

ORIGINAL ARTICLE

## Attitudes among sperm donors in 1992 and 2002: a Danish questionnaire survey

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### Abstract

**Background.** Sweden prohibited anonymous sperm donation in 1985 and Norway in 2005. In recent years the question of continued use of sperm from anonymous sperm donors for insemination in couples and the question of insemination of single and lesbian women have been vividly debated in Denmark. This survey examines the sperm donors' attitude towards these questions and describes any changes in attitude between 1992 and 2002. The objective is to investigate the likely consequences of abolishing anonymous sperm donation in Denmark. **Methods.** A questionnaire survey carried out among donors at a private Danish sperm bank, Cryos-International Sperm Bank Ltd. Over a period of 9 weeks in 2002 an anonymous questionnaire was handed out to all donors who were in contact with the sperm bank. The results were compared to a questionnaire survey carried out in 1992 at the same sperm bank. **Results.** In 2002, 25% (19% approved; 35% non-approved) of the donors stated that they would continue as donors if anonymity was abolished, whereas in 1992 the number was 32%. But when donors were asked whether they would accept that the children could contact them, only 22% agreed in 1992 and 13% (15% approved; 10% non-approved) in 2002. Altruistic as well as financial motives were the main factors for becoming a donor in both 1992 and 2002. Approximately 50% would accept sperm donation to lesbians in both surveys. In 2002 approximately one third was positive towards donation to single women. **Conclusion.** Maintaining anonymity is still important for the vast majority of the donors.

**Key words:** Sperm donors, anonymity, attitudes, single women

Sperm donation raises a number of ethical questions, both for the people directly involved – the childless couples, children of sperm donors, and the sperm donors themselves – but also for the local community and society in general. These questions are reflected in the legislation concerning sperm donation and in current media debates. During the last decades there has been particular focus on the question of anonymous sperm donation. In Denmark anonymity is secured by law (1). In Sweden, on the contrary, information that may later identify the donor is stored (2). Once a sperm donor child in Sweden has reached maturity (in practice once the child has turned 18), the possibility of knowing the identity of his/her biological father is available. A prerequisite is

of course that the parents have informed the child that he/she is a donor child. There is no law instructing parents to inform the child/children and only 10–15% actually do so (3). For an overview of European legislation, see Frith (4).

Arguments for and against anonymity have, among other things, been based on the donor children's interests (4,5). Some state that lack of information about the donor's identity may cause psychological problems (5). This notion is partly based on comparisons with adoptive children, many of whom want and seek contact with their biological parents. Investigations suggest that the biological father of approximately 5–8% of all Danish children is not the person stated in the official birth record

(6). The significance of the use of anonymous or non-anonymous semen for the offspring has also been debated thoroughly in the literature (7,8).

Another current question is donation to lesbian couples and single women. In Denmark it is illegal for doctors to inseminate lesbians and single women. For an overview of the conditions in the rest of the world, see ref. (4).

Knowledge about the sperm donors' attitudes concerning these questions may be important for the political decision-making process. After anonymity was abolished in Sweden in 1985 the number of sperm donors decreased by 85% (2,3). Despite the fact that the opposite has often been stated, the donor corps in Sweden has remained at this low level (9). It would be interesting to know if a similar decrease in sperm donors can be anticipated in Denmark if donor anonymity is prohibited.

Several questionnaire surveys of sperm donors have been published (10–13), including one survey among Danish donors (12). However, surveys that illustrate changes in attitudes among donors over time have not been published. It is interesting to investigate the donors' attitude after the last few years' media debate.

## Material and methods

Over a period of 9 weeks in 2002 an anonymous questionnaire was handed out to 101 sperm donors at Cryos International Sperm Bank in Copenhagen, Aarhus and Odense in Denmark. All the approved donors went through the sperm bank's routine examination, including an interview with a doctor, medical examination, an examination for venereal diseases, hepatitis B and C, HIV1/2, HTLV1/2, chromosome examination, as well as several sperm quality evaluations. All non-approved donors, i.e. those who had not yet been examined, also received a questionnaire.

Sperm donors are recruited in the following ways: via advertisements on notice boards at educational institutions, advertisements in student magazines, the sperm bank's web page, and finally a number of donor aspirants have been told of the possibility of being a sperm donor by a friend. The sum of money paid in compensation per ejaculate during the ten-year period was approximately 200 DKR (35 USD).

In 1992 47 donors were asked to participate over a period of 7 weeks. This survey did not differentiate between approved and non-approved donors.

During the last 14 years the approval rate among men who want to become sperm donors has been approximately 10%. The majority of the donor candidates are rejected on the basis of unsatisfactory

sperm quality after freezing and thawing before the first medical examination. In addition there are donor candidates who are rejected on the basis of the personal interview and/or the objective examination by the physician. During the period dealt with in this paper at least 20 million motile sperms per milliliter post-thawing was mandatory. Due to this very strict criterion, most donor aspirants were rejected. The recruitment criteria *per se* were the same in 1992 and 2002.

