Papeles del Psicólogo, 2008. Vol. 29(2), pp. 158-166
http://www.cop.es/papeles

THE PSYCHOLOGICAL IMPACT OF INFERTILITY

Luis María Llavona Uribelarrea
Universidad Complutense de Madrid

This paper analyzes infertility as an "atypical clinical problem" and the relevance of its psychological consequences. It describes the circumstances that can lead to a life crisis in the couple and provides an overview of research on devaluation of the self-concept and on emotional adjustment. It also considers negative psycho-social and economic implications in developing countries.
Keywords: *Infertility. Emotional adjustment. Life crisis. Self-concept. Couple.*

Este trabajo analiza la infertilidad como "problema clínico atípico" y la relevancia de sus consecuencias psicológicas. Describe las circunstancias que pueden desencadenar una crisis vital en la pareja, y revisa la investigación sobre la devaluación del autoconcepto y sobre las alteraciones emocionales. También recuerda las repercusiones negativas psico-sociales y económicas en los países en desarrollo.
Palabras clave: *Infertilidad. Ajuste emocional. Crisis vital. Autoconcepto. Pareja.*

The problem of infertility is acquiring an increasing presence in developed societies. Such presence is due not only to the considerable increase in the numbers of people who find themselves in this condition, but also to the extraordinary scientific and technological progress made in recent decades in the field of assisted reproduction, to the enormous resources made available for attending people with this problem (exponential growth of public and private clinics), and to the increased awareness that this phenomenon – given the present course of our civilization with regard to life patterns – is likely to have ever greater repercussions in society, and may become a social problem of the highest order.

Indeed, due mainly to women delaying their age at first procreation and to an evident reduction of semen quality in men (lower concentrations of spermatozoids, lower percentages of mobility and higher percentage of anomalous morphology), it is not surprising that we are faced with the possibility of a future in which the human reproduction process becomes more and more reliant on help from assisted reproduction procedures: In-Vitro Fertilization (IVF), donation of sperm, ova and embryos, etc.

The phenomenon of infertility takes on even greater transcendence and reveals its magnitude when the level of analysis moves from general sociological figures (human beings are having more and more problems to achieve procreation by natural means, with ever-increasing proportions failing to do so) to specific data. In Spain, according to data provided by Coroleu (President of the Spanish Fertility Society), some 800,000 couples have problems to bear children, and 30,000 couples annually undergo assisted reproduction treatment, as a result of which 7,000 children are born ("Cada año nacen 7.000 niños", 2007).

However, we can only understand the exact dimensions of the phenomenon by undertaking a psychological analysis of what infertility means for the people who find themselves in this situation, to bring out the real experiences they undergo throughout the long process involved in seeking to solve or come to terms with it.

It should be borne in mind that when we attempt to look gain a more profound insight into the psychology of infertility we come up against a serious source of bias: the vast majority of data available derive from studies involving people who, finding themselves with problems to have children, have sought help from some kind of health service or clinic specializing in human reproduction. Taking into account that estimations of the percentage of people seeking help for procreation difficulties vary widely between countries (van Balen, Verdurmen & Ketting, 1997), such data should not be taken as representative of infertile couples in general, but rather of infertile couples who request help. Furthermore, it is important to acknowledge the difficulty of accessing the infertile couples in the general population, considering

Correspondence: Luis María Llavona Uribelarrea. *Departamento de Personalidad, Evaluación y Psicología Clínica. Facultad de Psicología. Universidad Complutense de Madrid. Campus de Somosaguas. 28223-Pozuelo de Alarcón (Madrid). Spain.*
E-mail: lmllavon@psi.ucm.es

that in many cases the couples themselves are unaware of this situation, and that others are concealed behind a veil of silence.

There are already numerous publications dealing extensively with the multiple psychological aspects implicated in infertility and assisted reproduction (Daniluk, 2001; Gerrity, 2001; Guerra, 1998; Leiblum, 1997; Llavona & Mora, 2003; Mora, 2005; Moreno et al., 2007; Moreno-Rosset, 2000a; Wirtberg, Möller, Hogström, Tronstad & Lalos, 2007). Therefore, the present work is confined to analyzing the concept of infertility and reviewing the course of research on its psychological repercussions. Furthermore, we shall consider some differences between the impact of infertility in Western developed countries and in developing countries.

AN ATYPICAL PROBLEM

Infertility, as the inability to conceive after one year of maintaining regular unprotected sexual intercourse (WHO, 1993), constitutes a special kind of *clinical problem* (U.S. Congress, 1988). On the one hand, from a physical point of view, the vast majority of people with this "problem" suffer no negative physical repercussions whatsoever; nor do they display any specific symptoms, experience any pain, discomfort or physical impediment, or run the risk of developing other physical disorders derived from it. Thus, many people who are infertile can spend much of their life, or indeed all of it, ignorant of whether they are "fertile" or "infertile", and enjoying a full life, be they single or in a relationship.

