

PART I. OVERVIEW

1 Psychology of Infertility

LINDA HAMMER BURNS AND SHARON N. COVINGTON

*A child within my mind. I see
The eye, the hands. I see you also there.
I see you waiting with an honest care,
Within my mind, within my body. . . .*

– Elizabeth Jennings

Yearning for children and the heartbreak of barrenness have been a part of life since the beginning of mankind, chronicled throughout history by religious accounts, myths, legends, art, and literature. Whether driven by biological drive, social necessity, or psychological longing, the pursuit of a child or children has compelled men and women to seek a variety of remedies, sometimes even extreme measures. In fact, in all cultures involuntary childlessness is recognized as a crisis that has the potential to threaten the stability of individuals, relationships, and communities. Every society has culturally approved solutions to infertility involving, either alone or together, alterations of social relationships (e.g., divorce or adoption), spiritual intercession (e.g., prayer or pilgrimage to spiritually powerful site), or medical interventions (e.g., taking of herbs or consultation with ‘medicine man’).[1] While spiritual and medical remedies for infertility are common and often used early on by infertile couples, social solutions demanding the alteration of relationships have been shown to be the last alternative individuals or couples usually consider.[1] Typically, infertile couples are reluctant to jeopardize or disturb close relationships (perhaps because social changes are usually permanent) because they hope or believe infertility will be a temporary problem. By the same token, reluctance to consider solutions may be due to the hope and promise often attributed to medical and/or spiritual interventions. Nonetheless, infertile couples use all three measures – social, spiritual, and medical – as remedies for their involuntary childlessness; numerous examples of these remedies exist throughout history and across all cultures.[1] One of the most renowned social solutions to involuntary childlessness is King Henry VIII of England, who changed the religion and laws of a country to accommodate the need for a child (albeit a male child).

Divorce, polygamy, and extramarital affairs remain, as they have long been, social solutions to infertility, as do various forms of adoption and fostering. Examples of other social solutions include the continuing practice in some cultures of multiple wives in response to infertility (or lack of a son) or the custom in some cultures requiring a sibling (usually an eldest son) to provide one of his children to a younger, childless sibling. Community involvement in the realignment of social relationships is exemplified by the native peoples of two small islands off the coast of South America in which infertility was addressed by raiding the neighboring island to steal small children for childless women. Demonstrable in each of these examples is the social and emotional distress and expense of solutions involving the alteration of social relationships, thus explaining, in part, the reluctance of individuals to pursue these alternatives until other remedies have been exhausted.

Since antiquity, the appeal of religious faith and the power of belief in spirits and gods as a remedy for infertility can be found in all cultures. Fertility symbols, special gods, and fertility rites and customs are apparent from the highly erotic art of India, to the Celtic goddess of fertility carved into stoned walls of ancient Irish castles, to specially shaped and painted Navajo pottery. In ancient Greece, a common offering to the gods was terracotta votives in the shape of the affected organ (e.g., vagina, uterus, or penis).[2] In addition, the special spiritual power of certain places to enhance fertility can be seen in a phallic-shaped rock on the island of Maui in Hawaii, as well as in the pilgrimages made by infertile women of the Carib tribe in Mexico to Isla de las Mujeres (Island of Women) and by many infertile Roman Catholic women to Medjugorje in Bosnia-Herzegovina. Nevertheless, the importance of faith either as a means of solving infertility or as a

source of comfort cannot be minimized, and religious faith remains a powerful resource (or painful burden) for many infertile individuals around the world, even today.

Infertility affects between 80 million and 168 million people in the world today. Approximately one in ten couples experience primary and/or secondary infertility.[3,4] The majority of men and women live in the developing world, are infertile due to sexually transmitted diseases or underlying, untreated health conditions (e.g., malnutrition) while in the developing world increasing age in women is a major causal factor in infertility.[5] Global rates of infertility vary dramatically – from prevalence rates of about 5% in some developed countries to as high as more than 30% in sub-Saharan Africa.[6] Rates of primary infertility worldwide are generally 1 to 8% with rates of secondary infertility reaching as high as 35%. The rates of infertility are the highest in the world in what has been termed the ‘infertility belt,’ stretching across central and southern Africa.[7]

Although infertility is a global issue impacting individual and social well-being, the wide variance in incidence rates contributes to significant and unique psychosocial consequences as a result of *where* an individual experiences involuntary childlessness. This ‘stratification of infertility’ refers to the ways in which the infertility experience is affected by economic, social welfare, and public health issues. These issues include the preponderance of poverty, malnutrition, obesity, smoking, sexually transmitted diseases, or other conditions that impact general health and/or fertility; ignorance of reproduction, sexual health, and/or fertility preservation; lack of availability or access to high-quality medical treatments; and/or the inability to access medical treatments for cultural, religious, or legislative reasons. Any and all of these factors can and do contribute to infertile individuals traveling across national or international borders in pursuit of medical treatments to facilitate reproduction and/or parenthood – a phenomenon often termed ‘reproductive tourism.’ In short, as a global condition, infertility is not only a medical condition but also a social and emotional condition, in which a shift in emphasis has occurred from coping with childlessness through social means (e.g., participating in rearing the children of others) to a dependence on medical interventions – even when accessing them can be challenging.[8] This process has been referred to as the ‘medicalization of infertility’ – the phenomenon in which healthy, yet childless, individuals become patients, undergoing an array of medical treatments and assuming the passive patient role in patient–physician interactions – all in pursuit of parenthood.[9]

