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ASSISTED REPRODUCTION TECHNOLOGIES

The attitude of female students towards sperm donation by their partner

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Abstract

Purpose The aim of this study is to assess the attitude of heterosexual female students towards sperm donation by their partners and towards sperm donation in general.

Methods The method is an online anonymous survey of 1525 female students.

Results The majority of the women had a positive attitude towards sperm donation in general, but only 37% would support their partner if he would want to donate. The highest barriers to accepting donation by their partner were the fact that he would have one or more children that she would not know (55.8%) and the chance that he would be traced by his donor offspring (58.9%). There was a significant difference between the general attitude towards sperm donation as a fertility treatment and the attitude towards sperm donation by the partner.

Conclusions Men rightly worry about their partner or future partner when they donated or consider donating sperm. Only about one in three women would support their partner if he would want to donate. The majority of women perceived sperm donation by their partner as an act that also concerns them and believed that they should be heard in this decision. To promote full informed consent, the relational component should be included in counselling donors, not only regarding the present but also regarding the (possible) future partner.

Keywords Attitude · Donor conception · Female students · Partner · Sperm donation

Introduction

In Western societies, people have a general right to decide what happens to their bodies. A person can (within certain limits) do what he wants with his body. However, this view of autonomy is not shared worldwide and has been criticised because of the emphasis on the individual. The person is considered separate from his/her social network, as if he/she is an isolated unit who can make decisions without taking into account past, present and future relationships. The individualization of the moral person is artificial both in the sense that actions almost always have implications for others and in the sense that others almost always influence a person's decisions. One domain in human life in which this reality is demonstrated is reproduction which generally requires two persons. Classic examples of conflicts are frozen embryo disputes and male partner's rights in abortion. In general, we believe that within a couple, both partners should reach a joint decision regarding reproduction. This is expressed in legislation regarding medically assisted reproduction and in the contracts of the clinics. However, when we turn to gamete donation, the general rule is that every person should be able to decide for him or herself whether to become a donor [1]. Still, in practice, clinics regularly require the consent of the partner and this is more the case for oocyte donation [2]. In some countries, consent by the spouse or partner was obligatory. France not only demanded the partner's consent but, until recently, they only accepted donors in a stable relationship [3]. This law was recently adapted, and this condition has been dropped.

In a recent study, Provoost et al. [4] showed that male students are reluctant to donate sperm because they do not want to talk about the issue with their partner and/or because they fear a negative reaction by their future partner. Almost

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40% of the male students feared that the donation might have a negative impact on their current or future relationship. Other studies showed similar concerns though to a lesser extent. Jadva et al. [5] reported that 20.6% of the donors had concerns about how a current or future spouse/partner might feel if they knew. Lui and Weaver [6] showed that about two-thirds of the students and the fathers felt comfortable discussing their donation with their partner and/or wife.

All studies, however, focused on the perspective of the donors or candidate donors. There is very little information about the views of women. This is the first study worldwide that asks women about their attitude towards sperm donation by their partner. These findings may be important for future recruitment campaigns since campaigns are solely focused on the man, largely ignoring his (female) partner. Even more important are the implications for counselling donors: they should be made aware of the possible impact of their decision to donate on present and future relationships.

The aim of this exploratory study is to describe female students' attitudes towards sperm donation in general and donation by their partner in particular using an anonymous questionnaire among a large sample of female students. Female students most likely have a relationship with men approximately their own age who are eligible for sperm donation (between 18 and 45). The respondents received information about the legal aspects of sperm donation in Belgium: men donate anonymously but known donation (where donor and recipient know each other at the moment of donation) is an option, no information about the recipients (including single women and lesbian couples) is shared with donors and no payment is given but reimbursement of costs is possible [7].

Materials and methods

The research population consisted of approximately 52,000 Dutch-speaking students from two colleges in Ghent and all faculties of Ghent University. Each college and faculty approached the students through its own procedure, either through an announcement on their main electronic learning platform or via e-mail.