The "biological problem of infertility" only becomes evident when the reproductive function is put to the test in adequate conditions and fails. Thus, a biological dysfunction appears in relation to reproduction, whose consideration is not confined to the strictly anatomical-physiological problem present in each case, since it can move up to the level of procreation-paternity. Therefore, once this organic dysfunction has been discovered, it can remain as such, without affecting the person's quality of life, it can become another problem among the various types of biological-medical disorders dealt with by obstetricians and gynaecologists, or it can be become a "personal problem".

The general factor that will determine which of these possibilities occurs is the desire to have a child, and more specifically *the desire to have a biological child*. Without the involvement of this variable, at least at a medium-high level, it is unlikely that a person will even initiate assisted reproduction treatment, or that this biological dysfunction will become a personal problem. Thus, biological factors only affect the quality of the problem when they involve frustration of the hope of procreation (Llavona & Mora, 2002). Therefore, when the *Guidelines for Counselling in Infertility* drawn up by the ESHRE (European Society of Human Reproduction and Embryology) refer to the specific characteristics of consultations for infertility, it is stated that "the central focus of the consultation is an unfulfilled wish or goal in life" (Kentenich, 2002, p. 1).

Going a little further, the "clinical problem" becomes even more atypical if we take into account that the majority of cases involve two persons, and that, regardless of which one presents the organic dysfunction (or whether it is both), the situation of infertility extends to the couple as a whole, giving rise to "infertile couples". Thus, the problem of infertility comes to constitute a problem of "*couples' inability to procreate*" or "couples for whom a strong desire or life goal is frustrated".

LIFE CRISIS

A point on which there appears to be considerable consensus among those studying the psychological impact of infertility is that the discovery of the infertility brings about a *significant crisis in the lives* of the people involved (van Balen & Trimbos-Kemper, 1993). When someone wants to have a child, realization of an incapacity to do so through the "natural procedure" followed by humanity throughout its existence, at the moment one wishes, must undoubtedly lead to surprise and some degree of frustration. The surprise arises from being faced with an *unexpected situation*, given a deep-rooted belief in human beings that "procreation is a voluntary process", accessible to anyone simply as a result of frequent sexual intercourse. Moreover, this belief is no doubt reinforced indirectly by the fact that societies make tremendous efforts with regard to the control of unwanted pregnancies, implying the notion of conception as something that will tend to occur unless preventive measures are taken. In the general population, except for the case of patients with particular prior complaints related to the reproductive apparatus, one does not anticipate in oneself the condition of infertility: *the ability to procreate is presupposed*.

Likewise, the confirmation of one's inability to have a child not only produces frustration over an *unfulfilled desire and expectations of paternity*; it also implies an alteration, at

least temporary, of the life one may have mapped out for oneself – a challenge to one's life plan. Frustration at such alteration will be most substantial in two opposite types of life plan: that based on having children young (while the parents are full of vitality, so as to devote to the children the best years of one's life), and that based on paternity as the culmination of personal development (having children on achieving personal and professional maturity). In either case the time factor will be a variable that puts at serious risk the goals of the life plan.

Bearing in mind all of these issues, it is not surprising that those who suddenly learn of their infertility are confused, and experience, at the very least, a feeling of bewilderment, since they have to assimilate everything that is happening to them and position themselves with regard to the new conditions of their situation. This process involves a necessary *reappraisal of their life plan and the taking of important decisions*: basically, to continue trying by their own means, to give up the idea of having children, to try assisted reproduction, to adopt or to foster.

But this crisis, which can indeed be considered as significant in a person's life, insofar as it forces them to take stock and re-assess values and life decisions that had not previously been so close to the surface, need not necessarily become a serious life crisis. Although some authors, such as Menning (1980), Forrest and Gilbert (1992) and Lalos (1999), report that many infertile individuals suffer a chronic existential crisis, it can be assumed that what underlies such a crisis is *the continued frustration of a strong desire for biological paternity*.

Moreover, new data, which have only emerged as a result of longitudinal studies on assisted reproduction treatments which ended in failure, show that people who experience this type of chronic crisis over "not having children" see it resurface not only at various points throughout their lives as a consequence of certain events that bring their "lack of paternity" to the fore (Carter & McGoldrick, 1999), but also specifically on reaching the time of their lives when they would expect to be grandparents (Wirtberg, Möller, Hogström, Tronstad & Lalos, 2007). Thus, the phenomenon is replicated, this time reflected in *the frustration at not having grandchildren* ("grandchildlessness", Wirtberg et al., 2007).

