Reproductive BioMedicine Online (2013) **27**, 236–243

www.sciencedirect.com
www.rbmonline.com

SYMPOSIUM: MEN, FERTILITY AND ASSISTED REPRODUCTIVE TECHNOLOGIES ARTICLE

# (Male) infertility: what does it mean to men? New evidence from quantitative and qualitative studies

**Tewes Wischmann [a,*], Petra Thorn [b]**

[a] *Heidelberg University Hospital, Centre for Psychosocial Medicine, Institute of Medical Psychology, Heidelberg, Germany;*
[b] *Practice for Couple and Family Therapy, Moerfelden, Germany*
[*] Corresponding author. *E-mail address:* tewes.wischmann@med.uni-heidelberg.de (T Wischmann).

The psychotherapist and Jungian psychoanalyst Dr Tewes Wischmann has been a member of the scientific staff of the Institute of Medical Psychology at Heidelberg University Hospital (Germany) since 1990. He is co-author of the guidelines *Fertility Disorders — psychosomatic oriented diagnosis* and therapy of the Association of Scientific Medical Societies in Germany and *Guidelines for Counselling in Infertility* of ESHRE. He is vice chair of the German Society for Infertility Counselling, Associate Editor for the journals *Human Reproduction* and *Journal für Reproduktionsmedizin und Endokrinologie*.

**Abstract** Scientific knowledge of the emotional repercussions of infertility on men remains limited and has only recently become the focus of social science research. Firstly, the current developments in research on the psychosocial impact of infertility on men through a search of the literature over the last 10 years are outlined in this paper. In the second section, issues raised in pretreatment counselling for men and their partner who consider donor insemination are described as this treatment typically raises many emotional issues. The results of more recent studies with sophisticated methodological design show that the emotional impact of infertility may be nearly balanced, suggesting that men do suffer as well and that they have to be addressed in infertility counselling too. The emotional and clinical aspects of donor insemination support the hypothesis that the emotional repercussions of infertility affect both sexes. In general, male factor infertility seems to be more stigmatized than other infertility diagnoses. Forthcoming studies have to differentiate between the psychological impact of infertility on women and men and their respective abilities to communicate easily about this distress. More studies on infertile men in non-Western societies need to be conducted in order to understand the cultural impact on infertility.



**KEYWORDS:** counselling, donor insemination, gender, male infertility, psychological stress, stigma

## Background

Traditionally, it was assumed that the female was nearly always the ''responsible'' partner regarding reproduction (Carell and Urry, 1999). Male infertility was described as remaining ''somewhat in the dark ages'' (Lee, 1996, p. 29) and has only recently become the focus of both medical and social science research. Andrology has only been

1472-6483/$ - see front matter 
http://dx.doi.org/10.1016/j.rbmo.2013.06.002

studied as a distinct speciality since the 1960s, and the first journal, the German periodical *Andrologie* (now *Andrologia*) was established at the end of the 1960s (Andrologia, 2012). Psychological studies have also been rare. In a literature review, Bents (1985) found that amongst 121 articles on infertility published between 1948 and 1985, 56% referred only to the female partner, 29% to both partners and only 15% solely to the male partner. Twenty years later, a review of 157 ethnographies of gender and reproduction found that only one of these works focused on men (Inhorn, 2006).

New assisted reproduction treatments such as intracytoplasmic sperm injection (ICSI; i.e. injection of a single spermatozoon into the oocyte) and advances in retrieving spermatozoa such as testicular sperm extraction (TESE; i.e. surgical extraction of sperm cells from the testes) have been developed alongside with a stronger focus on the psychosocial aspects of male infertility (for an overview: Fisher and Hammarberg, 2012). Nevertheless, compared with the numerous guidance books written for women experiencing infertility, the number of self-help books written for men is very limited (Rawlings and Looi, 2006; Thorn, 2008) and scientific knowledge of the emotional repercussions of the diagnosis and the treatment of infertility on men remains limited (Culley et al., 2013). It is vital therefore to describe current knowledge, both based on scientific research and clinical experience, and to define future research requirements.

## Materials and methods

The introductory section of this article will primarily address the following questions and report conclusions drawn from recent studies: (i) Does current research corroborate or contradict past assumptions that men psychologically suffer less from infertility than their female partners? (ii) What are the long-term psychological effects of infertility on men's quality of life? and (iii) Is male factor infertility still stigmatized? A narrative review will outline the current developments of research on the psychosocial impact of infertility on men (short and long term) through a literature research over the last 10 years. A research in Web of Science with the search terms [Topic = (infertil*) and Topic = (psychol*) and Topic = (impact) and Topic = (men) and Year Published = (2000–2012)] yielded in 76 results. The next step excluded congress presentations and original papers in other languages than English. The selection of landmark studies and their findings in this review can be seen as an example of development regarding knowledge of the impact of infertility on men. Studies published before the year 2000 will be cited if they contributed substantially to the research field in the present authors' opinion.

