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The Association Between Perceived Family Support and Psychological Well-Being in Infertile Couples

Linda Marquardt Mintle
Old Dominion University

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THE ASSOCIATION BETWEEN PERCEIVED FAMILY SUPPORT AND
PSYCHOLOGICAL WELL-BEING IN INFERTILE COUPLES

by

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in Partial Fulfillment of the Requirement to the Degree of

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ABSTRACT

THE ASSOCIATION OF PERCEIVED FAMILY SUPPORT AND
PSYCHOLOGICAL WELL-BEING IN INFERTILE COUPLES

Linda Marquardt Mintle
Old Dominion University, 1995
Director: Dr. George Maihafer

A correlational research design utilizing a cross-sectional survey methodology was used to investigate the association between perceived family support and psychological well-being in infertile couples. Family stress theory and the construct of boundary ambiguity were conceptual frameworks applied to the developmental family life cycle. Respondents were 35 married infertile couples with primary infertility recruited from a private For-profit infertility clinic located in Virginia Beach, Virginia. Responses on the Moos and Moos (1984) Family Environment Scale and from the SCL-90-R developed by Derogatis (1977) measured perceived family support and psychological distress respectively. Major findings indicated that infertile couples rated their families of origin lower on perceived support when compared to normative data reported by Moos and Moos (1994). A low to moderate nonsignificant association was found between perceived family support and psychological distress however the correlation was positive indicating that higher family support is correlated with more psychological distress. This result did not support main effects or buffering hypotheses which propose family support as a modifier of stress. Gender differences did not exist between correlations of perceived family
support and psychological distress, however gender differences were noted on the correlations of specific subscales of both measures. Age, income and size of family predicted family support. None of the sociodemographic variables predicted psychological distress. Finally, couples in Stage 1 of medical investigation had a moderate correlation between perceived family support and psychological distress, however, correlation coefficients for each stage of medical investigation were not significantly different. Results may indicate a need for a reconceptualization of the role that the expression of negative feelings may play in the psychological coping of infertile couples. Perhaps the expression of psychological distress is a healthy sign of coping. The trend toward higher perceived family support with higher psychological distress may signal a need for families to serve as containers for psychological distress, thus assisting infertile couples in the coping process.
DEDICATION

This work is dedicated to my father, William Marquardt, a man of great character who knows the value of a good education and never let me think I could do anything but complete this process. To my mother, Esther Elizabeth, who gave of her time and energy and knows no end of sacrifice for her children. In memory of my brother Gary, whose untimely death prevented him from being the first Marquardt to receive a doctorate. To my loving husband, Norman, a true man of the 90's, whose actions speak louder than any words of support. His belief in me, unwavering support and countless hours entertaining our children allowed me to pursue my goal. To you, I am forever grateful. Like my father, you are respected and cherished. To Matthew, who came into my life as a result of my own eight year struggle with infertility. You are a blessing that makes me thankful for the struggle. To Kaitlyn, my second miracle, who arrived during my doctoral program as a reminder that creation is truly of God. Finally, to all the infertile couples whose lives have touched me and I theirs. My heart is with you. May you find resolve.
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CHAPTER 1

Introduction

Health is a concept subject to revision and redefinition. Once defined as the absence of disease, the definition has broadened to include a holistic view of the organism (Kass, 1981). The focus is no longer on a biomedical model of disease but on social, psychological and behavioral aspects of health. Influences such as the relationship between the health care provider and the patient, and an individual's perception which is influenced by physiology, psychology and sociocultural factors play a major role in health care today and cannot be ignored. Therefore a biomedical model of health care must be expanded to a social model which considers biopsychosocial influences as central to health and well-being.

Despite a conceptual evolution in defining health, little attention has been paid to social factors influencing illness and disease. This is even more surprising given the large body of research which supports the association between health outcomes and the role of social and psychological supports as mediators for stress (Banta, 1990).

Social support can act as a buffer to protect persons from the adverse effects of stressful situations (Cohen & Wills, 1985; Kessler & McLeod; 1985). Social support can also act as a main effect in dealing with stress (Kaplan, Cassel & Gore, 1977). Furthermore, there is evidence to suggest that supportive family relationships are related to more positive psychological adjustment in chronically ill patients (Moos & Moos, 1986; Wallston, Alagna, DeVellis, & DeVellis, 1983). For example, the psychological well-being of kidney dialysis
patients was moderated by social support in studies of end stage kidney
disease (Christensen, Turner, Slaughter & Holman, 1989; Burton, Lindsay, &
Kline, 1983).

The rising costs of health care (11-12% per year) call for reform. It is
estimated that Americans spend 12-14% of their income on health care per year
(Crane, 1995). Since it is unlikely that the need for health care services will
decrease, finding ways to contain costs is challenging. Hopefully, health care
reform will be guided by scientific data which provides an understanding of
factors associated with health and well-being. As health care reform moves
towards community-based efforts with emphasis on prevention and primary
care, linkages with families is vital. Families can support or hinder such efforts.

Assessment of the family is essential to the planning and delivery of
health services. The amount of stress experienced when illness is diagnosed
depends on the mental health of the family, the way the family functioned before
the illness and the severity of the illness (Campbell, 1986; Caroff & Mailick,
Therefore, the family unit as an influence on an individual's ability to cope with
stress and thus achieve or maintain a positive health outcome needs to be
studied as a possible avenue for intervention.

Infertility represents a family stress. The condition is characterized by
threat, ambiguity and unexpectedness. These circumstances have been shown
to lead to stress (Lazarus & Folkman, 1984).

Purpose

The purpose of this study is to explore the relationship between
perceived family support and psychological well-being in infertile couples. The
intent is for this information to be used in the provision of services to infertile
couples.

**Problem to be Addressed**

**Biological factors of Infertility**

There are numerous physical causes for infertility which can be diagnosed in the male, female or couple. Female factors account for 40% of the cases and include: endometriosis, congenital abnormalities, tumors or cysts, hormonal imbalance, scarring from prior surgery or infection, irregular ovulation, tubal damage from ectopic pregnancy and other causes, immunologic infertility, luteal phase defect, iatrogenically-induced diseases caused by DES (diethyl stilbesterol) or the Dalcon Shield, and sexual dysfunction. Male physical factors account for 40% of the cases and include: varicocele, congenital abnormalities, hormonal imbalance, physical and environmental traumas, DES and sexual dysfunction. Twenty percent of infertility cases are a combination of both male and female factors or are unexplained (Office of Technology [OTA], 1988).

Accurate diagnosis of infertility is possible in 90% of patients (Bernstein & Mattox, 1982). Diagnosis may require one or more of the following tests.

Women--physical examination, basal body temperature analysis, post coital test, hysterosalpingogram, endometrial biopsy, blood hormone analysis, laparoscopy, ultrasound, mycoplasm and chlamydia cultures, cervical antibody culture and serum antibody culture.

Men--physical examination and history, semen analysis, blood hormone analyses, testicular biopsy, vasogram, trial swim test, sperm penetration assay and anti-sperm antibody assay.

Treatment options have improved dramatically with the advancement of medical technology. Procedures that were once experimental are now considered acceptable forms of therapy. The advancement of technology adds...
to the success rate as well as provides couples with multiple options, many of which have biomedical ethical issues yet to be explored.

**Psychological/Social Factors of Infertility**

The psychological/social effects of infertility are well summarized by Stanton & Dunkel-Schetter (1991) in Table 1. This summary is taken from their study of six review articles, more than 30 descriptive/anecdotal articles and 25 empirical research articles. The authors’ summary fits well with the information found in preparation for this study. The psychological/social effects for the couple can be intense and speak to the multifactorial aspects of the condition.

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Insert Table 1 about here

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Infertility becomes a focal point of daily lives for affected couples. Coming to grips with the diagnosis involves shock, denial, anger, guilt, depression, weariness, isolation and ambivalence (Matthews & Matthews, 1986), the same stages of grief which follow a death, only there is no death because there is no life. A crisis is precipitated by the diagnosis which is usually unexpected. Stress mounts as the problem continues to remain unresolved. The process of continually dealing with the condition is likened to that of a chronic illness.

Infertility creates a stressful environment which can lead to psychological, marital and sexual crises, and affect personal relationships and health (Burns, 1993). The environment is the larger context of a person’s life. Part of that environment is the family.

Table 1’s subheading “social effects” of infertility is the topic of interest in
This study because it includes family relationships. Most of the effects of social networks are reported anecdotally in the literature. Few, if any, studies have factored out the effects of family on psychological well-being in infertile couples. Family influences are unique and potentially more influential than general social networks. Families differ from friendship networks in that one does not choose his/her family. When friendships or social institutions are unkind or unsupportive, one can change his/her network and seek out those who are supportive. In the case of family, one is born or adopted into a unit. Exit occurs through death.

Individuals who comprise a family have profound influences on each other. It is in families that people tend to be more vulnerable and reveal more of their true selves. The family is also a strong place of influence through opinions, and shapes the way members feel about each other. Symbolic interaction theory (Burgess & Locke, 1953) suggests that families are a unit of interacting personalities, i.e., family members have an influence on each other. The influence of the family is mainly on self-concept and behavior. (Burr, Leigh, Day & Constantine, 1979). Families also influence the way members define the world around them. Through a process of consensual validation, family members affirm definitions and assist each other with perceptions about the world (Lamanna & Riedmann, 1991).

Families can be a source of increased stress and place individuals at risk for mental health problems. The negative influences of families have been descriptively reported in the infertility literature. Couples report their families do not understand them. This often leads to a lack of disclosure by the couple. In some cases, couples completely withdraw from their families and look for solace from each other in the marriage.
Family members can also be a source of resentment, jealousy and envy, especially towards those who have children. One reason for this may be because infertile couples tend to make comparisons with family members. Comparisons are often critical which lead to more discomfort (Taylor & Lobel, 1989).

Families can also have positive impacts and influence on their members. The positive influence of family on infertile couples has been less reported and not empirically studied. We know that families influence individual behavior and can serve as a place to promote change and growth. For example, Holahan and Moos (1991) found that high family cohesion and expressiveness and low conflict predicted better adjustment among individuals experiencing stressful situations.

Infertility creates an intergenerational crisis because it affects the growth and development of the couple as well as parents and siblings.

It can create jealousy and envy among siblings, weaken family ties, or interrupt family traditions. Families may be torn by resentments stemming from expectations of support not provided. Long existing wounds may be exacerbated by infertility. On the other hand, families may provide warmth and understanding that proves especially beneficial to the infertile couple (Burns, 1993, p. 439).

In sum, the empirical study of the association between family support and psychological well-being of infertile couples is long overdue. This study specifically focuses on the variable of perceived family support as it relates to a measure of psychological well-being in infertile couples. The study addresses the larger context of family as a source of influence on the couple.

Scope of the problem

Infertility is a health problem facing one in six couples in the United
States today (Matthews & Matthews, 1986). Infertility is defined by the medical community as the inability to conceive after one year of unprotected sex, or the inability to carry a pregnancy to live birth (Benson, 1988). While the process is marked by the passing of a year, many couples seek treatment even sooner as their concern for a desired pregnancy heightens. One of the most difficult aspects of infertility is the unknown outcome. Because couples are uncertain as to whether or not a pregnancy will be achieved, they are constantly dealing with loss and/or the threat of loss. The loss and associated ambiguity of outcome over time creates a stressful condition and plays a major role in adjustment and psychological well-being.

The degree of stress experienced by infertile couples varies, however, Cook (1987) and Seibel & Taymor (1982) identify medical treatment as a major source of stress. The lack of success with medical treatments over time further heightens stress (Edelmann & Connolly, 1986). There are factors which may place some individuals at greater risk for stress than others given individual variations in the infertility process. One factor to be explored is that of social relationships, or in the case of this study, family relationships.

Infertility represents a negative life event which requires adjustment. In most cases, infertility is an unexpected event marked by a profound sense of loss and disappointment. So difficult is the experience that most couples (97%) in one study requested psychological services at the time of the first contact with an infertility clinic (Daniluk, 1988).

The problem of infertility is most often defined as a couple problem despite the fact that one partner may carry the medical diagnosis. The reason for this is that the experience requires both spouses to adjust. In addition, procedures and medical treatments are quite intense and pervade many

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aspects of a couple's lives.

The estimated 12% of couples of childbearing age who are infertile (Mosher & Pratt, 1990) is reported as an increase of 10% over the past 20 years by Burns (1987). However, a breakdown of these statistics reveals that the overall incidence of infertility in married couples has changed little from 1965 (13.3%) to 1988 (13.7%). These figures exclude the surgically sterile. When included, 2.4 million couples meet the standard definition of infertility (Mosher & Pratt, 1990). What has risen is an increase in the rate of specific groups. The number of couples with primary infertility doubled from 500,000 in 1965 to one million in 1988 (Mosher & Pratt, 1990). The rate of infertility among younger wives (20-24 years of age) has also increased substantially from 4% in 1965 to 11% in 1982 (Mosher & Pratt, 1985).

A broader concept of infertility includes difficulty or danger in carrying a baby to term and problems in conception. This broader definition is labeled “impaired fecundity” and affects approximately 4.9 million married and unmarried women. Impaired fecundity figures also include women with both primary (45%) and secondary (55%) infertility. In addition, those with reproductive impairment are not identified unless they come forward for treatment. Therefore, it is possible that the numbers could be higher than reported.

Statistics are available for infertility and impaired fecundity among African Americans. The overall risk with this population is greater than that of whites. The infertility rate for African Americans was 1.5 times greater than for white couples in 1982 (OTA, 1988). One reason for the increased risk may be that African American women were twice as likely as white women to be treated.
for pelvic inflammatory disease (PID), a risk factor for infertility (Mosher, 1988). A report from the OTA (1988) speculates on other reasons for this difference. They include: a) higher rates of sexually transmitted diseases among African Americans than whites b) higher use of IUDs among African Americans than whites - IUDs can increase the risk for PID c) greater exposure to occupational hazards and environmental factors for African Americans than whites - another known risk factor for infertility d) African Americans have a greater risk than whites for infection or complications following childbirth or abortions - this can lead to structural damage or scarring which increases the risk for infertility.

In addition to the above, Manley, Lin-Fu, Miranda, Noonan, and Parker (1985) cite poor access to health care as a factor in higher infertility rates among African American women. Because there are so few studies looking at ethnic and cultural differences, there may be other factors not yet investigated that affect minority groups.

Infertility has a medical etiology, however, environmental and lifestyle factors also contribute to the growing number of infertile couples. The delay of marriage and childbearing, the increase of sexually transmitted diseases, drug and medication use, pollution, poor nutrition, birth control methods and abortion can all impact future fertility (Houghton & Houghton, 1984).

The larger sociocultural context impacts infertile couples and creates stress. Our society remains pronatalistic (Lamanna & Riedmann, 1990) even though the women's movement has awakened cultural consciousness regarding the choices of women both personally and professionally. Americans place great value on parenthood and only a small percentage willingly choose childlessness. Consequently, both men and women continue to be stigmatized for their involuntary childlessness and must bear societal and familial
pressures to procreate (Miall, 1985).

In the United States, medical services for infertility have increased over the past two decades and one in six couples will most likely use infertility medical services at one point in their efforts to conceive a child (Hull et al., 1985; OTA, 1988). The cost of infertility medical services was estimated at one billion dollars in 1987 (OTA, 1988). Insurance coverage for infertility services varies by state and by policy, thus financial stress is an associated factor. As noted above, the number of couples with primary infertility has doubled. Those couples with primary infertility are more likely to seek treatment than those with secondary infertility. Infertility services are more available in urban areas and less stigmatized than before. Stigmatization still exists but media attention to the problem has created more awareness and hopefully more understanding.

Reproduction technology has dramatically improved. Medical advances in reproductive technology are a mixed blessing. Couples are faced with a plethora of medical treatment options which often require judicious use of financial resources, physical stamina and decision-making skills. The choice is no longer simply to seek treatment for infertility, but what type of treatment, how often, how much can be afforded, what are the ethical and moral implications, and when does one stop? The stress associated with reproductive decisions is considerable.

Research Questions

The broad research questions addressed in this study are:

1. Do infertile couples differ on measures of perceived family support from normal families?
2. What is the relationship between perceived family support and psychological well-being in infertile couples?

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3. Can perceived family support act as a mediator or main effect for psychological distress in infertile couples?

4. Is the relationship between family support and psychological well-being stronger for wives than husbands?

5. Do sociodemographic variables modify whatever relationship exists between family support and psychological well-being?

6. Does stage of medical investigation affect the correlation between perceived family support and psychological well-being in infertile couples?

Significance of the Study

Assessment will play an important role in health care reform. In order to provide cost-effective mental health services, clinicians and physicians will need to know which variables are critical to positive clinical outcome. Studies that help predict those variables are timely.

The problem to be addressed recognizes the biological, psychological and social stress created by infertility. The identification of variables which mediate that stress is important. Furthermore, the identification of factors that predict differential responses to illness can modify risk and prevent psychosocial breakdown (Bergman, Contro, & Zivot, 1984). The infertility literature references the need for social support and speaks to estranged family relationships (Mahlstedt, 1985; Mazor, 1984; Menning, 1980). However, most articles relegate the discussion of family factors to a paragraph or sentence with no empirical evidence to support the need. Clinical observations indicate that families play a role in coping with infertility but few studies, if any, define that role. Thus, by examining the relationship between family support and infertile patients' psychological well-being, information will be sought as to the importance of family factors and possible need for interventions geared towards
family issues. If indeed family factors play an important role in mediating stress, initial assessment of family support should become a formal part of every psychosocial infertility evaluation.

