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ARTICLE



Psychosocial counselling in donor sperm treatment: unmet needs and mental health among heterosexual, lesbian and single women



BIOGRAPHY

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KEY MESSAGE

More than half of the women who opt for donor sperm treatment have unmet needs after psychosocial counselling, which is negatively associated with their mental health. To improve counselling in donor sperm treatment and reduce unmet needs, it is recommended that evidence-based guidelines for psychosocial counselling in donor sperm treatment are developed.

ABSTRACT

Research question: What are the unmet needs after psychosocial counselling and mental health of women who opt for donor sperm treatment (DST), and are unmet counselling needs related to their mental health?

Design: This quantitative study included women in a heterosexual relationship ($n = 19$), women in a lesbian relationship ($n = 25$) and single women ($n = 51$) who opted for DST. Women were included if they had passed the DST intake procedure at a Dutch fertility clinic, were not pregnant and had no previous donor-child. Unmet needs were measured by a self-developed questionnaire based on specific topics identified in a previous qualitative study with added items from experts in the field of DST. The Adult Self Report was used to measure mental health. Relationships between unmet counselling needs and mental health were explored by multiple regression analyses.

Results: Fifty-two women (55%) reported unmet counselling needs. Women in heterosexual relationships mostly had unmet counselling needs on the topics of the decision to opt for DST ($n = 11$, 58%) and non-genetic parenthood ($n = 11$, 58%); women in lesbian relationships ($n = 10$, 40%) and single women ($n = 14$, 27%) mostly had unmet needs on the topic of choosing a sperm donor. In general, women had good mental health, but 13 (14%) met the criteria for clinical mental health problems. Women with more unmet counselling needs also had more mental health problems.

Conclusions: Evidence-based guidelines for psychosocial counselling in DST should be developed. Only then can counselling be improved and be fit for purpose.

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KEYWORDS

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Mental health
Psychosocial counselling
Unmet needs

INTRODUCTION

Intended parents – men and women in heterosexual relationships, women in lesbian relationships and single women – who opt for donor sperm treatment (DST) are faced with several psychosocial implications of donor conception, such as bonding between the non-genetic parent and the child, disclosure of donor-conception to the child and people around them, future contact between the child and the donor, and even stigmatization (Bos and van Balen, 2010; Cousineau and Domar, 2007; Gartrell et al., 1999; Golombok et al., 2005; Jadva et al., 2009; Murray and Golombok, 2005; Papadatou et al., 2016; Visser et al., 2016). In view of these implications, institutions in the field of reproductive medicine have developed guidelines emphasizing the importance of pre-treatment psychosocial counselling (ANZICA, 2018; ASRM, 2013; HFEA, 2019). The aim of pre-treatment psychosocial counselling is to explore any thoughts and feelings in intended parents regarding donor conception and to discuss a variety of issues that may affect these parents-to-be and their future offspring (BICA, 2019). Although these guidelines are a way forward in offering formal support, needs assessment on the topics that intended parents wish to discuss in psychosocial counselling are conspicuous by their absence.

A recently conducted qualitative study showed that intended parents identified seven topics that they found relevant to discuss with the counsellor (Schrijvers et al., 2019). These topics were the decision to opt for DST, choosing a sperm donor, coping with questions from family and friends, non-genetic parenthood, single motherhood, openness and disclosure, and future contact between the child and the donor and half-siblings. Men and women in heterosexual relationships, women in lesbian relationships and single women had partly the same, but also partly different, needs for psychosocial counselling. Although some intended parents felt satisfied about their consultation with the counsellor and the topics they had discussed, others had missed talking about certain topics, or the information they had received on a particular topic was not in line with their needs (Schrijvers et al., 2019). This indicates the presence of unmet counselling needs in intended parents.

