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Sexual and Emotional Adjustment of Couples
Undergoing Infertility Investigation and
the Effectiveness of Preparatory Information

Janet Takefman

A Thesis
in
The Department
of
Psychology

Presented in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy at
Concordia University
Montreal, Quebec, Canada

March, 1989

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ABSTRACT

Sexual and Emotional Adjustment of Couples
Undergoing Infertility Investigation and
the Effectiveness of Preparatory Information

Janet Takefman, Ph.D.
Concordia University, 1989.

Following a thorough medical evaluation, the cause of a couple's infertility will be discovered in approximately 90% of cases. However, research has shown that the infertility investigation is a stressful procedure for couples. This study examined the sexual and emotional adjustment of couples undergoing an investigation and compared the effectiveness of two types of preparatory information designed to reduce particular stresses associated with the investigation. The sample consisted of 39 primary, infertile couples who were undergoing an infertility evaluation for the first time. Each couple was randomly assigned to one of three informational groups. The High Information group viewed a video tape that described both the procedural and emotional aspects of the investigation. The High Information and Sex group viewed the same video as the previous group, and in addition received a pamphlet that described the sexual strains related to infertility. A control group, the Low Information group, viewed a video tape detailing only the procedural aspects of the investigation. During the investigation, couples were contacted on a monthly basis to evaluate their reactions to each diagnostic test. Couples completed a battery of self-report questionnaires measuring emotional and sexual functioning before beginning the investigation and at its completion.

The results revealed that during the investigation the Low Information group improved in feelings and knowledge about infertility, and reported an improved ability to cope with infertility. Furthermore, the group that received the

greatest volume of information was found to react most negatively to undergoing certain diagnostic tests. The sexual and emotional information were not found to be of assistance to couples. Results of discriminant analyses demonstrated that couples baseline psychological profiles could identify those at higher risk for poor sexual and emotional response to the investigation. Finally, pre-investigation anxiety levels were found to differentiate those who achieved pregnancy six months post-investigation from those who were unsuccessful.

Several findings of theoretical and clinical importance emerged from this study. First, infertility had more aversive effects on wives than husbands. Second, specific areas of functioning did deteriorate slightly during the infertility investigation, but not to the extent reported in the literature. Third, a basic amount of procedural information about the investigation was found to be beneficial. Suggestions were offered on ways the clinician can aid couples in managing the pressures of the investigation. Finally, methodological problems with respect to this line of research were discussed.

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I would first like to thank my supervisor, Dr. Bill Brender, for allowing me the opportunity to explore an area of research that was new to both of us. Throughout our years together he has provided me with scholarly counsel and personal encouragement. Under his guidance I was able to experience, first hand, the complexities of research undertakings including such related facets as grant applications and conference presentations, so that I now feel prepared to face these challenges in my own career.

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"My infertility is a blow to my self-esteem, a violation of my privacy, an assault on my sexuality, a final exam on my ability to cope, an affront to my sense of justice, a painful reminder that nothing can be taken for granted. My infertility is a break in the continuity of life. It is above all, a wound - to my body, to my psyche, to my soul."
(Infertility Patient, Resolve Newsletter, December 1981, p.1)

Many couples are denied the experience of childbearing because they are infertile. The resulting psychological reactions have been characterized as the "crisis of infertility" (Bresnick & Taymor, 1979). Anecdotal reports and formal research studies indicate that the emotional impact of infertility is extensive. It includes denial, frustration, anger, guilt, depression, sexual maladjustment and social isolation (Menning, 1980). Furthermore, medical evaluation to determine the cause of infertility, evokes psychological stress reactions of its own, varying in type and intensity (Lalos, Lalos, Jacobsson, von Schoultz, 1985). Thus the anxiety and frustrations already experienced by an infertile couple, combined with the stress of the infertility medical investigation, could further burden emotional well-being, and even possibly decrease probabilities of conception.

Canada's declining birthrate has become a major priority issue for the government. Canada's birthrate in 1987 was 14.5 per 1,000, lower than that ever recorded previously. Similarly, Québec recorded the lowest birth rate among the provinces - 12.9 per 1,000 which in fact is among the lowest in the world (Statistics Canada, 1987). One means of increasing the birthrate lies in building our knowledge base for helping infertile couples - those desiring but failing to conceive- to become pregnant. Research on the maladaptive psychological reactions associated with infertility and programs to reduce the negative impact of the medical investigation could help to improve the quality of life for infertile couples. It is also possible that probabilities for conception in this subsample of couples would increase if the stress of infertility was reduced. The psychological symptoms associated with infertility and the effectiveness of informational intervention programs for couples undergoing infertility investigation are the subject of this study.

Present State of Knowledge

Definition of Infertility

Infertility is conventionally defined as the inability to conceive after one year of regular sexual relations without contraception (Speroff, Glass & Kase, 1983). The one year criterion is based on statistics which have shown that in the absence of contraception about 25% of all sexually active couples will conceive in one month, 63% in six months, and

about 80% in a year. The remaining 20% or so have a diminished chance of becoming pregnant in the absence of evaluation and treatment, and it is this group of people who are labeled as having a fertility problem (Behrman & Kistner, 1975; Tulandi, Collins, Jarrel, McInnes, Wrixon & Simpson, 1988). Infertility is further defined as primary when there is no previous history of pregnancy, or secondary when it occurs after one or more pregnancies. Overall, 30% of infertile women have primary and 70% have secondary infertility (Hirsch & Mosher, 1987). The term sterility is reserved for cases of permanent or incurable infertility.

This definition of infertility, though widely accepted, is fraught with ambiguities. First, nobody has attempted to define regular sexual intercourse. In practice, doctors are not so concerned with a couple's overall frequency of coitus as they are with the time of month it occurs, i.e., whether it is during the female's time of ovulation. However, data have not yet been collected on infertile couples' coital frequencies at different phases of the menstrual cycle.

Second, unlike other medical conditions, infertility is unique in that it has no discernible onset, is usually asymptomatic, and a diagnosis is generally made retrospectively after attempts at conception have failed. Because it is difficult to determine when this condition was acquired, etiological factors associated with its onset are difficult to identify. Only a costly and lengthy prospective study using the general population of child-bearing couples

can ultimately solve this problem. Thus, when carrying out research on the psychological aspects of infertility, a common design problem is the difficulty in determining whether these factors pre-dated the infertility and contributed to its onset, or whether they are by-products of the diagnosed condition.

Incidence of Infertility

Infertility occurs in more than 15% of sexually active couples of child-bearing age (Collins, So, Wilson, Wrixon & Casper, 1984). There is a growing volume of evidence to suggest that the percentage of infertile couples is increasing due to a number of sociological and medical factors. The trend toward delaying marriage and child-bearing until later in life may be one reason. Fertility appears to be maximal at about age 24 (Moghissi & Wallach, 1983). Other factors include the prevalence of venereal disease, and the wide use of certain contraceptive methods (e.g., oral contraceptive, intrauterine device [IUD]), which may increase the risk of infertility (Rakoff, 1977). Abortion, even under ideal conditions, is accompanied by a one to five percent risk of infection which can lead to infertility (Behrman & Kistner, 1975).

There also appears to be an increase in the number of people seeking help for infertility (Mazor, 1978). One epidemiological study (Aral & Cates, 1983) estimated that almost 75% of couples with a perceived infertility problem requested medical evaluation between 1970 and 1975.

Authorities believe this demand for infertility services has escalated even more in recent years (McEwan, 1985). Several factors can account for this rise. Availability of adoptable infants has diminished because abortion services are more available to women, and unwed motherhood has become more socially acceptable. Furthermore, recent advances in treating infertile couples, e.g., in-vitro fertilization (IVF), have received wide-spread publicity and raised the hopes of previously sterile couples.

In recent years, more physicians have been taking an interest in infertility, thereby increasing the availability of such services. Technical improvements in the ability to diagnose and treat infertility and the larger percentage of upper-income populations with infertility problems have increased physician demand (Aral & Cates, 1983). For example, most major hospitals in Quebec today have established services staffed by specialized infertility teams within their Obstetrics and Gynecology departments.

Finally, a more conducive social milieu exists to promote infertility services. The counterreaction to the sexual revolution was the profamily movement (Mosher, 1982). The values of this movement have reinforced the social image of infertility as a major health problem. Furthermore, this generation of child-bearers is the first that has had the opportunity to plan the children they want and to prevent births they do not want (Hendershot & Bauman, 1981). For this group of young couples, fertility is viewed as a completely

controllable aspect of their lives. Just as they expect to prevent pregnancy with the use of contraceptives, they expect to be able to do something about their infertility.

Medical Aspects of Infertility

An organic cause for infertility will be identified in approximately 90% of couples who have undergone a thorough medical investigation. Of these, about 50 - 60% can be treated successfully. The problem is traceable to the female in about 40% of the cases, and in 35%, to the male. The couple jointly share a problem in the remaining 15% of cases (Moghissi, 1979).

The following is a brief description of some of the common diagnostic categories employed after an infertility evaluation.

1. Tubal Factor: A blockage to the union of sperm and ovum, found most commonly in the fallopian tubes, may account for 30 - 35% of all infertility cases (Mazor, 1978). Tubal problems can be due to adhesions, destruction of the delicate tubal lining, or a narrowness of the tube that prevents free passage. Conditions such as Pelvic Inflammatory Disease (PID) and Endometriosis are common diseases that would lead to a blockage.

2. Endocrine Disorders: These represent the second greatest cause of female infertility. There may be a disorder at any of the sites that influence the menstrual cycle, i.e., hypothalamus, pituitary, thyroid, adrenals, or ovaries. These

defects will either act on ovarian production or on implantation of the fertilized ovum in the uterus.

3. Cervical Factor: Between 10 - 15% of fertility problems in women can be traced to a poorly functioning cervix (Bellina & Wilson, 1985). Most of these problems involve the cervical mucus. A hostile cervical mucus that will immobilize sperm, can be created by infection, trauma to the glands, or antibodies.

4. Male Factor: With regard to male infertility, there may be a problem with sperm production (spermatogenesis), the ability of sperm to swim (motility), or the shape of sperm (morphology). As well, a blockage somewhere in the reproductive tract between the site of sperm production and where sperm are ejaculated would cause infertility.

5. Unexplained Infertility: In addition to the organic disorders, there exists a group of patients whose infertility remains unexplained after the completion of all available diagnostic tests. The incidence of unexplained infertility is generally considered to be between 10 to 15% (Verkauf, 1983). It has been shown, in fact, that the more exhaustive the evaluation, the more likely the medical factors responsible for a couple's infertility will be detected (Moghissi & Wallach, 1983). This finding invites the speculation that as medical technology becomes more sophisticated, abnormalities of a physiologic or chemical nature will be demonstrated in all cases of infertility.

It is noteworthy, that as recently as 20 years ago unexplained infertility was considered synonymous with psychosomatic or psychogenic infertility (Eisner, 1963). The definition of psychogenic infertility was "infertility without known anatomical or endocrinological pathology" (Cohen, 1961, p.396). Interestingly, this criterion was employed whether or not patients demonstrated emotional disorders. Earlier research that defined unexplained infertility as psychogenic by exclusion of organic causes has since been rejected because of lack of evidence or diagnostic value. Later research showed that there was no empirical basis for concluding that psychological variables played a more prominent etiological role in unexplained infertility than in any other diagnostic subgroup (Dominici, Coghi, Pancheri, Nicotra, Aboulkhair, Zichella & Peruggini, 1979; Seward, Bloch & Heinrich, 1967).

Stress and Infertility

Holmes and Rahe (1967) included life events requiring behavioral and physiological adjustment ranging from the death of a spouse, divorce, and pregnancy, to Christmas and taking a vacation in their scale designed to measure the amount of stress in a person's life. Despite the fact that it affects one in six married couples, infertility is not listed. Yet, similar to the experience of death or divorce, infertility represents a loss in several respects. For example, loss of genetic continuity, and loss of the experience of pregnancy, childbearing and parenthood.

Erickson (1950) referred to generativity as a stage of development, and believed that its absence could lead to some degree of personal impoverishment. It has also been reported extensively in the literature that psychological stressors can contribute to the degeneration of overall health (Jemmott III & Locke, 1984). In this sense it seems reasonable to theorize that the stress of infertility could contribute to the perpetuation of reproductive difficulties, whereas a reduction in stress could improve reproductive functioning. Findings that infertile couples have conceived during or after holidays (Denber, 1978; Urry, 1977), after adoption or decision to adopt (Sandler, 1965), or after inception of medical evaluation in the infertility clinic (Collins, Wrixon, Janes & Wilson, 1983) support this hypothesis.

Several aspects of infertility clearly qualify it as a stressful life event. Theories on predictability and human stress generally share the view that predictable aversive events are less stressful than unpredictable aversive events (Miller, 1981). With respect to infertility, it is rare for an individual to anticipate difficulties with conceiving. Most people grow up with the expectation that they have the freedom to choose when to have children. Research has also shown that social support from one's environment serves to buffer the effects of stressors and enhance the individual's ability to withstand their adverse effects (Cobb, 1976; Cohen & McKay, 1984; Gore, 1978.). Clinical reports suggest that infertile couples have difficulty sharing their "secret" of

infertility with family and friends thereby depriving themselves of this source of support (Menning, 1980).

In the following section clinical evidence will be presented bearing on the hypothesis that the reproductive system is stress-sensitive. In considering this literature, one has to keep in mind the difficulties in defining stress for purposes of determining its possible effect on reproductive functioning and in devising psychological instruments sufficiently sensitive and appropriate to translate complex psychological observations into quantifiable measures.

Effects of Stress on Reproductive Functioning

Many studies examining the effects of stress on the reproductive system have been criticized for conceptual and methodological deficiencies, however, there have been some replicated findings which support the contention that stress responses can negatively affect fertility. Individual case reports suggest many kinds of stress can affect reproductive physiology. The degree seems to range from "first-kiss amenorrhea" in young girls (Sandler, 1969), to pseudocyesis (hysterical pregnancy) (Starkman, Marshall, La Ferla & Kelch, 1985); and, from mid-cycle erectile difficulties in men attempting intercourse for purposes of conception, to occupational sterility (Bents, 1985). In the female, menstrual dysfunction has been reported after such traumatic experiences as incarceration in a concentration camp, electroshock therapy, and in young girls going to summer camp

or boarding school for the first time (Reichlin, Abplanalp, Labrum, Schwartz, Sommer & Taymor, 1979).

One well-controlled case study (Peyser, Ayalon, Harell, Toaff & Cordova, 1973) claimed to have demonstrated biochemical support for a stress induced delay in ovulation in two healthy volunteers whose preceding three cycles had been regular. For a period of 7 to 10 days around the expected time of ovulation, these women were hospitalized and blood samples for estimation of LH levels were obtained at 4-hour intervals. In both subjects the preovulatory surge of LH was delayed and occurred only 48 hours after discharge from hospital. The delay in ovulation was ascribed to the stress connected with the hospital stay and the continuous presence of an indwelling, intravenous catheter. In another study (Foldes, 1974) 73 women were selected as candidates for artificial insemination by donor (AID). Prior to this selection they had normal ovulatory cycles. In the months when AID was only contemplated, not even performed, 34 women showed abnormal ovulatory patterns. After the decision to postpone AID they regained normal ovulation spontaneously.

In the experimental literature, prolactin has recently gained attention for its role in infertility. It is probably the high levels of prolactin maintained during lactation and the consequent ovarian suppression that underlie the amenorrhea and infertility observed in lactating women (Bancroft, 1983). One study explored the relationship between psychological stress, hormonal factors and unexplained

infertility (O'Moore, O'Moore, Harrison, Murphy & Carruthers, 1983). Fifteen women with unexplained infertility were tested on several psychological measures, in addition to urine free cortisol and plasma prolactin being assessed by radioimmunoassay. After initial testing, infertile couples followed a basic eight week course in autogenic training, as a stress reduction technique. Results were compared to those of 10 fertile controls. Analysis of initial emotional factors showed that infertile women had higher anxiety scores than controls on the State-Trait Anxiety Inventory (STAI), Taylor Manifest Anxiety Scale and the Eysenck Personality Inventory. Concurrently, a significantly higher mean value of prolactin was found in infertiles compared to controls. Post-treatment results showed that the STAI scores decreased significantly from pre- to post autogenic training. Prolactin levels fell significantly following training as well. The significant reduction of prolactin levels, in parallel with decreased anxiety scores, supported the hypothesis that elevated prolactin levels in these patients were linked to emotional stress factors. However, because a no-treatment control group of infertile women was not included, one cannot draw conclusions on exactly what contributed to lower prolactin levels or on the direction of causality between prolactin and anxiety.

Depression, a common response to infertility, has also been associated with reproductive malfunctioning in women. Evidence suggests that depression is associated with a

depletion in neurotransmitter amines, which can lead to diminished output of gonadotrophins, failure to ovulate and in severe cases, amenorrhea (Sachar, 1980). Banks, Rutherford, and Coburn (1963) used Nialamide (100 mg. daily), a MAO inhibitor, in the treatment of infertility of unknown organic cause. Thirty of the 66 women receiving this medication became pregnant. Pregnancy success was related to a marked improvement in mood and an increased frequency of sexual relations. Unfortunately, the design of this study did not permit one to conclude whether pregnancy was primarily caused by a behavioral change or a neuroendocrine change. However, in another study (Lachelin & Yen, 1978) spontaneous reversal of amenorrhea followed counselling for 11 anovulatory women with depression.

Contrary to the findings of the last three studies, in a double-blind study in which tybamate (an antianxiety drug) or placebo were administered to 35 females with unexplained infertility, it was found that though the medication was effective in ameliorating psychoneurotic symptoms it did not contribute to increased fertility rate (Denber & Roland, 1969).

Psychological factors in infertility have been attributed largely to the female partner. Research on psychosomatic influences in male infertility has been limited (Cockett & Urry, 1976). This may be due partly to the fact that until recently, "reproductive medicine" has been traditionally provided to the woman. The fact that male infertility rarely

manifests any overt clinical symptoms may also account for the relative scarcity of studies on psychological factors (Bents, 1985). The first documented work on the effect of emotional stress on human spermatogenesis was a study of prisoners sentenced to death who were kept waiting a long time before execution (Stieve, 1952). Serial testicular biopsies were performed, and progressive disturbances in spermatogenesis were observed. In another study (Rose, Bourne, Poe, Maugey, Collins & Mason, 1969) the stress of officer-candidate school was believed to be responsible for the young men's depressed circulating testosterone levels. Monden et al (Monden, Koshuyama, Tanaka, Mizutani, Aona, Hamanaka, Yozumi & Matsumoto, 1972) measured plasma testosterone in 42 male patients following major surgery and found statistically significant decreases in testosterone for three weeks after surgery. All of the above-reviewed studies are limited, however, by various confounding influences.

In a recent empirical investigation, (Hellhammer, Hubert, Phil, Freischem & Nieschlag, 1985) the relationship between psychological test data and endocrine parameters, as well as ejaculate characteristics in 117 infertile husbands was examined. Analysis of correlations between personality attitudes and biological parameters revealed a significant relationship between high release of the gonadotrophins and sociability and extraversion. Lower levels of testosterone correlated significantly with high feelings of guilt. Because this study was correlational in nature, no conclusions can be

drawn as to the direction of causality. Finally, Harrison, Callan, and Hennessey (1988) examined the possible effects of stress on semen quality. In this study two semen profiles were evaluated for 500 husbands attempting IVF therapy. The first sample was obtained five weeks before in vitro fertilization, during a relatively unstressful time. The second sample was provided by husbands at the time of egg insemination, considered a stressful time. The results showed that sperm density, total sperm count and qualitative sperm motility were significantly lower in the second semen specimen as compared to the first, indicating that stress did have a negative effect on at least some parameters of semen quality.

Overall, because of methodological weaknesses that include lack of control groups, small sample sizes and non-specific measurements, the available evidence is insufficient to prove that stress can change reproductive functioning. Only two studies combined specified psychological and biochemical measurements to obtain data on the psychosomatic interdependencies in infertility (i.e., O'Moore et al, 1983; Hellhammer et al, 1985). Notwithstanding the limitations of the various studies reviewed, clinical observations and reports suggest an influence of psychological factors on reproductive processes. The following section will address the evidence which indicates that infertility itself can cause negative psychological reactions, which in a circular fashion, would further inhibit reproductive possibilities.

Psychological Aspects of Infertility

Sexual Adjustment-Anecdotal Evidence

The simplest and most understandable manner in which psychological factors could contribute to fertility difficulties is through their effect on sexual performance. Keye (1984) surveyed nearly 500 infertile men and women with respect to their psychological and sexual reactions to infertility. From these interviews three kinds of situations contributing to negative sexual responding were described which appear unique to infertile individuals. First were the physical consequences that result from the infertility problem itself. Examples include the pelvic pain that is present in many women with endometriosis or pelvic adhesions. As a result this may lead to a decrease in coital frequency. Other women who are receiving progesterone for luteal phase defects or progestins for endometriosis may experience decreased libido.

Second, sexual problems may develop in couples because of the focus on sex for procreation rather than for pleasure. As a result of the perceived need to have "sex on schedule," many couples begin to view sex as a purely mechanical act to be performed in a specific way, at a specific time, and at a predetermined frequency. Thus, the quality of sexuality is measured not in terms of pleasure derived but by its ability to produce a conception. The frustrations and pressures that arise from viewing sex in this goal-oriented manner can lead to sexual inhibitions that would interfere with coital acts.

Finally, sexual problems may develop as the result of the emotional impact of being infertile. For example, infertile individuals frequently become depressed when attempts at conception fail each month. This depression by itself may inhibit sexual desire, as it may in fertile individuals. But, in addition, couples may avoid intercourse at midcycle in order to save themselves from the feelings of disappointment, anger, and depression that occur with the onset of menses.

Sexual Adjustment-Empirical Evidence

Though intuition and clinical impressions strongly suggest that sexuality is likely to be threatened by infertility, the empirical literature on the psychosexual adjustment of infertile individuals is not as conclusive. The studies which have found evidence that infertility has a negative impact on sexual functioning are reviewed below.

Berger (1980) interviewed 16 couples after the male had been discovered to be infertile. Of these, 11 of the men reported experiencing a period of impotence following the discovery of their azoospermia. A similar type of study (Bell, 1981), using questionnaire data, found a high incidence of sexual problems in a group of 20 infertile couples attending an infertility clinic. Five of 20 couples reported a sexual dysfunction secondary to their infertility and a further seven couples reported a deterioration in the marital relationship.

Mai, Munday and Rump (1972) compared 50 infertile to 50 fertile couples by means of psychiatric interviews, and found

overall, that infertile couples did not seem to be different from their fertile counterparts in psychiatric pathology. However, differences were reported with regard to their sexual behaviour. Specifically, infertile women were found to feel more uncertain about their femininity, were more dissatisfied with their sexual relationships, and were less likely to experiment with different coital positions. Slade (1981) found that infertile women as compared to fertile women showed more restrictive sexual attitudes and greater sexual guilt levels. In these last two studies, of course, the direction of causality could not be determined.

Another retrospective study (Battaglia, Graziano & Scafidi-Fonti, 1983) examined the effects of infertility on sexual expression in 40 women. Based on semi-structured interview data it was found that after the discovery of infertility, frequency of sexual intercourse and sexual desire decreased, while level of sexual fulfillment remained unchanged. The reduction in frequency of sexual intercourse was attributed to the wife, since the initiation behaviour of the male partner remained unchanged. One controlled study (Freeman, Garcia & Rickels, 1983) compared behavioural and emotional factors in 49 anovulatory infertile women, with two comparison groups; fertile women and infertile women with a diagnosis other than anovulation. Neurotic personality structure and psychopathology were not significantly greater in the experimental group than in the comparison groups. Lower self-esteem and inhibited sexual attitudes were found

in the anovulatory group compared to the other two groups. Differences between groups in frequency of sexual intercourse and other sexual behaviours, however, were not statistically significant.

One final study (Fagan, Schmidt, Rock, Damewood, Halle & Wise, 1986) assessed the sexual functioning of 45 infertile couples who had requested IVF. Though as a group, scores on the Derogatis Sexual Functioning Inventory (DSFI) indicated that couples fell within the normal range of sexual adjustment, seven couples were found to be experiencing a sexual dysfunction as defined by the Diagnostic and Statistical Manual of Mental Disorders III (DSM-III). Couples with a sexual dysfunction were significantly more likely to have unexplained infertility. Once again, whether poor sexual functioning contributed to infertility problems or whether poor sexual functioning resulted from infertility was not determinable.

The designs of the above-mentioned studies suffered from several methodological weaknesses. First, controlled, empirical studies varied widely in the type of control group used. Some authors preferred comparisons with organically infertile patients, others used subjects assumed to be fertile by routine diagnosis and still others applied standardized parameters of the normal population as a control. Evaluations of infertile couples' sexual functioning varied depending on the comparison group used. Second, all these studies were carried out retrospectively and a measure

of baseline sexual functioning prior to discovery of infertility was not included, thereby ruling out the possibility of determining the direction of causality. Third, other than in two studies (Freeman et al, 1983; Fagan et al, 1986), no attempt was made to subclassify infertile couples by diagnostic group. One might expect different sexual reactions from couples whose diagnoses indicate a different likelihood of conception, as was found in the Fagan et al (1986) study. Finally, measures used to assess sexual functioning were in most cases unstandardized and aimed at broad rather than specific aspects of functioning.

Three studies found no relationship between infertility and impaired sexual functioning. In one study (Mai et al, 1972) no differences were found between anovulatory and ovulatory women, and between oligospermic and normospermic men, on such variables as coital frequency, sexual satisfaction, sexual identity and marital adjustment. Friedman (1979) compared the coital frequencies and sexual responsiveness of three groups of couples; infertile couples of unknown cause who had been trying to conceive, couples in which the husbands had been vasectomized, and couples where the male was known to be azoospermic. No significant differences were found. Thus, couples known to be sterile had the same coital frequency as couples who were trying to conceive. Finally, in a descriptive study, Leiblum, Kemmann and Lane (1987) looked at the interpersonal functioning of 59 couples who were candidates for an IVF program. Half of the

respondents reported improved marital communication, sensitivity to partner's feelings, and sense of closeness consequent to their struggle with infertility. Furthermore, more than one-fifth of the wives reported that the infertility difficulties had improved the frequency of sexual relations and increased sexual satisfaction. However, 14% of both husbands and wives noted that sexual frequency had worsened as a result of the infertility problem. It should be kept in mind, however, that candidates for IVF may represent a separate subgroup of infertile couples. Considering the extreme emotional and financial cost of IVF, only those couples who are highly committed to each other and to their goal of having children may choose to attempt this procedure.

Overall, the empirical literature indicates that there is a relationship between infertility and negative sexual expression, although the actual aspects of sexual functioning involved vary with the particular study. The most consistent finding (e.g., Berger, 1980; Fagan et al, 1986) is that sexual dysfunction occurs in a significant proportion of couples who are infertile. Another consistent finding, reported in all but one study (Battaglia et al, 1983) is that frequency of intercourse is not negatively affected by infertility, but rather it is the enjoyment of and satisfaction with sexual activity which seem to deteriorate as a result of infertility.

Personal Adjustment

There are two groups of studies which address the various emotional problems accompanying infertility. One type, characterizing the earlier studies, investigated the etiological role played by psychopathologies in infertility. These studies typically sought to describe common personality disorders and/or unresolved unconscious conflicts which resulted in an inability to conceive. In a comprehensive summary and critique of the literature published between 1935 - 1963, Noyes and Chapnick (1964) concluded that the majority of researchers of that time favoured the proposition that psychogenic factors were a major cause of infertility, even though they failed to supply any evidence for this view. In addition, most studies involved retrospective designs where objective testing with standardized tests was rare and the use of control groups rarer still. Overall, the authors concluded that their survey yielded no evidence that specific psychopathologies cause infertility. Due to the availability of Noyes and Chapnick's review those earlier studies which clearly set out to identify psychological profiles causing infertility will not be included in this review.

A second group of studies include those which examined the nature of the emotional distress resulting from infertility. The rest of this section will review the available empirical literature which has addressed the effects of infertility on individual personal adjustment.

Personal Adjustment - Empirical Evidence

One study attempted to describe the nature of emotional distress in 314 infertile women who were divided by diagnosis (Keye, Deneris, Butell, Wilson & Sullivan, 1983). Based on self-report measures, it was found that feelings of helplessness, inadequacy, and hopelessness increased with the duration of infertility, however, in general, older infertile women demonstrated less emotional distress than younger women. The nature of the distress was related to the underlying cause of infertility. Women with anovulatory infertility typically had a poorer body image and reduced self-esteem. Women with tubal disease felt more guilty and women whose infertility was due to a male factor were more dissatisfied with their sexual relationship.

Lalos et al (1985) performed a longitudinal study on a homogeneous group of infertile couples. Twenty-four infertile couples were interviewed prior to and two years after the woman's reconstructive tubal operation. In general, the wives reported poorer adjustment to infertility than their husbands. Although the marital relationship was reported to be satisfactory for most of the couples, the men reported an increased negative influence of the infertility on the marital relationship and the women reported deterioration in their sexual lives. Negative emotional (e.g., grief, depression) and social (e.g., isolation) effects were pronounced in the female both before and two years after the surgical treatment. Just before the operation, when the couples were reported to be hopeful, few subjects recognized

the need for professional help. However, two years later almost half of the women and a few men reported they needed psychosocial help and support. In another study (Veroff, 1987) comparing a similar sample to fertile controls, infertiles were found to be more depressed, lower in self and body esteem, less supported socially, and less likely to rate their marriages as happy. Another study (Desiderato, Callahan, Burnette & Toffle, 1986) found that infertile women reported less perceived ability to cope with situations (self-efficacy) than fertile women. However, when items related to fertility were excluded from the analysis, the significant difference between the two groups of women disappeared, indicating that it is largely in the area of infertility that infertile women perceived themselves as being unable to cope. In addition, infertile women were twice as likely to report experiencing depression than fertile women. No significant differences were found between infertile and fertile men.

McEwan, Costello and Taylor (1987) attempted to identify predictors of adjustment in infertile couples. They found that younger women, who belonged to a religion that places emphasis on childbearing, who did not have a confiding relationship with their partners, who were undergoing other life stresses, and who did not receive an organic diagnosis for their infertility were more likely to experience poor emotional adjustment. Furthermore, on a subjective level, women who felt responsible for their infertility and believed

their chances of conceiving were lower than the actual medical prognosis, showed poorer adjustment than their counterparts. It is interesting to note that contrary to Keye et al (1983) the length of time that a woman had been trying to conceive and cause of the infertility were found to be unrelated to adjustment.

Freeman et al (Freeman, Boxer, Rickels, Tureck & Mastroianni, 1985) reported data based on psychological evaluations of 200 couples seen at a pretreatment consultation in an IVF program. Half of the women and 15% of the men reported that infertility was the most upsetting experience of their lives. On the Minnesota Multiphasic Personality Inventory (MMPI), approximately 20% of these subjects had one or more elevated scale scores (above 70). Approximately half of these people had clinical syndromes of depression and somatization difficulties, while the remaining had personality disorders. However, the Taylor Manifest Anxiety Scale scores showed average anxiety levels.

Mazure, De l'Aune and DeCherney (1986) suggested there are two major weaknesses in most studies attempting to measure anxiety level in infertile couples. First, most studies do not use sensitive measures of anxiety, but rather employ measures of major psychopathology which are less useful since this is essentially a normal population. Second, the anxiety scales used are generally self-report, which requires an individual to be aware of his level of anxiety and be willing to report it. To correct this problem these

researchers used the Marlowe-Crowne Social Desirability Scale (M-C) (a measure of defensiveness and affect-inhibition) in conjunction with the Taylor Manifest Anxiety Scale (TMAS). This allowed them to distinguish low and high anxious individuals, as well as those who do not acknowledge anxiety as a means of coping (avoiders). Using 60 IVF participant couples, they found that 19% of the total group were both nervous and able to report anxiety, 43% reported true low anxiety, and most importantly, 38% manifested unacknowledged anxiety. Based on these data, the authors suggested that reports of anxiety levels in infertile couples may be underestimated because infertile couples may deny anxiety.