The results were compared to a similar questionnaire survey from 1992 (not previously published).

The questionnaires were handed out by the person in charge at each of the sperm bank's three branches (in 1992 there was only one branch). The donors (in 1992, as well as in 2002) were informed about the purpose of the survey and that participation was voluntary and anonymous. The questionnaire contained 30 questions, which have been categorized under four headings:

Motives for sperm donation.

Attitudes towards the problem of anonymity.

Considerations concerning the children born as a result of sperm donation.

Psychological aspects.

Out of the 30 questions, 17 were a word-for-word repetition of the questions from 1992 and the remainder were new.

## Statistics

The results were compared with Fisher's exact test with a 5% safety margin. The average age was compared with Student's *t*-test.

## Results

In 1992, 41 out of 47 donors (87%) answered the questionnaire and 93 (62 approved donors as well as 31 non-approved donors) out of 101 (92%) in 2002. None of the donors were active long enough to participate in both surveys.

In 1992 the average age was  $24.8 \pm 3.4$  (SD) years. The oldest donor was 33 and the youngest 19 years old. In 2002 the average age had increased to  $27.9 \pm 6.4$  years ( $p < 0.01$ ). The oldest donor was 44 years old and the youngest 19 years old.

There was a significant difference in the donors' occupational background in the two surveys. In 1992, 98% were students and 2% were skilled workers (1 donor). In 2002, 69% were students, 15% were skilled workers, and 16% had an academic degree.

The number of donors with a steady partner and/or children had increased, though not statistically significantly. In 1992, 41% had a steady partner and 10% had children. In 2002 the equivalent numbers were 50% and 23% respectively.

In 2002 the average time the donor was associated with the sperm bank was 29.2 months (0–96 months) and the average number of donations was over 100 per donor. This was not evaluated in the 1992 survey.

In 2002, the average age of non-approved donors was  $23.7 \pm 4.3$  years, which is significantly younger than the group of approved donors in 2002 ( $p < 0.01$ ). The oldest was 33 years old and the youngest 18 years old. The percentage of non-approved donors with a steady partner was 45% and 16% had children (no statistically significant difference compared to the approved donors). There was no significant difference in occupational background between approved and non-approved donors in 2002; 68% were students, 19% had an academic degree, and 10% were skilled workers.

#### *Motives for becoming a sperm donor and the openness*

##### *about being a donor (Table I)*

The majority of the donors in both surveys mentioned financial reasons for becoming a donor combined with a wish to help childless couples. Few would continue if they did not receive financial compensation. There were no statistically significant differences between the donors in the two surveys.

In 2002 approximately half of the donors had a partner when they signed up to become a donor. The partner did not have an influence on the decision to sign up as a sperm donor in 2/3 of the cases of the approved donors.

##### *Attitudes towards the problem of anonymity (Table II)*

The 1992 survey revealed that 13/41 (32%) would continue donation if anonymity was abolished; in 2002 the number was 23/93 (25%). However, when donors were asked whether they would accept that the children could contact them, only 22% said yes in 1992 and 13% (15% approved; 10% non-approved) in 2002. Any non-identifying information available to the donor children was accepted by the majority (between 58% and 74%) of the donors in the two surveys.

#### *Considerations concerning the children born as a result of sperm donations (Tables III and IV)*

In 1992 and 2002 there was no statistically significant difference between the results of the three questions asked in both surveys ( $p > 0.05$ ). About half were positive towards donating to lesbians in both surveys.

In 2002 fewer were positive towards donation to single women than to lesbians, but the difference was not statistically significant.

Four new questions concerning information about donor children were added to the 2002 survey. About half did not want information about the donor children. The majority of the rest only wanted to know the number of children.

Only 10% would participate in a "meeting club". A meeting club is a place where donors and adult donor children can register in order to make contact with each other (see e.g. <http://www.donorsiblingregistry.com>).

#### *Psychological aspects (Table V)*

Six questions were asked concerning the psychological aspects of being a donor. In 2002 significantly more donors stated that they were happy to help others and fewer regret being donors. Otherwise, the answers did not differ from the answers in the 1992 survey.

### **Discussion**

Sources of error exist in this study. Firstly, the questionnaires were handed out in cooperation with the sperm bank and this fact might have influenced the answers from the donors who returned the questionnaire. However, the surveys were done anonymously and somebody unfamiliar to the donors analyzed the data. The donors were informed about this before answering the questions. Secondly, not all donors answered the questionnaire. This may be a source of bias if an association existed between the decision not to participate and the pattern of answers. However, anonymity should help minimize a possible association. Besides, the percentages that did return the questionnaire were high (87% in 1992 and 92% in 2002).