Infertility counseling, as an emergent specialty within the mental health professions, has gained recognition and respect for its professional contributions through patient care, research, and education as well as for the identification of the need for expert care and treatment of this unique population in conjunction with complex medical treatment. In this book the term *infertility counselor* refers to any mental health professional (e.g., social worker, family therapist, psychiatrist, or psychologist) who has special training in reproductive medicine. In fact, a major goal and purpose of this book is to define the standard of care and practice, professional competency, and legal responsibilities for infertility counselors worldwide by providing a knowledge base on which to provide optimum clinical care with evidence-based therapeutic interventions.

As a clinical textbook, this book provides a comprehensive overview of the array of clinical issues and therapeutic interventions useful for the practicing infertility counselor as well as for the mental health professional who encounters a few patients with reproductive issues (current or past) requiring a clinical understanding of the relevant issues. This textbook (like its predecessor) has eight sections that reflect the breadth of the experience and issues confronted by individuals and couples experiencing infertility: assessment; treatment modalities; medical counseling issues; third-party reproduction and other means of alternative family building; postinfertility issues; and infertility counseling practice issues. Each chapter follows the same format regardless of the topic addressed in the chapter: an introduction to the topic, historical overview, review of the literature, clinical issues, therapeutic interventions, and future implications. This format is designed to provide both students and professionals with a consistent and predictable treatment of each topic and a basis for comparison across topics, thereby enabling optimum and professionally competent clinical care using evidence-based practice principles. This chapter outlines the scope and depth of issues involved in infertility counseling including:

- A historical overview of medical approaches to infertility and the emergence of infertility counseling in collaborative patient care;
- A review of advances in the scientific study of psychological responses to infertility;
- A discussion of the importance of theoretical frameworks as a basis for developing clinical interventions, including relevant infertility-specific psychological theories; and
- A summary of clinical issues and therapeutic interventions, which will provide a context for the chapters in this text.

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HISTORICAL OVERVIEW

The Trobrian Islanders attributed pregnancy to spirits, not sexual intercourse. Chukchi female shamans said they made children via their sacred stones, not through sexual intercourse or any contribution from men. Australian Ingarda peoples thought women became pregnant by eating special foods or by embracing a sacred tree hung with umbilical cords from previous births. The Batak peoples believed no woman could become pregnant unless umbilical cords and placentas were buried under her house.[10] Ancient Hindus believed that conception was facilitated by the worship of the *lingam* (erect penis) and *yoni* (female genitalia) and that a hole in a rock or cloven tree symbolized the female birth passage. Therefore, a woman could improve her fertility by passing through a hole in trees or rocks – a ritual that continues to be practiced in some parts of the world even today.[11]

Women in ancient Africa were encouraged to eat the eye of a hyena with licorice and dill to aid conception that was guaranteed to occur within three days while Siberian women were encouraged to eat spiders to facilitate conception.[11] According to African custom, to ensure pregnancy men applied a special powder made from the crushed roots of nine trees to the penis to enable sexual intercourse three times a night, while African women used vaginal pessaries made of wool dipped in peanut oil and wrapped in two cloves of garlic.[12] In ancient Arabia, amulets and/or fertility symbols were commonly worn as pendants to encourage conception, particularly by Egyptian women. Additionally, many cultures used fertility fetishes and symbols such as statuettes of pregnant females or of males with large phalluses to maximize fertility.[11] Even today, amulets, herbal remedies, and traditional rituals continue to be used by many infertile men and women, often in conjunction with conventional medical treatment, in hopes of achieving the longed-for pregnancy (child).

In antiquity, menstruation and fertility were believed to be influenced by the waxing and waning of the moon. As a result, astrology and numerology were considered important fertility treatments by providing correct numbers and/or days of the month for maximizing fertility and achieving pregnancy. It is generally accepted that ancient peoples had little understanding of human reproduction and as such sterility. With little understanding of the equal contributions of male and female reproductive cells or the role of sexual intercourse in fertilization, reproduction was thought to be a singularly female phenomenon and the role of the male was considered unnecessary and/or ceremonial. This ignorance probably contributed to valuing women for

their reproductive abilities but also to blaming women when conception and pregnancy failed. Throughout history and across cultures, there are countless examples of social, religious, and cultural glorification, even idealization of motherhood, and the vilification and maltreatment of infertile or 'barren' women. Infertile women were (and still may be) accused of witchcraft; socially isolated and ostracized; physically abused; divorced, abandoned, or forced to accept their husband's additional wives; or murdered (often by their husband or their husband's family). In Japanese, the word for infertile women is *umazume*, which is literally translated as 'stone woman.' The characters used spell 'no-life woman' or 'nonbirthing woman.' *Umazume* is considered one of the worst words in the entire Japanese language and it is rarely used because, according to traditional custom, the presence of a stone woman could make a whole village wither.[13] In various African, Asian, and Pacific cultures men fear(ed) female vaginal blood, which is not only viewed as polluting but also thought to weaken any man touched by it.[14]

