

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Sociology Department, Faculty Publications

Sociology, Department of

---

2010

## The experience of infertility: A review of recent literature

Arthur L. Greil

*Alfred University*, fgreil@alfred.edu

Kathleen Slauson-Blevins

*University of Nebraska-Lincoln*

Julia McQuillan

*University of Nebraska-Lincoln*, jmcquillan2@Unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/sociologyfacpub>



Part of the [Sociology Commons](#)

---

Greil, Arthur L.; Slauson-Blevins, Kathleen; and McQuillan, Julia, "The experience of infertility: A review of recent literature" (2010). *Sociology Department, Faculty Publications*. 102.

<https://digitalcommons.unl.edu/sociologyfacpub/102>

This Article is brought to you for free and open access by the Sociology, Department of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Sociology Department, Faculty Publications by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

REVIEW ARTICLE

# The experience of infertility: A review of recent literature

Arthur L. Greil,<sup>1</sup> Kathleen Slauson-Blevins,<sup>2</sup> and Julia McQuillan<sup>2</sup>

<sup>1</sup>Division of Social Sciences, Alfred University, Alfred, New York 14802, USA

<sup>2</sup>Department of Sociology, University of Nebraska–Lincoln, Lincoln, Nebraska 68588, USA  
*Corresponding author* – A. L. Greil, Division of Social Sciences, Alfred University, 1 Saxon Drive, Alfred, New York 14802, USA; e-mail: [fgreil@alfred.edu](mailto:fgreil@alfred.edu)

## Abstract

About 10 years ago Greil published a review and critique of the literature on the socio-psychological impact of infertility. He found at the time that most scholars treated infertility as a medical condition with psychological consequences rather than as a socially constructed reality. This article examines research published since the last review. More studies now place infertility within larger social contexts and social scientific frameworks although clinical emphases persist. Methodological problems remain but important improvements are also evident. We identify two vigorous research traditions in the social scientific study of infertility. One tradition uses primarily quantitative techniques to study clinic patients in order to improve service delivery and to assess the need for psychological counseling. The other tradition uses primarily qualitative research to capture the experiences of infertile people in a sociocultural context. We conclude that more attention is now being paid to the ways in which the experience of infertility is shaped by social context. We call for continued progress in the development of a distinctly sociological approach to infertility and for the continued integration of the two research traditions identified here.

**Keywords:** infertility, literature review, psychological distress, treatment, illness experience

## Introduction

Most medical sociologists agree that health and illness are best understood, not as objectively measurable states, but as socially constructed categories negotiated by professionals, sufferers and others in a sociocultural context. Decisions as to what constitutes abnormality, how to define that abnormality and what steps, if any, should be taken to deal with its conditions are all made within a social context. How sufferers are seen by others and how they come to see themselves are both products of processes of social definition. Conrad and Schneider (1980) have used the term ‘medicalization’ to denote the process by which certain behavior comes to be understood as a question of health and illness, subject to the authority of medical institutions. One phenomenon that has become increasingly defined as a medical condition is infertility, usually defined in the biomedical context as the inability to conceive after 12 months of regular unprotected intercourse. The medicalization of infertil-

ity began in earnest with the development of fertility drugs in the USA in the 1950s but it has proceeded even more rapidly since the development of such assisted reproductive technologies (ART) as in vitro fertilization (IVF) and intra-cytoplasmic sperm injection. Thompson (2005) has recently described the complex ontological choreography involving precisely timed actions (for example, injections of hormones, ejaculation of sperm and cryopreservation of gametes) among an interrelated set of actors (for example, physicians, nurses and patients) to produce a baby in the modern ART clinic.

The social construction of health and illness is perhaps even more striking in the case of infertility than it is for other conditions. Firstly, no matter how medical practitioners may define infertility, couples do not define themselves as infertile or present themselves for treatment unless they embrace parenthood as a desired social role. Secondly, while the biomedical model treats medical conditions as a phenomenon affecting the individual, infertility is often seen, especially in developed countries, as a condition that affects a couple regardless of which partner may have a functional impairment. Thus, defining oneself as infertile involves not simply negotiations between the individual and medical professionals but also negotiations within the couple and, possibly, the larger social networks. Thirdly, the presence of infertility is signaled, not by the presence of pathological symptoms, but by the absence of a desired state. It is, in the words of Koropatnick *et al.* (1993: 163), a 'non-event transition'. Fourthly, it is more obvious in the case of infertility than it is for other medical conditions that other possibilities exist rather than pursuing a 'cure'. Possible alternatives to treatment include self-definition as voluntarily child-free, adoption, fostering or changing partners. Infertility is best understood as a socially constructed process whereby individuals come to define their ability to have children as a problem, to define the nature of that problem and to construct an appropriate course of action. The study of infertility has much to contribute to the sociology of health and illness by providing researchers with an ideal vantage point from which to study such features of medicalized healthcare as the tension between the voice of medicine and the voice of the lifeworld (Mishler 1984), the gendered nature of health and healthcare and the interplay between structure and agency.

Because it involves an inability to achieve a desired social role, infertility is often associated with psychological distress. About 10 years ago Greil (1997) published a review and critique of the literature on the socio-psychological impact of infertility. He noted that, while the descriptive literature on the psychological consequences of infertility presented infertility as a devastating experience, attempts to test the psychological consequences hypothesis had produced more equivocal results. Studies that looked for psychopathology did not find significant differences between infertile individuals and others, while studies that employed measures of stress and self-esteem did find significant differences. He found support for the conclusion that infertility is a fundamentally different experience for women than for men. Greil also noted that the psychological distress literature was characterized by a number of flaws, including non-representative samples, failure to study those who have not sought treatment, failure to study economically deprived and culturally distinct populations, use of cross-sectional designs and a failure to come up with a satisfactory solution to the problem of 'controls'. Most importantly, however, Greil argued that the psychological distress literature showed little regard for *the social construction of infertility*, treating infertility instead as a medical condition with psychological consequences.

Our goal here is to assess research published since the last review article to determine how it has changed, to discover new lines of research, to summarize generalizations

about infertility experiences and to assess persistent limitations and progress in the methodological and theoretical dimensions of infertility research. We conclude that researchers are moving toward situating infertility in social contexts although the clinical focus of much earlier work persists. We also find that, while many methodological problems remain, important attempts to redress these problems are evident. We note further that there has been progress in certain lines of inquiry, including cross-cultural studies of infertility, the possible long-term consequences of childlessness, the relationship between infertility and stress and the importance of infertility in men's lives. Throughout, we try to demonstrate the importance of making use of non-clinic-based samples if we are to progress in our understanding of the experience of infertility.

We identify two distinct traditions of research in the study of the social and psychological consequences of infertility. One tradition is characterized by the quantitative analysis of patient populations — often focusing on patients being treated via ART — with the goals of improving service delivery and of assessing the need for psychological counseling procedures. These clinically oriented studies typically make use of the quantitative analysis of standardized psychological assessment instruments. The other tradition is based on the qualitative analysis of infertile women and men — both in developed and developing societies — outside the clinic context. Those being studied may or may not be patients in biomedical contexts but the focus of this research is not so much on improving care as on understanding the experience of infertility and the social context that shapes it. This second tradition has been more informed by developments in social scientific studies of illness experience, gender, the body and stigma.

There is little evidence that these two traditions 'speak' to each other; works in one tradition seldom cite works in the other. In the following review, we attempt to take a first step toward integrating these two research traditions. Because our emphasis here is on the experience of infertility and infertility treatment, we focus on studies published in the last 10 years that directly assess the responses to infertility of women, men, and couples. We exclude studies that focus exclusively on the institution of reproductive technology and its cultural and societal context. These are the subjects of a recent review by Inhorn and Birenbaum-Carmeli (2008). We also exclude studies for which the primary focus is on the incidence and prevalence of infertility.

## Methodological Issues

Many methodological shortcomings in infertility research noted by Greil (1997) still persist. Pasch and Christensen (2000) enumerated the following shortcomings in social-scientific research on infertility: small sample sizes, poor sampling methods, use of non-standardized measures, lack of adequate control groups and studies being conducted in infertility treatment centers with which the researcher is affiliated. Henning *et al.* (2002) criticize the many studies that rely primarily on self-report data, those that do not allow the separation of the psychological consequences of infertility from the psychological consequences of the infertility treatment and reliance on cross-sectional data.

Clinic-based studies of treatment seekers still prevail in research on the consequences of infertility (Henning *et al.* 2002). The focus on people receiving treatment makes it difficult to generalize to those who do not seek treatment (Greil 1997). In the USA, for example, less than half of infertile women seek treatment (Greil and McQuillan 2004, Stephen and Chandra 2000). Clinic-based studies therefore provide no information about half of

the infertile female population. Even in nations where access to infertility treatment is guaranteed by the state there are still many couples who do not seek treatment (Boivin *et al.* 2007). Without studies of non-treatment seekers it is impossible to determine what factors differentiate those who seek treatment from those who do not or why those who would like to receive infertility treatment do not have access to it. Even among treatment seekers, the emphasis has been on the most advanced treatments, limiting our ability to understand those who stop treatments after initial attempts. Without a non-clinic comparison group it is impossible to untangle the effects of infertility from the effects of infertility treatment on psychological outcomes.

Since 1997 there have been some important studies using non-clinic based samples. King (2003) used the National Survey of Family Growth, a nationally representative sample that included infertility status data for women in the USA to assess whether treatment seekers and non-treatment seekers are more likely to meet the criteria for anxiety. Malin *et al.* (2001) made use of a Finnish probability sample to determine the degree of satisfaction with treatment. Redshaw *et al.* (2007) used a nationally representative sample of women who had recently given birth in the UK to assess their reactions to infertility treatment. Sundby *et al.* (1998) and Leonard (2002a, 2002b) selected infertile respondents in The Gambia and in southern Chad using systematic sampling techniques in order to obtain a picture of the experience of infertility in those nations. McQuillan *et al.* (2003) studied a probability sample of 580 women in the mid-western USA with an oversample of minority women in order to determine the relationship between infertility and general distress. Greil, McQuillan, and their colleagues are now collecting data for the National Study of Fertility Barriers (NSFB), a prospective panel study based on a random sample of US women with an oversample of minorities and women who have not completed their childbearing.

