Parenthood motives, well-being and disclosure among men from couples ready to start treatment with intrauterine insemination using their own sperm or donor sperm


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BACKGROUND: As pregnancy and childbirth have long been considered women’s issues and male infertility has long been surrounded by taboo, limited research has focused on the experience of infertile men. The purpose of this study was to compare male motives for parenthood, male well-being and disclosure patterns concerning the method of conception among men from couples starting treatment with IUI using their own sperm (autologous sperm recipient, ASR) or donor sperm (donor sperm recipient, DSR).

METHODS: This prospective study included 46 DSR- and 151 ASR-couples. Self-report questionnaires assessing parenthood motives, well-being and disclosure patterns concerning the method of conception were administered to both men and women prior to treatment. Unpaired T-tests and Fisher’s exact tests were used to test for significant differences.

RESULTS: When compared with ASR-men, DSR-men expect more positive effects from parenthood on relationships and feelings of fulfillment, and report less negative effects of infertility on sexuality, but a lower self-image and more guilt. DSR-men plan to disclose the method of conception less frequently and have so far disclosed to a lesser degree than ASR-men.

CONCLUSIONS: DSR-men feel differently about parenthood and infertility compared with ASR-men, and their higher expectations combined with lower self-esteem need (more) attention during counselling.

Key words: donor insemination / artificial insemination / parenthood / well-being / disclosure

Introduction

Male perspectives of infertility have been neglected and men are underrepresented in most research examining the psychosocial consequences of infertility (Glover et al., 1998; Petok, 2006; Cousineau and Domar, 2007; Malik and Coulson, 2008; Furma, et al., 2010; Dancet et al., 2010). Even if medically assisted reproduction in general, is now widely accepted, donor sperm recipient (DSR) treatment remains surrounded by secrecy and taboo. Although attitudes towards secrecy surrounding gamete donation may have changed with a tendency towards more openness and disclosure, and changes in legislation (Daniels, 2007), research on psychosocial aspects of DSR is relatively scarce and sample sizes are small (Thorn, 2006). Only incidentally, DSR-couples have been investigated prior to the start of a fertility treatment with respect to their parenthood motives, psychosocial well-being and intentions regarding
disclosure (e.g. Klock et al., 1994; Langridge et al., 2000; Rosholm et al., 2010). Male partners of DSR-couples have never been examined as a separate group.

In one study by Langridge et al. (2000), core parenthood motives groups such as the need to ‘give love’, ‘receive love’ and ‘become a family’ were comparable among couples presenting for DSR, with couples presenting for IVF and fertile couples expecting their first child, but a higher number of motives were observed in the DSR group than in the other two groups. Psychosocial aspects such as well-being and quality of marital relationship of DSR couples’ prior to the start of treatment have been scarcely investigated with variable research methodology but were found to be normal (Clayton and Kovacs, 1980; Cook et al., 1989; Klock et al., 1994) or reduced (Humphrey and Humphrey, 1987). Intentions for disclosure to the child and/or actual disclosure to others regarding conception mode and biological origin have been investigated in DSR-couples prior to the start of a fertility treatment in only two studies (Klock et al., 1994; Rosholm et al., 2010), reporting that the use of donor gametes was a significant determinant of non-disclosure when compared with the use of autologous gametes.

The few available studies on psychosocial well-being and parenting in DSR couples, compare DSR families with families with naturally conceived children, children conceived by IVF and/or families with an adopted child (e.g. Cook et al., 1989; Golombok et al., 1996; Nachrigall et al., 1997; Langridge et al., 2000, 2004; Rosholm et al., 2010). However, the mode of conception (naturally or by assisted reproduction) and the type of assisted reproduction procedures [sperm insemination or assisted reproductive technology (ART)] (Zegers-Hochschild et al., 2009) in these groups differ largely. It is important to study groups that are similar with respect to mode of conception (assisted reproduction) and treatment procedures (intrauterine sperm insemination). Therefore, our study was designed to test the hypothesis that men from couples planning to start DSR treatment are different compared with men from couples planning to start artificial insemination with own semen (autologous sperm recipient, ASR) with respect to their parenthood motives, their relational and personal well-being and their disclosure patterns concerning the mode of conception to their offspring and others.