Finally, infertility clinics are located in urban areas. Hampton Roads, with a catchment area of approximately 1,400,000 people, houses two infertility clinics - the Jones Institute at the Eastern Virginia Medical School in Norfolk, and the Beach Center for Infertility, Endocrinology and IVF, a private For-profit clinic housed in Virginia Beach. Medical and technological advances are available in cities because the cities have the resources to provide services. Thus, this research has direct relevance to the field of urban services.

Assumptions

1. Health as a concept includes social factors which influence disease and illness.
2. Infertility is a physical problem with a medical etiology despite early studies that claimed psychogenic causation.
3. Infertility is a biopsychosocial crisis, affecting all aspects of a person’s functioning.
4. Infertility is a developmental and situational crisis which results in acute and chronic stress.
5. Social support is a potential moderating variable for psychological disturbance associated with disease and illness.
6. The family environment is a potential social support resource.
7. Perception is influenced by physiological determinants, psychological and sociocultural factors.

Limitations

1. The primary limitation of this study is the correlational research design.
Experimental manipulation of variables is not characteristic of correlational studies and thus, inferring causality is difficult. Therefore, any relationship found significant cannot be stated as causal.

2. There is also the difficulty of reverse causality. It may be that the condition of infertility affects families in positive or negative ways or that families affect the psychological well-being of infertile individuals and couples.

3. The stress of infertility and the measure of psychological distress are complex behaviors that are being broken down into simple components for the purpose of measurement. Assessment was based on single measures taken at one point in time. It may be that perceived family support and psychological well-being are variables that change over time given the roller coaster of emotions couples encounter through medical testing and treatment.

4. The measurement of family support is a perceived measure, i.e., it is based on the infertile individual’s perception of family support. It is possible that the actual behavior of the family could be quite different from an individual’s perception, especially in an individual under high stress. Also, what family members perceive may be distorted or inaccurate.

5. The measure of supportiveness of family environment does not consider social support from nonfamily sources. No information was gathered on the impact of support from outside the family on the patient’s well-being.

6. This study cannot control for all possible variables which may modify psychological well-being.

7. Another limitation of the design was that it did not control for selection of subjects, i.e., subjects were not randomized. The study utilized a convenience sample. It is possible that those who agreed to participate in the study were coping better than those who refused, resulting in a biased group. Also,
couples who attend infertility clinics may differ significantly on a number of subject characteristics from couples who refuse infertility treatments and/or drop out of treatment. A clinic sample was chosen because of the high stress treatments involved and because clinics tend to be the "last resort" for many couples. Thus, one could argue that the representiveness of the sample limits generalizability.

8. History is also an issue in that the study does not control for events which could influence respondents at the time of specific data collection, e.g., filling out the questionnaires after a failed IVF attempt may influence responses negatively, filling out questionnaires during follicle stimulation may produce hope and more positive responses, etc.

**Delimitations**

1. This study focused only on infertile couples with primary infertility who attend an infertility clinic in an urban setting.

2. Support is a complex concept which includes friends, family, groups, institutions, etc. This study looked only at the variable of family support and further narrowed the scope to patients' perceptions of support.

3. The data collected were self-report. Patient perception may in fact not correspond with actual behavior. Likewise, the measure of psychological distress is self-report and taps only specific dimensions of mental health. However, as noted previously, perception may be more powerfully linked to psychological well-being than actual behavior.
CHAPTER 2
Review of the Literature

This chapter begins with a presentation of the theoretical framework used to test hypotheses and conceptualize the process of infertility. It is followed by a brief historical overview of the infertility research and a section entitled, "Current Research". Next, the literature on social support and well-being is reviewed. Specifically, the predictor variable of the study, family support, is discussed. The criterion variable of psychological well-being is reviewed by looking at psychological responses to infertility. Related research findings are reported and subdivided into gender differences, marital relationships and sexual relationships. Additional research findings are also reported. They include race, class and ethnicity, stage of medical investigation and medical diagnosis. Finally, a summary of the methodological problems in infertility research is noted.

Theoretical Framework

Infertility has been conceptualized using a number of theoretical models. There is merit to multiple conceptualizations in that they provide useful parts of a whole needed for the integration of infertility into a master theory.

Four theoretical approaches found in the infertility literature are reviewed and noted for their contribution and limitations. They include Adlerian theory, crisis theory, sociological perspectives, and stress and coping theories. Next, the theoretical base for this study is outlined. This study embraces a feminist informed systemic paradigm along with family life cycle development and family stress theory.

Born (1989) discusses infertility from an Adlerian perspective. According
to Adler, the development of social interest and achieving a sense of larger community is critical to healthy adult functioning. Social interest and connectedness are achieved through the life tasks of love, friendships, work, self-concept and spiritual search. Born believes that infertility has a major impact on these life tasks and blocks couples from moving through the family life cycle. This theoretical approach has relevance to the variable of interest in this study, family support, because it accounts for the impact of family values, roles, constellation, etc., as major in influencing life tasks. The problem with Adler’s theory is that the concepts are vague and poorly defined. The absence of operational definitions creates difficulty for empirical testing. Consequently few, if any, infertility studies exist to support Adler’s theory.

Menning (1977) was the first to apply crisis theory to infertility. She proposed that individuals go through predictable stages of emotions while experiencing the “crisis” of infertility. The “crisis” was one of failing to parent. Erikson’s (1950) work on the individual’s life cycle, specifically the stage of generativity, is usually referenced to explain the developmental crisis. Erikson asserts that achieving generativity is more difficult without the experience of parenting. Basically, infertility blocks the individual’s ability to transition to the stage of parenting (Butler & Koraleski, 1990). The end result is either positive growth or maladjustment. Mild support for the application of Erikson’s theory was demonstrated in a longitudinal study of married men in the Boston area who experienced infertility (Snarey, Son, Kuehne, Hauser & Vaillant, 1987).

Once the crisis has begun, positive growth is achieved through expression in a grieving process. Infertility grieving is akin to the stages of death and dying proposed by Kubler-Ross (1969). Initial feelings of surprise and denial change to isolation, anger, guilt, unworthiness, depression and grief.
(Cook, 1987; Mahlstedt, 1985; Menning, 1982; Wilson, 1989). According to Conway and Valentine (1987), all infertility grief theories involve three general phases of emotions and behaviors. The three phases are initial shock and denial, intense sadness and anger related to deep grieving, and adaptation or resolution. The grief process is necessary for healthy adjustment.

The problem with the above is that no studies (with the exception of Snarey et al., 1987) have been found to validate the notion of a major life crisis followed by predictable stages of grieving. Instead, a great deal of individual variability is involved in the infertility process. Thus, lumping people into a homogeneous group of responders seems contraindicated.

Callan (1987) reviews sociological perspectives influencing infertility. These perspectives apply social psychology including social-exchange theory which considers the attitudes, mores and norms that influence psychological well-being. The benefit of these theories is in the addition of the sociocultural context to the study of infertility. The social stigma attached to infertility compounds stress because it adds a layer of social victimization to the problem. In a pronatalistic society childless women face stigmatization and formal sanctions. Even though Reed (1987) credits the women's movement for expanding the accepted roles of women to include alternatives to motherhood, motherhood remains a central role and identity for most women.

A social construction perspective (Greil, Leitko & Porter, 1988) defines infertility as a collective experience among the couple, medical personnel, family and friends. Infertility is an open ended process subject to influences of race, gender, class, technology and changing medical definitions. More studies are needed which take into account these sociopolitical contexts of infertility because the extent of these influences is unknown. Moreover, the unique
make-up of individuals cannot be ignored.

Berg and Wilson (1991) discuss infertility from a model of psychological strain in which couples first experience acute stress followed by chronic strain as treatment progresses. Symptoms of marital strain and psychological strain emerge. The construct of stress is also applied by Edelmann and Golombek (1989). They found a possible connection between psychological stress, prolactin levels and failure to conceive and called for pharmacological interventions to reduce stress. The authors believe a strong relationship between psychological and endocrinological functions exist however, more studies would have to bear this out.

Stress can be conceptualized as a stimulus, response or relational dynamic. For example, many life events such as divorce, death, illness, etc. serve as stimuli for the disruption of health and well-being. At other times, stress can be a response to demanding situations on the body, e.g., doctoral dissertations. Lazarus and Folkman (1984) discuss a relational definition of stress which is useful in this study. They define stress when the person and environment are appraised by the person as too taxing or using more resource than one has. The result is disruption of well-being. Applying this definition of stress to infertility, infertility is viewed as a stressful event which is perceived by the person as exhausting his/her resources and creating a disturbance in well-being. This definition allows for individual variability in that it takes into account the perceptions of the person. Individual perceptions account for variability in coping responses. For example, the woman who believes motherhood is essential to her identity as a woman will most likely experience more stress with infertility than a woman who creates her identity through career. One study (Scott & Morgan, 1983) speculated that women in urban areas may cope better.
with infertility than their rural counterparts because of the alternate roles women are exposed to in urban settings.

Infertility affects multiple domains of a person's life - marital and sexual relationships, financial, employment, etc. and taxes several domains of stress commonly listed on stress inventories (Sarason, Johnson, & Siegel, 1978). Because of the impact of infertility on multiple domains and the possibility that the stressor can remain chronic and unresolved for years, infertility could be considered a stimulus for accumulated stress. Over time, more and more areas of a person's life are affected. This propensity for chronicity and build up of stress fits McCubbin's and Patterson's (1983) double ABCX model of family stress. This model was built on the seminal work of Hill (1949) who first proposed that A (stressor event) interacts with B (the family's crisis meeting resources) and C (the family's definition of the event) to produce X (the crisis). McCubbin and Patterson (1983) extended Hill's model to include a Double A. The Double A is not only the stressor but the pile-up of life events experienced by the family.

The central issue of interest by most researchers is the relationship of stress with negative outcomes. What are the factors that determine successful adjustment to stress? Holahan and Moos (1987) identify risk and resistance factors in order to predict well-being. They define risk factors as chronic strains, stressors and use of avoidance coping. Infertility qualifies as a stressor and source of chronic strain placing couples at risk. One of the resistance factors noted by Holahan and Moos (1987) is family support, the variable of interest in this study.

Social support (Cohen & Wills, 1985) is one factor which may have a main or buffering effect on stress. Other factors which are more individual
include personality attributes (Kobasa & Puccetti, 1983), coping strategies (Revenson & Felton, 1989), lack of control (Affleck, Tennen, Pfeiffer, & Fifield, 1987), etc. This study is interested in the variable social support, more specifically family support as a possible buffer or main effect on the stress of infertility.

Successful adjustment is a concept in need of a definition. Lazarus and Folkman, (1984) focus on adaptive outcomes within three domains - morale, social functioning and somatic health. Adjustment under stressful circumstances can be measured by the maintenance of well-being. Social functioning which includes family relationships and morale can be measured by perceptions of well-being and emotional balance. Therefore, the intrapersonal (psychological well-being) affected by the interpersonal (family relationships) demands of infertility would be a good indicator of successful adjustment.

Stanton and Dunkel-Schetter (1991) report that the infertility literature suggests that the process of infertility results in levels of distress which approach clinical significance and/or persist over time. The intensity and duration of infertility can affect adjustment over time and need to be further investigated.

Stress and coping theories focus on the relationship between life context factors and individual functioning (Moos, Finney, & Cronkite, 1990). Family environment and family members mutually influence each other. Several factors are involved, e.g., personal characteristics, coping skills, well-being, life stressors and crises, etc. Stress theory allows a conceptualization of the psychological response to infertility and also helps define successful adjustment to the process. Specifically, Stanton and Dunkel-Schetter (1991) report that infertile individuals perceive the most stressful aspects of the
condition as the unpredictability, negativity, uncontrollability and ambiguity involved in the process. When a couple is infertile, stress is a continual process that develops out of transaction with both external (social) and internal (biological) environments (Morse & Van Hall, 1987).

Burns (1987) further elaborates on stress theory to include the construct of boundary ambiguity. Infertile couples are blocked from the transition to parenthood and thus experience a child they wish to have in their family who is psychologically present but physically absent.

Boundary ambiguity is the process of change that occurs in families stressed by normative or unexpected loss. Families are stressed because of the lack of clarity as to who is in and who is out. Infertility is an obstacle for the couple and family-of-origin. It becomes an intergenerational stressor that impacts boundaries and developmental tasks for all (e.g., mentoring, grandparenting, etc.). The parents of an infertile child may wonder if they caused the ‘defect’ (p. 369).

In addition, relationships with siblings can be stressed because infertile couples cannot share in the parenting stage of the life cycle.

According to Boss (1977), the goal for the family is to reduce boundary ambiguity so that family functioning can be restored. The means towards that end is to let go of the fantasy child and strengthen the marital bond. In doing so, the fantasy child is not used as a stress reducer to balance the marital relationship, i.e. the fantasy child is no longer used in a triangular fashion to cope with stress. The couple may continue efforts to conceive, but must approach the task with the reality of their situation.

In this study, a systemic paradigm serves as a backdrop for all conceptual thinking. This paradigm provides a way to conceptualize the interpersonal nature of infertility. Infertility is a medical problem found in individuals who are
social responders. A systemic view of infertility does not see the individual as “problem” but rather the problem as interactional and embedded in a larger context. This is an important conceptual point because it implies circular causality and takes the burden of adjustment to the stress of infertility off the individual. There is a problem with a purely systemic paradigm, however, in that it does not account for the sociocultural context of the individual. If system is defined to include not only the individual and family but community and sociocultural level, then the problem is remedied. The medical etiology is not ignored but the process of coping, adjusting and achieving psychological well-being occurs through social relationships embedded in a larger sociocultural context.

One of the primary social relationships is the marital spouse. The infertility literature references numerous studies which address this relationship. It is families, however, who send out individuals to partner. The influence of families therefore cannot be ignored. The importance of family of origin has been emphasized by a number of theorists (Bowen, 1978; Framo, 1976; Beavers, 1977) and provides an understanding of an individual’s current relationship difficulties. The families’ beliefs, behaviors, appraisals, etc. are always present in the spouse and carried as a legacy to the next generation. Families are unique in that one enters through birth or adoption and leaves by death. Friendships are chosen, families are not. A highly regarded value of families is that they provide relationships. Carter and McGoldrick (1988) define families as a three or four generational system. Their multigenerational perspective takes into account the adjustments all members must make to stress and transitions. When a disruption occurs, all members are affected.

Infertility represents a disruption in the family life cycle development.
process and has been labeled by Matthews and Matthews (1986) as a "transition to nonparenthood". Such an interruptions leads to stress. The family is blocked in the cycle, not just the individual or couple.

Family sociologists Hill and Duvall extended Erikson's theory of an individual stage of development to the family (Duvall, 1971; Hill & Rogers, 1964). The family schema postulates that there are predictable times of transitions which result in changes for the family. Most family life cycle schemas include the following stages: moving from couple to married; birth of the first child; children entering school; children entering adolescence; empty nest; and retirement from work (Carter & McGoldrick, 1980). The importance of these stages is that families must face transition points (stress) and draw upon their resources to do so.

Symptoms and dysfunction are usually associated with disruptions to the family life cycle (Walsh, 1978; McGoldrick Orfandis, 1977). Bowen (1978), a family therapist, is well-known for his clinical methods and research which assess multigenerational family patterns through the life cycle. He believes that current dysfunction can be understood in the context of family life cycle transitions and important events.

Correlating symptoms to disruptions in family life cycles is central to this study. Infertility represents a family stress which occurs around a life cycle transition point. Carter's (1978) diagram (Figure 1) provides a conceptualization of the interaction of stress and the family life cycle. It also includes multiple system levels which account for individual variability. Horizontal stressors are developmental as in life cycle transitions, and unpredictable as in chronic illness, sudden death, etc. Infertility represents a horizontal stressor in that it blocks the stage of parenting or birth of a first child.
Figure 1

Horizontal and Vertical Stressors

**SYSTEM LEVELS**

1. Social, Cultural, Political, Economic (gender, religion, ethnicity, etc.)
2. Community, work friends
3. Extended Family
4. Nuclear Family
5. Individual

**HORIZONTAL STRESSORS**

1. Developmental
   Life Cycle Transitions
2. Unpredictable
   Untimely death, chronic illness, accident

**VERTICAL STRESSORS**

Family pattern, myths, secrets, legacies

(Time)
and is unexpected. The vertical axis of Figure 1 represents what one is given from his/her family as he/she grows up, e.g., family patterns, expectations, attitudes, etc. These family patterns are transmitted down the generations. According to Carter (1978), the point of convergence of the horizontal and vertical stressors creates disruption in the system. The amount of anxiety associated with the stress determines how well the family will manage the crisis. The greater the anxiety at transition points, the greater the dysfunction. In her view, current life cycle stressors are also affected by the family generational messages and current stress of the day and time. Current stress includes social, economic, cultural and political impacts on the family.

Infertility clearly represents a horizontal stressor to be managed by the family. The way the family manages stress represents the vertical axis of Carter's theory. If family support is low then one would expect an increase in anxiety and more distress. If, however, the family is perceived as supportive, then one would expect better adjustment, i.e., lower levels of psychological distress. Stress and coping theories suggest that family support would serve as a main or buffering effect for the infertile spouse.

**Historical Overview**

The body of early research dates back to the 1940's and was born out of traditional psychological and psychoanalytical theories. Projective measures such as the Rorschach Inkblot Test were used to test out hypotheses as to the causes of infertility. The overall hypothesis was that psychological conflicts within the individual caused infertility. This hypothesis led to a number of studies aimed at supporting a psychogenic etiology for infertility. Most of these studies focused on women with unexplained infertility. Support for a psychogenic model with this population was strongest from the mid 1940's to
the mid 1960's (Mazure, Takefman, Milki & Polan, 1992). The theory behind this support was that no organic cause for infertility could be found, therefore, psychological factors must be responsible for blocked conception.

