



## Attitudes and motives of potential sperm donors in Serbia

### Stavovi i motivi potencijalnih davalaca sperme u Srbiji

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#### Abstract

**Background/Aim.** For curing infertility, sperm donors and their donations are important source of benefits for the society. Attitudes of sperm donors towards different recipient categories and relation with offspring become more important. The aim of our study was to explore sperm donation related attitudes and motives among potential sperm donors in Serbia. **Methods.** The study included 303 participants from Serbia, age from 20 to 40. Measures of personality traits were obtained by using the Big Five Inventory. For measuring attitudes and motivation regarding sperm donation the Attitudes and Motivation of Sperm Donors questionnaire was applied. **Results.** A total of 244 participants stated that they would be willing to be sperm donors. The results showed no statistically significant differences in personality traits between people who claimed that they would be willing to become sperm donors, and those claiming otherwise, but a number of differences in personality traits were found when various attitudes regarding sperm donation process, possible users of donated sperm and relations between the donor and his biological offspring were considered. **Conclusion.** There are no statistically significant differences in personality traits between people who claimed that they would and those that would not be willing to become sperm donors. It is possible that some other factors (e.g. cultural values) influence the decision to become sperm donor, but personality traits play an important role in decisions regarding sperm donation process, possible receivers of donation and relations between the donor and his biological offspring.

#### Key words:

tissue donors; semen; attitude; motivation; personality tests; serbia.

#### Apstrakt

**Uvod/cilj rada.** U lečenju infertiliteta donatori sperme igraju veoma važnu ulogu. Sa promovisanjem neanonimnih donora postalo je sve bitnije kakvi su njihovi stavovi o različitim kategorijama primaoca, kao i o odnosu sa potencijalnim potomstvom. Cilj našeg rada bio je da ispita-mo stavove i motive za davanje sperme kod potencijalnih donatora sperme iz Srbije. **Metode.** U studiji je učestvovalo 303 ispitanika, starosti od 20 do 40 godina. Osobine ličnosti su merene putem testa *Big Five Inventory* (BFI). Za merenje stavova i motivisanosti za davanje sperme korišćen je poseban upitnik Stavovi i motivacija donatora sperme. **Rezultati.** Od ukupno 303 ispitanika, 244 (80,53%) navelo je da bi bili donatori sperme. Naši rezultati pokazali su da ne postoji statistički značajna razlika u osobinama ispitanika koji navode da bi bili davaoci sperme i onih koje navode da to ne bi bili, ali postoje razlike u osobinama ličnosti onih koji navode da bi bili davaoci sperme kada su u pitanju različite kategorije primaoca, anonimnost i odnos sa potencijalnim potomstvom. **Zaključak.** Većina ispitanika u našem uzorku navela je da bi bili davaoci sperme. Ispitanici se nisu statistički značajno razlikovali po osobinama ličnosti kada je u pitanju volja da se bude ili ne potencijalni davalac sperme. Postojale su razlike u osobinama ličnosti onih koji su naveli da bi bili davaoci sperme s obzirom na stavove prema različitim kategorijama primalaca. Trebalo bi ispitati da li su neki drugi faktori povezani sa odlukom da se bude davalac sperme (npr. kulturne norme).

#### Ključne reči:

tkivo, davaoci; sperma; stav; motivacija; ličnost, testovi; srbija.

#### Introduction

In some cultures infertility is still a social stigma (India, Turkey) <sup>1,2</sup> influencing social and emotional life of the couples and relatives who are informed about the infertility problem.

In the contest for curing infertility, sperm donors and their donations are important source of benefit for the soci-

ety. Donors' sperm should be of high quality, but apart from that, recipients in some cases tend to find important other traits of the donor, such as color of the eyes, skin, height and weight, but also blood group, education, religion <sup>3,4</sup> and caste (in India) <sup>1</sup>.

Donors' rights (regulated by law) towards offspring resulting from their donation, their motives for donating, atti-

tudes about categories of people they want to donate sperm, are of great importance for clinicians, social workers and well-being of the child. There are several types of problems related to sperm donors: recruitment and recruitment strategies, anonymity, attitudes toward different sperm recipient categories and financial compensation. It is important to know that there is no ideal recruitment strategy for sperm donors that could optimise both investment and outcome.