Participation was voluntary and anonymous. The questionnaire could be completed in 10 min. Between December 2014 and February 2015, 1525 heterosexual female respondents completed the questionnaire. The study was approved by the Ethics Committee of the University Hospital Ghent (B670201422661, 18 November 2014).

The questionnaire was based on international literature and was reviewed by an interdisciplinary team (2 psychologists and 2 philosophers). Changes were made based on a pilot conducted in 2014 among 313 students. The questionnaire started with four introductory questions about sociodemographic features of the students (gender, age, relationship status and sexual orientation). The first part included a general question about what they thought about sperm donation, to be scored on a 7-point semantic differential scale ranging from positive (1) to negative (7).

Part two of the questionnaire measured the students' attitudes towards specific aspects of sperm donation. Furthermore, questions were asked about whether they would support their partner to donate sperm, what wishes they had regarding sperm donation by their partner in terms of information (in case of past donation) or participation in the decision-making, what would motivate them to support their partner to donate and what they saw as barriers to their partner's sperm donation (scored on a 5-point Likert-type scale). For several analyses, the respondents were categorized in two groups: those who would support their partner if he wanted to donate sperm (respondents who answered 'agree' or 'totally agree') and those who would not (respondents who answered differently) to the statement 'I would support my partner if he wants to donate sperm'.

The third part of the questionnaire focused on other sociodemographic characteristics including their relationship status, whether or not they had children and their religion. Religion was split between students with a denominative religion (Christian, Roman Catholic, Protestant, Jewish and Islamic) and those who are not religious (secular and humanist) or who do not have a specific religion or denomination.

The Statistical Package of the Social Sciences (SPSS version 21) was used for the analysis. Individual $\chi 2$ tests were undertaken to explore the significance of the association between variables. In case the assumption of $\chi 2$ was not met (> 20% of cells with a cell frequency count of < 5 and cells with a cell frequency count of zero), Cramer's V was used. $\chi 2$ and Cramer's V were used to analyse the significance of the association between supporting the partner's hypothetical donation and/or not supporting this donation and sociodemographic variables, attitudes towards sperm donation, wishes regarding information and the partner's decision to donate, and motivations and barriers for the partner's sperm donation. To compare the mean age, the independent sample *t* test was used.

Results

In the paragraphs below as well as in the tables, the results will be described per topic, dealing first with the characteristics or attitudes of all female respondents ($N = 1525$) followed by a description of the characteristics or attitudes of all female respondents with a male partner ($N = 843$). The results for the latter set of respondents will be presented according to their support (or lack thereof) for their partner's hypothetical sperm donation: women who would not support their partner if he

wanted to donate sperm ($N = 506$) and women who would support their partner if he wanted to donated sperm ($N = 298$).

Demographic characteristics

Mean age of the students was 22.5 years (minimum 18, maximum 52, SD = 3.679) (Table 1). At the moment of the survey, 44.7% ($n = 682$) was single and 55.3% ($n = 843$) had a relationship with a man. The majority (97.2%; $n = 1421$) had no children (neither they nor their partner) and had no denominative religion (67.2%; $n = 959$).

Attitude towards sperm donation in general

The large majority of the women (86.5%; $n = 1286$) thought positively about sperm donation to solve fertility problems, 8.3% ($n = 124$) adopted a neutral attitude, and 5.2% ($n = 77$) was negative (Table 2). In general, students did not believe that a genetic link between child and parent(s) was important: 1.9% ($n = 28$) believed that infertile couples should remain childless, 7.6% ($n = 113$) thought that true parenthood can only exist when parents and child are genetically related and 9.0% ($n = 134$) said that people always love genetically related children more. Over a third (37.5%; $n = 568$) of all female students would consider using donor sperm if they would face fertility problems. About 1 in 3 respondents (37.8%; $n = 559$) was aware of the fact that there was a shortage of sperm donors in Belgium. The same percentage (37.8%; $n = 560$) believed that most men are motivated by money. A small group (7.1%; $n = 105$) also believed that donor offspring have a higher risk of psychological problems. Almost all students (93.5%; $n = 1385$) knew that donors cannot be obliged to pay maintenance for the offspring conceived with their sperm.