The advancement of reproductive endocrinology led to better identification of biological causes for infertility, thus lending less support to a psychogenic cause. In the 1970's, Barbara Menning (1977), a nurse, was one of the first to challenge the traditional psychological and psychoanalytic views. She believed the distress noted among infertile women was a result not a cause of infertility. This notion has been substantiated by more contemporary research.

Current Research

Infertile couples, in general, do not differ significantly from fertile counterparts on traditional measures of personality (Edelmann, Connolly, Cook & Robson, 1991; Mai, Munden & Rump, 1972; Stauber, Maassen, Spielmann & Dincer, 1985; Wright, Allard, Lecours & Sabourin, 1989,). In fact, infertile couples have generally functioned within normal ranges of standardized measures of individual, marital and sexual adjustment (Dennerstein & Morse, 1988; Downey et al., 1989; Fagan et al., 1986; Freeman, Boxer, Rickels, Tureck & Mastrioanni, 1985; Garcia et al., 1985; Kipper, Sigler-Shani, Serr & Insler, 1977; Paulson, Haarmann, Salerno & Asmar, 1988).

Menning's view of the psychological pathology found in infertile couples as attributable to the couples' reaction to infertility has been substantiated in a number of studies (Berger, 1980a; Berger, 1980b; Decker, 1972; Dor, Homburg & Rabau, 1977; Ford et al., 1953; Menning, 1982; Moghissi & Wallach, 1983). As a result, current psychosomatic research focuses more on the physiological responses of infertility as a reaction to stress (Burns, 1987).
Most current research, however, embraces the view that psychological disruption of infertile couples is a result of circumstances rather than a predisposition. Psychological adjustment depends on a number of factors which may be preexistent in the couple and/or caused by the stress of infertility. The common view is that stress is considerable and interacts with infertility. However, the specific role stress plays in impairing infertility is still unknown. In one study (Mahlstedt, MacDuff & Bernstein, 1987), infertile couples sampled described infertility as extremely stressful or stressful 80% of the time; 63% described it as more stressful than divorce. In another study, Epstein, Rosenberg, Darden and Treiser (1993) concluded that infertility would rank sixth as a stressor of life events (after death of a spouse, divorce, marital separation, jail term and death of a close relative) if it were included on the Holmes and Rahe Social Readjustment Scale. The high ranking was even more significant given the lack of societal recognition of infertility as a stressor.


**Social/Family Support**

Social support serves a number of functions related to health and well-being (Turner, 1981). Mostly, social support helps people face difficulty and still function in their daily lives. The impact of social support is substantial in that it can act to maintain or restore one's health (Berkman & Syme, 1979; House, Robbins & Metzner, 1982) and act as a mediating force in reducing the consequences of illness (Finlayson, 1976). The relationship between the lack

Social support is a multidimensional construct which makes its study more complex. Researchers differ in their definitions and measurement of social support. Bloom and Spiegel (1984) studied two dimensions of social support in 86 women with metastatic carcinoma of the breast. The first dimension was defined as opportunities for social exchange between network members. The second dimension focused on emotional support provided by network members. Bloom and Spiegel's definition of emotional support is "...the perception that one is cared for and loved, is esteemed and valued regardless of achievement, and, when necessary, can count on others (p. 831)." The family domain of emotional support was measured by the Family Environment Scale developed by Moos and Moos (1986). The three subscales which comprise the Family Relationship Index were summed for a global perception of family support. Results indicated that emotional support was strongly related to one's outlook and that outlook was improved by family support. Family support was not related to social functioning but was related to social activity. This finding suggests that family support decreases isolation because of the continued opportunities to engage in support networks. In sum, this study supports the association between emotional support and psychological well-being.

The literature is rich with studies that show a relationship between social support and adjustment to acute and chronic stressors. The term social support is usually defined as, "...individuals' perceptions of various functional aspects of their social relationships" (Stanton & Dunkel-Schetter, 1991, p. 62). Cohen and Wills (1985) note that the presence of a social structure does not insure support.
More important is what happens within existing structures. Three key functions are identified: a) esteem which is made of love, caring and respect (Kahn & Antonucci, 1980; Schaefer, Coyne & Lazarus, 1981; Wills, 1985). The idea is that feeling loved and cared for combats a sense of loss and failure. b) information and affirmation which involve validating thoughts and feelings as normal. c) material aid which consists of concrete provisions and assistance. Cohen and Wills (1985) found material aid to be the least correlated to well-being. This may be due to the belief that the kind of aid offered must match the perceived need.

Most researchers agree that perceived support is an appropriate measure of social support. Cohen and Wills (1985) found that individual perceptions of available support related to well-being more than actual support received. This is an important notion because it speaks to the strength of perception and the need to measure it.

The social support literature is divided across a theoretical issue. The issue is whether social support has a "main" or "buffering" effect on outcome measures such as well-being. Kaplan et al. (1977) propose a "main effects" model which states that all people have a need for on-going care, recognition, affection and belonging. As a result, on-going support is beneficial to everyone regardless of the level of stress experienced.

Another school of thought sees social support as a moderating or "buffering" influence to those experiencing stress. Cohen and Wills (1985) believe social support helps people avoid negative life events by providing information and opportunities. For example, in times of economic stress, individuals may avoid consequences associated with that stress because of family members who are supportive and can provide temporary aid. The three
key functions of stress noted above help the individual through the difficult time and mediate the consequences of stress. Holahan and Moos (1982) found social support mediated consequences of stressful circumstances in the workplace. Those community members with few social supports reported more depressive and physical symptoms than those with more supports. Gore (1978) studied the effects of social support in moderating health consequences of unemployment. Those who perceived more family support had lower cholesterol levels and were less depressed than those without perceived support. Stevens (1992) concluded that social support was associated with later-life satisfaction in a sample of 108 community residents, ages 60-90.

Cohen and Wills (1985) and Kessler and McLeod (1985) found studies to support both hypotheses for the role of social support. Their reviews note that a main effects model may be supported when stress is chronic (Abbey & Rovine, 1985) while a buffering hypothesis fits for acute stress and the appropriate match of perceived need with response. Because infertility begins as an acute stress and often takes the form of a chronic stressor, it is important to test these hypotheses over time. It is likely that families become less responsive with time. It is not the purpose of this study to discriminate between a main effects or buffering hypothesis but to acknowledge that social support does impact psychological well-being in one or two ways as proposed by these hypotheses.

Abbey, Andrews and Halman (1991) conducted a study which focused on the interrelationships of spousal support, interpersonal conflict and well-being in 157 infertile couples recruited from infertility specialists, self-help groups and newspaper advertisements. Results of that study indicated that social support from one’s spouse enhanced the other’s well-being. Multiple
regression analysis showed a main effect on well-being versus a buffering effect. The study included a questionnaire which asked if couples talked with friends and family members about their infertility. If a spouse said "yes", he/she was asked to rate the interactions on a five-point Likert scale as to how the interactions made him/her feel. Results of this data indicated that 96% of women and 88% of men talked about their fertility situation with a friend or family member in the past year. Women indicated both positive and negative responses from others but men felt the responses from others influenced them little. These data suggest that women are more influenced by social supports than men and underlie the belief that a gender difference exists between the association of family support and psychological well-being.

Literature does exist on the importance of social support as a potential moderating variable for chronic illness. Social resources act as buffers from the adverse effects of chronic illness. More favorable social support is related to more positive chronic illness outcomes (Moos & Moos, 1986; Wallston et al., 1983). Specifically, the family environment is identified as a social support for chronically ill patients. Dimond (1979) found greater cohesion and expressiveness in families associated with higher morale and more positive social functioning for hemodialysis patients. Simmons, Klein, and Simmons (1977) suggested that perceived closeness of the family is related to lower anxiety and higher self-esteem among renal transplant patients. Increased suicide rates were associated with lack of family support in end-stage renal disease patients (Abram, Moore, & Westervelt, 1971; Foster & McKeegney, 1978). A supportive family environment had a positive effect on the psychological well-being of end-stage renal disease patients in a study conducted by Christensen et al., (1989).
In sum, most studies show a positive relationship between social support and psychological well-being. Cohen and Wills (1985) further suggest that this relationship may be causal when data from animal studies and social-psychology experiments and surveys are considered.

The family is a key unit of support which provides emotional and instrumental assistance (Caplan, 1976; Dean & Lin, 1977; Unger & Powell, 1980). It has also been found that support from family is preferable to support from friends (Penning, 1990). The directionality of the effect of family support to health and well-being is questionable. Family environment can be adversely affected by a member's impaired functioning (Grad & Sainsbury, 1968; Hertz, Endicott and Spitzen, 1976) or the effects of family environment may positively/negatively influence the person's functioning as reported in studies of schizophrenia (Brown, Birley & Wing, 1972; Gould & Glick, 1977), depression (Vaugh & Leff, 1976), childhood disorders (Straker & Jacobson, 1979), and other community mental health diagnoses (Wright & Stoffelmayr, 1980).

Family support may have a formative effect on coping responses and intrapsychic elements of adjustment (e.g., self-efficacy) (Moos & Billings, 1982). The important issue to this study is that the family serves as a major influence and is the environment from which the individual is raised.

Doane (1979) and Jacob (1975) provide reviews of the clinical research which links family support to a family member recovering from physical illness. Most of this research looks at the negative aspects of family characteristics. Holahan and Moos (1985) found family support a stress-resistant variable in predicting health and illness in a sample of over 500 community subjects in a study which compared individuals under high levels of stressors with distressed symptoms to those who adapted to stress without physical symptoms.
and/or emotional distress. They proposed a general conceptual framework in which personal and social resources are related to functioning through the coping responses used to manage intervening stressors. The relationship is both direct and indirect (Moos & Schaefer, 1986). Follow-up studies reinforced that personal and social resources predicted stable functioning under high stress (Holahan & Moos, 1987; Holahan & Moos, 1990). The 1987 study sampled a community of over 400 adults and children in order to predict which factors would associate with distress. Family support predicted psychological distress. This data supports the idea that stress resistance is a coping model and family support functions prospectively as a coping resource.

According to Stanton and Dunkel-Schetter (1991), research on social relations and infertility focus on three main areas --negative responses from others, spousal support and mutual support groups. Studies tend to report negative aspects of social relationships and do not factor out families from friendships. Families represent a unique source of social support because they are not chosen and represent years of emotional ties and interactional patterns. Infertile couples report adjusting their friendships according to the support they feel but cannot replace their families. They may detach or isolate from family members but the feelings associated with the support or lack of support remain.

As noted, family support may be positive, negative or a combination of both. Infertile couples often report that family members say and do things that are not supportive. For example, comments such as "If you would just relax and stop thinking about your problem" or "Adopt a baby and you will get pregnant" are viewed negatively by the couple and evidence of how little family understands their plight. Interpersonal conflict can and does occur in families with infertile couples due to the lack of understanding and behavior which is
negative (Abbey, Holland, & Wortman, 1980; Coates & Wortman, 1980; Wortman & Dunkel-Schetter, 1979).

Another problem is that family support is taxed by the excessive demands infertile couples often place on relationships. Family members tend to feel overwhelmed and frustrated by the emotional intensity and chronicity of the process. There may be a great deal of support given at the time of initial diagnosis but as time goes on, support wanes as resources are taxed. As a result, family members may pull away or act in unsupportive ways (Coates & Wortman, 1980).

Family and social support can have a profound impact on the adaptation of couples to their infertility (Burns, 1993). One consequence is that estranged family relationships can result (Mahlstedt, 1985; Mazor, 1984; Menning, 1980). Another consequence is that infertility may correlate positively with family support. Hearn, Yuzpe, Brown and Casper (1987) compared women in in vitro fertilization (IVF) programs to normal families. They concluded the IVF women perceived their families as more supportive, higher on moral-religious emphasis and were better organized. Shatford, Hearn, Yuzpe, Brown and Casper (1988) compared women with idiopathic diagnosis of infertility to women with organic causes and found more family cohesion and recreational orientation in the idiopathic group. Overall, however, little to no empirical evidence was found to interpret the relationship of support to psychological well-being in infertility.

In sum, positive psychological adjustment in chronically ill patients is associated with more supportive family relationships (characterized by higher levels of cohesion, expressiveness and lower levels of intrafamily conflict) (Moos & Moos, 1986). The psychological distress of infertile couples is similar to the distress of chronically ill patients. Therefore, this study will apply the
measures of family support and psychological well-being to a sample of infertile couples with the intent of analyzing that relationship.

**Psychological Reactions to Infertility**

The emotional/psychological distress of infertility is well-documented (Daniluk, 1988; McEwan, Costello & Taylor, 1987; Valentine, 1986; Kraft et al., 1980; Mahlstedt, 1985; Menning, 1980). Patients often describe the experience of infertility as an emotional roller coaster - one week they are up and hopeful, the next depressed and moody. Negative emotional reactions include: frustration/anger (Bresnick & Taymore, 1979; Valentine, 1986); lowered self-concept (Platt, Ficher & Silver, 1973); tension/strain (Andrews, 1970); fatigue (Valentine, 1986; Lalos, Lalos, Jacobsson & Von Schoultz, 1985); interpersonal disruption (Bell, 1981); obsessive thoughts (Valentine, 1986); anxiety (Bell, 1981), depression (Bell, 1981, Lalos et al, 1985; Valentine, 1986); grief, fear, envy, isolation and alienation, guilt and blame (Bierkins, 1975; Lieblum, 1988; Mazor, 1978; Menning, 1977; Woolett, 1985).

Mahlstedt (1985) outlines eight losses associated with infertility that help explain associated depression and other emotions. They are loss of a relationship, health, status, self-esteem, self-confidence, security, fantasy, and something or someone of greater symbolic value.

It appears that an individual’s psychological response to infertility is determined by a number of factors--personality style, past emotional health, level of infertility/stress, marital satisfaction, available social support, significant psychiatric symptoms or illness, history of substance abuse or dependency, treatment with psychotropic medications and prior psychiatric hospitalizations (Berger, 1980b).

What is less clear is how many intrapsychic and interpersonal problems
are preexistent to the infertility. Patients who may be particularly vulnerable to the stress of infertility often have a history of depression or psychosis, prior severe psychiatric illness, intense current stress, multiple prior episodes of psychiatric illness, significant impaired mental functioning in past or present and few psychological defenses (Burns, 1993). Furthermore, McEwan et al. (1987) gave a profile of infertile women most likely to experience emotional difficulties based on their research. The profile was a young women who endorsed a religion with emphasis on child-bearing, who did not have a confiding partner, had additional life stress and had no specific diagnosis.

Behavioral disturbances may include increased anxiety, disorganization, moodiness, distractibility, fatigue, eating disorders, obsessive behavior, sexual acting out, overeating, lack of grooming and neglect of self. Somatic reactions may be headaches, stomach problems and sexual dysfunction. Cognitively, an individual may have difficulty with concentration, impaired decision-making, and weakened thought processes (Butler & Koraleski, 1990). In addition, infertility can raise issues from the past that are unresolved and the stress response may generalize to other areas of a person's life (Daniluk, 1991).

Several studies have attempted to find significant differences in infertile couples from their fertile counterparts. To date, few differences exist. For example, Freeman, Garcia and Rickels (1983) compared 153 infertile women with 141 fertile women and found no difference on several measures of emotional distress or personality. Adler and Boxley (1985) looked for differences between 103 infertile men and women and 61 fertile men and women on marital adjustment, self-esteem, psychiatric symptoms, body image and sex roles and found no differences. Anxiety and emotional distress have been higher among infertile women than fertile women. However, these
differences are questionable due to methodological problems in the studies that report such differences (Dunkel-Schetter & Lobel, 1991).

It is interesting to note that while infertile individuals do not appear to be more maladjusted than their fertile counterparts (Downey, et al., 1989), they do appear quite distressed and often request counseling. Infertility was described as the most upsetting event of life by 49% of women and 15% of men in a study conducted by Freeman et al., (1985). Men and women in this study showed normal profiles on the MMPI. Paulson et al., (1988) and Daniluk (1988) found similar results--normal scores on psychological testing and requests for counseling during infertility treatments. According to Shaw, Johnston, and Shaw (1988), 50% of couples waiting for in vitro fertilization (IVF) wanted counseling. Another study (Baram, Tourtelot, Meuchler, & Huang, 1988) looked at reported depression following a failed IVF attempt. Data indicated 66% of women and 40% of men felt depressed. Of that group, 24% of women and 13% of men felt long-term counseling would be beneficial after failed IVF attempts.

Reading (1991) summarizes a number of possibilities for the above discrepancy. First, it is possible that some individuals may be more vulnerable than others or engaged in dysfunctional relationships. Second, the measures used in infertility research may not be sensitive to emotional states of infertile individuals. Most measures used in research are psychiatric measures designed to identify psychopathology. Third, infertile couples may tend to portray themselves in good light. Fourth, Mazure, De l'Aune, and DeCherney (1988) found that infertile couples tend to repress anxiety or stress. Fifth, the stage of treatment may affect distress. Sixth, coping styles and perceptions of available options would account for varying psychological reactions.
Related Research Findings

Gender Differences

Women and men cope differently with the stress of infertility (Abbey et al., 1991; Bresnick & Taylor, 1979; Salzer, 1986; Wright, 1991) which helps to explain why they sometimes have difficulty supporting one another through the process. Infertile wives suffer more isolation, frustration, guilt, depression and anxiety than infertile husbands (Bresnick & Taymor, 1979; Daniels, 1989; Daniluk, 1988; Lalos et al, 1985).