In summary, the majority of studies report that infertile couples experience significant inter- and intra-personal psychological distress in association with being infertile. Although the specific variables associated with infertility have not been isolated, some trends seem to be emerging. For example, it appears that women suffer more than their husbands. Second, there seem to be only a few psychological consequences that affect all infertile couples (e.g., depression), and the impact of infertility may vary depending upon factors like age, duration of infertility and diagnosis. Finally, for most couples the negative emotional effects of infertility remain specific to infertility and do not contribute to gross psychopathology.

The Infertility Investigation

The rationale of the infertility investigation is to establish whether ova and sperm are being produced and whether there is some barrier to their union. This generally requires a thorough medical, sexual and social history, a physical examination of both partners, and several diagnostic and laboratory tests.

Psychological Aspects of the Infertility Investigation

Sexual Adjustment-Anecdotal Evidence

On intuitive grounds, the infertility investigation would seem likely to have detrimental effects on a couple's sexual relationship. The reasons for this are twofold. First, undergoing an investigation for infertility serves as a constant reminder to couples of their reproductive failings. Second, the evaluation of infertility requires a great deal of emphasis on sexual performance. Patients must expose intimate parts of their bodies for examination and manipulation and provide exact details of their sexual lives. To meet the demands of certain test procedures, restrictions are often placed on the time of month couples are to engage in coitus, on the type and frequency of sexual activity and position to be employed. With many of the tests, such as semen analysis and the Post-Coital test (PCT or Huhner test) couples, especially the male partners, are asked not only to perform on demand, but to perform with the knowledge that their performance will be judged and graded and may prove to be the reason for the couple's infertility (Bell, 1981). These circumstances, combined with the frustrations and

anxiety already experienced by the infertile couple, provide an ideal backdrop for the development of sexual dysfunctions. In fact, Masters and Johnson (1970) postulated that variables such as these (restricting a couple's sexual expression, engaging in sex on demand, performance anxiety and a poor sexual self-image) are the major contributing factors to sexual dysfunction. Gray (1981) concluded that the infertility investigation may contribute to psychosexual problems, which in turn can complicate the diagnostic value of further infertility testing and lead to a multifaceted infertility problem.

There are a few case studies of instances where sexual problems developed as a result of the infertility investigation. For example, Bullock (1974) described a male with normal sexual function prior to the infertility investigation. During the investigation, however, he was consistently unable to achieve erection to permit semen analyses or PCT examinations (a test in which sperm motility is evaluated by analyzing the vaginal and cervical mucus within several hours after sexual intercourse). Palti (1969) reported on a case where a male developed situational erectile dysfunction which occurred only on those days when the couple was instructed by their physician to have intercourse.

Sexual Adjustment-Empirical Evidence

The number of empirical studies in this area, again are limited. Drake and Grunert (1979) evaluated the incidence of sexual dysfunction in infertile couples at the time of PCT testing. Infertility was present for one year at least and the initial interviews ruled out sexual dysfunction as the cause. Of 51 males in the study, 20% were repeatedly unable to perform for the PCT. Of these, half also reported erectile difficulties during their partners' fertile period. Most affected husbands observed that their wives' interest in sex was concentrated on mid-cycle which provoked hostility and further stress. In addition, couples reported that the recording of basal body temperature and coital charting, both of which are common procedures in the early months of the investigation, served to further inhibit the enjoyment of sexual activity for both partners. Bonnar (1979) interviewed 500 infertile couples who had undergone an investigation between 1972-1974. One of the most common complaints by couples was that scheduled intercourse and PCT's produced frustration, loss of libido and marital unrest. Several couples were reported to have discontinued the investigation because of the deleterious effect it was having on their marriages. However, other couples felt the investigation improved their relationship by forcing discussion of the issues. McGrade and Tolor (1981) retrospectively explored the impact of the investigation on sexual and emotional functioning in 126 couples. After initiation of the

investigation, wives reported greater deterioration of their sex lives, less interest in and desire for sex, and receiving less satisfaction from sexual activity. Forty-five percent of all respondents admitted to some difficulties with sex during the fertile period, and 27% indicated some difficulty with the PCT. Overall, husbands did not perceive the investigation as straining their sex lives to the extent that wives did.

Morse and Dennerstein (1985) carried out a retrospective, pilot survey of infertile couples who presented for IVF treatment. Almost 71% of wives reported that their participation in infertility investigations had changed their sexual enjoyment 'for the worse'. The adverse effects which were cited most often were complaints that sex activities had become mechanical, "tied to the calendar", less spontaneous, and too purposeful. It was interesting that 90% of wives reported that they had expected infertility investigations to make no difference to their lives.

Lalos et al (1985) also looked at the psychological effects of the medical investigation on 30 infertile couples. This was a prospective study that looked at the influence of basal body temperature (BBT) recording and semen analysis on psychological factors. It was shown that for all subjects, intercourse synchronized with BBT had a negative effect on sexual functioning. The planning made intercourse a burden and sometimes caused sexual aversion, lack of orgasms and erectile difficulties. With regard to semen analysis, half of the men experienced this examination as psychologically

difficult. Feelings of shame, embarrassment, degradation and stress were frequently described. Similarly, Camilleri (1980) found that of 332 infertile couples undergoing investigation, 26% of the men refused to have their semen analyzed because of anxiety-related reasons.

De Vries, Degani, Eilschitz, Oettinger, Zilberman and Sharf (1984) had 50 women complete a questionnaire immediately after the PCT test. The questionnaire inquired about their sexual functioning in relation to the 'scheduled intercourse' encounter preceding the PCT. It was found that sexual functioning was negatively affected when engaging in coitus for purposes of the PCT. Specifically, sexual foreplay and orgasmic function decreased during the PCT sexual encounter as compared to regular sexual intercourse. The 'same-morning' PCT (intercourse within approximately four hours of PCT testing) was found to have a greater negative impact on sexual functioning than the 'over-night' PCT (intercourse the night before PCT testing). It was also shown that women who reported feeling "distant" from their partners during the PCT sexual encounter scored more poorly on the PCT, despite originally good cervical scores and normal semen analyses. The authors suggested the possibility that negative feelings during sexual intercourse could affect physiohormonal functioning, resulting in unfavorable PCT findings.

In an attempt to replicate the findings of De Vries et al (1984), Takefman, Brender & Tulandi (1986) investigated the

relationship between PCT findings and couples' sexual functioning in 40 infertile women who were routinely undergoing 'same-morning' PCTs as part of their evaluation. Based on questionnaire responses, it was found that significant differences existed on a number of variables when comparing normal sexual encounters and those associated with the PCT. Specifically, nervousness during sex, closeness to partner, comfort level, arousal level, sexual satisfaction, duration of encounter, number of sexual activities engaged in per encounter and husbands' erectile ability were all negatively affected during the PCT encounter as compared to unprogrammed sexual functioning. It was also found that women who were less comfortable with the PCT sexual encounter, experienced less sexual arousal, which was associated with more unfavorable PCT results.

Personal Adjustment-Empirical Evidence

Daniluk (1988) studied 44 couples beginning an infertility investigation to determine if changes occurred in levels of psychological distress as they progressed through the medical investigation. Subjects were tested at four time periods; immediately after initial medical visit, four weeks later during medical testing, within one week of receiving a diagnosis, and at six weeks after diagnosis. Using a measure of psychological distress it was found that the infertility investigation was most stressful at the time of the initial medical contact compared to the latter three testing periods. This appears to be the only empirical evidence suggesting

that it is not the investigation per se, but rather beginning a work-up, that is most anxiety provoking. In addition, female participants were observed to exhibit substantially higher levels of distress than the male subjects at the time of diagnosis. Different psychological reactions were found between partners' identified as the source of the couples' fertility problem and the non-identified partner however, this was confounded by the observed sex difference. Finally, marital and sexual satisfaction scores of the participants remained in the normal range throughout. Considering these findings, it is surprising that 6 weeks post-investigation, approximately 96% of subjects indicated a belief that there was a need for psychological services for infertility, and 63% reported that they personally would have availed themselves of such services had the opportunity been provided.

In contrast to Daniluk's finding that anxiety decreased as the investigation progressed, are Berg's (1988) findings. This was a cross-sectional study in which 104 subjects were separated into different phases of the infertility work-up to examine the impact of duration of the work-up on psychological functioning. The findings showed that for the first year of the work-up increases in its duration were generally associated with increments in stress indices.

In summary, although there is only suggestive evidence due to the small number of empirical studies and their retrospective nature, the general consensus in the area is

that the medical investigation adds to an already difficult situation. Daniluk's recent study (1988) demonstrates improvements are occurring in the research designs being employed. She used a homogeneous sample of infertiles, studied them prospectively throughout a period of the investigation and six weeks following, and looked at sexual, inter- and intrapersonal aspects. Unfortunately her measures were confined to global psychological symptomatology and ratings of sexual satisfaction with no data on more specific behavioural functioning. In addition, she considered male and female spouses as independent subjects, even though their scores should be considered dependent given the relationship between partners.

Psychological Interventions

Infertility Counselling

Considering the emotional, sexual and marital problems that are believed to develop during the infertility investigation, and recognizing the time constraints on physicians, many experts have suggested that infertility services should include personnel who could treat psychologically-based problems. Short-term educational, supportive and behaviourally-oriented therapies have been proposed by many experts (Bresnick, 1984; Donnis, 1984; Frank, 1984; Greenfeld, Mazure, De L'Aune, DeCherney & Haseltine, 1984; Porter & Christopher, 1984). At present, however, such services remain rare, and empirical evidence on their usefulness is even rarer.

Some researchers have attempted to evaluate the effectiveness of their counselling programs for infertile couples. For example, Bresnick and Taymor (1979) evaluated the effectiveness of five sessions of psychological counselling for infertile couples. The results showed that 65% of couples reported improvement in their attitudes toward their infertility, though there were no significant changes in communication with spouse and sexual adjustment. Although this study demonstrated some benefits to couples, its value is limited due to its reliance on informal evaluation, and because baseline measurements were not taken and control groups were not used for comparison purposes.

Two other studies with similar methodological problems evaluated the effectiveness of group sessions for infertile couples beginning an investigation. In one study (Rosenfeld & Mitchell, 1979) the majority of couples reported an improvement in their sexual functioning, and a reduction in the frequency and duration of such symptoms as fear, anxiety and depression. Patients also reported more positive gender role feelings and a greater sense of control over events. The other study's informal findings (Karahasanoglu, Barglow & Gowe, 1972) indicated an improvement in the spontaneity and frequency of sexual intercourse, diminished tension between partners, and more positive attitudes toward self and partner.

Finally, Sarrel and DeCherney (1985) conducted an outcome study involving 20 couples with secondary, unexplained

infertility. One group was seen by a psychotherapist for a two hour session. A control group received no intervention. After 18 months of follow-up, six of the ten women in the experimental group had become pregnant while only one of nine women in the control group had achieved pregnancy. However, since no concomitant measures of psychological functioning were taken, one cannot determine what factors contributed to the successful pregnancy outcome. Furthermore, no mention is made of the proportion of diagnostic problems within each group.

It is clear that the effect of these studies is to encourage the use of counselling programs for couples undergoing infertility treatment, although the informal nature of the studies do not permit any firm conclusions.

Preparatory Information

Menning (1977) reported that one of the most helpful aids to couples undergoing an infertility investigation was supplying information about various diagnostic procedures. She found that this allowed couples to become experts in their area of special concern which gave them a greater sense of control and reduced stress. Many studies have found support for the hypothesis that preparing patients for stressful medical procedures by informing them about what to expect, improves recovery rate and reduces stress (Andrew, 1970; Auerbach, Kendall, Cuttler & Levitt, 1976; Auerbach & Kilmann, 1977; Johnson, 1975; Linderman & Van Aerman, 1971; Melemed & Siegel, 1975; Mumford, Schlesinger & Glass, 1982;

Reading, 1979; Schmitt & Woodridge, 1973; Wallace, 1984; Wilson, 1981).

Most of the research on the effectiveness of preparatory information in reducing stress has been carried out on patients undergoing surgical procedures. A study by Egbert et al (Egbert, Battit, Turndorf & Beecher, 1963) was one of the first to report that a supportive and informative visit by a physician before surgery, significantly reduced pre-operative anxiety and improved recovery. Since then, the majority of studies have supported the benefits of information-giving. Even in those studies that did not find objective benefits of information, in almost all instances patients did indicate a personal appreciation for the informational material provided (cf. Leydhecker, Gramer & Krieglstein, 1980; Libman, Fichten & Brender, 1987).

Why information-giving (or preparation) benefits patients has not yet been clarified. Three major theories have been proposed. One suggests that preparation is effective because it causes patients to rehearse mentally how they will cope with the pain and discomfort after surgery (Meichenbaum, Turk & Burstein, 1975). A second proposal suggests that information provides patients with accurate expectations for the future which reduce the unpredictability of the event (Johnson, 1975). A third suggestion, derived from theories of classical conditioning maintains that preparation improves recovery because it provides a desensitizing experience that extinguishes conditioned fear responses (Shipley, Butt,

Horwitz & Farbry, 1978). Although each theory has some support, none seems to adequately account for the range of results (Wilson, 1981).

Though in the majority of studies, results of preparatory information have been positive at least on some outcome variables, specific benefits differ depending on individual and situational factors. For example, Miller (1980b) hypothesized that the benefits of information will vary depending on the controllability of the stressful event, how invasive it is and on an individual's coping style. In addition, results of studies may differ because information is often confounded with other types of interventions like psychological support and skills training (Gil, 1984), and only a few studies have verified whether patients actually comprehended and retained the information they were given (Reading, 1981).

With regard to the possible harmful effects of preparatory information, Janis (1958) argued that too little or too much information may be detrimental to patients. Other experts have hypothesized that patients who are predominantly characterized by avoidance or denial defences, will actually become more anxious following reception of preparatory information (Andrew, 1970; Delong, 1971; Felton & Revenson, 1984; Langer, Irving, Janis & Wolfer, 1975; Miller, Brody, Leinbach, LaPorte & Summerton, 1982; Shipley, Butt, & Horowitz, 1979; Sime, 1976). This hypothesis is based upon the theory that information directs attention toward a

danger, and thereby increases awareness of the threat and increases stress. Since vigilant (information seeking) subjects are already psychologically in the presence of the danger signal, preparatory information does not increase stress further in their case but would in the case of information avoiders (Gil,1984).

Miller (1980a) proposed the "Blunting Hypothesis" which specifies the conditions under which information has stress reducing effects and when it does not. This hypothesis accounts for individual differences between those who prefer predictability under threat ('monitors") and those who prefer unpredictability ('blunters"). Blunters use such coping strategies as distraction, self-relaxation, reinterpretation, denial, detachment and intellectualization because these help blunt the psychological impact of physically present danger signals. In order to identify in advance those disposed to distract themselves or to monitor danger signals, Miller (1979) devised the Miller Behavioural Style Scale (MBSS), a measure for identifying monitors and blunters.

To test her blunting hypothesis, Miller and Mangan (1983) carried out an experiment in which 40 gynecological patients about to undergo colposcopy were given the MBSS questionnaire and based on their scores divided into monitors (information seekers) and blunters (information avoiders). Half in each group were exposed to voluminous preparatory information, and half to the usual modest level of information provided by hospital personnel. Overall, the results indicated that low-

information patients expressed less subjective arousal than high-information patients. Furthermore, blunTERS showed less subjective and behavioural arousal than monitors. In addition, patients' level of psychophysiological arousal was lower when the level of preparatory information was consistent with their coping style; that is, blunTERS were less aroused with low information and monitors were less aroused with high information. Based on these findings, Miller drew three conclusions. First, that voluminous preparatory information may exacerbate patient distress. Second, that being a monitor is a more costly emotional style than being a blunter. And finally, that variations in coping style interact with and determine the impact of information. These findings have since been replicated in a more recent study (Miller, Brody & Summerton, 1988).

Miller's results, though clearly illuminating, should be generalized with caution to infertility investigations. One could assert that the long duration, invasiveness and many diagnostic tests that are characteristic of the infertility investigation cannot be compared to an acute, benign surgical procedure like a colposcopy. The infertility medical investigation is made up of many different diagnostic procedures ranging from simple blood tests to surgery. Each of these involve different degrees of physical pain, anticipatory stress, controllability, invasiveness and significance. As well, each test varies in its demands on the patient with respect to patient participation, inconvenience

and which spouse is predominantly involved. For these reasons it may be faulty to generalize the results of studies investigating the value of information for one surgical procedure to the case of the multidimensional infertility work-up.

Two studies did look at the impact of coping styles with regard to infertility in general, however their findings were directly opposed. The findings of one study (Fleming & Burry, 1985) showed that avoidance strategies were not effective in coping with infertility. In this study, 83 infertile couples who were infertile for varying lengths of time were examined to evaluate how they coped with their condition. It was found that about 50 - 60% used avoidance and distraction techniques, however these strategies were not helpful in reducing their negative reactions to being infertile. On the other hand, Veroff (1987) found that blunting strategies, good social support systems and a confiding relationship were related to better emotional and sexual adjustment in women with prolonged infertility. Because the findings of these two studies are directly opposed, it is too early to draw firm conclusions on the value of different coping strategies with regard to infertility. In addition, as pointed out by Roth and Cohen (1986) it is possible that different coping strategies may be more effective for different kinds of stresses. For example, blunting may be more beneficial in the early phase of a traumatic event, or if it occurs in a situation that is both uncontrollable and too threatening. In

other circumstances, monitoring may be the more effective strategy. Since these latter two studies used subjects who were infertile for various lengths of time and with different diagnoses (controllability), it is difficult to speculate on the reasons for the contradictory findings. Moreover, since the infertility investigation can be considered an early phase of the infertility process, it is difficult to extrapolate the findings on coping with infertility in general to that of the infertility evaluation.

To this writer's knowledge, no systematic studies have been carried out on the value of preparatory information for the infertility work-up specifically. However, the literature does make cursory reference to the benefits of information-giving with regard to the infertility investigation. In a study described previously (McGrade & Tolor, 1981), couples who eventually became pregnant were compared to those who did not conceive, with regard to their attitudes about receiving information. Those couples who became pregnant were more inclined to report that they would have appreciated information prior to the investigation. However, husbands whose wives never became pregnant, in retrospect, said prior knowledge about the investigation would have been a deterrent to their participation. In this case, the uncontrollability of the situation for couples who did not achieve pregnancy may have influenced their preference for avoidance.

Wallace (1985) evaluated the benefits of information for 80 female patients undergoing laparoscopy, as part of their

infertility work-up. Patients were divided into three groups. The experimental group received routine hospital care plus a maximally informative booklet. One control group received only routine care while a second control group received routine care plus a minimal information placebo booklet. The results showed that the experimental group had lower fear scores the morning of surgery, lower worry scale scores, and lower STAI scores before and after surgery, and at 1-week follow-up. These results support the value of receiving high information regardless of individual coping style. However, it is not clear whether these results would be generalizable to other aspects of the infertility investigation, or whether they are limited to the surgical situation.

The major implications from this body of research are that preparatory information will likely benefit infertile patients undergoing medical testing in some way. However, the degree of beneficial effects may vary depending upon the content of the information, predisposing patient variables such as coping style, and the medical circumstances. Furthermore, since it is now widely held that patients are, in fact, entitled to be well informed about medical procedures, the research goal becomes discovering the optimal amount and type of preparatory information for couples in this situation.

Present Study

Within the many limitations noted in the literature on psychological aspects of infertility, the findings suggest

that infertility is a stressful life event which may negatively affect couples' sexual relationship, emotional stability and coping ability. In addition, some findings have suggested the medical investigation for infertility may aggravate negative psychological reactions, which may further impair fertility. On the other hand, others have suggested that negative reactions may decrease during the investigation. The present study was undertaken to (a) examine the specific parameters of psychological reactions to the infertility investigation in a systematic way, and (b), to evaluate the effectiveness of two different types of informational programs designed to reduce negative psychological reactions to the investigation. As was noted previously, there is a serious absence of empirical research on the effects of information on adaptation to the infertility investigation.

The present study attempted to control for a number of confounding variables: (1) The sample selected was homogeneous and well-defined. (2) The battery of questionnaires included self-report measures of various aspects of functioning which for the most part were standardized and specific. (3) Objective indicators of adaptation including pregnancy rate and compliance were assessed. (4) The design was a prospective one which measured functioning from commencement of an infertility medical investigation until its conclusion. (5) The study permitted and provided evaluation of two different types of

information; common sexual and emotional reactions to the investigation, since these two areas of functioning appear to be most threatened by the infertility investigation. (6) The design included a minimal-informational control group, since it is usually not possible to create an information-free control group in a hospital setting (Ludwick-Rosenthal & Neufeld, 1988). Thus, three groups exposed to different forms of preparatory information were evaluated and compared.

Aims of the Present Study

The specific objectives of the present investigation were the following:

(1) To collect information on the baseline functioning of infertile couples beginning an infertility investigation.

(2) To investigate whether subjects in the two experimental groups, and in the minimal-information control group demonstrate different benefits after exposure to the three different types of preparatory information. It was predicted that the group receiving the sexual information would demonstrate better sexual functioning at post-investigation as compared to the other two groups; and the groups receiving the emotional information would demonstrate better emotional functioning compared to the control group.

(3) To examine the effectiveness of individual coping styles in adapting to the investigation and to explore the relationship between amount of preparatory information and coping style.

(4) To investigate whether couples with different diagnoses demonstrate different psychological reactions at the completion of their investigation.

(5) To identify specific psychological predictors that differentiate couples who adapt favourably from those who adapt unfavourably, to the demands of the infertility investigation.

(6) To attempt to construct specific psychosocial profiles associated with successful conception, six months following the completion of the investigation.

Method

Subjects: The final group of subjects consisted of 39 volunteer, married couples who were commencing a medical investigation for infertility at the Royal Victoria Hospital or Sir Mortimer B. Davis Jewish General Hospital, in Montreal, Canada. The subjects were randomly assigned to three equal groups.

In order to maximize the likelihood that any psychological changes observed would be due to the experimental manipulations, an attempt was made to secure a subject sample which was as homogeneous as possible. Several criteria were employed in selecting subjects for this study. These included:

1. Couples must have been married and failed to conceive following at least one year of regular sexual relations

without contraception; (i.e., an intercourse frequency of at least three times during the mid-cycle (ovulation) or six times per month spaced throughout the month).

2. Females were experiencing primary infertility; i.e., no previous natural children, miscarriages or ectopic pregnancies.

3. Subjects did not undergo any medical evaluation for infertility for at least one year prior to participation and had not received a diagnosis for their infertility. In other words, all subjects at the start of the study were unaware of the reason for their failure to conceive.

4. The female was between the ages of 18 - 40.

5. Both partners were willing to comply with the conditions of the project and agreed to sign a consent form explaining subject requirements and experimenter responsibilities. (See Appendix A)

6. Both partners agreed to undergo the five diagnostic tests basic to an infertility investigation (i.e., basal body temperature (BBT) monitoring for approximately three months, Post-Coital testing (PCT), Hysterosalpingogram (x-ray of uterus and fallopian tubes), semen analysis, blood tests, and laparoscopy when appropriate).

7. Neither member of the couple exhibited gross psychopathology as measured by a symptom checklist (Brief Symptom Inventory - 3 standard deviations below the mean, Derogatis, 1975) or disturbed marital adjustment (Marital Adjustment Scale - below 80, Locke-Wallace, 1959).

8. Both members of the couple were able to speak and read English well enough to understand the video programs and complete questionnaire measures.

Over a three year period, from January 1985 through December 1987, a total of 208 couples indicated interest in the project and therefore received, at least a telephone screening call by the investigator. On the basis of the telephone interview, 101 couples (49%) were eliminated because they did not meet the criteria for subject selection as outlined above. Table 1 shows the percentages of subjects eliminated with respect to each subject criterion. A further 36 couples (17%) refused to take part after being given more detail on the purpose and requirements of the project. The majority of these couples gave time constraints as the reason for not participating. An additional 16 women (8%) indicated that they were interested in taking part but their husbands would not comply. Five other couples (2%) were deemed inappropriate at the first couple interview. Two couples refused to fill out the sexual questionnaires, another was uncertain about trying to conceive, another was engaging in sexual activity only one time per month and the female spouse of the fifth couple had medical problems that complicated conception probabilities

Of the 50 couples that met the selection criteria and signed the Consent Form agreeing to participate, eleven couples (22%) withdrew from the study. Of these eleven couples, two withdrew without explanation during the second

Table 1

Percentages of Subjects Who Failed to Meet Selection Criteria

Criteria	Percentage of Subjects
Infertile less than 1 year	10
Unmarried	2
Secondary Infertility	18
Pregnant	4
Previous medical evaluation	15
Cause of infertility already known	22
Female over age 40	4
Language difficulties	22
Other	3

Note. N = 101

meeting devoted to questionnaire completion. Four couples withdrew during the course of the study because they were experiencing marital problems and had separated. Five couples decided not to continue the medical evaluation of their infertility. Table 2 presents selected demographic variables on the remaining 39 couples who formed the sample for this study.

In order to assess the representativeness of this volunteer sample, a comparison was made with a random sample of 40 first-time investigated infertile couples obtained from the medical files of an infertility specialist, for the year 1984. Since only ages of spouses and years infertile were available in the medical files, only these variables were compared. Independent t-tests performed on these three variables between the two samples found no significant differences. Table 3 presents the means and standard deviations on the three variables for both samples.

Materials: The following 13 self-report, questionnaires requiring written responses formed the assessment battery.

(See Appendix B):

I. Demographic Questionnaires:

Patient Profile Form (Modified version) (Pion, 1975).

This self-report form was designed to provide detailed information on a subject's general medical, gynecological, contraceptive and reproductive history. It has been used as an assessment tool in various clinical settings (e.g., Jewish

Table 2

Selected Demographic Characteristics of the Sample

Variables	Couple	Male	Female
Age			
	M	32.3	29.8
	SD	5.2	4.1
Education			
(years)	M	14.9	14.4
	SD	3.2	2.8
Religion ^b :			
Catholic		21 (54%)	18 (46%)
Protestant		5 (13%)	8 (21%)
Jewish		9 (23%)	8 (21%)
Other		4 (10%)	5 (12%)
Occupations ^b :			
Professional		8 (21%)	10 (26%)
Business		12 (31%)	5 (13%)
Skilled labor		9 (23%)	6 (15%)
Sales		6 (15%)	2 (5%)
Clerical		2 (5%)	10 (26%)
Student		1 (3%)	-
Unemployed		1 (3%)	6 (15%)

Variables	Couple	Male	Female
Years married			
M	4.1		
SD	2.5		
Combined income ^a			
Mdn	4.43		
Range	6.00		
Years infertile			
M	2.3		
SD	1.7		

Note. N=39 males and 39 females

^aCombined income scale - 8 categories, median and range reported; Category '4' = \$30,000 - \$40,000; '5' = \$40,000 - \$50,000.

^b_n's are indicated first; percentages in parentheses.

Table 3

T-Test Comparisons between Study's Sample and ComparisonSample

Variable	df	Study's Sample ^a	Comparison Sample ^b	t
Age (Male)	77			
M		32.33	31.88	.41
SD		5.23	4.82	
Age (Female)	77			
M		29.82	28.83	.98
SD		4.10	4.88	
Months Infertile	77			
M		27.18	27.30	.02
SD		20.21	23.77	

Note. All t values not significant; $p > .10$.

^a $n = 39$; ^b $n = 40$.

General Hospital). This form was filled out once at pre-treatment.

Background Information Form

This form was devised for the present study to inquire about various personal and demographic variables such as age, religion, ethnic background, etc. This form was completed only at pre-treatment.

II. Interpersonal Questionnaires:

Marital Adjustment Scale (MAS) (Kimmel & Van der Veen, 1974)

This new version of the Locke-Wallace Marital Adjustment Scale (1959) was used to evaluate marital compatibility and satisfaction. This test is a highly reliable and well validated measure of marital adjustment (Schiavi, Derogatis, Kuriansky, O'Connor & Sharpe, 1979). It contains 23 items with scores weighted to reflect current sex differences in patterns of responding.

Sexual History Form (SHF)

This 29-item questionnaire obtained information on specific aspects of sexual functioning, including those thought to be affected by the experience of infertility and its investigation. It was developed specifically for this study and is based on the Sexual History Form designed by Nowinski and LoPiccolo (1979). Variables calculated from items in this questionnaire included 'Communication' which measured how well spouses know each others' sexual likes and dislikes-(derived by summing questions #1-3). 'Male Sexual

Problems' which evaluated the extent of male sexual problems (the sum of items #8-11). 'Female Sexual Problems' which measured the extent of female sexual difficulties (derived by summing items #12-15). 'Sex for Procreation' which evaluated differences in one's sexual functioning (frequency, repertoire, enjoyment, duration, arousal) between the fertile and non-fertile periods of a cycle (derived by summing items #17-21).

Derogatis Sexual Functioning Inventory (DSFI) (Derogatis, 1975).

This questionnaire measured individual sexual adjustment in eight major domains of sexual functioning, with a corresponding subtest for each. These included sexual; information, experience, drive, fantasy, attitudes, and satisfaction; affect, gender role identification, and body image. The DSFI also included a sexual intercourse frequency item and the Brief Symptom Inventory (BSI) subscale which is a symptom inventory designed to reflect the psychological symptom pattern of psychiatric and medical patients. To obtain a total score on the DSFI, scores on each subtest are standardized and then summed. This summary score communicates the individual's overall level of sexual functioning. Norms for this inventory were based on data from 200 normal and 200 sexually dysfunctional individuals. Reliability and validity have been established using the data from this sample (Derogatis, Rickels & Rock, 1976).

III. Personality Questionnaires:

Eysenck Personality Inventory (EPI) (Eysenck & Eysenck, 1968).

Personal adjustment was assessed by means of this questionnaire. This is a measure of two personality dimensions: neuroticism-stability and extroversion-introversion. A lie scale is included which monitors degree to which subjects respond in a socially desirable way and can be considered as a defensive personality trait measure. The test-retest reliability coefficients of the neuroticism and extroversion scales are 0.84 and 0.82, respectively. Construct and concurrent validity have been demonstrated (Eysenck & Eysenck, 1968). This test was administered once, at pre-treatment.

State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch & Lushere, 1970).

This questionnaire measures two anxiety constructs: state anxiety and trait anxiety. The trait scale asks people to describe how they generally feel with respect to 20 statements. The state scale requires subjects to indicate how they feel about the same 20 statements presently. Measures of internal consistency range from 0.82 - 0.92 for both the trait and state scales. Construct and concurrent validity have been adequately demonstrated for this inventory (Spielberger et al, 1970). The trait scale was filled out only at pre-treatment, the state scale, at the pre- and post periods. Nijs, Koninckx, Verstraeten, Mullens and Nicasy

(1984), after a careful analysis of the STAI, reported that it can be considered a stress inventory as opposed to a measure of anxiety. The Trait scale was found to be a good measure of one's vulnerability to be stressed and the State scale a measure of one's stress level at a given moment.

Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mook & Erbaugh, 1961).

This is a clinically derived scale consisting of 21 items. Each item consists of four statements and asks the subject to choose the one which describes 'how you have been feeling the past week, including today.' The scale has a split-half reliability of 0.93 and test retest reliability of .78 (Oliver & Burkham, 1979), and has been validated against clinical judgements of depression (Bumberry, Oliver & McClure, 1978). It has also been used in previous studies of infertility and pregnancy outcome (Desiderato et al, 1986; Garner, Kelly & Arnold, 1984; Hearn, Yuzpe, Brown & Casper, 1987; Malfese, Bricker, Manion, Beadnell, Yaple & Moires, 1987).

Miller Behavioural Style Scale (MBSS) (Miller, 1979).

The MBSS consists of four hypothetical, stress-evoking life events of an uncontrollable nature. Each is followed by eight statements which represent different ways of coping with the situation. Subjects mark all statements which might apply to them. The total score allows the identification of two types of responders; monitors and blunterns. Monitors are those who cope with stress by seeking information and

blunters prefer to diminish the psychological impact of stressful events by having the event remain unpredictable. The monitoring score is derived by summing the number of monitoring options endorsed across the four situations (higher score equals more monitoring). The blunting score is derived by summing the number of blunting options endorsed across the four situations (higher score equals more blunting). A total score is formed by subtracting the blunting score from the monitoring score (Miller et al, 1988). This scale has demonstrated good discriminant and predictive validity in that it has been shown to predict preference for information versus distraction in response to various threatening laboratory and clinical situations (Chorney, Efran, Ascher & Lukens, 1982; Miller, 1981; Miller, Brody, Leinbach, Laporte & Summerton, 1982; Miller & Mangan, 1983; Miller et al, 1988). This scale was administered at pre-treatment only.