Attitude towards sperm donation by their partner

Of all women in a partner relationship ($N = 843$), 37.1% ($n = 298$) would support their partner if he would want to donate, 18.5% ($n = 149$) would neither agree nor disagree and 44.4% ($n = 357$) would not support him (39 missing cases; numbers not shown). The demographic characteristics (religion, having children, age) were not significantly associated with being supportive or not.

The attitudes of women who would support their partner's sperm donation differed from the attitudes of women who would not support their partner's sperm donation. Significantly more women who would support their partner would accept to use donor sperm themselves in case of fertility

Table 1 Socio-demographic characteristics

	All female students ($N = 1525$)*		All female students with a male partner ($N = 843$)[a]			
			Those who would not support their partner's donation ($N = 506$)		Those who would support their partner's donation ($N = 298$)	
	n	%	*n*	%[b]	*n*	%[b]
Relationship status						
Single	682	44.7				
In a relationship	843	55.3				
Religion[c]						
Denominative religion	469	32.8	164	33.5	86	30.2
Not religious or no specific religion or denomination	959	67.2	326	65.6	199	69.8
Children[d]						
Yes	41	2.8	24	4.8	12	4.1
No	1421	97.2	472	95.2	281	95.9
Mean age (in years)	22.503 ± 3.679 (SE 0.095)		23.115 ± 3.997 (SE 0.177)		23.084 ± 4.345 (SE 0.252)	

*A number of missing cases vary between 56 and 68 per variable

[a] A number of missing cases vary between 39 and 68 per variable

[b] Distribution of respondents within each category of support of their partners' donation ('would not support' and 'would support') based on their response to the statement 'I would support my partner if he wants to donate sperm'

[c] The religion variable distinguishes between two groups: students who have a denominative religion (Christian, Roman Catholic, Protestant, Jewish and Islamic) and those who are not religious or who do not have a specific religion or denomination (religious but no specific religion, secular and humanist). The category 'other' ($n = 11$) was not included in this table

[d] Respondents who answered 'my partner has children' and 'I am pregnant' were included in the category 'yes'. Respondents who indicated 'other' ($n = 3$) were not included in this table

Table 2 Attitude towards and knowledge of sperm donation

	All female students ($N = 1525$)*						All female students with a male partner ($N = 843$)[a]			
	(Totally) disagree		Neither agree, nor disagree		(Totally) agree		Those who would not support their partner's donation ($N = 506$)		Those who would support their partner's donation ($N = 298$)	
	n	%	*n*	%	*n*	%	*n*	%[b]	*n*	%[b]
Attitude statements										
1. I would be prepared to use donor sperm when my partner would have fertility problems, regardless of whether I would choose an anonymous or a known sperm donor.	436	28.8	509	33.6	568	37.5	129	25.5[d]	152	51[d]
2. Donating sperm goes against my principles.	1160	78.3	210	14.2	112	7.6	73	14.4[d]	4	1.3[d]
3. Couples who cannot have children should stay childless.	1417	95.3	42	2.8	28	1.9	13	2.6	4	1.3
4. True parenthood can only exist when there is a genetic link between parents and children.	1309	88	65	4.4	113	7.6	56	11.1[d]	9	3.0[d]
5. People always love genetically related children more than children who are not genetically related.	1164	78.5	184	12.4	134	9.0	65	12.8[d]	13	4.4[d]
6. Sperm donation is a good way to help childless couples.	77	5.2	124	8.3	128 6	86.5	409	80.8[d]	280	94.0[d]
7. Most men donate for the money.	322	21.7	600	40.5	560	37.8	223	44.1[d]	104	34.9[d]
Knowledge statements										
1. I think there is a shortage of sperm donors in Belgium.	120	8.8	790	53.4	559	37.8	174	34.5[d]	142	47.7[d]
2. A sperm donor can be asked to pay maintenance for the children conceived with his sperm.	1385	93.5	60	4.1	36	2.4	13	2.6	4	1.3
3. Children conceived with donor sperm have a higher risk of psychological problems.	916	61.6	466	31.3	105	7.1	51	10.1[d]	17	5.1[d]