Other studies have taken steps short of a population study to improve the generalizability of their findings. Epstein *et al.* (2002) and Bunting and Boivin (2007) used internet surveys to obtain respondents for a study on internet use for infertility support through an internet based study and for study of treatment seeking, respectively. Jordan and Revenson (1999) conducted a meta-analysis of six studies using the Ways of Coping Checklist. Jordan and Ferguson (2006) found respondents, of whom 11.4 per cent had fertility problems, at family practice clinics.

As studies of infertility in developing societies have proliferated, ethnographic approaches have become more common. These studies inevitably raise questions of representativeness, but, unlike studies of infertility in developed countries, they have not been as frequently limited to studying people in western-style infertility centers. These studies cannot really deal with causality in a definitive way, but that is not their primary purpose. Instead, ethnographic studies provide rich detail and insight regarding the meaning of infertility in women's and men's own words and from their local perspective (Inhorn and Birenbaum-Carmeli 2008). The fact that there have now been qualitative community-based studies done in many different cultural settings means that we are beginning to develop a sense of the experience of infertility in developing countries.

Cross-sectional analysis, still the most common design in studies of the social and psychological consequences of infertility, makes it impossible to sort out cause and effect. There have been more longitudinal designs in recent years, but most employ a fairly narrow time frame. Several studies have assessed fluctuations in stress levels during a reproductive cycle (for example, Edelman and Connolly 1998, Verhaak *et al.* 2005). Other studies have worked with a slightly longer time frame (Anderson *et al.* 2003, Hjelmstedt *et al.* 2004, Holter *et al.* 2006). Much can be learned from longitudinal studies with

expanded time frames. The Copenhagen Multi-Centre Psychosocial Infertility (COMPI) study (Boivin and Schmidt 2005, Peronace *et al.* 2007, Schmidt *et al.* 2005a) measured Danish women at their initial visit to an infertility clinic and assessed treatment outcomes one year later. Schneider and Forthofer (2005) used data collected in 1988, 1989 and 1990 from the USA-based Study of Marriage, Family and Life Quality. The NSFB, now under way, involves re-interviews of a nationally representative sample of US women three years after the original interview.

Another methodological question has to do less with designing studies than with conceptualizing infertile individuals. As long as the study of infertility is limited to the study of clinic patients, conceptualizing who should be considered infertile seems straightforward. In most studies, infertile individuals are implicitly and inadvertently defined operationally as 'people who present themselves for infertility treatment'. Once we move beyond treatment seekers we observe that the line between infertile and non-infertile people becomes blurred (Greil and McQuillan forthcoming), and infertile individuals are seen to constitute a much more diverse group than was previously understood. How are we to classify a woman who would be considered infertile according to the medical definition but who does not see herself as having tried to conceive and who does not consider herself to be infertile? This is an important question, because such individuals are quite common. Greil and McQuillan (2004) and Jacob *et al.* (2007) have divided infertile women into the 'sub-fecund with intent' (women who say they tried to conceive for at least 12 months without conception) and the 'sub-fecund without intent' (women who report having had unprotected intercourse without conception but who do not say that they were consciously trying to conceive at the time) and have discovered that the two groups differ with regard to both distress levels and help seeking behavior.

Studying infertility in developing countries reveals that western biomedical definitions of infertility exclude a large portion of women in developing societies who think of themselves as infertile (Gerrits 1997). Sundby (2002) writes that in The Gambia and Zimbabwe infertility is experienced as anything that prevents women from realizing their reproductive ambitions. Leonard (2002b) presents the narrative of Solkem, a Chadian woman who, because her husband left her and she no longer has regular intercourse, might not be classified as infertile according to the western biomedical definition but who is nonetheless preoccupied with the quest for conception.

## **Descriptive literature on the experience of infertility**

Recent contributions to the descriptive literature on infertile women (for example, Becker 2000, Clarke *et al.* 2006, Earle and Letherby 2007, Johansson and Berg 2005, Redshaw *et al.* 2007) tend to confirm and elaborate upon previous characterizations of infertile individuals. Several characterizations of infertile women or couples have emerged from qualitative research. For example, Williams (1997) extracted 11 themes from interviews with infertile women: negative identity; a sense of worthlessness and inadequacy; a feeling of lack of personal control; anger and resentment; grief and depression; anxiety and stress; lower life satisfaction; envy of other mothers; loss of the dream of co-creating; the 'emotional roller coaster'; and a sense of isolation. Ulrich and Weatherall (2000) suggest that women experience infertility as an unanticipated life-course disruption. Martin-Matthews and Matthews (2001) focus on the sense among infertile women that time is slipping away and explore the interaction between familial and societal timetables, body timetables and treatment timetables (see also Earle and Letherby 2007). Parry and Shinew (2004) report that leisure satisfac-

tion is impaired by the process of seeking treatment and by feelings of social isolation. Evidence suggests, however, that the characterization of infertile woman as totally immersed in the process of trying to become pregnant describes only treatment seekers (Greil and McQuillan 2004 and forthcoming, Jacob *et al.* 2007, White *et al.* 2006).

### The importance of sociocultural context

The social-scientific literature on infertility is increasingly emphasizing the importance of the sociocultural context in shaping the lived experience of infertility. Kirkman and Rosenthal (1999) argue that the degree of availability of reproductive technology plays a major role in shaping perceptions of and responses to infertility. Letherby (2002) suggests that ambivalence toward motherhood may have been more socially acceptable before the advent of assisted reproductive technologies (ART). In a qualitative study of infertile individuals in South Africa, Sewpaul (1999) shows how differing religious traditions can shape the experience of infertility. According to Sundby (1997), while infertility is seen as a stigma in The Gambia, the existence of a strong fostering tradition means that 43 per cent of infertile couples have a foster child, a circumstance certain to have an impact on the experience of infertility. Feldman-Savelsberg (2002) argues that the experience of infertility is permeated by the political context in Cameroon, where infertile women feel that a weakening state cannot protect them as well from witches as it once did.

One characteristic of the sociocultural context that influences infertility is pro-natalism (Parry 2005, Ulrich and Weatherall 2000). While all societies are pro-natalist, some emphasize the centrality of motherhood to women's identity more than others. For example, Israel is an intensely pro-natalist society with state subsidies for IVF and surrogacy (Birenbaum-Carmeli 2004, Kahn 2000). Remennick (2000) studied a small Israeli sample and concluded that none of the women she spoke to even believed that there was such a thing as voluntary childlessness. In developing societies especially, having children may be the key to women achieving adult status and gaining acceptance in the community (Hollo 2003). Bhatti *et al.* (1999) discuss the importance of fertility to the female role in squatter settlements in Pakistan. According to Sundby and Jacobus (2001), in southern Africa the birth of children gives a woman the right to share in her husband's property and wealth. Among the Yoruba the adult woman's role depends on motherhood because children are essential to the continuation of lineages (Pearce 1999). Pashigian (2002: 135) reports that in northern Vietnam womanhood and motherhood are conflated, asserting that trying to have a baby is an attempt 'to engage in normative identity formation'. In Cameroon infertility can be a source of poverty for women (Feldman-Savelsberg 2002). Because fertility is so central to women's identities in developing countries women and men with fertility problems may resist labeling themselves infertile (Barden-O'Fallon 2005).

The experience of infertility is shaped by patriarchy, but the degree of male dominance and the range of roles other than motherhood open to women vary from society to society. In Egypt women bear the burden of infertility even when they know there is a male cause (Inhorn 2003). According to Nahar *et al.* (2000), in Bangladeshi slums the 'treatment' for males is remarriage, as women are held responsible for infertility. Jenkins (2002) reports a case in Costa Rica where a woman, Silvia, had to resign herself to childlessness because her husband refused to be tested. Several studies demonstrate that infertile women who experience rejection or pressure from husbands and family experience higher levels of distress (Gulseren *et al.* 2006, Guz *et al.* 2003). Gerrits (1997) reports that the experience of infertility may be different in matrilineal societies. While patriarchy may be

less striking in developed societies, it is by no means irrelevant to the experience of infertility in them. In a qualitative study of males who are infertile and have discontinued IVF, Throsby and Gill (2004) discuss what they see as the influence of hegemonic masculine culture on spousal relations. Husbands feel that infertility threatens their masculinity; while wives are pitied, husbands are teased. Men respond, according to Throsby and Gill (2004), by casting blame on their wives.

## Two worlds of infertility

As the above comments suggest, salient differences exist between the experience of infertility in developed and developing societies. It may be justifiable to think in terms of two worlds of infertility. Developed and developing societies tend to differ in prevailing assumptions about childlessness. In developed societies voluntary childlessness is viewed as a more viable and legitimate option and women without children are often presumed to be voluntarily childfree. According to Riessman (2000: 113), however, voluntary childlessness is rare in Kerala, India, since 'bearing and rearing children are central to women's power and well-being'. Leonard (2002a) reports that in Chad there is pressure to prove one's fertility soon after marriage; menstruation is regarded as a 'bad sickness'. Because motherhood is so tightly connected to marriage in many cultures, the presumption is that women are childless only if they are infertile. Therefore in cultures in which voluntary childfree status is acknowledged, many women experience infertility as a 'secret stigma' (Greil 1991b: 22); in cultures in which there is no concept of voluntary childfree status, it is impossible to hide infertility. The stigma and distress of infertility, therefore, is likely to be greater in developing countries (Dyer *et al.* 2005).

Policymakers and scholars are often more concerned about overpopulation than infertility in developing countries (Bos *et al.* 2005, Inhorn and Birenbaum-Carmeli 2008, Nachtigall 2005, van Balen and Gerrits 2001), yet the viewpoint of those who suffer from infertility is often quite different from that of those who make policy. From the point of view of national and international policy, overpopulation is the most important problem, but women in the Cameroon grasslands perceive infertility and population decline to be the chief threat (Feldman-Savelsberg 2002). Studies of infertility in developing societies are often quite sensitive to issues of sociocultural context; studies of infertility in developed societies more often treat infertility as a medical, ethical or psychological issue and pay less attention to the sociocultural context (Bos *et al.* 2005).