IV. Infertility Questionnaires:

Fertility Information Questionnaire (FIO)

This measure was developed for the present study. It consists of 30 true-false statements regarding male and female reproductive anatomy and the infertility investigation, including some common misconceptions about infertility. It was used to evaluate an individual's general fund of information regarding reproductive functioning.

The psychometric properties of this questionnaire were assessed using a sample of 59 university students (Colton &

Takefman, 1985) The mean score on the FIQ was 21.35, with a standard deviation of 3.99. Reliability was established by the split-half method ($r(58) = .74, p < .001$), the Kuder-Richardson Formula 20 ($r(58) = .78, p < .001$) and test-retest stability ($r(25) = .79, p < .001$).

Concurrent validity was demonstrated between the FIQ and the Sexual Information Subtest of the Derogatis Sexual Functioning Inventory ($r(58) = .69, p < .001$). Construct validity was assessed by dividing the sample of 59 subjects into two groups; an Information group, and a Non-Information group. The Information group viewed a relevant information video on facts about infertility. The Non-Information group viewed a control video. Subjects completed the FIQ before and after viewing the video tapes. Group scores on the FIQ were compared using a 2x2 ANOVA with repeated measures. A significant group by time interaction effect was found, $F(1, 57) = 24.54, p < .001$. Post hoc tests indicated that the Information group's post-video FIQ scores were significantly higher than their pre-video scores ($p < .05$).

Feelings About Infertility Questionnaire (FAI)

This 5-item questionnaire examined the impact of infertility on various aspects of one's life. It formed part of a battery of measures that was used in S.R. Leiblum's study (personal communication, September 24, 1984) evaluating the emotional impact of in vitro fertilization on couples. This questionnaire has demonstrated good construct validity in that it supported previous findings describing the

reactions of couples to an IVF failure experience. In addition, it was able to appropriately distinguish between husband and wife responses to infertility and between responses of those couples with other children and those without (Leiblum et al, 1987). Variables derived from this questionnaire included 'Support', which measured the degree of support an individual perceived from family and friends with regard to their infertility (derived by summing items A-F in question #1). 'Marital Disharmony' measured the impact of infertility on various aspects of a couple's marriage (derived by summing items A-H in question #2). 'Infertility Feelings' inquired about a subject's anticipated negative reactions to never conceiving (derived by summing items #B-D,F,G,and I-L in question #3). 'Alternatives' measured the degree to which a couple would consider alternatives to natural conception (derived by summing items A, E and H in question #3). 'Conception Expectations' asked couples to rate what they believed were their chances of conceiving naturally (question #4).

V. Intervention Questionnaires:

Post-Questionnaire Form

This form was devised for the present study and consists of four evaluative questions rated on a 5-point scale. The questions inquired about any changes over the duration of the investigation in ability to cope with infertility (item #1), in feelings about oneself personally (item #2) and sexually (item #3), and also asked the subject to rate the helpfulness

of the informational program (item #4). A summary score consisting of the total ratings of the first three items was computed as an overall measure of coping with the investigation. This questionnaire was completed at post-treatment only.

Film Retention Questionnaire (FRO)

This form was made up of 20 true/false questions that were derived from information provided by two videos (See Intervention Techniques below). It was completed by couples after viewing a video tape, to verify that the technical information presented to couples was retained and understood.

VI. Interviews (Appendix C)

Two structured interviews were carried out with each couple. One occurred before couples signed the consent form, the other after they had received a diagnosis.

Pre - Interview: This 30 minute interview was used as a screening tool and to provide data on matters relating to health, infertility status, sexual functioning and stress. Though spouses were interviewed together, each was given the opportunity to respond. Subjects' answers were recorded during the interview.

Post - Interview: This was a 30 minute interview that primarily asked couples questions concerning their physical and emotional reactions to the tests of the infertility investigation and their ability to cope. Their overall understanding about their diagnoses, expectations and future

plans were also inquired about. The format of this interview was the same as for the Pre-Interview.

Telephone Interview: This 10 minute, structured interview was conducted with subjects over the telephone, on a monthly basis by the investigator. It inquired about the diagnostic tests couples had undergone over the month and their reactions to them. Its purpose was to monitor couples' progress with their medical investigation and to collect data on reactions to each test. In this regard scores were calculated in terms of a subject's physical response (i.e., pain, discomfort, nausea, etc.) and emotional reaction to undergoing each diagnostic test. The variables formed included males' physical and emotional reactions to the semen analysis, females' physical and emotional reactions to the hysterosalpingogram and BBT monitoring, and couples' physical and emotional reactions to the PCT. Each response was rated on a three point scale from no reaction to an extreme negative reaction.

VII. Intervention Techniques:

Two video tape films and a written pamphlet formed the intervention strategies.

Low information Video (See Attached)

This 18 minute video entitled "Fertility Investigation" is part of a series of short information films called "Gynecology: Woman Talk" produced by Take III Investments Inc. of Canada. The video was examined and approved by the Society of Obstetricians and Gynecologists of Canada. It

portrays one couple going through a complete, standard medical investigation, describes the reproductive process, the causes of infertility, the nature and purpose of each diagnostic procedure and implications of test results. The film also included some statements concerning the emotional aspects of infertility, however these were edited out for purposes of this study, along with a six minute section that reviewed treatment procedures.

This film was used for the control condition in the study. Since couples receive various bits of information at different times in their work-up, from nurses, technicians, doctors and other patients, this film was used in an effort to standardize the information in the control group's possession. It also served to equate the control group with the experimental groups in terms of the experience of viewing a videotape.

High Information Video (See Attached)

This videotape entitled "Trying Times: Crisis in Fertility" was produced by Joan Sawyer in collaboration with Barbara Eck Menning, founder of Resolve, Inc., an American counselling and referral service for infertile couples, and distributed by Fanlight Productions of Boston, Mass. This film in its original form is 33 minutes long and through the use of interviews and animation provides a comprehensive review of all aspects of infertility. The normal reproductive process, basic causes of infertility and the general infertility work-up are described, with major

emphasis on the description of test procedures that make up the basic investigation. The procedural information provided was consistent with that provided in the low information film. However, in this film, the emotional stresses, hardships and successes involved, related by infertile couples themselves, are also presented in a vivid and reassuring manner. The original film also included a review of available alternatives to natural conception; these were deleted for purposes of this study. The edited version ran approximately 15 minutes. This film constituted the intervention for one experimental group and was a major intervention component for the other experimental group.

Informal viewing of the two films by colleagues and couples undergoing infertility evaluation independent of the study established that both films were considered informative, accurate and reassuring. As well, the High Information film was considered to contain more supportive contents than the Low Information film. Infertile couples reported that the feelings expressed in the High Information film were similar to their own experiences and that they were able to relate to the couples portrayed in the film.

Fact Sheet (Appendix D)

Both films were analyzed to ensure that they provided the same type of procedural information. Eleven facts about infertility were identified in the Low Information film that were not mentioned in the High Information Film. Thus, in order to equate the procedural information imparted by both

films, a Fact Sheet consisting of these facts was compiled. This sheet was reviewed with couples from the two experimental groups at the time of film viewing.

Sex Pamphlet (Appendix D)

This is a 16 page booklet which was developed for this study. It was adapted from various techniques that originated with Masters and Johnson (1970) and have since been used in various infertility counselling programs and self-help books (c.f., Menning, 1977; White, 1981). Its purpose was to inform couples that they might experience some strain on their sexual relationships during the investigation, and that this is a common and mostly, temporary occurrence. The pamphlet clearly describes how sexual difficulties develop so that couples can take counter measures. It explains how communication between partners is important to prevent sexual problems from developing and to ensure that each partner is giving and receiving the type of stimulation they prefer. A variety of suggestions and techniques are offered for couples to aid them if they perceive problems beginning. Thus this pamphlet provided both general information about sexual functioning addressed to infertile couples and sexual skills training for reducing sexual difficulties while attempting to conceive. This pamphlet formed part of the intervention for one experimental group.

Procedure: Prior to soliciting the participation of physicians, a proposal describing the study was approved by

the Ethics Committees of Concordia University and the Sir Mortimer B. Davis Jewish General Hospital. Infertility specialists associated with the Royal Victoria and Jewish General Hospitals, in Montreal, were briefed on the objectives of the project and encouraged to assist by providing subjects. They were asked to simply inform all their new infertility patients that a research project being conducted jointly by Concordia University and the two hospitals studying the psychological aspects of infertility was being carried out. Prospective subjects were to be informed that the project involved an informational program which might be useful to them for their upcoming medical investigation. Women who agreed to meet with the investigator to learn more about the goals and procedure of the study were then referred by their physicians. If patients were uncomfortable with this procedure, they were given a card stating a few details about the project and invited to call for more information. Overall, physicians were asked to say as little as possible to patients about the specifics of the project in order to avoid the possibility of unstandardized information being conveyed to subjects prior to recruitment into the study. (See Appendix E for "Doctor's Explanation to Patient"). Weekly calls were made to the infertility services at the two hospitals to collect the phone numbers of referred patients.

Subjects were telephoned between January, 1985 and December, 1987 in the order that they were referred. For the

first telephone contact, women subjects were told the purpose of the project, what was required of them and what would be offered. Over the telephone they were screened to assess whether they met the initial selection criteria. Couples who met the criteria and appeared interested in taking part in the project were asked to meet the investigator at the hospital for the Pre-Interview.

The specific details and requirements of the project were outlined to appropriate subjects at this meeting. (See Appendix E for "About The Study"). Couples who agreed to participate were asked to sign the consent form.

As each couple entered the study they were randomly assigned to one of the three groups. In a second meeting each couple completed the battery of questionnaires individually, in a supervised, two hour session. Each couple was then asked to return the following week to begin the intervention phase of the study, that is, to view the video tapes.

High Information + Sex Group: (Info + Sex)

Individual couples in this experimental group came to the hospital one week following initial questionnaire completion to view the high information video. Before viewing the film, a rationale was provided on how information about test procedures and possible emotional reactions to them, might prepare patients to cope better with the medical investigation. (See Appendix E for "Rationale for Emotional Video".) After viewing the film, couples had a chance to ask any questions about the film, and the extra information from

the Fact Sheet was reviewed with them orally. The Film Retention Questionnaire was completed by subjects at this time to ensure that they were clear on the technical facts just presented. Any mistakes on answers to the questionnaire were corrected at the time and reviewed with the couple.

In addition to the film, couples in this group were asked to read individually the Sex Information pamphlet in the office. Couples were told that the infertility investigation in some cases created strains on couples' sexual relationship and that the purpose of this pamphlet was to propose suggestions on how to lessen the probabilities of this occurring. (See Appendix E for "Rationale for Sex Pamphlet".) Afterward, the investigator reviewed the major points made in the pamphlet and answered any pertinent questions. Couples were told to take the pamphlet home and refer to it as needed.

Couples then signed an Authorization Form (Appendix E) allowing the investigator to follow their investigation in their doctors' medical files. Couples were called on a monthly basis in order to keep track of their progress through the stages of the investigation, and their reactions to the test procedures. Phone calls were made monthly for three months or until the couple's investigation was completed if longer than three months. Concurrent with the monthly calls, the investigator consulted patients' medical files to obtain behavioural data on compliance issues, i.e., missed appointments, cancellations, etc.

High Information Group (High Info.):

Couples in this group were also seen individually for one session after questionnaire completion. They viewed the high information film and were given the accompanying rationale as provided to the Info.and Sex group. The same procedure was then followed with regard to reviewing the Fact Sheet, completing the Film Retention Questionnaire, monthly telephone calls, and medical file monitoring. The only difference between the two groups was that the sex pamphlet was not provided as part of the intervention for this group.

Low Information Group (Low Info.):

Couples in this control group were also seen for one session. The rationale regarding the usefulness of viewing an informational film was the same for this group as that given to the other two groups with the exception that there was no reference to the effects of providing emotional information. (See Appendix E for "Rationale for Control Video".) Thus an attempt was made to provide this group with the same expectation of benefits as couples in the other groups. Couples then were shown the low information video after which they had the opportunity to have questions related to the film's material answered before completing the Film Retention Questionnaire. The Fact Sheet was not used for those who viewed this film, as all the information was provided in the film. The identical procedure as for the other groups was then followed.

Post-investigation

At the end of each couple's medical work-up, they were given the Post-Interview, and the battery of post questionnaires was completed. The medical work-up was considered complete when couples received final results from the pelvic examination, semen analysis, basal body temperature monitoring (approximately three months), Post-Coital test, hysterosalpingogram and when necessary, laparoscopy. Information concerning the actual completion date of the work-up, diagnosis and treatment plan was obtained from each couple's physician. Couples were made aware when the evaluation was, in fact, completed and their understanding of the results of their work-up was verified.

Following the post-investigation session the investigator was available for discussion and clarification of test results when called upon by couples. In addition, referrals for infertility counselling were made when couples requested it or seemed in need. Three couples in the sample elected to seek such consultation. Names were recorded for those couples wishing a copy of the study's final report.

Each couple was telephoned approximately six months after the post-investigation session to learn if pregnancy had yet occurred. For those subjects who were pregnant, medical files were checked and the female's last menstrual period (LMP) date was recorded. Table 4 shows a schedule of the study's procedures and Table 5 provides a sketch of the group design.

Table 4

Schedule of Procedures

<u>Phases of Study</u>	<u>Duration</u>	<u>Procedure</u>
1. Pre-Investigation Testing	3 hours	-telephone screening -interviewing -baseline questionnaire completion
2. Intervention Administration	1 hour	-video tape viewing -Film Retention Quest. -Sex Pamphlet (Info. + Sex Group)
3. Medical Work-Up	3 - 6 mos.	-medical diagnostic testing -monthly telephone interviewing -medical file monitoring
4. Post-Investigation Testing	2 hours	-interviewing -questionnaire completion
5. Six Month Follow-up	15 minutes	-telephone inquiry re: pregnancy outcome -medical file verification

Table 5

Group Design

	Groups	
<u>Info. & Sex</u>	<u>High Info.</u>	<u>Low Info</u> ^a .
High Info.video	High Info.video	Low Info.video
Sex Pamphlet	-	-
Fact Sheet	Fact Sheet	-

Note. n=13 couples per group. All subjects followed the identical procedural format.

^aControl Group.

Results

I. Baseline Functioning

Interview Data

The pre-investigation interview provided data on several characteristics of this sample of 39 males and 39 females with respect to their infertility and investigative history. The mean duration of infertility for the sample was 2.3 years, with a standard deviation of 1.7 years. Forty-six percent (18) of the women had carried out some BBT (Basal Body Temperature) monitoring (before being referred to an infertility specialist) on advice from their gynecologist. In addition, 46% (18) of the males had had one semen analysis completed at least a year prior to beginning this infertility investigation. However, as stated in the subject selection criteria, no subject was cognizant of the cause of their inability to conceive at the time of undertaking the present medical work-up. As well, for couples who had undergone previous testing, tests were repeated for purposes of this investigation.

Evaluation of couples' contraceptive history indicated that 79% (31) of the women had used birth control pills at one time or another (mean duration 3.8 years), 28% (11) the IUD (mean duration 1.5 years), 23% (9) condoms, 15% (6) the diaphragm, and 2% (1) the Rhythm method. As well, 23% (9) of the women had experienced a therapeutic abortion in the past but not during their current relationship. (Technically,

these nine women could be considered secondary infertiles, however, since their pregnancy was unintended, occurred at an early age and may have resulted in their present infertile status, they were deemed appropriate subjects for this study).

Thirty-nine percent (15) of the females and 16% (6) of the males reported that the time interval in which they had been trying to conceive was stressful. Overall, 59% (23) of the females reported that they were worried or anxious about the upcoming investigation, as compared to 38% (15) of the males. Finally, 36% (14) of the females and 31% (12) of the males had consulted friends or professionals, and/or read pertinent literature to attain more information about their infertility.

In terms of the sample's sexual history, while only one couple reported having experienced a sexual problem of premature ejaculation in their marriage; 13% (5) of males and 23% (9) of females reported experiencing occasional sexual difficulties since trying to conceive. Specifically, for the males, 8% (3) reported inhibited sexual desire, and 5% (2), erectile difficulties. For the female spouses, 8% (3) reported inhibited sexual desire, 3% (1), inhibited arousal, 5% (2), orgasmic problems and 8% (3), dysparunia.

Couples' general health status was coded from The Patient Profile Form. Sixty-nine percent (27) of females and 74% (29) of the males were rated as having no overt medical problems. Twenty-three percent (9) of females and 21% (8) of males were rated as having a moderate health problem (i.e., regularly taking a prescribed medication for allergies, migraine headaches, or chronic fatigue). Eight percent (3) of females and 5% (2) of males were rated as having a serious health problem (i.e., activities limited by health and heart disease, asthma or diabetes). In addition, 28% (11) of males and females had at one time contracted a sexually transmitted disease.

Questionnaire Data

Psychological Functioning

The results of several standardized personality and symptomatology questionnaires indicated that mean scores for the total sample at initial testing fell within the normal range of psychological functioning. Similarly, the MAS, a measure of marital adjustment, indicated that all scores fell within the well-adjusted category.

Table 6 presents the means and standard deviations for baseline scores on these measures. For comparison purposes, the table also includes each scale's scores for normative functioning. Because males and females do not differ significantly on these scales, mean normative scores by sex were averaged for simplification purposes. Where provided

Table 6

Baseline Means and Standard Deviations on Psychological
Functioning Measures

Variable	Male	Female	Population Norms
EPI Neuroticism	6.62 (4.68)	11.44 (4.78)	9.00 (4.8)
EPI Extroversion	11.95 (3.20)	11.92 (3.20)	12.10 (4.40)
DSFI BSI	48.62 (11.50)	47.05 (11.81)	50.00 (10.00)
STAI-Trait	32.41 (6.96)	36.62 (8.88)	36.42 (10.59)
MAS	118.51 (11.06)	119.41 (11.45)	100.00 (15.00)

Note. N = 39 males and 39 females. Means indicated first,
SD's indicated in parentheses.

the norms for normal non-clinical samples were used (c.f., Derogatis, 1975; Eysenck & Eysenck, 1968; Kimmel & Van der Veen, 1974; Spielberger et al, 1970).

Group Characteristics.

There were 13 couples in each of the three groups. Group by Sex, (correlated) ANOVAs were computed for demographic and questionnaire dependent variables to assess whether spouses in the three groups were homogeneous at pre-investigation.

i. Group Differences.

Table 7 presents the means and standard deviations on variables in which significant group main effects were found. Results of ANOVAs revealed that a main effect of group on educational level was significant, $F(2, 36) = 3.57, p < .05$. Examination of the means using Scheffé post-hoc tests, collapsed across sex, indicated that the Info. + Sex group was of a higher educational level than the High Info. group ($p < .05$). On the EPI Lie Scale a main effect of group was found, $F(2, 36) = 3.70, p < .05$, with Scheffé post hoc tests indicating that the High Info. group responded more defensively at baseline than the Info. & Sex group ($p < .05$). DSFI Body-Image also showed a significant effect of group, $F(2, 36) = 4.09, p < .05$, however, Scheffé post-hoc comparisons did not reveal a significant difference between any two groups. The Least Significant Difference (LSD) post hoc tests, however, showed that at the inception of the study the High Info. group reported a better body-image than the Low Info. group ($p < .05$). No other dependent variables showed

Table 7

Group Means and Standard Deviations for Baseline Variables
with Significant Group Effects (Collapsed Across Sex)

Variable	Group		
	Low Info.	High Info.	Info. + Sex
Education	14.54 ^{ab} (1.95)	13.50 ^a (2.42)	15.96 ^b (2.65)
Body-Image	39.81 ^a (6.03)	48.00 ^b (10.52)	40.04 ^{ab} (8.32)
EPI Lie Scale	2.35 ^{ab} (1.57)	3.19 ^b (1.77)	2.08 ^a (1.34)

Note. n=13 couples per group. Means are presented first; SD's shown in parentheses. All differences significant at $p < .05$.

^aAcross rows, means with different superscripts are significantly different.

Higher scores on Body-Image indicate better responding.

significant differences at pre-investigation testing. (See Appendix F.1 - F.32 for ANOVA summary tables.)

ii. Sex Differences.

Significant sex differences were found on six dependent variables. On age, males were found to be significantly older than females, $F(1, 36) = 15.64, p < .001$. For the variable that measured infertility feelings, female spouses anticipated significantly more negative reactions to never being able to conceive than males, $F(1, 36) = 21.58, p < .001$. For the BDI, females scored significantly higher on depression than males, $F(1, 36) = 8.18, p < .01$ and similarly, on DSFI Affect, females had a higher negative affect score than males, $F(1, 36) = 4.24, p < .05$. For the STAI-Trait scale, females scored significantly higher on trait anxiety than males, $F(1, 36) = 5.08, p < .05$. Finally, on the EPI Neuroticism scale, females obtained a significantly higher neuroticism score than males, $F(1, 36) = 20.27, p < .001$.

No significant group by sex interactions were found on any of the dependent variables. Table 8 presents the means and standard deviations on variables in which significant sex main effects were found.

II. Post -Investigation Status

At the completion of the investigation, four couples had achieved pregnancy, nine couples were assigned the diagnosis of "unexplained" infertility, 11 women were diagnosed with endocrine disorders, eight with tubal factor problems and seven men were found to have male factor problems.

Table 8

Means and Standard Deviations for Baseline Variables with
Significant Sex Effects (Collapsed Across Group)

Variable	Sex	
	Male	Female
Age	32.33 (5.09)	29.82*** (4.04)
Infertility Feelings ^a	16.67 (6.04)	24.64*** (9.45)
BDI ^a	2.28 (2.88)	5.05** (5.35)
EPI-Neuroticism ^a	6.62 (4.68)	11.44*** (4.78)
STAI-Trait ^a	32.41 (6.96)	36.62* (8.88)
DSFI-Affect	55.05 (10.99)	49.79* (12.52)

Note. N = 39 males and 39 females. Means are indicated first; SD's shown in parentheses.

^aHigher scores equal more negative responding.

*** $p < .001$; ** $p < .01$; * $p < .05$

The duration of the medical investigation varied for each couple depending on such factors as their availability, laboratory and surgical scheduling and presenting history. The average length of the investigation for the couples who did not achieve pregnancy during the investigation was 14.17 weeks, with a standard deviation of 8.19 weeks. A one-way ANOVA indicated that there were no significant differences among the experimental groups in terms of duration of the investigation, $F(2,32) = 0.07, p = n.s..$

Compliance with the demands of the investigation was assessed by totalling the number of appointments couples either missed, cancelled or postponed, as determined from doctors' appointment books. Thirty-six percent (14) of couples did not miss any medical appointments, with the remaining couples missing from one to nine appointments over the course of the investigation. A one-way ANOVA by informational group found that there were no significant difference between the groups on the compliance measure, $F(2,36) = .81, p = n.s..$

The Film Retention questionnaire completed by subjects immediately following the video viewing indicated that subjects correctly answered an average of 16.58 questions out of a possible 20, with a standard deviation of 1.99. Thus it appeared that couples did comprehend and retain the technical information provided by the video interventions. A 3X2 ANOVA showed no significant difference between groups or sex on

this measure (See Appendix F.33 - F.35 for ANOVA summary tables.)

III. Effectiveness of Informational Interventions

MANOVA Results

The effectiveness of the informational interventions was assessed using a 3 x 2 x 2 (Group x Time x Sex) mixed design multivariate analysis of variance (MANOVA) with Time and Sex as repeated measures. The BMDP4V program was used to carry out the MANOVA tests. The grouping factor consisted of the three types of information; Low, High, and High Info. and Sex. Time included two levels; pre-investigation and post investigation, and sex included two levels. Sex was analyzed as a repeated measure because of the relation between spouses within a couple.

Four couples achieved pregnancy during the investigation and therefore could not complete many of the post-questionnaires due to their inappropriateness. These four couples were thereby excluded from any pre- post- analyses. Thus for the following MANOVAs 35 couples were included in the analyses. Eleven couples in the Low Info. group, 13 in the High Info. group, and 11 in the Info. + Sex group. Three separate MANOVA tests were carried out to examine the impact of the interventions on three distinct dimensions of psychological functioning; infertility adaptation and sexual and emotional functioning. MANOVA tests were chosen as the primary analysis for two reasons. First, given the large number of dependent variables, computing ANOVA tests on each

dependent variable may have led to alpha inflation. Second, within each dimension, the general pattern of intercorrelations argued for a multivariate approach to data analysis.

Variable Selection

A minimum requirement when computing MANOVAs is an approximate ratio of 10 subjects per variable (Huberty, 1975). Therefore, a maximum set of four variables was selected for each MANOVA based on the following two steps. First, variables were selected if, from a logical standpoint, they would likely be affected by the experimental interventions and had been shown in the literature to be relevant to the particular dimension being analyzed. Second, of this subset, if two or more variables, based on their degree of correlation showed a shared variance that was high as indicated by $r > .60$, only one variable was selected in an effort to avoid redundancy. (See Appendix J.1 for tests of assumptions computed on the selected variables).

1. Infertility Adaptation

Of the six infertility variables 'Marital Disharmony' and 'Alternatives' were not included in the analysis. 'Marital Disharmony' was eliminated because it belonged more appropriately in the sexual adjustment MANOVA. 'Alternatives' was also not included because this issue was not referred to in the interventions provided. Thus, the four variables selected for analysis, all of which have been referred to in the literature, included, 'Support', 'Infertility Feelings',

'Conception Expectations', and FIQ (Fertility Information Questionnaire). Though these variables were moderately correlated, no correlation reached .60. (See Appendix G.1 - G.4 for correlation matrix of the full set of infertility variables.)

The Hotelling T^2 criterion (which is equivalent to Wilks Lambda criterion in the case of a two level repeated measure) indicated a significant main effect for time, $F(4, 29) = 15.69, p < .001$, with Infertility Feelings, $F(1, 32) = 4.16, p < .05$ and Conception Expectations, $F(1, 32) = 22.21, p < .001$ decreasing over time and FIQ scores increasing over time, $F(1, 32) = 16.70, p < .001$. In addition, the Wilks Lambda criterion showed a significant time x group interaction, $F(8, 58) = 3.40, p < .01$. Inspection of the Univariate F tests for the time x group interaction identified Infertility Feelings and the FIQ score as the variables contributing to the overall effect. (The MANOVA summary table is shown in Appendix H.1).

Hotelling's T^2 post-hoc tests were carried out within each group to assess change from pre- to post investigation on this subset of variables. Because a significant main effect of sex was also found on these two variables, $F(4, 29) = 7.68, p < .001$, post hoc tests were computed separately for each sex.

The means presented in Table 9 show that both males and females of the Low Info. group showed a significant increase in their knowledge about infertility, and a decrease in their

Table 9

Means and Standard Deviations for Low Information Group On
Infertility Adaptation Variables

Variable		Investigation Time	
		Pre	Post
FIQ ^a	Males	23.64 (3.72)	25.82 (2.14) *
	Females	24.09 (2.51)	26.45 (1.37) *
Infertility Feelings ^b	Males	21.36 (8.27)	15.27 (4.29) *
	Females	25.27 (9.27)	19.09 (7.83) *
Support ^b	Males	9.27 (3.90)	10.36 (4.13)
	Females	11.36 (2.33)	10.73 (3.38)
Conception	Male	3.73 (1.19)	3.45 (1.21)
Expectations ^a	Female	3.91 (1.04)	3.18 (1.47)

Note. N = 11 males and females. Means indicated first; SD's in parentheses.

^ahigher scores = more positive responding; ^bhigher scores = more negative responding.

*p<.05

negative feelings to being unable to conceive ($p < .05$) from pre to post investigation. No significant pre to post changes were found on these variables for the High Info. and Info. + Sex groups. (See Tables 10 and 11 for means and standard deviations on variables for the High Info. and Info. + Sex groups.) (See Appendix H.1 for Hotelling's T^2 summary tables.)

The significant main effect of sex was followed up by examination of the means for the FIQ and Infertility Feelings variables, collapsed across group and time. Females reported a greater degree of negative reactions to infertility ($M = 24.09$) as compared to males ($M = 16.20$) and possessed more information about infertility ($M = 25.11$) than their husbands ($M = 24.23$).

2. Sexual Adjustment

Seven variables measuring sexual functioning were selected which had been reported in the literature to be effected by the demands of the infertility investigation. These included DSFI Body Image, DSFI Satisfaction, SHF Communication, SHF Sex for Procreation, DSFI Information, DSFI Intercourse Frequency and the MAS. The DSFI Body Image scale was not included in this MANOVA because, as mentioned earlier a significant difference between groups was found at pre-investigation. DSFI Satisfaction and SHF Communication were also eliminated because they were highly correlated with the MAS which is a more reliable measure. (See Appendix G.5 - G.8 for correlation matrix of sexual adjustment variables.)

Table 10

Means and Standard Deviations for Information and Sex Group
On Infertility Adaptation Variables

Variable		Investigation Time	
		Pre	Post
FIQ ^a	Males	24.64 (3.17)	25.64 (2.34)
	Females	25.73 (2.05)	27.00 (2.45)
Infertility	Males	15.55 (4.61)	15.55 (7.72)
Feelings ^b	Females	28.18 (9.58)	28.18 (9.46)
Support ^b	Males	9.27 (3.38)	11.27 (3.66)
	Females	9.18 (4.07)	9.55 (2.62)
Conception	Male	3.82 (1.17)	2.55 (1.63)
Expectations ^a	Female	3.09 (1.31)	2.64 (1.63)

Note. N = 11 males and females. Means indicated first; SD's in parentheses. All Hotelling t^2 not significant, $p > .10$.

^ahigher scores = more positive responding; ^bhigher scores = more negative responding.

Table 11
Means and Standard Deviations for High Information Group On
Infertility Adaptation Variables

Variable		<u>Investigation Time</u>	
		Pre	Post
FIQ ^a	Males	22.62 (2.29)	23.46 (1.76)
	Females	24.00 (2.08)	23.85 (1.91)
Infertility Feelings ^b	Males	14.46 (5.06)	15.46 (7.74)
	Females	21.92 (10.26)	22.54 (9.87)
Support ^b	Males	9.69 (3.66)	7.54 (2.69)
	Females	9.85 (3.84)	9.92 (3.84)
Conception	Male	4.08 (1.44)	3.31 (1.32)
Expectations ^a	Female	3.69 (1.11)	3.31 (1.03)

Note. N = 13 males and females. Means indicated first; SD's in parentheses. All Hotelling's t^2 values not significant; $p > .10$.

^ahigher scores = more positive responding; ^bhigher scores = more negative responding.

The remaining subset of variables included in the sexual adjustment MANOVA were DSFI Information, DSFI Intercourse Frequency, SHF Sex for Procreation and MAS.

The Hotelling T^2 criterion was significant for a main effect of Time with, $F(4,29) = 7.29, p < .001$. (See Appendix H.2 for MANOVA summary table.) Univariate F tests for each of the dependent measures indicated that for three of the four variables the time effect was significant. Examination of the means collapsed across group and sex for the significant variables, revealed that couples' marital adjustment; $F(1,32) = 6.19, p < .05$, and intercourse frequency; $F(1,32) = 4.56, p < .05$ decreased over time, while sexual knowledge; $F(1,32) = 20.49, p < .001$ increased for the sample as a whole from pre to post investigation. Sex for Procreation was not found to significantly contribute to the overall time effect, $F(1,32) = 1.85, p = n.s.$. Table 12 presents the means and standard deviations for this set of variables. No other significant main effects or interactions were found.

3. Emotional Adjustment

A third MANOVA comparing groups on various emotional variables had been planned but could not be computed because of the high intercorrelations among the dependent measures. (See Appendix G.9 - G.12 for correlation matrix of emotional variables.) Therefore, of the BDI, STAI-State and BSI, only the STAI-State was selected for analysis, because it has been reported to have high test-retest reliability ($r = .97$) with

Table 12

Means and Standard Deviations for Sexual Adjustment Variables
(Collapsed Across Group and Sex)

Variable	Investigation Time	
	Pre	Post
MAS ^a	118.34 (11.51)	114.96 (14.84)*
Intercourse Frequency (per week)	3.91 (1.00)	3.71 (0.92)*
Sexual Information	46.49 (11.08)	50.46 (9.02)**
Sex for Procreation	21.49 (2.60)	20.96 (3.22)

Note. N = 35 males and females. Means indicated first; SD's in parentheses.