Science altered our understanding of reproduction and fertility when, in 1677, Dutch scientist Anton Leeuwenhoek became the first to identify spermatozoa with the newly invented microscope. In 1765, through experiments with dogs, Italian priest and physiologist Lazzaro Spallanzani became the first to discover that mammalian reproduction required both the male sperm and female oocyte, that is, that the embryo was the "product of male seed, nurtured in the soil of the female." [15] However, it was not until the nineteenth century that human reproduction (and infertility) became more clearly illuminated. In 1826, German biologist Karl von Baer discovered the mammalian oocyte and identified mammalian embryonic development of animals. Together with Heinz Christian Pander and based on the work by Caspar Friedrich Wolff, he described the germ-layer theory of embryological development and the principles that became the foundation for comparative embryology.[16] The next year, Swiss physiologist and histologist Albert von Kolliker identified the function of spermatozoa and that sperm originated from the testes. In 1839, Augustus Gendrin suggested that ovulation controlled menstruation, thereby dispelling the long-standing belief that menstruation was controlled by the moon and lunar phases.

By the early twentieth century, the pieces of the reproductive puzzle were beginning to fall into place. Still, it was only in the middle of the twentieth century and later that physicians medically addressed infertility as a couples issue in which both partners were medically evaluated rather than viewed as a woman's medical problem

(defect).[17] Nevertheless, infertility treatment continued to maintain a paradigmatic example of a medical situation in which throughout much of its history physicians were men, patients were women, and the focus of medical treatment was on the sexual organs.[8] Despite evidence that men were and are infertile as often as women, throughout history and across cultures, women have disproportionately borne the medical, social, and cultural burden of a couple's failure to conceive. This is a situation that has become even more prominent with the advent of assisted reproductive technologies in which the female partner undergoes disproportionately more treatment, regardless of the etiology of the infertility diagnosis.[8] This paradigm did not dramatically shift despite the advent of assisted reproductive technology (ART), which began with the birth of Louise Brown in Great Britain in 1978. Her conception via in vitro fertilization (IVF) was the result of the groundbreaking work of British physicians Patrick Steptoe and Robert Edwards which began the modern era of human reproduction in which reproduction did not require sexual intercourse, used an array of assisted reproductive technologies, and could be facilitated by various forms of donated gametes, embryos, and surrogacy.

Infertility counseling, as a profession, emerged almost in tandem with the major medical advancements in the field of reproductive medicine, particularly assisted and third-party reproduction. Although the psychological impact of infertility was addressed in the literature beginning in the 1930s, infertility counseling has emerged as a recognized profession and mental health specialty only within the past thirty years.[18] Historically, the role of the mental health professional in the treatment of infertility was to cure the infertile patient's neurosis thereby curing their infertility. This approach fell into disfavor in the 1970s as mental health professionals working in infertility clinics began providing psychological support, crisis intervention, and education to ameliorate the stress of infertility and enhance the patient's quality of life.[19] Today, the role of the infertility counselor has expanded to meet the psychosocial challenges of assisted reproduction and includes assessment, support, treatment, education, research, and consultation.[18,20,21]

Throughout history and across cultures, medical solutions to infertility have been diverse and varied such as relics, charms, incantations, eating special foods, vaginal treatments, treatments to enhance male sexual potency, and special potions and/or poultices. Whether 'primitive' medical treatments or the more sophisticated assisted reproductive technologies of today, medical treatments for infertility have always been actively pursued and held particular power and influence for

infertile couples. It may be argued that medical solutions to involuntary childlessness became even more powerful and appealing to the infertile by the end of the twentieth century with the advent of assisted reproductive technologies and advanced third-party reproduction.

REVIEW OF LITERATURE

Original investigations into the psychological aspects of infertility focused on individual psychopathology (particularly in women), sexual dysfunction, and infertility-specific distress. Furthermore, early research was largely based on theoretical speculations or anecdotal information rather than scientifically rigorous investigations. Much of the research focused on psychological distress, was exploratory, relied on researcher-designed instruments rather than standardized measures, lacked control or comparison groups, and was plagued by small numbers. While research on the medical aspects of infertility has expanded exponentially, research on the psychosocial aspects of infertility continues to lag behind by comparison. Nevertheless, the overall quality and quantity of studies have dramatically improved in recent decades with an increasing number of infertility counselors acting as researchers investigating a wider array of issues such as the impact of stress on infertility; gender differences in response to infertility; cross-cultural issues; and complicating medical conditions.

Recently, the focus of research on the psychological aspects of infertility has shifted from individual psychopathology to more holistic/interactive views of infertility and to the impact of advancing assisted reproductive technologies. Consequently, there has been a shift from a singular focus on the individual to assessments and interventions aimed at groups, such as couples and families. In addition, while research and clinical experience continue to indicate that the vast majority of infertile men and women do not experience significant levels of psychological trauma or psychopathology, the use of advanced medical technology and/or third-party reproduction involving a plethora of additional stressors may increase psychological distress during specific periods of the treatment cycle. As such, investigations into responses to assisted reproduction have involved the interactive aspects of medical technology and individual and couple response, as well as medical outcome. In addition, the focus of both medical and psychosocial research has become more 'evidence-based': how research findings can provide direction for the identification of clinical issues and therapeutic interventions that are most beneficial and effective.