*A number of missing cases vary between 12 and 46 per variable

[a] A number of missing cases vary between 39 and 40 per statement

[b] Distribution of respondents within each category of support of their partners' donation ('would not support' and 'would support') based on their response to the statement 'I would support my partner if he wants to donate sperm'

[c] Statement only presented to women with a male partner

[d] $P \leq 0.001$. *P* value based on Cramer's V to compare the proportion of respondents who (totally) agreed between women who 'would not support' and 'would support' sperm donation by their partner

problems than women who would not support their partner (Table 2). Those who would support their partner thought significantly less often that true parenthood required a genetic link between parents and children compared with women who would not support their partner (3.0% vs. 11.1%; $P = .001$). Women who would support their partner also less often thought that people love their genetically related children more than children who are not genetically related (4.4% vs. 12.8%; $P = .001$). Overall, the first group more often considered sperm donation a good way to help childless couples compared with women who would not support their partner's sperm donation (94.0% vs. 80.8%; $P = .001$).

Preferences regarding involvement in the sperm donation of the partner

Three steps can be distinguished in the involvement in the donation: being informed about the donation before the relationship, being informed about the donation during the relationship and co-deciding about the donation during the relationship.

The overwhelming majority (85.2%; $n = 544$) of women with a partner would like to be informed if their partner had donated in the past (Table 3). Significantly fewer women who would support their partner would like to be informed about past donations than women who would not support their partner (80.2% vs. 88.1%; $P = .001$). About one in four (28.4%; $n = 228$) would find it difficult to cope with the fact that their partner had been a donor before their relationship started. Again, women who would support their partner were much less likely to find this a problem compared with women who would not support their partner (4.4% vs. 42.5%; $P = .001$).

Only 9.5% ($n = 139$) believed that their (future) partner could donate without informing them, and 62.7% ($n = 918$) believed that they had the right to co-decide whether or not their (future) partner could donate. Women who would

Table 3 Reaction to and preferences regarding sperm donation by the partner

	All female students ($N = 1525$)*						All female students with a male partner ($N = 843$)[a]			
	(Totally) disagree		Neither agree, nor disagree		(Totally) agree		Those who would not support their partner's donation ($N = 506$)		Those who would support their partner's donation ($N = 298$)	
	n	%	*n*	%	*n*	%	*n*	%[b]	*n*	%[b]
Reaction to sperm donation by the partner										
1. If my partner would have donated sperm before our relationship, I would have a hard time with it.[c]	447	55.6	129	16	228	28.4	215	42.5[d]	13	4.4[d]
2. If my partner was a sperm donor, I would not tell anyone.	435	29.7	554	37.8	477	32.5	208	41.1[d]	62	20.9[d]
Preferences regarding involvement in the partner's decision										
3. I would accept my (future) partner to donate sperm without me knowing this.	1208	82.5	116	7.9	139	9.5	15	3.0[d]	45	15.1[d]
4. I believe that I have the right to co-decide whether my (future) partner would donate sperm.	340	23.3	205	14	918	62.7	369	72.9[d]	115	38.6[d]
5. If my partner donated sperm, I would like to know.[c]	32	4.1	55	8.7	544	85.2	446	88.1[d]	239	80.2[d]
Preferences relating to the partner's donor children										
6. If my partner was a sperm donor, I would want information about the children conceived with his sperm without knowing their full names.	966	65.9	183	12.5	318	21.7	133	26.3[d]	31	10.4[d]
7. If my partner was a sperm donor, I would want to meet the children conceived with his sperm (once).	1185	80.8	165	11.2	117	8.0	47	9.3[e]	19	6.4[e]
8. If my partner was a sperm donor, I would not want the children conceived with his sperm to receive information about him.	328	22.4	280	19.1	858	58.5	320	63.2[e]	193	65.0[e]