The main section will describe in detail issues typically experienced by men and their partners after male infertility has been diagnosed and prior to the use of donor insemination (DI) as extracts of an empirical study. This section is based on a typical counselling process and will focus on the affects primarily described by men when considering this family building alternative. It will provide a vivid demonstration that the impact of male factor infertility exceeds what has so far been represented in quantitative questionnaire scores and confirm the need to acknowledge men's emotions and emotional needs.

## The psychosocial impact of infertility on men and women

### Does current research corroborate or contradict past assumptions that men psychologically suffer less from infertility than their female partners?

For decades, psychosomatic research postulated that women suffer considerably more from infertility than their male partners (e.g. Jordan and Revenson, 1999). Recent research suggests, however, that the established differences in men's and women's psychological responses to infertility need to be interpreted through an understanding of broader gender differences in reactions to stress, emotional distress and grief rather than reactions specific to infertility (Edelmann and Connolly, 2000; Fisher et al., 2010). The results of much of the formerly available research supporting women's greater overt distress in response to infertility may well reflect differences in the ways men and women have been socialized to cope with negative affect and with distress (Webb and Daniluk, 1999). Adhering to masculinity norms, many men tend to suppress their emotions in an effort to support their partners (Hudson and Culley, 2013). Withdrawal may be a way of protecting the woman from her partner's pain (Cousineau and Domar, 2007). Jaffe and Diamond point out that, on the surface, men and women are likely to express grief in stereotypically different ways: whereas women voice their sadness emotionally and need to talk about it extensively, men usually avoid overt emotions and take on the role of the stoic partner. The authors argue that each person has varying degrees of both loss-orientation and restoration-orientation styles of coping. ''Women appear to be more loss-oriented following bereavement, feeling and expressing their distress at their loss; men more restoration-oriented, actively engaging with the problems and practical issues associated with loss'' (Stroebe and Schut, 2010, p. 282). In a couple facing infertility, one partner (the woman) is grieving the loss, while at the same time, the other (the man) needs to rewrite the reproductive story in order to restore meaning and hope for the future (Jaffe and Diamond, 2010, p. 101).

With statistical approaches that keep matched pairs (e.g. by calculating differences between the woman and man on questionnaire scores for each couple separately), differences between men and women are much smaller than testing the samples of women and men as independent groups. In the study of Chachamovich et al. (2009), the data were analysed with a couple as the unit of analysis. In order to conduct the analysis, the data were structured so that each row contained data for one couple as the subject. Furthermore, the authors conducted linear multiple regressions with depression levels as independent variables and the difference of quality of life scores between the man and woman within couples as dependent variable. The authors concluded that consideration should be given to offering psychosocial interventions to them as a dyad rather than solely to the women, as the quality of life seems to affect both men and women.

Over the last decades, assisted reproduction treatment has developed enormously. The introduction of ICSI has revolutionized the treatment of male factor infertility and

thereby possibly improved the psychological wellbeing of males (Holter et al., 2007). Before the introduction of ICSI, DI was the only option for a couple to conceive a child genetically linked to at least one partner. Female partners, on the other hand, are subjected to the hormonal medication commonly prescribed for fertility treatment and this may lead to higher levels of emotional instability compared with their male partners (Daniluk, 1997).

## What are the long-term psychological effects of infertility on men's quality of life?

The research findings in relation to the long-term effects on the quality of life on men and women who remain involuntary childless are mixed. A study comparing women and men 4–5.5 years after successful and after unsuccessful IVF with a control group showed that quality of life in men seems more negatively affected by involuntary infertility than reported before: their scores in depression and psychological wellbeing were similar to the women in the unsuccessful IVF group (Johansson et al., 2010). A cross-sectional nationwide health survey in Finland indicated that childless men who had experienced infertility had a significantly poorer subjective quality of life (but not in perceived health, psychological distress or depressivity) compared with men without infertility (Klemetti et al., 2010). In contrast to these findings, however, a 10-year follow-up study of psychosocial factors affecting couples after infertility treatment showed only differences in self-esteem but not in other areas of quality of life (e.g. job situation, friendships, partnership, sexuality) between fathers and childless men (Wischmann et al., 2012). In summary, it can be concluded that there are only small differences in the quality of life between involuntarily childless women and men and mothers and fathers respectively in the long term (Kraaij et al., 2008; Peterson et al., 2009; Sundby et al., 2007; Sydsjö et al., 2005; Verhaak et al., 2007).

## Is male factor infertility still stigmatized?

To be diagnosed with male factor infertility may result in secrecy surrounding diagnosis, sometimes to the point that female partner takes the blame for the couple's infertility even if her own fertility is not impaired (Carmeli and Birenbaum-Carmeli, 1994; van Balen et al., 1996). One indicator of the stigmatization of male factor infertility may be the observation that the relatives of the infertile woman are more likely to be informed about successful treatment with donor insemination than the relatives of the man (Brewaeys, 1996; Cook et al., 1995).