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Van Balen and Inhorn contend that research on the psychosocial aspects of infertility has historically been hampered because infertility was: (1) considered a medical condition rather than a social problem worthy of social analysis (particularly in Western societies); (2) a taboo subject not easily talked about even in 'neutral' research settings; (3) an issue emerging in Western societies at a time of changing social beliefs about parenthood, women's roles, and the importance of children in the lives of men and women; and (4) research-focused on psychosocial responses to assisted reproductive technologies and less on the experience of involuntary childlessness or 'disrupted reproduction' and its impact on the lives of individuals and couples.[22]

In recent decades, however, infertility has gained increasing attention from various social and behavioral scientists who have brought a wider variety of investigative approaches and research methods, in contrast to traditional psychologically oriented qualitative and quantitative methods. Examples of new research methodologies include the ethnographic model typically used in anthropology,[23] in which data are collected on the basis of reproductive life histories and/or narratives in individual studies;[24–27] grounded-theory methodology; discourse analysis (e.g., the analysis of newspaper accounts);[28] and ethnographic, qualitative case studies.[29] These are but a few examples of the different research approaches that provide different perspectives, exciting insights, and important findings that help provide a greater understanding of the psychosocial impact of infertility, thereby facilitating the work of infertility counselors by identifying significant clinical issues and/or beneficial therapeutic interventions.

While the scientific rigor of psychosocial investigations has dramatically improved, some significant gaps in the research remain, particularly regarding the psychosocial needs of the underserved (reproductive stratification) as well as the counseling needs of culturally diverse patients and reproductive tourists. A continuing and significant problem regarding research on the psychosocial issues of involuntary childlessness is that the preponderance of research to date has focused predominantly on white, heterosexual women living in developed countries and who, generally, are better educated and have higher socioeconomic status. Far less research has focused on culturally diverse men and women with limited financial or education resources, from developing countries, and/or who have limited access to treatment or specifically assisted reproduction.[30] The World Health Organization (WHO) has recognized the importance of sterility as a health issue of global concern, particularly in developing countries. WHO has

acknowledged the challenges of lack of heterogeneity in the developing world particularly regarding assisted reproductive technologies, inconsistent access to or availability of quality infertility services in the developing world, as well as the lack of consistent standards regarding the quality of infertility services.[3] By contrast, little attention has focused on the psychosocial needs and/or the provision of mental health services in the developing world. Similar challenges exist regarding the wide variation of attitudes regarding counseling and mental health services and the lack of consistent standards regarding the quality of available infertility counseling services. As such, underserved, culturally diverse, infertile couples seeking infertility treatment either in their home country or across international borders remain an area that not only received minimal research attention, but, as a result, also failed to benefit from clearly identified clinical and therapeutic interventions based on research evidence.

Psychosocial Interventions for Infertility

For several decades the provision of psychosocial support and/or counseling services have been requested by patients, suggested by professionals, legislated, and/or recommended on the basis of evidence-based research. Infertile patients have requested psychological services in conjunction with or as an adjunct to medical treatment for infertility[31–33] or through consumer advocacy organizations (e.g., ISSUE, ICSI, CHILD, Resolve). Recommendations for infertility counseling have also been mandated by legislation and/or regulatory bodies.[34–39] At the same time, infertility counseling services have been recommended and/or mandated by medical professional organizations, most often in conjunction with specific medical treatments.[40–43] Mental health professionals have also made recommendations for the provision of psychological counseling services.[20,21,44–46]

In a review of current research, Boivin addressed the effectiveness of psychosocial interventions for infertility in terms of the following questions: 1) Do psychosocial interventions improve well-being?, 2) Do psychosocial interventions increase pregnancy rates?, and 3) Are some interventions more effective than others?[47] The review involved a systematic search of all published and unpublished papers in any language and any source that (1) described a psychosocial intervention and (2) evaluated its effect on at least one outcome measure in an infertile population. A total of 380 studies met the criteria but only 7% were independent evaluation studies. Analysis of these studies showed that psychosocial interventions were more effective in reducing negative

affect than in changing interpersonal functioning (e.g., marital and social functioning). Pregnancy rates were unlikely to be affected by psychosocial interventions. It was also found that group interventions that had emphasized education and skills training (e.g., relaxation training) were significantly more effective in producing positive change across a range of outcomes than counseling interventions that emphasized emotional expression and support and/or discussion about thoughts and feelings related to infertility. Men and women were found to benefit equally from psychosocial interventions. This review highlighted the lack of well-controlled, scientifically rigorous studies based on classic experimental methods. This review examined thirty years of research, yet produced only twenty-five independent studies evaluating psychosocial interventions for infertile individuals of which only eight met minimum requirements for good quality studies. By contrast, during the same period almost 400 papers were published in which psychosocial interventions for infertility were strongly recommended. In short, there remains a significant, even urgent need for high quality studies to unequivocally address the effectiveness of psychosocial interventions. Boivin suggests that future research should address (1) who benefits from psychological interventions, (2) which types of interventions are most beneficial to which patients, and (3) when is the optimum time to provide psychological interventions. In summary, by not simply recommending, but by providing evidence-based research through controlled investigative methodology, infertility counselors can provide more effective psychological interventions with greater confidence.