The presence of unmet needs after psychosocial counselling is worrisome as unmet needs are known to be related to lower mental health among infertile couples (High and Steuber, 2014). As far as the current authors are aware, mental health in the population of intended parents who opt for DST has never been assessed, nor has the impact of unmet counselling needs on the mental health of intended parents. Therefore, this study aimed to describe the unmet needs after psychosocial counselling and mental health of intended parents who opt for DST and to explore the relationship between intended parents' unmet counselling needs and mental health. To offer tailored counselling to intended parents in heterosexual relationships, lesbian relationships and single women, the study also assessed whether the relationship between unmet counselling needs and mental health would be different for intended parents of the three family types.

MATERIALS AND METHODS

Ethical approval

The Medical Ethics Committee of the Amsterdam UMC evaluated the study protocol and affirmed that the participants in this study would not be subjected to any risks, and that all procedures corresponded with the ethical standards of the Helsinki Declaration of 2013 (2015_102#B2015627, 08-09-2015). The study is registered with the Dutch Trial Register, code number NTR5340.

Psychosocial counselling practices in the Netherlands

The counsellors in Dutch fertility clinics offering DST have various backgrounds: some are social workers and others are psychologists (Visser et al., 2019). They base their counselling on their clinical experience and on the policy of the clinic as they have no specific training or education in DST counselling. Most counsellors combine screening and counselling for intended parents in one session. The main focus of counselling is to support intended parents who feel uncertain about DST, to assist in the choice between a donor from the sperm bank or a known donor, to reflect on the implications of disclosure, to reflect on future contact between the child and the donor and to advise on how to deal with DST in relation to significant others (Visser et al., 2019).

Recruitment

The recruitment of intended parents for this particular study was part of a broader research project on psychosocial counselling in DST practices and is described in a previously published study (Schrijvers et al., 2019). For the broader research project, men and women in heterosexual relationships, women in lesbian relationships and single women who opted for DST for their first donor-child were recruited. Recruitment was between October 2015 and June 2017, and via three Dutch fertility clinics and via four network organizations. 'Freya', an association for men and women with fertility problems, posted an announcement on their Twitter account; 'Stichting Meer dan Gewenst', an organization for homosexual and lesbian (intended) parents, distributed postcards introducing the study to the visitors of their monthly meetings; and 'Alleen met Kinderwens' and 'BAM-MAM Nederland', two network organizations for single women who want to share thoughts and experiences about donor conception with other single women, posted a message on their websites and in their newsletters with an announcement asking for participation in the study. Intended parents who were recruited and who had a partner were asked whether their partner was also willing to participate (snowball sampling). All men and women who were willing to participate received a patient information letter, an informed consent form and a digital link to the online questionnaire.

For this particular study, intended parents were only included if they met the following inclusion criteria: they had opted for DST at a Dutch fertility clinic, passed the intake procedure – including that with the doctor and the counsellor – at the fertility clinic, were not yet pregnant and did not have a previous donor-child. Intended parents who already had a child through natural conception in a previous relationship were allowed to participate.

Data collection

Unmet needs after psychosocial counselling

First, 35 items were derived from a qualitative study on intended parents' needs for psychosocial counselling (Schrijvers et al., 2019). In that study, all overlapping needs for counselling that belonged to one subject were taken

together in a topic. These topics with the separate items were presented to two gynaecologists, one psychologist and four counsellors working in the field of donor conception to establish whether the items were well formulated and whether they agreed that the items belonged to one of the identified topics. Based on their judgement, one new topic was added, with four items that were associated with practical aspects of DST, such as 'I want to know if this is the right time in life to start donor sperm treatment.' In total, there were eight topics with 39 items: the decision to opt for DST, choosing a sperm donor, practical aspects of treatment, coping with questions from family and friends, non-genetic parenthood, single motherhood, openness and disclosure, and future contact between the child and the donor and half-siblings. All pertinent items and the related topics are displayed in the Supplementary Table.