Materials and Methods

Participants

Participants were recruited at the Leuven University Fertility Centre (LUFC) and the Ghent University Hospital, Department of Reproductive Medicine, both tertiary university-based fertility centres in Belgium. Belgium provides a tax-financed comprehensive health care system with equal, free and easy access to high quality fertility treatment (Belgian Royal Decree, 4th June 2003, B.S. 16.07.2003). Concerning donor-assisted treatment, Belgian law adheres to donor anonymity. Known donation with equal, free and easy access to high quality fertility treatment (Belgian Royal Decree, 4th June 2003, B.S. 16.07.2003). Concerning donor-assisted treatment, Belgian law adheres to donor anonymity. Known donation with the agreement of both donor and recipient is not legally forbidden, but rarely employed (Belgian Act of 6th July 2007, B.S. 17.07.2007). Counseling prior to DSR is mandatory in both fertility centres where recruitment took place. Feelings about social and biological parenthood, and intentions of the couple to disclose or not the mode of conception to the child and others, are talked through but no professional systematic advice favouring disclosing or non-disclosing the mode of conception to the child or others is given during mandatory counselling in either of the centre. Couples in ASR treatment, on the other hand, did not systematically receive counselling (or any advice on the disclosure of the mode of conception to their child).

Recruitment took place between March 2004 and February 2009. Couples were eligible for the study if they were starting a heterologous or homologous artificial insemination treatment and were in a heterosexual relationship. Candidates who had insufficient knowledge of Dutch to fill out the questionnaires were excluded from the study.

Procedure

Patients eligible for the study were approached by the study coordinator or midwife (Leuven University) or counsellor (Ghent University) at intake or at counselling preceding treatment, to participate in the study. If candidates agreed to participate, both men and women were given questionnaires and asked to fill them out at home and return the questionnaires to the study coordinator in a closed and pre-paid envelope. In case questionnaires were not returned, couples were contacted by telephone to ask if they still were interested in participation in the study and, if so, to encourage completion of the questionnaires.

This study was approved by the respective ethical committees of both university hospitals.

Measurements

Parenthood motives

The Parenthood Motivation List (PML) (van Balen and Trimbos-Kemper, 1995, 2008) comprises 18 items reflecting six parenthood motives (three items per motive). Items are scored on a 3-point Likert scale (strong agreement, partial agreement and disagreement). The score for each subscale is calculated as the sum of the individual item scores, a higher score indicating a more intense motivation. The subscales (motives) are happiness, well-being, parenthood, identity, continuity and social control. Happiness indicates the expected feelings of affection and happiness in the relationship with children. Well-being is defined as the expected positive effects of children on the family. Identity reflects the desire to have children as a means of achieving adulthood and identity-strengthening. Parenthood refers to the expectation that parenthood will give life-fulfilment. Continuity reflects the desired affective relation with grown-up children and the wish to live on through one’s children after death. Social control indicates the implicit or explicit pressure from outside the couple to procreate. A factor analysis with the 18 items was performed by the authors of the instrument as a test of its validity (Van Balen and Trimbos-Kemper, 1995). The factor analysis revealed five factors: happiness, continuity, social control, well-being and the categories parenthood and identity appeared to be a single motive. The authors decided to maintain six categories of parenthood motives in their instrument ‘as these had been discerned in previous studies and on theoretical grounds’ (Van Balen and Trimbos-Kemper, 1995, p. 140). In one study with lesbian couples, Cronbach’s alphas, ranging between 0.50 and 0.65, were assessed as sufficient (Bos et al., 2003). After correction for the small number of items per subscale by the Spearman–Brown test extension formula (Van den Bergh and De Rycke, 2003; Peet et al., 1995), Cronbach’s alphas in our study were 0.63, 0.78, 0.69, 0.69, 0.73 and 0.80, respectively.

Next to and apart from parenthood motives, the strength of the desire for a child (Van Balen and Trimbos-Kemper, 1995) was measured through the question ‘How strong is your wish to have a child/another child?’ to be answered on a 6-point Likert scale (1 = ‘I am willing to give absolutely everything for it’; 6 = ‘I do not really care that much’). A lower score refers to a stronger motivation.