Despite the recruitment strategy used (an open or closed system)<sup>5</sup>, recruitment procedure is multiphase and has a significant drop out rate. The most common reason for rejection is suboptimal semen quality<sup>6</sup>. Thorn et al.<sup>7</sup> report difficulties in finding sufficient men despite using proactive recruitment strategies such as placing handouts in universities, and posting information on the Internet. The most common strategy, however, is relying on a word-of-mouth strategy. In some countries advertisements about sperm donations are quite normal while in some are forbidden by law (Canada, Serbia). "People will not consider semen donation if they have never heard about the need for this, or have been exposed to negative media coverage, or misunderstand the ramifications of donation."<sup>8</sup> The role or potential role of a female partner in recruitment has been highlighted in the results of Lalos et al.<sup>9</sup> An "open system" and "information sharing" approach is successful in Sweden<sup>9</sup>.

In Serbia there are still no legal regulations about sperm donations and assisted reproduction. There is only a law draft about curing infertility with biomedical-assisted fertilization written in 2005. This law draft was extensively criticized in 2009 but was not accepted by the Parliament. As there is no law, there are no sperm banks; there are no legal sperm donors. Sperm inseminations and *in vitro* fertilizations are available only to married couples and with husband's sperm. According to the informations available at the web site of the Ministry of Health of the Republic of Serbia (<http://www.zdravlje.gov.rs>), reproductive cells may only be a gift to the heterosexual couple but without a price (material or nonmaterial); advertising on reproductive cells is forbidden, but it is possible to import them with special permission from the Minister of Health; it is forbidden to use mixture of semen from different men in biomedical-assisted reproduction; sperm donor has no legal and other obligations towards the child conceived as a result of his donation; sperm may be used only from live donors, except in the case where there is a legal testament for sperm donation; it is forbidden to give donation to homosexual couples; it is forbidden to trade or to mediate in trading with reproductive cells and early embryos; the child conceived as a result of anonymous sperm donation has a legal right to ask for the medical data of his / her biological father only for medical reasons, but it has no right to know his name and surname.

Considering the present situation, we found convenient to investigate the attitudes of potential sperm donors in Serbia. As legal regulations are still in the making, having data on attitudes and motives of potential sperm donors, as well as on their psychological properties is important for deciding for and against various possible legal solutions in the area.

Having this in mind, the aim of our study was to survey the sperm donation related attitudes on a sample of potential

sperm donors from Serbia. Also we will explore possible relations between these attitudes and the Big Five personality traits.

The results of this study may provide data for the creation of more effective donor recruitment strategies. Apart from this, the obtained data can also be useful when considering certain future legal solutions in the area of assisted reproduction, and, together with available data from other countries, can provide information on the variance of sperm donation related attitudes across nations.

## Methods

Measures of personality traits were obtained by using the Big Five Inventory (BFI)<sup>10</sup>. This 44-item inventory provides measures on 5 personality traits: Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A) and Conscientiousness (C). The authors of the inventory have declared it free to use for noncommercial purposes. The Serbian/Croatian version of the inventory, which was used in this study is the version which was previously used in a number of studies in Serbia<sup>11-14</sup>. Stojanović<sup>15</sup> conducted a study on a sample of 304 participants from Serbia, which demonstrated convergence of BFI measures to analogues personality trait measures obtained by using NEO Personality Inventory – Revised (NEO PI-R). This study reported Cronbach's alpha reliability coefficient for this measure ranging from 0.771 to 0.857 for four of the inventory measures and the fifth measure's alpha value being 0.641. Unfortunately, BFI alpha coefficients on our sample were lower, ranging from 0.402 to 0.643.

Measures of sperm donation related attitudes were obtained by using the questionnaire that was based on that used by Thorn et al.<sup>7</sup> and studies in Germany, New Zealand, Australia, UK and Sweden<sup>16-19</sup> but adapted so that it would fit the context in Serbia. The questionnaire consists of 40 questions, of which 15 concern with sperm donation related attitudes and motives, and were thus considered in our analyses.