DEVALUATION OF SELF-CONCEPT

A point from which to start out in analyzing the desire for biological paternity is that it is largely conditioned by strong values associated with procreation, one of the aspirations still considered as basic for the majority of human beings (Ireland, 1993). When "the power to procreate" is taken as a reference for virility-masculinity or femininity, the inability to have children "by ourselves" calls into question our *personal identity*, potentially sowing seeds of doubt over "how much of a man (or woman)" one is (Carmeli & Birenbaum-Carmeli, 1994; Deveraux & Hammerman, 1998; Williams, 1997). Such doubts about personal identity can go as far as modifying the concept one had of oneself up to that time, devaluing it, and can trigger, in people with infertility problems, *thoughts of low personal self-worth*.

Thus, numerous studies have found, in couples attending assisted reproduction clinics, diverse types of *negative self-appraisal*:

- ✔ *Low self-esteem* and feelings of inferiority (Abbey, Andrews & Halman, 1992; Bromham, Bryce & Balmer, 1989; Wischmann, Stammer, Scherg, Gerhard & Verres, 2001).
- ✔ *Low confidence in oneself* and low level of pride (Menning, 1977, 1980).
- ✔ *Poor self-image* (Abbey, Andrews & Halman, 1994; Miall, 1994).
- ✔ *Appraisal of oneself as incomplete* or defective (Edelmann, Humphrey & Owens, 1994; Möller & Fällström, 1991).
- ✔ *Appraisal of oneself as unattractive* and not very worthy of consideration by others (Oddens, den Tonkelaar & Nieuwenhuyse, 1999; Valentine, 1986).
- ✔ *Doubts about competencies in roles such as parenting and in marital relationships* (Greil, Leitko & Porter, 1988).

It should be noted that the positive value associated with conception through one's own natural means is so significant that some people maintain such negative self-appraisals even when they have succeeded in procreating through assisted reproduction (Hjelmstedt, 2003). These data may be explained by Whiteford and Gonzalez's observation (1995), which remains valid, that "the culturally shaped desire to have children appears to be extremely strong, transcending sex, age, race, religion, ethnicity and social class division" (cited by Hjelmstedt, 2003, p.7).

In any case, we should not overlook the close relationship between individual beliefs and values and the beliefs and values prevailing in diverse societies, so that in societies in which the demand for paternity is high due to social, economic and religious needs, the inability to

have children can have highly negative psychosocial consequences (Dyer, Abrahams, Mokoena, Lombard & van der Spuy, 2005).

PSYCHOLOGICAL RESEARCH ON THE IMPACT OF INFERTILITY

In the *Guides to psychological assessment, counselling, support and intervention in Assisted Reproduction* published by the Psychological Interest Group of the Spanish Fertility Society (*Sociedad Española de Fertilidad*, SEF), on analyzing the emotional processes found in these patients they state that: "It is not rare to find, therefore, in general, emotional expressions of: social and personal isolation, guilt and blame, anxiety, depression and relationship problems" (Moreno & Guerra, 2007, p. 12). Indeed, the presence of such problems in patients seeking psychological help after unsuccessful attempts to be parents should not be surprising – especially in the case of women – since they are all phenomena easily associated with processes explained by well known psychological theories.

Many professionals interested in this field have provided data supporting this version of the reality since the 1980s, through case studies and other descriptive and empirical work (Ávila, 1993; Benazon, Wright & Sabourin, 1992; Boivin & Takefman, 1996; Greil, 1997; Link & Darling, 1986; Menning, 1980; Mora, 2005; Moreno-Rosset, 2000b, Wirtberg et al., 2007).

However, the 1990s saw the publication of a number of reviews of this type of study that called into question this "official view of the psychological problem of infertility", namely, that infertility implies a significant life crisis that will trigger important psychological alterations.

First of all, they raised serious *methodological objections*, based on the fact that the majority of studies from which they obtained their information were exploratory, tended to use instruments designed by the researchers themselves (rather than standardized instruments), had biased samples – made up basically of women seeking help –, lacked control groups or comparison between groups, and used small samples (Burns & Covington, 1999; Dunkel-Schetter & Stanton, 1991).

