becoming and functioning as an egg donation mother. Raoul Duval and colleagues concluded that denial is particularly strong in cases of egg donation and suggested that denial, which generally has negative consequences, seemed to play a positive role with recipients and enabled recipients to leap from infertile woman to mother [7–9]. But how true is this conclusion and how effortful and effective is this strategy? Would it not be more helpful to look at adoption practice for a different strategy. In studies of adoption it was found that a strategy that recognizes a certain difference from a 'natural' family, but does not exaggerate this difference, is the healthiest approach. Possibly such a balanced approach could make early disclosure easier and diminish anxieties and uncertainties.

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Current knowledge on this subject

- In most studies on egg donation non-anonymous donors are absent or underrepresented.
- Many anonymous egg donation parents do not have the intention to tell their children about their origin.
- The welfare of the child and parent-child relationship are the same in the case of anonymous egg donation and natural conception.

What this study adds

- Focus on non-anonymous egg donation.
- Most of the non-anonymous egg donation parents have the intention to tell their child about his origin. They show a clear preference for a disclosure at a later point in time, in adolescence.
- Egg donation mothers are very happy with their child, but they also show a need to control, denial behaviour and defensive reactions which can be interpreted as a way to deal with anxieties and ambivalences in becoming and functioning as an egg donation mother.