The Child Wish Questionnaire (CWQ) (Bruffaerts et al., 2001) was developed to assess motives for wanting (CWQ-PRO; 101 items) and
motives for not wanting children (CWQ-CONTRA; 32 items). Given the aim of the present study, only the CWQ-PRO scale was used. Of the original CWQ-PRO-scale, only the 46 items considered to be appropriate for further use, after principal component analysis by Bruffaerts et al. (2001), were used. Items are rated on a 5-point Likert scale. The total score for each subscale is calculated as the sum of individual item scores, a higher score indicating a more intense motivation. The CWQ-PRO consists of five motives for wanting children: biopsychosocial integration, parenting, second chance, relational growth and rejuvenation. Biopsychosocial integration consists of 18 items referring to bodily conditions of fertility, social pressure and sexuality. Parenting consists of 16 items referring to a dimension of personal meaning of having children. The four items of the subscale second chance refer to a desire to compensate experienced deficits by parents in their own childhood. Relational growth consists of six items referring to the meaning of a child for the partner relationship. The two items of the subscale rejuvenation are related to the ability to keep up with the times when having children. Cronbach’s alpha in the study of Bruffaerts et al. (2001) ranged between 0.71 and 0.88. Cronbach’s alphas in our study population were 0.82, 0.78, 0.69, 0.82 and 0.68, respectively.

**Well-being**

Mental health functioning was measured using a Dutch version of the General Health Questionnaire-12 (GHQ-12) (Goldberg, 1972; Koeter and Ormel, 1991). The GHQ-12 is a screening tool to identify the severity of psychological distress experienced by an individual within the past few weeks. The scale focuses on breaks in normal functioning rather than on lifelong traits. It covers feelings of strain, depression, inability to cope, anxiety-based insomnia, lack of confidence and self-esteem and other symptoms of mental distress. The GHQ-12 consists of 12 items, to be scored on a Likert scale from one to four. A higher score refers to more distress. Answers are bi-modally transcribed. Less complaints or no difference within the past few weeks compared with the usual situation (raw scores 1 or 2) are transformed to 0. Score 1 is given if the person experiencing more complaints than usually (raw scores 3 or 4). The total score is calculated as the sum of individual item scores. Koeter and Ormel (1991) found Cronbach’s alpha to range between 0.86 and 0.97. Cronbach’s alpha in our study was 0.86.

The Relational Interactional Satisfaction Scale (RISS), an eight-item questionnaire developed by Buunk (1990), was employed to assess relational satisfaction. The scale measures the frequency with which the interaction with the partner in an intimate relationship is experienced as rewarding and not as aversive. Possible answers range from 1 = ‘never’ to 5 = ‘very often’. The scale score is calculated as the sum of the individual item scores, with scores from three items being reverse coded. Cronbach’s alpha ranged from 0.83 to 0.88 in various samples (Buunk, 1990). A high score indicates a higher level of satisfaction in the relationship. Cronbach’s alpha in this study was 0.86.

The Infertility Questionnaire (IFQ) (Dutch version by van Balen and Trimbos-Kemper, 1993), consisting of 21 items, was developed by Bernstein et al. (1985). It consists of three subscales that measure the effect of infertility on: (i) self-image (eight items); (ii) sense of guilt and blame (five items) and (iii) sexuality (eight items). Responses were rated on a 5-point Likert scale (1 = fully disagree, 5 = fully agree). Item scores are summed to a total subscale score, with four items on the subscale sexuality and four items on self-image being reverse coded. A high score indicates a less negative effect of infertility on self-image, higher feelings of guilt and a less negative effect of infertility on the experience of sexuality. Cronbach’s alphas found by Bernstein et al. (1985) were 0.83 for self-image, 0.72 for sense of guilt and blame and 0.79 for sexuality. Cronbach’s alphas found for a Dutch population by Van Rooij et al. (2007) were 0.74, 0.62 and 0.71, respectively. Cronbach’s alphas in our study were 0.80, 0.61 and 0.67, respectively.

**Data analysis**

Statistics Package for the Social Sciences (SPSS) version 16.0.2 was used to compute unpaired t-tests to test for significant mean differences between DSR-men and ASR-men, and between DSR-women and ASR-women. Fisher’s exact tests were conducted to test for significant differences in frequencies between the study groups.