Furthermore, it was claimed that on taking into account only those studies that used representative samples and standardized measures, empirical research showed that infertile women in general did not differ significantly in emotional aspects from the control group or from normative groups, though there was evidence of negative effects in a few studies (Dunkel-Schetter & Lobel, 1991). Likewise, as Wischmann, Stammer, Scherg, Gerhard and Verres (2001) point out, several systematic studies that used control or comparison groups failed to find significant psychopathology in populations of infertile couples (Leiblum & Greenfield, 1997; Morrow, Thoreson & Penny, 1995; Wright, Allard, Lecours & Sabourin, 1989).

More recently, Verhaak and cols., concluding their review of 25 years' research on psychological aspects of IVF, make the following assertion:

> "Apart from individual differences, 25 years of research into the psychological aspects of IVF has not yielded compelling evidence for significant negative emotional consequences of unsuccessful treatment. Most women seem to be able to deal effectively with the burden of the successive cycles. Most women seem to adjust well, even to unsuccessful treatment, but still a considerable number develops clinical relevant emotional problems as a result of ineffective IVF" (Verhaak, Smeenk, Evers, Kremer, Kraaimaat & Braat, 2007, p.33).

This conclusion appears to put the problem back in perspective: it cannot be asserted, in a general way, that the majority of those with problems of infertility present psychological alterations (in themselves or in relation to the various interventions of assisted reproduction treatment), but it does seem to be shown that a portion of them experience such problems (as described in Antequera, Moreno-Rosset, Jenaro and Ávila in this same issue).

Controlled studies have yielded data that confirm the type of problem and its magnitude. Results in this direction would include those of Oddens et al. (1999) with a sample of 281 women awaiting assisted reproduction treatments from three different countries (Belgium, Holland and France), who were compared to 289 of similar characteristics but without fertility problems (control group). Significant differences between the two groups were found for the following aspects, with prevalence indicated for the group studied:

1) *Negative feelings and negative self-appraisals* [feeling inadequate (44.8%), depressed (77.9%), hurt (84.4%), guilty (37.4%), isolated (50.5%), angry (73.3%), ashamed (37.2%), embarrassed (77.0%)].
2) *Relationship* [support by partner (92.9%), partner

distressed (37.5%), partner sad (67.7%), less satisfaction with the relationship (8.7%), relationship less close (4.5%)].

3) *Sexuality* [less sexual interest (31.5%), less sexual satisfaction (20.6%), less sexual pleasure (25.7%), less spontaneity of sex (48.1%), lower coital frequency (22.3%)].

Moreover, significant differences were also found in *depressed mood*, in *concentration capacity and memory*, in *anxiety/fears* and in *attractiveness*. One in four patients (24.9%) presented *depressive disorders*, compared to just 6.8% of controls.

It should be pointed out that various studies using *control groups* have indeed systematically found significant differences in women with problems for having children, mainly in measures of *anxiety and depressive behaviours*, at some of the different stages of assisted reproduction (see, for example, Castro, Borrás, Pérez-Pareja & Palmer, 2001; Dyer et al., 2005; Moreno-Rosset & Martin, 2008; Verhaak et al., 2007; Wischman et al., 2001).

Finally, it is important to stress that, paraphrasing Wischmann et al. (2001, p.1760), although research is definitively in favour of the "de-pathologization" of infertility, there does appear to be a "subgroup" of couples with serious psychological problems who need special psychological help.

An idea of how this subgroup – whose size Boivin estimates at around 20% of the total – is made up can be obtained by considering the *risk factors* indicated by the present author in the above-mentioned *Guidelines for Counselling in Infertility* (ESHRE):

1) *Personal* (pre-existing psychopathology, primary infertility, being female, considering paternity as a central goal of adult life, and using avoidance strategies for coping with the problem).
2) *Situational or social* (poor quality of marriage/relationship, impoverished social network, and situations or persons that remind one of one's infertility).
3) *Treatment-linked* (side effects of medication, situations that threaten the goal of pregnancy, and decision-making times) (Boivin, 2002, pp.9-10)

SOCIAL REPERCUSSIONS

The majority of research in the last forty years on the repercussions of infertility in people's lives has been carried out in Western developed countries, given the availability of the necessary resources, and has focused on revealing the impact on "psychological well-being". However, it should be borne in mind that the repercussions of infertility in people's lives *are not the same in Western developed countries*, where economic and social wellbeing is basically assured and is not directly related to biological paternity, *as in developing countries*, or in countries that are developed but in which there persists a conception of society in which family structures support the social-economic framework more than any other type of social structure.

As Dyer and cols. point out, in the developing world, infertility produces "marital instability, divorce, loss of social status, abuse, poverty and stigmatization ... and although men are not immune to the suffering associated with infertility, women appear to carry the main burden as they are often blamed for non-conception and are more vulnerable to the negative social and economical consequences" (Dyer et al., 2005, p.1938).