Another difference between infertility in developed and developing societies has to do with folk models for making sense of infertility. In developed societies, acceptance of the biomedical model is virtually hegemonic, while in other societies biomedical interpretations of infertility coexist and interact to a greater degree with traditional interpretations (Dyer *et al.* 2004, Feldman-Savelsberg 2002, Gerrits 1997, Nahar 2007). Male infertility in Egypt is explained by the belief that the 'worms' (sperm) are weak (Inhorn 2003). Among the Macua of Madagascar, infertility may be attributed to a husband's and wife's blood failing to mix, a woman's marriage to a spirit, or pubic hair - buried during initiation rites - being dug up by a witch (Gerrits 1997). In both developed and developing societies, folk explanations of infertility may be intertwined with biomedical interpretations (Kahn 2000, Sewpaul 1999, Yebei 2000). Among the Sara of southern Chad (Leonard 2002a, 2002b), whether one uses western medicine ('going to the hospital') or traditional solutions ('going to the village') depends on the interpretation of the problem.

## Research on the psychology of infertility

Alongside the descriptive literature is a more quantitatively oriented literature focused on testing hypotheses about psychosocial aspects of infertility. Edelman and Connolly (1998) found no evidence of psychopathology among British infertility patients and propose that differences between the findings of controlled research and findings based on clinical impressions stem from the fact that counselors see the most distressed patients. They may, however, be responding to past arguments rather than to contemporary accounts in that most of the descriptive literature – as well as most reports based on clinical impressions – asserts not that infertile patients are fundamentally different from others in their psychological functioning but that the experience of infertility is a source of psychological distress (Greil 1997). In a literature review of studies of patients undergoing IVF, Eugster and Vingerhoets (1999) find that IVF couples are well-adjusted. Wischmann *et al.* (2001) suggest that, while most couples do not have a psychopathology there is a subgroup that needs psychological help.

While infertile women are not necessarily more likely to exhibit psychopathology they are more likely to experience higher levels of distress than comparison groups (Beutel *et al.* 1998, Fekkes *et al.* 2003, Monga *et al.* 2004, Oddens *et al.* 1999). Wischmann *et al.* (2001) found that women in a German clinic suffered slightly higher stress than norms and also scored lower than norms on a number of sub-scales of life satisfaction. Infertile women have higher distress scores on the Patient Health Questionnaire than do other women in family practice clinics (Jordan and Ferguson 2006). Women currently experiencing infertility problems display more depression and anxiety than counterparts who have eventually conceived naturally (Oddens *et al.* 1999). Several studies (Holter *et al.* 2006, Verhaak *et al.* 2005), however, have found that IVF women do not differ significantly from norms on general distress.

Studies of men also report mixed results. Baluch *et al.* (1998) found that Iranian men with infertility have higher scores for depression and trait anxiety, especially among those with male-factor infertility. Folkvord *et al.* (2005) report that one-third of infertile men in Zimbabwe showed signs of mild clinical depression. On the other hand, Monga *et al.* (2004) assert that men in infertile couples do not differ from controls on a scale of psychological wellbeing. On the basis of a longitudinal study in Denmark, Peronace *et al.* (2007) conclude that infertility is stressful for men regardless of the source of infertility. Younger Dutch IVF men but not older men exhibited more emotional problems than norms (Fekkes *et al.* 2003).

Much research on both fertility-specific distress and general distress has focused on gender differences in levels of distress. Literature reviews (Abbey 2000, Eugster and Vingerhoets 1999, Henning *et al.* 2002, Savitz-Smith 2003) report evidence that women experience more infertility stress than men. Edelman and Connolly (1998) suggest that this finding may simply reflect the tendency for women generally to be more distressed than men. Despite this caution, most recent studies confirm earlier research that concludes that infertility is more distressing for women than it is for men (Anderson *et al.* 2003, Holter *et al.* 2006, Lee and Sun 2000, Monga *et al.* 2004, Schneider and Forthofer 2005, Slade *et al.* 2007). Additionally, White and McQuillan (2006) found that relinquishing a strong intention to have a child is associated with elevated distress for women but not for men. Pasch and Christensen (2000) write that women invest more in having children and are more treatment-oriented than men. Women experience higher levels of stigma than men (Slade *et al.* 2007). On the other hand, Dyer *et al.* (2004) show that men in South Africa are very bothered by involuntary childlessness.

It is also important to explore *qualitative* differences in the ways that men and women are affected by infertility. Beutel *et al.* (1998) posit that while infertile wives experience infertility as having a greater impact on their daily lives and feel a need for more support, their husbands feel more responsible. Hjelmstedt *et al.* (1999) argue that both men and women report feelings of injustice but assert that women are more likely to admit to changes in mood, jealousy of those who are not infertile and a sense that their biological clocks are ticking away. Men are concerned about loss of control and are worried about their partner's reaction to infertility (Hjelmstedt *et al.* 1999). Much of the above is reminiscent of Greil's (1991a) argument that wives experience infertility as a direct blow to their self-identity, whereas husbands experience infertility indirectly through the effect that it has on their wives.

Most researchers who have investigated the relationship between infertility diagnosis and distress have reached the conclusion that the diagnosis does not exercise an influence over distress levels (Edelmann and Connolly 1998, Hjelmstedt *et al.* 1999, Holter *et al.* 2007, Verhaak *et al.* 2005, Wischmann *et al.* 2001: for an exception, see Dhaliwal *et al.* 2004). No studies have established the extent to which distress among infertile individuals may reflect infertility treatment rather than infertility itself. Based on a national probability sample of women in the USA, King (2003) concludes that the effects of sub-fecundity on general anxiety disorder are not moderated by treatment. Some studies show that the length of treatment is not related to the level of stress (Anderson *et al.* 2003), but several researchers have reported contradictory findings (Chiba *et al.* 1997, Nasser 2000). One unanswered question is whether changes in distress over time are a response to treatment or whether they are a result of the duration of infertility. Studies of IVF women and men (Ardenti *et al.* 1999, Boivin *et al.* 1998) have documented that distress levels vary with the stage of treatment. Studies of IVF women have also provided evidence that it is the outcome of the treatment rather than its duration that gives rise to increased levels of distress (Lok *et al.* 2002, Sydsjö *et al.* 2005, Verhaak *et al.* 2007). Most women eventually adjusted to unsuccessful treatment but a significant minority showed signs of emotional problems (Beutel *et al.* 1998, Holter *et al.* 2006, Verhaak *et al.* 2001, 2005, 2007).

The sizable literature on the relationship between distress and coping strategies among infertile individuals (for example, Benyamini *et al.* 2008, Schmidt *et al.* 2005b, van den Akker 2004) has been reviewed by Abbey (2000). According to Gibson and Myers (2002), social coping resources, growth-fostering relationships, partner support and family support all contribute to lessened infertility stress among women. Hansell *et al.* (1998) report that women who responded to infertility as a 'challenge' were less distressed than women who responded to infertility as a 'loss'. Brothers and Maddux (2003) report that women who perceive a strong link between their future happiness and becoming a parent exhibit higher levels of psychological distress. The focus on gender differences is also evident in studies of coping strategies (Dhillon *et al.* 2000, Hjelmstedt *et al.* 1999). A meta-analysis of six studies using the Ways of Coping Checklist led Jordan and Revenson (1999) to conclude that women display higher levels of seeking social support, escape or avoidance, plan-oriented problem-solving and positive reappraisal. Some evidence suggests that distress levels are related to one's partners coping strategies as well as to one's own (Schmidt *et al.* 2005a). A fascinating discovery comes from Pasch *et al.* (2002), who say that husbands display more negative effects when wives want to talk. While infertility may lead to stress and communication problems between marital partners, Greil (1991a, 1997) claims that couples nonetheless report that they feel that infertility has brought them closer together. A literature review by Pasch and Christensen (2000) finds that infertility does not typi-

cally lead to relationship or sexual problems (see also Daniluk 2001, Hjelmstedt *et al.* 1999, Schmidt *et al.* 2005a, Sydsjö *et al.* 2005). Webb and Daniluk (1999) state that when men reported actually beginning to deal with their infertility they started talking to their partners, which ultimately resulted in a sense of infertility as a shared experience and in turn strengthened relationships. There are, however, some who claim that infertility does have a deleterious impact on marital relationships (Wirtberg *et al.* 2007). According to Sundby (1997), in The Gambia, where marital stability is already an issue, infertility is seen as a major threat to marital stability.

These studies suggest that the impact of infertility on marital relationships depends on the sociocultural context. For example, in settings where women's roles are more closely tied to having children, where producing children for one's family is considered an important obligation and where marriage is defined in terms of producing and raising children, infertility is likely to have a greater negative impact on couple relationships. This implies that infertility will have a greater impact on relationships in the developing world. Evidence for this claim comes from research showing that infertility is more strongly associated with psychopathology in Nigeria, a polygamous society (Aghanwa *et al.* 1999).

Researchers are conducting more systematic studies of the use and effectiveness of psychological interventions than was the case in the past (Domar *et al.* 2000, McQueeney *et al.* 1997, Pook *et al.* 2001). A literature review of studies of the effectiveness of psychosocial interventions concludes that the evidence does not yet support the conclusion that counseling is beneficial (Boivin 2003). More infertility patients express a need for counseling than actually seek it (Boivin *et al.* 1999). Guerra *et al.* (1998) present evidence suggesting that many infertility patients who could benefit from counseling are not referred. Many couples now use the internet for information and support (Kahlor and Mackert 2009, Porter and Bhattacharya 2008, Rawal and Haddad 2006). Wingert *et al.* (2005) argue that internet self-help in the form of online bulletin boards serves many of the same functions as support groups, but Epstein *et al.* (2002) present evidence that suggests that women who use the internet as their only outlet for infertility support are more depressed than those with multiple outlets. Cousineau *et al.* (2008) have found that a program designed to provide patient support via the internet had positive effects.