In keeping with a social construction perspective, Greil et al. (1988) conducted a qualitative study with 22 married infertile couples which looked at the way gender shaped the experience of infertility. Their findings revealed gender differences. Women perceived infertility to be a devastating condition and role failure and often took responsibility for the problem even when men were medically infertile. Infertility permeated every aspect of women's lives. By contrast, men found the condition disappointing but not devastating. Men were more upset with the impact infertility had on their wives. Women reported a need to establish relationships with other infertile couples. Men were less interested in networking. Wives brought up the discussion of infertility and were the initiators of medical treatment. Husbands were more willing to end treatment. In fact, husbands were viewed as supportive if they didn't actively interfere with treatment.

Reed (1987) also reports a difference in the way men and women process infertility. She notes that men grieve less than women and prefer not to talk about losses. She also speaks to the physical and emotional impact of infertility, both of which impact women to a greater degree than men.
Gender differences are found regarding the need for self and professional help. When men are the cause of infertility, they prefer to wait over a year after diagnosis to seek professional counseling help if they choose to do so at all. Women who are the infertile partner and request counseling, do so within the first year of diagnosis (Edelmann & Connolly, 1987).

Abbey et al. (1991) report several findings related to gender in a study which compared 185 infertile couples to 90 fertile couples. Among the infertile group, wives perceived their infertility as more stressful than husbands and husbands perceived home life more stressful than wives. Infertile wives did more problem-solving and escape-coping than husbands and attributed more responsibility to themselves for the infertility problem. Infertile wives perceived themselves as having more control over solutions to infertility than husbands. Infertile husbands were more satisfied with the meaning they found in their infertility than wives.

In the above study, gender differences were also noted in the provision and reception of social support. Women viewed social support more positively than men and were more influenced by their interactions with others. Men tended to express their feelings to their wives while women had a number of friends in which they confided. This pattern may place an additional stress on women--one of sole provider of emotional support to men.

Gender differences were evaluated in a study of 449 first admission couples to a fertility clinic. The researchers, Wright et al., (1991) found infertile women higher on measures of psychosocial distress than infertile men. However, no gender differences were noted on measures of marital and sexual adjustment. The authors speculate three reasons for the gender differences among infertile men and women. First, there is the notion that responsibility for
conception rests more with women than men. Social role theory would support such an explanation. Another possibility is that the medical technology involved in treatment is usually performed on women. Finally, coping research suggests that men and women deal differently with chronic stress. Typically, men try to deny and avoid while women ruminate about the condition leading to more depressive reactions. All three possibilities may play a role in gender differences and need to be tested in further studies.

Infertile women showed greater anxiety and depression than infertile men in a study by Raval et al. (1987). The study sampled 47 couples attending infertility clinics. Women’s anxiety levels were predicted by the tendency to avoid friends with children and the completion of ovulatory tests. Depression was predicted by low self-esteem. Hostility was predicted by the importance of having a child. For males, anxiety was predicted by a low frequency of sexual intercourse after diagnosis. Depression was predicted by low self-esteem (same as women). Hostility was predicted by the negative impact of infertility on the sexual relationship.

Finally, Stanton (1991) sampled 52 infertile couples and found that wives used more social support than did their husbands. This finding was consistent with Draye, Woods, and Mitchell (1988) and Affleck, Tennen, and Rowe (1990).

Thus it appears that women are more studied in the infertility research than men, present more for treatment, present earlier in the process, are the impetus for continued treatment and are more devastated by the condition than are men.

Marital Relationship

Couples’ responses to infertility are widely varied. Some passively accept the process while others become frustrated and angry. Infertile couples
suffer marital strain and tension (Daniluk, 1988; Link & Darling, 1986; Morse & Dennerstein, 1985; Valentine, 1986). Of the 47 couples attending an infertility clinic, more than half of the women reported marital problems after their infertility was diagnosed (Raval et al., 1987). Marital problems tended to decrease after treatment was begun, suggesting that doing something about the problem lessons tension. As compared to fertile counterparts, divorce is higher, the suicide rate is twice that of couples with children, acting out behavior can occur, and economic, career and physical strain add to the stress of marriage (Mai et al., 1972). However, there is support for the idea that infertility can strengthen a marriage as the couple pulls together to weather the crisis (Greil et al., 1988). Whether marital problems result from coping with infertility or were present prior to diagnosis is still an area of needed research. Evaluation of couples’ marriages prior to the infertility diagnosis would prove insightful because satisfaction with the marriage in the past and present may influence adjustment.

As part of a longitudinal study, Shatford et al., (1988) studied 348 infertile candidates prior to their entry into an IVF program. They categorized individuals as having either organic or idiopathic infertility and compared the two groups on family environment. The idiopathic infertility group reported higher levels of cohesion in marital relationships than the organic group. This finding suggests that couples give more support to each other when the medical cause is unknown and open-ended. This may be due to the lack of attached blame and the lack of medical diagnosis. The idiopathic group also reported higher active/recreational involvement which may indicate that this group is more active with other areas of their lives despite the monthly disappointment of no conception.
In another study (Hearn et al., 1987), the Family Environment Scale was used to compare IVF couples with normative samples. Results indicate that IVF couples scored higher on organization, cohesion, expressiveness, morale-religious scales and lower on conflict, control, and intellectual-cultural orientation than the normative sample.

Stress to infertile couples is enormous. Infertility may represent the first major marital crisis or be one in a series of crises and strains preexistent in couples. Managing the intensity of the feelings and decisions regarding treatment can be overwhelming. As noted above, couples are usually isolated from other infertile couples and have difficulty supporting one another due to gender differences in coping.

Lalos et al., (1985) report 87% of women and 86% of men in their study felt a lack of support from family and friends while undergoing infertility treatments. Mahlstedt (1985) cited a reluctance by family and friends to invite infertile couples to family events such as baby showers. Thus, infertile couples in need of validation for their feelings are actually isolated due to a cyclical response which involves their own secrecy and uncomfortableness about the problem and family's negative remarks and avoidance. The result is that the couple has each other to seek solace and support. This can tax a relationship or strengthen it.

**Sexual Relationship**

The literature in the area of sexual relationships and infertility speaks to a need to assess the couple's sexual functioning prior to infertility diagnosis and treatment. The reason this may be important is because infertility treatments can exacerbate an already existing sexual dysfunction or may lead to one. This adds to the overall stress experienced by couples and places them at higher
risk for poor adjustment. There are studies that show few differences between infertile and fertile couples in levels of sexual satisfaction and dysfunction (Fagan et al., 1986; Link & Darling, 1986). However, infertility is usually reported as a major strain on the sexual relationship of the couple (Mazor, 1980; Menning, 1977, 1979) and a cause of sexual dissatisfaction. This discrepancy may be accounted for by the fact that most studies do not assess changes in functioning over time.

Reading (1991) discusses several factors which may disrupt sexual response of infertile couples. Among those are performance anxiety which may arise due to the need for scheduled sex around ovulation; insufficient stimulation caused by the focus on procreation versus lovemaking; the intense need to monitor the physiological responses of the body; and interpersonal issues around scheduled sex and partners' inability to perform.

Freeman et al. (1985) studied 200 couples ready to enter an IVF and embryo transfer program. Couples said infertility treatments did change their sexual relationships (men - 32%; women - 46%). Of the group reporting a change in sexual relationships, two-thirds said sex had become less pleasurable while the other third felt sex was more pleasurable.

Thirty IVF couples were studied by Morse and Dennerstein (1985). Their results indicated 71% of women reported decreased sexual enjoyment. Fagan et al. (1986) sampled 45 married couples requesting IVF and found 15.5% experienced sexual dysfunction. These data are not higher than the incidence of sexual dysfunction in the general population.

One study (Raval et al., 1987) assessed sexual problems at three stages of infertility investigations. Sexual difficulties increased for women from a baseline (prior to recognition of infertility) of 6% to 64% after the recognition of
Rates fell to 31% once infertility treatment began. Overall, men identified fewer sexual problems but still increased from a baseline of 8% to 24% after treatment. In her study of 43 primary infertile couples, Daniluk (1988) concluded that couples with unexplained infertility had more distress than couples with medically diagnosed infertility. However, the mean scores of sexual satisfaction on the Index of Sexual Satisfaction scale were within the sexually satisfied range for all participants but showed wide variability in satisfaction levels.

Medical treatment for infertility can have an effect on sexual practices (increased frequency at midcycle, decreased frequency at luteal phase, decreased variety of sexual expression, and change in who initiates sex) and sexual functioning (occasional periovulatory impotence or retarded ejaculation, occasional periovulatory orgasmic dysfunction due to "spectatoring") (Keye, 1984). In addition sexual desire, arousal and orgasm can be diminished (Bresnick, 1984). According to Greil et al., (1989), the key to strengthening sexual intimacy is for the couple to view infertility as a shared problem.

In sum, the sexual relationship is another dimension of the couples' lives touched by the stress of infertility. It may be that this dimension becomes more affected as chronicity of the problem increases. The need for longitudinal studies to account for changes over time still exists.

Additional Research Findings

Race, Class and Ethnicity

Unfortunately little has been addressed in the literature regarding the variables of race, class and ethnicity. One might expect these variables would have an impact on coping with infertility given varying cultural assumptions and beliefs, and economic status. Racial differences as well as income levels and
class do exist in health. However, most research samples white, middle class spouses. Class might contribute to one's ability to access services or even be aware of options. Also, there is evidence to suggest that lower SES groups are exposed to more stress and have fewer resources to cope (Kessler & Cleary, 1980). In an attempt to identify social factors as correlates with infertility, Poston (1976) found no linear pattern between childlessness and husband's or family income. A higher incidence of childlessness was found in lower income families, perhaps due to finances as a barrier to services (Kunz, Brinkerhoff & Hundley, 1973). Future research should focus on the influence of these variables in order to determine what impact they may actually have on the experience of infertility.

**Stage of Medical Investigation**

Stage of medical investigation is important to understanding adjustment to infertility. Different types of need surface at different times in the process of coping. For example, marital and sexual problems are significant after diagnosis but appear to decrease during the process of medical investigation (Raval et al., 1987). The interpretation of stress as normal is needed at the beginning of treatment while more intensive symptomology may appear with the chronic stress associated with continued infertility (Berg & Wilson, 1991). According to Berg and Wilson (1991), psychological symptoms fluctuate with the stage of treatment. The authors assert that symptoms are moderately elevated at the time of medical diagnosis, stabilize and return to normal limits during the second year of treatment, and become the most symptomatic after three or more years of medical treatment.

**Medical Diagnosis**

Who has the medical diagnosis may be a significant issue in
psychological adjustment. As stated earlier, female factors account for 40% of the medical etiology, male factors for 40% and 20% of the cases are a combination of both male and female or unexplained (OTA, 1988). The partner who may have brought on the condition physically through disease, abortion, etc. may feel guilt. The fertile partner may feel disappointment, cheated, angry, and guilty for feeling so. If the cause of the infertility is unknown, guilt and shame can still result due to inability to provide children to a partner or extended family (Corson, 1983). Raval et al. (1987) reported a diagnosis of unexplained infertility was associated with lower levels of sexual dysfunction among couples.

A study was conducted which categorized infertility into five diagnostic groups (tubal problems, endometriosis, male factors, multiple factors and idiopathic) (Shatford et al., 1988). The researchers compared 348 IVF patients on measures of social support, personality functioning, depression, anxiety and coping ability. Significant differences among the five groups were noted. Women with tubal problems and multiple factors were higher on measures of self-effacement than women with male factor and idiopathic infertility. The tubal problems and multiple factor groups also reported higher needs to nurture than did the other groups. Patients in the male factor group reported higher endurance levels than the idiopathic and endometriosis groups. Women in the male factor group showed higher needs for control than women in other groups. In addition to comparing the five groups, the study divided patients into two main groups--organic or functional infertility and made comparisons. The organic group was higher on self-effacement, psychological endurance and nurturing than the functional group. The functional group scored higher on harm avoidance. There were no group differences on measures of depression
or anxiety. Thus, it appears from this study that personality traits may account for group differences rather than medical diagnosis. More studies are needed to determine the role of medical diagnosis.

**Methodological Literature Review**

A brief review of several methodological problems in the infertility literature is presented. First, it is extremely difficult to discriminate what is a causal factor from an effect due to the numerous methodological problems in the infertility research. Generally, studies lack scientific rigor and are conducted in single settings utilizing cross-sectional measurements. There are few longitudinal studies which assess the impact of infertility over time. Standard measures are used in only a few studies and usually have not been normed on a medical population. Sample sizes are often insufficient, with less known about infertile men than women. Comparison groups are often lacking. Sociological and emotional consequences are mostly based on observations of individuals who have self-selected.

As mentioned, even less is known about the variables of race, class and ethnicity as they apply to infertile populations. Family of origin influences are rarely mentioned as possible mediators of stress. When families are mentioned, there is little empirical support for their use as a stress reducer or creator. There are numerous statements regarding the benefits of social support with few data to back up the statements.

Finally, common indicators of adjustment found in the literature assess emotional distress and psychiatric symptomology. A problem with these measures is that higher levels of distress at certain points in infertility treatments may be a sign of coping with loss. Longitudinal studies would assess coping and adjustment over time. Stanton and Dunkel-Schetter (1991) propose other
areas of couples' lives to be assessed--permanent loss of self-esteem, stable feelings of helplessness, lack of control in other areas of living, problems in social relationships, chronic marital strains, etc. Their point is well-taken in that individuals may be well adjusted in some areas of their lives and not so well adjusted in others.
CHAPTER 3

Methodology

Purpose

The purpose of this study is to explore the relationship between perceived family support and psychological well-being in infertile couples. An understanding of the relationship between perceived family support and psychological well-being will assist in the planning of health and mental health services for infertile couples attending infertility clinics. For example, family assessment may be critical at the beginning of treatment if it is shown to have a positive influence on psychological well-being. If, on the other hand, family support does not moderate psychological distress in infertile couples, it would be important to identify those variables which may have such an influence.

Hypotheses

1) There will be a significant difference between infertile couples and normal families on measures of perceived family support. This hypothesis is based on the notion that infertile couples typically feel their families lack understanding of their condition and act in inappropriate ways.

2) There will be a significant relationship between perceived family support and psychological well-being. An inverse correlation will be found (higher perceived family support correlated with lower psychological distress). This hypothesis is based on theory that family support is a main or buffering effect for psychological distress.

3) Perceived family support will be more associated with psychological well-
being among women than men. This hypothesis is grounded in literature that concludes women have more psychological distress than men while involved in infertility treatments. Therefore, perceived family support, if it acts as a mediator for stress should show a stronger correlation for women than men. 

4) There will be no significant association between the sociodemographic variables of age, race, education, family income, family size, religion, employment status and measures of psychological distress. This hypothesis is supported by the literature which, to date, has noted no impact of these variables on infertile couples' adjustment.

5. Perceived family support and psychological well-being will be more associated among spouses who are in Stage 1 of infertility medical investigation than those in Stages 2 or 3. This hypothesis is based on theory that families do well to support one another in times of acute stress, but that family resources may be taxed as stress moves from acute to chronic. Data support the fact that the longer the couple is infertile, the more stressful the situation becomes.

**Research Design**

This study is embedded in a quantitative paradigm. Hypotheses were derived from family development and stress theories. The testing of hypotheses will hopefully lend support to both theories and provide more information to conceptualize the process involved in treating infertile couples.

A correlational research design utilizing a cross-sectional survey methodology was selected for several reasons. First, correlational designs allow for the measurement of several variables and their interrelationships simultaneously in a realistic setting, e.g., clinic. This study incorporates a criterion variable, a primary predictor variable and multiple sociodemographic
predictor variables to be included in the analysis. Second, information as to the
degree of relationships and not just the presence or absence of an effect will be
obtained. Third, correlational designs provide preliminary surveys or serve as
exploratory tests of hypotheses. If significance is found, then more experimental
methods can be employed (Campbell & Stanley, 1963). Fourth, this study will
investigate the association between perceived family support and psychological
well-being. These variables are complex and do not easily lend themselves to
the experimental method because, in this case, they cannot be controlled nor
manipulated. The predictor variable of family support cannot be manipulated
experimentally. It is simply a subject variable assessed as the patient
perceives it to exist. Thus, no specific intervention will be administered. Finally,
while correlational designs do not imply causation, correlational studies do
contribute to the disconfirmation of certain causal hypotheses.

The problems with correlational designs are noteworthy. First, there is
the issue of reverse causality. In this study, it will be difficult to know whether
family support is a function of psychological well-being or psychological well­
being a function of family support. At best, the level of association can be found.
Second, since randomization of the sample is not possible, selection becomes
an issue. The question of whether this particular group represents other clinic
groups arises. Third, there may be other predictor variables not identified in the
study responsible for the observed effect, e.g., possible rival hypotheses.

In addition to the correlational design, a survey method was chosen for
several reasons. Survey research allows the researcher to generalize from a
sample to a population. Survey data were chosen for this study due to the
economy of the design and the rapid turnaround of data collection. Survey data
are also appropriate for assessing topics that are sensitive (Babbie, 1990).
Clearly, asking couples to reveal feelings and perceptions about their inability to conceive qualifies as a sensitive topic. Finally, a survey method was chosen as a way to identify subjects' perceptions of family support. Future studies could compare perceptions to actual behavior which would require observational data as well as survey information.