Second, the following procedure was used to assess intended parents' unmet needs after psychosocial counselling on all 39 items. Intended parents were asked to indicate – per item – if they needed support on the item, if they perceived this as stressful – not stressful, stressful or very stressful – if they wished to receive counselling from a professional, if counselling had been offered on this item and, if it had been offered, if it met their needs. The item was regarded as an 'unmet counselling need' if intended parents perceived it as stressful or very stressful that this particular item had not been addressed in counselling or if the counselling on that particular item had not met their needs. If intended parents had an unmet counselling need related to one or more of the items belonging to a topic, this was considered as an unmet need on the topic. Finally, 'total unmet needs' were measured by taking the sum of the topics on which intended parents had an unmet need, so scores could range from 0 to 8: 0 if intended parents had unmet needs after psychosocial counselling on zero topics, and 8 if intended parents had unmet needs after psychosocial counselling on eight topics. The internal consistency of the topics was assessed by measuring Cronbach's alpha for every family type. The internal consistency of the eight topics was rated as low (0.69 or lower), sufficient (0.70–0.79) or high (0.80 or higher) (Supplementary Table).

Mental health

Mental health was measured using the Dutch translation of the 'internalizing problems' (39 items) and 'externalizing problems' (35 items) scales from the Adult Self Report, a validated questionnaire for the assessment of behavioural and emotional problems (Achenbach and Rescorla, 2003). Participants were asked to indicate how applicable each statement had been for them during the previous 6 months, rated on a 3-point Likert scale as 0 'not true', 1 'sometimes true' and 2 'often true'. The sum of the items yielded an internalizing problem score and an externalizing problems score. These raw scores were transformed into *T*-scores. *T*-scores below 60 suggested 'normal mental health', *T*-scores between 60 and 63 suggested 'borderline clinical problems', and *T*-scores higher than 63 suggested 'clinical problems'. A low score on the scales indicated good mental health, and a high score indicated mental health problems (Achenbach and Rescorla, 2003). In this study, *T*-scores of 60 and higher represent clinical mental health problems. For each of the three family types, the internal consistency of the two scales was assessed by measuring Cronbach's alpha. Internal consistency of the internalizing problem scale for women in a heterosexual relationship, women in a lesbian relationship and single women was high: 0.84, 0.86 and 0.89, respectively. Internal consistency of the externalizing problem scale for the three groups was sufficient to high: 0.83 for women in a heterosexual relationship, 0.58 for women in a lesbian relationship and 0.80 for single women.

Data analysis

First, descriptive statistics were used to document the intended parents' age and education level, unmet needs and mental health, i.e. internalizing and externalizing problems. Second, as age and education level are known confounders among infertile patients with regard to mental health, it was explored whether the effect of unmet counselling needs on mental health could not be attributed to these sociodemographic characteristics (Biringer et al., 2015). For these analyses, linear regression analyses were conducted with internalizing problems and externalizing problems as the outcome variables and the above-mentioned sociodemographic characteristics as predictors. Third, linear multiple regression analysis were

conducted to assess the relationship between unmet needs after psychosocial counselling as independent variable and internalizing problems as outcome variable. If intended parents differed in age and education level between the three family types, or if age and education level were significantly related to mental health, the sociodemographic variables were included as covariates in the analysis. Family type was included – as a dummy variable with the largest group as the reference group – as was the interaction between unmet needs and family type as dummies. In the case that one of the interactions was significant, simple slope analyses would be used to interpret the interactions. The same multiple regression analysis were performed with externalizing problems as the outcome variable. Finally, post hoc power analyses were conducted to determine the power for these multiple regression analyses, using G*Power software (version 3.0) (Faul et al., 2007). All other analyses were performed with the Statistical Package for the Social Sciences version 24 for Windows (SPSS; IBM corporation, USA). *P*-values less than 0.05 were considered statistically significant.