This questionnaire contains demographic data and a question about whether a person would be interested in becoming a sperm donor, and a number of questions on attitudes about various aspects of the sperm donation process. We divided these questions into 5 groups: motivation – includes questions on the strength of various potential motives for becoming a sperm donor; anonymity – questions asking if the person would let people in his vicinity (partner, family, friends, relatives know that he donated sperm); finances – questions on financial aspects of sperm donation (whether the sperm donation should be paid for, and whether donor expenses should be reimbursed); potential receivers of sperm donation – questions on the categories of people the donor would make a sperm donation to; relations with offspring – questions regarding various aspects of relations with future offspring, born as the result of sperm donation.

The study was conducted on a sample of 303 male participants. Men aged 18–40 were asked to participate in the study. Participation in the survey was voluntary. The ques-

tionnaire was used in the web based and in the paper and pencil form. A total of 27 participants completed the web based version of the questionnaire, while 276 participants completed the paper and pencil form. The survey was conducted in three cities in the Republic of Serbia: Nis, Kragujevac and Belgrade in May–Jun 2009. The researchers visited a number of faculties in these cities and asked people found at the faculty building or in faculty cafeterias to participate in the study. Some were administered a paper and pencil version of the survey, and others were directed to a web page containing the survey. Rejection rate was around 5% (percent of who were asked to participate, but refused).

The mean age of participants was 23.03 years (min 18, max 40, SD 3.74). Of the participants 91.4 % was between 18 and 28 years of age, 250 (82.5%) participants were students, 15 (5%) were employed, 3 (1%) were entrepreneurs, 12 (4%) unemployed, and 22 (7.3%) did not answer this question.

In our sample 9 (3.1%) participants were married, 5 (1.7%) were divorced, 105 (36.7%) were in a long-term relationship, 166 (58%) were single or in a short-term relationship, while 18 examinees did not answer this question.

A total of 59 participants stated that they would not be willing to be a sperm donor, and they were excluded from analyses relating to potential donors. Only participants who answered yes to maybe on the question about willingness to become a sperm donor were considered potential sperm donors.

Having these characteristics in mind we can conclude that the structure of our sample resembles structures of sperm donor population in countries like Great Britain and

Denmark.

For descriptive statistical purposes means, standard deviations, frequencies and percentages were used. Spearman correlation coefficients were used to examine relations between various motives and personality traits. Analysis of variance (ANOVA) was used to test for differences in mean personality trait expressions between people with differing attitudes on examined sperm donation related matters. Canonical Discriminant analysis was used to asses to total variance of an examined sperm donation related attitude accounted for by personality traits, on attitudes which were found to be related to personality traits i.e. where ANOVA showed statistically significant differences between means on at least one personality trait. A psychologist conducted the statistical analysis of BFI.

**Results**

We first considered the descriptive data on potential donors attitudes. The results are presented in the Tables 1–4.

We examined the relations between willingness to become a sperm donor and personality traits, but found no differences in the level of personality trait expression between participants who claimed that they would be willing to become voluntary sperm donors and those who claimed that they would not. Afterwards, we examined the differences in the levels of personality traits expression between people who manifested different attitudes on various aspects of sperm donation. In these analyses participants who claimed that they would not become sperm donors were excluded. These results are presented in Table 5.

**Table 1**

**Motivation for making a sperm donation\***

Motive	Mean	SD
Wish to help a childless couple	4.2163	1.05699
Wish to inspect donor's own fertility	3.0785	1.52492
Financial compensation	2.3925	1.50737
curiosity	2.1264	1.34984

\*Five-point rating scales were used (1-5), 1 denotes that the motive is the least important, 5 denotes that the motive is of highest importance. All differences between the displayed motive intensity means are statistically significant at the 0.001 level, except the difference between financial compensation and curiosity (*t*-test with bonferonni correction was used for making pairwise comparisons