Furthermore, male factor infertility is more strongly associated with sexual disorders than female factor infertility. Media reports on ''the sperm decline'' tend to construct stereotypical masculinity and conflate male infertility with impotence (Gannon et al., 2004), although it is common knowledge that infertility has no impact on the physical aspects of potency. If men are affected by infertility, the unfulfilled desire for a child and a sexual dysfunction are often believed to be synonymous (the ''fertility-virility linkage'', Lloyd, 1996; q.v. Miall, 1986; Throsby and Gill, 2004; Keylor and Apfel, 2010; Hinton and Miller, 2013). In a Danish questionnaire study on 210 men undergoing ICSI treatment, 37% of the participants stated that the reduced sperm quality (and not the ICSI procedure per se) affected their perception of masculinity (Mikkelsen et al., 2012).

There is also country-level variation in men's perceptions of infertility, which may be attributed to variation in procreative cultures of different societies or in the variation of availability and acceptability of assisted reproduction treatments. For example, a study in South Africa on 120 men beginning reproductive medical treatment (Dyer et al., 2009) showed depression scores on average nearly 1 standard deviation higher than the scores in a German study with the same questionnaire on a sample of men in a comparable reproductive medicine setting (Wischmann et al., 2001). This indicates the higher suffering from infertility in men with a strong pro-natalistic cultural background. Several other studies underline the importance of the cultural background for men's coping abilities with infertility (e.g. Tarlatzis et al., 1993; Lee et al., 2001; Inhorn, 2002).

In contrast to these findings, in a study on 256 Danish infertile men, the Copenhagen Multi-centre Psychosocial Infertility Research group found that men with solely male factor infertility did not suffer in the form of decreased mental health, increased physical stress reactions, decreased social support, and increased negative social stress over time more than men with infertility due to other causes (solely female factor, mixed or unexplained). Most men in this study, including those with male factor infertility, were open about their fertility problems. Across all diagnostic groups, emotional suffering increased over time when treatment was not successful indicating that this distress was not specific to male factor diagnosis or disproportionate for this group (Peronace et al., 2007). These findings contrast results of older studies in which men with male factor infertility displayed more anxiety and depression compared with fertile men (e. g. Glover et al., 1996). According to the European IVF-Monitoring Committee, Denmark has the highest rate of assisted reproduction infants per national births in Europe with 4.6% in the year 2008 (Ferraretti et al., 2012), suggesting that infertility has greater societal recognition. As an important aspect of the psychosocial impact of infertility on both partners of the couple, stigmatization may be influenced by the cultural background of the society as well as by the meaning and the status of reproductive medicine treatment in the public media discourse.

## Donor insemination: a treatment that gives rise to many emotional reactions: extracts of an empirical study

DI is a family-building option for those couples where the male partner is sterile, has undergone irreversible vasectomy, does not wish to pass on (a risk for) a hereditary disease or the couple decides against (further) treatment with ICSI and adoption. In DI, the semen of another man (the donor) is used to inseminate the female partner and achieve pregnancy. For most couples, DI is contemplated only once other options have failed. Thus, most men have been diagnosed with male infertility and most couples have been confronted with the emotional repercussions of failed treatment. They need to consider an alternative family

building option which requires them to reflect on the meanings of the contribution of another male, the sperm donor; the asymmetry of parenthood (biological mother and social father); their ability to bond with the child; their and the donor's role towards the child as well as managing the stigma of DI including the question of if and how they can talk to the child and significant other about their use of DI.

The counselling process of men and their partners in this particular situation therefore typically raises issues such as male self-esteem, the stigma of male infertility and quality of life including sexual satisfaction and provides men with a possibility of voicing their emotional needs — and men tend to use this opportunity. This second section will provide a range of emotional reactions underlining and providing examples for these issues. Men also feel pain from and experience distress as a result of infertility, but socialization and gender differences contribute to different management of their affects. The reactions described in this section are extracts of a qualitative study carried out on 22 males and their partners (Thorn, 2005; in the original study, one lesbian couple participated; the data of this couple is not included in the results presented in this article). Men and their partners were recruited via infertility clinics, infertility counsellors and an online chat forum for infertility. All respondents were German, had had at least one contact with an infertility clinic and the male partners had been diagnosed with male infertility or other reasons for DI such as a genetic disease. DI had been considered an option by all participants. The mean age of the male partner was 36; of the female partner 31 years. Just under 20% had a trade certificate, 43% a professional certificate and 37% a university degree. Respondents came from rural and urban areas of Germany, but only three couples resided in the former eastern states. The most relevant data of this study regarding typical reactions of men is presented.

Typical counselling issues in DI include: (i) acknowledging the past and all previous efforts of the couple to have a child; (ii) supporting the couple in grieving for the child the couple was not able to have; (iii) managing social and biological parenthood as well as meanings attached to the donor; (iv) tackling the stigma of infertility and information sharing with others; and finally (v) preparing disclosure with the child (British Infertility Counselling Association, 2004; Thorn, 2006a; Thorn and Wischmann, 2009). This structure will be used in order to highlight typical male reactions and needs.