RESULTS

Inclusion and characteristics

The inclusion of intended parents is summarized in **FIGURE 1**. In total, 302 intended parents were eligible for inclusion in the broader research project. Seventy-three intended parents did not participate in the broader project as they had no time or did not respond to reminders. In total 229 intended parents filled in the questionnaire, but 117 were excluded as they did not meet the inclusion criteria for this particular study or did not complete the questionnaire. As only nine men completed the questionnaire, they were excluded from this study because this sample was too small to conduct further analysis. In line with this, the eight partners of the lesbian women who planned to be the biological mother of their first donor-child were also excluded. Eventually, 95 women who opted for DST were available for analysis.

All women filled in the questionnaire between April 2016 and April 2017 and had had their first visit to the clinic between January 2006 and October 2015. All women in a heterosexual relationship were recruited through

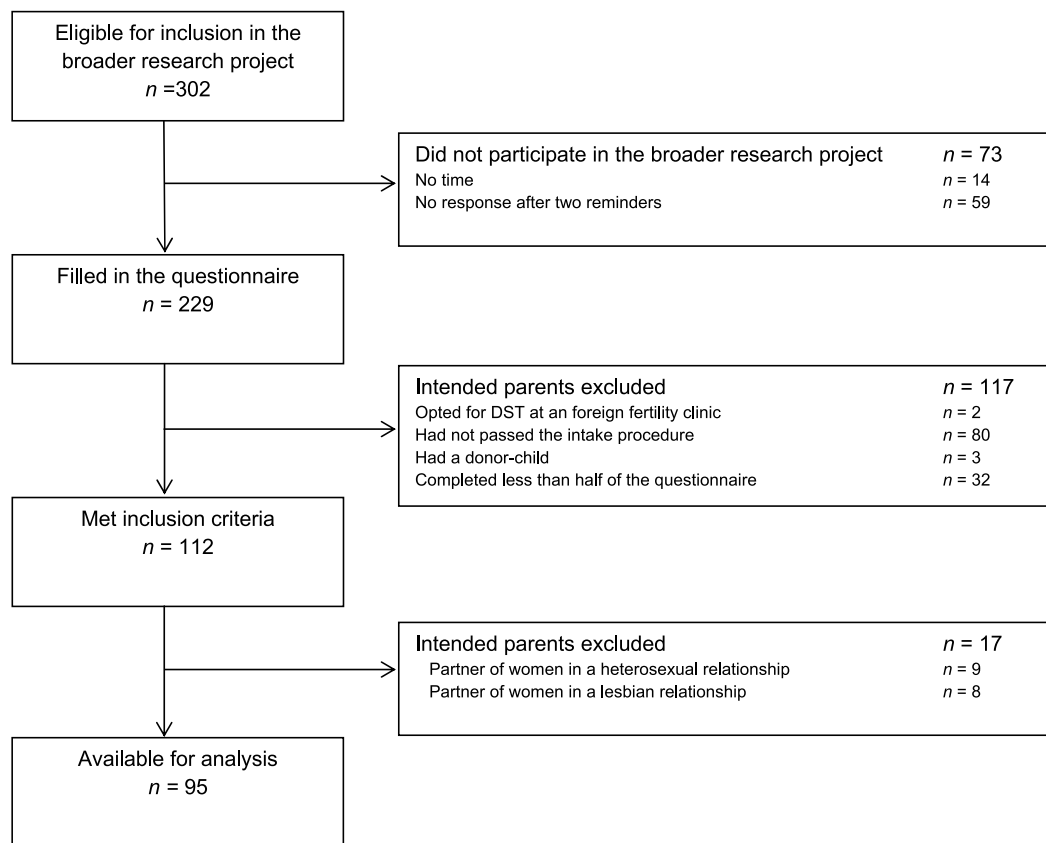


FIGURE 1 Inclusion of intended parents

the fertility clinics. This also held for most women in a lesbian relationship and single women – 92% and 78%, respectively. The characteristics of the participants are summarized in **TABLE 1**. Nineteen women were in a heterosexual relationship, 25 were in a lesbian relationship and 51 were single. Their average age was 33.4 years (SD = 4.18). Single women were significantly older than women in a lesbian relationship and women in a heterosexual relationship ($P < 0.001$). Most women were highly educated and there were no differences between the three family types. Three

women had had a child within a previous relationship but they had never previously gone through a fertility clinic or had psychosocial counselling.