^ahigher scores = more positive responding.

* $p < .05$; ** $p < .001$

non-clinical samples and because it has been found to be a good measure of one's stress level at a given time (Nijs et al, 1984).

An analysis of variance (ANOVA) with repeated measures was computed for STAI-State. An overall main effect of Time was found, $F(1,32) = 4.33, p < .05$. Examination of the means, collapsed across group and sex revealed that anxiety level increased from pre-investigation ($M = 33.07$) to post-investigation ($M = 35.49$). (See Appendix F.36 for ANOVA summary table.)

IV. Post-Investigation Functioning

1. Monthly Telephone Interviews

Participants' physical and emotional responses to the particular diagnostic tests they had undergone in a given month were recorded through monthly telephone interviews. Variables were formed that included physical and emotional reactions to the semen analysis, hysterosalpingogram and the PCT, and emotional reactions to BBT monitoring.

One-way ANOVAs were performed on each of these variables to determine if the experimental groups differed in their reactions to the diagnostic tests. Since sample size varied for each diagnostic test and because different tests involved either males or females, univariate analyses as opposed to a multivariate analysis were performed.

In order to maintain a significance level at .05, the Bonferroni correction was used to control for possible alpha inflation. Because three pairwise comparisons were performed

on the female data (physical and emotional reactions to hysterosalpingogram, and BBT emotional reactions), the experiment-wise error rate was set at 0.02 to obtain significance. In this case women's emotional reactions to undergoing the hysterosalpingogram approached significance; $F(2,33) = 3.79$, $p = .03$. As shown in Table 13, post hoc Scheffé tests indicated that the Info.& Sex group reported significantly more negative feelings about the hysterosalpingogram experience as compared to the High Info. group ($p < .05$).

A trend toward significance was also found for the variable that measured males' emotional reactions to undergoing a semen analysis, $F(2,34) = 2.94$, $p = .06$. As shown in Table 13, examination of the means using the Least Significant Difference (LSD) post-hoc test (this was not found to reach significance using the Scheffé post-hoc test) indicated that the males in the Info.+ Sex group experienced more negative feelings about this test than the Low Info. group ($p < .05$).

No significant effects were found on the remaining variables measuring emotional and physical reactions to each diagnostic test. (See Appendix F.37 - F.40 for ANOVA summary tables).

2. Post-Interview Data

Descriptive data were collected on some items derived from the post-interview for the sample of 35 couples who had not achieved pregnancy at termination of the investigation.

Table 13

Group Means and Standard Deviations for Telephone Interview Variables

Variable	n	Groups		
		Low Info.	High Info.	Info. +Sex
Semen Analysis 37				
Physical		1.00 (0)	1.15 (.56)	1.08 (.28)
Emotional		1.00 ^a (0)	1.31 ^{ab} (.48)	1.54 ^b (.78)
Hysterosalpingogram				
Physical	36	2.00 (.95)	1.83 (.94)	2.25 (.97)
Emotional		1.60 ^{ab} (.89)	1.50 ^a (.67)	2.33 ^b (.78)
PCT 27				
Physical		1.00 (0)	1.00 (0)	1.00 (0)
Emotional		1.25 (.46)	1.67 (.65)	1.43 (.84)
BBT 33				
Emotional		1.44 (.53)	1.63 (.84)	1.58 (.79)

Note. Means are indicated first; SD's are in parentheses.

Scores ranked on scale from '1' (no reaction) - '3' (extreme negative reaction).

^aAcross rows, means with different superscripts are significantly different at $p < .05$

After completion of the investigation 85% (30) of the husbands and wives reported being as eager to have children as they were when they began the investigation. Thirty-one percent (11) of husbands and 23% (8) of wives were more encouraged about their ability to conceive at the end of the investigation than at its start. Twenty-one percent (7) of husbands and 46% (16) of wives were less encouraged about their conception prospects after the investigation. In terms of couples' immediate plans with regard to their infertility 23% (8) were planning to begin drug therapy, 14% (5) were planning surgical treatment, 23% (8) were considering reproductive alternatives (e.g., IVF, AID, etc.), 17% (6) were planning to continue trying without treatment and 23% (8) were planning to take a few months off before deciding on a course of action.

Evaluations about the interventions indicated that 54% (21) of females and 51% (20) of males believed the video that they viewed was helpful. Twenty-six percent of husbands and wives (9) believed the videos were unhelpful, with the remaining proportion of couples feeling indifferent toward the films. A 3x2 ANOVA with repeated measures (Experimental Group by Sex) showed no significant group or sex differences on subjects' ratings of the videotapes. (ANOVA summary table is presented in Appendix F.41.)

Evaluations about the sex pamphlet showed that 31% (4) of couples reported that they had referred to the sex pamphlet at home and had found parts of it useful. The remaining

couples (9) did not consult the pamphlet once leaving their appointment nor did they report it as beneficial.

3. Post-Test Questionnaire

The first item on the Post-Test Questionnaire asked subjects if their ability to cope with infertility had changed over the course of the investigation. Approximately half the sample perceived their ability to cope as having improved (43% [15] of the males and 49% [17] of the females), and half reported no change in coping ability (54% of males and 37% of females). Five women as compared to one man rated their ability to cope as having become worse since before the investigation.

A 3x2 (Group by Sex) ANOVA with repeated measures for sex was computed for the item on coping in order to evaluate whether coping ability differed between the spouses and/or as a result of the different experimental interventions. A main effect of group was found to approach significance, $F(2, 32) = 3.04$, $p = .06$. Examination of the means using the LSD post hoc procedure (Scheffé post hoc tests did not yield any significant group differences) indicated that the Low Info. group rated their ability to cope as better than the High Info. group ($p < .05$). No main effect of sex was found. (See Table 14.)

The second item ('Sexual Image') inquired about change in subjects' sexual self-images over the investigation. The greatest proportion of sample responses indicated no change in this area (74% of husbands and 71% of wives). Two husbands

Table 14

Group Means and Standard Deviations for Post Test
Questionnaire Items

Variable		Group		
		Low Info.	High Info.	Info. +Sex
Coping	Males	2.82 ^a (.87)	2.31 ^b (.48)	2.45 ^{ab} (.82)
	Females	3.00 ^a (1.00)	2.15 ^b (.80)	2.64 ^{ab} (1.12)
Sexual	Males	2.45 (.69)	2.08 (.28)	2.00 (.63)
Image	Females	2.27 (.65)	2.15 (.69)	1.91 (.70)
Self-Image	Males	2.36 (.92)	2.00 (0)	2.18 (.60)
	Females	2.36 (1.12)	2.08 (.28)	2.64 (.81)
Evaluation	Males	3.91 (.83)	4.08 (.86)	4.00 (1.00)
	Females	4.18 (.75)	4.23 (.93)	4.36 (1.03)

Note. N = 35 males and females. Means indicated first; SD's are in parentheses. Scale ranges from '1' - '5'; higher scores equal more positive responding.

^aAcross rows, means with different superscripts are different at $p = .06$.

and four wives rated their sexual self-image as having worsened over the investigation, with the remaining subjects, that is, 20% (7) of husbands and 17% (6) of wives noting an improvement. ANOVA results comparing experimental groups and spouses on self-image did not reveal any significant main effects or interactions.

The third item ('Self-Image') asked subjects to rate their level of change over the investigation in terms of their feelings about themselves. Seventy-seven percent (27) of all husbands and 74% (26) of wives perceived no change in self-image. Seventeen percent (6) of males and 23% (8) of females reported an improvement in self-image. A group by sex ANOVA did not show any significant differences between the experimental groups or the sexes on this variable.

Finally, the last item ('Evaluation') asked subjects to evaluate the helpfulness of the informational programs they had received. The majority of subjects (82% of males and 85% of females) rated the program as a whole as somewhat to extremely helpful. Only three husbands and two wives found it unhelpful. A 3x2 (Group by Sex) ANOVA with sex as a repeated measure showed a trend toward a main effect of sex with wives evaluating the program as more helpful than their husbands, $F(2,32) = 3.78, p = .06$. No other significant effects were found.

Table 14 presents the means and standard deviations for the variables contained in the Post-Questionnaire Test by

group and sex. (See Appendix F.42 - F.45 for ANOVA summary tables.)

V. Individual Coping Styles

Coping Groups:

In order to assign each subject into Monitoring or Blunting categories, the MBSS difference score (Monitoring items checked minus Blunting items) was first computed for each subject. A median-split procedure was then used to assign subjects to one of these categories. Subjects who scored on the median were dropped from subsequent analyses. Because MBSS scores are considered personality traits and therefore unrelated to the couple interaction, yet responses to the dependent variables are correlated within a couple, subjects were analyzed separately as to sex. The research design called for examination of the interaction between experimental group and coping style on several dependent variables. However, once subjects falling on the median were eliminated from the subject pool ($n=12$), as well as the four pregnant couples who were omitted from all pre- to post analyses, cell sizes became too small to compute the intended ANOVAs. Therefore, subjects were collapsed across experimental groups and 2x2 ANOVAs with repeated measures (Coping Group by Time) were performed to examine the influence of coping style on response to the demands of the investigation.

Before collapsing across informational groups, it was necessary to ensure that no significant differences between number of blunters and monitors existed among experimental groups. All computed chi squares were found to be nonsignificant. (See Appendix F.66 for chi square statistics.).

Variable Selection

Variables selected for analysis were those that on theoretical grounds were thought to be affected by coping style. Of variables evaluated only at pre-investigation, Years Infertile and Film Retention Questionnaire were included. Of variables measured at post-investigation, the Coping Summary Score of the Post-Test Questionnaire, Investigation Time and Compliance were included.

Variables that were assessed both at pre- and post-investigation included the FIQ, Infertility Feelings and Marital Disharmony from the FAI questionnaire, STAI-State and DSFI Sexual Satisfaction.

Results for Females

To control for the possibility of alpha inflation, Bonferroni corrections were used to set probabilities at .01 for significance, thus maintaining the alpha level at .05 for the five pairwise comparisons. Using t-tests for the variables measured only at post-investigation, a significant difference was found between female monitors and blunters on investigation time, $t(28) = 2.55, p < .01$. Examination of group means in Table 15 indicates that blunters took longer to be

investigated than monitors. A significant difference was also revealed on the Post-Test Questionnaire Summary Score, $t(28) = 2.53$, $p < .01$. In this case, blunterns reported coping better with the investigation than Monitors. No other significant effects were found on the t-tests for women. (See Appendix F.46 for non-significant t-test results.)

The Bonferroni correction was set at $\alpha = .01$ for five ANOVA tests that included variables assessed at pre- and post-investigation. Only main Group or Time x Group interactions will be reported as main time effects would be similar to those reported in the previous MANOVA results. A main effect of group was found to approach significance for the Infertility Feelings variable, with $F(1,26) = 4.79$, $p = .04$. Examination of the group means in Table 15, collapsed across time, indicated that blunterns anticipated reacting better to never being able to conceive than monitors. No other significant group or time x group interactions were found for females. (Appendix F.47 - F.51 presents ANOVA summary tables.)

Results for Males

No significant differences were found on the t-tests for variables measured either at pre- or post- investigation. Marital Disharmony was the only variable of those analyzed using ANOVAs that was found to approach significance with an overall effect of group, $F(1,26) = 4.84$, $p = .04$. Table 15 presents group means collapsed across time, which indicates that male blunterns reported that infertility had

Table 15

Means and Standard Deviations on Significant Variables by
Coping Style.

Variable		Monitors	Blunters
Investigation	Females	10.31 (4.33)	17.59 (9.53)**
Time (Weeks)	Males	16.75 (10.55)	11.75 (4.85)
Coping Summary	Females	5.92 (1.66)	7.47 (1.66)**
Score	Males	6.88 (1.78)	6.58 (0.90)
Infertility	Females	27.92 (10.27)	20.65 (9.06)*
Feelings ^a	Males	16.41 (5.84)	13.17 (4.98)
Marital	Females	21.35 (4.23)	19.53 (5.42)
Disharmony ^a	Males	19.66 (4.23)	22.67 (3.04)*

Note. For females: $n = 17$ blunters and 13 monitors; For males: $n = 12$ blunters and 16 monitors. Means indicated first; SD's in parenthesis.

^ascores collapsed across time; higher scores equal more negative responding.

* $p < .05$; ** $p < .01$

had a more negative effect on their marriages than monitors. No other significant effects for males were found. (See Appendix F.52 - F.57 for t-test and ANOVA summary tables.)

VI. Diagnostic Outcome

Emotional Reactions to Diagnosis

The reactions of couples upon learning the results of their particular diagnostic work-up were compared across diagnostic group (unexplained, endocrine, tubal factor and male factor). It will be remembered that subjects were given the battery of post-questionnaires within a week of receiving their final diagnosis. Couple post scores were used since regardless of which spouse is responsible for the infertility problem, the diagnosis is applied to the couple as a unit. Furthermore, because in the majority of cases women were identified as the source of the couples' infertility problem, an underlying sex difference may have been confounded with a difference between the identified and non-identified spouse.

Analyses of Covariance (ANCOVA) were performed to address this question. Because subjects could not be randomly assigned to diagnostic group, potential sources of uncontrollable bias may have existed at pre-investigation that would affect post-investigation reactions. By using pre-investigation scores as covariates any naturally occurring differences among couples at initial testing would be removed, so that the effects of learning one's medical diagnosis could be evaluated accurately.

Variable Selection

Since subjects completed the post-questionnaires one week after receiving their diagnosis only those questionnaires that could reflect immediate change were included. Responses on three subscales of the FAI (i.e., Infertility Feelings, Conception Expectations and Alternatives), as well as Body-Image, STAI-State and BDI were therefore selected as the variables to be compared across diagnostic group.

Results

All covariates accounted for significant variance in post-investigation scores. However, no significant effect of diagnosis was found on any of the variables at post-investigation. (Appendix F.58 - F.63 presents the ANCOVA summary tables).

VII. Differentiating Couples' Levels of Adaptation to the Investigation: Discriminant Analyses

1. Sexual Adjustment

The purpose of this discriminant analysis was to determine the power of a set of variables, measured at pre-investigation, in differentiating couples with sexual difficulties from those without, as reported at post-investigation. Discriminant analysis was selected as the statistical method of choice because it provides information on the adequacy of a set of predictors in classifying subjects into the group which they most likely resemble, as well as describing major differences between groups as a MANOVA does.

Sexually Adjusted and Poorly Adjusted Groups

The grouping variable that was chosen to divide the 35 couples (four pregnant couples were omitted) into two groups, representing sexually adjusted and poorly adjusted couples, was the sum of items #22 and #29 from the post-SHF. First, if either spouse in a couple responded affirmatively to item 22 which asked couples if they were experiencing a sexual difficulty at the time, they were potentially placed in the poorly adjusted category. Couples' descriptions of their sexual difficulties were examined to verify that indeed a sexual difficulty was being described. Seventeen couples responded appropriately to this item. Next, of the 17 couples, those who also reported a sexual problem at pre-investigation were eliminated to ensure that these problems developed during the investigation. Four couples were eliminated on this basis.

The 13 couples were then examined further through item #29. This item asked couples to rate to what extent they believed their sexual difficulty would improve if a pregnancy was achieved. On a scale of 1-7, only those couples who responded 5 or higher (i.e., they attributed their sexual difficulty primarily to conception failures) were included in the poorly adjusted group. Of the 13 couples, three were dropped based on this criterion. To summarize, only subjects with infertility related sexual problems at post-investigation were included in the poorly adjusted group.

Overall, 18 couples fell into the sexually well-adjusted group and 10 into the poorly-adjusted group. Of the 10 poorly-adjusted couples; three were in the Low Info. group, three in the High Info. group and four in the Info. and Sex group. Since information group and sexual adjustment were clearly unrelated, subjects were collapsed across experimental group for the computation of the discriminant analysis.

Variable Selection

For this analysis, couple scores on the predictor variables, as opposed to individual scores, were used for two reasons. First, sexual difficulties whether present in one or the other spouse generally manifest as a couple problem. Second, because couples, as opposed to spouses, were categorized into the adjusted and poorly adjusted groups, it seemed reasonable to use couple scores for the predictor variables as well. For those variables that did not naturally exist as a couple variable, couple scores were created by averaging both partners' scores within a couple.

Variables were selected for this analysis based on the following three steps. First, theoretical considerations: variables that could potentially affect sexual functioning were selected for the potential pool of variables. Nine preliminary variables were selected on this basis. The second step was taken because it was necessary to reduce the variable pool further. Reliability of results required that the total sample size be at least ten times the number of

variables and the size of the smallest group no less than the number of variables (Tabachnick & Fidell, 1983). Thus the second step involved examination of the group means of each of the potential predictor variables. Accordingly, independent t-tests were performed. Those variables which did not demonstrate a significant difference between adjusted and poorly adjusted groups were eliminated from the variable pool. Of the pool of nine variables, five were found to be significant. (See Table 16 for means and standard deviations of the five significant variables and Appendix I.1 for means and standard deviations of the remaining variables.)

For any set of predictors, redundancy could also render results misleading. Therefore, redundancy among variables was assessed by examining the intercorrelations among the variables. The third step involved eliminating variables with a correlation that was greater than .60. Of the five variables, two were found to be highly correlated with several others and were therefore eliminated. (See Appendix I.2 for correlation matrix of sexual adjustment variables). The remaining set of three variables, which included Intercourse Frequency, MAS and Sex for Procreation were used as predictor variables for this Discriminant Analysis. (See Appendix J.2 for tests of assumptions computed on the selected variables).

Discriminant Analysis Results

To compute the discriminant analysis a direct method was used with Wilks Lambda as the criterion to evaluate the

Table 16

Means and Standard Deviations on Significant Variables for
Sexual Adjustment Discriminant Analysis

Variable	Sexual Groups	
	Well-Adjusted	Poorly Adjusted
MAS	122.16 (7.56)	113.45 (8.65)**
Sex For Procreation	22.29 (1.92)	20.15 (2.07)**
Sexual Satisfaction	9.32 (0.63)	7.80 (1.77)**
Intercourse Frequency (Per week)	4.16 (0.63)	3.45 (.86)**
Communication	17.81 (1.78)	15.95 (3.03)*

Note. n = 10 poorly adjusted couples; n = 18 well-adjusted couples. Means are indicated first; SD's are in parentheses. For all scales higher scores = better functioning.

**p<.01; *p<.05

significance of the discriminant function. Lambda is an inverse measure of the discriminating power of the variables. It is transformed into a chi-square to test significance.

The combined set of predictors was found to discriminate significantly between couples who reported sexual difficulties at post-investigation and those who did not; $\chi^2(3, N = 28) = 12.55, p < .01$. The canonical correlation, a measure of association between the function and the grouping variables, showed a value of .63 indicating that the function accounted for 40% of the between group variance. (See Table 17 for discriminant analysis summary table.)

Examination of group means as shown in Table 16 indicated that the group with sexual difficulties, compared to the sexually adjusted group, presented at pre-investigation with a lower intercourse frequency, poorer marital adjustment and less change in their sexual routine during ovulation.

Prediction of group membership provides a measure of the adequacy of the discriminant function, in that subjects are classified into the group which they most closely resemble based on the predictor variables. Thus the percentage of correctly classified cases, that is, subjects whose predicted group membership was the same as their actual group membership was examined. Classification analyses were computed with prior probabilities of group membership equal to the actual sample proportions. As described, the literature reports a significant proportion of couples with sexual difficulties related to their infertility. The actual

Table 17

Results of Discriminant Analysis for Sexual Adjustment

Predictor Variables	Correlations of predictors with		Univariate F (1,26)		Pooled Within Group Correlations Among Predictors		
	Function	Sex	MAS	Intercourse	Sex	MAS	Intercourse
Sex for Procreation	.71	1.00	- .02	.26			
MAS	.67		1.00	.38			
Intercourse Freq.	.63			1.00			
Canonical R	.63						
Eigenvalue	.67						

*p<.01

proportions vary from 16% (Fagen et al, 1986) to 60% (Sarrel & DeCherney, 1985). However, studies also vary as to their method of determining the prevalence of sexual problems. Since the present study's rate of sexual difficulties related to infertility was 26% of the total sample, which is within the range of various studies' rates, it seemed reasonable to use the present study's rates to reflect population group membership. The overall correct classification achieved was 86.2%. As shown in Table 18, based on the set of predictor variables, 60% of the poorly adjusted group was correctly classified and 100% of the well-adjusted group.

2. Emotional Adjustment

This discriminant analysis was carried out to evaluate the ability of a selection of initial test responses to discriminate between subjects whose psychological distress levels either increased or did not increase over the course of the infertility investigation.

Emotionally Well- Adjusted and Poorly-Adjusted Groups

The grouping variable that was selected to represent emotional adjustment was derived from each subject's change scores on three different measures of psychological distress, that is, the BDI, STAI-State and DSFI Symptom subscale. Because the small sample size necessitated that subjects be collapsed across groups, 3x2x2 ANOVAs with repeated measures were performed on the BDI and Symptom subscale measures to ensure that the experimental interventions did not have any differential effects. Only a significant main effect of sex

Table 18

Classification Results for Discriminant Analysis on Sexual
Adjustment

<u>Actual Groups</u>	<u>n</u>	<u>Predicted Groups</u>	
		<u>Poorly Adjusted</u>	<u>Well-Adjusted</u>
Poorly Adjusted	10	6 (60%)	4 (40%)
Well-Adjusted	18	0	18 (100%)

Note. Overall percent of cases correctly classified = 86.2%.

on the BDI was found; $F(1,32) = 5.88, p < .02$. (See Appendix F.64 + 65 for ANOVA Summary tables.) Examination of group means indicated overall that females ($M = 5.26$) were more depressed than males ($M = 2.69$). (As reported earlier, only a significant time effect, collapsed across group, was found on the STAI-State measure.) The fact that no significant group effects or group by time interactions were found on any of the three measures permitted subjects to be collapsed across group. Because a significant sex effect on the BDI was revealed, the sexes were analyzed separately.

Two steps were followed in order to classify subjects as either having adjusted favourably or unfavourably to the investigation. The first step involved calculating a subject's change score by subtracting their pre-scores from their post-scores, on each of the three measures. Thus scores that were in the positive direction indicated an increase in psychological distress from pre- to post-investigation. The second step involved selecting only those subjects who had positive change scores on two or three of the measures and placing them in the poorly-adjusted group. Subjects who showed either a decrease in distress levels from pre- to post-investigation or no change, on at least two of the measures were considered well-adjusted. Thus the grouping factor took into account the effect of the investigation on increasing or decreasing levels of psychological distress using a composite variable that included measures of depression, anxiety and psychological symptomatology.

Variable Selection

Pre-investigation variables were selected for analysis in the same manner as outlined in the previous discriminant analysis. First, variables were selected based on theoretical considerations in terms of what aspects of functioning might influence one's emotional adjustment. A potential set of 12 variables were selected.

Next, independent t-tests for each sex were performed to determine which of these variables showed a significant difference between groups. For the males, significant differences between the adjusted and poorly-adjusted groups were found on two variables. Table 19 presents the means and standard deviations for these two variables. (See Appendix I.3 for the means and standard deviations on the remaining variables). For the females, a significant difference between groups was also found on two variables. Table 20 presents the means and standard deviations for these two variables. (See Appendix I.4 for the means and standard deviations on the remaining variables). Finally, the last step involved checking the interrelatedness between variables within each pair. Since the variables were not found to be correlated, Neuroticism and Intercourse Frequency ($r = -.17$, $p = \text{N.S.}$) were used to predict male adjustment levels, and Sex for Procreation and Marital Adjustment (MAS) ($r = .15$, $p = \text{N.S.}$) made up the pair of variables predicting female adjustment levels. (See Appendix J.3 for tests of assumptions computed on these variables).

Table 19

Means and Standard Deviations on Significant Variables for
Emotional Adjustment Discriminant Analysis: Males

	<u>Groups</u>	
	<u>Well-Adjusted</u>	<u>Poorly-Adjusted</u>
Neuroticism ^a	5.91 (4.56)	9.33 (4.58)*
Intercourse Frequency (per week)	3.57 (1.03)	4.33 (0.78)*

Note. n = 23 adjusted males; 12 poorly-adjusted males. Means are indicated first; SD's in parentheses.

^aHigher scores equal poorer functioning.

*p<.05.

Table 20

Means and Standard Deviations on Significant Variables for
Emotional Discriminant Analysis: Females

	<u>Groups</u>	
	<u>Well-Adjusted</u>	<u>Poorly-Adjusted</u>
Sex for Procreation	22.13 (2.82)	19.91 (2.81)*
MAS	121.75 (9.98)	112.36 (13.27*)

Note. n = 24 adjusted females; 11 poorly-adjusted females.

Means are indicated first; SD's in parentheses.

Higher scores equal better functioning.

*p<.05.

Discriminant Analysis Results

Males: A discriminant analysis using the direct method was performed with Wilks Lambda as the criterion to determine the significance of the discriminant function. Prior probabilities were set so that cases had a 50% chance of being assigned to one group or the other.

The baseline set of predictors was found to significantly discriminate between males whose psychological distress levels increased over the investigation and those whose did not, with $\chi^2 (2, N = 35) = 11.67, p < .01$. The canonical correlation coefficient of .55 indicated that 30% of the between group variability was explained by the function. Examination of the significant correlations between the discriminant function and the predictor variables showed that the Intercourse Frequency was a slightly stronger contributor to distinguishing between the groups than Neuroticism. Table 21 presents the summary table of discriminant analysis results. Examination of the means as presented in Table 19 indicates that males who adjusted poorly as compared to those who adjusted well to the investigation, began the investigation being more emotionally vulnerable and having a higher intercourse frequency.

Examination of the classification analysis indicated that the baseline variables were able to predict with an 82.86% accuracy rate those who would adjust favourably or unfavourably to the investigation. As presented in Table 22,

Table 21
Results of Discriminant Analysis for Male Emotional Adjustment

Predictor Variables	Correlations of predictors with Function	Univariate F (1,33)	Pooled Within Group Correlations Among Predictors	Neuroticism
Intercourse Freq.	.59	5.06*	1.00	-.34
Neuroticism	.55	4.42*		1.00
Canonical R	.55			
Eigenvalue	.44			
MAS				

* $p < .05$.

Table 22

Classification Results for Discriminant Analysis on Emotional
Adjustment: Males

		<u>Predicted Groups</u>	
<u>Actual Groups</u>	<u>n</u>	<u>Adjusted</u>	<u>Poorly-Adjusted</u>
Adjusted	23	19 (82.6%)	4 (17.4%)
Poorly-Adjusted	12	2 (16.7%)	10 (83.3%)

Note. Overall percent of cases correctly classified = 82.86%.

82.6% of the adjusted group, and 83.3% of the poorly-adjusted group were correctly classified.

Females: The baseline set of variables consisting of Sex for Procreation and MAS significantly differentiated between the adjusted and poorly-adjusted females, with $\chi^2(2, N = 35) = 8.35, p < .01$. Based on the canonical correlation, 23% of the group variance was accounted for by this linear combination of variables, with the MAS contributing more to the group discrimination. Table 23 presents the discriminant analysis summary table. Examination of the means presented in Table 20 indicates that those females who at the start of the investigation exhibited lower marital adjustment scores and less change in their sex lives between ovulation and non-fertile periods were more likely to experience emotional distress by the end of the investigation.

Prediction of actual group membership based on these initial test responses indicated that 68.57% of the subjects were correctly classified. Specifically, 70.8% of the adjusted and 63.6% of the poorly-adjusted women were classified correctly at post-investigation based on their pre-investigation scores. Table 24 presents the classification breakdowns by group.

VIII. Predicting Pregnancy Outcome - Discriminant Analysis

A discriminant analysis was carried out to determine the power of a set of predictor variables measured at pre-investigation, in differentiating couples who did or did not

Table 23
Results of Discriminant Analysis for Female Emotional Adjustment

Predictor Variables	Correlations of predictors with Function	Univariate F (1,33)	Pooled Within Group Correlations Among Predictors	Sex for Proc.
MAS	.74	5.41*	1.00	.02
Sex for Procreation	.69	4.67*		1.00
Canonical R	.48			
Eignevalue	.30			

*p<.05.

Table 24

Classification Results for Discriminant Analysis on Emotional
Adjustment: Females

<u>Actual Groups</u>	<u>n</u>	<u>Predicted Groups</u>	
		<u>Adjusted</u>	<u>Poorly-Adjusted</u>
Adjusted	24	17 (70.8%)	7 (29.2%)
Poorly-Adjusted	11	4 (36.4%)	7 (63.6%)

Note. Overall percent of cases correctly classified = 68.6%.

achieve pregnancy, six months following completion of the investigation.

Pregnancy Outcome:

As described in the procedure section, couples were contacted approximately six months after they had completed the post-investigation questionnaires to determine if pregnancy had yet been achieved. All couples had received some sort of treatment of varying durations within the six months following their investigation. In order to standardize the interval between post-investigation time and conception outcome, wives' last menstrual period (LMP) must have occurred within six months of the date that post-questionnaires were completed. Based on this criterion, a total of five of 35 couples achieved pregnancy. In addition, the four couples who had conceived during the investigation were included in this group. Thus, a pregnancy success rate of 23% was obtained. An equal number of pregnant couples fell within each informational group. Of the five couples who conceived after the investigation; two couples had initially received a diagnosis of unexplained infertility, two, that of tubal factor and one was diagnosed with endocrine disorder.

Variable Selection

Couple scores were used to predict pregnancy success. For those variables that did not naturally exist as a couple variable, scores were derived by averaging both partners' scores within a couple.

Based on theoretical considerations, variables that might potentially contribute to pregnancy outcome were chosen. In this manner, twelve variables were selected. To reduce this number of variables, the group means of each potential predictor variable were examined to test for group differences. Only one variable, STAI-State was found to significantly differentiate the groups, $t(37) = 2.10, p < .05$. (See Appendix I.5 for t-test results.) In order to perform a discriminant analysis there must be at least as many variables as there are groups (Huberty, 1975). Therefore, a stepwise discriminant analysis was performed to determine whether any other variable could contribute to differentiating the groups. Years married was selected as the only other variable, combined with STAI-State, that was able to discriminate the groups. A direct discriminant analysis was then performed using STAI-State and years married as the predictor variables. (See Appendix J.4 for tests of assumptions computed on these variables).

Discriminant Analysis Results

Prior probabilities were set to reflect the sample proportions, that is, a pregnancy success ratio of 23% to 77%. Collins et al (1984) reported a cumulative pregnancy rate for 1,297 couples with the same diagnoses as in the present sample at 25% within nine months of registration for an investigation. For the present sample, the pregnancy rate was determined six months post-investigation after couples had undergone an investigation of an average length of 3.6

months. Therefore, this study's pregnancy rate appears to approximate the infertility population's rate.

The discriminant function was found to be significant, $\chi^2(2, N = 29) = 6.50, p < .05$. The canonical correlation coefficient of .41 indicated that 17% of the between group variability was explained by the function. Based on the correlations between the function and the predictors, the better contributor to distinguishing between those who achieved pregnancy and those who were unsuccessful was the STAI-State variable (simple $r(39) = .33, p < .05$). (See Table 25 for discriminant analysis summary table.)

Examination of the group means in Table 26 showed that those who did not achieve pregnancy displayed significantly higher anxiety scores at pre-investigation than those who did conceive and were also married longer, however number of years married did not reach significance.

Examination of the classification analysis indicated that the baseline information from the predictor variables were able to classify 79.49% of our sample. However, the within group classification ratings indicated that while 93.3% of the nonpregnants were correctly classified, only 33.3% of the pregnant women were correctly classified into their actual group. (See Table 27 for classification breakdown.) Thus the variables that made up the discriminant function were not able to adequately classify subjects in the pregnancy group.

Table 25

Results of Discriminant Analysis for Pregnancy Outcome

Predictor Variables	Correlations of predictors with Function	Univariate F (1,37)	Pooled Within Group Correlations Among Predictors	
			STAI-State	Years Married
STAI-State	.78	4.43*	1.00	-.12
Years Married	.54	2.14		1.00
Canonical R	.41			
Eigenvalue	.20			

*p<.05

Table 26

Group Means and Standard Deviations for Pregnancy Outcome

	<u>Groups</u>	
	<u>Pregnant (n=9)</u>	<u>Not Pregnant (n=30)</u>
STAI-State ^a	29.06 (4.39)	33.53 (5.89)*
Years Married	3.00 (1.95)	4.36 (2.57)

Note. Means are indicated first; SD's are in parentheses.