**Results**

**Response rate**

There were 46 DSR-couples and 151 ASR-couples who participated in the study. Mostly both the man and woman from the couple participated in the study (41 DSR-couples and 145 ASR-couples). In the ASR-group, six women (3.97%) participated without their partners; in the DSR-group, five (10.87%) of the females participated alone.

Of the ASR-couples, 86% were recruited in LUFC and 14% in the fertility centre in Ghent. Of the DSR-couples, 68% came from LUFC and 31% from the Ghent Fertility Centre. The response rate (RR) is only known for the centre of Leuven, where the researchers were located. Of all couples in a DSR- or ASR-treatment program in Leuven, about three quarters (74.2%) were approached. It was noticed that 25.8% of eligible candidates were not approached. Shortness of available staff, workload and a reluctance to approach some possible candidates concerning this particularly emotive subject may have caused some to be missing. Couples who were already involved in another study were not approached by the staff, although not explicitly put in the exclusion criteria. For the approached couples, the RR was 57.9% in the DSR-group and 39.1% in the ASR-group. Among the non-responding couples, some refused to participate straight away (not wanting to be reminded of the infertility, wanted the treatment to stay secret), while others agreed but did not send the questionnaires back. As some respondents did not answer all questions or did not fill out their age, the number of answering participants varied for each question, but all available data were included in the analyses. For each question, the number of answering participants ranged between 41 and 43 for DSR-men, between 144 and 148 for ASR-men, between 45 and 46 for DSR-women and between 148 and 151 for ASR-women.

Study groups were similar regarding ages of men and women and the number of children per couple (Table I).

**Parenthood motives**

Several motives for parenthood were significantly different between DSR- and ASR-men (Table II). Compared with ASR-men, DSR-men, on average, expected more of parenthood regarding positive effects
on well-being of family relationships (PML; \( P = 0.011 \)) and on their partner relationship (CWQ-PRO; \( P = 0.018 \)), life-fulfilment (PML; \( P < 0.001 \)) and opportunities to compensate experienced deficits by their parents during their own childhood (CWQ-PRO; \( P = 0.007 \)). There were no significant differences between DSR- and ASR-men concerning their motivation by external pressure to procreate (PML), their identity development (PML), their bodily experience of fertility, social pressure and sexuality (CWQ-PRO), the rejuvenating aspects of parenthood (CWQ-PRO), the wish to live on through one’s children (PML), the level of happiness they expect to experience in the attachment to and interaction with their child (PML), their personal meaning towards having children (CWQ-PRO) or their desire for a child (PML).

In the female group, DSR-women had a significantly stronger wish to live on through one’s children after death than ASR-women (PML; \( P = 0.048 \)). No other significant differences in parenthood motives were found between DSR- and ASR-women.

**Well-being**

No significant differences were found between DSR- and ASR-men on relational well-being and experienced distress (Table III). However,
DSR-men reported significantly lower feelings of self-appraisal ($P < 0.001$) and more feelings of guilt ($P < 0.001$) regarding the infertility experience, but experienced significantly less negative effects from infertility on their sexuality ($P = 0.026$) than ASR-men. No significant differences were found between DSR- and ASR-women.

### Disclosure

DSR-men and ASR-men differed significantly in their intention to disclose (or not) the mode of conception to their child ($P \leq 0.001$) (Table IV). Whereas the proportion of men intending to disclose was similar in both groups (DSR: 58.5%, ASR: 55.8%), more DSR-men (26.8%) than ASR-men (2.7%) reported intending not to disclose to their child and more ASR-men (41.5%) than DSR-men (14.6%) were still doubting about disclosing. The degree of disclosure to others was also significantly different between DSR- and ASR-men ($P = 0.006$). More DSR-men told nobody (16.7%) or only family (28.6%) compared with ASR-men (8.2% respectively 10.9%). For women, similar patterns regarding their intention to disclose were found.

### Discussion

This study aimed at exploring motives for parenthood, well-being and disclosure patterns concerning the mode of conception among DSR- and ASR-men prior to treatment.