This study is a first attempt to establish an empirical relationship between perceived family support and psychological well-being in infertile couples. Because of this, subjects were assessed at one point in time. A longitudinal study would provide richer data and is recommended as a follow-up to this study. It may be that perceived family support fluctuates over time given the chronicity and course of infertility treatments.

Operational Definition of Terms

The following definitions will be used in this study:

1. **ASSISTED REPRODUCTIVE TECHNOLOGY (ART)** - A variety of high technology methods used to assist conception, e.g., in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT), zygote intrafallopian transfer (ZIFT), and egg donor IVF.

2. **FAMILY SUPPORT** - Defined by the Family Relationships Index derived from the Family Environment Scale (FES) (Moos & Moos, 1994). Three subscales include a) Cohesion - degree to which family members are helpful and supportive of each other; b) Expressiveness - extent to which family members are encouraged to act openly and to express their feelings directly; c) Conflict - extent to which the open expression of anger and general conflictual interactions are characteristic of the family (Holahan & Moos, 1983).


4. **INFERTILITY/INVOLUNTARY CHILDLESSNESS** - The inability to
conceive after 12 months or more of intercourse without contraception, or the inability to carry pregnancy to live birth (Mosher & Pratt, 1990).

5. **IMPAIRED FECUNDITY** - A broader definition of infertility which includes problems in conception as well as difficulty or danger in carrying a baby to term (OTA, 1988).

6. **PRIMARY INFERTILITY** - Those couples who have never had a biological child and are infertile (OTA, 1988).

7. **PSYCHOLOGICAL WELL-BEING** - An aggregate term taken from the SCL-90-R which includes measures of psychological distress (anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, somatization, obsessive-compulsion, interpersonal sensitivity and depression).

8. **SECONDARY INFERTILITY** - Those couples who are infertile but have had at least one conception (OTA, 1988).

9. **SOCIAL SUPPORT** - A person's network of relationships and institutions that help maintain him/her by providing for needs under difficulty.

10. **STRESS** - Physical, mental or emotional strain or tension (Webster, 1989); a continuous process that develops out of the transaction of the individual with the external and internal environments (Morse & Van Hall, 1987).

11. **STRESSOR** - Life events that are significant enough to bring about change in a family system (Boss, 1987).

12. **SUPPORT** - To sustain a person under trial or affliction (Webster, 1989).

**Variables**

The primary *predictor variable* is perceived family support measured by the Family Relationship Index derived from the Family Environment Scale. The relationship indices of the FES consist of three nine item subscales which measure the quality of social relationships in the family environment. Since
family support was not manipulated experimentally, it could be moderated with patient sociodemographic variables. Thus secondary analyses were performed in an attempt to identify potential moderating predictor variables. These variables were selected based on the literature review. They include age, race, gender, educational degree, combined family income, religion, years of schooling, length of diagnosis, stage of medical investigation, employment status, family size and diagnosis.

The criterion variable is the specific measure of psychological well-being, the SCL-90-R. This measure was chosen because it provides a summary measure of symptomatic psychological distress as well as separate subscales of nine symptom dimensions.

Study Sample

Couples who attend infertility clinics are excellent candidates for the application of stress theory because they obviously desire children or they wouldn't put themselves through the rigorous physical, emotional and financial treatment. Infertile couples are subject to multiple demands on their time and energy by virtue of the imposed medical treatments. Participation in this study represented an additional demand on time and energy, thus not everyone was willing to be involved. In addition, subjects had to give informed consent. The result was a volunteer versus a random sample. All couples meeting criteria for the study were approached to participate. Approximately one third of those approached refused because they were unwilling to complete yet another task involved with their infertility.

Borg and Gall (1983) speak to the use of volunteers and note the necessity of using such a sample given the conditions of this study. It is recognized that volunteers represent a biased group. Studies of volunteers
versus nonvolunteers show differences between the two groups. Specifically, volunteers tend to be better educated, have higher socioeconomic status, are more intelligent, are more sociable and have higher needs for social approval than nonvolunteers (Rosenthal & Rosnow, 1975). Thus, generalizability of results from a volunteer sample is limited to certain populations.

The convenience sample consisted of 35 married couples with primary infertility (no children) recruited from a private For-profit infertility clinic in Virginia Beach, Virginia. Sample size was estimated based on tables provided by Borg and Gall (1983) for correlational studies. The authors suggest a minimum number of 30 cases. The table to estimate sample size is provided and based on correlation coefficients obtained from prior but similar studies. Since this study was exploratory, no prior correlation coefficients were found on these two variables. The table could only be used to estimate the numbers required. A correlation coefficient of .32 required an N of 35. This figure was used to generate the sample size needed. Also, the computation of multivariate analyses requires as large a sample size as possible.

All couples attending the clinic during the period of data collection were asked to participate if they met the following criteria: a) married; b) male/female couple; c) had no children living in the home, e.g., adopted, foster, children from a previous marriage; d) had attempted conception for at least 12 months; e) were currently involved in medical treatment for infertility; f) both consented to participate; g) spoke and read English. Couples at all stages of treatment were included based on evidence suggesting a correlation of stage of medical investigation and level of stress (Berg & Wilson, 1991).

Setting

The clinic is physically located in Virginia Beach but serves a
five city urban area of approximately 1,400,000 people. The clinic is blocks away from a large metropolitan hospital. Because of the specialized services offered, the clinic draws patients from the Tidewater area as well as Richmond and North Carolina. The physical building is beautifully appointed, warm and inviting. Staff is friendly and personable with patients. The clinic is a small For-profit business. The staff is directed by a physician who is board certified as a reproductive endocrinologist. She is also a Jones Institute alumna. Other staff include a nurse practitioner, several nurses, embryologist, an office manager, an administrator, and a patient liaison coordinator. Specialty services include advanced operative laparoscopy, laser surgery, tubal reconstructive microsurgery, assisted reproductive technologies including IVF, GIFT, ZIFT and ovum donation, infertility, andrology, hirsutism, menstrual irregularity, congenital abnormalities, hormone replacement therapy, ovulation induction and therapeutic insemination. A clinic population was chosen due to an interest by the researcher in the development of mental health services for infertile couples who attend infertility clinics. This specific clinic was selected because the physician who directs and owns the operation is extremely supportive of the research and shares a similar interest in treating patients holistically. The physician is acutely aware of the stress infertility poses and interested in helping couples cope with the process.

Sample Selection

As noted above, a random sample was not possible because couples had to first be identified as meeting criteria and then be willing to submit to additional assessment. It was not possible nor ethical to insist that those who qualified participate.
Instrumentation

A patient information sheet (Appendix C) was developed from the findings in the literature. It included sociodemographic data used in the secondary analysis presented under data analyses in Chapter 4.

Family Environment Scale

As noted above, the Family Environment Scale (FES) (Moos & Moos, 1994) was used to measure the predictor variable of family support. The Family Environment Scale has been used in a number of research studies on coping with life transitions and crises. The rationale for the use of this measure is that family climate influences individual coping with stress and life transitions. The FES is a 90 item true/false test designed to measure the social climate/environment of a family. The measure was developed by Rudolf H. Moos and Bernice S. Moos at the Social Ecology Laboratory, Department of Psychiatry and Behavioral Sciences, Stanford University and the Veterans Administration Medical Center, Palo Alto, California. The FES is composed of ten subscales which assess three underlying dimensions: relationships, personal growth and system maintenance. According to Moos & Moos (1994), the relationship and system maintenance dimensions reflect internal family functioning while personal growth reflects the linkage between the family and the larger context.

The relationship dimension consists of three subscales: 1) Cohesion, the measure of degree of commitment, help or support family members provide one another; 2) Expressiveness, the extent family members assert, are self-sufficient and make their own decisions; 3) Conflict, the openness of expressed anger and conflict among family members.

The personal growth dimension has five subscales: 1)
Independence, the extent family members are assertive, self-sufficient and make their own decisions; 2) Achievement Orientation, based on how much activities are framed in an achievement-oriented frame; 3) Intellectual-Cultural Orientation, based on the level of interest in intellectual, political and cultural activities; 4) Active-Recreational Oriented, based on the amount of participation in social and recreational activities; 5) Moral-Religious Emphasis, the emphasis on ethical and religious values and issues.

The third dimension, system maintenance measures: 1) Organization, the importance placed on organization and structure in family planning and 2) Control, the use of rules and procedures in the family (Moos & Moos, 1994).

The FES has three forms: 1) Form R - the REAL FORM used to measure a person’s current perception of his/her family; 2) Form I - the IDEAL FORM used to look at preferences about an ideal family environment; and 3) Form E, the EXPECTATIONS FORM used to measure a person’s expectations about family settings. Form R was used in this study since the focus was on current perceptions regarding the family environment.

Form R was developed using normative data for 788 distressed families and 1432 normal families. Normal families were used to develop the standard score conversion table found in the test manual which was used in this study. Respondents were asked to record their answers on an answer sheet. An average score for each subscale was calculated along with a summary measure of family support. The summary measure of family support is the sum of the Cohesion, Expressiveness, and Conflict (reversed) subscales called the Family Relationship Index (27-items on the quality of family relationships). This index has been used as a summary measure of family support (Billings & Moos, 1982; Bloom & Spiegel, 1984; McGee, Williams & Silva, 1984) and has
good internal consistency and construct validity (Holahan & Moos, 1981, 1982, 1983; Moos, 1990). The table referred to above allows the researcher to convert raw scores to standardized scores. The test manual also reports means and standard deviations for special groups of families. Specifically, there is a table to compare means and standard deviations by family size since larger families tend to be lower on Cohesion, Expressiveness, Independence, and Organization and higher on Conflict, Active-Recreational Orientation and Control (Boake & Salmon, 1983; Eastman, Archer, & Ball, 1990). There is also a table of means and standard deviations for one-parent families. The authors do note that conclusions regarding the differences of one-parent and two-parent families are not clear or consistent to date. A table for African-American and Latino adults derived from normal samples is also available. However, sample size was small, consisted of mostly middle class, and was not matched on family background factors. Finally, there is a table for normal adults’ (N=240) family of origin. Since this study asked respondents to answer scales based on their family of origin, this table was selected for comparison. The table provides means and standard deviations for each subscale.

Reliability

The FES subscales have adequate internal consistency reliability and stability when used with diverse samples. Cronbach’s alphas for each of the ten subscales range from 0.61 to 0.78. Intercorrelations for the ten subscales show that the subscales measure distinct and somewhat related aspects of family environments. Test-retest reliabilities on the ten subscales are reported for individuals who took Form R twice within a two-month and four-month interval. The two month test-retest reliabilities range from a low of .68 to a high of .86. These reliabilities also remained high at the four-month interval. Studies
on the stability of the measure indicate moderate long-term stability and reasonable change in family environments (Moos & Moos, 1994).

**Validity**

Research supports that the items have good content and face validity, construct, concurrent and predictive validity (Moos & Moos, 1986). The FES test manual provides a review of research that addresses construct and discriminate validity. Studies conclude the FES discriminates among families, predicts and measures treatment outcomes, shows association between family climate and coping with life transitions and crises, and connects family environment and adaptation among children and adults (Moos & Moos, 1994).

**SCL-90-R**

The SCL-90-R is a 90 item, self-report questionnaire developed by Clinical Psychometric Research, a unit of Johns Hopkins University. The instrument evolved from the Hopkins Symptom Checklist (HSCL). The SCL-90-R was developed to measure psychological symptom patterns of medical and psychiatric patients.

Subjects were asked to rate each of the 90 items on a 5-point Likert scale of distress (0-4) with responses ranging from “not at all” to “extremely”. In this study, one item, #87- “The idea that something serious is wrong with your body,” was removed as suggested by Berg and Wilson (1991). They contend that this item inflates the Psychoticism scale when applied to an infertile population.

Scoring of the instrument provides nine primary symptom dimensions (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation and Psychoticism) and three global indices of distress. The Global Severity Index (GSI) was used as the best single indicator of the subject’s distress. This index gives the current
level of distress or depth of the disorder. The Positive Symptom Distress Index (PSDI) is an intensity measure which assesses response style. It specifically communicates whether the subject is augmenting or repressing symptom distress. The Positive Symptom Total (PST) is a count of the number of symptoms reported as positive.

As noted the GSI is a summary measure which combines information on both number of symptoms and intensity of perceived distress. The raw scores can be converted to standardized T scores for ease in interpretation. A T score distribution has a mean of 50 and a standard deviation of 10. Derogatis (1977) has operationalized "caseness" which identifies possible psychiatric disorders. Positive cases have T's greater than 63 and must be present in the GSI or at least on two symptom dimensions.

Reliability

Reliability of the SCL-90-R is reported in the administrative, scoring and procedural manual. The SCL-90-R has consistently demonstrated high levels of internal consistency and stability coefficients. Coefficient alphas have been reported on all nine symptom dimensions between 0.77 and 0.86. This attests to the internal consistency of the measure. Test-retest coefficients range from 0.78 to 0.90.

Factorial invariance studies have been conducted for all nine symptom dimensions across the parameter of gender. Factorial invariance refers to the constancy in composition of a dimension across significant subject parameters. The greater the invariance on a symptom dimension, the more generalizable it is. Males and females showed high levels of agreement on eight of the nine dimensions and a moderate level of agreement on the ninth symptom dimension (Derogatis, 1977).
Validity

It should be noted that most of the validity studies reported were on the SCL-90 versus the SCL-90-R. Convergent validity has been established with the SCL-90-R and the MMPI for each dimension except obsessive-compulsive (There is no like scale on the MMPI) (Derogatis, Rickels & Rock, 1976), the Beck Depression Inventory (Dinning & Evans, 1977), the Denver Community Mental Health Questionnaire and the Personal Adjustment and Role Skills Inventory (Turner, McGovern & Sandrock, 1983). Overall, concurrent, predictive and construct validity have been established on this instrument (Derogatis, 1977).

Data Collection

The Office Manager at the Clinic was the person who had initial and ongoing contact with each couple. She was trained and oriented by the researcher to select couples based on the criteria of the study. During the time of data collection, the Office Manager at the Clinic screened each couple scheduled for an appointment to see if they met criteria for study. If they did, they were given a brief written description of the study and consent form (Appendix A) to be signed giving permission to be contacted by the researcher. The written consent was then passed to the researcher with telephone numbers. The researcher contacted couples by telephone or in person and provided more information about the study. Both spouses were asked if they wished to participate. All patients were informed of the confidentiality of the study and told that their willingness or refusal to participate in no way affected their medical treatment at the clinic. Patients were told that their participation was strictly voluntary, no financial incentives were offered and they could withdraw from the study at any time.
Of the 39 couples who qualified and were approached to participate, 35 couples volunteered and four couples refused. Three couples refused because husbands were unwilling to cooperate. Reasons for their refusal related to discomfort with the personal nature of the infertility treatments. The wives of these men did not want to push their participation, fearing they would be less cooperative with medical treatment. One couple refused because the wife grew up in an orphanage and felt inadequate answering the family questionnaire.

When a couple agreed to participate, an appointment time was arranged in which both spouses filled out the research packet. When scheduling conflicts were insurmountable, a spouse was allowed to pick up the packets and return them to the clinic or packets were mailed. For convenience, couples were given the option of meeting at the Clinic or at the researcher's private practice office. The private practice office was more centrally located to the five city area than was the Clinic. All instructions for completing packets were given by the researcher, viewed on video-tape, or written. The video-tape was made by the researcher in order to standardize instructions even though the instruments were fairly self-explanatory. The research packet consisted of the Patient Consent Form (Appendix B), the Patient Information Sheet (Appendix C), the Family Environment Scale (Appendix D) and the SCL-90-R (Appendix E) and took approximately an hour to complete.

Each couple who met criteria and agreed to participate was given a written consent to participate prior to filling out any data forms. Written consent described the purpose of the study as well as any potential risks for participation. Couples were scheduled for a time (approximately one to one and a half hours) during which they completed the information sheet and measures noted above. All measures were self-administered at the clinic,
private practice setting and/or taken home and returned to the clinic. Couples were asked to fill out measures independent of their spouse and instructed to fill out the family measure as it related to their family of origin. All responses were coded by number so that anonymity could be maintained.

Institutional and Practice Center Permission

Approval to conduct this research was obtained from the Beach Center for Infertility, Endocrinology and IVF (Appendix F). All data were handled in accordance with the guidelines established by Old Dominion University and the Human Subjects' Committee.

This study was submitted to the Human Subjects Committee of the College of Health Sciences at Old Dominion University on November 11, 1994 and granted written approval in December of 1994. Data collection began in January 1995 and was completed in May 1995.
CHAPTER 4
Analysis of the Data

Description of Sample

Sociodemographic Information

The study sample consisted of 35 married infertile couples for a total of 70 respondents. Both husbands and wives were asked to participate. The mean age for the total sample was 32 years with a range of 20-48 years. Average age of wives was 31 years and husbands 33 years. Most respondents were white (90%) with African Americans accounting for 10% of the group. Religious preferences were listed as 47.8% Protestant, 30% Catholic, 4.3% Jewish, 12.9% other and 4.3% no preference. The average yearly household income was $50,000-$59,999 with a range from $10,000 to $100,000 and over.

Three-quarters (75.7%) of the total sample worked full-time while 18.6% worked part-time; 5.7% were unemployed. Two-thirds of wives worked full-time, almost one-third (31%) worked part-time and only one wife did not work outside the home. The majority of husbands worked full-time, with 9% reporting part-time employment and 9% unemployed.

Average years of schooling were 15.03 (SD ± 2.33) with 1.4% holding less than a high school diploma, 35.7% high school diplomas, 17.1% Associate degrees, 32.9% Bachelor degrees and 11.4% Master degrees. There was also one medical doctor.