^aHigher score = more anxiety.

* $p < .05$

Table 27

Classification Results for Discriminant Analysis on Pregnancy Outcome

Actual Groups	n	<u>Predicted Group</u>	
		Pregnant	Not Pregnant
Pregnant	9	3 (33.3%)	6 (66.7%)
Not Pregnant	30	2 (6.7%)	28 (93.3%)

Note. Overall percent of cases correctly classified = 79.49%.

Discussion

One major goal of this study was to evaluate the effectiveness of sexual and emotional information in helping couples cope with the strains of the infertility investigation. Overall, the results indicated that such informational interventions did not benefit couples. However, a routine amount of procedural information was associated with improvement in various aspects of functioning. A second major objective was to identify any psychological factors that could predict patients who would adapt unfavorably to the investigation process. Psychological profiles assessed at intake were identified which significantly predicted subjects who reported sexual difficulties or psychological distress at the end of the investigation. These specific findings and several others will now be discussed in more detail.

Effectiveness of the Informational Interventions

Adaptation to Infertility:

Measures which inquired about infertility-related issues were the only ones to show sex differences and differential effects as a result of the informational interventions. This is not surprising since the interventions were focussed specifically at infertility issues. The major finding was that males and females in the Low Info. group showed gains from pre- to post- investigation on their feelings and knowledge about infertility while the other two groups showed no change over time. Furthermore, it was found that females overall react more negatively to the possibility of never

conceiving and acquire more information about infertility-related issues, than males.

Several other results were consistent with the finding that those who received less information adapted better to the investigation. Specifically, data from the monthly telephone interviews showed males in the Low Info. group reported less negative reactions to submitting to semen analyses than males in the Info.+ Sex group. Similarly, women in the Info.+ Sex group, which is the group that received the largest volume of information, reacted most poorly to undergoing the hysterosalpingogram.

Another result compatible with this pattern was found on the Post-Test Questionnaire which rated how well couples had coped over the course of the investigation. The results showed a trend for males and females of the Low Info. group to report better coping than subjects in the High Info. group.

Since a no-treatment or attentional control group was not included in this study it is unclear what contributed to positive change in this Low Info. group. Because all three groups received the same expectations, completed the same test battery and met with the experimenter for the same amount of time, such non-specific factors were not likely responsible for the differential gains. Without a no-information control, it is impossible to discern whether the technical information alone was responsible for the gains observed in this group, or whether these gains naturally

occur during an infertility investigation, but the emotional information served as a hinderance.

There is evidence in the coping literature to support both of these processes, that is, that procedural information does lead to positive gains and that too much information may be a hindrance (c.f., Ludwick-Rosenthal & Neufeld, 1988). Janis (1958) demonstrated that surgical patients recovered best if they experienced some optimal amount of preoperative anxiety based on the information they received. Too much information was thought to be more harmful than no information at all. Therefore, one alternative explanation is that the Low Info. group received the optimal amount of information they needed to cope adequately with the diagnostic phase of the infertility work-up. The other two groups received an overload of information, which may have interfered with their ability to use and retain this information in an adaptive manner.

This hypothesis is consistent with the finding that the Low Info. group acquired more infertility knowledge at post-investigation than the other two groups. Scores on the Film Retention Questionnaire indicated that the groups did not differ in the amount of knowledge they retained immediately following the viewing of the videos. Therefore, over the length of the investigation the additional emotional information in some way may have interfered with the retention of technical knowledge acquired.

If, on the other hand, the procedural information was inert, then the positive gains observed in the group receiving this information must be attributed to positive effects intrinsic to the investigation process itself. This hypothesis is consistent with Daniluk's (1988) finding that anxiety actually decreases over the investigation. However Daniluk did not incorporate measures related specifically to infertility. Moreover, the findings in the current study, that several aspects of functioning were negatively affected during the course of the investigation, across intervention strategies, (i.e., anxiety levels, intercourse frequency and marital adjustment) fail to support this contention.

It will be recalled that subjects in the Low Info. group actually viewed a different film from subjects in the other two groups. Although the content of the technical information was equated in the two films, the possibility exists that the information in the control film was simply presented in a more helpful manner. However, this possibility is not supported by the findings that no group differences were found on scores for the Film Retention Questionnaire and that subjective reports indicated that most subjects in each group found the videos helpful.

The pattern in the findings which occurred over a variety of situations and measures strengthens the generalizability of the conclusion that minimal technical information is more useful to couples dealing with certain issues related to their infertility compared to information on emotional and

sexual issues. Perhaps such detailed information would be more helpful to couples if offered gradually as the specific strains of infertility become more obvious. Research has shown (e.g., Keye et al, 1983; Lalos et al. 1985) that the negative effects of infertility on emotional and sexual functioning do become more pronounced the longer one is faced with this problem. Given this phenomenon, it would be of interest as well, to carry out a one year follow-up on the present sample to assess whether the emotional and sexual informational interventions possibly demonstrate delayed benefits.

Sexual Functioning:

The intervention which included the sex pamphlet was not found to have an impact on couple's sexual functioning. The results showed that on four variables that included behavioral reports and subjective reactions (MAS, sexual information, sex for procreation and intercourse frequency) the Info.+ Sex group did not perform differently from pre- to post-investigation compared to the two groups that did not receive the sex pamphlet. In addition, within the Info.+ Sex group, only four of thirteen couples at post-interview reported that they found the pamphlet useful.

A comparable finding was reported recently in Libman et al (1987) in which an informational sex pamphlet was not found to have any positive effects on sexual functioning in couples in which the male had undergone prostatectomy surgery. In their study, no significant differences on

marital and psychological adjustment variables were found from before to after prostate surgery, even without intervention. Therefore, it was not surprising that their informational pamphlet demonstrated no effect.

A similar phenomenon may have been operating in the present study, in that the sample as a whole showed only slight deterioration in sexual expression from pre- to post-investigation. Specifically, although marital adjustment scores and intercourse frequencies were shown to significantly decrease over the investigation experience, scores remained within the range of normal functioning throughout. The fact that the medical investigation did not have a major, negative sexual impact may have made the sex pamphlet inconsequential.

Another possible explanation for the ineffectiveness of the pamphlet is that for this type of preparatory information a longer-term, couple therapy format is required in order for it to be useful. That is, the nature of this information may necessitate that couples be allowed to communicate openly in the presence of a counsellor. In fact, the contents of the sex pamphlet included portions that could be considered more as skills training than as an information-giving intervention, which may work better in a therapy-type format. Several studies have reported positive effects of short-term sex counselling for infertile couples (e.g., Karahasanglu et al, 1972; Rosenfeld & Mitchell, 1979).

The findings that for the sample as a whole, marital adjustment scores and intercourse frequencies decreased significantly from pre- to- post-investigation are consistent with most past findings. The fact that intercourse frequencies did not decrease to abnormally low levels, however, is consistent with the general consensus that because intercourse is the means by which infertile couples might achieve their desired outcome, this behavior persists even if positive feelings toward it are diminished (Gray, 1981; Palti, 1979). This hypothesis is compatible with the findings that marital adjustment worsened and anxiety levels increased during the investigation. One might have expected coital frequencies to decrease more than they did, given increased personal and interpersonal stress, if not for the fact that conception requires this behavior.

Emotional Functioning:

It was found that preparing couples specifically for the stressful aspects of the medical procedures did not lead to lowered generalized anxiety scores. It was expected that as a consequence of viewing the emotional video, subjects in these two groups as compared to the control group, would gain a stronger sense of control and predictability over their emotions which would result in lowered stress levels from pre- to post investigation. Rather it was found that for all three groups, anxiety increased over time.

One possible explanation for the lack of differential findings is that, as suggested by Mazure et al (1986),

couples may be reluctant to report accurately their level of stress for fear that it will be construed by medical personnel as a reason for their infertility. It will be recalled that 38% of their sample showed unacknowledged anxiety levels based on their combination scores on the Marlowe-Crowne Social Desirability Scale and the Taylor Manifest Anxiety scale. The results of the present study lend some support to this hypothesis in that the average score on the STAI-State at pre- and post-investigation for the sample was in the normal range of functioning which contradicted couples' verbal reports that they were anxious about the investigation. Thus either the STAI-State questionnaire is not able to pick up a specific rather than generalized stress or, on self-report psychological inventories, infertility patients may be apprehensive about reporting the true extent of their stress levels. Both of these explanations could account for the lack of differential findings on stress levels by informational group.

The finding that anxiety levels increased from pre- to post investigation is directly contrary to that of Daniluk (1988) who found that anxiety levels decreased during the investigation. However, Daniluk's measure of anxiety may also have been too general to detect infertility-related stress, having been derived from a subscore of a measure of gross psychological distress. Her finding that 96% of her couples reported a need for psychological counselling related to their infertility post-investigation, implies that the

investigation put more strain on her sample than was reflected in their questionnaire responses. Consistent with the finding of the present study are those of Berg (1988) who found gradual increases in stress as the investigation progressed, and clinical impressions (e.g., Menning, 1980) which describe couples beginning the investigation as having renewed hope after being infertile for at least a year, and then experiencing increased stress as their inability to conceive continues throughout the investigation.

Conclusions on Effects of Preparatory Information:

Contrary to expectation, this study demonstrated that prior information on the emotional strains of the infertility investigation and on the sexual difficulties that might accompany an investigation do not enhance adaptation to it. Second, it was confirmed that a basic amount of procedural information about the diagnostic tests of the investigation contributes to positive benefits on both behavioral reports and subjective measures of infertility-related issues. Third, it was demonstrated that although functioning is not severely harmed as a result of the investigation, deterioration in certain aspects of personal and interpersonal functioning does occur over its course.

Coping Style

As discussed in the introduction, the effects of high versus low information may vary depending on an individual's coping style. Researchers have shown that it is mainly patients with a preference to seek out information (monitors)

who benefit from high levels of information (Auerbach et al, 1976; Miller & Mangan, 1983). In this study, given the small sample size and the fact that an unequal number of monitors and blunters naturally fell within each group, it was impossible to measure the effects of high versus low information for individual differences in coping style. However, it was possible to determine overall which coping style was associated with better adjustment with respect to handling the demands of the investigation.

The results of this study demonstrated that female blunters reported coping significantly better with the demands of the investigation and reported more positive change with regard to their personal and sexual self-images as compared to monitors on self-report measures of adjustment. Moreover, they reported significantly fewer negative feelings to never being able to conceive than monitors. On the other hand, female monitors were found to take a significantly shorter amount of time to complete their investigation than female blunters. The mean duration for female monitors was two and one half months, which is considerably shorter than the average of four months (Mazor, 1978), especially given the three month requirement of basal body temperature monitoring. Consistent with their information-seeking preference, many of the monitors had begun temperature monitoring before beginning the investigation (temperature provides information on ovulation time), which partially accounted for their quick evaluation

time. Thus, for females, blunting overall appeared to be a better coping strategy for dealing with the investigation than monitoring. However, one benefit of being a monitor appears to be the tendency to complete medical test requirements within unusually brief time spans. These results, in part, corroborate those of Veroff (1987) in which it was found that avoidant coping was more likely to be associated with good emotional, marital and sexual adjustment than active coping, for women with long-term infertility.

The finding that female blunTERS fared better than female monitors might further explain why subjects who received a minimal information intervention dealt better with infertility-related issues than those who received greater amounts of information. If, as it appears, avoidance is a better overall strategy in dealing with the infertility investigation, then an intervention that promotes attention to its particular stresses (emotional and sexual information) would be incompatible with better coping. This explanation is consistent with the overall findings of Miller and Mangan's (1983) study that voluminous preparatory information can increase patient distress and that being a monitor is a more costly emotional style than being a blunter.

Evaluation of the benefits of different coping styles for males, indicated that male blunTERS reported more marital disharmony than male monitors. Clinical reports (Menning, 1980; Rosenfeld & Mitchell, 1979) suggest that males have a more difficult time communicating about infertility with

their spouses than females, and that this situation causes marital unrest. It may be that in this case it is the male monitor who fares better, in that his style of seeking out information permits him to communicate more with his wife about the subject of infertility. Since it is fairly unequivocal that females react differently to infertility than males, it may be that a sex difference also exists in terms of the effectiveness of a given coping style for various aspects of infertility. That is, in coping with the investigation a blunting style may be more adaptive for infertile women who in general experience the effects of infertility more intensely than males. Conversely, a monitoring style might benefit males more in managing the effects of infertility on the marital relationship. Future research is needed to evaluate this hypothesis.

It will be recalled that in order to recruit subjects for this study, potential participants were told that the program would provide them with information they might find helpful when undergoing the investigation. One might assume that participants would have had to be information seekers to some degree to agree to take part in such a study. However, the mean monitoring minus blunting score for the female subjects in this study was the same as that found in Miller and Mangan's (1983) study on volunteer, gynecological patients who were not recruited on the basis of receiving information in return for participation.

The findings on the relationship between coping style and adaptation to the infertility investigation are provocative but need replication. Future studies should form groups of subjects based on their coping style to evaluate the interaction between coping style and type of preparatory information.

Diagnostic Outcome

The results demonstrated that couples with different diagnoses did not react differently at the time of receiving their diagnoses in terms of feelings toward infertility, desire to try alternatives to natural conception, body-image, conception expectations and degree of anxiety and depression. These results differ from those of Keye et al (1983) and Freeman et al (1983) who found that the nature of emotional distress experienced by infertile couples differed as a result of diagnosis. However, subjects in these two studies had been aware of their diagnostic category for an extended period of time. Although a difference in psychological reactions at the time of diagnosis was found between the sexes in Daniluk's (1988) study, her findings concurred with those of the current study in that different psychological reactions were not found for subjects with different diagnoses.

The proportions of couples receiving various diagnoses in the present study were for the most part consistent with the diagnostic rates reported by Collins et al (1984). Of their sample of 1,297 infertile couples, 30% were classified with

endocrine disorders as compared to the present study's 28%. Twenty percent of their sample were diagnosed as unexplained infertiles compared to our 23%, and 17% of the larger sample received the diagnosis of tubal factor compared to this study's 21%. The one major discrepancy occurred with the diagnosis of male factor infertility. Their data reported a 30% rate, whereas the present study found a rate of 18%. Although the subject selection criteria and diagnostic evaluations were very similar between this study and Collins', one particular criterion in the present study may have accounted for the discrepancy, that is, the stipulation that subjects not be aware of the cause of their infertility at the start of the investigation. Many patients typically receive a preliminary work-up from their physicians before being referred to an infertility specialist. Semen analysis is often included in this work-up as it is quick, non-intrusive from a medical point of view and cost-efficient. Infertile couples are then referred to a specialist for a more complete diagnostic work-up. In this study, the criterion that excluded the largest percentage of couples from participation in this study, along with language difficulties, was awareness of an organic problem that would cause infertility. Thus for generalization purposes, this sample, although similar to others in terms of demographics, psychological profiles and females diagnoses, may be slightly different in terms of the frequency of male factor infertility.

Predictors of Outcome

Predicting Sexual Adjustment: The results of the sexual adjustment discriminant analysis indicated that subjects' initial test profiles could significantly differentiate those who reported sexual difficulties related to their infertility at post-investigation from those who reported no such difficulties at the end of the investigation.

The baseline clinical profile that characterized the poorly adjusted group included lower marital adjustment scores, less change in sexual activity during ovulation and a lower intercourse frequency. Thus, those who reported sexual difficulties at the end of the investigation were those who actually began the program at a disadvantage in terms of their interpersonal functioning, which appeared to put them at a higher risk for sexual problems during the investigation. It should be recalled that the selection criteria for forming the poorly adjusted group excluded those who were also experiencing sex problems at pre-investigation. As well, only those who reported that their sexual difficulties were directly related to their infertility problems were included in this group. These considerations justify the inference that these sex problems developed at some point during the investigation and were attributed to infertility-related issues.

The baseline variables that differentiated poorly-adjusted from well-adjusted groups in sexual functioning were all in the interpersonal area as opposed to general

psychological functioning. Furthermore, the predictor variables were able to distinguish couples with sexual difficulties from those without with a high accuracy rate, even though couples in the poorly-adjusted group still performed within the normal range on this set of variables. In fact, the scores for the well-adjusted group were more unusual than those for the poorly-adjusted group in that they indicated better performance than would be expected for an average couple. Scores on the MAS for the well-adjusted group were more than one standard deviation above the norm. The intercourse frequencies of more than four times per week would also be considered more frequent than average for this age range (Friedman, 1979). In addition, the finding that better sex during ovulation, both qualitatively and quantitatively, was reported for the sexually well-adjusted group refutes the general consensus that synchronizing sex to the calendar represents a negative adaptation to infertility in all cases (e.g., Bonnar, 1979; Keye, 1984; Lalos et al. 1985). It is possible, therefore, that only couples who have an unusually strong and flexible interpersonal relationship are those who are protected from the potential of developing sexual difficulties during the investigation.

In order to identify patients in the future who are at risk to develop sexual problems over the course of the investigation, the results of this study indicate that it is not simply a case of screening for gross sexual or psychological pathology. Rather, it appears that the demands

of the investigation on the sexual relationship are such that couples with adequate relationships can develop sexual difficulties. Only those who were fortified with an exceptional interpersonal and sexual relationship appeared to be unaffected. It would appear prudent for clinicians to monitor couples as they proceed through the investigative process so that any sexual difficulties can be dealt with as they occur.

Predicting Emotional Adjustment: It will be recalled that change scores were used in order to form the emotionally adjusted and poorly-adjusted groups for this discriminant analysis. That is, emotional functioning for subjects in the poorly-adjusted group had deteriorated over the course of the investigation, while it had either remained the same or improved for subjects in the well-adjusted group. Thus, individual differences in terms of baseline emotional functioning and its impact on adapting to the investigation did not weigh in the formation of these groups. This was an important criterion since it was not known whether subjects' baseline emotional functioning levels were due to infertility or to other factors. Furthermore, a composite score representing three measures of emotional adjustment was used, thereby strengthening the probability that only those who experienced deterioration in emotional functioning would be included in the poorly-adjusted group.

Baseline neuroticism scores and intercourse frequencies were able to differentiate those males who became

psychologically distressed over the course of the investigation. For females, sex during ovulation and marital adjustment were the best predictors of poor emotional adaptation to the investigation. It is noteworthy that three of the four variables (excluding neuroticism) which predicted emotional adjustment also predicted sexual adjustment, even though only 17% of males and 33% of females in the emotionally maladjusted group also fell into the sexually maladjusted group. Moreover, these variables each measure an aspect of interpersonal functioning. Therefore, these data attest to the importance of relationship-type variables in predicting both emotional and sexual adaptation to the infertility investigation.

For the most part, the differences between the adjusted and poorly-adjusted groups were in the expected directions. That is, poorly-adjusted males had higher neuroticism scores than well-adjusted males; and poorly-adjusted females demonstrated poorer marital adjustment levels and less change in sexual activity during ovulation than their well-adjusted counterparts. However, it was found that for the males, higher intercourse frequencies were predictive of poorer emotional adjustment. Although this appears counter-intuitive, there is substantial evidence in the literature to suggest that increasing one's coital frequencies in order to improve conception probabilities leads to increased psychological stress, especially in the male because of the pressure on him to perform for intercourse (i.e., to obtain an erection and

ejaculate.) (Bell, 1981; Bullock, 1874; Drake & Grunert, 1979). The finding that the mean intercourse rate in the poorly-adjusted group was significantly higher than that in the well-adjusted group does lend some support to the conclusion that higher intercourse rates are associated with psychological distress in males. However, because it is not known whether the mean frequency in the poorly-adjusted group represents an increase compared to frequency rates prior to the discovery of infertility, this explanation remains tentative.

Interestingly, the converse was found to be true for females. In their case, an increase in sexual activity during ovulation time was predictive of good emotional adjustment. Following the same line of reasoning as was offered for the male case, for females increased coital activity would not represent a pressure to perform, as they need not be aroused for coitus to occur. Furthermore, since females experience the inability to reproduce more acutely than males, any behaviour that it likely to improve prospects of conceiving would likely be regarded as stress-reducing.

The early identification of patients whose emotional stability might worsen over the course of the investigation should therefore include detailed assessment of a couple's interpersonal relationship, both in general and as it relates to their infertility. As well it should be kept in mind that what is predictive of good adjustment in one spouse can be related to poor emotional adjustment in the other. The

classification analyses indicated that, whereas neuroticism and intercourse frequencies could classify 83% of the males into their respective adjusted and poorly-adjusted groups, only 69% of the females could be similarly classified based on their best predictors of marital adjustment and sex for procreation. Therefore, more confidence should be placed on the indicators of males at high risk than those for females.

Predictors of Pregnancy Success:

The results of the discriminant analysis for predicting pregnancy outcome showed that social and psychological variables alone were not sufficient predictors of pregnancy within six months post-investigation. This finding is not surprising since diagnosis, which is the best predictor of pregnancy outcome, could not be included in this analysis (Collins et al, 1984). As reviewed in the introduction, recent studies have demonstrated that infertility is organically-based in at least 90% of the cases. Without medical correction of the presenting organic problem, pregnancy has a low probability of occurring (Bernstein et al, 1979). In the present sample, of the five couples who achieved pregnancy after receiving a diagnosis, three were diagnosed with an organic problem that was subsequently treated. The two others (unexplained infertility) achieved pregnancy after being placed on a regimen of hormonal medication (clomiphene citrate) even though no hormonal abnormalities were detected. However, it will be recalled that subjects in the no-pregnancy group also received

treatment during the six month follow-up period. Therefore treatment alone would not account for pregnancy success.

The discriminant analysis did reveal, nonetheless, that pre-investigation anxiety levels contributed significantly to differentiating the groups, in that those who achieved pregnancy had significantly lower anxiety scores at the start of the investigation than those who did not achieve pregnancy. Based on t-test analyses, STAI-State was, in fact, the only variable that differentiated the groups. Such variables as years infertile, years married and age were not found to be good predictors of pregnancy success, as have been found in other studies (Keye et al, 1983; McEwan et al, 1987). This finding does implicate stress as contributing to the perpetuation of infertility. This result is consistent with the numerous anecdotal and case studies that have demonstrated that stress influences reproductive functioning. It also is consistent with the empirical findings of O'Moore et al (1983) that demonstrated a relationship between decreased anxiety scores and a reduction in elevated prolactin levels that would inhibit pregnancy. Thus, one can speculate from the results of the present study in combination with those of past studies, that without taking into account medical factors, one cannot predict the likelihood of pregnancy success. However, in combination with medical factors, stress level might play a part in distinguishing those who are more likely to achieve pregnancy. Future research directed toward more precisely

identifying the best predictors of pregnancy should include the physician's prognostic estimate of an individual's chances of achieving pregnancy based on medical factors alone, accompanied by variables that measure various forms of psychological stress.

On a conceptual level, the finding that stress levels were associated with eventual pregnancy success, however provisional, is compatible with the interactional model proposed by Jemmott III and Locke (1984). They suggested that the development of disease states should be viewed within a multi-factorial framework of etiology. This approach would hold that given a certain set of circumstances, emotional elements could interact with medical factors to contribute relatively to the development and/or outcome of infertility. Accordingly, the task for future researchers would be to identify the circumstances that foster the influence of psychological factors on the course of infertility.

The results of the present study also revealed that STAI-State scores increased significantly from pre- to post-investigation, suggesting that if stress is a factor in reducing pregnancy rates, then the stress of the investigation could serve to further impede pregnancy possibilities.

One of the aims of this study was to test the hypotheses that the infertility investigation causes additional stress for couples, and that stress itself contributes to lower pregnancy rates. Though these results must be taken as

preliminary given the small sample size they are consistent with this notion. Since the other major hypothesis of this study was not confirmed, that is, that emotional-related information presented by video tape format would alleviate the anxiety of the investigation, the task for future research continues to be to evaluate the effectiveness of different intervention formats and contents in reducing stress.

Limitations of the Present Study

As noted in the introduction, one major weakness in previous studies was that samples were heterogeneous with respect to type of infertility, duration of infertility and phase of the infertility process. The strict selection criteria used in the present study to rectify this problem did result, however, in the loss of a large number of potential subjects. As indicated in the 'Subjects' section, of a possible 208 subjects who expressed an interest in participating in the study, 121 were eliminated based on the selection criteria. The final sample of 39 males and 39 females was relatively small, thereby reducing the statistical power of the design.

One common method used to increase power is to adopt a more lenient alpha level. However, this presents its own problems as an inflated alpha level will increase the probability of Type I errors (Tabachnick & Fidell, 1983). Another strategy is to decrease the within group variability in the sampling distributions by exerting greater

experimental control, as in narrowly defining the sample (Stevens, 1986). The more homogeneous the sample, the lower the variability in the dependent variables and the greater the power of the design to detect true group differences. Thus, though the cost of using a homogeneous sample was a reduced sample size, the gain was a more sensitive experimental design. In addition, Stevens (1986) recommends that repeated measures designs are useful when insufficient power is of concern because individual difference, which increases variability, is removed from the error term. The design of this study called for Sex (partners within a couple) and Time (pre- post-investigation) to be analyzed as repeated measures thereby improving the power as well. Overall, however, because of the relatively small sample size in the present study, the generalizability of the results should be viewed as tentative pending further replication. Furthermore, because of the method of subject recruitment, in addition to the strict subject selection criteria, sampling bias may also limit this sample's representativeness.

Another limitation in the design of this study concerns the interpretation of the findings of overall time effects. Since post-testing in the majority of cases occurred within one week of subjects' receiving diagnostic information, the possibility existed that subjects' responses at post-investigation reflected acute reactions to their diagnostic information, as opposed to changes over the investigative process. For example, an overall decrease from pre- to post-

investigation was found in subjects' perceptions of their chances of conceiving, which may have represented an immediate reaction to diagnostic information given to them. If this were the case, subjects' disappointment upon learning their diagnoses may have influenced their responses on other measures. However, this is an unlikely possibility given that the nature of the majority of measures that demonstrated change from pre-to post-investigation inquired about an aspect of functioning that occurred over an extended period of time. For example, the development of sexual difficulties, intercourse frequency, marital harmony, knowledge about infertility and coping with the investigation, represent subjective as well as behavioral measures which suggest change over a period of time. Furthermore, in Daniluk's (1988) study no differences in psychological distress scores were found for her sample between the two testing periods of one month into the investigation and the time subjects learned the cause of their infertility, indicating that diagnostic information was not reactive. Therefore, it seems justifiable to conclude that the majority of findings in the current study represent change over time that occurred either because of the interventions or the investigative process itself. However, given the design of this study, the effects of receiving a diagnosis must be considered when interpreting pre- to post-changes.

Finally, although extraneous influences on the groups that received the sexual and emotional informational

components were controlled for by the low information group, the procedural information in this latter group was itself not controlled for. Since this intervention proved not to be inert, the question of what contributed to change in this group cannot be answered clearly. Ultimately, an attentional placebo group that received routine hospital care in conjunction with an inert film would be required to clarify this finding.

Conclusions and Recommendations

The findings of this study raise several conceptual, methodological and clinical points. One major conclusion is that clear and distinct differences do exist between the sexes in the way they react to and cope with infertility. These results are consistent with the vast majority of infertility studies. Specifically, in the current study, a greater percentage of wives than husbands felt their infertility was a stressful experience, were anxious about the investigation and reported experiencing infertility-related sexual difficulties. As well, females were found to have more negative feelings about their infertility in general and to have acquired more knowledge about infertility. Furthermore, increased intercourse frequencies were found to be associated with reduced psychological distress in females and increased distress in males. Since many of these differences were evident even before subjects knew who was responsible for the couple's infertility problem, it is unlikely that diagnostic information would

alter this pattern of findings. The clinical implication of this sex difference effect is that the infertile female is more in need of psychological services than her spouse. The male's reaction to infertility is not as extreme. Therefore, it is possible that despite the numerous advantages of couple therapy, important gains might also be made by focussing on the female partner individually. Improving her level of emotional well-being might generalize, as well, to an improvement for the couple.

Another clear conclusion of this study is that the effects of infertility and the infertility investigation manifest themselves mainly in areas of functioning that are relevant to reproduction. These findings correspond to others (e.g., Desiderato et al, 1986) in which it has been demonstrated that couples feel anxious and unable to cope specifically with infertility, as opposed to developing generalized anxiety and inefficacy. One might conclude therefore, that this sample was essentially a normal, nonpsychiatric sample as evidenced by subjects' questionnaire responses. However, it was demonstrated that psychological and sexual difficulties did exist around infertility-related issues. The researcher who is interested in increasing our understanding of the psychological challenges that infertility presents, needs to devise questionnaires that are sensitive to the problems of the infertile population, evaluate their psychometric properties and develop norms.

It is also recommended that future research include evaluation of psychological functioning on a continuous basis by employing the use of daily or weekly self-monitoring forms that subjects would complete at home. This would solve the methodological dilemma concerning whether observed pre- to post changes reflected a change over time, or a reaction to diagnostic information received at post-investigation. Testing subjects' reactions at a particular point during the investigation as Daniluk (1988) did, or as was done in the current study with the use of monthly telephone interviews may not be as effective since there are many factors which occur during the course of the investigation which could influence questionnaire responses, e.g., the onset of menstruation, before or after certain diagnostic tests. In addition, it has been shown that pre- post questionnaire data tends to portray more positive functioning than daily, self-monitoring data (Libman, Fichten & Brender, 1983). Thus self-monitoring may be a more sensitive tool in detecting the difficulties that were reported by the present sample during the interview sessions but which were not reflected in their questionnaire responses.

From a life-stress perspective, the results of this prospective study indicated that the infertility investigation in combination with at least a minimal amount of routine procedural information was not as troublesome to couples as many reports have suggested. Nonetheless, stress levels, as well as other areas of psychological functioning

were negatively affected by the investigation experience and some subjects were more adversely affected than others. Specifically, patients who began the investigation with minor difficulties in their personal and/or interpersonal lives were likely to experience the strains of the investigation more acutely. Furthermore, stress was shown to be implicated in some fashion in lowering conception outcome. Therefore, it is suggested that infertility centers include a mental health professional who could assess patients at intake, bearing in mind the factors that contribute to better psychological handling of the pressures of the investigation. Early identification of patients at risk to experience emotional and sexual difficulties, accompanied by immediate intervention could prove to be cost-effective. It might ensure less problematic participation during the investigation and perhaps contribute to an increase in the birthrate.

In conclusion, the findings of this study suggest that infertility is a multifaceted problem and its medical investigation presents several psychological challenges for couples. Mental health professionals as integral participants in an infertility service can play an important role by offering couples an opportunity to meet these challenges more competently. Similarly, by endorsing a holistic and integrative approach to research, a better understanding of infertility might emerge, as well as the development of techniques for its management.

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Appendix A

Consent Forms

English Form

French Form

CONSENT FORM

1. We are informed that this study is an attempt to evaluate the effectiveness of various counselling techniques for couples undergoing an infertility investigation.
2. We understand that by participating in this study, we may benefit by receiving information and suggestions designed to help couples better cope with the infertility investigation. Also, our participation may contribute to the understanding in general, of the problems that affect couples during the infertility investigation.
3. We are aware that we have every right to request psychological counselling regardless of whether we partake in this study or not.
4. We are willing to complete a series of self-report, written questionnaires designed to assess each partner's overall psychological, marital and sexual functioning. The questionnaires take approximately two hours to complete, and will be filled out, individually, at two different time periods presently, at the end of our medical investigation.
5. We understand that by participating in this study, we will meet together with a project worker for one to two sessions, of approximately one hour duration each, over a period of two weeks during the early stages of our medical investigation. These sessions will provide us with information and/or suggestions in video tape or written format aimed at reducing the anxieties of the investigation on our personal and interpersonal lives.
6. We agree to sign a standard authorization form granting permission to the doctor in charge of our case to release information regarding our medical status to the study's project coordinator, who is a psychologist. This will allow the project coordinator access to our medical file which includes such details as the results of any medical tests, diagnosis, type of treatment prescribed and ongoing progress. We agree to allow the project coordinator to follow our case in such a manner for one year from the signing of this document. Any information obtained from our medical file will be treated with absolute confidentiality.
7. We understand that both partners will be required to complete the questionnaires and attend the counselling sessions.
8. We understand that we are free to ask any questions concerning the procedures used in this study at any time. If for any reason we experience discomfort or concern during participation in this project, we are free to withdraw, or discuss this with the psychologist and request appropriate recommendations or referrals. We understand that withdrawal from the study at any time will not affect our receiving medical treatment.