Firstly, the male DSR-group, on average, expected significantly more positive effects from parenthood on relationships, higher feelings of fulfillment and to have a better opportunity to compensate for experienced deficits by their parents during their own childhood than
ASR-men. These findings seem to indicate that DSR-men have somewhat higher expectations of parenthood and can be seen in line with the results of Langridge et al. (2000) that DSR-couples express stronger and a more complex network of motives for parenthood. Confrontation with their inability to procreate may have forced these men to thoroughly think over their wish for a child and the meaning of fatherhood (dealing with the lack of a biological relationship to the future child and the meaning and position of the donor). Mandatory counselling prior to DSR-treatment (which was the case for all DSR-couples in our study) could have made DSR-men more aware of their motives and caused them to appraise fatherhood more preciously. In contrast ASR-men were not confronted with the loss of genetic fatherhood and ASR-couples in our study were not systematically offered counselling. In addition, possible feelings of the need to justify themselves to the medical team may have accentuated the motives of DSR-men and increased social desirability. Langridge et al. (2000) observed a higher need in DSR-couples to justify their desire for a child to medical authorities.

Interestingly, in the female group, only the motive ‘continuity’ was significantly more important for DSR- than ASR-women. It is remarkable that the motive ‘continuity’ was not significantly different between DSR- and ASR-men. DSR-men, in reality, are confronted with discontinuation in their genetic line; continuity, as such, does not apply to these men, as it does to others being able to reproduce themselves. Isaksson et al. (2011) found that male partners of sperm recipients regarded the genetic link between father and child as less important than did male partners of oocyte recipients. This suggests that DSR-men cope with infertility by adapting their values (e.g. giving lower importance to the genetic parent–child tie) to what is accessible to them. The absence of a difference between DSR- and ASR-men in our study may be explained by the fact that the motive continuity refers to more than the genetic link alone (e.g. continuation of the family name). In sum, our results suggest that the motive continuity was elevated by the DSR-women, but not attenuated by the DSR-men, when compared with ASR-women and to ASR-men, respectively.

Secondly, DSR-men, on average, showed a lower self-esteem concerning their body and gender-role and more feelings of guilt regarding the infertility experience than ASR-men. This supports previous findings (Nachtigall, 1992; Petok, 2006; Roshholm et al., 2010) stating that male infertility is extremely embarrassing for many men and often arouses feelings of lesser masculinity. On the other hand, DSR-men, as a group, experienced significantly less of a negative effect of infertility on sexuality than ASR-men. The latter finding may be explained by the fact that the items in this subscale focus on experiencing pressure as result of scheduling their sexual life to enhance the chance of natural procreation. As this is only of importance in the group of ASR, it may explain the higher impact in this latter group.

Thirdly, both DSR-men and -women plan to disclose the mode of conception less frequently and to a lesser degree than ASR-men and -women. These findings are in line with prior DSR-treatment results of Klock et al. (1994) and Roshholm et al. (2010), showing that using donor gametes was a significant determinant of non-disclosure in comparison to men and women using own gametes for reproduction. Several motives for non-disclosure, to the child and others, have been determined in the past: to avoid accidental discovery by the child, no need to disclose and protection of the child (lack of genetic information and understanding) or the father (fear of rejection, to hide the male infertility) (Nachtigall et al., 1992; Lycett et al., 2005; Roshholm et al., 2010). Shehab et al. (2008) pointed out that the disclosure decision is a complex, negotiated process reflecting a wide range of influences and contexts. As we did not ask for underlying motives or the wider context, our results cannot support specific motives. The results that fewer DSR-men than ASR-men were still doubting about disclosure may be explained by the mandatory counselling for DSR-couples where, among other things, the decision about (non-)disclosure is extensively discussed. ASR-couples do not systematically receive counselling and therefore miss an opportunity to discuss the topic of disclosing or not the mode of conception. It is also possible that reasons to disclose are not that obvious to ASR-men (as both parents will be biologically related to the future child) and ASR is not known to bring about any risks for the development of the offspring) and therefore they had not previously reflected on the question.