Most respondents (84.3%) reported no history of psychiatric conditions prior to their infertility. Of the 15.7% who did, depression, anxiety and marital problems were the most frequently cited. Of the 15.7% positive for psychiatric
history, 73% of that subgroup reported lower family support than the mean scores for the total sample. This percentage (73%) is higher than the no psychiatric history group (53%) in the sample. Only one person in the positive history for psychiatric symptoms group reported psychological distress at the clinical level (defined by the SCL-90-R, Derogatis, 1977).

Respondents were asked to report the size of their family of origin in order to assess family size as a possible predictor of support and/or well-being. The average family size was five with a range from 3-10 family members.

Medical Information

Table 2 provides a summary of the medical information gathered from the sample. The number of months of infertility varied greatly with one-half

Insert Table 2 about here

the sample in Stage 1 of medical investigation. Two-thirds defined the wife as having the medical diagnosis. Compared to the general infertile population (OTA, 1988), female factors were over represented and male factors under represented.

Psychological Well-Being

The SCL-90-R was used to measure psychological distress. The General Severity Index (GSI) is an indicator of the number of symptoms and intensity of perceived distress derived from the SCL-90-R. The GSI was used in this study as a summary measure of psychological distress. The raw scores on the GSI were converted to standard T-scores. Normative T-score values are provided by Derogatis (1977) from a non-patient normal cohort of approximately 1,000 individuals (493 males and 480 females). The normative sample was stratified
and randomized from a diversified county in a large eastern state. The Derogatis (1977) sample served as the normative group for the infertile sample.

As noted previously, infertile couples generally function within normal ranges of standardized measurements of individual adjustment. The study sample did not differ in this respect. The mean of the overall standard measure of psychological distress (General Severity Index - GSI) fell within normal limits (M=54.07, SD±13.27) for the total sample. However, 21% of the sample had a T-score of 63 or above, meeting the definition of "caseness" as defined by the SCL-90-R (Derogatis, 1977). The operational definition of caseness was developed by detailed comparisons of large samples of psychiatric patients versus non-patients. Table 3 reports the means and standard deviations for each of the nine subscales of the SCL-90-R. Standard T-scores indicate that none of the subscales were elevated above normal levels. One item was removed from the Psychoticism scale, #87 - "The idea that something serious is wrong with your body," as recommended by Berg and Wilson (1991). The highest standard score was on the Depression scale (M=55.21, SD±13.21).

Overall, gender differences on the GSI were not statistically significant but did show a trend of wives as more distressed than husbands [ t (68) =1.93, p=.057]. There were statistically significant differences between specific subscales for wives and husbands on the SCL-90-R. Gender differences were noted on Somatization [ t (68) = 8.57, p<.01], Interpersonal Sensitivity [ t (68) = 2.56, p<.05], Depression [ t (68) = 3.13, p<.01] and Anxiety [ t (68) = 2.27, p<.05].
Table 4 provides the means, standard deviations and t scores for each subscale of the SCL-90-R by gender. In sum, the data shows a trend towards wives and husband differences on psychological distress. The subscale differences support previous research which concludes women have more depression and anxiety than men while involved in infertility treatments.

Cronbach's alpha

The Cronbach's alpha reliability coefficient for the FES was 0.83. Table 5 shows Cronbach's alpha reliability coefficients for each of the ten subscales of the FES. Scores ranged from a low of 0.77 (Cohesion) to a high of 0.88 (Control). The internal consistencies were higher for the study sample than those reported by Moos and Moos (1994). Only Cohesion (0.77) was slightly lower than the normative sample (0.78).

The internal consistency of the SCL-90-R was 0.92 (Cronbach's alpha). Table 6 shows the Cronbach's alpha reliability coefficients for the nine subscales of the SCL-90-R. All subscales showed high internal reliability.

Hypothesis One

Hypothesis One states there will be a significant difference between
infertile couples and normal families on measures of perceived family support. Moos and Moos (1994) report subscale means and standard deviations from other investigators' dissertations and published reports for normal adults' perceptions of their families of origin. A table with a sample size of 240 is provided in the Family Environment Scale manual. Since the table presents normal adults' perceptions of their families of origin, these data were used as a comparison for the infertile sample in this study. No other information about the Moos and Moos sample is given. Table 7 reports the FES scale means and standard deviations obtained from the infertile sample and the Moos and Moos (1994) sample for normal adults' families of origin. The highest subscale mean for the infertile sample was on Organization (M = 5.40). Cohesion was second (M = 5.39). The normal sample's highest mean was on Independence (M = 6.77) with Cohesion also placing second (M = 6.68).

Independent t tests were performed to determine significant differences between the means of the infertile sample and the normal sample on each of the ten subscales of the FES. There was a significant difference on seven of the ten subscales (Cohesion, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Moral-Religious Emphasis and Organization) as shown in Table 7. Expressiveness, Active-Recreational Orientation and Control subscale means did not significantly differ from normals. In terms of the three scales comprising the Family Relationship Index (FRI), infertile respondents rated their families lower on Cohesion and Expressiveness and higher on Conflict than normals. However, Expressiveness did not differ...
significantly from the normal sample. In sum, infertile respondents showed a statistically significant difference from normals on ratings of family environment on seven of the ten subscales of the FES.

**Hypothesis Two**

Hypothesis Two proposed a correlation between perceived family support and psychological distress. In addition, the direction of the hypothesis was believed to be positive—more perceived family support would correlate with less psychological distress. A Pearson’s Correlation Coefficient ($r$) was computed for the relationship between perceived family support and psychological distress. Specifically, raw scores from the Family Relationship Index (FRI) were correlated with raw scores from the General Severity Index (GSI). The correlation coefficient was small to moderate ($r=.22$) and not significant ($p=.066$). Therefore, Hypothesis Two was not supported.

**FES Subscales With SCL-90-R Subscales**

Correlation coefficients for the association of FES subscales with SCL-90-R subscales are presented in Table 8. The Achievement Orientation scale of the FES subscales correlated positively with seven of the SCL-90-R subscales. Moral-Religious Emphasis on the FES correlated positively with five of the SCL-90-R subscales. The Psychoticism scale of the SCL-90-R correlated with four of the family environment subscales. No other significant correlations were noted between subscales on the two measures.

When correlations were computed by gender, the primary correlation of perceived family support (measured by the FRI) with psychological distress...
(measured by the GSI) for wives was not significant ($r=.26, \text{ns}$). The same was true for husbands ($r=.11, \text{ns}$). However, there were differences between wives and husbands on specific subscales.

**FES Subscales With SCL-90-R Subscales by Wives**

Correlation coefficients for wives are displayed in Table 9. The Psychoticism scale correlates with five of the Family Environment Scales (FRI, Cohesion, Conflict, Moral-Religious Emphasis and Achievement-Orientation). No other pattern of correlation is evident.

**FES Subscales With SCL-90-R Subscales by Husbands**

Correlation coefficients for husbands are provided in Table 10. Only five correlations are found in the entire table. Of the five, two are on the Achievement Orientation scale and correlated with GSI and the Obsessive-Compulsive Scale. No other pattern is apparent.

**Hypothesis Three**

It was hypothesized that perceived family support would be more associated with psychological well-being among wives than husbands. In order to determine if a gender difference existed between the correlations for FRI and GSI, a Fisher's $z$ transformation was used to compare the two independent $r$s. No significant difference was found between wives and husbands on the primary correlation of FRI and GSI ($z=.036, \text{ns}$). Therefore, wives did not
associate family support with psychological well-being more so than husbands.

**Hypothesis Four**

Hypothesis Four proposed no significant association between sociodemographic variables and psychological distress. The purpose of this hypothesis was to test for possible modifying effects of sociodemographic variables on the criterion measure of GSI.

**Categorical Predictors for GSI**

A six way ANOVA was run to test for the interaction of categorical variables on psychological distress (GSI). A General Linear Models (GLM) procedure was computed on the categorical variables of gender, race, religion, degree, medical diagnosis and history of psychiatric symptoms with GSI. Overall, the model was not statistically significant \[F(18,51)=1.53, \text{ ns}\]. In sum, categorical variables did not predict psychological distress.

**Continuous Predictors for GSI**

Using multiple regression, GSI scores were then regressed on the linear combination of age, income and years of schooling, length of infertility diagnosis (months) and size of family of origin. A forward stepwise multiple regression procedure was run in order to account for continuous variables as predictors of GSI. The overall model was not statistically significant \[F(3,63) = 1.61, \text{ ns}\] and accounted for only 7% of the variance. Beta weights were also reviewed to assess the relative importance of variables (age, income and years of schooling) in the prediction of GSI. Beta weights are presented in Table 11

Insert Table 11 about here

and approached zero. In sum, none of the continuous variables predicted GSI.
Predictors for FRI

Although Hypothesis Four only related to predictors for GSI, there was interest in looking at possible predictors for FRI. Therefore a secondary analysis was performed with FRI as the criterion measure. A GLM procedure and forward stepwise multiple regression (Table 12) were also computed for FRI. Results indicated that categorical variables did not predict FRI \( F (18,51) = 0.86, \text{ ns} \).

The overall model for the stepwise multiple regression for FRI was statistically significant \( p=0.04 \) and accounted for 15% of the variance. Table 12 reports a summary of the stepwise multiple regression for four criterion variables. Three criterion variables (age, income, and size of family of origin) did have statistical significance. Results indicate that the older

\[ \text{Insert Table 12 about here} \]

the infertile individual, the more the perceived family support; the lower the income, the greater the perceived family support; and the larger the size of family of origin, the more the perceived family support. Reviewing the beta weights for the variables, size of family of origin was the most important predictor, followed by age.

In sum, none of the criterion variables predicted GSI as hypothesized. A secondary analysis of FRI as the criterion measure was predicted by age, income and size of family of origin, however, the variance accounted for was small.
Hypothesis Five

Hypothesis Five tested the differences between correlations by stage of medical investigation. Specifically, it was believed that the correlation of perceived family support and psychological distress would be more associated with those in Stage 1 of infertility medical investigation than those in Stages 2 or 3. In order to test this belief, Pearson’s $r$ correlations were computed for the association of perceived family support (FRI) with psychological distress (GSI) by stage of medical investigation (1, 2 or 3). Only the Pearson $r$ for Stage 1 was statistically significant ($r=.32$, $p=.04$). Stage 2 had a $r=.03$, ns and Stage 3 a $r=.08$, ns. To test for significance differences between correlation coefficients, Fisher’s $z$ transformations and comparisons between independent $r$s were performed. When the difference between correlations for Stage 1 and 2 was computed, no significant difference was found ($z=0.80$, ns). The difference between correlations from Stage 1 an 3 was also not significant ($z=0.89$, ns). Finally, the difference between Stages 2 and 3 found no significant difference ($z=0.38$, ns).

In sum, Stage 1 of medical investigation showed a moderate positive correlation between perceived family support and psychological distress, i.e., the higher the amount of perceived family support, the higher the report of psychological distress. None of the differences between correlations in Stages 1, 2 or 3 were statistically significant. Therefore, the hypothesis was not supported. While there seems to be the strongest association between perceived family support and psychological distress in Stage 1 of medical investigation, there were no statistically significant differences between correlations by stage of medical investigation.

In addition, mean scores of psychological distress (GSI) for each stage

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indicated that psychological distress increased from Stage 1 (M = .43) to Stage 2 (M = .45) to Stage 3 (M = .51). However, no significant differences between the means of each stage was found when Independent t-tests were performed (Stage 1-2 [t (48) = .254, ns]; Stage 2-3 [t (28) = .409, ns]; and Stage 1-3 [t (58) = .952, ns]). Therefore psychological distress increases as time goes on but not significantly so.

The mean of perceived family support decreased from Stage 1 (M = 5.2) to Stage 2 (M = 4.6) and then increased to 5.1 for Stage 3. This shows perceived family support to be strongest at Stage 1 and lessen over time. Independent t-tests found no significant differences between stages on perceived family support (Stage 1-2: [t (48) = .86, ns]; Stage 2-3: [t (28) = .63, ns] and Stage 1-3: [t (58) = .20, ns]. Therefore, perceived family support lessens from the acute stage of infertility diagnosis and treatment, but the changes were not statistically significant.
CHAPTER 5
Findings and Interpretations

Psychological Well-Being

The infertile sample in this study, as a whole, did not differ from fertile counterparts on measures of psychological adjustment. This finding supports past research which concludes that infertile individuals do not constitute a psychiatric population (Edelmann, Connolly, Cook & Robson, 1991; Mai, Munden & Rump, 1972). However, the fact that one-fifth of the infertile sample fell within the clinical range of psychological distress does support infertility as a life stressor and suggests that a percentage of the infertile population appears similar to other psychologically distressed groups..

The summary measure of psychological distress did not show significant gender differences but did show a trend towards wives as more distressed than husbands. Perhaps a larger sample size would support the trend towards gender differences. Gender differences on measures of depression and anxiety were significant and consistent with previous studies which conclude women are more depressed and anxious than men in coping with infertility (Abbey et al., 1991; Bresnick & Taylor, 1979).

Perceived Family Support

A specific intent of this study was to assess infertile adults' perceptions of family support, specifically their families of origins versus marital relationships. Because couples often report that family members lack understanding and empathy regarding their infertility, perceived family support was predicted to be lower for this population. Indeed, infertile couples rated their families lower in
support than normals. Considering the average length of infertility diagnosis was 37 months, this finding would support the view of infertility as a chronic stressor. Family stress and development theories view infertility as an intergenerational stressor, blocking family development and affecting all members of the family. Over time, the family's crisis meeting resources become taxed by the stress of infertility. The result is crisis and strain which could easily lead to feelings of lowered support. According to stress theory, families would be higher on support at the onset of crisis. Perceived support would lower as the infertility becomes chronic. In this study, family support was rated highest during initial evaluation and first year of treatment. Perceived family support lowered during second year of treatment when couples usually experience most medical procedures. Perceived support increased somewhat from Stage 2 to Stage 3 but was not rated as high as Stage 1. These findings lend support to a theory of infertility as acute and chronic stress which loses family support over time.

The Association of Perceived Family Support and Psychological Well-Being

After assessing the perceived family support of infertile adults in the sample, their scores were then correlated with the summary measure of psychological distress. The main purpose of this study was to see if an association between these two variables existed. A statistically significant association was not found, however a trend toward a relationship was noted. A possible explanation for the nonsignificant association is that the sample size was small. Because a trend toward association was noted, the study may be repeated with a larger and more diverse sample.

According to Cohen (1988), it is rare to obtain a correlation coefficient
greater than .40 in psychological studies due to the complexity involved in real
life studies. Rarely would one predictor variable associate with the criterion
variable. Therefore, Cohen (1988) considers .50 to be a large correlation, .30 a
moderate correlation, and .10 a small correlation. Based on this reference, the
correlation found was low to moderate, though not statistically significant. The
low to moderate association was not surprising in that the construct of social
support typically includes family, spouse and friends. This study sought to
account for only the variable of family of origin as an influence and possible
modifier of stress. Other studies (Hearn et al., 1987; Greil et al., 1988) have
shown that marital support can strengthen infertility coping. In addition, the
influence of supportive friends is anecdotally documented in the infertility
literature. Therefore, because more components than family make up the
construct of social support, one would not expect family of origin to account for
all the variance on psychological distress.

The second part of Hypothesis Two predicted that family would show a
positive effect and modify and/or serve as a main effect for stress. Even though
a nonsignificant low to moderate association was found, the results do not
support the directionality of Hypothesis Two. The correlation coefficient was
positive suggesting that more perceived family support is associated with more
psychological symptomology. One explanation for this could be that there is
more freedom in supportive families to express negativity without conflict. This
freedom may lead to less repression of symptoms and less desire to appear
normal to others despite the life stressor. If higher psychological distress is an
appropriate response to chronic illness, than the ability to express such
reactions may actually be beneficial to well-being.

In addition, correlational studies have the possibility of reverse causality.
It may be that the more psychological distress an infertile person experiences, the more support is needed by the family. Family support may not be the factor that significantly modifies distress, but may still be important to the individual's total well-being, i.e., the person may be more distressed without the support. Perhaps family support offers benefits not measured in this study.

The idea for this study was taken from literature which showed family support as a buffer for coping with chronic illness. In studies on chronic illness, medical problems are specifically diagnosed, e.g., end-stage renal failure. Families do not typically hold myths about the etiology of physical disease. For example, it wouldn't be appropriate to tell a cancer patient to relax and he/she will be cured. Yet, infertility still falls victim to many family myths and misconceptions. It is not uncommon for family members to ignore the medical etiology of infertility and give prescriptions for pregnancy related to improved mental health. Because of this difference, families with an infertile member may not view the condition the same as those with a "real" disease. The result of such a difference in definition could affect support and psychological well-being.

It may also be that the ambiguity and open endedness of the condition makes it difficult for families to know what to do to be supportive. Cohen and Wills (1985) speculate that if support isn't matched to need, it won't be viewed as support. Clinical impressions note that infertile couples are often quick to criticize family and friends for not understanding their needs, but less quick to offer helpful suggestions. Perhaps this is due to the confusion felt by the couple in not knowing what is appropriate or "normal" to expect from others. Furthermore, infertility is a private personal matter, accompanied by intense negative feelings. Coping with the intensity often requires so much mental
energy that asserting ones needs is less a priority. Having a container (the family) for the expression of feelings may be most helpful.

It was surprising that no gender difference was found on the correlation of perceived family support and psychological well-being since women tend to receive and be influenced by social support more so than men (Abbey et al., 1991). Again, it may be that the marital relationship and support network of friends more strongly influences women and men than family of origin. For example, a supportive spouse may counteract an unsupportive family of origin. Marital relationships and friendship networks were not measured in this study and thus cannot be accounted for in the equation.

