

A comparative study of attitudes towards donor insemination and egg donation in recipients, potential donors and the public

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Abstract

Attitudes towards egg donation and sperm donation were compared in four groups of subjects: patients receiving egg donation, patients receiving sperm donation, potential egg donors and a general population control group. Subjects were generally in favor of gamete donation as a treatment for infertility, with patients having more positive attitudes than the general public, and recipients more in favor than donors. Whilst egg donation appears to be as acceptable as sperm donation, there were some differences in attitudes towards the two types of gamete donation. Subjects overall were more in favor of donor anonymity for sperm donation than for egg donation, and the sperm recipients were more in favor of donor anonymity than egg recipients. Subjects demonstrated uncertainty on the issue of giving information to children conceived by gamete donation, but held positive attitudes towards the counseling of both donors and recipients. These results are considered in the light of current debate about gamete donation in the UK. Resolution of the issue of donor anonymity is unlikely until follow-up studies of children conceived as a result of gamete donation are carried out.

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Zusammenfassung

Verglichen wird die Einstellung zur Spende von Eizellen und Sperma in vier Gruppen: bei Empfängern von Eizellen, Empfängern von Sperma, potentiellen Eizellenspendern und einer Kontrollgruppe aus der Bevölkerung. Generell befürworteten alle Personen die Gametenspende als Möglichkeit zur Behandlung der Unfruchtbarkeit, wobei die Patienten eine positivere Einstellung als die Vertreter der Bevölkerung aufwiesen und die Empfänger stärker dafür waren als die Spender. Zwar wird die Spende von Eizellen anscheinend ebenso für akzeptabel befunden wie die Samenspende, doch zeigten sich auch einige Unterschiede in der Einstellung zu den beiden Arten der Gametenspende. Insgesamt sprach man sich in bezug auf die Samenspende stärker für die Anonymität des Spenders aus als in bezug auf die Eizellenspende; und die Spermaempfänger wünschten die Wahrung der Anonymität des Spenders stärker als die Eizellenempfänger. Unsicher war man sich in der Frage, ob die aus einer Gametenspende hervorgegangenen Kinder darüber informiert werden sollten; befürwortet wurde hingegen die Beratung von Spendern wie auch von Empfängern. Die gewonnenen Erkenntnisse werden im Lichte der breiten Debatte über Gametenspende betrachtet, die gegenwärtig in Großbritannien geführt wird. Die Frage der Anonymität des Spenders dürfte erst dann gelöst werden können, wenn Folgeuntersuchungen an Kindern vorgenommen wurden, die aus einer Gametenspende hervorgingen.

Résumé

Les auteurs ont comparé, chez quatre groupes de sujets, les attitudes envers le don d'ovules et le don de sperme: sujets recevant des dons d'ovules, sujets recevant des dons de sperme, donneuses potentielles d'ovules et un groupe témoin comportant une population générale. Dans l'ensemble, les sujets étaient en faveur du don de gamètes comme traitement pour l'infécondité, les patientes présentant une attitude plus positive que le public en général, les sujets receveurs étant plus enthousiastes que les donneurs. Bien que le don d'ovules semble être aussi acceptable que le don de sperme, on a constaté certaines différences dans les attitudes envers les deux types de don de gamètes. Dans l'ensemble, les sujets penchaient davantage vers l'anonymité du donneur pour le don de sperme que pour le don d'ovules, tandis que les sujets receveurs de sperme favorisaient davantage l'anonymité du donneur que celle des réceptrices. Les sujets ont démontré une certaine incertitude concernant l'information à donner à des enfants conçus par don de gamètes, mais ont exprimé des attitudes positives envers le besoin en conseils des sujets donneurs aussi bien que receveurs. Ces résultats sont considérés à la lumière du débat actuel, au Royaume Uni, sur le don de gamètes. Il est peu probable que la question relative à l'anonymité

des donneurs soit résolue avant la réalisation d'études ultérieures d'enfants conçus suite à un don de gamètes.

Introduction

While donor insemination has been used extensively in infertility clinics for many years, the use of egg donation as a treatment for infertility was first reported by Trounson *et al.*¹ and the first successful pregnancy occurred in 1984. Although egg donation is similar to sperm donation, in so far as both procedures involve the donation of gametes, the procedures differ in two important ways. First, donated eggs are usually obtained either from a patient population, including infertile women who are receiving *in vitro* fertilization (IVF) treatment and women undergoing sterilization, or from donors who may be friends or relatives of the recipient. Sperm donors, on the other hand, are recruited from a non-patient population and are not generally known to the recipient. Second, the donation of eggs, unlike sperm donation, is an intrusive procedure. The donor's ovaries are stimulated hormonally to produce several eggs which are then retrieved using techniques which are either painful or involve a general anesthetic.