## Acknowledging past experiences

Many men considering DI have been confronted with the diagnosis of male infertility. In some cases, diagnosis took place many years prior to considering DI, in others, it was a recent experience. Many men describe the diagnosis of infertility as a devastating experience:

> Well, it was a pretty shattering ... because I had not expected that it doesn't function or that it does not work. ... I never expected that.
> I was shocked, to put it bluntly.

Some reactions include disbelief and denial and men sometimes undergo several examinations, as they tend not to believe the first and second diagnosis The final diagnosis tends to leave men with feelings of powerlessness They describe infertility to be ''a blow in your face'', ''something unimaginable'' and voiced feelings of helplessness and despair

Infertility is not only perceived to be a physical deficiency, but as a factor impacting negatively on male self-esteem and identity as well as on the social expectation of a man to be virile and potent:

> There are male ideals which are propagated again and again, there is this template of a perfect male — and now I do not fit into this template anymore.

Female partners also share this perception:

> It does not fit the nature of a man to be infertile. I think my husband, at the beginning, he did not find himself anymore. A part of his maleness was simply gone.

Such strong emotional reactions confirm that male and female partners share similar reactions Management strategies, however, seem to differ between men and women Whereas men tend towards pragmatic solutions and a step-wise approach, women typically voice a great need to share their emotions:

> I think I will have to accept it as it is, there is nothing I can do anyway. I was diagnosed, I suffered, and now I find a way forward. My wife, however, needs to talk and sometimes I am glad she has so many friends who are willing to listen.

Couples often struggle with such different needs and an important aim in counselling is to attach a positive connotation to the fact that there are different management strategies: one strategy that does not ignore the emotional repercussions (''loss-oriented'') and another one that is eager to find a way forward (''restoration-oriented'') However, in some cases, partners may have different emotional ''speeds'' and whereas one partner is ready to move on, the other is still coming to terms with the emotions This difference needs to be acknowledged in the counselling process and the couple should be supported to determine a time frame that they both find acceptable (''preparing road-maps''; Van den Broeck et al, 2010)

## Supporting grief for both partners

For most couples, DI initially is not their preferred way of building a family. They have attempted to conceive with their own gametes in the hope to have a child biologically related to both parents. Once they have decided to use DI, they will have to come to terms with not having this child and accept an alternative family composition in which only the female partner shares biological ties with the child. After the diagnosis of infertility, men often experience this as the second loss:

> I lost my fertility and now, by using DI, I am also losing the biological connection to the child we plan to have. It feels like a double punishment by fate.

At the same time, as a result of their pragmatic and goal-oriented attitude, some men decide quickly to use DI and their female partners wonder if their positive attitude may result from a degree of pressure to find a way forward:

> My husband had accepted DI very quickly and I was very surprised by this speed. He seemed to suffer tremendously from the diagnosis and then, when DI was mentioned, it was like he had forgotten all about his feelings. He wanted to move on and to overcome this painful situation, maybe for his own sake, but maybe also because he could not bear to see me suffer. Initially, I did not trust him, but after several long conversations with him, I truly believed that he was ready to move on.

Female partners often are surprised by this speed and fear that men do not give adequate space and time to find closure for their emotional pain One important issue in counselling is therefore to find a time frame and a ritual (or several) that both partners define as adequate for finding closure and mourning the child they are not able to have

## Managing social and biological parenthood and meanings attached to the donor

For most couples, social parenthood is less desirable and perceived to be more fragile than biological parenthood. In the couple's imagination, this affects the bonding quality between the father and the child, which is often assumed to be less secure than between the mother and the child:

> If I have a child via DI, I worry that a child may instinctively see me as a secondary or even unimportant person as it is my wife who will share the biological links. Maybe I will be number three in my own family: first the child, then the mother and finally me. I may be on my own in my own family.
> There is a big difference between a normal family and a DI family. If I had a genetic child, then I would feel at home, my role would be different. That's the point where I am vulnerable, the lack of biological connection, that's where I can be marginalized so easily.

The donor as the biological genitor is often considered to be the ''real'' father and the male partner may — at least initially — consider him to be the competitor:

> The donor, well, he can do what I cannot do: he can father a child. And this makes me feel pretty inferior, and I will have to find a way to manage this, to overcome this. Or I have to consciously suppress these thoughts.

It can be helpful to reframe internal concepts of social parenthood, of ''fathering'' a child and the notion of ''bonding'' and to provide information on current research that suggests that the quality of bonding in families following DI is similar to bonding in other families types (e.g. Blake et al., 2012; Golombok et al., 2005, 2006; Lycett et al., 2004)

Furthermore, DI has the potential to impact on the balance of give and take between partners, especially if one partner's desire for a child is greater than the other's:

> If I agree and we go ahead with DI, how will my wife know that I am doing it for her sake only, because she suffers so much more from infertility than I do? This is a dilemma for us: if I consent, she will worry that I only do it for her and maybe that will make her feel uncomfortable.