THEORETICAL FRAMEWORK

In both psychology and medicine, theories or theoretical frameworks are the basis for the academic scientific method. Theories (as a collection of interrelated ideas and facts) are developed to describe, explain, predict, and/or change (manage) behavior or mental processes. The purpose of theories is to better understand previous conditions that led to a thought, behavior, interaction, or phenomenon. As such, the scientific method involves (1) stating the problem, (2) forming a theory, (3) developing a hypothesis, (4) testing the hypothesis through a variety of research methods, and (5) replicating the results of the tested hypothesis. As such, theories or theoretical frameworks are a fundamental component of the research process, while at the same time facilitating and enhancing patient care by identifying relevant clinical issues and therapeutic interventions most beneficial and effective in curing or ameliorating symptomatology,

improving well-being, and/or enhancing the outcome of treatment.

While the focus of the academic approach in medicine and counseling is research, the focus of the applied or clinical approach to medicine and counseling is implementation of knowledge gained from research for the immediate and practical benefit of individuals, couples, and families. In fact, clinicians and researchers do not have mutually exclusive roles and many infertility counselors are involved in both research and clinical work (i.e., application of research findings) to some extent over the course of their careers. The basic premise of applied psychology is the use of psychological principles and theories to overcome practical problems (e.g., reproductive medicine or health psychology). Infertility counseling is a specialty area with specific theoretical frameworks, clinical issues, and therapeutic interventions based on the scientific model of evidence-based medicine or treatment.

Theoretical approaches to infertility and, as such, infertility counseling have historically been based on a specific theoretical perspective or specific principles of theories adapted and applied to infertility. Recently, interest in developing infertility-specific theoretical frameworks, that contribute to a greater understanding of the psychosocial impact of infertility, has been growing. Infertility-specific theoretical frameworks aid infertility counselors as both researchers and clinicians by identifying the psychosocial phenomena of infertility, relevant issues, treatment modalities, and beneficial interventions to minimize psychosocial distress and trauma.

Evolution of Infertility-Specific Theoretical Frameworks

Over the years, infertility-specific theoretical frameworks have evolved from what have been termed *psychogenic infertility theories* or *psychosomatic medicine* approaches, in which demonstrable psychopathology was thought to play an etiological role in infertility.[48] The foundation of *psychogenic infertility theories* was Freudian psychoanalytic approaches in which psychological (and medical) disorders were thought to be due to an individual's unresolved conflicts and/or an unconscious defense mechanisms that caused or contributed to sterility.[49] The psychogenic infertility model (also sometimes referred to as the *psychosomatic medicine approach*) was introduced in the 1930s and reached its height of popularity during the pronatalist period of the 1950s and 1960s, particularly in the United States. At a time when up to 50% of infertility problems could not be accurately medically diagnosed or

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treated, psychological explanations of potential causes or treatment modalities were considered helpful and reasonable. However, the vast majority of these theories focused on psychological (and subconscious) disturbances in women, contending that neurotic conflicted feelings about motherhood or their own mothers prevented conception and the assumption of adult roles. Fischer described two personality styles in women contributing to infertility: the weak, emotionally immature, overprotected type, and the ambitious, masculine, aggressive, and dominating career-type.[50] The 'weak' woman was thought to be unable to separate or differentiate from her mother or express her anger in a direct fashion, or she had an abnormal fear of sex, motherhood, pregnancy, and labor that inhibited reproductive ability. 'Ambitious' women were infertile because "becoming pregnant meant accepting sexual feelings, being comfortable in competing with a stronger maternal figure, giving up the fantasy of remaining a child, and not having to compete with an unborn child." [51] Typically, 'psychogenically infertile' men were thought to have domineering mothers who over controlled their sons by threatening withdrawal of love, expecting conformity to their rigid moral codes, or creating anxiety within their sons as a result of their own sexual inhibitions.[52] Men, too, were thought to have conflicted feelings about parenthood or masculinity causing infertility.[53] This theory was recycled during the sexual revolution of the 1960s in descriptions of the 'new impotence' – men experiencing impotence as a result of performance pressure from 'liberated' women who expected sexual encounters to be mutually rewarding.[54]

Psychogenic infertility theories fell into disfavor partly as a result of the increased ability of reproductive medicine to diagnose and treat infertility problems. During the past thirty years, infertility of unknown etiology has been significantly reduced in large portions of the world, eliminating the necessity and/or feasibility of psychological causes of reproductive failure. More importantly, several reviewers of the psychogenic infertility literature concluded that the preponderance of studies revealed no consistent or striking evidence of psychological causes of infertility.[55–58]