Although donor insemination has become an accepted treatment for infertility, and is used widely, a number of issues surrounding its use remain controversial and have been the subject of recent debate. These include the questions of whether the anonymity of the donor should be protected, whether children conceived by donor insemination should be given information about their origin, whether donors should be paid, and what are the most appropriate screening procedures for the selection of donors and recipients. These issues become even more complex with regard to egg donation, largely because of the relative difficulty in obtaining eggs compared with sperm.

In the UK, donor insemination as currently practiced serves to protect the anonymity of the donor, although children born as a result of this procedure do not have the right to request information about their method of conception at 18 years. A number of studies have found that the large majority of couples keep donor insemination a secret from the child²⁻⁴. Both the Report of the Warnock Committee of Enquiry into Human Fertilisation and Embryology⁵ and the Glover Report on Reproductive Technologies to the European Commission⁶ have expressed concern that the emphasis on secrecy will have a negative effect on children and their families. McWhinnie⁷ also holds this view. Specifically, it is argued that it is harmful for children to be raised in an atmosphere of deception, and that lack of knowledge about a child's origins is likely to have deleterious consequences for its development of self-identity. If so, then it would be expected that a child conceived using the egg of a donor who is known to the family and who is not told would be particularly at risk. Whether or not families which are secretive about the fact that their child was conceived by sperm or egg donation experience problems, and whether or not secrecy about a known donor produces additional difficulties is as yet unknown.

A few studies have examined the characteristics and attitudes of gamete

donors. A study of 37 sperm donors in New Zealand found that 92% were motivated by a desire to help infertile couples, although 14% also wanted information about their own fertility⁸. Contrary to popular opinion about men's reasons for donation, only one was motivated solely by payment. Of particular interest was the finding that only 24% reported that they would donate if anonymity was not preserved. This suggests that male donors do not wish to develop a relationship with the child, and that giving identifying information about the donor to the recipients would decrease the number of volunteers. A comparable study in Australia also found that the majority of male donors wished to help an infertile couple, but that 24% donated for payment alone⁹. Only 42% reported that they would donate if their name was given to the recipients, although 60% did not mind if the child contacted them at 18 years old. Similar results have been reported for Australian donors¹⁰. A study in the USA found that, in contrast to the other studies, 74% of donors listed payment as their primary reason for donating to a sperm bank¹¹. Half of this sample thought that the child should have the right to discover the identity of the biological father. It is interesting to note that a change in the law in Sweden giving children aged 18 years the right to know the full identity of the sperm donor resulted in a drop in the number of donors¹².

Leeton and Harman studied 34 egg donors who were also IVF patients¹³. As with the male donors, the main reason for donating was to help a couple to conceive. They were all unpaid, and only one woman thought that they should be paid. Two-thirds wanted anonymity to be preserved and would not donate otherwise. However, half said that they would not mind the child contacting them in 18 years. Although the majority wanted to know if their donation had led to a live birth, they reported that they would not feel any particular connection to the child. Half of these donors said that they would donate to a close friend or relative. In an investigation of seven women who had donated eggs to a known couple, two sisters and five close friends, Leeton and Harman found that five of the donors reported that they would feel closely connected to the child compared with eight of the 34 donors in their study of unknown donors¹⁴. All of the donors felt that the decision as to whether the child should be told about its origins should be left to the social parents. Schover *et al.* examined a screening program for anonymous, paid, non-patient egg donors who were recruited through the media¹⁵. The authors concluded that the volunteers often come from disruptive families and have often experienced a trauma in their reproductive lives. While Leeton and Harman consider egg donors who are known to the recipients to be acceptable¹⁴, Schover *et al.* argue that this is likely to lead to family conflict, emotional coercion and negative outcomes for the child¹⁵.

A striking contrast exists between the screening procedures used to select egg donors as opposed to sperm donors. While male donors are simply screened for medical problems, female donors generally undergo a detailed and lengthy examination of their psychological as well as their physical state. For example, Daniels found that 41% of men spent less than 10 minutes discussing the donation⁸, while Schover *et al.* administered an in-depth interview about the

woman's motivations to volunteer, current sources of stress and satisfaction in her life, family history, sexual traumas, her marital relationship, job history and whether or not she had experienced any type of psychiatric disorder¹⁵. She was also asked to complete personality tests. Whilst it is possible that this disparity may to some extent be a result of differing practice in clinics, it also appears to reflect a fundamental difference in the way in which egg and sperm donation are perceived by clinic professionals.