Counselling interventions can aim to explore the different intensity of a wish for a child and the general balance of give and take in the relationship: It explores the circumstances under which one partner may concede to DI as a gift to the other and it explores the circumstances under which a partner may accept the gift without feeling emotional pressure.

## Tackling the stigma of male infertility and sharing information with significant others

DI has been shrouded in secrecy for many decades. Only recently have parents started to openly share their child's nature of conception. Many men clearly indicate that the secrecy is based on two fears: in heterosexual couples, DI, in contrast to adoption, reveals the male partner's infertility; and it also reveals the contribution of a donor and thus the unusual family composition:

> If we talk openly about DI with my male friends, how will they view me? I never talked about my infertility, and I guess I would have to do this first. But I don't know if I have the courage because I don't know how they will react.
> We need to protect ourselves and our child from negative public reactions. You never know how others react. We would be very worried that the child could be ridiculed or even ostracized at school.

In many countries, families with a difference are portrayed in the media more and more often; families built by third-party conception are becoming part of this public awareness and the climate for such families is becoming more accepting Intending parents, however, need to feel confident about their use of DI and, as already described, both partners should have found closure For most men, this means that they have accepted their infertility rather than feeling the need to dissociate from it:

> When we discussed if and how we would talk to our child, I was again confronted with my infertility issue. It was clear: if our daughter knows, she will at some stage talk to others, and then they will realize I am infertile. So I started to talk to some close friends and found out that they were pretty sympathetic. This helped me to accept my infertility, and I knew I would have someone to talk to if I needed to, although I was certain that I would not have a great need to talk.

This indicates once more the vital support that pretreatment counselling can provide for tackling the long-term implications of male infertility and DI Supporting couples to find closure with infertility not only helps them to move on, it can also raise their confidence for the family building options they chose It also helps them to develop strategies

for disclosing DI to significant others so that they feel more at ease Educational group work for couples considering DI has the additional advantage that the group setting itself challenges the taboo and that this protected setting enables male participants to share their experiences with others; something they describe to be both a relief and empowering Group settings can impact positively on confidence (Daniels et al, 2007), especially as participants can stay in touch with and support each other beyond their participation in a group programme

## Preparing disclosure with the child as an important counselling task

Many couples are uncertain about when and how to talk to their future children about their conception. They feel that DI is ''too complex'' to be understood by young children and consider not sharing ''better for the child in order to ensure a reasonable upbringing, especially, during puberty.'' They feel that disclosure may be more appropriate once the child has reached adulthood:

> When you are 23 or 24, you may be strong enough to manage something like this.

In many cases, men and their partners indicate a lack of information for an appropriate and thoughtful process of disclosure:

> I think it is very difficult. How do you tell the child? You cannot simply... confront the child with it, like ''Listen, we could not have any children ourselves and therefore we decided to do DI and you were born like this''. Because, what would the child think about it, if it learns how it was conceived? Those are all these questions where one day, oh no, we had better not tell the child. But of course, this would not be fair to the child either.

There is increasing agreement that both children and parents fare best if disclosure takes place between the age of 3 and 6 years, so that a family secret as well as the risk of children finding out inadvertently and the potential of an identity crisis resulting from late and inappropriate disclosure are avoided (Blyth et al, 2012) Counsellors can support men and their partners by providing guidance, by supporting them to develop narratives for disclosure and by indicating resources such as booklets they can use (eg Infertility Research Trust, 1991; Thorn, 2006b) Couples should also be informed about the meaning of donor conception at various developmental stages of the child They should be aware that disclosure is a process rather than one single talk to a child, that children will manage this information in accordance to their psychological development and that curiosity about the donor and a desire to meet him is not an indication of unsuccessful bonding to the father but interest in their biological origin (Kirkman et al, 2007; Scheib et al, 2005)

## Summary

In general, the emotional impact of infertility seems to be lower for men than for women (Greil et al., 2010), and this seems to result from the (invasive) medical treatment typically women undergo and from the fact that the physical aspects of failed treatment and of pregnancy loss are not experienced by men (Mahlstedt, 1985). On the other hand, more recent studies with sophisticated methodological design show that these differences are indeed small or factually non-existent. At least men with male factor infertility suffer as much as women diagnosed with female factor infertility, but research results are still inconclusive (Holter et al., 2007; Peronace et al., 2007). This suffering is caused in part by the fact that in general male factor infertility seems to be more stigmatized than other infertility diagnoses. Apparently, men do indeed experience pain related to their infertility but may feel they have few acceptable outlets for the expression of their emotional distress (Webb and Daniluk, 1999). Forthcoming studies have to differentiate between the psychological impact of infertility on women and men and their respective abilities to communicate easily about this distress (Wischmann, 2012). Studies on the psychological impact of invasive reproductive treatment measures (e.g. MESA/TESE) on infertile men are still missing. Many more studies on infertile men in non-Western societies need to be conducted in order to understand the cultural impact on infertility. Results of studies conducted so far indicate that the emotional impact of infertility on men is much stronger in more traditional oriented cultures and in cultures where reproductive medicine treatment is still a social taboo.