Various studies in this field carried out in China and Taiwan highlight first of all the fact that the problems experienced are similar to those found in the West, and also that the failure to have children has greater impact in rural areas and in more poorly education people. But furthermore, they coincide in stressing that the principal difference with respect to Western countries lies in the negative effect on the relationship between women and their parents in-law in cases of infertile couples, given their much more significant role in Chinese society (Lee & Sun, 2000, Lee, Sun & Chao, 2001).

In turn, Hjelmstedt (2003) not only draws our attention to the worry brought about by infertility in Muslim women, given the possibility of the man's taking another wife, but also reports that 40% of Nigerian women with secondary infertility were labelled as "witches" in cases of divorce or their husband's further marriages. Likewise, she stresses the devastating consequences of this problem in societies in which the survival of adults depends on their having children.

Studies with samples from Turkey, South Africa, Kuwait, Bangladesh and Mozambique, which also reveal the extent of this problem in its various forms of expression, can be consulted in Ozcon and Baysac (2006), Dyer et al. (2005), Fido and Zahid (2004), Papreen, Sharma, Sabin, Begum, Ahsan and Baqui, (2000), Gerrits (1997) and van Balen and Gerrits (2001)

CONCLUSIONS

The information analyzed here on the different psychological repercussions highlights the need for

intervention by psychologists in this field of attention to couples with problems of infertility, and especially with regard to the problematic subgroup. Moreover, it may help to guide such intervention toward *priority goals* (see the works by Ávila & Moreno-Rosset, and Flores, Jenaro & Moreno-Rosset, in this same issue) such as:

1) Restructuring of the values of biological paternity and of self-concept and the negative consequences of the self-devaluation process.
2) Intervention for the management and prevention of anxiety, depressive behaviours, self-blame and social isolation, and for the normalization of sexuality.
3) Strengthening of the relationship, with regard to direct communication, decision-making, emotional support and sexual relations.
4) Preparation for the medical procedures couples have to deal with and their consequences (both during the interventions themselves and should they fail), and for an assertive relationship with the health professionals making up the assisted reproduction teams.

It should be borne in mind that the goals of psychological intervention do not include "satisfaction of the desire to have a biological child", since in the psychologist's arsenal there are no instruments or strategies that lead directly to an increase in the probability of conception. Up to now it has not been clearly demonstrated either that the anxiety variable affects the results of reproductive intervention (Anderheim, Holter, Bergh & Möller, 2005; Mumford, 2004) or that psychological intervention programmes significantly increase conception rates (Boivin, 2003; Guerra, 2007).

Fortunately, *Reproductive Psychology* (Moreno-Rosset, 2004; Moreno-Rosset, Antequera, Jenaro & Gómez, 2008) already offers intervention strategies and programmes which, to a greater or lesser extent, address the priority goals indicated, and reflect the progress made in the restoration of psychological well-being for couples with problems of infertility (Domar, Clapp, Slawsby, Kessel, Orav & Freizinger, 2000; Gutiérrez, 2007; Llavona & Mora, 2003; Moreno-Rosset, 2005; Tuschen-Caffier, Florin, Krausee & Pook, 1999).

Finally, it should be taken into account that if we are to tackle the problems arising from infertility in developing countries it is necessary to design programmes that include community-based resources and interventions with a view to demythifying the causes of infertility and informing people about how it – and the problems deriving from it – can best be treated (Papreen et al., 2000).

REFERENCES

Abbey, A., Andrews, F.M. & Halman, L.J. (1992). Infertility and subjective well-being: The mediating roles of self-esteem, internal control and interpersonal conflict. *Journal of Marriage and The Family, 54*, 408-417.

Abbey, A., Andrews, F.M. & Halman, L.J. (1994). Psychosocial predictors of life quality. How are they affected by infertility, gender, and parenthood? *Journal of Family Issues, 15*, 253-271.

Anderheim, L., Holter, H. Bergh, C. & Möller, A. (2005). Does psychological stress affect the outcome of in vitro fertilization? *Human Reproduction, 20*, (10) 2969-2975.

Ávila, A. (1993). Estrés y procesos psicológicos en la infertilidad humana [Stress and psychological processes in human infertility]. In J. Buendía (Ed.), Estrés y psicopatología [Stress and psychopathology] (pp.181-200). Madrid: Pirámide.

Benazon, N., Wright, J., & Sabourin, S. (1992). Stress, sexual satisfaction, and marital adjustment in infertile couples. *Journal of Sex and Marital Therapy, 18*, 273-284

Boivin, J. (2002). Who is likely to need counselling? *ESHRE Monographs: Guidelines for Counselling in Infertility, 2002* (1) 9-10.