The percentage of DSR-men who, prior to treatment, intended to disclose was higher (as much as double) compared with similar but older research (Klock et al., 1994). A recent change in attitudes towards more openness concerning gamete donation was pointed out by Daniels (2007). To date, there is no distinct culture in Belgium towards openness about DSR as for example in Sweden (Isaksson et al., 2011). Belgian legislation still holds on to a system of full anonymous donation (Belgian Act of 6th July 2007, B.S. 17.07.2007). It may be speculated that an anonymous donation system may create feelings of safety among the social father, as no contact can be sought with the donor, which may increase the intention to disclose. In addition, as Klock et al. (1994) pointed out, the debate about whether couples ‘should’ disclose the DSR-conception has been clouded by the connotations of the words used to describe the process; e.g. openness and secrecy or disclosure and privacy. It is possible that men presenting for a DSR-treatment experience ‘disclosure or being open and honest’ as a more socially desirable answer, relative to the negative connotation associated with ‘concealing the mode of conception or secrecy’. Besides, there are different levels of disclosure, e.g. disclosure of the use of assisted reproduction, disclosure of the specific treatment used (DSR or ASR). The questionnaire used was not explicit enough, with possible ambiguous interpretation. Indeed, it is possible that parents answered ‘yes, we intend to inform our child about the mode of conception’, meaning ‘yes, we intend to inform our child about the use of assisted reproduction’ but without specifically clarifying the sperm origin (donor or husband/partner). Finally, measuring intentions to disclose to the child is not interchangeable with actually assessing disclosure. Follow-up is needed to examine if intentions will be carried out in actual behaviour in the future.

As differences were found between the male DSR and ASR groups that could not be identified between the female DSR and ASR groups, these results draw attention to the specificity of the experience of the male partners in a fertility treatment. It is important to realize that a certain treatment does not necessarily affect both partners in a similar way.

Limitations
The RR for the DSR-group (57.89%) was comparable to the RR of DSR-couples prior to treatment in the study of Klock et al. (1994;
50%). Compared with the DSR-group, the RR for the ASR-group (39.11%) was lower. No other RRs for ASR-groups have been published to our knowledge. A higher need for information concerning their specific situation and a higher sensitivity to socially desirable behaviour, may elicit a higher RR among a DSR-population. It is important to be aware of the self-selected bias of this population and of a considerable group of non-responders.

Secondly, the study used self-rating questionnaires which increases the risk of socially desirable answers. The social desirability bias may be greater for infertile couples (Greil, 1997; Langridge et al., 2000) than for other individuals. Couples may feel pressure to appear ‘normal’ because they may suspect that gaining access to high-tech treatments may involve (in)formal psychological screening (Greil, 1997). Interviews could have addressed this issue, but were not possible in this study. Concerning the openness versus secrecy questionnaire concerning the mode of conception (Colpin and Soenen, 2002), it was noticed during analysis that it does not specify enough regarding different levels of disclosure necessary for these study groups. Participants could answer that they disclosed the use of assisted reproduction, without disclosing the use of donor semen. This resembles what Hershberger (2007) recently defined as ‘selective disclosure’; recipients using donor gametes select not only to whom they will tell, but also how much of their infertility history they will share to others. Therefore, the openness versus secrecy questionnaire concerning the mode of conception (Colpin and Soenen, 2002) should be adapted to the target population of donor gametes recipients.

**Conclusion**

When compared with ASR-men, DSR-men expect more positive effects from parenthood on relationships and feelings of fulfilment and report less negative effects of infertility on sexuality, but also experience a lower self-image and more guilt. These differences were not observed between ASR- and DSR-women. It is important to realize that a certain treatment does not necessarily affect both partners in a similar way. Both DSR-men and -women plan to disclose the method of conception less frequently and have already disclosed to a lesser degree than ASR-men and -women. More research on the experience of infertile men is necessary to adjust counselling to their needs.

**Authors’ roles**

A.I. acquisition, analysis and interpretation of data, writing of the paper. T.D.’ design of the study, supervision of patient recruitment and data collection in University Hospital Leuven, interpretation of data, revision of several drafts of the paper. P.D.S. advisory support in design of the study, supervision of patient recruitment and data collection in University Hospital Ghent, and revision of final draft. K.D. and D.V. advisory support in design of the study, revision of final draft. M.W. and B.V. patient recruitment and data collection. P.R. revision of several drafts of the paper. H.C. design of the study, supervision of master students involved in patient recruitment and data collection, analysis and interpretation of data, supervision of writing process, revision of several drafts of the paper.

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**Conflict of interest**

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