A significant selection bias has to be considered in previous studies on men and their reactions to infertility because of high non-responder rates. Men's gender-specific experiences of the infertility problem, of their medical diagnosis and of the donor insemination treatment have to be targeted more closely by forthcoming research (Lloyd, 1996). Especially, qualitative research has the potential to show that men do make implicit issues explicit, acknowledge and share their emotional repercussions and can also voice their emotional needs (e.g. Dooley et al., 2011).

## Conclusions for infertility counselling

Clinical experience indicates that infertility counselling is still primarily sought by women. In the light of results of the latest research concerning the impact of infertility and the impact of the diagnosis of male-factor infertility on men, counsellors should strongly consider strategies that facilitate the uptake of infertility counselling by men. These include offering flexible times (such as possibilities for appointments after work), a setting that explicitly addresses men and their needs (explicitly describing infertility as a couple issue and inviting men to participate) and a language that both genders find helpful and inviting (using terms such as ''information seminar'' instead of ''group therapy''). Providing patient-friendly and resource-oriented questionnaires before the beginning of reproductive medicine treatment may help to identify those infertile men who are in need of psychosocial support by mental health professionals (e.g. FertiQol, Boivin et al., 2011; SCREENIVF, Verhaak et al., 2010).

When counselling men by themselves or with their partners, their management strategies should receive equal

consideration and gender differences should be made explicit and connoted as resources a couple can draw upon rather than problems.

## References


Andrologia, 2012. Available from: <http://sfx.cceu.org.cn/cgi-bin/tgxx.cgi?issn=0303–4569> (accessed 09.01.2013).

Bents, H., 1985. Psychology of male infertility – a literature survey. Int. J. Androl. 8, 325–336.

Blake, L., Casey, P., Jadva, V., Golombok, S., 2012. Marital stability and quality in families created by assisted reproduction techniques: a follow-up study. Reprod. Biomed. Online 25, 678–683.

Blyth, E., Crawshaw, M., Frith, L., Jones, C., 2012. Donor-conceived people's views and experiences of their genetic origins: a critical analysis of the research evidence. J. Law Med. 19, 769–789.

Boivin, J., Takefman, J., Braverman, A., 2011. The fertility quality of life (FertiQoL) tool: development and general psychometric properties. Fertil. Steril. 96, 409–415.

Brewaeys, A., 1996. Donor insemination, the impact on family and child development. J. Psychosom. Obstet. Gynaecol. 17, 1–13.

British Infertility Counselling Association, 2004. Implications Counselling for People Considering Donor-assisted Conception. University of York Print Unit, Heslington.

Carell, D., Urry, R., 1999. Male infertility. In: Burfoot, A. (Ed.), Encyclopedia of Reproductive Technologies. Westview Press, Boulder, pp. 171–179.

Carmeli, Y.S., Birenbaum-Carmeli, D., 1994. The predicament of masculinity: towards understanding the male's experience of infertility treatments. Sex Roles 30, 663–677.

Chachamovich, J., Chachamovich, E., Fleck, M.P., Cordova, F.P., Knauth, D., Passos, E., 2009. Congruence of quality of life among infertile men and women: findings from a couple-based study. Hum. Reprod. 24, 2151–2157.

Cook, R., Golombok, S., Bish, A., Murray, C., 1995. Disclosure of donor insemination: Parental attitudes. Am. J. Orthopsychiatry. 65, 549–559.

Cousineau, T.M., Domar, A.D., 2007. Psychological impact of infertility. Best Pract. Res. Clin. Obst. Gynaecol. 21, 293–308.

Culley, L., Hudson, N., Lohan, M., 2013. Where are all the men? The marginalisation of men in social scientific research on infertility. Reprod. Biomed. Online.

Daniels, K., Thorn, P., Westerbrooke, R., 2007. Confidence in the use of donor insemination: an evaluation of the impact of participating in a group preparation programme. Hum. Fertil. (Camb.) 10, 13–20.

Daniluk, J.C., 1997. Gender and infertility. In: Leiblum, S.R. (Ed.), Infertility. Psychological Issues and Counseling Strategies. John Wiley and Sons, New York, pp. 103–125.

Dooley, M., Nolan, A., Sarma, K.M., 2011. The psychological impact of male factor infertility and fertility treatment on men: a qualitative study. Ir. J. Psychol. 32, 14–24.

Dyer, S., Lombard, C., Van der Spuy, Z., 2009. Psychological distress among men suffering from couple infertility in South Africa: a quantitative assessment. Hum. Reprod. 24, 2821–2826.

Edelmann, R., Connolly, K., 2000. Gender differences in response to infertility and infertility investigations: real or illusory? Br. J. Health Psychol. 5, 365–375.