Boivin, J. (2003). A review of psychosocial interventions in infertility. *Social Science Medicine, 57*, 2325-2341.

Boivin, J. & Takefman, J.E. (1996). Impact of the in-vitro fertilization process on emotional, physical and relational variables. *Human Reproduction, 11*, 903-907.

Bromham, D.R., Bryce, F.C. & Balmer, B. (1989). Psychometric evaluation of infertile couples (preliminary findings). *Journal of Reproductive and Infant Psychology, 7*, 195-202.

Burns, L.H. & Covington, S.H. (1999). Psychology of Infertility. In L.H. Burns & S.H Covington (Eds.), Infertility Counselling. *A Comprehensive Handbook for Clinicians* (pp. 3-25). New York: Parthenon.

Cada año nacen 7000 niños por técnicas de reproducción asistida en España [7000 babies born every year in Spain through assisted reproduction]. (2007, 29 March). *El País*, p. 30.

Carmeli, Y.S. & Birenbaum-Carmeli, D. (1994). The predicament of masculinity: Towards understanding the experience of infertility treatments. *Sex Roles, 30*, 663-677.

Carter, B. & McGoldrick, M. (1999).The expanded Family Life Cycle. *Individual, Family and Social Perspectives. Needham:* Allyn and Bacon.

Castro, C., Borrás, C., Pérez-Pareja, J. & Palmer, A. (2001). Respuestas emocionales en mujeres que se encuentran en tratamiento de reproducción asistida [Emotional responses in women undergoing assisted reproduction treatment]. *Ansiedad y Estrés, 7* (2-3) 283-291.

Daniluk, J. (2001). If we had to do it over again… Couples reflections on their experiences of infertility treatments. *Family Journal: Counseling and Therapy for Couples and Families, 9*, 122-133.

Deveraux, L.L & Hammerman, A.J. (1998). Infertility and Identity. San Francisco, Jossey-Bass.

Domar, A., Clapp, D. Slawsby, E., Kessel, B., Orav, J. & Freizinger, M. (2000). The impact of group psychological interventions on distress in infertile women. *Health Psychology, 19*, 568-575.

Dunkel-Schetter, C. & Lobel, M. (1991) Psychological reactions to infertility. In Stanton, A.L. & Dunkel-Schetter, C. (Eds.), *Infertility: Perspectives from Stress and Coping Research* (pp.29-57). New York: Plenum Press.

Dunkel-Schetter, Ch. & Stanton, A.L. (1991). Psychological adjustment to infertility: future directions in research and application. In A.L. Stanton & Ch. Dunkel-Schetter (Eds.*), Infertility. Perspectives from Stress and Coping Research* (pp.197-222). New York: Plenum.

Dyer, S.J., Abrahams, N., Mokoena, N.E., Lombard,C.J. & van der Spuy, Z.M. (2005). Psychological distress among women suffering from couple infertility in South Africa: a quantitative assessment. *Human Reproduction, 20* (7), 1938-1943.

Edelmann, R.J., Humphrey, M. & Owens, D. (1994). The meaning of parenthood and couples, reactions to male infertility. *British Journal of Medical Psychology, 67*, 291-299.

Fido, A. & Zahid, M.A. (2004). Coping with infertility among Kuwaiti women: cultural perspectives. *International Journal of Social Psychiatry, 50* (4) 294-300.

Forrest, L. & Gilbert, M.S. (1992). Infertility: An unanticipated and prolonged life crisis. *Journal of Mental Health Counseling*, 14, 42-58.

Gerrits, T. (1997).Social and cultural aspects of infertility in Mozambique. *Patient Education and Counseling, 31*, 39-48.

Gerrity, D. (2001). A biopsychosocial theory of infertility. *Family Journal, 9* (2), 151-158.

Greil, A.L. (1997). Infertility and psychological distress: a critical review of the literature. *Social Science and Medicine, 45*, 1679-1704.

Greil, A.L., Leitko, T.A. & Porter, K.L. (1988). Infertility: his and hers. *Gender and Society, 2*, 172-199.

Guerra, D. (1998). Cómo afrontar la infertilidad [Coping with infertility]. Barcelona: Planeta.

Guerra, D. (2007). Por qué unas guías de consejo, apoyo e intervención psicológica al paciente en medicina reproductiva asistida. Guías de evaluación, consejo, apoyo e intervención psicológica en reproducción asistida [Why guides for psychological counselling, support and intervention for patients in assisted reproductive medicine? Guides for psychological assessment, counselling, support and intervention in assisted reproduction]. *Revista Iberoamericana de Fertilidad*, Special Issue. 3-9.