Subsequently, *psychological sequelae* or *psychological consequences theories* emerged during the late 1970s in the United States and a worldwide consumer movement emphasizing that experience of infertility and treatment for it are emotionally difficult and all-encompassing, impacting all aspects of an individual and couple's life. Hence, infertility was the *consequence* and not the *cause* of involuntary childlessness.[30,59] Menning was one of the first to suggest a *psychological sequelae* or

psychological consequences approach that included the recommendation of psychological support services in conjunction with or as an adjunct to infertility treatment.[59] This model was initially presented using a combination of theoretical frameworks including developmental models, crisis theory, bereavement models, and a predictable pattern to develop a stage theory of infertility. Accordingly, the inability to procreate impaired the completion of adult tasks of intimacy and generativity creating a period of emotional disequilibrium, with the potential for either maladjustment or positive growth facilitating resolution and homeostasis for individuals or couples. Furthermore, infertility evoked typical feelings and psychological responses to infertility that followed a predictable pattern based on the stages of bereavement; involved recognition of the loss; gave meaning to the experience and attained effective resolution through personal growth; and overcame the losses of infertility.[59]

In general, the *psychological sequelae* approach provided a broad view of the interrelationships of individual, couple, family, society, and reproductive medicine; integrated different theoretical frameworks; conceptualized infertility as a major life crisis involving stress and grief; and provided a framework for the provision of counseling services. As such, the *psychological sequelae model* was valuable in stimulating the development of consumer advocacy and support organizations; increasing awareness among mental health and medical professionals of the importance of the psychosocial aspects of infertility; and legitimizing adjustment to infertility as a problem worthy of empirical study.[60] Still, the *psychological sequelae* approach was not without flaws and criticism in that it continued to apply a medical model to the complex psychosocial experience of infertility and failed to consider the social and cultural factors influencing the experience of involuntary childlessness and treatment for it.[30]

Subsequently, several different approaches have been suggested including the *psychological cyclical model*,[61] the *psychological outcome approach*,[30] and the *psychosocial context approach*. According to the *psychological cyclical model*, involuntary childlessness increases stress levels causing physiological changes that influence treatment outcome. As such, the *cyclical model* suggests that the psychological distress of infertility can and does have biological consequences that can (and may) influence conception whether or not medical treatment is used.[62] However, the *cyclical model* historically failed to address stress levels in the male partner and/or identify what levels of stress were significant (and counterproductive) for specific individuals under particular circumstances or situations.

The *psychological outcome approach* is, to some extent, an elaboration on the *psychological cyclical model* in that it involves an integrated mind–body, family system, and biopsychosocial perspective to research and clinical practice and recognizes the influence of psychobiological factors (e.g., stress) on conception and treatment outcome. The focus of the *psychological outcome approach* is the psychosocial response to infertility treatment of individuals, couples, and subsequent families as well as psychotherapeutic interventions that impact treatment outcomes. An example is the Heidelberg Model,[46] in which solution-focused counseling was found to be helpful for infertile couples, particularly couples who were highly stressed and who experienced deterioration of mood and sexual problems over the course of treatment.

The *psychosocial context approach* addresses how infertility is an experience that occurs within a social structure (e.g., marriage, family, community, and culture) and context (e.g., culture or religion). Although infertility can be a painful psychological trauma and life-altering phenomenon that is isolating and stigmatizing, it is not simply an individual psychological experience but a social experience that occurs within the context of the individual's or couple's life and social milieu. As such, infertility is better understood as a 'process' rather than a single event or series of isolated events. The *psychosocial context approach* is also a less individualistic model that takes a more holistic, global approach to understanding the psychosocial phenomena of infertility and the provision of treatment. It addresses cultural, religious, and environmental factors (e.g., natural or manmade disasters such as hurricanes or terrorist attacks) that can and do intensify or somehow influence the infertility experience for individuals and couples. Furthermore, the *psychosocial context approach* addresses the issues of stratification of medical and mental health services for infertility (e.g., uneven availability of infertility treatment services); reproductive tourism (e.g., culture clashes when patients travel across borders for reproductive treatment); and, finally, the influence of culture and/or religion on psychosocial response to infertility as well as the acceptability of medical treatments, mental health care, and/or family-building options.

Ultimately, both the *psychological outcome* and *psychosocial context approaches* provide perspectives by increasing our understanding of individual, couple and cultural differences, providing greater knowledge of clinical issues and effective therapeutic interventions to improve patient well-being and response to treatment. Ultimately, theory development in infertility should expand even further to include the integration of empir-

ical research, clinical practice, psychotherapeutic interventions, and social policy issues acknowledging the universal and global context in which infertility is experienced and in which treatment is provided both medically and psychologically.[30] As noted throughout this book, how theoretical frameworks have been developed and/or applied in infertility vary according to the issue or topic being addressed. As such, the *psychosocial context approach* to theoretical frameworks in infertility may be more relevant as it acknowledges that the theoretical framework of individual identity may be highly applicable to individual psychotherapy or psychopathology but less useful within the context of cross-cultural counseling, while stress and coping theories or bereavement theories may have more universal application.