Couples who attend infertility clinics were chosen because of the high stress treatments involved. It may be that those who attend the clinic and agree to participate have supportive nonfamily and marital relationships which modify their stress. It takes support and cooperation to agree to invasive medical treatments and persevere through months of procedures. Thus, the study respondents may differ from other infertile groups on the variable of support. Perhaps perceived family support plays a greater role with couples who have less nonfamily support.

**Subscale Correlations of FES with SCL-90-R**

Regarding the specific subscales of the FES, Achievement Orientation (AO) which assesses how much a family views activities in a competitive framework, positively associated on six of the nine symptom dimensions and the summary measure of the SCL-90-R. This would indicate that infertile adults from competitive families are the most distressed. The difficulty in conceiving is often associated with feelings of failure and lack of accomplishment. The inability to achieve the goal of child birth must be most difficult in families who
cast activities in a competitive frame.

The summary measure of distress and four of the symptom scales on the SCL-90-R were also significantly associated with the Moral-Religious Emphasis scale on the FES. Families higher in Moral-Religious place emphasis on ethical and religious issues and values. Apparently such emphasis places infertile adults at greater risk for psychological distress. One would speculate that the difficulties in conceiving may be associated with cognitions related to punishment by God, unworthiness, etc. A religious explanation for childlessness when children are viewed as gifts from God often takes a negative spin and adds to feelings of blame and low self-worth. An interesting study would be to extrapolate religious cognitions from infertile couples in order to see if indeed their thoughts hinder or help their adjustment. Those who view infertility as a trial and test from God in order to build patience and faith may fare better than those who see their infertility as a curse.

The Psychoticism scale of the SCL-90-R correlated positively with four of the subscales on the FES. As noted, one item from this scale (#87 - "The idea that something serious is wrong with your body") was removed because of its tendency to inflate the scale for an infertile population (Berg & Wilson, 1991). Berg and Wilson (1991) also note that some of the symptoms indicative of psychopathology on the SCL-90-R may represent normal reactions to infertile treatments, thus causing spurious estimates of pathology. The ten items composing the Psychoticism scale do in fact relate to feelings expressed by infertile couples while going through medical treatment (e.g., "Feeling lonely when you are with people; The idea that you should be punished for your sins; Having thoughts about sex that bother you alot; Other people being aware of your private thoughts, etc."). The experience of infertility often contributes to
elevated feelings of loneliness, sexual difficulties, religious questioning and interpersonal strain. In its proper context, the items may be appropriate reactions to the stress of infertility and not necessarily indicators of psychopathology. Again, the admission of such feelings may be of benefit to the infertile person. A supportive family would encourage and allow the negative expression of emotion related to stress, thus one may see higher perceived family support correlated with higher psychological distress. Because of this possibility, caution should be exercised when interpreting measures of psychopathology. Perhaps a higher admission of psychological distress signifies healthy coping with this population.

Gender and Correlations of Subscales

Wives

Different scales were correlated for wives and husbands. Wives had more positive significant associations with the Psychoticism scale possibly due to the above explanations and fact that most medical treatment takes place in wives' physical body. What was interesting was that Psychoticism and Conflict scales were negatively correlated ($r = -.34$), suggesting an inverse relationship between the two variables. This finding would support the above discussion suggesting that the repression of one leads to an increase in the other.

Husbands

Husbands showed no overall pattern, except two of the five significant correlations were on the Achievement Oriented scale suggesting that men's stronger socialization in competiveness may affect their symptomology. For husbands, Phobic Anxiety increased with family support. The Phobic Anxiety scale measures irrational fear which leads to escape and avoidance behavior. Infertile husbands prefer not to discuss their infertility with family and friends.
(Greil et al., 1988), a finding which may explain why Phobic Anxiety increases in men from families higher in support. A supportive environment promotes expression. Expression may lead to increased anxiety because the irrational fears are no longer avoided.

Moral-Religious Emphasis was positively correlated \((r = .35)\) with anxiety in men. There may be no difference in the way husbands and wives think about their religious values and infertility. What is different is that wives appear more psychotic in response and husbands more anxious. Again, this may relate to gender differences in coping styles.

Husbands had a positive correlation on Organization and Psychoticism \((r = .35)\). Organization reflects the degree of importance of structure and planning in families. The ambiguity of infertility arrests future planning and blocks the transition to parenthood. Husbands confronted with infertility, who traditionally feel the stronger burden for financial security in families, may withdraw and isolate more when from families who are strong in organization.

**Gender Differences on the Main Correlation of Perceived Family Support and Psychological Well-Being**

Different subscales of the two measures were correlated for husbands and wives, however, no gender differences were found between correlations of perceived family support and psychological well-being. Wives did not associate family support with psychological well-being more so than husbands. The reason for this is unclear. The literature reports that wives are more influenced by social support than husbands, so one would expect the association to be stronger. The lack of difference may be accounted for by other variables not assessed in the study, e.g., coping styles, pile-up of stress, attitudes, beliefs, etc.
Sociodemographic Variables as Predictors

Primary Analysis (GSI)

This study did have similar findings to others which assert that sociodemographic variables have little to no influence on infertility findings. The only difference noted, gender, has been discussed. However, this study, like others, sampled a primarily white well-educated clinic group (income was normally distributed and showed no difference on measures of psychological well-being). More studies are needed which account for racial and ethnic, educational and class differences. The population of infertile couples who never use an infertility clinic would also be important to study.

In sum, while an association was noted between perceived family support and psychological distress, it was positive and nonsignificant. The positive direction of the correlation does not support a main effects or buffering hypothesis. Instead, it may be that more perceived family support may actually increase psychological distress. However, since directionality of causation is unknown in correlational analysis, increased psychological distress may increase family support. Families may, in fact, rally around the condition and allow for the expression of symptomology as a coping strategy. Gender differences in coping were reflected in the different subscales correlated for men and women.

Secondary Analysis (FRI)

A secondary analysis was performed on sociodemographic variables as predictors of perceived family support. Results indicated that family support was predicted by age, income and family size. Specifically, the older one is, the
more the perceived support. The poorer the couple, the more the perceived support and the larger the family, the more the perceived support. One can only speculate on reasons for such findings. For example, age may relate to stages of life cycle. Perhaps older adults are better able to recognize the complexity of their situation and hold lower expectations for their families of origin. Older adults may also be more independent and depend less on support for adjustment.

Less financially able couples may see support in more tangible means such as money and services from their families. As long as aid matches need (Cohen & Wills, 1985), the couple would feel supported. The tremendous costs of infertility treatment would surely place a financial need on those of less means. Supportive families may assist with those costs.

Finally, the larger the family, the more possible it may be to find at least one family member supportive of the infertility. Family size as a predictor for support was an opposite finding from the data reported by Moos and Moos (1994). They found that larger families tend to be lower on support. In coping with infertility, finding an ally anywhere in the family may be enough to perceive support.

**Stage of Medical Investigation as a Predictor of the Main Correlation**

Based on family stress and coping theories, one would expect a stronger association between Stage 1 of medical investigation on the relationship between family support and psychological well-being than Stages 2 or 3. Theory would predict higher family support given to a couple at the beginning of medical treatment, thus buffering the stress and easing psychological distress. As time goes on, perceived family support would diminish given the taxation of resources and chronicity of the condition. Couples did show a significant
relationship on perceived family support with psychological distress in Stage 1. Because the association was positive it did not support a buffering effect. However, family support declined as infertility progressed, lending credence to family stress theory which suggests family resources are taxed over time.

Secondly, the differences between correlation coefficients by stage were not significant. Therefore, stage of medical investigation did not affect the association of perceived family support and psychological well-being in the way hypothesized. Again, because perceived family support did not act as a modifier of stress, one would hypothesize that the expression of psychological distress is beneficial to this population.

Limitations and Generalizations

Caution should be exercised in generalizing these results for the following reasons. Sample size was small. Although 70 respondents participated in the study, they represented 35 couples. Because specific trends were noted in the study, a larger and more diverse sample may be a better indicator of results. In addition, the nature of the study was to treat each respondent as an individual. Respondents were asked to reflect on perceived family support from the family in which they grew up. In theory, each response should be independent. However, clinical observations indicate that spouses are affected by each other. The amount of influence spouses exert in the area of the others' family of origin is unknown.

The study sample used volunteers at an infertility clinic. Couples who attend infertility clinics may differ significantly from other infertile individuals. Volunteers may also prove to be a biased sample.

The study was cross-sectional in design which limited data collection to one point in time and could not speak to longitudinal results. History was also a
threat to validity in that events related to medical treatment were not controlled for in the study. For example, it is possible that most respondents filled out measures at a hopeful time in the treatment.

The criterion measure of psychological distress may be too limiting in measuring psychological well-being. Elevated psychological distress scores may signal a spouse is in touch with the negative emotions associated with stress. A reconsideration of how adjustment is defined may prove more insightful. Measures of life satisfaction, individual coping styles, etc. may provide a more complete look at adjustment.

Finally, statistically significant results were low to moderate in every finding, making it difficult to assess influence and importance. Again, a larger sample size may find results more definitive.

Despite the methodological flaws, this study is a first attempt to analyze the relationship between perceived family support and psychological well-being. The variable of family represents an important larger context of the person and a step towards accounting for multiple influences on the individual. This study is not intended to determine causation since causation in social science and health is rarely accounted for by a handful of variables. Instead, the study was an attempt to identify a variable in predicting adjustment of infertile individuals.

**Recommendations for Future Research**

As mentioned, this study represents a first step toward quantifying the association between perceived family support and psychological well-being. While a low to moderate nonsignificant association was discovered, the positive direction of the correlation did not provide evidence for family support as a modifier for psychological distress. Perhaps other variables (i.e., coping style)
are more important in modifying the stress of infertility. Future studies should focus on the construct of social support but include nonfamily sources with larger and more diverse samples in order to determine if this conclusion will hold. Psychological distress related to infertility may be modified by other variables including all forms of social support. Finally, it is recommended that psychological adjustment be defined in broader terms, taking into account other measures of personal and family adjustment. Healthy psychological adjustment for infertile couples may be arrived at by the expression of negative emotions in a supportive family context.

**Implications for Practice**

Based on the above conclusions, assessment of family of origin during clinical evaluations of infertile couples appears to have little value in relation to modifying stress. It may be more beneficial to inquire as to nonfamily sources of support and assess the marital relationship.

It is important to note that infertile couples rate their families lower on support than normal adults. Because family ratings are lower, clinicians may wish to help infertile couples assert their needs, define their expectations in the family and/or accept the fact that the family may not understand the emotional consequences of their experience. It would also be important to help couples realize that the intense stress experienced may negatively affect family support. Consequently, strategies to help couples cope with stress are recommended.

Finally, a reconceptualization regarding the role of expression of negative feelings may be needed in working with infertile couples. If expression of negative feelings is beneficial in identifying stress and acknowledging the struggle involved with infertility, then families may need to recognize that the way they can best offer support may be to allow these couples free expression.
without conflict. Given this, the family of origin could serve as a container for such intense emotions. Thus, the family of origin may play a different role in coping with infertility. Instead of acting as a buffer for stress, the family of origin may be a promoter of psychological distress expression which may serve a useful function in coping with infertility.
REFERENCES


Table 1

Observed Psychological Effects of Infertility

<table>
<thead>
<tr>
<th>A. Emotional effects</th>
</tr>
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<tbody>
<tr>
<td>1. Grieving/depression</td>
</tr>
<tr>
<td>2. Anger/frustration</td>
</tr>
<tr>
<td>3. Guilt</td>
</tr>
<tr>
<td>4. Shock/denial</td>
</tr>
<tr>
<td>5. Anxiety</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Loss of control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Loss of control over activities, body, emotions</td>
</tr>
<tr>
<td>2. Inability to predict and plan future according to life goals</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Effects on self-esteem, identity, beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Loss of self-esteem, feelings of inadequacy</td>
</tr>
<tr>
<td>2. Identity problems or shifts</td>
</tr>
<tr>
<td>3. Changes in world views</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Social effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Effects on marital interactions and satisfaction (positive and negative)</td>
</tr>
<tr>
<td>2. Effects on sexual functioning</td>
</tr>
<tr>
<td>3. Difficult social network interactions, changes in relationships with network members, loneliness, embarrassment</td>
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Table 2
Summary of Infertility Medical Investigation

<table>
<thead>
<tr>
<th>Variable</th>
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<th>Mean</th>
<th>SD</th>
<th>Range</th>
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<td>37.73</td>
<td>42.28</td>
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</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>f</th>
<th>%</th>
<th>Cum%</th>
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<tr>
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<td></td>
</tr>
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<td>57.1</td>
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<td>Stage 2</td>
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<td>Stage 3</td>
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<td>Total</td>
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<td>100.0</td>
<td>100.0</td>
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<table>
<thead>
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<th>Who has the medical diagnosis?</th>
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<th>%</th>
<th>Cum%</th>
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<tr>
<td>Wives</td>
<td>48</td>
<td>68.6</td>
<td>68.6</td>
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<td>4</td>
<td>5.7</td>
<td>74.3</td>
</tr>
<tr>
<td>Both</td>
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<td>5.7</td>
<td>80.0</td>
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<tr>
<td>Undefined</td>
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<td>20</td>
<td>100.0</td>
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<tr>
<td>TOTAL</td>
<td>70</td>
<td>100.0</td>
<td>100.0</td>
</tr>
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Table 3

Means and Standard Deviations for Standard Scores on the SCL-90-R

<table>
<thead>
<tr>
<th>SCL-90-R subscale</th>
<th>Means</th>
<th>Standard Deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatization</td>
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<td>12.87</td>
</tr>
<tr>
<td>Obsessive-Compulsive</td>
<td>53.73</td>
<td>13.02</td>
</tr>
<tr>
<td>Interpersonal Sensitivity</td>
<td>54.73</td>
<td>13.41</td>
</tr>
<tr>
<td>Depression</td>
<td>55.21</td>
<td>13.21</td>
</tr>
<tr>
<td>Anxiety</td>
<td>51.16</td>
<td>13.03</td>
</tr>
<tr>
<td>Hostility</td>
<td>53.00</td>
<td>13.0</td>
</tr>
<tr>
<td>Phobic Anxiety</td>
<td>49.00</td>
<td>11.36</td>
</tr>
<tr>
<td>Paranoid Ideation</td>
<td>52.22</td>
<td>13.19</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>51.37</td>
<td>13.01</td>
</tr>
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</table>
Table 4

Differences Between Wives and Husbands on Subscale Scores of the SCL-90-R

<table>
<thead>
<tr>
<th>SCL-90-R Subscale</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wives/Husbands</td>
<td>Wives/Husbands</td>
<td></td>
</tr>
<tr>
<td>Somatization</td>
<td>.44/.34</td>
<td>.37/.39</td>
<td>8.57**</td>
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<tr>
<td>Obsessive-Compulsive</td>
<td>.61/.58</td>
<td>.52/.52</td>
<td>0.242</td>
</tr>
<tr>
<td>Interpersonal Sensitivity</td>
<td>.72/.40</td>
<td>.63/.39</td>
<td>2.56*</td>
</tr>
<tr>
<td>Depression</td>
<td>.87/.45</td>
<td>.70/.37</td>
<td>3.13**</td>
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<tr>
<td>Anxiety</td>
<td>.45/.25</td>
<td>.36/.38</td>
<td>2.27*</td>
</tr>
<tr>
<td>Hostility</td>
<td>.52/.43</td>
<td>.61/.49</td>
<td>0.681</td>
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<tr>
<td>Phobic Anxiety</td>
<td>.09/.11</td>
<td>.15/.23</td>
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<td>Paranoid Ideation</td>
<td>.51/.43</td>
<td>.57/.43</td>
<td>0.666</td>
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<tr>
<td>Psychoticism</td>
<td>.20/.23</td>
<td>.27/.39</td>
<td>0.379</td>
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Note. Degrees of freedom = 68
*p<.05   **p<.01
Table 5

Cronbach's Alpha Reliability Coefficients for FES Subscales

<table>
<thead>
<tr>
<th>FES Subscale</th>
<th>Cronbach's alpha</th>
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<tr>
<td>Cohesion</td>
<td>0.77</td>
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<tr>
<td>Expressiveness</td>
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<td>Conflict</td>
<td>0.80</td>
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<tr>
<td>Independence</td>
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<tr>
<td>Achievement Orientation</td>
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<tr>
<td>Intellectual-Cultural Orientation</td>
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<tr>
<td>Active-Recreational Orientation</td>
<td>0.79</td>
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<tr>
<td>Moral-Religious Orientation</td>
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<tr>
<td>Organization</td>
<td>0.79</td>
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<tr>
<td>Control</td>
<td>0.88</td>
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### Table 6

Cronbach's Alpha Reliability Coefficients for SCL-90-R Subscales

<table>
<thead>
<tr>
<th>SCL-90-R Subscales</th>
<th>Cronbach's alpha</th>
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<tbody>
<tr>
<td>Somatization</td>
<td>0.92</td>
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<td>Obsessive-Compulsive</td>
<td>0.91</td>
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<td>Interpersonal Sensitivity</td>
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</tr>
<tr>
<td>Depression</td>
<td>0.91</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.92</td>
</tr>
<tr>
<td>Hostility</td>
<td>0.92</td>
</tr>
<tr>
<td>Phobic Anxiety</td>
<td>0.93</td>
</tr>
<tr>
<td>Paranoid Ideation</td>
<td>0.92</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>0.93</td>
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</table>
Table 7
Difference Between Infertile and Normal Adults on FES