9. We are aware that this is an experimental program, and that no fee is required to participate. We are informed that should we desire additional help once we have completed the program, we can obtain information from the psychologist about the availability of other services and their costs.
10. We are informed that on completion of this study, we are welcome to inquire and receive information pertaining to our individual and the overall results of the study.
11. We understand that if results of this study are published, our part in the study will be completely anonymous and our privacy will be completely protected.
12. On the basis of this information we willingly consent to participate as subjects in this study conducted at the
Hospital, and associated with
Concordia University, Department of Psychology.

Date _____

Wife _____

Date _____

Husband _____

Date _____

Project Coordinator _____

FORMULE DE CONSENTEMENT

1. Nous sommes au courant que la présente étude vise à évaluer l'efficacité de différentes techniques de consultation à l'intention des couples soumis à une investigation sur la stérilité.
2. Nous comprenons qu'un prenant part à cette étude, nous bénéficierons peut-être de l'information et des suggestions présentées aux couples dans le but de les aider à mieux être à la hauteur de la situation. De plus, notre participation peut nous aider à comprendre les difficultés expérimentées par les couples au cours de l'investigation sur la stérilité.
3. Nous savons que nous avons le droit de faire appel à la consultation psychologique, que nous participions à l'étude ou non.
4. Nous sommes disposés à effectuer une série d'auto-évaluations et de questionnaires dans le but d'évaluer les fonctions psychologique, maritale et sexuelle générales de notre partenaire. Il faut environ deux séances de une heure chacune pour répondre aux questionnaires; nous serons appelés à les remplir, individuellement, à deux reprises, soit maintenant, une fois notre investigation médicale terminée.
5. Nous savons qu'en prenant part à l'étude, nous nous réunirons avec un des membres de l'équipe de chercheurs à une ou deux reprises, et chaque séance durera environ une heure; ces consultations, échelonnées sur une période de deux semaines, auront lieu au cours de la première phase de notre investigation médicale. Elles nous donneront de l'information et/ou des suggestions par le biais de bandes vidéo ou de documents écrits sur les méthodes de réduction de l'anxiété découlant de l'investigation et se manifestant dans nos vies individuelles et notre vie commune.
6. Nous consentons à signer une formule d'autorisation normalisée par laquelle nous donnons la permission au médecin chargé de notre cas de transmettre de l'information relative à notre statut médical au psychologue qui s'occupe de la coordination du projet. Cette autorisation donne également au coordonnateur l'accès à notre dossier médical, lequel renferme des détails tels que résultats d'analyses, diagnostic, genre de traitement prescrit et suivi de nos progrès. Nous autorisons le coordonnateur du projet à suivre notre cas de cette façon pendant une année à compter de la date à laquelle nous apposons notre signature sur le présent document. L'information recueillie à partir de notre dossier médical sera traitée en toute confidentialité.
7. Nous savons que les deux partenaires seront appelés à répondre aux questionnaires et à assister aux consultations.
8. Nous savons que nous pouvons poser des questions relatives à la méthodologie mise en oeuvre dans le cadre de la présente étude en toute liberté et en tout temps. Si pour quelque raison que ce soit, nous nous sentions mal à l'aise ou appréhendions quoi que ce soit en rapport

avec notre participation à l'étude, nous pouvons cesser d'y participer ou en discuter avec le psychologue et lui demander de nous faire des recommandations ou de nous orienter en conséquence. Il est entendu que notre retrait du projet ne compromettra en rien la qualité des soins qui nous seront prodigués ultérieurement.

9. Nous savons que le présent projet est de nature expérimentale et que notre participation n'entraîne aucun déboursé. Nous savons que si nous désirons avoir recours à une aide additionnelle une fois le programme terminé, nous pouvons nous renseigner auprès du psychologue au sujet des services disponibles et des frais.
10. Nous savons qu'une fois l'étude terminée, nous sommes invités à nous renseigner sur tout ce qui touche notre cas particulier et l'ensemble de l'étude.
11. Il est entendu que si les résultats de l'étude sont publiés, l'anonymat des participants sera respecté.
12. Compte tenu de l'information qui précède, nous consentons de plein gré à participer à l'étude dont il est question à titre de sujets à l'Hôpital _____ en association avec le Département de psychologie de l'Université Concordia.

Date _____

Conjointe _____

Date _____

Conjoint _____

Date _____

Coordonnateur du projet _____

Appendix B

Questionnaires:

Patient Profile Form
Background Information Form
Locke-Wallace Marital Adjustment Scale (MAS)
Derogatis Sexual Functioning Inventory (DSFI)
Sexual History Form (SHF)
Eysenck Personality Inventory (EPI)
Beck Depression Inventory (BDI)
Miller Behavioral Style Scale (MBSS)
State-Trait Anxiety Inventory (STAI)
Fertility Information Questionnaire (FIQ)
Feelings About Infertility Questionnaire (FAI)
Post-Questionnaire Form
Film Retention Questionnaire (FRQ)

PATIENT PROFILE

Please fill out this questionnaire as accurately and completely as you can. The information that is provided is confidential.

Today's Date _____
 Month Day Year

Referred by _____

NAME _____

GENERAL MEDICAL HISTORY

(Please circle the appropriate answer)

1. Has a serious medical illness ever impaired your general health? _____ YES NO
2. Have you been under a physician's care within the past year? _____ YES NO
3. Has there been any significant change in your general health during the past year? _____ YES NO
4. Are your activities limited by health? _____ YES NO
5. Are you taking any prescribed medicines or drugs? _____ YES NO
6. Are you taking any non-prescription medicines or drugs? _____ YES NO
7. Are you allergic to any medications, foods, pollens, etc.? _____ YES NO
8. Do you now have or have you ever had: (indicate with check)
- | | |
|--|---|
| <input type="checkbox"/> An operation | <input type="checkbox"/> Migraine headache |
| <input type="checkbox"/> Heart disease | <input type="checkbox"/> Herpes |
| <input type="checkbox"/> Kidney disease | <input type="checkbox"/> Varicose veins |
| <input type="checkbox"/> Jaundice or Liver Disease | <input type="checkbox"/> Bleeding disorders |
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Severe depression |
| <input type="checkbox"/> Pneumonia | <input type="checkbox"/> Stroke |
| <input type="checkbox"/> Asthma | <input type="checkbox"/> Chronic fatigue |
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Adult Mumps |
| <input type="checkbox"/> Sexually transmitted diseases | <input type="checkbox"/> Genital infection |
| | <input type="checkbox"/> Other medical problems |
9. Please state the names of your: General Practitioner _____
Gynecologist _____
Urologist _____
10. How long have you been trying to have a child? _____
11. Have you consulted a specialist to investigate your lack of success at conception? _____ YES NO
If yes, please specify what medical tests were performed _____

12. Have you ever received professional help for an emotional, marital or sexual problem? _____ YES NO
If yes, describe for what, when, and for how long _____

FEMALE HISTORYA. Gynecological History

1. Date of first day of your last normal menstrual period _____
2. How old were you at the time of your first menstrual period? _____
3. During the last couple of years have your menstrual cycles been:

shorter than 21 days _____	YES	NO
longer than 40 days _____	YES	NO
4. How would you describe your flow? _____ Light, Average, Heavy
5. Do you bleed for longer than 7 days? _____ YES NO
6. Do you bleed or spot between periods? _____ YES NO
7. Do you have much pain with your periods? _____ YES NO
8. Are you able to tell when you ovulate? _____ YES NO
9. Do you have pain during or after intercourse? _____ YES NO
10. Do you have any problems with intercourse? _____ YES NO
11. Have you had a pelvic exam within the last 6 months? _____ YES NO

B. Contraceptive and Reproductive History

1. Which methods of contraception have you used?

___ Birth control pills	___ Rhythm
Brand _____	___ Withdrawal
How long _____	___ Douche
___ Intrauterine device how long _____	___ Other (Please identify)
___ Diaphragm	___ None
___ Condom	
___ Foam	
___ Creams or jellies	
2. What was your last method of contraception? _____
How long did you use this method for? _____
3. At what age did you first have sexual intercourse? _____
4. Have you ever been pregnant? _____ YES NO
If yes, how many pregnancies have you had? _____
5. Have you ever had an abortion? _____ YES NO
If yes, how many abortions have you had? _____

6. Have you ever had a miscarriage? _____ YES NO
If yes, how many miscarriages have you had? _____
7. Have you ever had any medical problems or surgical procedures
affecting the reproductive organs? _____ YES NO
If yes, please specify _____

MALE HISTORY

1. Have you ever fathered any children? _____ YES NO
2. Have you ever consulted a urologist? _____ YES NO
If yes, please specify for what purpose _____
3. Have you ever had any medical problems or surgical procedures affecting
the reproductive organs? _____ YES NO
If yes, please specify _____
-

Your comments are welcome, feel free to write them down on this form.

Background Information Form

1. Name: _____
2. Address: _____

 _____ Postal Code _____
3. Telephone: Home: _____ Office: _____
4. Age: _____
5. Sex: Male: _____ Female: _____
6. Marital Status: _____ Married
 _____ Remarried
 (Mark one X only) _____ Co-habiting
7. Where were you born? _____
8. What is your citizenship? Canadian Other: _____
 please specify
9. What is your religion? (Mark one X only)
 _____ Protestant
 _____ Catholic
 _____ Jewish
 _____ Other: _____
 please specify
10. Please circle the number of years of schooling you have completed. Include years of schooling at university, secondary (high) or elementary school, community colleges, institutes of technology, CEGEP's (general and professional), private trade schools or private business colleges, diploma schools of nursing, etc.
- 1 3 5 7 9 11 13 15 17 19 21 23 25
 2 4 6 8 10 12 14 16 18 20 22 24

11. What degrees, certificates or diplomas have you ever obtained?
Mark as many boxes as apply:

- None
- Secondary (high) school graduation certificate
- Trades certificate or diploma
- Other non-university certificate or diploma (obtained at community college, CEGEP, institute of technology, etc.)
- University certificate or diploma below bachelor level
- Bachelor's degree(s) (e.g. B.A., B.Sc., B.A.Sc., LL.B.)
- University certificate or diploma above bachelor level
- Master's degree(s) (e.g. M.A., M.Sc., M.Ed.)
- Degree in medicine, dentistry, veterinary medicine or optometry (M.D., D.D.S., D.M.D., D.V.M., O.D.)
- Earned Doctorate (e.g. Ph.D., D.Sc., D.Ed.)

12. How long have you been married to or co-habiting with your present partner? _____

13. Do you have any children? (Adopted or natural) _____

14. What is your occupation? _____
(Please be specific. For example, accounting clerk, sales representative, civil engineer, secondary school teacher, chief electrician, metal worker, homemaker...)

15. If retired, what was your occupation before retirement? _____

16. In your occupation, what are/were your most important activities or duties?

(For example, verifying invoices, selling electrical tools, managing the research department, teaching mathematics, supervising construction electricians, operating lathe (If in the Armed Forces, give rank.)

17. What was your combined annual income last year? Please circle one:

\$1,000-\$10,000	\$10,000-\$20,000	\$20,000-\$30,000	\$30,000-\$40,000
\$40,000-\$50,000	\$50,000-\$60,000	\$60,000-\$70,000	more than \$70,000


Locke-Wallace Marital Adjustment Scale

Please reply to each of the questions by circling the appropriate answer. If you cannot give an exact answer to a question, answer the best you can.

1. Have you ever wished you had not married?
 - a. Frequently
 - b. Occasionally
 - c. Rarely
2. If you had your life to live again, would you:
 - a. Marry the same person
 - b. Marry a different person
 - c. Not marry at all
3. How many outside activities do husband and wife engage in together?
 - a. All of them
 - b. Some of them
 - c. Few of them
 - d. None of them
4. In leisure time, which situation do you prefer?
 - a. Both husband/wife to stay home
 - b. Both to be on the go
 - c. One to be on the go and the other to stay home
5. Do you and your mate talk things over together?
 - a. Never
 - b. Now and then
 - c. Almost always
 - d. Always
6. How often do you kiss your mate?
 - a. Every day
 - b. Now and then
 - c. Almost never
7. Check any of the following items which you think have caused serious difficulties in your marriage.
 - Mate's attempt to control my spending money
 - Other difficulties over money
- Religious differences
- Different amusement interests
- Lack of mutual friends
- Constant pickering
- Interference of in-laws
- Lack of mutual affection
- Unsatisfying sex relations
- Selfishness/lack of cooperation
- Adultery
- Desire to have children
- Sterility of husband or wife
- Venereal diseases
- Mate became familiar with other
- Desertion
- Non-support
- Drunkenness
- Gambling
- Ill health
- Mate sent to jail
- Other reasons
8. How many things truly satisfy you about your marriage?
 - a. Nothing
 - b. One thing
 - c. Two things
 - d. Three or more
9. When disagreement arise, they result in:
 - a. Husband giving in
 - b. Wife giving in
 - c. Neither giving in
 - d. Agreement by mutual give and take
10. What is the total number of times you left mate or mate left you due to conflict?
 - a. No time
 - b. One or more times
11. How frequently do you or your mate get on each other's nerves around the house?
 - a. Never
 - b. Occasionally
 - c. Frequently
 - d. Almost always
 - e. Always
12. What are your feelings on sex relations between you and your mate?
 - a. Very enjoyable
 - b. Enjoyable
 - c. Tolerable
 - d. Disgusting
13. What are your mate's feelings on sex relations with you?
 - a. Very Enjoyable
 - b. Enjoyable
 - c. Tolerable
 - d. Disgusting

Indicate approximate extent of agreement between husband and wife

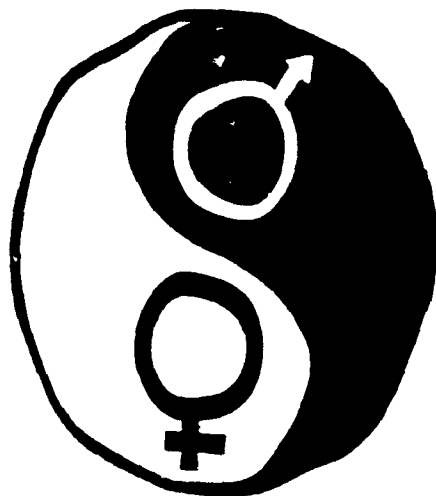
Check one column for
each item below*

	1	2	3	4	5	6
14. Handling Family Finances						
15. Matters of Recreation (eg. going to dance)						
16. Demonstration of Affection (eg. kissing frequency)						
17. Friends (eg. dislike of mate's friends)						
18. Intimate Relations						
19. Ways of dealing with in-laws						
20. Amount of time that should be spent together						
21. Conventionality (eg. right, good or proper conduct)						
22. Aims, goals and things believed to be important						
23. Circle the dot which you feel best represents the degree of happiness in your marriage						
						
very unhappy			very happy			

* Use the following number key to indicate extent of agreement;

1. Always agree
2. Almost always agree
3. Occasionally disagree
4. Frequently disagree
5. Almost always disagree
6. Always disagree

DSFI



DEROGATIS
SEXUAL FUNCTIONING
INVENTORY

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INSTRUCTIONS

Below you will be asked to report certain attitudes and opinions, and provide information about some of your sexual experiences. These questions are focused on your thoughts and feelings. Your answers and responses will be kept in the strict confidence, and only those members of the staff directly involved with your treatment will have access to this information. It will not be made available to anyone else unless you request it. The inventory is divided into 20 sections, and in each section you are asked something slightly different. In some you are asked to answer questions, while in others you are asked to describe yourself. We also ask about problems you may be having and about some of your sexual thoughts, fantasies, and experiences.

Each section has a brief instruction which will tell you what you are to do in that section. Please work quickly, and do not skip any items. If you have any questions, please ask the technician to help you.

SECTION 1

Below are some statements concerning general information about sexual functioning. Please read each statement carefully. Once you have read it, indicate whether you agree with the statement or not by marking TRUE for those you agree with, or FALSE for those you do not.

	<u>TRUE</u>	<u>FALSE</u>
1. USUALLY MEN ACHIEVE ORGASM MORE QUICKLY THAN WOMEN	C	O
2. HAVING INTERCOURSE DURING MENSTRUATION IS NOT A HEALTHY PRACTICE	O	O
3. THE PENIS MUST BE ERECT BEFORE EJACULATION MAY OCCUR	O	O
4. SIMULTANEOUS ORGASM IS NOT NECESSARY FOR A GOOD SEXUAL RELATIONSHIP	O	O
5. MASTURBATION BY EITHER PARTNER IS AN INDICATOR OF POOR MARITAL ADJUSTMENT	O	O
6. A WOMAN WHO HAS HAD A HISTERECTOMY CAN NO LONGER EXPERIENCE ORGASM	O	O
7. MEN REACH THE PEAK OF THEIR SEXUAL DRIVE IN THEIR LATE TEENS WHILE WOMEN REACH THEIR PEAK DURING THEIR 30'S	O	O
8. A WOMAN CAN BECOME PREGNANT DURING MENSTRUATION	O	O
9. MOST MEN AND WOMEN LOSE INTEREST IN SEX AFTER AGE 60	O	O
10. A MALE'S ORGASM IS MORE SATISFYING THAN A FEMALE'S ORGASM	O	O
11. THE PROPHYLACTIC (RUBBER) PROTECTS AGAINST CONCEPTION AND AGAINST VENEREAL DISEASE	O	O
12. LUBRICATION IN THE FEMALE SHOWS SEXUAL EXCITEMENT LIKE THE MALE'S ERECTION	O	O
13. ORAL-GENITAL SEX IS UNHEALTHY BECAUSE IT ENHANCES THE POSSIBILITY OF CONTRACTING VENEREAL DISEASE	O	O
14. WOMEN WHO HAVE FANTASIES DURING INTERCOURSE ARE DISSATISFIED WITH THEIR SEX LIVES	O	O
15. FREQUENCY OF INTERCOURSE IS AN ACCURATE MEASURE OF SUCCESS OF A RELATIONSHIP	O	O
16. A WOMAN MAY BE BROUGHT TO ORGASM BY MANUAL STIMULATION OF HER GENITALS	O	O
17. MENOPAUSE IN A WOMAN CREATES A SHARP REDUCTION IN HER SEXUAL DRIVE	O	O
18. WOMEN DESIRE SEX ABOUT AS FREQUENTLY AS MEN	O	O
19. AN EFFECTIVE FORM OF CONTRACEPTION IS DOUCHING AFTER INTERCOURSE	O	O
20. AFTER INTERCOURSE THERE IS A PERIOD WHEN A MAN CANNOT RESPOND TO SEXUAL STIMULATION	O	O
21. FEMALES CAN MAINTAIN A SEXUAL RESPONSE THROUGH MULTIPLE ORGASMS	O	O
22. MOST WOMEN ARE ABLE TO ENJOY SEX EVEN WITHOUT EXPERIENCING ORGASM	O	O
23. THE BIGGER THE PENIS THE MORE SATISFYING IT IS TO THE FEMALE IN INTERCOURSE	O	O
24. A WOMAN CAN NO LONGER BECOME PREGNANT ONCE MENOPAUSE HAS BEGUN	O	O
25. ERECTION IN THE MALE IS BROUGHT ABOUT BY CONGESTION OF BLOOD IN THE PENIS	O	O
26. THE CLITORIS IS NOT A PARTICULARLY SENSITIVE AREA OF THE FEMALE'S GENITALS	O	O

SECTION II

Below are a list of sexual experiences that people have. We would like to know which of these sexual behaviors you have experienced. Please indicate those experiences you have personally had by placing a check ([]) under the YES column for that experience. If you have not had the experience please your check under the NO column. In addition, if you have had the experience during the past 60 months please place an additional check under the column marked PAST 60 DAYS. Make your marks carefully and do not skip any items.

	YES	NO	PAST 60 DAYS
1. MALE LYING PRONE ON FEMALE (CLOTHED)	[]	[]	[]
2. STROKING AND PETTING YOUR SEXUAL PARTNER'S GENITALS	[]	[]	[]
3. EROTIC EMBRACE (CLOTHED)	[]	[]	[]
4. INTERCOURSE-WAGINAL ENTRY FROM REAR	[]	[]	[]
5. HAVING GENITALS CARESSED BY YOUR SEXUAL PARTNER	[]	[]	[]
6. MUTUAL ORAL STIMULATION OF GENITALS	[]	[]	[]
7. ORAL STIMULATION OF YOUR PARTNER'S GENITALS	[]	[]	[]
8. INTERCOURSE-SIDE BY SIDE	[]	[]	[]
9. KISSING OF SENSITIVE (NON-GENITAL) AREAS OF THE BODY	[]	[]	[]
10. INTERCOURSE-SITTING POSITION	[]	[]	[]
11. MASTURBATING ALONE	[]	[]	[]
12. MALE KISSING FEMALE'S NUDE BREASTS	[]	[]	[]
	YES	NO	PAST 60 DAYS
13. HAVING YOUR ANAL AREA CROSSED	[]	[]	[]
14. BREAST PETTING (CLOTHED)	[]	[]	[]
15. CARESSING YOUR PARTNER'S ANAL AREA	[]	[]	[]
16. INTERCOURSE-FEMALE SUPERIOR POSITION	[]	[]	[]
17. MUTUAL PETTING OF GENITALS TO ORGASM	[]	[]	[]
18. HAVING YOUR GENITALS ORALLY STIMULATED	[]	[]	[]
19. MUTUAL DRESSING OF EACH OTHER	[]	[]	[]
20. DEEP KISSING	[]	[]	[]
21. INTERCOURSE-MALE SUPERIOR POSITION	[]	[]	[]
22. ANAL INTERCOURSE	[]	[]	[]
23. KISSING ON THE LIPS	[]	[]	[]
24. BREAST PETTING (NUDE)	[]	[]	[]

SECTION III

Below we would like you to indicate the frequency with which you typically engage in certain sexual activities. Please indicate how often you experience each of the sexual activities below by checking ([]) the category that is closest to your personal frequency. Categories range from "NOT AT ALL" to "4 OR MORE TIMES A DAY". Please do not skip any items.

	NOT AT ALL	LESS THAN 1 MONTH	1-2 MONTH	1 WEEK	2-3 WEEK	4-6 WEEK	1 DAY	2-3 DAY	4 OR MORE DAY
1. INTERCOURSE	[]	[]	[]	[]	[]	[]	[]	[]	[]
2. MASTURBATION	[]	[]	[]	[]	[]	[]	[]	[]	[]
3. KISSING AND PETTING	[]	[]	[]	[]	[]	[]	[]	[]	[]
4. SEXUAL FANTASIES	[]	[]	[]	[]	[]	[]	[]	[]	[]
5. WHAT WOULD BE YOUR IDEAL FREQUENCY OF SEXUAL INTERCOURSE ?	[]						[]		
6. AT WHAT AGE DID YOU FIRST BECOME INTERESTED IN SEXUAL ACTIVITY ?	[]						[]		
7. AT WHAT AGE DID YOU FIRST HAVE SEXUAL INTERCOURSE ?	[]						[]		

SECTION IV

Below are a series of statements about various aspects of sexual behavior. We would like to know to what extent you agree or disagree with each one. Please indicate how much you agree or disagree with each statement by placing the appropriate number from the alternatives below in the space alongside the statement. Please do not skip any statements and work quickly.

- | -2 | -1 | 0 | 1 | 2 |
|----------------------|----------|-------------------------------|-------|-------------------|
| STRONGLY
DISAGREE | DISAGREE | NEITHER
AGREE NOR DISAGREE | AGREE | STRONGLY
AGREE |
| 1. [] | | | | |
| 2. [] | | | | |
| 3. [] | | | | |
| 4. [] | | | | |
| 5. [] | | | | |
| 6. [] | | | | |
| 7. [] | | | | |
| 8. [] | | | | |
| 9. [] | | | | |
| 10. [] | | | | |
| 11. [] | | | | |
| 12. [] | | | | |
| 13. [] | | | | |
| 14. [] | | | | |
| 15. [] | | | | |
| 16. [] | | | | |
| 17. [] | | | | |
| 18. [] | | | | |
| 19. [] | | | | |
| 20. [] | | | | |
| 21. [] | | | | |
| 22. [] | | | | |
| 23. [] | | | | |
| 24. [] | | | | |
| 25. [] | | | | |
| 26. [] | | | | |
| 27. [] | | | | |
| 28. [] | | | | |
| 29. [] | | | | |
| 30. [] | | | | |

SECTION V

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so, please fill in one of the numbered spaces to the right that best describes HOW MUCH THAT PROBLEM HAS BOTHERED OR DISTRESSED YOU IN THE PAST TWO WEEKS INCLUDING TODAY. Mark only one numbered space for each problem and do not skip any items.

HOW MUCH WERE YOU BOTHERED BY :	not at all	slightly	moderately	quite a bit	extremely	HOW MUCH WERE YOU BOTHERED BY :	not at all	slightly	moderately	quite a bit	extremely
1. NERVOUSNESS OR SHAKINESS INSIDE	=0=	=1=	=2=	=3=	=4=	27. DIFFICULTY MAKING DECISIONS	=0=	=1=	=2=	=3=	=4=
2. FAINTNESS OR DIZZINESS	=0=	=1=	=2=	=3=	=4=	28. FEELING AFRAID TO TRAVEL ON BUSES, SUBWAYS OR TRAINS	=0=	=1=	=2=	=3=	=4=
3. THE IDEA THAT SOMEONE ELSE CAN CONTROL YOUR MIND	=0=	=1=	=2=	=3=	=4=	29. TROUBLE GETTING YOUR BREATH	=0=	=1=	=2=	=3=	=4=
4. FEELING OTHERS ARE TO BLAME FOR MOST OF YOUR TROUBLES	=0=	=1=	=2=	=3=	=4=	30. HOT OR COLD SPELLS	=0=	=1=	=2=	=3=	=4=
5. TROUBLE REMEMBERING THINGS	=0=	=1=	=2=	=3=	=4=	31. HAVING TO AVOID CERTAIN THINGS, PLACES OR ACTIVITIES BECAUSE THEY FRIGHTEN YOU	=0=	=1=	=2=	=3=	=4=
6. FEELING EASILY ANNOYED OR IRRITATED	=0=	=1=	=2=	=3=	=4=	32. YOUR MIND GOING BLANK	=0=	=1=	=2=	=3=	=4=
7. PAINS IN HEART OR CHEST	=0=	=1=	=2=	=3=	=4=	33. NUMBNESS OR TINGLING IN PARTS OF YOUR BODY	=0=	=1=	=2=	=3=	=4=
8. FEELING AFRAID IN OPEN SPACES	=0=	=1=	=2=	=3=	=4=	34. THE IDEA THAT YOU SHOULD BE PUNISHED FOR YOUR SINS	=0=	=1=	=2=	=3=	=4=
9. THOUGHTS OF ENDING YOUR LIFE	=0=	=1=	=2=	=3=	=4=	35. FEELING HOPELESS ABOUT THE FUTURE	=0=	=1=	=2=	=3=	=4=
10. FEELING THAT MOST PEOPLE CANNOT BE TRUSTED	=0=	=1=	=2=	=3=	=4=	36. TROUBLE CONCENTRATING	=0=	=1=	=2=	=3=	=4=
11. POOR APPETITE	=0=	=1=	=2=	=3=	=4=	37. FEELING WEAK IN PARTS OF YOUR BODY	=0=	=1=	=2=	=3=	=4=
12. SUDDENLY SCARED FOR NO REASON	=0=	=1=	=2=	=3=	=4=	38. FEELING TENSE OR KEED UP	=0=	=1=	=2=	=3=	=4=
13. TEMPER OUTBURSTS THAT YOU COULD NOT CONTROL	=0=	=1=	=2=	=3=	=4=	39. THOUGHTS OF DEATH OR DYING	=0=	=1=	=2=	=3=	=4=
14. FEELING LONELY EVEN WHEN YOU ARE WITH PEOPLE	=0=	=1=	=2=	=3=	=4=	40. HAVING URGES TO BEAT, INSULT OR HARM SOMEONE	=0=	=1=	=2=	=3=	=4=
15. FEELING BLOCKED IN GETTING THINGS DONE	=0=	=1=	=2=	=3=	=4=	41. HAVING URGES TO BREAK OR SMASH THINGS	=0=	=1=	=2=	=3=	=4=
16. FEELING LONELY	=0=	=1=	=2=	=3=	=4=	42. FEELING VERY SELF CONSCIOUS WITH OTHERS	=0=	=1=	=2=	=3=	=4=
17. FEELING BLUE	=0=	=1=	=2=	=3=	=4=	43. FEELING UNEASY IN CROWDS	=0=	=1=	=2=	=3=	=4=
18. FEELING NO INTEREST IN THINGS	=0=	=1=	=2=	=3=	=4=	44. NEVER FEELING CLOSE TO ANOTHER PERSON	=0=	=1=	=2=	=3=	=4=
19. FEELING FEARFUL	=0=	=1=	=2=	=3=	=4=	45. SPELLS OF TERROR OR PANIC	=0=	=1=	=2=	=3=	=4=
20. YOUR FEELINGS BEING EASILY HURT	=0=	=1=	=2=	=3=	=4=	46. GETTING INTO FREQUENT ARGUMENTS	=0=	=1=	=2=	=3=	=4=
21. FEELING THAT PEOPLE ARE UNFRIENDLY OR DISLIKE YOU	=0=	=1=	=2=	=3=	=4=	47. FEELING NERVOUS WHEN YOU ARE LEFT ALONE	=0=	=1=	=2=	=3=	=4=
22. FEELING INFERIOR TO OTHERS	=0=	=1=	=2=	=3=	=4=	48. OTHERS NOT GIVING YOU PROPER CREDIT FOR YOUR ACHIEVEMENTS	=0=	=1=	=2=	=3=	=4=
23. NAUSEA OR UPSET STOMACH	=0=	=1=	=2=	=3=	=4=	49. FEELING SO RESTLESS YOU COULDN'T SIT STILL	=0=	=1=	=2=	=3=	=4=
24. FEELING THAT YOU ARE WATCHED OR TALKED ABOUT BY OTHERS	=0=	=1=	=2=	=3=	=4=	50. FEELING OF WORTHLESSNESS	=0=	=1=	=2=	=3=	=4=
25. TROUBLE FALLING ASLEEP	=0=	=1=	=2=	=3=	=4=	51. FEELING PEOPLE WILL TAKE ADVANTAGE OF YOU IF YOU LET THEM	=0=	=1=	=2=	=3=	=4=
26. HAVING TO CHECK AND DOUBLE CHECK WHAT YOU DO	=0=	=1=	=2=	=3=	=4=	52. FEELINGS OF GUILT	=0=	=1=	=2=	=3=	=4=
						53. THE IDEA THAT SOMETHING IS WRONG WITH YOUR MIND	=0=	=1=	=2=	=3=	=4=

SECTION VI

Below is a list of words that describe the way people sometimes feel. We would like you to tell us whether you have been having any of these feelings during the past TWO WEEKS. Please indicate the degree to which you have typically felt each emotion by putting in one of the numbered spaces that best describes your experience.

	never	rarely	sometimes	frequently	always		never	rarely	sometimes	frequently	always
1. NERVOUS	0	1	2	3	4	21. CHEERFUL	0	1	2	3	4
2. SAD	0	1	2	3	4	22. SATISFIED	0	1	2	3	4
3. REGRETFUL	0	1	2	3	4	23. ACTIVE	0	1	2	3	4
4. IRRETRIEVABLE	0	1	2	3	4	24. FRIENDLY	0	1	2	3	4
5. HAPPY	0	1	2	3	4	25. ANXIOUS	0	1	2	3	4
6. PLEASED	0	1	2	3	4	26. MISERABLE	0	1	2	3	4
7. EXCITED	0	1	2	3	4	27. GUILTY	0	1	2	3	4
8. PASSIONATE	0	1	2	3	4	28. ENRAGED	0	1	2	3	4
9. TIMID	0	1	2	3	4	29. DELIGHTED	0	1	2	3	4
10. HOPELESS	0	1	2	3	4	30. RELAXED	0	1	2	3	4
11. BLAMEWORTHY	0	1	2	3	4	31. VIGOROUS	0	1	2	3	4
12. RESENTFUL	0	1	2	3	4	32. AFFECTIONATE	0	1	2	3	4
13. GLAD	0	1	2	3	4	33. AFRAID	0	1	2	3	4
14. CALM	0	1	2	3	4	34. UNHAPPY	0	1	2	3	4
15. ENERGETIC	0	1	2	3	4	35. REMORSEFUL	0	1	2	3	4
16. LOVING	0	1	2	3	4	36. BITTER	0	1	2	3	4
17. TENSE	0	1	2	3	4	37. JOYOUS	0	1	2	3	4
18. WORKLESS	0	1	2	3	4	38. CONTENTED	0	1	2	3	4
19. ASHAMED	0	1	2	3	4	39. LIVELY	0	1	2	3	4
20. ANGRY	0	1	2	3	4	40. WARM	0	1	2	3	4

SECTION VII

Below is a list of personality characteristics that are often used to describe people. We would like you to describe yourself in terms of these characteristics. To do this, please indicate the degree to which each trait is typical of you—in other words, how much of each characteristic you have. Use the numbered scale given below, and place the appropriate number alongside each trait.