Infertility-Specific Theoretical Frameworks

Grief and Bereavement Approaches

Infertility involves grief and loss whether it is a profound distinct loss at the onset of treatment or a gradual accumulation of losses over time. The losses of infertility may involve the loss of individual and/or couple's health, physical and psychological well-being, life goals, status, prestige, self-confidence, and assumption of fertility, loss of privacy and control of one's body, and anticipatory grief at the possibility of being childless.[63,64] Grieving may also involve mourning relationships altered by infertility whether allowed to slip away or actually lost or forever changed. As with any grief response, the level of attachment (the desire for parenthood, child, or baby) is directly proportionate to the level of grief an individual or couple experiences. As such, infertility may typically involve grief responses such as shock, disbelief, anger, blame, shame, and guilt, while over time, feelings of loss of control, diminished self-esteem, chronic bereavement, anxiety, and depression may persist.

Building on bereavement approaches to infertility, Burns and Covington suggested the *keening syndrome of infertility-specific grieving*. [21] Within this context *keening* refers to the traditional Irish custom of grieving in which women weep and wail while preparing the deceased for burial, while men watched in somber silence (often sharing alcoholic beverages which typically lead to the cultural phenomenon known as the 'Irish Wake'). The keening syndrome of infertility refers to the way in which many couples grieve the losses of infertility: Women weep and men watch – with men often emotionally distancing themselves from the couple's shared loss. This phenomenon can result in husbands becoming the 'forgotten mourners' because the

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husband is less verbal and expressive with his grief or unable to express it in the same open manner as his wife. Ultimately, failure to acknowledge and appropriately grieve the losses of infertility has an impact on a couple's long-term adjustment to infertility, as well as prospective decisions regarding treatment and family-building alternatives. In many ways, this approach highlights not only gender differences in grief and mourning but also how women often assume the role of primary mourner, bearing an unequal share of the emotional burden of a couple's grief. Some have suggested that this is because women are proportionately more distressed than men, while others argue that it represents a common marital or cultural pattern in which women assume greater responsibility for the couple's emotional well-being and expressiveness. It may also reflect how infertility treatment is disproportionately geared toward women.

By contrast, Unruh and McGrath objected to the application of traditional grief and loss theory to infertility because it failed to address the ongoing, chronic nature of infertility.[65] They identified infertility as a *chronic sorrow* for the infertile, typically involving numerous losses over an extended period of time. In fact, infertility-specific grief may never be completely mourned, transcended, or fully integrated. According to the *chronic infertility-specific grief model*, even after parenthood has been achieved or childlessness accepted, infertility can, and often does, periodically reemerge only to be remourned from a different perspective or vantage point in the couple's or individual's life.

It has been suggested that infertility is a *disenfranchised grief* in that infertility is a loss that can lead to intense grief, although others may not recognize it or perceive it as minor.[66] Disenfranchised grief has three categories, all of which are to some extent often experienced by infertile couples. It is a grief in which (1) the lost relationship loss has no legitimacy, is socially unrecognized, or unacknowledged (e.g., yearned-for child, miscarriage); (2) the loss itself is not recognized as significant to others in the couple's social network or culture (e.g., failed treatment cycle or chemical pregnancy); and (3) the griever is not recognized as having suffered a loss and justified in grieving. Disenfranchised grief is recognized as a more complicated bereavement because the usual supports that facilitate grieving and the healing process are absent. Furthermore, there are some situations around which losses are so socially stigmatizing that individuals are reluctant to acknowledge their loss. Infertility may be so socially unacceptable that the shame of the diagnosis, treatments for it, and/or family-building alternatives may lead the infertile individual to keep his or her losses hidden to minimize social stigma.

Individual Identity Theories

Infertility as an experience that alters an individual's identity and sense of a self was suggested as *integration of infertility into sense of self* model by Olshansky, who contended that the internalization of the infertility experience is instrumental in managing the narcissistic wounds of infertility.[27] According to this theoretical approach, infertility alters an individual's sense of self by creating or exacerbating feelings of deficiency, hopelessness, and shame. Both infertile men and women experience altered self-concept and self-image as a result of infertility, although they may experience it differently. Women often feel inadequate and deficient for failing to fulfill personal and societal roles, while men often feel inferior, ashamed, and angry. In short, whether infertility involves an actual pregnancy loss or the loss of the couple's wished-for child, it is a loss that is experienced as a narcissistic injury as well as a symbolic loss of self.[67] A core concept of this theory is that individuals experiencing infertility must integrate and incorporate infertility into their individual identity, sense of self, or self-definition. In so doing, the individual is then able to move beyond a personal identity of oneself as 'infertile' and transcend the experience through overcoming, circumventing, or reconciling the identity of self as infertile.[27]

In considering the impact of infertility on women, Unruh and McGrath suggest that infertile women have (1) the right to have control over their bodies, particularly their reproductive capabilities, and to actively participate in their healthcare; (2) been commonly blamed for the conditions that have caused them personal distress; (3) been socialized to value themselves primarily for their childbearing roles; and (4) more in common with each other than their differences in fertility.[65] Another theoretical approach that addresses identity issues in infertile women is Kikendall's application of *self-discrepancy theory*. According to this theoretical approach, infertility is a personal identity crisis in which a woman experiences a conflict between her ideal sense of self as mother or woman and her real sense of self as infertile.[68]