*A number of missing cases vary between 58 and 62 per variable

[a] A number of missing cases vary between 39 and 40 per statement

[b] Distribution of respondents within each category of support of their partners' donation ('would not support' and 'would support') based on their response to the statement 'I would support my partner if he wants to donate sperm'

[c] Statement only presented to women with a male partner

[d] $P \leq 0.001$. *P* value based on Cramer's V to compare the proportion of respondents who (totally) agreed between women who 'would not support' and 'would support' sperm donation by their partner

[e] $P \leq 0.05$. *P* value based on Cramer's V to compare the proportion of respondents who (totally) agreed between women who 'would not support' and 'would support' sperm donation by their partner

support their partner if he would like to donate significantly more often accepted that their partner would donate without their knowledge compared with women who would not support their partner (15.1% vs. 3.0%, $P = .001$). Significantly fewer women who would support their partner believed that they had a right to participate in the decision compared with the others (38.6% vs. 72.9%, $P = .001$).

About one in three women (32.5%; $n = 477$) would keep their partner's donation a secret for everyone. Significantly more women who would support their partner would share this fact with others (20.9% vs. 41.1%; $P = .001$).

Partner's donor offspring

Regarding the attitude towards donor offspring, a small minority of women would be interested in receiving information or contact: 21.7% ($n = 318$) would like to receive non-identifying information on the children and 8.0% ($n = 117$) would like to meet the offspring. At the same time, 58.5% ($n = 858$) also states that donor offspring should not receive information about their partner. On the point of information provision, those who would support their partner and those who would not differ significantly: significantly fewer women who would support their partner would like to receive information on the children created by his sperm (10.4% vs. 26.3%; $P = .001$) and would like to meet the children (6.4% vs. 9.3%; $P = .05$).

Motivations for and barriers to a donation by the partner

When women with partner were asked which motivations would play a role to allow their partners to donate, two motivations were selected by three out of four respondents (Table 4): the wish to help people with a wish for a child

Table 4 Motivations and barriers regarding sperm donation by their partner

	All female students with a male partner ($N = 843$)*									
	(Totally) disagree		Neither agree, nor disagree		(Totally) agree		Those who would not support their partner's donation ($N = 506$)		Those who would support their partner's donation ($N = 298$)	
	n	%	*n*	%	*n*	%	*n*	%[b]	*n*	%[b]
Motivations										
1. To help people with a child wish.	102	12.4	106	12.9	612	74.7	331	65.4[c]	270	90.9[c]
2. Because I empathize with couples who have fertility problems.	93	11.3	117	14.3	610	74.4	337	66.6[c]	263	88.6[cc]
3. Because it would give me some satisfaction.	548	66.9	221	27.0	50	6.0	14	2.8[c]	34	11.4[c]
4. The financial compensation.	654	78.5	108	13.2	58	7.1	25	4.9[c]	31	10.4[cc]
5. Because I have experienced (in my immediate surroundings) what it means to be involuntarily childless.	379	46.2	253	30.9	188	22.9	101	20[d]	81	27.3[d]
Barriers							*n*	%[b]	*n*	%[b]
1. He would have one or more children that I would not know.	252	31.6	101	12.6	446	55.8	364	72.9[c]	79	27.0[c]
2. The chance that my partner would be traced by the children conceived with his sperm.	216	27	113	14.1	470	58.9	327	65.5[c]	141	48.1[c]
3. The chance that my own (future) children and the children conceived with his sperm would accidently get in a relationship with each other.	359	44.9	169	21.2	271	33.9	183	36.7	86	29.4
4. I am afraid it would harm my relationship.	401	50.2	153	19.1	245	30.7	222	44.5[c]	22	7.5[c]
5. I do not feel comfortable with the idea of my partner donating sperm.	338	42.3	108	13.5	353	44.1	334	66.9[c]	19	6.5[c]
6. I would feel responsible for the wellbeing of the children.	545	68.2	120	15	124	16.8	105	21[c]	28	9.6[c]
7. The sperm could be used by lesbian couples.	711	89	57	7.1	31	3.9	28	5.6[c]	3	1[c]
8. The sperm could be used by single women.	686	85.9	65	8.1	48	6	44	8.8[c]	4	1.4[c]