Ferraretti, A.P., Goossens, V., de Mouzon, J., Bhattacharya, S., Castilla, J.A., Korsak, V., et al., 2012. Assisted reproductive technology in Europe, 2008: results generated from European registers by ESHRE. Hum. Reprod. 27, 2571–2584.

Fisher, J.R.W., Hammarberg, K., 2012. Psychological and social aspects of infertility in men: an overview of the evidence and implications for psychologically informed clinical care and future research. Asian J. Androl. 14, 121–129.

Fisher, J.R.W., Baker, G.H.W., Hammarberg, K., 2010. Long-term health, well-being, life satisfaction, and attitudes toward parenthood in men diagnosed as infertile: challenges to gender stereotypes and implications for practice. Fertil. Steril. 94, 574–580.

Gannon, K., Glover, L., Abel, P., 2004. Masculinity, infertility, stigma and media reports. Soc. Sci. Med. 59, 1169–1175.

Glover, L., Gannon, K., Sherr, L., Abel, P.D., 1996. Distress in sub-fertile men: a longitudinal study. J. Reprod. Infant Psychol. 14, 23–36.

Golombok, S., Jadva, V., Lycett, E., Murray, C., Maccallum, F., 2005. Families created by gamete donation: follow-up at age 2. Hum. Reprod. 20, 286–293.

Golombok, S., Murray, C., Jadva, V., Lycett, E., MacCallum, F., Rust, J., 2006. Non-genetic and non-gestational parenthood: consequences for parent–child relationships and the psychological well-being of mothers, fathers and children at age 3. Hum. Reprod. 21, 1918–1924.

Greil, A.L., Slauson-Blevins, K., McQuillan, J., 2010. The experience of infertility: a review of recent literature. Sociol. Health Illness 32, 140–162.

Hinton, L., Miller, T., 2013. Mapping men's anticipations and experiences in the reproductive realm: (in)fertility journeys. Reprod. Biomed. Online.

Holter, H., Anderheim, L., Bergh, C., Moller, A., 2007. The psychological influence of gender infertility diagnoses among men about to start IVF or ICSI treatment using their own sperm. Hum. Reprod. 22, 2559–2565.

Hudson, N., Culley, L., 2013. The bloke can be a bit hazy about what's going on: men and cross border reproductive treatment. Reprod. Biomed. Online.

Infertility Research Trust, 1991. My Story. University Department of Obstetrics and Gynaecology, Jessop Hospital for Women, Sheffield.

Inhorn, M.C., 2002. Sexuality, masculinity, and infertility in Egypt: potent troubles in the marital and medical encounters. J. Men's Stud. 10, 343–359.

Inhorn, M.C., 2006. Defining women's health: a dozen messages from more than 150 ethnographies. Med. Anthropol. Q. 20, 345–378.

Jaffe, J., Diamond, M.O., 2010. Reproductive Trauma. Psychotherapy with Infertility and Pregnancy Loss Clients. American Psychological Association, Washington.

Johansson, M., Adolfsson, A., Berg, M., Francis, J., Hogström, L., Janson, P.O., et al., 2010. Gender perspective on quality of life, comparisons between groups 4–5.5 years after unsuccessful or successful IVF treatment. Acta Obstet. Gynecol. Scand. 89, 683–691.

Jordan, C., Revenson, T.A., 1999. Gender differences in coping with infertility: a meta-analysis. J. Behav. Med. 22, 341–358.

Keylor, R., Apfel, R., 2010. Male infertility: integrating an old psychoanalytic story with the research literature. Stud. Gender Sex. 11, 60–77.

Kirkman, M., Rosenthal, D., Johnson, L., 2007. Families working it out: adolescents' views on communicating about donor-assisted conception. Hum. Reprod. 22, 2318–2324.

Klemetti, R., Raitanen, J., Sihvo, S., Saarni, S., Koponen, P., 2010. Infertility, mental disorders and well-being – a nationwide survey. Acta Obstet. Gynecol. Scand. 89, 677–682.

Kraaij, V., Garnefski, N., Vlietstra, A., 2008. Cognitive coping and depressive symptoms in definitive infertility: a prospective study. J. Psychosom. Obstet. Gynaecol. 29, 9–16.

Lee, S., 1996. Counselling in Male Infertility. Blackwell Science, Oxford.

Lee, T.Y., Sun, G.H., Chao, S.C., 2001. The effect of an infertility diagnosis on the distress, martial and sexual satisfaction between husband and wives in Taiwan. Hum. Reprod. 16, 1762–1767.