Stress and Coping Theories

Taymor and Bresnick were the first to refer to infertility as a *stressor* and *crisis* involving interaction among physical conditions predisposing to infertility, medical interventions addressing infertility, reactions of others, and individual psychological characteristics.[69] Stanton and Dunkel-Schetter applied stress and coping theory to infertility, noting that infertility is characterized by the dimensions of what individuals find stressful: unpredictability, negativity, uncontrollability,

and ambiguity.[60] Furthermore, infertile couples typically perceive infertility as carrying the potential for both harm (e.g., loss of a central role) and benefit (e.g., strengthening of the marital relationship). Additionally, infertility is a stressor that is both controllable (e.g., deciding whether or not to pursue medical treatment or a specific treatment) and uncontrollable (e.g., attaining conception).[70]

Within the context of the infertility, individuals may experience a single acute stressor (i.e., crisis) such as diagnosis of a genetic disorder or cancer as the cause of infertility and, as such, is a discrete, time-limited crisis involving specific coping strategies to adapt to the crisis. However, for the majority of couples, infertility is more likely to be experienced as a chronic stressor in that emotional distress and demanding treatments and events accumulate over an extended period of time requiring different coping strategies to successfully adjust, adapt, and maintain emotional and marital equilibrium regardless of the ultimate outcome. Whether acute or chronic, infertility is a life crisis typically perceived or experienced as an insolvable problem threatening important life goals, taxing personal resources, and potentially arousing unresolved problems from the past. The application of stress and coping theory to infertility provides a greater understanding of (1) the conditions under which infertility is likely to be perceived as stressful; (2) factors most likely to facilitate or impede adjustment in infertile couples or individuals (i.e., identifying optimum coping strategies); (3) guidance in defining what constitutes successful psychological adjustment to infertility; and (4) what therapeutic interventions may be most beneficial for enhancing treatment outcome and/or reducing stress.

Social Construction and Stigma Theories

Infertility is experienced within the context of ever changing interpersonal relationships, predominantly family relationships. The individual develops a sense of self within the context of social interactions, family systems, religion, personal values, culture, and language often based on narratives that contribute to the construction of a sense of self and one's life. The concept of *stigma* in infertile men and women contains a self-perception of loss, role failure, and diminished esteem.[71] This theoretical framework is the foundation for understanding infertility as a cultural, religious, and existential experience.

Stigma involves the failure to fulfill cultural norms and extends to the social identity of the whole person, polluting his or her other accomplishments.[72] Stigma has been identified as theoretical framework applicable

to both gender-specific infertility and infertility-specific individual distress within cultural contexts.[73,74] Infertile men and women typically experience feelings of defectiveness, inadequacy, inferiority, worthlessness, shame, and guilt – feelings that have been found to be culturally universal responses. Although men and women do not appear to differ in feelings of stigma regarding infertility, men with male-factor infertility seem to be more stigmatized than men without male-factor infertility, and women seem more stigmatized by infertility regardless of the diagnosis.[75] In short, infertility, as an externally invisible 'defect,' increases feelings of inferiority, differentness, and spoiled identity.[76,77]

Stigma has been found to be a significant theoretical framework across cultures in that different facets of infertility cause social isolation in specific cultures or social circumstances. Accordingly, Gonzalez noted that social stigma was experienced as failure to fulfill a prescribed societal norm as well as an assault on personal identity. However, infertility could also be a *transformational process* in which an individual has mourned the loss of reproductive function and parenting roles and struggled to make restitution for the perceived stigma and powerlessness associated with nonfulfillment of a prescribed societal norms, exclusion from cherished societal rituals, and deprivation of familial ties of descent.[78]

Family Systems Theory

Infertility thwarts a couple's movement forward into the next stage of marriage and family life (i.e., 'family expansion') for the couple as well as the members of their extended families. As such, infertility is an *intergenerational family developmental crisis* preventing parents and siblings from proceeding through life cycle stages (e.g., not yet grandparents, inability to share parenthood with siblings). It is a crisis of family developmental genealogy in which infertility jeopardizes and compromises the family's generative potential. Family system theory has been applied to infertility in a variety of contexts (e.g., cultural factors, diagnosis of genetic disorders, family-building alternatives, and the impact of family 'secrets,' particularly regarding third-party reproduction). Furthermore, family systems theory and therapeutic interventions have been integrated into infertility counseling diagnosis and treatment, as exemplified by the identification of resiliency as an individual and family strength potentially facilitating adjustment to infertility not only for the infertile couple, but also their extended family.[79]

Matthews and Matthews, using the family life stage model, suggested that the identity confusion and role

Psychological causes of infertility. Violations of reproductive functions can be caused by psychosomatic disorders or disturbances in the emotional sphere. Infertility is the inability to have offspring. Such a diagnosis is made if efforts to become pregnant does not lead to success within 2 years of constant sexual activity. Men as well as women can be infertile. According to the latest data, infertility occurs in about 10% of couples. Infertility has a serious impact on the couple. It causes depression, anxiety.