Although most researchers have rejected the notion that psychopathology is an important causal factor in infertility (Brkovich and Fischer 1998), there is support for the cyclical argument (van Balen 2002) that infertility produces stress, and that stress in turn inhibits fertility (Henning *et al.* 2002, Pook *et al.* 2004). In a literature review on psychological distress and infertility, Wischmann (2003) argues that stress and anxiety are likely to be contributing causes but are rarely the sole cause of infertility and asserts that methodological improvements are necessary before definitive statements about the causal roles of stress and anxiety can be made. In another literature review, Eugster and Vingerhoets (1999) cite some evidence that psychological factors may influence IVF success rates. This is supported by research by a number of researchers (Boivin and Schmidt 2005, Boivin *et al.* 2006, Gulseren *et al.* 2006), but others (Anderheim *et al.* 2005, Salvatore *et al.* 2001) find no evidence for this. Strauss *et al.* (1998) report that psychological variables explain only a very small proportion of the variance in treatment outcomes. There is evidence that stress levels and coping strategies have an impact on sperm quality (Pook and Krause 2005, Pook *et al.* 1999).

## Sociocultural environment of treatment

Alongside the literature on the experience of infertility exists another body of research that focuses on the experience of infertility *treatment* both in developed and developing societies. An important factor influencing the experience of infertility, even in developed societies, is access to care (Beckman and Harvey 2005). Ethnic minorities in the USA, the UK and The Netherlands have less access to care than non-Hispanic Whites (Becker *et al.* 2005, Bitler and Schmidt 2006, Culley and Hudson 2006, 2007, Henne and Bundorf 2008, Inhorn and Fakih 2005, Jain 2006, van Rooij *et al.* 2007, White *et al.* 2005). Even in Massachusetts, a US state with mandated ART coverage, Latino women, less educated women and poor women are underrepresented in ART clinics (Jain 2006). Feinberg *et al.* (2006, 2007) found that African Americans were not underrepresented at a military fertility clinic where everyone was guaranteed equal access but that Hispanics were underrepresented. In contrast to US women, Israeli women experience infertility in the context of state support of infertility treatment (Kahn 2000, Remennick 2000). In France, where ART is subsidized, socioeconomic status (SES) and occupation do not seem to affect the utilization of ART but low SES women are overrepresented among early ART pioneers (Tain 2003). This suggests that, as new treatments become available, patterns of usage and, indeed, the experience of infertility, may change as well. For example, Miller (2004) observes that the intention to have children has risen faster among sub-fecund women than among fecund women and speculates that this trend may be a response to the increasing availability of ART.

Although rates of seeking help for infertility are comparable in developed and less developed societies (Boivin *et al.* 2007), access to care is much more severely limited in developing societies (Kielman 1998, Nachtigall 2005, Ombelet *et al.* 2008, van Balen and Gerrits 2001). Dyer *et al.* (2002) discovered that one-quarter of female South African clinic patients had been seeking care for over five years before their first appointment at an infertility clinic. Lack of access to primary care appeared to be a major barrier. Sundby (2002) writes that the formal medical systems in both The Gambia and Zimbabwe are unable to meet the need for services. That infertility is a major concern is evident from the high proportion of hospital admissions, but the care women receive is often inappropriate (Sundby *et al.* 1998, Sundby and Jacobus 2001). Lack of coordination between care providers means that people may go through the same treatment several times. Affluent women in The Gambia, India and Egypt have access to sophisticated gynecological facilities and ART but the needs of poor and middle-class women are not met (Sundby *et al.* 1998, Widge 2005).

A crucial difference between infertility treatment in developed and developing societies is the greater availability, acceptance and utilization of alternative care systems in developing societies (Kielman 1998, Okonofua *et al.* 1997). Many clinic patients in both South Africa and Zimbabwe say that they went first to see a traditional healer (Dyer *et al.* 2004, Folkvord *et al.* 2005). Nahar *et al.* (2000) comment that in Bangladeshi slums the most common treatment for women involves the use of herbalists and healers, while the most common 'treatment' for men is remarriage. Yebei (2000) reports that, even after they had immigrated to The Netherlands, Ghanaian women often had to seek alternative practitioners, such as herbalists and spiritual healers, because of the high cost of biomedical treatment.

The delivery of infertility treatment appears to be shaped in many ways by its socio-cultural context. Treatment of infertility in India is shaped by the fact that adoption is not an option, given the Indian ideology of marriage and the family. Inhorn (2000) writes that Islam prohibits adoption because there are no blood ties to the father and no mater-

nal bond. In contrast, Jenkins (2002) describes the situation in Costa Rica, where adoption is a socially acceptable solution to the problem of infertility because unwed pregnancies are a problem and abortion is illegal. In countries influenced by Islam, religious leaders deem donor insemination unacceptable (Folkvord *et al.* 2005, Meirow and Schenker 1997). Handwerker (2002) posits that the ideological importance in China of having sons fuels the Chinese ART industry. Inhorn (2000) has been especially eloquent in discussing the interplay between cultural understandings and reproductive technology in Egypt. Mitchell (2002) argues that increased marketing of reproductive technologies has led to couples seeking help earlier and may have resulted in unnecessary treatments.

Because only about half of infertile individuals worldwide seek treatment, the question of what factors influence help-seeking is an intriguing one. On the basis of a study of a population-based sample of infertile women, White *et al.* (2006) conclude that self-definition as infertile is key to seeking treatment. Because this was a cross-sectional study, it remains unclear whether defining oneself as infertile is a prerequisite to seeking treatment or whether it is treatment that leads individuals to define themselves as infertile. Bunting and Boivin (2007) found that women who were more concerned about being labeled infertile were less likely to seek treatment. Greil and McQuillan (2004) have found that infertile individuals with intent were more likely to seek treatment than infertile individuals without intent. It is apparent that not all US women who are infertile by the medical definition see themselves as infertile. Conversely, Gerrits (1997) notes that Macua women in Cameroon who sought both western and traditional treatment were not necessarily infertile by the biomedical definition.

Greil's early qualitative work (1991a) showed that wives were much more likely to initiate treatment than husbands. More recently, Daniluk (2001) has reported that, of the 65 infertile couples she interviewed, it was the woman who initiated treatment in all cases (see also Webb and Daniluk 1999, Throsby and Gill 2004). Although women are very treatment-oriented, they nonetheless find the experience of treatment highly stressful (Peddie *et al.* 2005, Schmidt 1998). Yebai (2000) discovered that Ghanaian women in The Netherlands found infertility treatment unpleasant and emotionally draining. Husbands, too, find treatment stressful (Schneider and Forthofer 2005), but men who perceive healthcare professionals as supportive report lower levels of stress and anxiety (Brucker and McKenry 2004). Redshaw *et al.* (2007) find that patients report feeling that they have little control over treatment and that they are not being treated like people.

Several studies have shown that patients are intimidated by the language of biomedicine and by the technical aspects of infertility treatment, especially in situations where language barriers exist (Becker *et al.* 2005, Ulrich and Weatherall 2000, Wingert *et al.* 2005). The infertility treatment experience has been described as a situation that engulfs patients and dominates their daily routine (Daniluk 2001, Redshaw *et al.* 2007). Greil (2002) summarizes the experience of treatment of infertile women in terms of three paradoxes: (i) their sense of loss of control leads them to treatment where they lose even more control; (ii) their feelings of loss of bodily integrity leads them to treatment where the body is invaded; and (iii) their sense of loss of identity leads to treatment where they feel they are not treated as whole people. Still Greil (2002) insists that infertile women in the USA should not be seen as passive victims (see also Letherby 2002, Parry 2005). Riessman (2000, 2002) and Todorova and Kotzeva (2003) make similar observations about women in southern India and Bulgaria, respectively.

Infertility patients want to receive patient-centered care (Schmidt *et al.* 2003) and more information than they currently receive (Souter *et al.* 1998). Redshaw *et al.* (2007) report

that infertility patients complained about the lack of continuity of care, about the inconvenience of treatment and about its emotional and financial costs. Nonetheless, women expressed stoicism and saw the difficulties of treatment as the price they had to pay to have a child. Malin *et al.* (2001) found that Finnish women treated prior to 1990 were more dissatisfied than women who received treatment after that time. Patients expressed satisfaction if they perceived that care was individualized, supportive and friendly. Sources of dissatisfaction were the slow progress of treatment and poor relationship with healthcare providers. Women display variability in which aspects of treatment they find most stressful (Benyamini *et al.* 2005).

The difficulties patients have in putting a stop to treatment have also been discussed (Greil 1991a, Sandelowski 1991). According to Throsby and Gill (2004: 12), women find it especially difficult to stop treatment, but their husbands step in to exercise a 'rational veto' by bringing in considerations of the emotional and physical health of wives. Olivius *et al.* (2004) find that 26 per cent of women who voluntarily stop IVF treatment do so because of the psychological burden entailed. Although it is difficult to stop treatment, Verhaak *et al.* (2007) say that stopping treatment leads to reduced depression and anxiety among IVF women, even if they do not conceive. Unsuccessful IVF couples do not regret the IVF experience; instead they view it as their best chance to have conceived (Daniluk 2001, Johansson and Berg 2005, Throsby and Gill 2004). Women who have stopped IVF treatment often go through a period of self-reflection before coming to terms with their infertility (Peddie *et al.* 2005). A study of Scandinavian women two years after unsuccessful IVF found that the women refocus on other concerns but still retain hope for a child (Johansson and Berg 2005). Johansson and Berg (2005) describe women who, even after they discontinued treatment, do not relinquish hope, at least until they reach menopause. Small-sample studies of women who are not able to have biological children find that many restructure their definition of family to include adoption and childfree lifestyles (Parry 2005, Su and Chen 2006, Ulrich and Weatherall 2000).