Lloyd, M., 1996. Condemned to be meaningful: non-response in studies of men and infertility. Sociol. Health Illn. 18, 433—454.
Lycett, E., Daniels, K., Curson, R., Golombok, S., 2004. Offspring created as a result of donor insemination: a study of family relationships, child adjustment, and disclosure. Fertil. Steril. 82, 172—179.
Mahlstedt, P.P., 1985. The psychological component of infertility. Fertil. Steril. 43, 335—346.
Miall, C.E., 1986. The stigma of involuntary childlessness. Soc. Probl. 33, 268—282.
Mikkelsen, A.T., Madsen, S.A., Humaidan, P., 2012. Psychological aspects of male fertility treatment. J. Adv. Nurs.. http://dx.doi.org/10.1111/jan.12058 (E-Pub ahead of print. Article first published online: 10.12.12).
Peronace, L.A., Boivin, J., Schmidt, L., 2007. Patterns of suffering and social interactions in infertile men: 12 months after unsuccessful treatment. J. Psychosom. Obstet. Gynaecol. 28, 105—114.
Peterson, B.D., Pirritano, M., Christensen, U., Boivin, J., Block, J., Schmidt, L., 2009. The longitudinal impact of partner coping in couples following 5 years of unsuccessful fertility treatments. Hum. Reprod. 24, 1656—1664.
Rawlings, D., Looi, K., 2006. Swimming Upstreams. The Struggle to Conceive. Peacoock Publications, Norwood.
Scheib, J.E., Riordan, M., Rubin, S., 2005. Adolescents with open-identity sperm donors: reports from 12—17 year olds. Hum. Reprod. 20, 239—252.
Stroebe, M., Schut, H., 2010. The dual process model of coping with bereavement: a decade on. Omega 61, 273—289.
Sundby, J., Schmidt, L., Heldaas, K., Bugge, S., Tanbo, T., 2007. Consequences of IVF among women: 10 years post-treatment. J. Psychosom. Obstet. Gynaecol. 28, 115—120.
Sydsjö, G., Ekholm, K., Wadsby, M., Kjellberg, S., Sydsjö, A., 2005. Relationships in couples after failed IVF treatment: a prospective follow-up study. Hum. Reprod. 20, 1952—1957.
Tarlatzis, I., Tarlatzis, B.C., Diakogiannis, I., Bontis, J., Lagos, S., Gavriilidou, D., et al., 1993. Psychosocial impacts of infertility on Greek couples. Hum. Reprod. 8, 396—401.
Thorn, P., 2005. Sharing the Nature of the Child's Conception in Famillies Formed as a Result of Donor Insemination. A Study of the Factors Influencing Parental Decision Making. Unpublished PhD Thesis. University of Canterbury.
Thorn, P., 2006a. Recipient counselling for donor insemination. In: Covington, S.N., Burns, L.H. (Eds.), Infertility Counseling. A Comprehensive Handbook for Clinicians, second ed. Cambridge University Press, Cambridge, New York, pp. 305—318.
Thorn, P., 2006b. Die Geschichte unserer Familie. Ein Buch für Familien, die sich mit Hilfe der Spendersamenbehandlung gebildet haben. FamART Verlag, Mörfelden.
Thorn, P., 2008. Familiengründung mit Spendersamen—ein Ratgeber zu psychosozialen und rechtlichen Fragen. Kohlhammer, Stuttgart.
Thorn, P., Wischmann, T., 2009. German guidelines for psychosocial counselling in the area of gamete donation. Hum. Fertil. (Camb.) 12, 73—80.
Throsby, K., Gill, R., 2004. It's different for men. Men Masculin. 6, 330—347.
van Balen, F., Naaktgeboren, N., Trimbos-Kemper, T., 1996. In-vitro fertilization: the experience of treatment, pregnancy and delivery. Hum. Reprod. 11, 95—98.
Van den Broeck, U., Emery, M., Wischmann, T., Thorn, P., 2010. Counselling in infertility: individual, couple and group interventions. Patient Educ. Couns. 81, 422—428.
Verhaak, C.M., Smeenk, J.M.J., Evers, A.W.M., Kremer, J.A.M., Kraaimaat, F.W., Braat, D.D.M., 2007. Women's emotional adjustment to IVF: a systematic review of 25 years of research. Hum. Reprod. Update 13, 27—36.
Verhaak, C.M., Lintsen, A.M.E., Evers, A.W.M., Braat, D.D.M., 2010. Who is at risk of emotional problems and how do you know? Screening of women going for IVF treatment. Hum. Reprod. 25, 1234—1240.
Webb, R.E., Daniluk, J.C., 1999. The end of the line: infertile men's experiences of being unable to produce a child. Men Mascul. 2, 6—25.
Wischmann, T., 2012. 'Your count is zero' — counselling the infertile man. Hum. Fertil. (Camb.) 16, 35—39.
Wischmann, T., Stammer, H., Scherg, H., Gerhard, I., Verres, R., 2001. Psychological characteristics of infertile couples: a study by the 'Heidelberg fertility consultation service'. Hum. Reprod. 16, 1753—1761.
Wischmann, T., Korge, K., Scherg, H., Strowitzki, T., Verres, R., 2012. A 10-year follow-up study of psychosocial factors affecting couples after infertility treatment. Hum. Reprod. 27, 3226—3232.

*Declaration: The authors report no financial or commercial conflicts of interest.*

Received 11 January 2013; refereed 30 April 2013; accepted 11 June 2013.