The donors were older and with a different occupational background in 2002 compared to 1992. Whether or not this contributed to the pattern of answers cannot be concluded from this study.

The two surveys demonstrate that attitudes towards being a sperm donor have not changed considerably among Danish sperm donors in the

Table I. Motives for becoming a sperm donor

	1992	2002	
		Approved	Non-approved
Motives for becoming a sperm donor	<i>n</i> = 41	<i>n</i> = 62	<i>n</i> = 31
Economical	39 (95%)	61 (98%)	28 (90%)
Purely economical	5 (12%)	10 (16%)	4 (13%)
Altruistic	36 (88%)	49 (79%)	20 (65%)
Purely altruistic	2 (5%)	1 (2%)	0 (0%)
Combination of the above	34 (83%)	48 (77%)	20 (65%)
To get the physical and biochemical examination*	12 (29%)	22 (35%)	13 (42%)
Curiosity	12 (29%)	10 (16%)	12 (39%)
Action if there was no economical compensation			
Would continue to donate	5 (12%)	5 (8%)	1 (3%)
Would no longer wish to donate	23 (56%)	41 (66%)	20 (65%)
Uncertain	13 (32%)	16 (26%)	10 (32%)
Influence of partner on the decision to become a donor	<i>n</i> = 31	<i>n</i> = 18	
None		20 (63%)	5 (28%)
Some		4 (13%)	6 (33%)
To a large extent		7 (23%)	7 (39%)

\*Sperm quality and test for venereal diseases.

Table II. Attitudes toward anonymous donation

	1992	2002	
		Approved	Non-approved
How would you react if it was no longer possible to assure anonymous donation?	<i>n</i> = 41	<i>n</i> = 62	<i>n</i> = 31
I would no longer donate	21 (51%)	35 (56%)	12 (39%)
I would continue donating	13 (32%)	12 (19%)	11 (35%)
Uncertain	7 (17%)	15 (24%)	8 (26%)
If anonymity was changed, what degree of openness would you accept?			
I would like to know the number of children	16 (39%)	27 (44%)	12 (39%)
I would like to visit the children	9 (22%)	1 (2%)	1 (3%)
I would accept that the children could know my identity	14 (34%)	14 (23%)	2 (6%)
I would accept that the children could contact me	9 (22%)	9 (15%)	3 (10%)
Among donors willing to continue if anonymity was abolished (or uncertain about the question):	<i>n</i> = 20	<i>n</i> = 27	<i>n</i> = 19
I would like to know the number of children	10 (50%)	13 (48%)	7 (37%)
I would like to visit the children	4 (20%)	1 (4%)	0 (0%)
I would accept that the children could know my identity	13 (65%)	11 (41%)	2 (11%)
I would accept that the children could contact me	9 (45%)	8 (30%)	3 (16%)
How much information about you should be available to the recipient couple?	<i>n</i> = 41	<i>n</i> = 61*	<i>n</i> = 31
None	1 (2%)	2 (3%)	4 (13%)
Height, eye color, and hair color	16 (39%)	14 (23%)	9 (29%)
All non-identifying information	24 (59%)	45 (74%)	18 (58%)
Have you changed opinion about the question about anonymity since you started as a donor?		<i>n</i> = 62	
No		48 (77%)	
Yes		12 (19%)	
More negative towards anonymous donation*		5 (8%)	
More positive towards anonymous donation**		4 (6%)	
Uncertain		2 (3%)	

\*One donor did not answer the questions.

\*\*Three donors did not state in which direction.

Table III. Attitudes toward the offspring

	1992	2002	
		Approved	Non-approved
How does the thought of the offspring influence you?*	<i>n</i> = 41	<i>n</i> = 62	<i>n</i> = 31
It makes me happy	17 (41%)	27 (44%)	12 (39%)
It makes me depressed	1 (2%)	0 (0%)	0 (0%)
It doesn't influence me	12 (29%)	13 (21%)	6 (19%)
It influences me in another way	8 (29%)	15 (24%)	9 (29%)
I never think about it	1 (2%)	7 (11%)	4 (13%)
Does it worry you the kind of childhood* the offspring will have?			
Yes, a lot	1 (2%)	5 (8%)	2 (6%)
Yes, a little	17 (41%)	13 (21%)	11 (35%)
No	17 (41%)	39 (63%)	15 (48%)
Uncertain	4 (10%)	5 (8%)	3 (10%)
Would you like to be informed if use of your semen results in pregnancy?			
Yes		24 (39%)	8 (26%)
No		26 (42%)	19 (61%)
Uncertain		12 (19%)	4 (13%)
What would you like to know about the offspring?			
None		32 (52%)	18 (58%)
The number of children		25 (40%)	9 (29%)
Looks		8 (13%)	2 (6%)
Development		8 (13%)	0 (0%)
Personality		9 (15%)	2 (6%)
Uncertain		4 (6%)	2 (6%)
What is your opinion about the so-called meeting clubs?*			
Good idea. I would volunteer		6 (10%)	0 (0%)
Good idea, but I am not sure I would volunteer		19 (31%)	9 (29%)
Good idea, but I would never volunteer.		22 (35%)	5 (16%)
Bad idea.		14 (23%)	16 (52%)
Uncertain		1 (2%)	1 (3%)
If an offspring got a hereditary disease would you like to be informed?			
Yes, but only while I'm a donor		10 (16%)	1 (3%)
Yes, as long as I live		26 (42%)	13 (42%)
No, I do not wish to be informed		18 (29%)	16 (52%)
Uncertain		8 (13%)	1 (3%)