Achieving pregnancy does not necessarily restore normalcy to the lives of infertile individuals. Eugster and Vingerhoets (1999) report in a literature review that pregnancy for people undergoing IVF is more stressful than for people without fertility problems (see also Bevilacqua *et al.* 2000), but Cox *et al.* (2005) find no evidence of lower self-esteem for those who became pregnant via IVF. Letherby (1999) states that infertile women who have given birth through ART report feelings of anxiety and guilt as well as an obligation to be perfect mothers. Conversely, Hjelmstedt *et al.* (2004) report that, six months postpartum, successful infertility patients felt they had left infertility behind them. Parents say infertility has led them to have stronger feelings for children, to have greater tolerance for the difficulties of parenting and to be more grateful. Men felt infertility had made them emotionally closer to their children than they would otherwise have been. The few empirical studies that have been done on the acquisition of maternal identity among infertile women show that infertile mothers have lower self-evaluations and take longer to embrace the motherhood identity (Gibson *et al.* 2000, McMahan 1999). There is, however, no evidence of problematic maternal behavior, marital problems or psychological problems (Repokari *et al.* 2007). Ulrich and Weatherall (2000) state that infertile women who eventually give birth discover that motherhood presented more challenges than they had expected. Eugster and Vingerhoets (1999) find no differences in parenting between parents who have conceived through IVF and other parents.

Some researchers have addressed the long-term consequences of infertility. Wirtberg *et al.* (2007) conducted in-depth interviews with 14 Swedish women 20 years after unsuc-

cessful tubal surgery. They found that the women still had vivid memories of their time as infertility patients although all but three were able to develop a satisfying childfree lifestyle. With peers beginning to have grandchildren, however, several felt as if they were experiencing infertility all over again. Qualitative interviews conducted by Zucker (1999) reveal that, compared to women with other reproductive problems, infertile women were more likely to recall feelings of failure and uncertainty. In a 10-year follow-up study of IVF women, Sundby *et al.* (2007) found that women remembered the period of infertility as a difficult time in their lives. Most of the IVF women in the Sundby *et al.* (2007) study became mothers. Regardless of the outcome, they all found ways to cope with their situation. There is evidence that the long-term negative consequences of infertility exist only among the involuntarily childless (see also Jacob *et al.* 2007, McQuillan *et al.* 2003, 2007). Distress levels for ever-infertile mothers, whether they have biological or adopted children, are not significantly different from those found among the fertile. In a study of women who adopted, used ART or pursued surrogacy, van den Akker (2004) found that women with children reported a higher quality of life than childless women, regardless of the process by which they obtained children.

## Conclusions

The publication of scholarly research on the infertility experience has grown in the past 10 years. Scholars continue to explore the extent to which infertility is a source of psychological distress and to accumulate evidence about the importance of gender for the experience of infertility. Research continues to examine in detail the characteristics of IVF patients and many aspects of the experience of IVF treatment. New trends are evident as well. There has been an explosion of ethnographic research that places the experience of infertility in its sociocultural context. More attention is now being devoted to the investigation of the long-term consequences of infertility. It is also possible to discern some movement towards an increased emphasis on the study of the dialectical relationship between infertility and stress and on the assessment of the effectiveness of psychological interventions.

Some methodological weaknesses persist but there is also progress. There is increased recognition of the importance of studying couples and of learning more about the male experience of infertility. There is a growing recognition that reliance on small, nonrepresentative, clinic-based samples of treatment seekers is a problem and researchers have begun to address these issues. While the underrepresentation of economically deprived and culturally distinct populations continues to be a problem in the study of infertility in developed societies, the publication of ethnographic studies of infertility in developing countries has drawn attention to the need for more of this work. Research and analyses are moving in the direction of placing the experience of infertility within its social context by bringing sociological and socio-psychological theories to bear on the experience of infertility.

There are now two vigorous research traditions in the social-scientific study of infertility. One tradition primarily uses quantitative techniques to study clinic patients with an eye to improving service delivery and to assessing the need for psychological counseling. The other tradition primarily uses qualitative research to capture the experiences of infertile individuals in their sociocultural context. In this article we have tried to interweave these two traditions in an effort to begin the process of integrating them. Much can be gained by combining the methodological rigor of the clinical literature with the sensitivity to the socially constructed nature of infertility evidenced by the cross-cultural literature.

Gerrits' recent (2008) study of a Dutch fertility clinic provides us with an excellent example of a work that brings an ethnographic sensibility to the modern clinic setting. Sundby *et al.* (1998) and Leonard (2002a, 2002b) have employed sophisticated sampling techniques in an effort to strengthen the generalizability of their ethnographic observations. Bunting and Boivin (2007) have recently applied quantitative techniques outside the clinic setting in order to observe infertility decision-making among women early in the process. The NSFB provides researchers with the opportunity to address questions of self-definition, social influence and other issues that have often been neglected in the quantitative literature. The COMPI research program represents another notable effort to apply quantitative methodological strategies to questions revolving around the social construction of infertility.

It seems fairly clear that infertility researchers have begun to apply insights from the sociology of health and illness, the sociology of gender, the sociology of the body and the sociology of deviance to understanding the experience of infertility. It is less clear that these fields have been influenced by research on infertility, but the study of infertility has much to contribute to the wider discipline. The research on infertility reported upon here can tell sociologists a great deal about the role of power and social structure in the social construction of reproduction, nicely captured by the phrase 'stratified reproduction' (Ginsburg and Rapp 1995: 3). The research reported upon here also provides us with evidence that women are not merely passive victims of medicalization and male reproductive control but are rather active agents in defining their own experience and in constructing meaningful moral worlds in situations not of their own choosing. The literature described here sends a clear message about the importance of self-identity in the medical help-seeking process and about the importance of the body for identity. The infertility literature can also serve to remind us that it is not only women who reproduce, who undergo medicalization and who experience stigma, and that men need to be a part of research on gender and health.

## References

- Abbey, A. (2000) Adjusting to infertility. In Harvey, J.D. and Miller, E.D. (eds) *Loss and Trauma: General and Close Relationship Perspectives*. Ann Arbor, MI: Edwards Brothers.
- Aghanwa, H.S., Dare, F.O. and Oguniyi, S.O. (1999) Sociodemographic factors in mental disorders associated with infertility in Nigeria, *Journal of Psychometric Research*, 46, 2, 117–23.
- Anderheim, L., Holter, H., Bergh, C. and Møller, A. (2005) Does psychological stress affect the outcome of in vitro fertilization? *Human Reproduction*, 20, 10, 2969–75.
- Anderson, K.M., Sharp, M., Rattray, A. and Irvine, D.S. (2003) Distress and concerns in couples referred to a specialist infertility clinic, *Journal of Psychosomatic Research*, 54, 4, 353–5.
- Ardenti, R., Campari, C., Agazzi, L. and La Sala, G.B. (1999) Anxiety and perceptive functioning of infertile women during in-vitro fertilization: exploratory survey of an Italian sample, *Human Reproduction*, 14, 3126–32.
- Baluch, B., Nasser, M. and Aghssa, M.M. (1998) Psychological and social aspects of male infertility in a male dominated society, *Journal of Social and Evolutionary Systems*, 21, 1, 113–20.
- Barden-O'Fallon, J. (2005) Associates of self-reported fertility status and infertility treatment seeking in a rural district of Malawi, *Human Reproduction*, 20, 8, 2229–36.
- Becker, G. (2000) *The Elusive Embryo: How Women and Men Approach New Reproductive Technologies*. Berkeley, CA: University of California Press.

- Becker, G., Castrillo, M., Jackson, R. and Nachtigall, R.D. (2005) Infertility among low-income Latinos, *Fertility and Sterility*, 85, 4, 882–7.
- Beckman, L.J. and Harvey, S.M. (2005) Current reproductive technologies: increased access and choice? *Journal of Social Issues*, 61, 1, 1–20.
- Benyamini, Y., Gozlan, M. and Kokia, E. (2005) Variability in the difficulties experienced by women undergoing infertility treatments, *Fertility and Sterility*, 83, 2, 275–83.
- Benyamini, Y., Gefen-Bardarian, Y., Gozlan, M., Tabiv, G., et al. (2008) Coping specificity: the case of women coping with infertility treatments, *Psychology & Health*, 23, 2, 221–41.
- Beutel, M., Kupfer, J., Kirchmeyer, P., Kehde, S., et al. (1998) Treatment-related stresses and depression in couples undergoing assisted reproductive treatment by IVF or ICSI, *Andrologia*, 31, 1, 27–35.
- Bevilacqua, K., Barad, D., Youchah, J. and Witt, B. (2000) Is affect associated with infertility treatment outcome? *Fertility and Sterility*, 73, 3, 648–9.
- Bhatti, L.I., Fikree, F.F. and Khan, A. (1999) The quest of infertile women in squatter settlements of Karachi, Pakistan: a qualitative study, *Social Science and Medicine*, 49, 5, 637–49.
- Birenbaum-Carmeli, D. (2004) 'Cheaper than a newcomer': on the social production of IVF policy in Israel, *Sociology of Health & Illness*, 26, 7, 897–924.
- Bitler, M. and Schmidt, L. (2006) Health disparities and infertility: impacts of state level mandates, *Fertility and Sterility*, 85, 4, 858–64.
- Boivin, J. (2003) A review of psychosocial interventions in infertility, *Social Science & Medicine*, 57, 12, 2325–41.
- Boivin, J. and Schmidt, L. (2005) Infertility-related stress in men and women predicts treatment outcome 1 year later, *Fertility and Sterility*, 83, 6, 1745–52.
- Boivin, J., Skoog-Svanberg, A., Andersson, L., Hjelmstedt, A., et al. (1998) Distress level in men undergoing intracytoplasmic sperm injection versus in-vitro fertilization, *Human Reproduction*, 13, 5, 1403–6.
- Boivin, J., Scanlan, L.C. and Walker, S.M. (1999) Why are infertile patients not using psychosocial counseling? *Human Reproduction*, 14, 5, 1384–91.
- Boivin, J., Bunting, L., Collins, J.A. and Nygren, K.G. (2007) International estimates of infertility prevalence and treatment-seeking: potential need and demand for infertility medical care, *Human Reproduction*, 22, 6, 1506–12.
- Bos, H., van Balen, F., and Visser, A. (2005) Social and cultural factors in infertility and childlessness, *Patient Education and Counseling*, 59, 3, 223–5.
- Brkovich, A.M. and Fischer, W.A. (1998) Psychosomatic distress and infertility: forty years of research, *Journal of Psychosomatic Obstetrics, and Gynecology*, 19, 4, 218–28.
- Brothers, S.C. and Maddux, J.E. (2003) The goal of biological parenthood and emotional distress from infertility: linking parenthood to happiness, *Journal of Applied Social Psychology*, 33, 2, 248–262.
- Brucker, P.S. and McKenry, P.C. (2004) Support from healthcare providers and the psychological adjustment of individuals experiencing infertility, *Journal of Obstetric, Gynecological, and Neonatal Nursing*, 33, 5, 597–603.
- Bunting, L. and Boivin, J. (2007) Decision-making about seeking medical advice in an Internet sample of women trying to get pregnant, *Human Reproduction*, 22, 6, 1662–8.
- Chiba, H., Mori, E., Morioka, Y., Kashiwakura, M., et al. (1997) Stress of female infertility: relations to length of treatment, *Gynecologic and Obstetric Investigation*, 43, 3, 171–7.
- Clarke, L.H., Martin-Matthews, A. and Matthews, R. (2006) The continuity and discontinuity of the embodied self in infertility, *The Canadian Review of Sociology and Anthropology / La Revue Canadienne de Sociologie et d'Anthropologie*, 43, 1, 95–113.
- Conrad, P. and Schneider, J.W. (1980) *The Medicalisation of Deviance: From Badness to Sickness*. St Louis, MO: Mosby.