0	1	2	3	4
NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
1. SYMPATHETIC []		11. SENSITIVE []		21. GRACEFUL []
2. DECISIVE []		12. INDEPENDENT []		22. DOMINANT []
3. FRIVOLOUS []		13. DOMESTIC []		23. SEDUCTIVE []
4. PRACTICAL []		14. BOLD []		24. AUTHORITATIVE []
5. SENTIMENTAL []		15. DEPENDENT []		25. WHIMSICAL []
6. RATIONAL []		16. ADVENTUROUS []		26. ATHLETIC []
7. SECRETIVE []		17. FELINE []		27. FASHIONABLE []
8. CONFIDENT []		18. STRONG []		28. AGGRESSIVE []
9. COMPASSIONATE []		19. FLIRTATIOUS []		29. GENTLE []
10. VIGOROUS []		20. MECHANICAL []		30. ASSERTIVE []

SECTION VIII

In this section we have listed a variety of sexual ideas, and fantasies that people sometimes have. We would like you to indicate which of these fantasies you have experienced either in *daydreams* or *dreams while asleep*. For each fantasy that you have experienced place a check (✓) in the space alongside that item.

1. ✓ HAVING MORE THAN ONE SEXUAL PARTNER AT THE SAME TIME
2. ✓ HAVING INTERCOURSE IN UNUSUAL POSITIONS
3. ✓ HAVING SEXUAL RELATIONS WITH ANIMALS
4. ✓ WHIPPING OR BEATING YOUR SEXUAL PARTNER
5. ✓ FORCING A PARTNER TO SUBMIT TO SEXUAL ACTS
6. ✓ DRESSING IN CLOTHES OF THE OPPOSITE SEX
7. ✓ USING ARTIFICIAL DEVICES FOR SEXUAL STIMULATION
8. ✓ BEING A PROSTITUTE
9. ✓ FORBIDDEN LOVER OR MISTRESS IN SEXUAL ADVENTURES
10. ✓ HOMOSEXUAL FANTASIES
11. ✓ MATESWAPPING FANTASIES
12. ✓ BEING TIED UP OR BOUND DURING SEXUAL ACTIVITIES
13. ✓ DEGRADING A SEX PARTNER
14. ✓ BEING SEXUALLY DEGRADED
15. ✓ ANAL INTERCOURSE
16. ✓ DRESSING IN EROTIC GARMENTS
17. ✓ SEXUAL INTERCOURSE
18. ✓ FANTASIZING THAT YOU ARE OF THE OPPOSITE SEX
19. ✓ ORAL-GENITAL SEX
20. ✓ BEING FORCED TO SUBMIT TO SEXUAL ACTS

SECTION IX

Below are some statements concerning how you view your body. Please indicate to what degree each of the following statements is true of you by circling the number that best describes your experience. Note that Part A is for both sexes, Part B is for men only, and Part C is for women only.

<u>PART A (BOTH SEXES)</u>		▼ not at all	▼ slightly	▼ moderately	▼ quite a bit	▼ extremely
1.	I AM LESS ATTRACTIVE THAN I WOULD LIKE TO BE	0	1	2	3	4
2.	I AM TOO FAT	0	1	2	3	4
3.	I ENJOY BEING SEEN IN A BATHING SUIT	0	1	2	3	4
4.	I AM TOO THIN	0	1	2	3	4
5.	I WOULD BE EMBARRASSED TO BE SEEN NUDE BY A LOVER	0	1	2	3	4
6.	I AM TOO SHORT	0	1	2	3	4
7.	THERE ARE PARTS OF MY BODY I DON'T LIKE AT ALL	0	1	2	3	4
8.	I AM TOO TALL	0	1	2	3	4
9.	I HAVE TOO MUCH BODY HAIR	0	1	2	3	4
10.	MY FACE IS ATTRACTIVE	0	1	2	3	4

PART B (MEN ONLY)

		not at all	slightly	moderately	quite a bit	extremely
11. I HAVE A WELL PROPORTIONED BODY	0	1	2	3	4	
12. I AM SATISFIED WITH THE SIZE OF MY PENIS	0	1	2	3	4	
13. WOMEN WOULD FIND MY BODY ATTRACTIVE	0	1	2	3	4	
14. I AM WELL-COORDINATED AND ATHLETIC	0	1	2	3	4	
15. I AM PLEASED WITH THE PHYSICAL CONDITION OF MY BODY	0	1	2	3	4	

PART C (WOMEN ONLY)

		not at all	slightly	moderately	quite a bit	extremely
16. I HAVE A SHAPELY AND WELL PROPORTIONED BODY	0	1	2	3	4	
17. I HAVE ATTRACTIVE BREASTS	0	1	2	3	4	
18. MEN WOULD FIND MY BODY ATTRACTIVE	0	1	2	3	4	
19. I HAVE ATTRACTIVE LEGS	0	1	2	3	4	
20. I AM PLEASED WITH THE WAY MY VAGINA LOOKS	0	1	2	3	4	

SECTION X

Below are some statements about sexual satisfaction. Please indicate whether each statement is true of you by checking either true or false for each item.

	<u>TRUE</u>	<u>FALSE</u>
1. USUALLY, I AM SATISFIED WITH MY SEXUAL PARTNER	T	F
2. I FEEL I DO NOT HAVE SEX FREQUENTLY ENOUGH	T	F
3. THERE IS NOT ENOUGH VARIETY IN MY SEX LIFE	T	F
4. USUALLY AFTER SEX I FEEL RELAXED AND FULFILLED	T	F
5. USUALLY, SEX DOES NOT LAST LONG ENOUGH	T	F
6. I AM NOT VERY INTERESTED IN SEX	T	F
7. USUALLY, I HAVE A SATISFYING ORGASM WITH SEX	T	F
8. FOREPLAY BEFORE INTERCOURSE IS USUALLY VERY AROUSING FOR ME	T	F
9. OFTEN, I WORRY ABOUT MY SEXUAL PERFORMANCE	T	F
10. USUALLY, MY PARTNER AND I HAVE GOOD COMMUNICATION ABOUT SEX	T	F

GSSI - Below is a rating scale upon which we would like you to record your personal evaluation of how satisfying your sexual relationship is. The rating is simple. Make your evaluation by placing a check in the appropriate box that best describes your present sexual relationship.

- 8 COULD NOT BE BETTER
- 7 EXCELLENT
- 6 GOOD
- 5 ABOVE AVERAGE
- 4 ADEQUATE
- 3 SOMEWHAT INADEQUATE
- 2 POOR
- 1 HIGHLY INADEQUATE
- 0 COULD NOT BE WORSE

NAME _____

DATE _____

SEXUAL HISTORY FORM

The information which you will provide in response to the following questions is intended to increase our understanding of your sexual feelings, concerns and habits. All information will be held in the strictest of confidence. Please answer all questions.

SEXUAL HISTORY FORM

Please circle the most appropriate number for each question.

1. How well do you think you know your partner's sexual likes and dislikes?

1	2	3	4	5	6	7

do not know them at all						know them very well

2. How well do you think your partner knows your sexual likes and dislikes?

1	2	3	4	5	6	7

do not know them at all						know them very well

3. How satisfied are you with the ways in which you and your partner talk about sex in order to develop better ways of pleasing each other?

1	2	3	4	5	6	7

Not satisfied at all						very satisfied

4. Do you have any thoughts or ideas which you think interfere with your sexual functioning?

1	2	3	4	5	6	7

None						Many

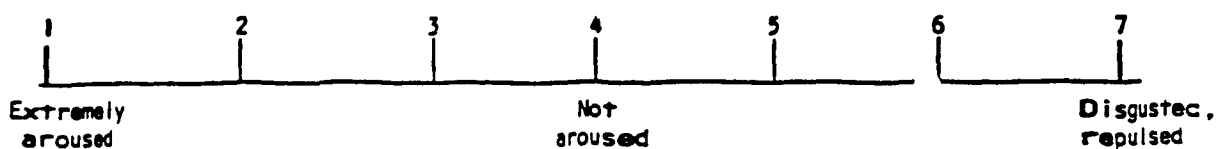
5. Do you think your partner has any thoughts or ideas which interfere with his/her sexual functioning?



6. Rate what you perceive to be your average level of sexual interest.



6a. What is your usual reaction to erotic or pornographic materials (pictures, movies, books)?



7. Who usually initiates having sexual intercourse or activity?

- | | |
|--|-------------------------|
| 1) I always do | 4) my mate usually does |
| 2) I usually do | 5) my mate always does |
| 3) My mate and I each initiate about equally often | |

MALES ONLY:

8. During sexual activity I worry about whether or not I will get or keep an erection.



9. If you had difficulty getting or keeping an erection during sex would you feel comfortable about telling your partner what types or amounts of sexual stimulation you would want or need?



10. Do you have any trouble in getting or keeping an erection during sexual activity?

- | | |
|-------------------------------------|--|
| 1) Never | 4) Usually, about 75% of the time |
| 2) Seldom, about 25% of the time | 5) Nearly always, over 90% of the time |
| 3) Sometimes, about 50% of the time | |

11. Do you ever reach orgasm (ejaculate) while trying to enter the woman's vagina?

- | | |
|-------------------------------------|--|
| 1) Never | 4) Usually, about 75% of the time |
| 2) Seldom, about 25% of the time | 5) Nearly always, over 90% of the time |
| 3) Sometimes, about 50% of the time | |

FEMALES ONLY:

12. If you try, is it possible for you to reach orgasm through having your genitals caressed by your mate?

- | | |
|--|----------------------------------|
| 1) Nearly always, over 90% of the time | 4) Seldom, about 25% of the time |
| 2) Usually, about 75% of the time | 5) Never |
| 3) Sometimes, about 50% of the time | |

13. If you try, is it possible for you to reach orgasm through sexual intercourse?

- | | |
|--|----------------------------------|
| 1) Nearly always, over 90% of the time | 4) Seldom, about 25% of the time |
| 2) Usually, about 75% of the time | 5) Never |
| 3) Sometimes, about 50% of the time | |

14. Is your vagina so "dry" or "tight" that intercourse cannot occur?

- | | |
|--------------------------------------|--|
| 1) Never | 4) Usually, about 75% of the time |
| 2) Seldom, less than 25% of the time | 5) Nearly always, over 90% of the time |
| 3) Sometimes, about 50% of the time | |

15. Do you feel pain in your vagina during sexual intercourse?

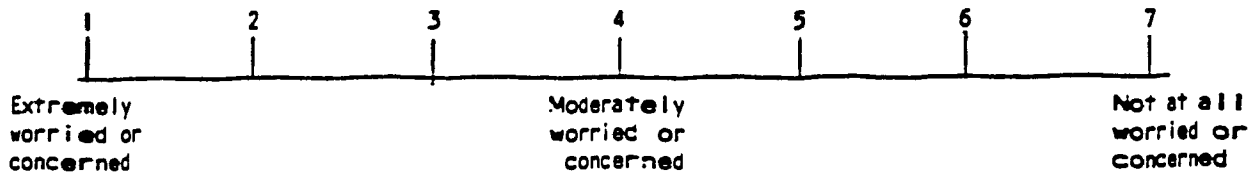
- | | |
|--------------------------------------|--|
| 1) Never | 4) Usually, about 75% of the time |
| 2) Seldom, less than 25% of the time | 5) Nearly always, over 90% of the time |
| 3) Sometimes, about 50% of the time | |

FOR ALL:

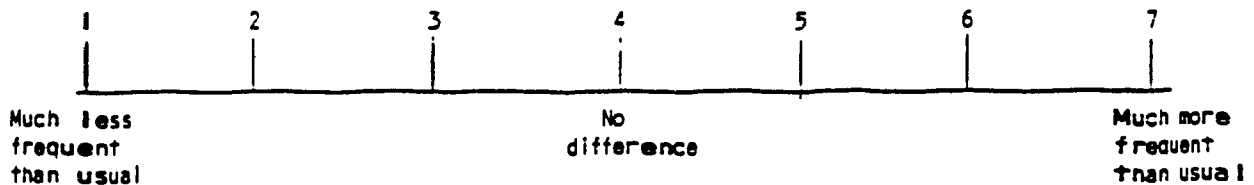
16. a) Do you find a difference in your love-making style between times in the month when you are trying to conceive (fertile periods) and times that you are not (non-fertile periods) trying to conceive?



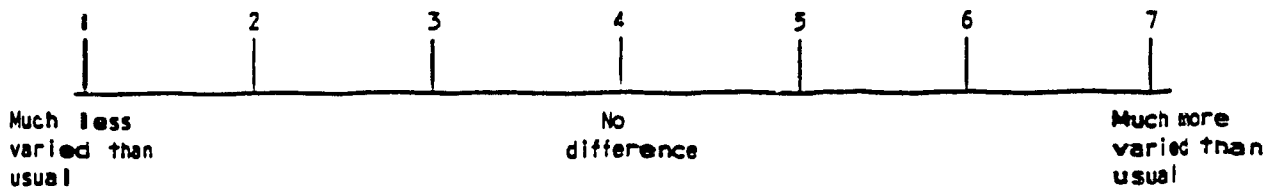
b) State your degree of concern or worry about any differences you have noted in question #16 above.



17. During the time of the month we are trying to conceive (fertile period) our frequency of sexual activity is:



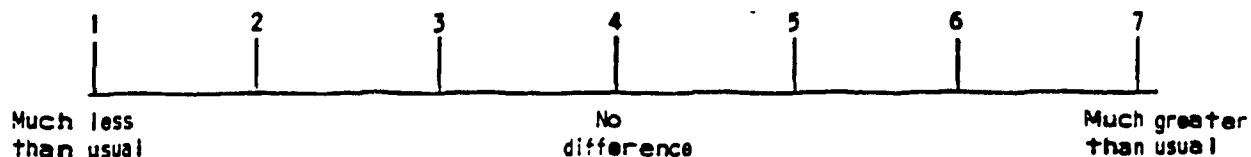
18. During the time of month we are trying to conceive (fertile period) the variety of sexual activities we engage in is:



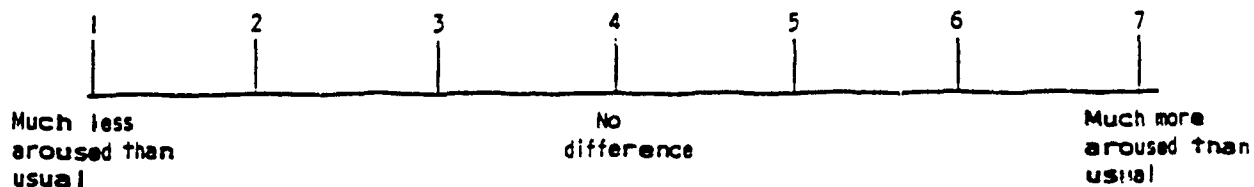
19. During the time of the month we are trying to conceive (fertile period) our average length of a sexual encounter is:



20. During the time we are trying to conceive (fertile period) my enjoyment of sexual activity is:



21. During the time we are trying to conceive (fertile period) my arousal (excitement) level during sexual activity is:

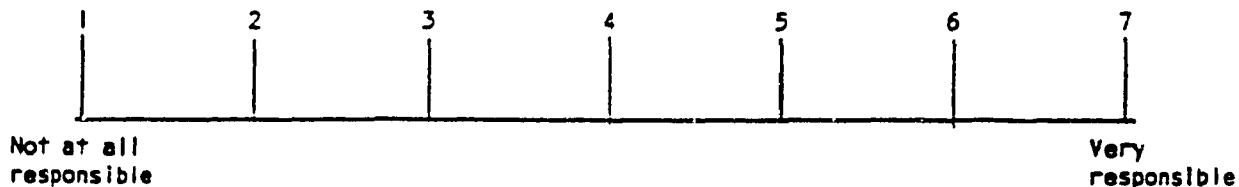


If you are currently experiencing any sort of sexual difficulties (e.g., dissatisfaction with sexual relationship, low interest, difficulty getting an erection, difficulty getting excited, etc.) describe the type of difficulty and answer the following questions from 22-29. For questions 23-29, please circle the number (1-7) that reflects exactly how you feel presently about each question.

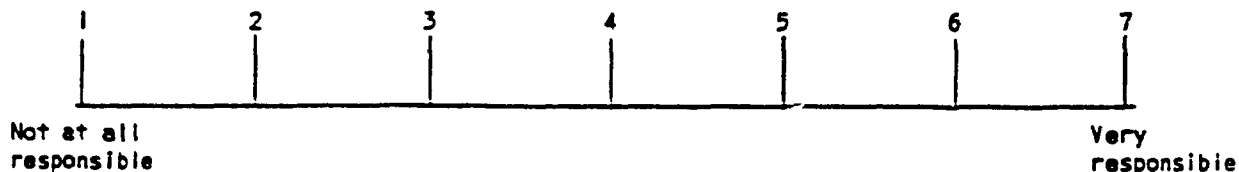
If you are not currently experiencing any sexual difficulties go directly to the next questionnaire.

22. Describe the type of sexual difficulty you are experiencing:

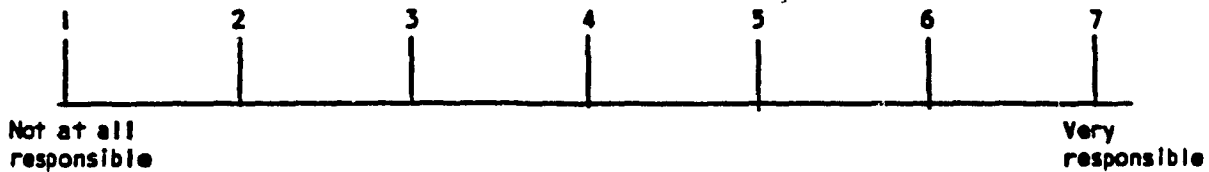
23. how responsible do you feel for the sexual difficulty?



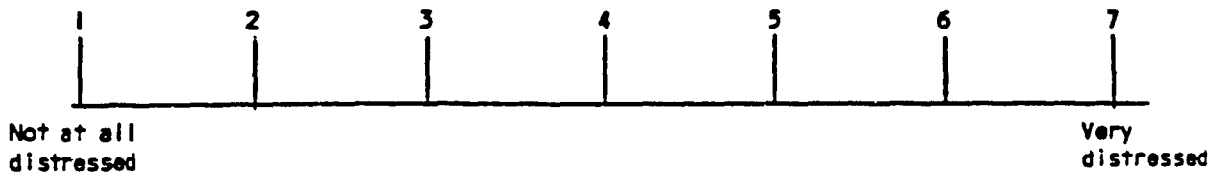
24. how responsible do you feel your partner is for the sexual difficulty?



25. How responsible do you feel circumstances are for the sexual difficulty?



26. How distressed or upset are you about the sexual difficulty?



27. How distressed or upset is your partner about the sexual difficulty?



28. Do you think you know what you can do to help resolve the sexual difficulty?



29. In your opinion, how likely is it that the sexual difficulty would improve if you (your wife) became pregnant?



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(PAGES 215 & 216)

SELF-EVALUTATION QUESTIONNAIRE
Consulting Psychologists Press
577 College Avenue,
Palo Alto, California 94306

EYSENCK PERSONALITY INVENTORY

FORM A

By **H. J. Eysenck**
and **Sybil B. G. Eysenck**

Name _____ Age _____ Sex _____

Grade or Occupation _____ Date _____

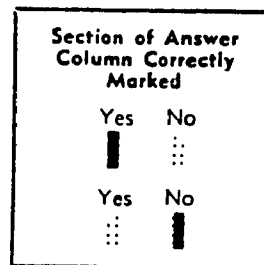
School or Firm _____ Marital Status _____

INSTRUCTIONS

Here are some questions regarding the way you behave, feel and act. After each question is a space for answering "Yes," or "No."

Try and decide whether "Yes," or "No" represents your usual way of acting or feeling. Then blacken in the space under the column headed "Yes" or "No."

Work quickly, and don't spend too much time over any question, we want your first reaction, not a long drawn-out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions. Now turn the page over and go ahead. Work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.



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		E	N	L		
1.	Do you often long for excitement?	Yes	No			
2.	Do you often need understanding friends to cheer you up?	Yes	No	31.	Do ideas run through your head so that you cannot sleep?	Yes No
3.	Are you usually carefree?	Yes	No	32.	If there is something you want to know about, would you rather look it up in a book than talk to someone about it?	Yes No
4.	Do you find it very hard to take no for an answer?	Yes	No	33.	Do you get palpitations or thumping in your heart?	Yes No
5.	Do you stop and think things over before doing anything?	Yes	No	34.	Do you like the kind of work that you need to pay close attention to?	Yes No
6.	If you say you will do something do you always keep your promise, no matter how inconvenient it might be to do so?	Yes	No	35.	Do you get attacks of shaking or trembling?	Yes No
7.	Does your mood often go up and down?	Yes	No	36.	Would you always declare everything at the customs, even if you knew that you could never be found out?	Yes No
8.	Do you generally do and say things quickly without stopping to think?	Yes	No	37.	Do you hate being with a crowd who play jokes on one another?	Yes No
9.	Do you ever feel "just miserable" for no good reason?	Yes	No	38.	Are you an irritable person?	Yes No
10.	Would you do almost anything for a dare?	Yes	No	39.	Do you like doing things in which you have to act quickly?	Yes No
11.	Do you suddenly feel shy when you want to talk to an attractive stranger?	Yes	No	40.	Do you worry about awful things that might happen?	Yes No
12.	Once in a while do you lose your temper and get angry?	Yes	No	41.	Are you slow and unhurried in the way you move?	Yes No
13.	Do you often do things on the spur of the moment?	Yes	No	42.	Have you ever been late for an appointment or work?	Yes No
14.	Do you often worry about things you should not have done or said?	Yes	No	43.	Do you have many nightmares?	Yes No
15.	Generally do you prefer reading to meeting people?	Yes	No	44.	Do you like talking to people so much that you would never miss a chance of talking to a stranger?	Yes No
16.	Are your feelings rather easily hurt?	Yes	No	45.	Are you troubled by acnes and pains?	Yes No
17.	Do you like going out a lot?	Yes	No	46.	Would you be very unhappy if you could not see lots of people most of the time?	Yes No
18.	Do you occasionally have thoughts and ideas that you would not like other people to know about?	Yes	No	47.	Would you call yourself a nervous person?	Yes No
19.	Are you sometimes bubbling over with energy and sometimes very sluggish?	Yes	No	48.	Of all the people you know are there some whom you definitely do not like?	Yes No
20.	Do you prefer to have few but special friends?	Yes	No	49.	Would you say you were fairly self-confident?	Yes No
21.	Do you daydream a lot?	Yes	No	50.	Are you easily hurt when people find fault with you or your work?	Yes No
22.	When people shout at you, do you shout back?	Yes	No	51.	Do you find it hard to really enjoy yourself at a lively party?	Yes No
23.	Are you often troubled about feelings of guilt?	Yes	No	52.	Are you troubled with feelings of inferiority?	Yes No
24.	Are all your habits good and desirable ones?	Yes	No	53.	Can you easily get some life into a rather dull party?	Yes No
25.	Can you usually let yourself go and enjoy yourself a lot at a gay party?	Yes	No	54.	Do you sometimes talk about things you know nothing about?	Yes No
26.	Would you call yourself tense or "highly-strung"?	Yes	No	55.	Do you worry about your health?	Yes No
27.	Do other people think of you as being very lively?	Yes	No	56.	Do you like playing pranks on others?	Yes No
28.	After you have done something important, do you often come away feeling you could have done better?	Yes	No	57.	Do you suffer from sleeplessness?	Yes No
29.	Are you mostly quiet when you are with other people?	Yes	No			
30.	Do you sometimes gossip?	Yes	No			

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS.

BECK SCALE

Read each statement and choose the statement that best describes how you feel at this time.

- A. 0 I do not feel sad.
 1 I feel blue or sad.
 2a I am blue or sad all the time and I can't snap out of it.
 2b I am so sad or unhappy that it is quite painful.
 3 I am so sad or unhappy that I can't stand it.
- B. 0 I am not particularly pessimistic or discouraged about the future.
 1a I feel discouraged about the future.
 2a I feel I have nothing to look forward to.
 2b I feel that I won't ever get over my troubles.
 3 I feel that the future is hopeless and that things cannot improve.
- C. 0 I do not feel like a failure.
 1 I feel I have failed more than the average person.
 2a I feel I have accomplished very little that is worthwhile or that means anything.
 2b As I look back on my life all I can see is a lot of failures.
 3 I feel I am a complete failure as a person (parent, spouse).
- D. 0 I am not particularly dissatisfied.
 1a I feel bored most of the time.
 1b I don't enjoy things the way I used to.
 2 I don't get satisfaction out of anything anymore.
 3 I am dissatisfied with everything.
- E. 0 I don't feel particularly guilty.
 1 I feel bad or unworthy a good part of the time.
 2a I feel quite guilty.
 2b I feel bad or unworthy practically all the time now.
 3 I feel as though I am very bad or worthless.
- F. 0 I don't feel I am being punished.
 1 I have a feeling that something bad may happen to me.
 2 I feel I am being punished or will be punished.
 3a I feel I deserve to be punished.
 3b I want to be punished.
- G. 0 I don't feel disappointed in myself.
 1a I am disappointed in myself.
 1b I don't like myself.
 2 I am disgusted with myself.
 3 I hate myself.
- H. 0 I don't feel I am worse than anybody else.
 2a I am critical of myself for weaknesses or mistakes.
 2b I blame myself for my faults.
 3 I blame myself for everything bad that happens.

- I. 0 I don't have any thoughts of harming myself.
1 I have thoughts of harming myself but I would not carry them out.
2a I feel I would be better off dead.
2b I feel my family would be better off if I were dead.
3a I have definite plans about committing suicide.
3b I would kill myself if I could.
- J. 0 I don't cry any more than usual.
1 I cry more than I used to.
2 I feel irritated all the time.
3 I used to be able to cry but now I can't cry at all even though I want to.
- K. 0 I am no more irritated now than I ever am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time.
3 I don't get irritated at all at the things that used to irritate me.
- L. 0 I have not lost interest in other people.
1 I am less interested in other people now than I used to be.
2 I have lost most of my interest in other people and have little feeling for them.
3 I have lost all my interest in other people and don't care about them at all.
- M. 0 I make decisions about as well as ever.
1 I try to put off making decisions.
2 I have great difficulty in making decisions.
3 I can't make decisions at all any more.
- N. 0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance and they make me look unattractive.
3 I feel that I am ugly or repulsive looking.
- O. 0 I can work about as well as before.
1a It takes extra effort to get started at doing something.
1b I don't work as well as I used to.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.
- P. 0 I can sleep as well as usual.
1 I wake up more tired in the morning than I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up early every day and can't get more than 5 hours sleep
- Q. 0 I don't get any more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing anything.
3 I get too tired to do anything.

- R. 0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all any more.
- S. 0 I haven't lost much weight, if any, lately.
1 I have lost more than 5 pounds.
2 I have lost more than 10 pounds.
3 I have lost more than 15 pounds.
- T. 0 I am no more concerned about my health than usual.
1 I am concerned about aches and pains OR upset stomach OR constipation.
2 I am so concerned with how I feel or what I feel that it's hard to think of much else.
3 I am completely absorbed in what I feel.
- U. 0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

Miller Behavioral Style Scale

1. Vividly imagine that you are afraid of the dentist and have to get some dental work done. Which of the following would you do? Check all of the statements that might apply to you.

- I would ask the dentist exactly what he was going to do.
- I would take a tranquilizer or have a drink before going.
- I would try to think about pleasant memories.
- I would want the dentist to tell me when I would feel pain.
- I would try to sleep.
- I would watch all the dentist's movements and listen for the sound of the drill.
- I would watch the flow of water from my mouth to see if it contained blood.
- I would do mental puzzles in my mind.

2. Vividly imagine that you are being held hostage by a group of armed terrorists in a public building. Which of the following would you do? Check all of the statements that might apply to you.

- I would sit by myself and have as many daydreams and fantasies as I could.
- I would stay alert and try to keep myself from falling asleep.
- I would exchange life stories with the other hostages.
- If there was a radio present, I would stay near it and listen to bulletins about what the police were doing.
- I would watch every movement of my captors and keep an eye on their weapons.
- I would try to sleep as much as possible.
- I would think about how nice it's going to be when I get home.
- I would make sure I knew where every possible exit was.

3. Vividly imagine that, due to a large drop in sales, it is rumored that several people in your department at work will be laid off. Your supervisor has turned in an evaluation of your work for the past year. The decision about lay-offs has been made and will be announced in

several days. Check all the statements that might apply to you.

_____ I would talk to my fellow workers to see if they knew anything about what the supervisor's evaluation of me said.

_____ I would review the list of duties for my present job and try to figure out if I had fulfilled them all.

_____ I would go to the movies to 'ake my mind off things.

_____ I would try to remember any arguments or disagreements I might have had with the supervisor that would have lowered his opinion of me.

_____ I would push all thoughts of being laid off out of my mind.

_____ I would tell my spouse that I'd rather not discuss my chances of being laid off.

_____ I would try to think which employees in my department the supervisor might have thought had done the worst job.

_____ I would continue doing my work as if nothing special was happening.

4. Vividly imagine that you are on an airplane, thirty minutes from your destination, when the plane unexpectedly goes into a deep dive and then suddenly levels off. After a short time, the pilot announces that nothing is wrong, although the rest of the ride may be rough. You, however, are not convinced that all is well. Check all the statements that might apply to you.

_____ I would carefully read the information provided about safety features in the plane and make sure I knew where the emergency exits were.

_____ I would make small talk with the passenger beside me.

_____ I would watch the end of the movie, even if I had seen it before.

_____ I would call for the stewardess and ask her exactly what the problem was.

_____ I would order a drink or tranquilizer from the stewardess.

_____ I would listen carefully to the engine for unusual noises and would watch the crew to see if their behaviour was out of ordinary.

_____ I would talk to the passenger beside me about what might be wrong.

_____ I would settle down and read a book or magazine or write a letter.

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

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STAI FORM X-1

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *feel* right now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2. I feel secure	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3. I am tense	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4. I am regretful	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5. I feel at ease	Ⓐ	Ⓑ	Ⓒ	Ⓓ
6. I feel upset	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7. I am presently worrying over possible misfortunes	Ⓐ	Ⓑ	Ⓒ	Ⓓ
8. I feel rested	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9. I feel anxious	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10. I feel comfortable	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11. I feel self-confident	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12. I feel nervous	Ⓐ	Ⓑ	Ⓒ	Ⓓ
13. I am jittery	Ⓐ	Ⓑ	Ⓒ	Ⓓ
14. I feel "high strung"	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15. I am relaxed	Ⓐ	Ⓑ	Ⓒ	Ⓓ
16. I feel content	Ⓐ	Ⓑ	Ⓒ	Ⓓ
17. I am worried	Ⓐ	Ⓑ	Ⓒ	Ⓓ
18. I feel over-excited and "rattled"	Ⓐ	Ⓑ	Ⓒ	Ⓓ
19. I feel joyful	Ⓐ	Ⓑ	Ⓒ	Ⓓ
20. I feel pleasant	Ⓐ	Ⓑ	Ⓒ	Ⓓ



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SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME _____ DATE _____

DIRECTIONS. A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I tire quickly	①	②	③	④
23. I feel like crying	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I am losing out on things because I can't make up my mind soon enough	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I am inclined to take things hard	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I try to avoid facing a crisis or difficulty	①	②	③	④
35. I feel blue	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	①	②	③	④

FERTILITY INFORMATION QUESTIONNAIRE

Below are some statements concerning general information about fertility. Please read each statement carefully. Once you have read it, indicate whether you agree with the statement or not by marking TRUE for those you agree with, and FALSE for those you do not.