**Table 2**

**Anonymity and financial compensation related attitudes**

Question	Answers (% of participants)			
	Yes	No	Not	Do not have a partner / family / relatives
Would you inform your _____ that you made a sperm donation? ▼				
partner	63.6	7.9	13.0	15.4
family	50.0	18.0	32.0	0
closest friends	64.5	13.7	21.9	0
closest relatives	28.1	44.1	26.6	1.2
Financial compensation should be given to sperm donors				
yes				
no	28.9	46.1	25.0	
not				
Travel expenses should be reimbursed	53.3	27.2	19.5	

Table 3

Question	Recipients of the donation					
	% of participants					
Who would you make a donation to?	people I am acquainted with	people I am not acquainted with	both	acquaintance not important		
	5.5	26.5	20.2	47.8		
Which categories would you make a donation to? (% checked)	married couple	heterosexual pair	lesbian pair	widow	single woman	divorced woman
	72.3	32.0	12.9	27.7	40.3	29.0
Would you give consent for your sperm being used by... (% yes)	married couple	heterosexual pair	lesbian pair	single woman	divorced woman	
	90.3	69.9	22.2	61.2	54.1	
If you could choose the recipients, would their education level matter?	yes	no	not sure			
	28.0	50.8	21.3			
Which education level of the recipients would you prefer?	primary education	secondary education	some college	graduate school	unimportant or multiple	
	3.4	10.2	6.1	68.7	11.6	

Table 4

Relationship with offspring	
Question (attitude) / Answer	% of participants
Interest in knowing the outcome of donation	
very interested	21.3
interested	36.2
neutral	26.4
not interested	9.4
completely uninterested	6.7
Wish to remain anonymous	
yes	63.7
no	8.0
not sure	16.7
have not considered	11.6
Wish to meet offspring in the future	
yes	32.7
no	19.7
not sure	26.8
have not considered	20.9
Should parents explain to the child how it was conceived?	
yes	41.1
no	29.2
not sure	29.6
If the child conceived through your donation wishes to meet you when it comes of age, would you agree?	
yes	70.2
no	9.8
not sure	20.0

Table 5

**Spearman correlation coefficients between the reported strength of possible motives for donating sperm and personality traits<sup>†</sup>**

Question / Attitude	N	E	O	A	C
Wish to help a childless couple	-0.03	0.09	0.14	0.10	0.10
Wish to check own fertility	-0.03	0.11	0.02	-0.08	-0.13
Financial reward	-0.02	0.08	-0.04	<b>-0.16*</b>	-0.02
Curiosity	0.00	<b>0.14*</b>	0.01	<b>-0.18*</b>	-0.11

N – Neuroticism; E – Extraversion; O – Openness; A – Agreeableness; C – Conscientiousness

Five-point rating scales were used (1-5), 1 denotes that the motive is the least important, 5 denotes that the motive is of highest importance. All differences between the displayed motive intensity means are statistically significant at the 0.001 level, except the difference between financial compensation and curiosity (*t*-test with Bonferonni correction was used for making pairwise comparisons)

<sup>†</sup>All correlations higher than 0.14 are statistically significant at least at the 0.05 level. All such correlations are given in bold and marked with\*

Relative to the matters of anonymity, i.e. readiness to inform family and friends about the fact that they have made a sperm donation, statistically significant differences were obtained only in A and O personality traits (Table 6).

Participants who reported that they would only donate sperm to people they do not know obtained higher scores on Neuroticism than participants who reported that it is not important whether they know the receivers or not (Table 7).