Little is known about the attitudes of recipients of gamete donation towards this treatment. The few existing studies have investigated patients receiving donated sperm rather than donated eggs and have not examined differences in attitude towards the two procedures. As expected, women undergoing donor insemination report feeling positive about the treatment^{16,17}. In addition, they were not found to be preoccupied with thoughts about the donor. With respect to the issue of secrecy, a study in which 899 couples undergoing donor insemination in the UK were interviewed, concluded that the majority of respondents thought that the insistence on anonymity reinforced negative stereotypes about the procedure, such as donors being secretive and somewhat subversive, and about artificial reproductive techniques in general¹⁸. In a study of 55 couples receiving donor insemination in New Zealand, it was found that 41% held the view that children should not be told of their origins, and a further 46% were undecided on this matter¹⁹. Although only 5% of couples believed that a child would want to know the donor's identity, 75% were unsure.

In a study of public attitudes towards donor insemination and egg donation in the USA, it was shown that the large majority of respondents accepted the use of gamete donation¹¹. However, sperm donation was found to be more acceptable than egg donation with 89% and 77% respectively in favor of these procedures. Fifty-four per cent of respondents believed that the child should be told of his or her method of conception.

The study presented here was designed to examine whether or not differences exist in attitudes towards egg donation compared with sperm donation in four groups of subjects:

- (1) Patients receiving egg donation;
- (2) Patients receiving donor insemination;
- (3) Potential egg donors; and
- (4) A general population control group.

The aim of the study was to examine the extent to which egg donation and sperm donation, both of which involve the donation of gametes, are perceived to be different by recipients, potential donors and the public.

Methods

Subjects

Three hundred and ninety-nine subjects participated in the investigation. The recipients of gamete donation and the potential donors were recruited from

the Assisted Conception Unit at King's College Hospital, London. There were two groups of recipients, 134 donor insemination patients and 53 egg donation patients. The 168 potential egg donors were receiving infertility treatment which did not involve gamete donation, such as IVF, and had been asked whether they would be prepared to donate excess eggs. The general population control group consisted of 44 individuals who reported no history of infertility and who were asked to participate while waiting to see their family doctor in a General Practice in London. A response rate of over 80% was obtained for each of the four subject groups.

There were 190 men and 290 women in the sample. The sexes were equally distributed within the three patient groups. However, there was a higher proportion of women in the control group. The large majority of subjects had either professional or skilled manual occupations.

Measures

A questionnaire was constructed consisting of 31 statements about sperm donation and 31 parallel statements about egg donation. The content of the statements resulted from discussion with health professionals working with donor insemination and egg donation patients, and reflected issues raised by the provision of these infertility treatments. The respondents were asked to rate each statement on a 5-point scale with the following anchor points: strongly agree, agree, uncertain, disagree and strongly disagree. Some of the items in the questionnaire were reversed to reduce acquiescence effects.

Factor analyses were carried out on the questionnaire separately for egg and sperm items. This produced seven subscales concerning sperm donation and seven parallel subscales on egg donation. These were as follows:

- (1) Acceptance of gamete donation;
- (2) Donor anonymity;
- (3) Donor records;
- (4) Donor contact with child;
- (5) Concern for donor;
- (6) Provision of counseling; and
- (7) Screening procedures.

Parallel forms reliability coefficients for these subscales respectively were found to be 0.85, 0.85, 0.95, 0.95, 0.71, 0.93 and 0.74.

Possible scores on acceptance of gamete donation ranged from 0 to 32, with a higher score indicating a more favorable attitude. Donor anonymity scores ranged from 0 to 20; a high score indicating a positive attitude towards the donor remaining anonymous. Donor records scores ranged from 0 to 8; a high score indicating a positive attitude towards information being kept about the donor. Donor contact with child scores ranged from 0 to 12; a high score indicating a positive attitude towards a known donor keeping in contact with the child. Concern for donor scores ranged from 0 to 12; a high score indicating a positive attitude towards the donor. Provision of counseling scores ranged

from 0 to 12; a high score indicating a positive attitude towards the provision of counseling. Screening procedures scores ranged from 0 to 8; a high score indicating a positive attitude towards the screening of recipients.