Gutiérrez, K. (2007). Intervención Psicológica grupal en Reproducción Humana Asistida. Guías de evaluación, consejo, apoyo e intervención psicológica en reproducción asistida [Group Psychological Intervention in Assisted Human Reproduction]. *Revista Iberoamericana de Fertilidad*, Special Issue. 47-54.

Hjelmstedt, A. (2003). In Vitro Fertilization – *Emotional reactions to treatment, pregnancy and parenthood.* Stockholm: Carolinska University Press.

Ireland, M.S. (1993). Reconceiving women: separating motherhood from female identity. New York: Guilford.

Kentenich, H. (2002). Introduction. *ESHRE Monographs: Guidelines for Counselling in Infertility, 2002* (1) 1-3.

Lalos, A. (1999). Breaking bad news concerning fertility. *Human Reproduction ,14* (3), 581–585.

Lee, T.Y., & Sun, G.H. (2000). Psychosocial response of Chinese infertile husbands and wives. *Archives of Andrology, 45* (3), 143-8.

Lee, T.Y., Sun, G.H. & Chao, S.C. (2001). The effect of an infertility diagnosis on the distress, marital and sexual satisfaction between husbands and wives in Taiwan. *Human reproduction, 16* (8), 1762-1767.

Leiblum, S. (Ed.) (1997). *Infertility. Psychological issues and counselling strategies.* New York: John Wiley & Sons.

Leiblum, S.R. & Greenfield, D.A. (1997). The course of infertility: immediate and long-term reactions. In S. Leiblum (Ed.), *Infertility: Psychological Issues and Counselling Strategies* (pp. 83-102). New York: John Wiley & Sons.

Llavona L. & Mora, R. (2002). La infertilidad: algo más que un problema biológico [Infertility: more than just a biological problem]. *Jano, 63*, (1453), 90-93.

Llavona, L. & Mora, R. (2003). Atención psicológica a las parejas infértiles en tratamiento de reproducción asistida [Psychological attention for infertile couples in assisted reproduction treatment]. In J.M. Ortigosa; M.J. Quiles & F.X. Méndez (Eds.), *Manual de Psicología de la Salud con Niños, Adolescentes y Familia* (287-304). Madrid: Pirámide.

Link, P.W. & Darling, C.A. (1986). Couples undergoing treatment for infertility: Dimensions of life satisfaction. *Journal of Sex and Marital Therapy, 12*, 46-59.

Menning, B. E. (1977). *Infertility: A guide for the childless couple*. Englewood Cliffs: Prentice Hall.

Menning, B.E. (1980) The emotional needs of infertile couples. *Fertility & Sterility, 34*, 313–319.

Miall, C.E. (1994). Community constructs of involuntary childlessness: Sympathy, stigma, and social support. *Canadian Review of Sociology & Anthropology, 31*, 392-421.

Möller, A. & Fällström, K. (1991). Psychological consequences of infertility: a longitudinal study. *Journal of Psychosomatic Obstetrics & Gynecology, 12*, 27-44.

Mora, R. (2005). *Análisis psicológico de las parejas con problemas de infertilidad* [Psychological analysis of couples with problems of infertility]. *Doctoral Dissertation*. Madrid: Universidad Complutense.

Moreno, A., Guerra, D., Baccio, G., Jiménez, V., Dolz, P., Tirado, M. et al. (2007). Guías de evaluación, consejo, apoyo e intervención psicológica en reproducción asistida [Guides for psychological assessment, counselling, support and intervention in assisted reproduction]. *Revista Iberoamericana de Fertilidad*, Special Issue.

Moreno, A. & Guerra, D. (2007). Procesos emocionales en pacientes sometidos a técnicas de reproducción asistida. Guías de evaluación, consejo, apoyo e intervención psicológica en reproducción asistida [Emotional processes in patients undergoing assisted reproduction treatment. Guides for psychological assessment, counselling, support and intervention in assisted reproduction]. *Revista Iberoamericana de Fertilidad*, Special Issue, 11-17.

Moreno-Rosset, C. (Dir.) (2000a). *Factores psicológicos de la infertilidad* [Psychological factors in infertility]. Madrid: Sanz y Torres.

Moreno-Rosset, C. (2000b). Ansiedad y depresión: Principales trastornos asociados a la infertilidad [Anxiety and depression. Principal disorders associated with infertility]. *Informació Psicològica, 73*, 12-19.

Moreno-Rosset, C. (2004). La Psicología de la Reproducción: Una Subdisciplina de la Psicología de la Salud [Reproductive Psychology: A Subdiscipline of Health Psychology]. *ASEBIR. Asociación para el estudio de la biología de la reproducción, 9* (2) 6-8.