**Table 6**  
Differences in mean personality traits' level relative to the participants reported willingness to inform their family and friends about making a sperm donation†

Would you inform your _____ that you made a sperm donation? ▼		Openness				Agreeableness			
		M	SD	F	p	M	SD	F	P
Partner	Yes	3.96	0.62			3.64	0.60		
	No	3.64	0.59	2.673	0.072	3.38	0.44	1.401	0.249
	Not Sure	3.77	0.55			3.58	0.43		
Family	Yes	4.01	0.60			3.72	0.58		
	No	3.76	0.61	2.946	0.055	3.41	0.61	5.576	0.004*
	Not Sure	3.88	0.54			3.55	0.45		
Closest friends	Yes	3.98	0.61			3.64	0.57		
	No	3.77	0.60	2.286	0.104	3.41	0.52	2.102	0.125
	Not Sure	3.82	0.50			3.58	0.49		
Closest relatives	Yes	4.03	0.69			3.69	0.54		
	No	3.80	0.55	3.741	0.025*	3.52	0.58	2.598	0.077
	Not Sure	3.99	0.51			3.68	0.50		

†denotes statistically significant differences (post hoc tests using the Bonferonni correction were performed to make pairwise comparisons). In all cases where F was statistically significant, post hoc tests showed statistically significant differences between Yes and No groups.

Relative to the matters of financial compensation for donation, no statistically significant differences in personality traits expression were obtained between groups with various attitudes.

Relative to the matters of potential receivers of donations statistically significant differences in personality traits were obtained to the question asking if the participant would be willing to donate sperm to people he knows and to the questions about potential receivers of the donation. When asked if they would donate sperm to people they know, par-

Relative to the categories of possible receivers of donations statistically significant differences were obtained only in personality traits O and A and these results are presented in Table 8.

Relative to attitudes towards relations with future offspring born as a result of donation no differences in personality traits expression were obtained.

Apart from these results, each of the results showing significant differences in at least one personality trait was submitted to canonical discriminant analysis in order to de-

**Table 7**  
Levels of neuroticism and possible receivers of the sperm donation†

Who would you donate sperm to?	Neuroticism			
	M	SD	F	p
People I know	2.25	0.63		
People I do not know *	2.52	0.72	2.809	0.040
Both to those I know and those I do not know	2.42	0.74		
It is not important whether I know them or not *	2.22	0.64		

†Post hoc tests with Bonferroni correction show a statistically significant difference between groups marked with\*

**Table 8**  
Personality traits and potential receivers of sperm donation†

If you became a sperm donor who would you donate it to? ▼		Openness				Agreeableness			
		M	SD	F	p	M	SD	F	p
Married couple	Yes	3.93	0.58			3.65	0.52		
	No	3.83	0.64	1.020	0.314	3.42	0.70	5.738	0.017*
Heterosexual pair regardless of whether they are married	Yes	4.05	0.60			3.57	0.54		
	No	3.83	0.57	7.808	0.006*	3.64	0.56	0.958	0.329
homosexual pair – a pair of lesbians	Yes	3.95	0.61			3.55	0.50		
	No	3.91	0.59	0.175	0.676	3.62	0.56	0.454	0.501
A widow	Yes	4.02	0.55			3.55	0.50		
	No	3.87	0.60	3.450	0.064	3.64	0.58	1.283	0.259
A single woman	Yes	3.97	0.58			3.57	0.53		
	No	3.87	0.60	1.544	0.215	3.65	0.57	1.390	0.240
A divorced woman	Yes	3.97	0.57			3.56	0.48		
	No	3.89	0.60	1.132	0.288	3.64	0.59	0.1261	0.263

†Statistically significant differences are marked with \*

termine the total amount of variance that can be accounted for by personality traits. For the question about the receivers of donations relative to the donors acquaintance with them, no statistically significant discriminant functions were obtained. Relative to the question about donating sperm to a married couple, discriminant analyses yielded a discriminant function with a canonical correlation of 0.213 (eigenvalue of 0.048), statistically significant at 0.051. Relative to the question about donating sperm to a married couple, the same analysis yielded a discriminant function with a canonical correlation of 0.233 (eigenvalue of 0.057), statistically significant at 0.022 level.

## Discussion

First, we will examine the sperm donation related attitudes of the sample group by group and compare them with the available data from similar studies.