Results

A multivariate analysis of variance was carried out for all the subscales combined, using group as the between subjects factor. The group effect was significant ($F = 3.31$, $p < 0.0001$) showing that overall differences existed between the groups in attitudes towards gamete donation. A univariate repeated measures analysis of variance was then carried out for each subscale. The between subjects factor was group and the within subjects factor was type of gamete donation (egg versus sperm). The group \times type of gamete donation interaction provided a test of the relative difference in attitude to sperm versus egg donation between groups. The 3 degrees of freedom for the group effect and the 3 degrees of freedom for the interaction were each partitioned using Helmert contrasts. These compared: (i) the general public with all patients combined (i.e. gamete recipients and donors) (ii) gamete donors with gamete recipients, and (iii) sperm recipients with egg recipients. Mean scores for the sperm and egg donation subscales for each group of subjects are presented in Table 1.

The mean score for acceptance of gamete donation for all of the subjects combined was 25.70 showing that the subjects were in favor of gamete donation as a treatment for infertility. A significant main effect was found for group [$F = 41.25$, $p < 0.0001$]. The contrast analysis showed that the patients were more in favor of gamete donation than the general public ($t = 7.13$, $p < 0.001$) and that gamete recipients were more in favor than gamete donors ($t = 8.50$, $p < 0.0001$). The group \times type of gamete donation interaction was also significant ($F = 7.85$, $p < 0.0001$). Contrast analysis indicated that the sperm recipients and egg recipients each had a more favorable attitude to the type of gamete donation which they were receiving ($t = 4.09$, $p < 0.0001$).

For donor anonymity the mean score for all of the subjects combined was 13.26 which indicated that they were uncertain about whether the donor should be anonymous. A significant main effect was found for group ($F = 7.61$, $p < 0.0001$). The contrast analysis showed that sperm recipients were more in favor of donor anonymity than egg recipients ($t = 4.53$, $p < 0.0001$). A significant main effect was also found for type of gamete donation ($F = 33.20$, $p < 0.0001$). Inspection of the mean scores showed that the subjects overall were more in favor of donor anonymity for donor insemination than for egg donation.

The mean score for donor records was 5.01 which showed that the subjects were uncertain about this issue. No significant effects were found for donor records indicating that the groups did not differ in attitude towards keeping records about the donor for either type of gamete donation.

For donor contact with child the subjects were against a known donor keeping in contact with the child (mean = 3.19). A significant main effect was found for group ($F = 10.25$, $p < 0.0001$). It was shown by the contrast analysis

Table 1 Mean scores for the sperm donation and egg donation subscales for each group of subjects

	<i>Egg donors</i> (<i>n</i> = 168)	<i>General public</i> (<i>n</i> = 44)	<i>Sperm recipients</i> (<i>n</i> = 134)	<i>Egg recipients</i> (<i>n</i> = 53)	<i>Total sample</i> (<i>n</i> = 399)
<i>Acceptance of gamete donation (range: 0-32)</i>					
Sperm donation	24.08	22.67	28.57	27.47	25.82
Egg donation	24.22	22.04	27.60	28.21	25.57
<i>Donor anonymity (range: 0-20)</i>					
Sperm donation	13.37	12.96	14.78	11.89	13.59
Egg donation	12.67	13.02	13.99	11.19	12.93
<i>Donor records (range: 0-8)</i>					
Sperm donation	4.82	5.39	5.24	4.72	5.01
Egg donation	4.78	5.35	5.19	4.91	5.00
<i>Donor contact with child (range: 0-12)</i>					
Sperm donation	3.19	4.38	2.36	3.63	3.12
Egg donation	3.36	4.40	2.50	3.74	3.25
<i>Concern for donor (range: 0-12)</i>					
Sperm donation	3.55	5.10	3.07	3.68	3.60
Egg donation	4.03	5.13	3.76	4.11	4.09
<i>Provision of counseling (range: 0-12)</i>					
Sperm donation	9.39	10.18	9.51	8.70	9.44
Egg donation	9.44	10.26	9.41	8.91	9.46
<i>Screening procedures (range: 0-8)</i>					
Sperm donation	3.34	4.38	3.17	3.09	3.38
Egg donation	3.37	4.35	3.49	3.08	3.49

that sperm recipients were more against a known donor keeping in contact with the child than egg recipients ($t = 3.36, p < 0.001$) and that patients were more against a known donor keeping in contact with the child than the public ($t = 3.54, p < 0.0001$). A significant main effect was also found for type of gamete donation ($F = 13.57, p < 0.0005$). Inspection of the mean scores showed that the subjects overall were more against a known donor keeping in contact with a child conceived by sperm donation than by egg donation.

Little concern was expressed for the donor as indicated by a mean of 3.85 on the concern for donor subscale. A significant main effect was found for group ($F = 9.32, p < 0.0001$). Contrast analysis showed that the general public were more concerned about the donor than the patients ($t = 4.73, p < 0.001$). A significant main effect was also found for type of gamete donation ($F = 34.80, p < 0.0001$). Inspection of the means showed that the subjects overall were more concerned about egg donors than sperm donors.