Unmet needs after psychosocial counselling

An overview of unmet needs after counselling is presented in **TABLE 2**.

Mental health

On average, women in a heterosexual relationship, women in a lesbian relationship and single women had low levels of internalizing problems: 55.5

(SD = 7.13), 43.4 (SD = 8.37) and 47.2 (SD = 9.98), respectively. However, 11 women (12%) had clinical levels of internalizing problems. Of these, six women were in a heterosexual relationship, one was in a lesbian relationship and four were single. There were no significant relationships between age and level of internalizing problems ($\beta = -0.001$, $p = 0.996$) or between education level and internalizing problems ($\beta = -0.025$, $P = 0.809$).

On average, women in a heterosexual relationship, women in a lesbian

TABLE 1 PARTICIPANTS' CHARACTERISTICS

Characteristic	Women in a heterosexual relationship (n = 19, 20%)	Women in a lesbian relationship (n = 25, 26%)	Single women (n = 51, 54%)
Age (years), mean (SD) ^a	31.3 (3.72)	31.0 (4.44)	35.4 (3.11)
Education, n ^b			
Senior secondary vocational education	2	7	12
Higher vocational education or university education	17	18	39
Children, n			
None	19	23	50
With ex-partner	0	2	1

^a $F = 16.496$, $P < 0.001$.

^b Chi-squared = 2.044, $P = 0.360$.

TABLE 2 UNMET NEEDS AFTER PSYCHOSOCIAL COUNSELLING

	Women in a heterosexual relationship (n = 19)		Women in a lesbian relationship (n = 25)		Single women (n = 51)	
Unmet needs on						
Zero topics, n, %	3	16	12	48	28	55
One topic, n, %	3	16	2	8	6	12
Two topics, n, %	5	26	2	8	7	14
Three topics, n, %	1	5	2	8	2	4
Four topics, n, %	1	5	2	8	7	14
Five topics, n, %	2	11	3	12	0	0
Six topics, n, %	3	16	2	8	1	2
Seven topics, n, %	1	5	0	0	0	0
Mean (SD)	2.9 (2.31)		1.9 (2.22)		1.18 (1.61)	
Topic						
Decision to opt for donor sperm treatment, n, %	11	58	6	24	10	20
Choosing a sperm donor, n, %	9	47	10	40	14	27
Practical aspects of treatment, n, %	5	26	7	28	7	14
Coping with questions from family and friends, n, %	6	32	2	8	3	6
Non-genetic parenthood, n, %	11	58	8	32		
Single motherhood, n, %					7	14
Openness and disclosure, n, %	7	37	6	24	10	20
Future contact between the child and donor and half-siblings, n, %	6	32	8	32	9	18

relationship and single women had low mean levels of externalizing problems: 48.5 (SD = 7.12), 41.4 (SD = 7.19) and 43.5 (SD = 8.94), respectively. Three women (3.2%) had clinical levels of externalizing problems. Two of these were single women and one was a woman in a heterosexual relationship who also had clinical internalizing problems. There were no significant relationships between sociodemographic factors and levels of externalizing problems, age ($\beta = 0.044$, $P = 0.672$) or education ($\beta = -0.062$, $P = 0.548$).

Relationship between unmet needs after psychosocial counselling and mental health

Unmet needs after psychosocial counselling were associated with higher levels of internalizing problems ($P = 0.004$) (TABLE 3). Women in a heterosexual relationship had more internalizing problems ($\beta = 0.268$, $P = 0.019$) than single women, and women in a lesbian relationship had fewer internalizing problems ($\beta = -0.236$, $P = 0.031$) than single women. The relationship between unmet needs after psychosocial counselling and internalizing problems did not differ between the family type. Post hoc power analysis confirmed that the power to detect a significant relationship was high, at 0.99.