### *Motivation*

The most prevailing motive for making a donation in our sample was a wish to help a childless couple. The mean reported intensity of this motive was significantly higher than the same measure of all other motives. The second most intensive motive was a desire to verify one's own fertility, while the mean intensity of the financial compensation motive was much lower, and in line with the mean reported intensity of the curiosity motive (the difference in mean reported intensities was not statistically significant). These results are in line with the findings of several other studies<sup>8, 18–20</sup> that reported the wish to help others to be the main reported sperm donation motive. These studies also reported that financial compensation as a motive was not important, as was also confirmed on our sample.

### *Finances*

In our study 28.9% of participants stated that financial compensation should be given to sperm donors, and 53.3% stated that donation related travel expenses should be reimbursed (Table 2). These results are in line with the fact of relatively low importance given to financial compensation as a motive for making a donation. Attitudes towards financial compensation for donation differ from country to country<sup>7, 9, 16, 21, 22</sup>.

In a 2008 study in Germany, most of sperm donors agreed that donors should receive financial compensation for their donation, but not all favored reimbursement of costs. In France, semen donation is both unpaid and anonymous by law, and only reimbursement of travelling costs is permitted<sup>21</sup>.

Research studies conducted in Australia and New Zealand also reported that the majority of men who donated semen for altruistic reasons rated payment rather unimportant<sup>16, 22</sup>. In Sweden, Lalos et al.<sup>9</sup> reported that more than half of sperm donors state that they should be paid for sperm donation and almost twice as many from Umea (81%) compared with Stockholm (43%) thought that providers should be reimbursed and not suffer financially. Although reported motive strengths appear basically similar, these discrepancies

suggest the possibility that pronounced differences in finance related aspects of sperm donation attitudes might exist across nations and regions. It is possible that such differences are also more pronounced at interindividual level.

It appears that somehow, different groups of people are attracted to the act of donation under different recruitment models and donation cultures as influenced by different regulatory frameworks. Compensation donation models appear to attract egotistic donors who are mostly anonymous and whose donation is primarily motivated by financial rewards<sup>8</sup>.

### *Potential recipients*

When sperm donors are anonymous it is not important who the recipients are. The recipients are also anonymous to donors. With revocation of the donor's anonymity, it became important for some donors to know the identity of the recipients. Donors' attitudes towards different recipient categories (to whom they want to donate) are influenced by cultural values, and, possibly, by some personality traits. Donors should have the right to direct their gametes to categories accepted as relevant by the moral and religious communities in their society. Different groups of recipients, such as single women, lesbians, etc. are not usually discussed with the donor and consent is universal<sup>23</sup>.

Relative to the questions of potential donation recipients, almost ¾ of participants answered that they would make a donation regardless of acquaintance with recipients. Over half of potential sperm donors consider education of recipients unimportant, but more than 68% would prefer recipients with higher education if forced to make a choice. This suggests that although potential donors from our sample value education *per se*, education and acquaintance with recipients do not seem to be important factors for donor motivation.

Relative to recipients partnership status, more than 70% of participants stated their willingness to make a sperm donation to a married couple, while only 12.9% reported willingness to donate to a lesbian couple (Table 3). As interest for sperm donations for lesbian couples increases<sup>24</sup> many private clinics include this option in their offer in spite of legal regulations prohibiting assisted reproduction for lesbian couples or single women. On the other hand, despite being rather small in percentage individuals willing to donate sperm to a lesbian couple exist. This corresponds to the results reported by Thorn et al.<sup>7</sup> on a German sample.

In one Danish clinic, approximately 50% of sperm donors would accept sperm donation to lesbians in both surveys (in 1992 and 2002). In 2002, approximately one third was positive towards donation to single women although maintaining anonymity is still important for the vast majority of donors<sup>23</sup>. In Germany health care coverage of fertility therapies applies only to married heterosexual couples who are legal residents of Germany. The fertility clinic (in which the study was conducted) provided fertility therapies to unmarried heterosexual couples viewed as life partners, who paid out-of-pocket, but restricted access to other prospective clients, such as lesbian couples and singles<sup>2</sup>. Over half sperm donors in Germany are willing to donate for other than het-

erosexual and married couples, thus risking legal responsibility. If sperm donation is used in situations of no legal father (lesbian couple or single women) sperm donors have legal responsibility in Germany. Although, legally, sperm recipients in Germany can only be heterosexual couples, treating women's infertility is not forbidden for single women or homosexual women. In Germany, sperm donors are anonymous and so are the recipients<sup>7</sup>.