- Cousineau, T., Green, T.C., Corsini, E., Seibring, A., et al. (2008) Online psychoeducational support for infertile women: a randomized controlled trial, *Human Reproduction*, 23, 554–66.
- Cox, S., Glazebrook, C., Sheard, C., Ndukwe, G., et al. (2005) Maternal self-esteem after successful treatment for infertility, *Fertility and Sterility*, 85, 1, 84–9.
- Culley, L. and Hudson, N. (2006) Disrupted reproduction and deviant bodies: pronatalism and British South Asian communities, *International Journal of Diversity in Organisations, Communities and Nations*, 5, 2, 117–26.
- Culley, L. and Hudson, N. (2007) Public understandings of science: British South Asian men's perceptions of third party assisted conception, *International Journal of Interdisciplinary Social Sciences*, 2, 4, 79–86.
- Daniluk, J.C. (2001) Reconstructing their lives: a longitudinal, qualitative analysis of the transition to biological childlessness for infertile couples, *Journal of Counseling & Development*, 79, 4, 439–49.
- Dhaliwal, L.K., Gupta, K.R., Gopalan, S. and Kulhara, P. (2004) Psychological aspects of infertility due to various causes – a prospective study, *International Journal of Fertility and Women's Medicine*, 49, 1, 44–8.
- Dhillon, R., Cumming, C.E. and Cumming, D.C. (2000) Psychological well-being and coping patterns in infertile men, *Fertility and Sterility*, 74, 4, 702–6.
- Domar, A.D., Clapp, D., Slawsby, E., Kessel, B., et al. (2000) The impact of group psychological interventions on distress in infertile women, *Health Psychology*, 19, 6, 568–75.
- Dyer, S.J., Abrahams, N., Hoffman, M. and van der Spuy, Z.M. (2002) Infertility in South Africa: women's reproductive health knowledge and treatment-seeking behaviour for involuntary childlessness, *Human Reproduction*, 17, 6, 1657–62.
- Dyer, S.J., Abrahams, N., Mokoena, N.E. and van der Spuy, Z.M. (2004) 'You are a man because you have children': experiences, reproductive health knowledge and treatment seeking behaviour among men suffering from couple infertility in South Africa, *Human Reproduction*, 19, 4, 960–7.
- Dyer, S.J., Abrahams, N., Mokoena, N.E., Lombard, C.J., et al. (2005) Psychological distress among women suffering from infertility in South Africa: a quantitative assessment, *Human Reproduction*, 20, 7, 1938–43.
- Earle, S. and Letherby, G. (2007) Conceiving time? Women who do or do not conceive, *Sociology of Health & Illness*, 29, 2, 233–50.
- Edelmann, R.J. and Connolly, K.J. (1998) Psychological state and psychological strain in relation to infertility, *Journal of Community & Applied Social Psychology*, 8, 4, 303–11.
- Epstein, Y.M., Rosenberg, H.S., Grant, T.V. and Hemenway, N. (2002) Use of the internet as the only outlet for talking about infertility, *Fertility and Sterility*, 78, 3, 507–14.
- Eugster, A. and Vingerhoets, A.J.J.M. (1999) Psychological aspects of in vitro fertilization: a review, *Social Science & Medicine*, 48, 5, 575–89.
- Fekkes, M., Buitendijk, S.E., Verrips, G.H.W., Braat, D.D.M., et al. (2003) Health-related quality of life in relation to gender and age in couples planning IVF treatment, *Human Reproduction*, 18, 7, 1536–43.
- Feinberg, E.C., Larsen, F.W., Catherino, W.H., Zhang, J., et al. (2006) Comparison of assisted reproductive technology utilization and outcomes between Caucasian and African American patients in an equal-access-to-care setting, *Fertility and Sterility*, 85, 4, 888–94.
- Feinberg, E.C., Larsen, F.W., Wah, R.M., Alvero, R.J., et al. (2007) Economics may not explain Hispanics' underutilization of assisted reproductive technology and services, *Fertility and Sterility*, 88, 5, 1439–41.
- Feldman-Savelsberg, P. (2002) Is infertility an unrecognized public health and population problem?: The view from the Cameroon grass fields. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Folkvord, S., Odegaard, O.A. and Sundby, J. (2005) Male infertility in Zimbabwe, *Patient Education and Counseling*, 59, 3, 239–43.

- Gerrits, T. (1997) Social and cultural aspects of infertility in Mozambique, *Patient Education and Counseling*, 31, 1, 39–48.
- Gerrits, T. (2008) Clinical encounters: dynamics of patient-centered practices in a Dutch fertility clinic. PhD dissertation. Amsterdam: University of Amsterdam.
- Gibson, D.M. and Myers, J.E. (2002) The effects of social coping resources and growth-fostering relationships on infertility stress in women, *Journal of Mental Health and Counseling*, 24, 1, 68–80.
- Ginsburg, F.D. and Rayna Rapp, R. (1995) *Conceiving the New World Order: The Global Politics of Reproduction*. Berkeley, CA: University of California Press.
- Gibson, F.L., Ungerer, J.A., Tennant, C.C. and Saunders, D.M. (2000) Parental adjustment and attitudes to parenting after in vitro fertilization, *Fertility and Sterility*, 73, 3, 565–574.
- Greil, A.L. (1991a) *Not Yet Pregnant: Infertile Couples in Contemporary America*. New Brunswick, NJ: Rutgers University Press.
- Greil, A.L. (1991b) A secret stigma: the analogy between infertility and chronic illness and disability, *Advances in Medical Sociology*, 2, 17–38.
- Greil, A.L. (1997) Infertility and psychological distress: a critical review of the literature, *Social Science and Medicine*, 45, 11, 1679–704.
- Greil, A.L. (2002) Infertile bodies: medicalization, metaphor, and agency. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Greil, A.L. and McQuillan, J. (2004) Help-seeking patterns among subfecund women, *Journal of Reproductive and Infant Psychology*, 22, 4, 305–19.
- Greil, A.L. and McQuillan, J. (forthcoming) Trying times: medicalization, intent, and ambiguity in the definition of infertility, *Medical Anthropology Quarterly*.
- Guerra, D., Llobera, A., Veiga, A. and Barri, P.N. (1998) Psychiatric morbidity in couples attending a fertility service, *Human Reproduction*, 13, 61733–6.
- Gulseren, L., Cetinay, P., Tokatlioglu, B., Sarikaya, O.O., et al. (2006) Depression and anxiety levels in infertile Turkish women, *Journal of Reproductive Medicine*, 51, 5, 421–6.
- Guz, H., Ozkan, A., Sarisov, G., Yanik, F., et al. (2003) Psychiatric symptoms of Turkish infertile women, *Journal of Psychosomatic Obstetrics and Gynecology*, 24, 4, 267–271.
- Handwerker, L. (2002) The politics of making modern babies in China: reproductive technologies and the ‘new’ eugenics. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Hansell, P.L., Thorn, B.E., Prentice-Dunn, S. and Floyd, D.L. (1998) The relationships of primary appraisals of infertility and other gynecological stressors to coping, *Journal of Clinical Psychology in Medical Settings*, 5, 2, 133–45.
- Henne, M.B. and Bundorf, K. (2008) Insurance mandates and trends in infertility treatments, *Fertility and Sterility*, 89, 1, 66–73.
- Henning, K., Strauss, B. and Strauss, B. (2002) *Psychological and Psychosomatic Aspects of Involuntary Childlessness: State of Research at the End of the 1990s*. Ashland, OH: Hogrefe and Huber.
- Hjelmstedt, A., Andersson, L., Skoog-Svanberg, A., Bergh, T., et al. (1999) Gender differences in psychological reactions to infertility among couples seeking IVF- and ICSI-treatment, *Acta Obstetrica Gynecologica Scandinavica*, 78, 1, 42–8.
- Hjelmstedt, A., Widstrom, A.M., Wramsby, H. and Collins, A. (2004) Emotional adaptation following successful in vitro fertilization, *Fertility and Sterility*, 81, 5, 1254–64.
- Hollos, M. (2003) Profiles of infertility in southern Nigeria: Women’s voices from Amakiri, *African Journal of Reproductive Health/La Revue Africaine de la Sante’ Reproductive*, 7, 2, 46–56.
- Holter, H., Anderheim, L., Bergh, C. and Moller, A. (2006) First IVF treatment – short-term impact on psychological well-being and the marital relationship, *Human Reproduction*, 21, 12, 3295–302.