\*Two donors in 1992 did not answer these questions.

\*\*In the question the concept was explained.

Table IV. Attitudes toward donation to lesbian couples and single women

	1992	2002	
		Approved	Non-approved
What is your attitude toward donation to lesbian couples	<i>n</i> = 41	<i>n</i> = 62	<i>n</i> = 31
I am against it	14 (34%)	11 (18%)	7 (23%)
I am positive towards it	20 (49%)	33 (55%)	13 (42%)
I don't care	2 (5%)	9 (15%)	7 (23%)
Uncertain	5 (12%)	7 (12%)	4 (13%)
What is your attitude toward donation to single women*		<i>n</i> = 60*	
I am against it		13 (22%)	8 (26%)
I am positive towards it		24 (40%)	10 (32%)
I don't care		9 (15%)	6 (19%)
Uncertain		14 (23%)	7 (23%)

\*Two donors did not answer the question.

Table V. Psychological aspects

	1992	2002 Approved
Does donation influence your mood?	<i>n</i> = 41	<i>n</i> = 62
Yes, in a positive direction	11 (27%)	28 (45%)
Yes, in a negative direction	8 (20%)	2 (3%)
No	18 (44%)	30 (48%)
Uncertain	4 (10%)	2 (3%)
Do you sometimes regret being a sperm donor?		
No, never	27 (66%)	58 (94%)
Yes, sometimes	5 (12%)	1 (2%)
Yes, often	0 (0%)	0 (0%)
Uncertain	7 (17%)	3 (5%)
Does donation influence your sexual life?*		
No	25 (61%)	46 (74%)
Yes, in a positive direction	3 (7%)	3 (5%)
Yes, in a negative direction	6 (15%)	5 (8%)
Uncertain	4 (10%)	8 (13%)
Do you discuss your sperm donation with others?		
Yes, I am open about it	7 (17%)	14 (23%)
Yes, but only to certain people	24 (59%)	35 (56%)
No, not at all	10 (24%)	13 (21%)
If you have a partner, does she know that you are a sperm donor?		
Yes, and she is positive	15 (88%)**	29 (94%***)
Yes, and she is negative	0 (0%)**	1 (3%***)
No	2 (12%)**	1 (3%***)
Uncertain	0 (0%)**	0 (0%***)
Do you sometimes consider how the fact that you are a sperm donor will influence your future life?		
Yes		19 (31%)
No		42 (68%)
No answer		1 (2%)

\*In 1992 nine donors did not answer the question\*\**n* = 17\*\*\**n* = 31.

last 10 years. To maintain anonymity is still important for the majority of the donors. In 2002, 87% (85% approved; 90% non-approved) of the donors were not able to accept the full consequences of non-anonymous donation, namely the fact that later in life the children were able to contact them. This result is very similar to what was seen in Sweden in 1985 where an 85% decrease in the numbers of sperm donors was seen after if anonymous sperm donation was abolished. However, the majority of donors in 2002 would accept more detailed registration and that non-identifiable data (such as hobbies, specific skills, family relations, number of siblings, childhood, etc.) could be passed on to the recipients and donor children. Thus the donors appear to be interested in helping childless couples. This is reflected in the reasons for becoming a donor: although almost all donors stated that financial compensation played a part in deciding to become a donor, a majority

also became donors to help others. Norway prohibited anonymous sperm donation from January 1, 2005. The UK also prohibited it from April 1, 2006. It is thus expected that a large number of couples from these countries will seek treatment in neighboring countries. Even though there are no actual political plans to abolish anonymity of Danish donors, the present data suggest that Denmark will face the same problems if anonymous donation is abolished.

In conclusion, the present data indicate a rather stable unwillingness against non-anonymous donation among present Danish sperm donors. It can be expected that recruitment of sperm donors in Denmark may become difficult following abolishment of anonymity. However, this is not a survey of the general population. It has not been investigated if a different type of recruitment strategy could result in recruitment of a sufficient number of non-anonymous donors.

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