Unmet needs after psychosocial counselling were associated with higher levels of externalizing problems ($P < 0.001$). There was no relationship between family type and externalizing problems. The relationship between unmet needs after psychosocial counselling and externalizing problems did not differ between the family types. Post hoc power analysis confirmed that the power to detect a significant relationship was high, at 0.99.

DISCUSSION

Fifty-five percent of all women who opted for DST had unmet needs after psychosocial counselling; these were mostly on the topics of the decision to opt for DST, choosing a sperm donor and non-genetic parenthood. Most women had relatively good mental health, but 14% met the criteria for clinical mental health problems. If women had more unmet needs after psychosocial counselling, they also had more internalizing and externalizing mental health problems, but this did not differ between the family types.

This study has several strengths. First, women in heterosexual relationships, women in lesbian relationships and

single women were included, which allowed insight to be gained into the specific unmet needs of women of different family types. Second, because no validated instrument was available, a questionnaire was developed with self-constructed items to measure women's unmet needs after psychosocial counselling based on a previous published qualitative study and on items added by experts in the field of DST (Schrijvers et al., 2019).

Several limitations also need to be acknowledged. First, recruitment through network organizations might cause bias as women who seek support via network organizations might have other needs for psychosocial counselling than those who do not. Nevertheless, it is assumed that the risk of bias is limited because all women met the inclusion criteria of this study: they had passed the intake procedure in a Dutch fertility clinic, were not yet pregnant and did not have a previous donor-child.

Second, there was variability in the time when women completed the questionnaires and when they were counselled. Some women had counselling several months before participating in the study, while others had counselling

TABLE 3 UNMET NEEDS AFTER PSYCHOSOCIAL COUNSELLING AND MENTAL HEALTH

	Internalizing problems				Externalizing problems			
	B	SE	β	P ^a	B	SE	β	P ^a
Unmet needs for psychosocial counselling	0.455	0.152	0.467	0.004	0.531	0.160	0.544	0.001
Age of intended parent	0.001	0.025	0.003	0.976	0.013	0.027	0.056	0.618
Family type_hetero ^b	0.666	0.278	0.268	0.019	0.318	0.291	0.128	0.279
Family type_lesbian ^b	-0.534	0.243	-0.236	0.031	-0.331	0.255	-0.147	0.198
Family type_hetero*unmet needs ^b	-0.325	0.235	-0.188	0.170	-0.194	0.246	-0.112	0.432
Family type_lesbian*unmet needs ^b	-0.052	0.220	-0.030	0.812	-0.282	0.231	-0.161	0.225
R ²	0.307				0.238			
F	6.507				4.588			
P	<0.001				<0.001			

^a Post hoc power analyses (all based on alpha error = 0.05): internalizing problems = $1 - \beta$, error probability = 0.99, $f = 0.44$, $n = 95$; externalizing problems = $1 - \beta$ error probability = 0.99, $F = 0.31$, $n = 95$.

^b Dummy variables with single women as the reference category. $P < 0.05$ was considered statistically significant. B, standardized B; F, change in F.

several years before participating. This could cause bias as women's needs for psychosocial counselling may change throughout several stages of fertility treatment and parenthood. Ideally, the time lag between psychosocial counselling and completion of the questionnaire would be the same for each woman.

Third, as this was a cross-sectional study, it is impossible to determine whether the mental health problems were the result of unmet needs after psychosocial counselling or whether mental health problems resulted in unmet needs. Only a longitudinal follow-up study with intended parents measuring their unmet needs and mental health at baseline, i.e. their first visit to a fertility clinic, until the moment they ended fertility treatment, whether or not pregnant by DST, would be able to determine a cause and effect relationship.