For provision of counseling the overall mean score was 9.45 showing that the subjects were in favor of counseling for recipients and donors. A significant main effect was found for group ($F = 4.84, p < 0.005$). Contrast analysis showed that the general public were more in favor of the provision of counseling than the patients ($t = 3.41, p < 0.001$) and that sperm recipients were more in

favor of counseling than egg recipients ($t = 2.15$, $p < 0.05$).

For screening procedures an overall mean of 3.44 was obtained which suggests that the subjects were uncertain about the screening of recipients. A significant main effect was found for group ($F = 8.86$, $p < 0.0001$). Contrast analysis showed that the general public were more in favor of the screening of recipients than the patients ($t = 5.15$, $p < 0.001$).

Discussion

It seems from the results that the subjects were generally in favor of gamete donation as a treatment for infertility. As might be predicted, the patients were more in favor than the general public and the recipients were more in favor than the donors.

Although broadly in favor of gamete donation, the public appear to have more reservations than infertility patients. As well as being generally less accepting of these techniques they were more concerned about the status and welfare of the donor. In general, egg donation appears to be just as acceptable as sperm donation, although sperm and egg recipients each had a more positive attitude towards the type of gamete donation which they were receiving.

It is clear, however, that egg donation and donor insemination are perceived to differ from each other in some respects. The subjects overall were more in favor of donor anonymity for sperm donation than for egg donation, and the sperm recipients themselves were more in favor of donor anonymity than egg recipients. For example, 89% of sperm recipients wanted the donor to remain anonymous while this was true of only 59% of egg recipients. For both egg donation and donor insemination, 65% of the public believed that donors should remain anonymous.

Although subjects seemed uncertain about whether records containing information about the donor should be kept, examination of individual items showed that there was less doubt about who should keep such information. Although most subjects were favorable towards the idea of keeping some form of records on both sperm and egg donors, nearly 80% of subjects felt that such records should not be kept centrally (i.e. by the Government), in comparison with only 20% who felt that records should not be kept by the clinic.

With respect to the related issue of whether children conceived using donor gametes should be given information about their origins, the respondents disagreed or were uncertain about the view that children should be informed. For both egg and sperm donation, only 40% of the public were in favor of a child being told, and even fewer gamete recipients were in favor of telling (32% of egg recipients and 12% of sperm recipients). It is also worth noting that only 21% of the egg donors agreed with the view that a child conceived by egg donation should be told.

In cases involving a donor who is a friend or relative of the recipient, the subjects overall, and particularly the patients, were against the donor keeping in contact with the child, although this was less true for egg than sperm donation. The egg recipients themselves, although negative about maintaining

contact between a known donor and the child, were less so than sperm recipients. For example, 84% of sperm recipients and 70% of egg recipients were against a friend who donated a gamete keeping in contact with the child. Interestingly, 80% of the egg donors were also against this. Although little concern was expressed for the donors, the subjects overall, and particularly the general public, showed more concern for egg than sperm donors.

Attitudes towards the provision of counseling were generally favorable, although the general public were more in favor of this than the patients, and sperm recipients were more positive about receiving counseling than egg recipients. Similarly, the public were more in favor of the use of screening procedures to select recipients than the patients, although the subjects were generally uncertain about this issue. Attitudes to the provision of counseling and the screening of recipients were not affected by the type of gamete donation under consideration.

The finding that the respondents were generally in favor of donor anonymity appears to reflect a concern that donor identification may pose a threat to family relationships. As Glover *et al.* point out, the social parents may want their family to be as much like other families as possible, unencumbered by ambiguous half relationships with donors⁶. However, opponents of anonymity argue that it is in the child's best interest to have access to its genetic father's identity should the child so wish. This view stems from the findings that adopted children benefit from information about their genetic parents^{20,21}. For egg donation there is the further issue of whether or not the donor should be a relative or friend of the recipient. Those who are opposed to the use of known donors argue that in cases where this is kept secret from the child the effects on the family are likely to be deleterious, and where the child is told this may cause identity problems as a result of the confusion of relationships within the family²².

At present little is known about the problems which children are likely to experience as a result of these differing family circumstances, and large-scale studies of children conceived by the new reproductive technologies are currently being carried out²³. For an informed decision to be made about what to tell children who have been conceived by gamete donation it is important to determine the consequences of providing information about the child's origins for the children and the families concerned. In spite of all the current speculation about children's rights and best interests, it is only in the future when these children, as adults, can speak for themselves that a proper judgement can be made.

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