#### *Anonymity*

Legal sperm donor privacy protection regulations vary from country to country. In some countries, anonymity of the sperm donor is mandatory (Denmark, Israel), in others, anonymous donation is illegal (including Sweden, Norway, the Netherlands, Britain, Switzerland and Australia, or Italy, where it is illegal to use donor sperm). Sperm Cryobank in Denmark cannot export sperm to countries in which anonymous donation is illegal. In Canada law guarantees donor anonymity<sup>8</sup>.

In our sample the majority of potential donors reported willingness to inform their partner (63.6%), family (50%), and closest friends (64.5%) but only a small part reported willingness to inform their closest relatives. Lalos et al.<sup>9</sup> report that female partner of sperm donors had important role in a decision to be a sperm donor.

Most of sperm donors from Umea and Karolinska (Sweden) 90%, inform their partner about being a sperm donor<sup>21</sup>, 33% inform their birth families<sup>11</sup>, 27% inform their friends<sup>8</sup>. The younger, new-recruits appeared to be much more open with their existing networks about becoming semen providers, the most obvious discrepancy being that half of Umea semen providers had told members of their birth families but only 14% of the Karolinska semen providers had done likewise<sup>16</sup>. Although percentages in these studies differ, they all suggest that the fact that one is a sperm donor is generally regarded as a private matter, but not a thing of secret, and one of enough importance to be communicated to the closest social network members.

In 1995, in one of the first surveys on semen donor attitudes<sup>25</sup>, 89% of potential donors required confidentiality and guaranteed anonymity. Reproductive politics all around the world had changed since 1997<sup>26</sup> but maintaining anonymity is still important for the vast majority of donors in Denmark.<sup>25</sup> Changes in anonymity influenced changes in the profile of sperm donors<sup>6, 7, 21</sup>.

After 2005, when nonanonymous donors were legalised in Britain, they experienced a sharp decline in the number sperm donors, which was partly due to the fact that most of the donors were students, to whom anonymity of the donation was very important<sup>6</sup>. Regulations now are more liberal than before<sup>27</sup>. Identifiable sperm donors are driven by altruistic motives, but shortage of sperm donors leads to reproductive travelling especially from Sweden to Denmark<sup>20</sup>.

#### *Relations with offspring*

A number of previous studies have reported that most sperm donors are interested in knowing the outcome of their donation<sup>17, 19, 28</sup>. A detailed analysis of the profiles of men

who register to donate sperm through the Australian Sperm Donor Registry reveals that most donors are open to identity disclosure. However a marked difference is evident between heterosexual and gay/bisexual donors with the latter being significantly more likely to desire contact with children born of their donations<sup>29</sup>. In our sample, 57.5% of participants have reported interest in the outcome of their donation and 26.4% reported a neutral opinion. On the other hand, 63.7% would like to stay anonymous after knowing the outcome, and only 8% explicitly wish not to stay anonymous after knowing the outcome. In the sample of Daniels et al.<sup>18</sup> a similar percentage of participants reported that anonymity was one of crucial factors in considering whether to become a donor. Mahlstedt and Probasco<sup>30</sup> report that 90% of their donors are willing to complete lengthy application forms providing medical and psychosocial information. Ninety-six percent are willing to share this information in a nonidentifying manner with recipient families. Thirty-six percent say that they will be donors if anonymity cannot be guaranteed, and 60% indicate that they will meet or provide identifying information to the child at the age of 18. Seventy-two percent left personal messages to their potential offspring. All these data point to the conclusion that donors generally prefer data that could personally identify them be withheld, but generally do not object to sharing data that could not be used for personal identification.