- Holter, H., Anderheim, L., Bergh, C. and Moller, A. (2007) The psychological influence of gender infertility diagnoses among men about to start IVF and ICSI treatment using their own sperm, *Human Reproduction*, 22, 9, 2559–65.
- Inhorn, M.C. (2000) Missing motherhood: infertility, technology, and poverty in Egyptian women's lives. In Ragone, H. and Widdance-Twine, F. (eds) *Ideologies and Technologies of Motherhood*. New York: Routledge.
- Inhorn, M.C. (2003) 'The worms are weak': male infertility and patriarchal paradoxes in Egypt, *Men and Masculinities*, 5, 3, 236–56.
- Inhorn, M.C. and Birenbaum-Carmeli, D. (2008) Assisted reproductive technologies and culture change, *Annual Review of Anthropology*, 37, 177–96.
- Inhorn, M.C. and Fakih, M.H. (2005) Arab Americans, African Americans, and infertility: barriers to reproduction and medical care, *Fertility and Sterility*, 85, 4, 844–52.
- Jacob, M.C., McQuillan, J. and Greil, A.L. (2007) Psychological distress by type of fertility barrier, *Human Reproduction*, 22, 3, 885–94.
- Jain, T. (2006) Socioeconomic and racial disparities among infertility patients seeking care, *Fertility and Sterility*, 85, 4, 876–81.
- Jenkins, G.L. (2002) Childlessness, adoption, and Milagros de Dios in Costa Rica. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Johansson, M. and Berg, M. (2005) Women's experiences of childlessness 2 years after the end of in vitro fertilization treatment, *Scandinavian Journal of Caring Sciences*, 19, 1, 58–63.
- Jordan, C.B. and Ferguson, R.J. (2006) Infertility-related concerns in two family practice sites, *Families, Systems and Health*, 24, 1, 28–32.
- Jordan, C.B. and Revenson, T.A. (1999) Gender differences in coping with infertility: a metaanalysis, *Journal of Behavioral Medicine*, 22, 4, 341–58.
- Kahlor, L.A. and Mackert, M. (2009) Perceptions of infertility information and support sources among female patients who access the internet, *Fertility and Sterility*, 91, 1, 83–90.
- Kahn, S.M. (2000) *Reproducing Jews: A Cultural Account of Assisted Conception in Israel*. Durham, NC: University of North Carolina Press.
- Kielman, K. (1998) Barren ground: contesting identities of infertile women in Pemba, Tanzania. In Lock, M. and Kaufert, P.A. (eds) *Pragmatic Women and Body Politics*. Cambridge, MA: Cambridge University Press.
- King, R.B. (2003) Subfecundity and anxiety in a nationally representative sample, *Social Science and Medicine*, 56, 4, 739–51.
- Kirkman, M. and Rosenthal, D. (1999) Representations of reproductive technology in women's narratives of infertility, *Women and Health*, 29, 2, 17–36.
- Koropatnick, S., Daniluk, J. and Pattinson, H.A. (1993) Infertility: a non-event transition, *Fertility and Sterility*, 59, 1, 163–71.
- Lee, T.-Y. and Sun, G.-H. (2000) Psychosocial response of Chinese infertile husbands and wives, *Archives of Andrology*, 45, 3, 143–8.
- Leonard, L. (2002b) Problematizing fertility: 'scientific' accounts and Chadian women's narratives. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Letherby, G. (1999) Other than mother and mothers as others: the experience of motherhood and non-motherhood in relation to 'infertility' and 'involuntary' childlessness, *Women's Studies International Forum*, 22, 3, 359–72.
- Letherby, G. (2002) Childless and bereft? Stereotypes and realities in relation to 'voluntary' and 'involuntary' childlessness and womanhood, *Sociological Inquiry*, 72, 1, 7–20.

- Lok, I.H., Lee, D.T.S., Cheung, L.P., Chung, W.S., Lo, W.K. and Haines, C.J. (2002) Psychiatric morbidity amongst infertile Chinese women undergoing treatment with assisted reproductive technology and the impact of treatment failure, *Gynecologic and Obstetric Investigation*, 53, 4, 195–9.
- McMahon, C. (1999) Does assisted reproduction make an impact on the identity and self-esteem of infertile women during the transition to parenthood? *Journal of Assisted Reproduction and Genetics*, 16, 2, 59–62.
- McQueeney, D.A., Stanton, A.L. and Sigmon, S. (1997) Efficacy of emotion-focused and problem focused group therapies for women with fertility problems, *Journal of Behavioral Medicine*, 20, 4, 313–32.
- McQuillan, J., Greil, A.L., White, L. and Jacob, M.C. (2003) Frustrated fertility: infertility and psychological distress among women, *Journal of Marriage & Family*, 65, 4, 1007–18.
- McQuillan, J., Stone, R.A.T. and Greil, A.L. (2007) Infertility and life satisfaction among women, *Journal of Family Issues*, 28, 7, 955–81.
- Malin, M., Hemminki, E., Raikonen, O., Sihvo, S., et al. (2001) What do women want? Women's experiences of infertility treatment, *Social Science and Medicine*, 53, 1, 123–13.
- Martin-Matthews, A. and Matthews, R. (2001) Living in time: multiple timetables in couples' experiences of infertility and its treatment. In Daly, K. (ed.) *Minding the Time in Family Experience: Emerging Perspectives and Issues*. New York: JAI and Elsevier Science.
- Meirow, D. and Schenker, J.G. (1997) The current status of sperm donation in assisted reproduction technology: ethical and legal considerations, *Journal of Assisted Reproduction and Genetics*, 14, 3, 133–8.
- Miller, K. (2004) Assisted reproduction may change birth intentions, *Fertility and Sterility*, 81, 3, 572–81.
- Mishler, E.G. (1984) *The Discourse of Medicine*. Norwood, NJ: Ablex.
- Mitchell, A.A. (2002) Infertility treatment – more risks and challenges, *The New England Journal of Medicine*, 346, 10, 769–70.
- Monga, M., Alexandrescu, B., Katz, S., Stein, M., et al. (2004) Impact of infertility on quality of life, marital adjustment, and sexual function, *Urology*, 63, 1, 126–30.
- Nachtigall, R.D. (2005) International disparities in access to infertility services, *Fertility and Sterility*, 85, 4, 871–4.
- Nahar, P. (2007) Childless in Bangladesh: suffering and resilience among rural and urban women. PhD dissertation. Amsterdam: University of Amsterdam.
- Nahar, P., Sharma, A., Sabin, K., Begum, L., et al. (2000) Living with infertility: experiences among urban slum populations in Bangladesh, *Reproductive Health Matters*, 8, 15, 33–44.
- Nasseri, M. (2000) Cultural similarities in psychological reactions to infertility, *Psychological Reports*, 86, 2, 375–9.
- Oddens, B.J., den Tonkelaar, I. and Nieuwenhuyse, H. (1999) Psychosocial experiences in women facing fertility problems – a comparative survey, *Human Reproduction*, 14, 1, 255–61.
- Okonofua, F.E., Harris, D., Odebiyi, A., Kane, T., et al. (1997) The social meaning of infertility in southwest Nigeria, *Health Transition Review*, 7, 2, 205–20.
- Olivius, C., Friden, B., Borg, G. and Bergh, C. (2004) Why do couples discontinue in vitro fertilization treatment? A cohort study, *Fertility and Sterility*, 81, 2, 258–61.
- Ombelet, W., Cook, I., Dyer, S., Serour, G., et al. (2008) Infertility and provision of infertility medical services in developing countries, *Human Reproduction Update*, 14, 6, 605–21.
- Parry, D.C. (2005) Work, leisure, and support groups: an examination of the ways women with infertility respond to pronatalist ideology, *Sex Roles*, 53, 5–6, 337–46.
- Parry, D.C. and Shinew, K.J. (2004) The constraining impact of infertility on women's leisure lifestyles, *Leisure Sciences*, 26, 3, 295–308.
- Pasch, L.A. and Christensen, A. (2000) Couples facing fertility problems. In Schmalings, K.B. and Sher, T.G. (eds) *The Psychology of Couples and Illness: Theory, Research and Practice*. Washington

DC: American Psychological Association.