<table>
<thead>
<tr>
<th>FES Subscale</th>
<th>Means Infertile / Normal</th>
<th>Standard Deviations Infertile / Normal</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohesion</td>
<td>5.39 / 6.68</td>
<td>2.75 / 2.39</td>
<td>3.55**</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>4.73 / 4.87</td>
<td>1.90 / 2.29</td>
<td>0.52</td>
</tr>
<tr>
<td>Conflict</td>
<td>3.90 / 3.33</td>
<td>2.03 / 2.28</td>
<td>2.14*</td>
</tr>
<tr>
<td>Independence</td>
<td>4.96 / 6.77</td>
<td>2.20 / 1.74</td>
<td>6.24**</td>
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<tr>
<td>Achievement Orientation</td>
<td>4.57 / 5.93</td>
<td>1.71 / 1.82</td>
<td>5.67**</td>
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<tr>
<td>Intellectual-Cultural</td>
<td>4.47 / 5.30</td>
<td>2.09 / 2.49</td>
<td>2.77**</td>
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<tr>
<td>Active-Recreational</td>
<td>4.90 / 5.32</td>
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<td>1.56</td>
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<tr>
<td>Moral-Religious Emphasis</td>
<td>4.83 / 5.69</td>
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<td>2.87**</td>
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<tr>
<td>Organization</td>
<td>5.40 / 6.02</td>
<td>2.00 / 2.18</td>
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</tr>
<tr>
<td>Control</td>
<td>4.54 / 4.78</td>
<td>2.40 / 2.35</td>
<td>0.75</td>
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</table>


N= 70 (Infertile)   N=240 (Normal)
df = 308
*p<.05    **p<.01
Table 8
Pearson's Correlational Coefficients for Family Support and Psychological Distress

<table>
<thead>
<tr>
<th>Family Environment Scale</th>
<th>SCL-90-R</th>
<th>FRI</th>
<th>COH</th>
<th>EXP</th>
<th>COF</th>
<th>IND</th>
<th>AO</th>
<th>ICO</th>
<th>ARO</th>
<th>MRE</th>
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<td>.21</td>
<td>.18</td>
<td>-.15</td>
<td>.03</td>
<td>.31*</td>
<td>.19</td>
<td>.08</td>
<td>.24*</td>
<td>.13</td>
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<td>SOM</td>
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<td>.20</td>
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<td>.10</td>
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*p<.05  **p<.01
Table 9

Pearson's Correlation Coefficients for FES and SCL-90-R --WIVES

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<th>FAMILY ENVIRONMENT SCALE</th>
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<th>EXP</th>
<th>COF</th>
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<th>ARO</th>
<th>MRE</th>
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*p<.05
Table 10

Pearson's Correlation Coefficients for FES and SCL-90-R--HUSBANDS

<table>
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<tr>
<th>SCL-90-R</th>
<th>FRI</th>
<th>COH</th>
<th>EXP</th>
<th>COF</th>
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<th>AO</th>
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*p<.05
Table 11
Stepwise Multiple Regression Findings for Prediction of GSI Scores From Three Demographic Variables

<table>
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<th>Predictors in order of selection by GSI</th>
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### Table 12

**Stepwise Multiple Regression Findings for Prediction of FRI Scores From Four Demographic Variables**

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<th>Predictors in order of selection by FRI</th>
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<td>Income</td>
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<td>Age</td>
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<td>Length of infertility</td>
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*p < .05"
APPENDIX A

Beach Center For Infertility, Endocrinology and IVF

As a student director of an infertility research project, I am asking you to participate in a study. Your participation will only require filling out some forms which will take about an hour of your time. The study is looking at the relationship between family support and psychological well-being in infertile couples. The hope is that this information will help you and other infertile couples better cope with the process of infertility.

If you and your spouse (we need both to participate) are interested in participating in this study, please sign below and I will contact you in the next few days.

Thank you for your help.

Linda S. Mintle, L.C.S.W.
Doctoral Student, ODU

____________________________________
Patient Signature

____________________________________
Date
APPENDIX B

Beach Center for Infertility, Endocrinology and IVF

The Association Between Perceived Family Support and Psychological Well-Being in Infertile Couples

PATIENT CONSENT FORM

I understand that I am being asked to participate voluntarily in an approved research study, the purpose of which is to increase the understanding of psychological well-being related to infertility in an effort to improve treatment for individuals suffering from this condition. I understand that all of my responses to questionnaires in this study will be identified by number only so that my name will never be associated with my responses.

I understand that all patients who seek treatment for infertility and meet criteria for this study at the Beach Center for Infertility will be asked to participate without remuneration.

I understand that my decision to participate or not participate in this study will in NO WAY influence my current or future medical treatment. The research procedures and materials have been approved by the Human Subjects Committee, College of Health Science of Old Dominion University.

My participation in this project will involve completing a packet of self-administered questionnaires taking approximately 1-1 and 1/2 hours. All of the
materials that I complete will be coded. In this way, my complete confidentiality and privacy can be maintained.

Although there are no known health risks involved in this non-invasive study, it is possible that there are risks not yet identified. If any discomfort should arise regarding materials addressed in this study, I may call Linda S. Mintle at 456-0505 to ask any questions or discuss these feelings. Also, I understand that no specific benefit is expected from participation in this study. I am aware that I may withdraw from this study at any time and that my withdrawal will in no way influence my current or future medical treatment.

I understand that if I have any questions about this study, I may call Linda S. Mintle, L.C.S.W. at 456-0505 or 547-5595 and/or George Maihafer, Ph.D., Dissertation Chair at 683-4519. A summary of the results of this study will be available upon request by contacting Linda S. Mintle at the above number. I have signed below to indicate my consent to participate in this study.

________________________________________
Subject's Signature Date

________________________________________
Witness’ Signature Date

I have explained the above to the subject on the date stated on this consent form.

________________________________________
Investigator's or Representative's Signature Date
APPENDIX C

FORM W NUMBER_______

PATIENT INFORMATION SHEET

1. What is your sex?
   Female_______  Male_______

2. What was your AGE on your last birthday? ________

3. What is your race?
   Caucasian _______  Asian _______
   African American _____  Hispanic _______
   Other _______

4. What is your religious preference?
   Protestant _____  Jewish _____
   Catholic _____  Other _______
   None _______

5. What is your yearly household income?
   0- 9,999 ______  50,000-59,000 ______
   10,000-19,999 ______  60,000-69,999 ______
   20,000-29,999 ______  70,000-79,999 ______
   30,000-39,999 ______  80,000-89,999 ______
   40,000-49,999 ______  90,000-99,999 ______
   100,000 + ______

6. Are you employed outside of the home?
   Full-time _____
   Part-time _____
7. What is the most schooling you have completed? (Circle highest)

K 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20+

8. What degrees do you hold?

None _____ Masters _____
GED _____ Doctorate _____
H.S. Diploma _____ Post Doctorate _____
Associates _____ M.D. _____
Bachelors _____ J.D. _____

9. Who has the medical diagnosis of infertility?

Self _____
Spouse _____
Both _____
Undefined _____

10. How long has infertility been diagnosed? Years _____ Months _____

11. What stage of medical investigation are you currently involved in?

Initial diagnosis and treatment (1 year or less) _____
2nd year of treatment _____
3 + years of treatment _____

12. Prior to your infertility diagnosis were you treated for any psychiatric conditions? NO ____ YES ____ (Check those that apply)

depression _____
anxiety _____
family problems _____
marital problems _____
psychosis ______

eating disorders ______

obsessive-compulsive behavior ______

ADHD ______

substance abuse ______

physical abuse ______

sexual abuse ______

Other (specify) __________________________________________________________

14. How many people are in the family in which you grew up? ________
APPENDIX D
FAMILY ENVIRONMENT SCALE
FORM R
Rudolf H. Moos
Instructions
There are 90 statements in this booklet. They are statements about families. You are to decide which of these statements are true of your family, make an X in the box labeled T (true). If you think the statement is False or mostly False of your family, make an X in the box labeled F (false).

You may feel some of the statements are true for some family members and false for others. Mark T if the statement is true for most members. Mark F if the statement is false for most members. If the members are evenly divided, decide what is the stronger overall impression and answer accordingly.

Remember, we would like to know what your family seems like to you. So do not try to figure out how other members see your family, but do give us your general impression of your family for each statement.

1. Family members really help and support one another.
2. Family members often keep their feelings to themselves.
3. We fight a lot in our family.
4. We don't do things on our own very often in our family.
5. We feel it is important to be the best at whatever you do.
6. We often talk about political and social problems.
7. We spend most weekends and evenings at home.
8. Family members attend church, synagogue, or Sunday School fairly often.
9. Activities in our family are pretty carefully planned.
10. Family members are rarely ordered around.
11. We often seem to be killing time at home.
12. We say anything we want to around home.
13. Family members rarely become openly angry.
14. In our family, we are strongly encouraged to be independent.
15. Getting ahead in life is very important in our family.
16. We rarely go to lectures, plays or concerts.
17. Friends often come over for dinner or to visit.
18. We don't say prayers in our family.
19. We are generally very neat and orderly.
20. There are very few rules to follow in our family.
21. We put a lot of energy into what we do at home.
22. It's hard to "blow off steam" at home without upsetting somebody.
23. Family members sometimes get so angry they throw things.
24. We think things out for ourselves in our family.
25. How much money a person makes is not very important to us.
26. Learning about new and different things is very important in our family.
27. Nobody in our family is active in sports, Little League, bowling, etc.
28. We often talk about the religious meaning of Christmas, Passover, or other holidays.
29. It's often hard to find things when you need them in our household.
30. There is one family member who makes most of the decisions.
31. There is a feeling of togetherness in our family.
32. We tell each other about our personal problems.
33. Family members hardly ever lose their temper.
34. We come and go as we want to in our family.
35. We believe in competition and “may the best man win.”
36. We are not that interested in cultural activities.
37. We often go to movies, sports events, camping, etc.
38. We don’t believe in heaven or hell.
39. Being on time is very important in our family.
40. There are set ways of doing things at home.
41. We rarely volunteer when something has to be done at home.
42. If we feel like doing something on the spur of the moment we often just pick up and go.
43. Family members often criticize each other.
44. There is very little privacy in our family.
45. We always strive to do things just a little better the next time.
46. We rarely have intellectual discussions.
47. Everyone in our family has a hobby or two.
48. Family members have strict ideas about what is right and wrong.
49. People change their minds often in our family.
50. There is a strong emphasis on following rules in our family.
51. Family members really back each other.
52. Someone usually gets upset if you complain in our family.
53. Family members sometimes hit each other.
54. Family members almost always rely on themselves when a problem comes
up.

55. Family members rarely worry about job promotions, school grades, etc.
56. Someone in our family plays a musical instrument.
57. Family members are not very involved in recreational activities outside work or school.
58. We believe there are some things you just have to take on faith.
59. Family members make sure their rooms are neat.
60. Everyone has an equal say in family decisions.
61. There is very little group spirit in our family.
62. Money and paying bills is openly talked about in our family.
63. If there's a disagreement in our family, we try hard to smooth things over and keep the peace.
64. Family members strongly encourage others to stand up for their rights.
65. In our family, we don't try that hard to succeed.
66. Family members often go to the library.
67. Family members sometimes attend courses or take lessons for some hobby or interest (outside of school).
68. In our family each person has different ideas about what is right and wrong.
69. Each person's duties are clearly defined in our family.
70. We can do whatever we want to in our family.
71. We really get along well with each other.
72. We are usually careful about what we say to each other.
73. Family members often try to one-up or out-do each other.
74. It's hard to be yourself without hurting someone's feelings in our household.
75. "Work before play" is the rule in our family.
76. Watching T.V. is more important than reading in our family.
77. Family members go out a lot.
78. The Bible is a very important book in our home.
79. Money is not handled very carefully in our family.
80. Rules are pretty inflexible in our household.
81. There is plenty of time and attention for everyone in our family.
82. There are a lot of spontaneous discussions in our family.
83. In our family, we believe you don't ever get anywhere by raising your voice.
84. We are not really encouraged to speak up for ourselves in our family.
85. Family members are often compared with others as to how well they are doing at work or school.
86. Family members really like music, art and literature.
87. Our main form of entertainment is watching TV or listening to the radio.
88. Family members believe that if you sin you will be punished.
89. Dishes are usually done immediately after eating.
90. You can't get away with much in our family.
APPENDIX E

SCL-90-R

Instructions:
Below is a list of problems people sometimes have. Please read each one carefully, and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Blacken the circle for only one number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example before beginning, and if you have any questions please ask about them.

Not at all  A little bit  Moderately  Quite a bit  Extremely

0  1  2  3  4

HOW MUCH WERE YOU DISTRESSED BY:

0  1  2  3  4  1. Headaches

0  1  2  3  4  2. Nervousness or shakiness inside

0  1  2  3  4  3. Repeated unpleasant thoughts that won't leave your mind.

0  1  2  3  4  4. Faintness or dizziness

0  1  2  3  4  5. Loss of sexual interest or pleasure

0  1  2  3  4  6. Feeling critical of others
0 1 2 3 4 7. The idea that someone else can control your thoughts
0 1 2 3 4 8. Feeling others are to blame for most of your troubles
0 1 2 3 4 9. Trouble remembering things
0 1 2 3 4 10. Worried about sloppiness or carelessness
0 1 2 3 4 11. Feeling easily annoyed or irritated
0 1 2 3 4 12. Pains in heart or chest
0 1 2 3 4 13. Feeling afraid in open spaces or on the streets
0 1 2 3 4 14. Feeling low in energy or slowed down
0 1 2 3 4 15. Thoughts of ending your life
0 1 2 3 4 16. Hearing voices that other people do not hear
0 1 2 3 4 17. Trembling
0 1 2 3 4 18. Feeling that most people cannot be trusted
0 1 2 3 4 19. Poor appetite
0 1 2 3 4 20. Crying easily
0 1 2 3 4 21. Feeling shy or uneasy with the opposite sex
0 1 2 3 4 22. Feelings of being trapped or caught
0 1 2 3 4 23. Suddenly scared for no reason
0 1 2 3 4 24. Temper outbursts that you could not control
0 1 2 3 4 25. Feeling afraid to go out of your house alone
0 1 2 3 4 26. Blaming yourself for things
0 1 2 3 4 27. Pains in lower back
0 1 2 3 4 28. Feeling blocked in getting things done
<table>
<thead>
<tr>
<th></th>
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<th>29. Feeling lonely</th>
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<td>30. Feeling blue</td>
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<td></td>
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<td>31. Worrying too much about things</td>
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<td>32. Feeling no interest in things</td>
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<td>33. Feeling fearful</td>
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<td></td>
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<td>34. Your feelings being easily hurt</td>
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<td>35. Other people being aware of your private thoughts</td>
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<td>36. Feeling others do not understand you or are unsympathetic</td>
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<td>37. Feeling that people are unfriendly or dislike you</td>
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<td>38. Having to do things very slowly to insure correctness</td>
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<td>39. Heart pounding or racing</td>
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<td>41. Feeling inferior to others</td>
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<td>43. Feeling that you are watched or talked about by others</td>
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<td>44. Trouble falling asleep</td>
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<td>45. Having to check and double-check what you do</td>
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<td>46. Difficulty making decisions</td>
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<td>47. Feeling afraid to travel on buses, subways, or trains</td>
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<td>48. Trouble getting your breath</td>
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<td>49. Hot or cold spells</td>
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<td>50. Having to avoid certain things, places, or activities</td>
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because they frighten you

51. Your mind going blank
52. Numbness or tingling in parts of your body
53. A lump in your throat
54. Feeling hopeless about the future
55. Trouble concentrating
56. Feeling weal in part of your body
57. Feeling tense or keyed up
58. Heavy feelings in your arms and legs
59. Thoughts of death or dying
60. Overeating
61. Feeling uneasy when people are watching or talking about you
62. Having thoughts that are not your own
63. Having urges to beat, injure, or harm someone
64. Awakening in the early morning
65. Having to repeat the same actions such as touching, counting, or washing
66. Sleep that is restless or disturbed
67. Having urges to break or smash things
68. Having ideas or beliefs that others do not share
69. Feeling very self-conscious with others
70. Feeling uneasy in crowds, such as shopping or at a movie
71. Feeling everything is an effort
72. Spells of terror or panic
73. Feeling uncomfortable about eating or drinking in public
74. Getting into frequent arguments
75. Feeling nervous when you are left alone
76. Others not giving you proper credit for your achievements
77. Feeling lonely even when you are with people
78. Feeling so restless you couldn’t sit still
79. Feelings of worthlessness
80. The feeling that something bad is going to happen to you
81. Shouting or throwing things
82. Feeling afraid you will faint in public
83. Feeling that people will take advantage of you if you let them
84. Having thoughts about sex that bother you a lot
85. The idea that you should be punished for your sins
86. Thoughts and images of a frightening nature
87. The idea that something serious is wrong with your body
88. Never feeling close to another person
89. Feelings of guilt
90. The idea that something is wrong with your mind
APPENDIX F

Beach Center for Infertility, Endocrinology and IVF

FACILITY CONSENT FORM

The Beach Center for Infertility, Endocrinology and IVF gives Linda S. Mintle, L.C.S.W. permission to conduct her dissertation research entitled, "The Association Between Perceived Family Support and Psychological Well-Being in Infertile Couples". This consent covers use of facility and patients for the period of time this research is being conducted.

________________________________________

Jill Taylor Flood, M.D.
Director

________________________________________

Linda S. Mintle, L.C.S.W.
Researcher

Date