Relative to paternal disclosure and relations with offspring, 32.7% of participants in our sample stated that they would like to meet future offspring born as a result of their donation, 19.7% that they did not want, and 47.7% were undecided or stated that they did not consider such an option. On the other hand, 70.2% of potential sperm donors in Serbia declare that they would be ready to meet future offspring at the request of the child when it reaches adulthood, and only 9.2% declare that they would not be ready. Comparatively, in a 1997 study<sup>18</sup>, sperm donors from the UK reported a lower level of readiness to share personal information and meet future offspring. In 1994, most donors did not seem to feel any close relationship to donor offspring and at least 60% found anonymity to be essential for their further functioning as donors, while 20% of donors are willing to continue donation if the present rules of anonymity are revoked<sup>31</sup>. In a survey from 2006 in Germany, 43% of sperm donors were willing to meet offspring, 22% uncertain and 35% opposed<sup>7</sup>. This could point to certain variability in attitudes across countries, but could also be explained by the fact that the assisted reproduction through the use of sperm donations is still a relatively novel thing in Serbia, hence the large number of undecided participants.

#### *Paternal disclosure and its importance*

About 41.1% of potential sperm donors in Serbia think that parents who got child by sperm donation should have to explain to the child the way it was conceived, 29.2% are against and 29.6% are undecided. Our results are similar to the results of a survey in Germany<sup>7</sup>, according to which 37% of donors suggested that parents should disclose the nature of conception to their child, 34% were uncertain and 29% op-

posed, although many surveys confirm that couples, receiving sperm donation still do not think of a donor as a person<sup>32-34</sup>. Jadva et al.<sup>35</sup> report that offspring of single mothers and lesbian couples learn of their donor origins earlier than offspring of heterosexual couples and that age of disclosure is important in determining donor offspring's feelings about their donor conception.

Our results are also in line with the results reporting that almost one-half (48.9%) of potential donors from Western Australia agree that children born as a result of sperm donation should be informed about the manner of their conception, with 42.2% expressing neutral feelings about the issue<sup>36</sup>. When responses in this study are compared based on demographic features, 61.5% (8/13) of students and 88.9% (8/9) of professionals agree that a child born from sperm donation should be informed about the manner of conception, compared with 14.3% (1/7) of men in the trades and labour industry and 31.3% (5/16) of men in other occupations.

#### *Relations with personality traits*

Given the fact that, in spite of considerable individual differences, results of studies in various countries show pronounced similarities, we consider that there are some deeper psychological factors which could account for differences in sperm donation related attitudes. In this study we considered basic personality traits as operationalized by the Big Five model and the BFI. Having reviewed the available literature we found no data about personality traits of sperm donors/potential sperm donors or data about relations between the Big Five personality traits of the donors/potential donors and various sperm donation related attitudes. Although some authors speak about altruistically recruited sperm donors<sup>8, 18-20</sup> meaning that their main motivation to become sperm donors is to help others and that financial compensation is not important, none report specific psychological profiles of sperm donors.

In our study, several sperm donation related attitudes were found to be related to personality traits. All the obtained relations were weak, but were all in line with theoretical content of personality traits in question, i.e. in places where they could be expected.

Relative to the willingness to inform people around him about the donation, people who are more open to experience are more ready to inform their closest relatives, while people who are prepared to inform their family tend to be somewhat more agreeable than those who are not.

Relative to recipients of donation, participants with higher degree of neuroticism tend to prefer not to be acquainted with recipients of the donation. Also participants who would donate to a married couple tend to be somewhat more agreeable, than those who would not, while those who would donate to a heterosexual couple regardless of marital status tend to be more open to experience.

#### **Conclusion**

Our results show that the most important reported motive for making a sperm donation in our sample is a wish to help a childless couple, while financial compensation turned out to be a relatively unimportant source of motivation. The majority of potential donors reported willingness to make a donation to married and heterosexual couples, but in a much lesser percentage to a lesbian couple or a single woman. Certain but not all aspects of anonymity were considered important when considering donorship, as was the case with relationship with offspring conceived through sperm donation. The results are in line with results of certain previous studies in other countries, but they point to certain variability in sperm donation related attitudes across countries. Weak relations between personality traits and some aspects of sperm donation related attitudes were obtained, which were concordant with theoretical content of personality dimensions involved.

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