*Statements about motives were only presented to women with a male partner ($N = 843$). Statements about barriers were only presented to women with a male partner who had not donated sperm yet ($N = 833$)

[a] A number of missing cases vary between 23 and 35 per statement, for the motives and between 50 and 51 per statement for the barriers

[b] Distribution of respondents within each category of support of their partners' donation ('would not support' and 'would support') based on their response to the statement 'I would support my partner if he wants to donate sperm'

[c] $P \leq 0.001$. *P* value based on Cramer's V to compare the proportion of respondents who (totally) agreed between women who 'would not support' and 'would support' sperm donation by their partner

[d] $P \leq 0.05$. *P* value based on Cramer's V to compare the proportion of respondents who (totally) agreed between women who 'would not support' and 'would support' sperm donation by their partner

(74.7%; $n = 612$) and empathy with couples who experience fertility problems (74.4%; $n = 610$). Motives such as financial compensation and personal satisfaction played only a minor role (7.1%; $n = 58$ and 6.0%; $n = 50$ respectively). Significantly more women who would support their partner ticked all of the above-mentioned motivations as relevant in their approval of their partner's donation.

The main reasons to object to their partner donating were the fact that he would have one or more children that she would not know (55.8%; $n = 446$) and the chance that he would be traced by his donor offspring (58.9%; $n = 470$). Less frequently mentioned objections were that they would not feel at ease with their partner donating (44.1%; $n = 353$), the chance that their own children and the children created by him as a donor could accidentally have a relationship (33.9%; $n = 271$) and the fear that the donation could harm their relationship (30.7%; $n = 245$). The possibility that his sperm would be used by lesbian couples and single women was only a problem for a small number of women (respectively 3.9%, $n = 31$, and 6.0%, $n = 48$). A small minority (16.8%; $n = 124$) objected because they would feel responsible for the children. When the respondents' views on barriers were compared according to the women's support of their partner's donation, again, differences were found. Women who would support their partner significantly less often saw the fact that he would have children they would not know as a barrier compared with the other group (27% vs. 72.9%; $P = .001$). Women who would support their partner also significantly less often saw a barrier in the chance that he could be traced by donor offspring (48.1% vs. 65.5%; $P = .001$). The supporting women also significantly less considered the following emotions as a barrier: the fear that the donation might damage their relationship (7.5% vs. 44.5%; $P = .001$), not feeling at ease (6.5% vs. 66.9%; $P = .001$) and feeling responsible for the children (9.6% vs. 21%; $P = .001$).

Discussion

There is a clear difference between the attitude towards sperm donation as a fertility treatment and the attitude towards sperm donation by the partner. While 86% thought positively about sperm donation, only 37% would support their partner if he would like to donate. The general attitude expresses the acceptance of the practice, while the attitude towards their partner's donation brings the practice home. No conclusion of inconsistency can be drawn from this difference: personal convictions, emotions and relationships may lead to a different evaluation.