Fourth, the relationship between unmet counselling needs and mental health can be confounded by other factors that are related to the parents' mental health, such as social support or social stress, which could not be adjusted for (Shechner et al., 2010; Shehab et al., 2008). Fifth, no a priori statistical power analysis was conducted to determine the number of participants needed to prevent the occurrence of type II errors. Although the study cohort may seem limited, a post hoc power analysis showed that there was enough power in the sample to detect significant relationships.

In light of the generalizability of the findings, one caveat is that, in the

Netherlands, donor-conceived offspring can obtain non-identifiable information about the donor from the age of 12 years and identifiable information from the age of 16. Caution is thus needed when generalizing these results to countries where DST is offered with anonymous donors as the counselling needs of women in these countries may differ. In addition, it is also plausible that men and women who are not going to be the biological parents of the child – i.e. the social father and social mother-to-be – might have other counselling needs and might thus have other unmet needs after psychosocial counselling.

The finding that more than half of the women had unmet needs after psychosocial counselling is not altogether surprising because of the large practice variation and the lack of evidence-based guidelines on DST counselling (Visser et al., 2019). The fact that most women in a heterosexual relationship perceived the topics of the decision to opt for DST and non-genetic parenthood as a source of distress confirms that non-genetic parenthood is one of the major challenges for heterosexual couples who opt for DST, and that couples have to alter their initial view on what constitutes a family (Grace et al., 2008; Hargreaves, 2006). Women prefer the donor to be matched on the characteristics of the non-genetic parent as this affirms the connectedness between the non-genetic parent and the child so that the parent-child relationship is not called into question (Grace et al., 2008; Indekeu et al., 2014). This emphasizes the feeling that they 'belong together' (Indekeu

et al., 2014). Similar concerns have been expressed by women in lesbian relationships. Information about the physical characteristics enables these women to imagine what their future child might look like and how the child would relate to the non-genetic mother (Lingiardi et al., 2016). The topic of choosing a sperm donor, considered as an unmet counselling need by most women in lesbian relationships and single women, is indicative of the importance they attach to information on the donor's characteristics before they start with DST, but which is not given by Dutch fertility clinics (Hayman et al., 2015; Zadeh et al., 2016).

Women had generally good levels of mental health, but 14% – most of them in a heterosexual relationship – had mental health problems in the clinical range. In light of the finding that women with more unmet counselling needs had more mental health problems, it may be surmised that women with clinical mental health problems also had high levels of unmet counselling needs. This relationship has previously been found among other populations – such as women with a BRCA mutation – but is new in the context of donor conception (Farrelly et al., 2013). The clinical implication of clinical mental health problems in women who opt for DST is that counsellors need to be aware of the negative relationship between unmet counselling needs and mental health, and of the limits of their own competence, and that they need to know when to refer intended parents to a mental health therapist (Blyth, 2012). To

do this, counsellors must be informed about the counselling needs of women who opt for DST and the implications of unmet needs for women's mental health. Although the European Society of Human Reproduction and Embryology (ESHRE) guideline on 'Routine psychosocial care in infertility and medically assisted reproduction' provides evidence on how to offer psychosocial care to men and women going through infertility treatment, ESHRE does not offer specific recommendations on how to shape DST counselling (Gameiro *et al.*, 2015). This study provides input for the development of such an evidence-based guideline for DST counselling.

In summary, more than half of the women who opt for DST have unmet needs after psychosocial counselling. The authors thus recommend counsellors in the field of gamete donation to be aware of clinical mental health problems in these women and to refer them to mental health care when needed. Evidence-based guidelines for DST counselling should be developed by taking into account intended parents' needs for psychosocial counselling on the eight topics addressed in this study, with special attention to the decision to opt for DST and non-genetic parenthood in counselling women in heterosexual relationships, as well as to choosing a sperm donor in counselling women in lesbian relationships and single women. By doing this, clinicians will move a step closer to evidence-based practices in DST counselling.

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SUPPLEMENTARY MATERIALS

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