- Pasch, L.A., Dunkel-Schetter, C. and Christensen, A. (2002) Differences between husbands' and wives' approach to infertility affect marital communication and adjustment, *Fertility and Sterility*, 77, 6, 1241-7.
- Pashigian, M.J. (2002) Conceiving the happy family: infertility and marital politics in northern Vietnam. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Pearce, T.O. (1999) She will not be listened to in public: perceptions among the Yoruba of infertility and childlessness in women, *Reproductive Health Matters*, 7, 13, 69-79.
- Peddie, V.L., van Teijlingen, E. and Bhattacharya, S. (2005) A qualitative study of women's decision-making at the end of IVF treatment, *Human Reproduction*, 20, 7, 1944-51.
- Peronace, L.A., Boivin, J. and Schmidt, L. (2007) Patterns of suffering and social interactions in infertile men: 12 months after unsuccessful treatment, *Journal of Psychosomatic Obstetrics & Gynecology*, 28, 2, 105-14.
- Pook, M. and Krause, W. (2005) Stress reduction in male infertility patients: a randomized, controlled trial, *Fertility and Sterility*, 83, 1, 68-73.
- Pook, M., Krause, W. and Rohrlé, B. (1999) Coping with infertility: distress and changes in sperm quality, *Human Reproduction*, 14, 6, 1487-92.
- Pook, M., Rohrlé, B., Tuschen-Caffier, B. and Krause, W. (2001) Why do infertile males use psychological couple counselling? *Patient Education and Counseling*, 42, 3, 239-45.
- Pook, M., Tuschen-Caffier, B. and Krause, W. (2004) Is infertility a risk factor for impaired male fertility? *Human Reproduction*, 19, 40, 954-9.
- Porter, M. and Bhattacharya, S. (2008) Helping themselves to get pregnant: a qualitative longitudinal study on the information-seeking behavior of infertile couples, *Human Reproduction*, 23, 3, 567-572.
- Rawal, N. and Haddad, N. (2006) Use of the Internet in infertility patients, *Internet Journal of Gynecology & Obstetrics*, 5, 2.
- Redshaw, M., Hockley, C. and Davidson, L.L. (2007) A qualitative study of the experience of treatment for infertility among women who successfully became pregnant, *Human Reproduction*, 22, 1, 295-304.
- Remennick, L. (2000) Childless in the land of imperative motherhood: stigma and coping among infertile Israeli women, *Sex Roles*, 43, 11-12, 821-41.
- Riessman, C.K. (2000) Stigma and everyday resistance practices: childless women in South India, *Gender & Society*, 14, 1, 111-35.
- Riessman, C.K. (2002) Positioning gender identity in narratives of infertility: south Indian women's lives in context. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Repokari, L., Punamaa, R.L., Unkila-Kallio, L., Vilks, S., et al. (2007) Infertility treatment and marital relationships: a 1-year prospective study among successfully treated ART couples and their controls, *Human Reproduction*, 22, 5, 1481-91.
- Salvatore, P., Gariboldi, S., Offidani, A., Coppola, F., et al. (2001) Psychopathology, personality, and marital relationship in patients undergoing in vitro fertilization procedures, *Fertility and Sterility*, 75, 6, 1119-25.
- Sandelowski, M. (1991) Compelled to try: the never-enough quality of conceptive technology, *Medical Anthropology Quarterly*, 5, 1, 29-47.
- Savitz-Smith, J. (2003) Couples undergoing infertility treatment: implications for counselors, *Family Journal*, 11, 4, 383-7.
- Schmidt, L. (1998) Infertile couples' assessment of infertility treatment, *Acta Obstetrica et Gynecologica Scandinavica*, 77, 66, 649-53.

- Schmidt, L., Holstein, B., Christensen, U. and Boivin, J. (2005a) Does infertility cause marital benefit? An epidemiological study of 2250 women and men in fertility treatment, *Patient Education and Counseling*, 59, 3, 244–51.
- Schmidt, L., Holstein, B.E., Christensen, U. and Boivin, J. (2005b) Communication and coping as predictors of fertility problem stress: cohort study of 816 participants who did not achieve a delivery after 12 months of fertility treatment, *Human Reproduction*, 20, 11, 3248–56.
- Schmidt, L., Holstein, B.E., Sa°ngren, H., Tjørnhøj-Thomsen, T., et al. (2003) Patients' attitudes to medical and psychosocial aspects of care in fertility clinics: findings from the Copenhagen Multicentre Psychological Infertility (COMPI) Research Program, *Human Reproduction*, 18, 3, 628–37.
- Schneider, M.G. and Forthofer, M.S. (2005) Associations of psychosocial factors with the stress of infertility treatment, *Health & Social Work*, 30, 3, 183–91.
- Sewpaul, V. (1999) Culture religion and infertility: a South African perspective, *The British Journal of Social Work*, 29, 5, 741–54.
- Slade, P., O'Neill, C.O., Simpson, A.J. and Lashen, H. (2007) The relationship between perceived stigma, disclosure patterns, support and distress in new attendees at an infertility clinic, *Human Reproduction*, 22, 8, 2309–17.
- Souter, V.L., Penney, G., Hopton, J.L. and Templeton, A.A. (1998) Patient satisfaction with the management of infertility, *Human Reproduction*, 13, 7, 1831–6.
- Stephen, E.H. and Chandra, A. (2000) Use of infertility services in the United States: 1995, *Family Planning Perspectives*, 32, 3, 132–7.
- Strauss, B., Hepp, U., Staeding, G. and Mettler, L. (1998) Psychological characteristics of infertile couples: can they predict pregnancy and treatment persistence? *Journal of Community and Applied Social Psychology*, 8, 44, 289–301.
- Su, T.-J. and Chen, Y.-C. (2006) Transforming hope: the lived experience of infertile women who terminated treatment after in vitro fertilization failure, *Journal of Nursing Research*, 14, 1, 46–53.
- Sundby, J. (1997) Infertility in The Gambia: Traditional and modern healthcare, *Patient Education and Counseling*, 31, 1, 29–37.
- Sundby, J. (2002) Infertility and healthcare in countries with less resources. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- Sundby, J. and Jacobus, A. (2001) Health and traditional care for infertility in The Gambia and Zimbabwe. In Boerma, J.T. and Mgalla, Z. (eds) *Women and Infertility in sub-Saharan Africa: A Multi-disciplinary Perspective*. Amsterdam: Royal Tropical Institute.
- Sundby, J., Mboge, R. and Sonko, S. (1998) Infertility in The Gambia: frequency and healthcare seeking, *Social Science and Medicine*, 46, 7, 891–9.
- Sundby, J., Schmidt, L., Heldaas, K., Bugge, S., et al. (2007) Consequences of IVF among women: 10 years post-treatment, *Journal of Psychosomatic Obstetrics & Gynecology*, 28, 2, 115–20.
- Sydsjö, G., Ekholm, K., Wadsby, M., Kjellberg, S., et al. (2005) Relationships in couples after failed IVF treatment: a prospective follow-up study. *Human Reproduction*, 20, 7, 1952–7.
- Tain, L. (2003) Health inequality and users' risk taking: a longitudinal analysis in a French reproductive technology centre, *Social Science and Medicine*, 57, 11, 2115–25.
- Thompson, C. (2005) *Making Parents: The Ontological Choreography of Reproductive Technologies*. Cambridge, MA: MIT Press.
- Throsby, K. and Gill, R. (2004) 'It's different for men': masculinity and IVF, *Men and Masculinities*, 6, 4, 330–48.
- Todorova, I.L.G. and Kotzeva, T. (2003) Social discourses, women's resistive voices: facing involuntary childlessness in Bulgaria, *Women's Studies International Forum*, 26, 2, 139–51.
- Ulrich, M. and Weatherall, A. (2000) Motherhood and infertility: viewing motherhood through the lens of infertility, *Feminism & Psychology*, 10, 3, 323–6.

- van Balen, F. (2002) The psychologization of infertility. In Inhorn, M.C. and van Balen, F. (eds) *Infertility around the Globe: New Thinking on Childlessness, Gender, and Reproductive Technologies: A View from the Social Sciences*. Berkeley, CA: University of California Press.
- van Balen, F. and Gerrits, T. (2001) Quality of infertility care in poor-resource areas and the introduction of new reproductive technologies, *Human Reproduction*, 16, 2, 215–19.
- van den Akker, O. (2004) Coping, quality of life and psychological symptoms in three groups of sub-fertile women, *Patient Education and Counseling*, 57, 2, 183–9.
- van Rooij, F.B., van Balen, F. and Hermanns, J.M.A. (2007) Emotional distress and infertility: Turkish migrant couples compared to Dutch couples and couples in western Turkey, *Journal of Psychosomatic Obstetrics & Gynaecology*, 28, 2, 87–95.
- Verhaak, C.M., Smeenk, J.M., Eugster, A., van Minnen, A., et al. (2001) Stress and marital satisfaction among women before and after their first cycle of in vitro fertilization and intracytoplasmic sperm injection, *Fertility and Sterility*, 76, 3, 525–31.
- Verhaak, C.M., Smeenk, J.M.J., van Minnen, A., Kremer, J.A.M., et al. (2005) A longitudinal, prospective study on emotional adjustment before, during and after consecutive fertility treatment cycles, *Human Reproduction*, 20, 8, 2253–60.
- Verhaak, C.M., Smeenk, J.M.J., Evers, A.W.M., Kremer, J.A.M., et al. (2007) Women's emotional adjustment to IVF: a systematic review of 25 years of research, *Human Reproduction Update*, 13, 1, 27–36.
- Webb, R.E. and Daniluk, J.C. (1999) The end of the line: infertile men's experiences of being unable to produce a child, *Men & Masculinities*, 2, 1, 6–25.
- White, L. and McQuillan, J. (2006) No longer intending: the relationship between relinquished fertility intentions and distress, *Journal of Marriage and the Family*, 68, 2, 478–90.
- White, L., McQuillan, J. and Greil, A.L. (2005) Explaining disparities in treatment seeking: the case of infertility, *Fertility and Sterility*, 85, 4, 853–7.
- White, L., McQuillan, J., Greil, A.L. and Johnson, D.R. (2006) Infertility: testing a help seeking model, *Social Science & Medicine*, 62, 4, 1031–41.
- Widge, A. (2005) Seeking conception: experiences of urban Indian women with in vitro fertilization, *Patient Education and Counseling*, 59, 3, 226–33.
- Williams, M.E. (1997) Toward greater understanding of the psychological effects of infertility on women, *Psychotherapy in Private Practice*, 16, 3, 7–26.
- Wingert, S., Harvey, C.D.H., Duncan, K.A. and Berry, R.E. (2005) Assessing the needs of assisted reproductive technology users of an online bulletin board, *International Journal of Consumer Studies*, 29, 5, 468–78.
- Wirtberg, I., Moller, A., Hogstrom, L., Tronstad, S.E., et al. (2007) Life 20 years after unsuccessful infertility treatment, *Human Reproduction*, 22, 2, 598–604.
- Wischmann, T.H. (2003) Psychogenic infertility: myths and facts, *Journal of Assisted Reproduction & Genetics*, 20, 12, 485–94.
- Wischmann, T., Stammer, H., Scherg, H., Gerhard, I., et al. (2001) Psychosocial characteristics of infertile couples: a study by the 'Heidelberg fertility consultation service', *Human Reproduction*, 16, 8, 1753–61.
- Yebei, V.N. (2000) Unmet needs, beliefs and treatment-seeking for infertility among migrant Ghanaian women in the Netherlands, *Reproductive Health Matters*, 8, 16, 134–41.
- Zucker, A.N. (1999) The psychological impact of reproductive difficulties on women's lives, *Sex Roles*, 40, 9–10, 767–86.