More than 80% of the women in our study believed that their partner should not donate without informing them, and over 60% believed that their partner should not donate without them approving or consenting to it, thereby expressing an even stronger wish for involvement. Most studies indicate that only a minority of the donors involved their partner in the decision [8]. However, much depends on the level of involvement. In one study, almost all married and co-habiting men had informed their partners of their intention to become a sperm donor [9]. Seventy-three percent of the candidate donors in a Belgian study thought that their (future) partner has the right to know that they are (were) a donor. Men without a partner agreed significantly less often with the statement that their future partner has the right to know they were a donor (61.9% vs. 81.0%; $P = 0.05$) compared with men with a partner [10]. In a study on Danish sperm donors, the influence of the partner increased in time: in 2002, the donors said that there was some (13%) or a large (23%) involvement by the partner. In 2012, the percentage had gone up to 37% and 32% respectively [11]. However, information and discussion do not imply that donors believe that their partner should be given the right to consent. In a study by Daniels et al. [12], 37% of the donors with a partner did not accept that consent would be required from the partner although 39% involved their partners in the decision. Kalampalikis et al. [13] found two different attitudes among donors in France. One group saw the donation as strictly private business and did not give their partner any say in the matter. They even forced the decision in those cases where the partner was clearly opposed to them becoming a donor. In the second group, the partner initiated the donation. In some cases, the man was undergoing a vasectomy in order to enable his partner to stop contraception and in other cases, he donated to help someone she knew. The same influence from the partner could be found in a Swedish study [14]. It is difficult to deduce from such findings what the general attitude of women is. Most likely, there is a self-selection bias: men who are convinced that their partner will object are more likely not to start the discussion or will donate without her knowing. The latter obviously is less risky in a (theoretically) anonymous system. A study from the Netherlands showed that all donors whose wives did not back their donation would quit donating if anonymity were abolished [15]. Shukla et al. [16] found that after the abolishment of donor anonymity, more potential donors in a relationship had informed their partners of their donation when compared with donors who donated before the change of the law. However, the comparison was difficult to make since there were more homosexuals in the group that donated after the change of the law.

All previous studies started with donors or potential donors. As a consequence, those men who discussed the donation with their partner and then dropped the plan because they encountered a negative reaction were no longer present in the studies. This might explain the relatively high percentage of donors who reported that their partners/wives were enthusiastic or supportive [12, 14]. Our data show that only a minority of the partners would be supportive.

About one in four women would find it difficult to cope with the past donation of their partner, whereas over 40% said they would not support their current partner in donating. This suggests that women look differently at acts that took place before their relationship compared with those during the relationship. In the latter case, gametes may be perceived as 'joint property' and donation of those gametes as threatening to the relationship. This is an important finding since many relationships are temporary and donors need to realise that their current partner (who may have agreed to the donation) may not be their partner forever. In one study, 36% of the donors had a different partner than at the time of the donation [17]. In an early study, only 12% said that they would tell a future partner [12]. Moreover, many sperm donors are single at the moment of donation. Men should seriously consider whether or not to tell their partner about their past donation taking into account the considerable risk of psychological distress and possible relationship problems and the (still unknown) risk of their partner finding out inadvertently. Finally, these results are also important given the present possibility to identify donors through genetic ancestry databases [18]. Contact by offspring or recipients may lead to serious problems for past donors [19].

The women showed little interest in the children resulting from their partner's sperm: the overwhelming majority did not want to receive information about the offspring and did not want to meet them. At the same time, the majority did not want the offspring to receive information about the partner. These wishes seemed directed at the isolation of the partner (and so indirectly of them and their family) from the donor offspring. It seems that the donor offspring was seen as a potential threat and should be kept at a distance. Given this position, one might expect an even more negative attitude of women towards the past donation of their partner when they are informed of the fact that anonymity can no longer be strictly guaranteed because of the genealogic and genetic databases.

Potentially, 52,000 students could have seen the call to participate in the study. However, about half of these were men who were excluded from this study. It is impossible to know how many of the approximately 26,000 female students actually saw the call so no response rate could be calculated. Even with a large sample, a bias cannot be excluded. A second limitation is the bias in terms of education and age. Since this is the first study to survey women about their attitude towards donation by their partner, we cannot compare the results to other studies but it seems reasonable to assume that both characteristics may influence women's attitude.

Conclusion

Men are right to worry about their partner or future partner when they donated or consider donating sperm. Only about one in three women would support their partner if he would want to donate. The overwhelming majority (> 80%) believed that they should be informed if their partner intends to donate and about two-thirds thought that they had a right to co-decide. Women believed that sperm donation is not an act that can be separated from the relationship: people who are in a stable relationship are supposed to consult with each other on matters of reproduction. In order to promote full informed consent, the relational component should be included in counselling donors, not only regarding the present but also regarding the (possible) future partner. Donors should know that around one-third of women find it hard to cope with their partner's past donation and that the overwhelming majority of women believe that they should have a say in this decision.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in the study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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