Moreno-Rosset C. (2005). Guía para la paciente. Apoyo Psicológico en Reproducción Asistida [Patient guide. Psychological Support in Assisted Reproduction]. *Proyecto I+D+I - La infertilidad en la mujer: aspectos psicosociales y neurobiológicos [R+D+I Project – Infertility in women: psychological and neurobiological aspects]. Expte. 28/03*. Madrid: Intellectual property registration of the Guide (31 pages): M-002424/2005. Intellectual property registration of the script for the relaxation CD (20 minutes): M-002420/2005, 2005.

Moreno-Rosset, C., Antequera, R., Jenaro, C. & Gómez, Y. (2008). La Psicología de la reproducción: la necesidad del psicólogo en las Unidades de Reproducción Humana [Reproductive Psychology: the need for the psychologist in Human Reproduction Units]. *Clínica y Salud* (in press).

Moreno-Rosset, C. & Martín, M.D. (2008). La ansiedad en parejas fértiles e infértiles [Anxiety in fertile and infertile couples]. *Ansiedad y Estrés, 14* (in press).

Morrow, K.A., Thoreson, R.W. & Penny, L.L. (1995). Predictors of psychological distress among infertility clinic patients. *Journal of Consulting and Clinical Psychology, 63*, 163-167.

Mumford, K.R (2004). *The Stress Response, Psychoeducational Interventions and Assisted Reproduction Technology Treatment Outcomes: A Meta-Analytic Review*. Dissertation for the degree of Doctor of Philosophy. University of South Florida.

Oddens, B.J, den Tonkelaar, I. & Nieuwenhuyse, H. (1999). Psychosocial experiences in women facing fertility problems: a comparative survey. *Human Reproduction, 14* (1) 255-261.

Ozcon, M. & Baysac, B. (2006). Emotional distress of infertile women in Turkey. *Clinical and Experimental Obstetrics and Gynecology, 33* (1), 44-46.

Papreen, N., Sharma, A. Sabin, K., Begum, L., Ahsan, S.K. & Baqui, A.H. (2000). Living with infertility:

experiences among urban slum populations in Bangladesh. *International Journal of Social Psychiatry, 8* (15), 33-44.

Tuschen-Caffier, C.B., Florin, I., Krausee, W. & Pook, M. (1999). Cognitive-Behavioral Therapy for Idiopathic Infertile Couples. *Psychotherapy and Psychosomatics, 68*, 15-21.

U.S. Congress (1988). Infertility: Medical and Social Choices. *Office of Technology Assessment: OTA-BA-358*, Washington.

Valentine, D.P. (1986). Psychological impact of infertility: Identifying issues and needs. *Social Work in Health Care, 11*, 61-69.

Van Balen, F. & Gerrits, T. (2001). Quality of infertility care in poor-resource areas and the introduction of new reproductive technologies. *Human Reproduction, 16*, 215-219.

Van Balen, F. & Trimbos-Kemper, T. (1993). Long-term infertile couples: a study of their well-being. *Journal of Psychosomatic Obstetrics & Gynecology, 14*, 53-60.

Van Balen, F., Verdurmen, J. & Ketting, E. (1997). Choices and motivations of infertile couples. *Patient Education and Counseling, 31*, 19-27.

Verhaak, C.M., Smeenk, J.M., Evers, A.W., Kremer, J.A., Kraaimaat, F.W. & Braat, D.D. (2007). Women's emotional adjustment to IVF: a systematic review of 25 years of research. *Human Reproduction Update, 13* (1), 27-36.

Whiteford, L.M. & Gonzalez, L.(1995). Stigma: The hidden burden of infertility. *Social Science Medicine, 40*, 27-36.

WHO (1993). *Manual for standardized investigation and diagnosis of the infertile couple*. Melbourne: Cambridge University Press.

Williams, M.E. (1997). Toward greater understanding of the psychological effects of infertility on women. *Psychotherapy in Private Practice, 16*, 7-26.

Wirtberg, I., Möller, A., Hogström, L., Tronstad, S-E. & Lalos, A. (2007). Life 20 years after unsuccessful infertility treatment. *Human Reproduction, 22* (2), 598-604.

Wischmann, T., Stammer, H., Scherg, H., Gerhard, I. & Verres, R. (2001). Psychosocial characteristics of infertile couples: a study by the "Heidelberg Fertility Consultation Service". *Human Reproduction, 16* (8), 1753-1761.

Wright, J., Allard, M., Lecours, A. & Sabourin, S. (1989). Psychosocial distress and infertility: a review of controlled research. *International Journal of Fertility, 34*, 126-142.