	<u>TRUE</u>	<u>FALSE</u>
1. A couple is considered to be infertile if they have not conceived for one year without using contraception.	T	F
2. If a couple cannot get pregnant the problem likely lies with the woman.	T	F
3. Emotional problems are usually the cause of fertility difficulties.	T	F
4. A woman is most likely to conceive around the 14th day in a 28 day cycle. (Cycle begins with first day of menstruation.)	T	F
5. Sometimes surgery is used to correct an infertility problem.	T	F
6. Hormone deficiencies are a common cause of infertility.	T	F
7. It is a good idea for men to abstain from sexual activity for a week or so to build up the amount of sperm.	T	F
8. A woman can often determine her time of ovulation by taking her temperature every morning.	T	F
9. If a woman menstruates it proves she has ovulated that month.	T	F
10. Progesterone is a female hormone, produced mainly after ovulation.	T	F
11. The only intercourse position that will lead to conception is the male on top of the female.	T	F

	<u>TRUE</u>	<u>218 FALSE</u>
12. If a male's sperm count is about 100 sperm per cc, then he is considered fertile.	T	F
13. Most infertility problems can be traced to inadequate sexual practices.	T	F
14. Poor sperm mobility (movement) can hinder a male's ability to fertilize.	T	F
15. About one out of every 50 couples of child-bearing age is infertile.	T	F
16. Infertility specialists can usually help only about 25% of the couples they see.	T	F
17. Only one sperm in many can enter the woman's egg in order to fertilize it.	T	F
18. A couple must engage in intercourse at least every other night if they are to conceive.	T	F
19. Some people experience sexual difficulties during the infertility investigation.	T	F
20. Woman who do not achieve orgasm are less likely to conceive.	T	F
21. Semen analysis is the most important test in the evaluation of male infertility.	T	F
22. Sperm must first penetrate the cervical mucus before reaching the fallopian tube.	T	F
23. Fertilization (conception) takes place in the fallopian tube.	T	F
24. With a careful and complete investigation the cause of infertility can be identified in most couples.	T	F
25. If an infertility investigation does not uncover a physical problem then the problem must be emotional.	T	F
26. Infertility itself can be a source of emotional trauma for couples.	T	F
27. If a man cannot achieve an erection, that is an indication that he must be sterile.	T	F

TRUEFALSE

28. The medical investigation of a couple's infertility problem can take several months.
29. If a woman ovulates, then she is considered capable of conceiving.
30. The semen analysis is a test that is quite painful for the male.

T

F

T

F

T

F

Name _____

Date _____

Feelings About Infertility

1. People have a variety of reactions to infertility. What are (or would you expect) the reactions of the following individuals to be towards your infertility.

	<i>Very Supportive</i>	<i>Mildly Supportive</i>	<i>Neutral</i>	<i>Mildly Unsupportive</i>	<i>Very Unsupportive</i>
A. Spouse	(1)	(2)	(3)	(4)	(5)
B. Your Mother	(1)	(2)	(3)	(4)	(5)
C. Spouse's Mother	(1)	(2)	(3)	(4)	(5)
D. Your Father	(1)	(2)	(3)	(4)	(5)
E. Spouse's Father	(1)	(2)	(3)	(4)	(5)
F. Friends	(1)	(2)	(3)	(4)	(5)

2. To what degree have the infertility problems you and your spouse have been experiencing affected the following aspects of your marriage?

	<i>Greatly Improved</i>	<i>Mildly Improved</i>	<i>No Change</i>	<i>Mildly Worsened</i>	<i>Greatly Worsened</i>
A. Communication	(1)	(2)	(3)	(4)	(5)
B. Feelings of Intimacy	(1)	(2)	(3)	(4)	(5)
C. Sensitivity to your partner's feelings	(1)	(2)	(3)	(4)	(5)
D. Sense of closeness	(1)	(2)	(3)	(4)	(5)
E. Ability to solve disagreements	(1)	(2)	(3)	(4)	(5)
F. Marital commitment	(1)	(2)	(3)	(4)	(5)
G. Marital satisfaction	(1)	(2)	(3)	(4)	(5)
H. Sexual satisfaction	(1)	(2)	(3)	(4)	(5)

3. If you are not successful in conceiving, to what extent do you believe you might experience each of the following feelings.

<u>Feeling:</u>	<i>Not at all</i>	<i>A little</i>	<i>Moderately</i>	<i>Quite a lot</i>	<i>Extremely</i>
A. Eager to adopt	(1)	(2)	(3)	(4)	(5)
B. Guilty	(1)	(2)	(3)	(4)	(5)
C. Unfulfilled	(1)	(2)	(3)	(4)	(5)
D. Angry	(1)	(2)	(3)	(4)	(5)
E. Resigned to not having a biological child	(1)	(2)	(3)	(4)	(5)
F. Disgusted	(1)	(2)	(3)	(4)	(5)
G. Betrayed by body	(1)	(2)	(3)	(4)	(5)
H. Desire to try alternatives (e.g., artificial insemination, in vitro-fertilization)	(1)	(2)	(3)	(4)	(5)
I. Empty	(1)	(2)	(3)	(4)	(5)
J. Sad	(1)	(2)	(3)	(4)	(5)
K. Helpless	(1)	(2)	(3)	(4)	(5)
L. Hopeless	(1)	(2)	(3)	(4)	(5)
M. Other _____					

4. What do you consider the likelihood for a successful conception to be for you?

- | | |
|-----------------|------------------|
| a. 10-20% _____ | c. 41-60% _____ |
| b. 21-40% _____ | d. 61-80% _____ |
| | e. 81-100% _____ |

NAME _____ DATE _____

1. Generally speaking, has your ability to cope with the strain of infertility changed during the past months?

_____ improved _____ improved _____ improved _____ no _____ worse
_____ completely _____ considerably _____ slightly _____ change _____

2. Generally speaking, have your feelings about yourself as a sexual person changed during the past months?

_____ improved _____ improved _____ improved _____ no _____ worse
_____ completely _____ considerably _____ slightly _____ change _____

3. In general, have your feelings about yourself (how you feel about yourself as a person), changed during the past months?

_____ improved _____ improved _____ improved _____ no _____ worse
_____ completely _____ considerably _____ slightly _____ change _____

4. In general, how would you evaluate the helpfulness of the informational program you received?

_____ extremely _____ somewhat _____ neither helpful/ _____ somewhat _____ extremely
_____ helpful _____ helpful _____ nor unhelpful _____ unhelpful _____ unhelpful

NAME _____

DATE _____

FILM RETENTION

- | | <u>TRUE</u> | <u>FALSE</u> |
|--|-------------|--------------|
| 1. The post-coital test is carried out around the time of ovulation. | T | F |
| 2. A sperm analysis can only indicate how many sperm a male produces, not if they are healthy or not. | T | F |
| 3. If a woman menstruates regularly that is evidence that it is likely the male who is responsible for the infertility problem. | T | F |
| 4. The post-coital test requires that the couple engage in intercourse hours before. | T | F |
| 5. Sperm is produced in the testes (testicles) and is mixed with fluids from glands to produce semen which is ejaculated from the penis. | T | F |
| 6. An ejaculate contains hundreds of millions of sperm, but only one sperm will fertilize an egg. | T | F |
| 7. Ovulation depends on perfectly timed and proportioned stimulation of the ovary by hormones. | T | F |
| 8. A woman is fertile at several different times during a given cycle. | T | F |
| 9. There are no direct tests to prove a woman has ovulated. | T | F |

10. If the egg is not fertilized it will implant in the lining of the uterus. T F
11. The post-coital test is done primarily to ensure that the male produces a sufficient number of sperm. T F
12. If the dye spills out of the tubes in the hysterosalpingogram test, that indicates that something is wrong. T F
13. There are usually more diagnostic tests carried out on the female than the male in an infertility investigation. T F
14. An x-ray test is carried out to verify that the ovaries are not blocked. T F
15. The post-coital test is considered a painful procedure. T F
16. The laparoscopy is different from the hysterosalpingogram in that it allows the doctor to directly view the tubes. T F
17. The laparoscopy involves examining a tissue sample under a microscope. T F
18. The hysterosalpingogram is a test done to establish whether it is possible for the sperm and egg to meet. T F
19. Charting a woman's basal body temperature each day for one month is not a sufficient amount of time to establish whether a woman ovulates regularly. T F
20. The laparoscopy is carried out when the woman is asleep. T F

Appendix C

Interviews:

Pre-investigation Interview

Monthly Telephone Interview

Post-investigation Interview

PRE-INTERVIEW

Date _____

I. DEMOGRAPHIC**MALE****FEMALE**

Name _____

Name _____

Age _____

Age _____

Occupation _____

Occupation _____

Education level _(yrs.) _____

Education level_(yrs.) _____

Reading ability _____

Reading ability _____

Years married _____

Previous marriage _____

Children _____

Referral _____

Address _____

Phone # _____

II. Health

(1) Do you have any medical problems? (e.g., diabetes, hypertension, asthma, etc.) Any that might interfere with conception? If yes for either question, then; what, duration, and how treated?

(F) _____

(M) _____

(2) Have you ever had any surgery on your reproductive organs?
What?

(M) _____

(F) _____

(3) Are you currently taking any medication? If yes, what?

(M) _____

(F) _____

(4) Do you take any non-prescription drugs or medicines (including alcohol) on a regular basis? If yes, what, how often?

(M) _____

(F) _____

(5) Have you experienced any change in health over the past year ?

If so,

what? _____

(M) _____

(F) _____

(6) Have you had any recent check-ups with a Gynecologist? Urologist? General Practitioner? If yes, when and why?

(M) _____

(F) _____

(7) Calculate what phase of the menstrual cycle you are in at the present time (e.g., menstruation (days 1-5), pre-ovulation (days 6-10), ovulation (days 11-14), post-ovulation (days 15-22), pre-menstruation (days 22-28)?

III. General-Fertility

(1) How long have you been trying to conceive (months)? _____

(2) What medical examinations have you undertaken for your infertility so far?

(3) Do you think your infertility is the result of a specific event?

(M) _____

(F) _____

(4) Have you consulted with friends, professionals, etc. about your infertility? Have you read any literature to learn more about infertility? If yes, what?

(M) _____

(F) _____

(5) Is anybody in your extended family childless? Did anyone experience fertility difficulties? If yes, who and what?

(6) Have you ever been pregnant before? Miscarriage? Abortion? If yes, when, duration of pregnancy, what?

7) What methods of birth control have you used in the past? For how long? Did they cause any medical problems? (Describe in chronological order until most recent)

IV. Sex

(1) What is your average frequency of sexual intercourse per month? This past month? Do you ever engage in sexual activity without having intercourse? If yes, how often? _____

(2) Has your style of making love changed from before trying to conceive to the present? In what way?

(3) Have you experienced any sexual difficulties in the past year? (e.g., loss of interest, erection difficulties, non-lubrication, low arousal?) If yes, what , duration? Why?

(M) _____

(F) _____

(4) Have you ever been troubled by a sexual problem in your marriage?(e.g., nonorgasmic, erectile dysfunction (impotence), premature ejaculation, etc.) If yes, when, what, and how treated?

(M) _____

(F) _____

(5) Have you ever received professional help for a marital or sexual problem? If yes, for what, when and duration?

V. Stress

(1) Has this year (years) in which you have been trying to conceive been stressful for you? If yes, what aspects? How have you dealt with the stress?

[Rate on scale from 1 (not at all) - 5(extremely)]

M _____

(F) _____

(2) Have you had any major stresses in your life in the past year (e.g., death of loved one, financial hardship, career change, etc.)? If yes, what?

(M) _____

(F) _____

MONTHLY TELEPHONE INTERVIEW

Name _____ Who spoke to _____

Date _____ Interview # _____

1) What tests have you had this month, e.g., post-coital test, blood tests, endometrial biopsy, hysterosalpinogram? Were you told the results of any of the tests this month?

2) Did you experience any difficulties, pain or discomfort with any of these tests? Which ones? Did you feel you were adequately prepared for this reaction? [Rate on scale from 1(no problem) - 3 (extreme difficulty)]

3) What was your emotional reaction to each of these tests, e.g., were you calm or nervous? Why do you think you reacted this way? [Rate on scale from 1 - 3].

4) Are you currently charting your morning temperature? How many months have you been doing this? Do you find it a bothersome or helpful task? Are you doing it consistently or do you forget sometimes? Do you find you schedule your love-making by your temperature chart?

5) What tests has your husband had this month, e.g., blood tests, physical examination, semen analyses (how many)? Were you told the results of any of these tests this month? Did he have any difficulties with any of these tests? [Rate on scale from 1(no problem) to 3(extreme difficulty)].

6) Did you or your husband find it difficult to schedule or keep any doctor's appointments? Why, e.g., work conflicts, nervousness, etc.?

7) Have you been reading or gathering any additional information on infertility or the tests involved? Have you consulted anyone other than your doctor? Has this been helpful?

8) Do you feel the investigation has put a strain on your marital or sexual relationship? In what way exactly? [Rate on scale from 1 - 3]

9) What was your average frequency of sexual activity this month? Is this the same, more or less than before you began the investigation? Is your sexual activity spread out over the month or mainly confined to your fertile period?

10) Have you experienced any significant changes in your lives in the past month unrelated to the infertility investigation, e.g., job change, illness, etc.?

11) Any additional comments? Any questions?

POST-INTERVIEW

Name _____

Date _____

I. Health

1) Did you experience any medical problems unrelated to the fertility investigation since we last met?

2) Were you (are you) taking any medication? What? For how long?

II. Infertility Investigation

1. What was your reaction to the tests? Were you nervous or calm? Did you experience any difficulties, pain or discomfort with any? [Rate on scale from 1(no problem) to 3(extreme difficulties)]

pelvic exam _____

temperature monitoring (how long?) _____

post-coital _____

endometrial biopsy _____

hysterosalpinogram _____

semen analyses (how many?) _____

other _____

2. Are you satisfied with the amount of care given by your doctor? Did he provide you with the necessary information about the tests?

3. Did you seek out additional information or help about the investigation or about infertility in general, e.g., reading material, support counselling, cohorts, etc.?

4. Did you find that the information we provided you with was helpful? In what way? [Rate on scale from 1(unhelpful)- 2(indifferent)- 3(helpful)]

III. Coping

1. In general, do you feel you have been coping well during the investigation? Was it a stressful process for you? If yes, how did you deal with the stress? Were there certain incidents that were harder to cope with than others, e.g., baby showers, birth announcements, etc.?

2. Did you take time off from work in order to meet doctor appointments? Did this present a problem?

3. Are you now more or less encouraged about your ability to have a child?

[Rate on scale from 1(less encouraged)-2(no difference)-3(more encouraged)]

4. Do you find you are putting off plans (career or other) because of your infertility? In what way?

5. Have there been stresses in your life unrelated to fertility during this time? What?

IV. Support/Relationships.

1. Did you feel the investigation had an affect on your marital relationship? In what way?

2. Were you able to talk to your partner about your thoughts and feelings about the investigation?

3. Did you at times experience such feelings as anger, jealousy, hopelessness, blaming, etc.?

4. Were you able to share the experience of the investigation with others? Friends? Family? Was this helpful?

5. Did you find the film we showed you was helpful? In what way? **If appropriate:** Did you experience any of the reactions mentioned in the film? Did it increase or decrease your anxiety to be exposed to other people's reactions in this way? [Rate on scale from 1(unhelpful)-2(indifferent)-3(helpful)].

V. Sexual Functioning

1. In general, did you feel the investigation put a strain on your sexual relationship? In what way exactly?

2. Did your frequency of intercourse decrease or increase? Did your pattern of love-making change? In what way?

3. **If appropriate:** Did you make use of the sex pamphlet we provided? How often did you refer to it? Did it prompt better communication between you and your partner? In general, did you find it reassuring, useful, or anxiety-provoking? What parts were particularly helpful? [Rate on scale from 1(unhelpful)-2(indifferent)-to 3(helpful)].

VI. Diagnosis

1. Calculate what phase of the menstrual cycle you are in at the present time (e.g., menstruation (days 1-5), pre-ovulation (days 6-10), ovulation (days 11-14), post-ovulation (days 15-22), pre-menstruation (days 22-28)? _____

2. Have you been told the probable cause of your infertility? Have you been told what your chances of becoming pregnant are?

3. How do you feel about knowing/not knowing the cause of your infertility?

4. What are your plans for the immediate future with regard to your infertility, e.g., further investigation, treatment, take a break?

5. Are you considering alternatives to a natural birth such as adoption?

6. Are you as eager to have children now as you were when you began the investigation? [Rate on scale from 1(less eager)-2(no change)-3(more eager)].

Appendix D
Interventions:
Fact Sheet
Sex Pamphlet

FACT SHEET

(For Info. + Sex and High Info. Groups)

"There are some other pieces of information about infertility not mentioned in the film that I would like to review:"

- Women are responsible for just over half of infertility problems, and males for the rest.

- In the female, hormones excreted from the endocrine glands affect ovulation.

- Women are fertile for about 36 hours in every cycle.

- It takes about 6 1/2 days for the fertilized egg to travel the length of the fallopian tube to the uterus.

- A male must have at least 60-70 million normal healthy sperm per cc. to be considered fertile.

- Though hundreds of million sperm are deposited in the upper vagina during intercourse, only about 100 die-hards live through the journey up the tube, and only one will actually fertilize the egg.

- If a couple has sexual intercourse about three times per week, this provides a good opportunity for conception to occur.

- Basal body temperature monitoring is often done for 3 - 4 cycles to obtain an accurate indication of ovulation.

-In the female, free passage within the tube can be inhibited by pelvic inflammation due to unknown causes, endometriosis (endometrial tissue located outside the uterine cavity), or previous damage caused, for example by a ruptured appendix.

-In the male, sperm production and quality can be inhibited by damaged testicles, a blocked vas deferens (tubes that lead from the testicles to the end of the penis), and lack of a cool environment for the testicles. Tight pants and jockey shorts can prevent the testicles from maintaining stable temperatures which would impair sperm production . Treatment techniques are available to improve sperm count if necessary.

SEX AND INFERTILITY

FACTS AND FEELINGS

INTRODUCTION

Sexual stress is a common side effect of infertility. If you were to ask a sex therapist how a happily married couple with a good sex life could deliberately ruin their sexual relationship, the answer would be something like, "Tell them that they have to make love whether they feel like it or not, and that sex must take place on certain days. Tell them that they can only make love in one way, sexual intercourse in the male superior position (missionary), and to have sex when they are anxious because of the importance of each encounter". This is, of course, just what happens when a couple undergoes infertility treatment. The "scheduling" of sex to a certain time of month (ovulation) is frustrating and difficult for a couple and makes sex an obligation, not fun or exciting. It's hard for either partner to feel sexy or "in the mood" when he/she is depressed about infertility, or when watching the wife's body temperature chart. Furthermore, because fertility is concerned with the sexual and reproductive organs, feelings of inadequacy about one's reproductive capacity often spread to feelings about one's ability as a sexual partner. Therefore, a sexual encounter can degenerate into one more opportunity to fail at producing a baby. Love making just becomes transformed into baby-making. To top it all off, many of the tests of the infertility investigation, such as semen analysis and the post-coital test, require couples to have sex at inconvenient times with the knowledge that the result of their sexual performance will be medically evaluated and graded.

These circumstances, combined with the frustrations and anxiety already experienced by the infertile couple, provide an ideal backdrop for the development of sexual difficulties. This in turn, can put further pressure on the couple, because sexual problems could lead to avoidance and decrease the frequency of sexual contact between partners, lowering chances of conception.

Experts in human sexuality, such as Master's and Johnson, have theorized that sexual problems often arise because a couple becomes too focussed on the act of sexual intercourse to the exclusion of enjoying the pleasures of sexual caressing and touching. Instead of allowing themselves to enjoy the sexual feelings produced by the sight and feel of each other's bodies, they become worried or anxious about their sexual arousal, or about the male having an erection for intercourse. Applying this theory to the infertile couple suggests that the pressure to couples place on themselves to engage in successful intercourse for conception, might serve to disrupt normally occurring sexual feelings, and thereby sexual arousal. In other words, sexual arousal is diminished by the couple focussing on the completion of intercourse rather than on pleasurable sensations. There are studies that indicate that the more pressure placed on an individual to engage in sex, the more panicky and anxious he/she becomes, and the less able he/she is to perform sexually. The "this is the night syndrome" is familiar to all couples who have experienced any degree of infertility in their relationship. Studies have shown that this syndrome has contributed to stressful reactions in the couple and can cause erection difficulties in the male.

For these reasons, while you are undergoing the infertility investigation and monthly attempts at conception, it might be helpful to be aware of the potential stresses that can arise. Sometimes just being told that such difficulties might occur and that they are a normal

reaction to the tension that both partners feel is enough to ensure that they will not become a major obstacle to conception. Other times, you may want to try various exercises and techniques to help you maintain a good sexual relationship during this trying time. Also, keep in mind, that not all couples experience difficulties. In fact, some couples have reported that the infertility problem actually brought them closer together, because it opened communication between them, and they had the feeling of working together to solve a mutual problem.

Before proceeding to some ways to help you maintain your sexual arousal, or make the infertility investigation less sexually stressful, it may be informative to mention and debunk some of the misconceptions commonly associated with infertility and stress.

MYTHS

1) INFERTILITY IS A SEXUAL DISORDER.

In the vast majority of cases, infertility has nothing to do with ability to engage in sexual relations. Infertile men and women are capable of experiencing the same spectrum of physical and emotional responses in sexual relations that other couples do. However, as explained earlier, because the stress of a long infertility investigation can lessen the desire for sex from time to time, the male may experience occasional impotence, or the female, lack of vaginal lubrication and arousal, when there is a demand for sex at a particular time. It is important to remember that this is a normal reaction to stress and is a temporary condition, not a permanent one.

2) INFERTILITY IS USUALLY CAUSED BY INCORRECT TIMING OR IMPROPER LOVE-MAKING.

Many couples, in search for an explanation for their failure at conception, convince themselves that they are not making love correctly or they have simply missed making love on the right day. In fact, this is unlikely to be responsible for long-term infertility. The way in which couples were making love before trying to have a child, using the same frequency rate are, generally speaking, meeting adequate conditions to result in pregnancy if no medical condition is interfering. If a couple's average frequency of love-making is about 2 to 3 times per week, then it is not necessary to concentrate sexual encounters during the "fertile" period. Overall, the best guide to intercourse frequency is mutual desire.

3) PROLONGED PERIODS OF ABSTINENCE TO "SAVE UP A HUSBAND'S SPERM" WILL LIKELY IMPROVE SPERM QUALITY

In fact, a normal male can maintain a high level of fertility with ejaculation as much as every 24 hours. Moreover, sperm movement is improved by more frequent ejaculations, which is as important a factor in fertilization as the number of sperm. It is only in cases of a subnormal sperm count that "saving up" may improve conception possibilities, and in these cases your physician would offer a specific recommendation as to rate

of love-making.

4) LACK OF SEXUAL DESIRE OR ORGASM WILL AFFECT A WOMAN'S ABILITY TO CONCEIVE

Orgasm or sexual desire will in no way influence the woman's reproductive capacity as long as intercourse can take place. In this respect she has an advantage over the male because she does not have to feel "turned on" in order to engage in intercourse, although the quality of her feelings and pleasure will be affected. The male, on the other hand, must produce an erection in order to perform intercourse, which requires a certain degree of sexual arousal.

5) A MAN ALWAYS WANTS AND IS ALWAYS READY TO HAVE SEX.

Most men have acknowledged a woman's right to say no to sex, but are unable to accept this right for themselves, to recognize that sometimes they are simply not interested in sex. Moreover, many men and women believe that men must always produce an erection, without any help from their partner. The facts are that men, like women, require a certain set of personal conditions to function adequately sexually. If they are too tired, preoccupied with other matters, or feeling stressed, they will have difficulty obtaining an erection. Furthermore, there are times when a man will need more direct stimulation from his partner (manual or oral) in order to have an erection. Since sex is basically a two-person venture, it is important for the woman to share responsibility for an enjoyable sexual encounter.

6) STRESS AS A FACTOR IN CAUSING INFERTILITY IS QUITE COMMON.

Infertile couples are wide open to the suggestion that "it is all in their heads", or that they are just too tense about the whole thing. In fact, there is little, if any, evidence to support the theory that what's going on in one's head on its own can cause infertility. A PHYSICAL problem is generally found in 90 percent of all infertile cases that have been thoroughly investigated by a qualified doctor. The remaining 10 percent may have a problem that cannot be diagnosed as yet with our current medical technology.

The following represents a list of suggestions that can enhance a sexual relationship. These techniques or exercises can be used to add variety or as aids to nip a potential problem in the bud. These procedures have been used extensively with couples who are experiencing sexual difficulties such as a female who is unable to achieve orgasm, or a male who has difficulty having an erection, or who is ejaculating too quickly. These techniques have also helped couples for whom sex is no longer enjoyable, or for partners who have discrepant sexual appetites.

Some of the techniques listed below will suite your relationship better than others. The list has been compiled so that couples can choose what seems to fit their needs at a particular time. You should feel free to experiment with any of these suggestions, modifying them as you wish, or rejecting some if they simply do not appeal to you.

COMMUNICATION

If any of the following suggestions are to be useful to your situation, there is one important interpersonal skill that must be underlined and practised. This concerns communication with your partner about your sexual likes and dislikes. Good communication between partners, in general, implies that the 'speaker' states exactly what he is thinking, wanting or feeling in a clear manner. He does not assume the 'listener' knows what is going on in his head; he tells the listener so that the listener doesn't have to guess or mind read. The good listener, similarly, tries to make sure that he understands what the speaker has said and does not fill in gaps with guesses as to what is going on in the speaker's mind. Even though you may feel that communication has never been a problem between you and your partner, the ordeal of the infertility investigation necessitates that you pay closer attention to the process of communication to ensure that you and your partner understand how one another is truly thinking and feeling. For example, talking about what it feels like to be focussed on baby-making rather than love-making may relieve some of the tension between husband and wife.

Communication with regard to your sexual functioning is as important as communication in other areas of your life. However, couples often find this area the most difficult to talk about. Communicating your reactions and desires, whatever they may be, will help your partner to better understand your sexual needs and preferences. Communicating your specific likes and dislikes gives your partner vital information about how you are feeling during sexual activity, information that only you can provide. Communication of sexual preferences can enhance your sexual relationship and prevent temporary difficulties from enduring, by guiding and teaching your partner the location and the kinds of touch to which you are most responsive.

Sexual communication can be either verbal or non-verbal. For example, you can let each other know with words what you would like your partner to do for you sexually. Tell each other what kind of touch is best for you, what feels good or what should change about the way you are caressing one another. You can say things during sexual activity like "A little lighter would feel better", or "Mmm... that feels good". Verbal communication should be given in a gentle, positive manner. What is said and the tone of your voice should indicate whether you like what is being done, and if not, what your partner could do differently. As well, at times, rather than speaking, you might try non-verbal communication. For example, during a sexual encounter, you could place your hand over your partner's hand and guide it to indicate the kind of stroke you like, so that you are being touched in the way that feels most pleasant.

Once you and your partner are comfortable with sexual communication, you will be better equipped to take full advantage of the suggestions offered below. Remember, this list was designed so that you can select what best fits your own particular preferences and situation. As well, at various times during the investigation you will find certain techniques more useful than others. It is a good idea to go over this list with your partner and talk about your impressions of it, once you are home.

SUGGESTIONS

1. Distinguish between "work" sex at fertile times (baby-making) and "play" sex at non-fertile times. It can be a relief to let go of expectations for passionate, creative and loving sex at ovulation, accepting that sex, at this time, can feel more like required work. During non-fertile times, try to let go of the requirements of "work" sex. Intercourse doesn't have to be your goal. You don't have to end up in the ideal position (i.e., male on top of female). Erection-getting is not necessary, nor is ejaculation. You may find you both want to make a special effort to create the setting for "play" sex., e.g., a playful bubble-bath for two, a candle-lit meal, etc. (see section 4e, "Setting the Atmosphere").

2. If you can estimate your fertile time (generally occurs somewhere between days 11 to 22 counting from the first day of menstruation), you could deliberately abstain from sex for a number of days (e.g., 5 days) prior to this time to build up your desire for sexual activity, or to increase your sexual appetite. Similarly, once your fertile time has passed, you may want to put sex aside for the next few days or weeks. Instead, you can spend this time being affectionate with each other, with the understanding that physical affection will not lead to sexual activity. Basically, together you can form your own "contract" or agreement on the frequency, type and conditions of sexual activity that will occur outside the fertile period.

3. Take a vacation from baby-making for a month or two so that sex can be focussed on pleasure rather than reproduction. A month or two without the pressure of baby-making can restore lovemaking and get the relationship back on track and better prepared to endure the months to come. You can decide between yourselves exactly what "taking a vacation" would entail. Possibilities range from, taking a pause from the infertility investigation, stopping to schedule sex by refraining from keeping temperature charts, banning sexual intercourse from your sexual repertoire of activities, and actually using contraceptives for a period of time. These suggestions may be most useful if the male is experiencing increasing bouts of erectile difficulties, or the couple is feeling progressively more negative about their sexual relationship. If the couple is able to take this time-out for one to two months, the situation will often improve.

4. There are many different tools and techniques one can use to enhance sexual arousal. These tools may be most helpful during those times when you have to have sex because it is the fertile period, or for the post-coital and semen analysis tests of the infertility investigation. The following is a list of some of these enhancement techniques.

a) Fantasy-use:

Some people find fantasizing a good technique to achieve arousal. This is a particularly good skill for those times when you find your body is not responding to stimulation because your mind is elsewhere, or when you are having trouble getting "In the mood" during fertile periods. All of us have fantasized at times. Dreams and "daydreams" are a form of

fantasy. Some people find it easier to fantasize than others, but it is something you can teach yourself to do. You may want to enjoy your fantasy privately, or share it with your partner aloud. Talking about fantasies together can be a way to add excitement and variety to a sexual relationship. You may even want to enact some of your fantasies with your partner.

There are several books you can purchase for a few dollars on fantasies. "My Secret Garden" and "Forbidden Flowers" by Nancy Friday are collections of women's fantasies. "Men in Love" also by Nancy Friday concerns male fantasies. All of these books are available in paperback at most book stores. You will probably experience lots of different reactions to these books. Some fantasies will surprise you, some will make you laugh, some will turn you on and some will definitely turn you off. These books may help you feel more comfortable about eventually exploring your own fantasies if this is difficult for you.

Another way to develop your own fantasizing is to start by recalling a film scene or a portion of a novel that you particularly liked and build on that. Remember a fantasy does not have to be some elaborate and involved story. Also, what turns you on can be something that is not explicitly sexual (e.g., a romantic walk). Finally, fantasizing about something does not mean that you actually want it to happen in real life. The beauty of fantasies is that they are "safe", in that they are removed from reality.

d) Erotica:

Reading or viewing erotic materials may also help you both to reel in the mood for a sexual encounter and to enhance your feelings of sexual pleasure. Erotic themes are expressed in many ways, including music, art, literature and photography. The most common forms of erotica are books, magazines, films and videos. Not all types of erotic content are universally appealing, so don't expect yourself to become automatically aroused at the first sight of a naked body, or by the same things that interest your partner. It is fine to be selective in your tastes.

With regard to books that might arouse you, they need not be explicitly sexual. For example, such classics as "The French Lieutenant's Woman" by John Fowles and "Tender is the Night" by F. Scott Fitzgerald are nonexplicit, suggestive or romantic selections that many people find pleasing. Other books like "Candy" by Maxwell Kenton and "The Sensuous Couple" by R. Chartham are more sexually descriptive. Likewise, magazine pictures vary from suggestive photographs to explicit ones. Some popular erotic magazines are *Oui*, *Playboy*, *Playgirl*, and *Penthouse*. Erotic videos can be rented at most video clubs if you have access to a video tape recorder. If not, there are several movie theatres downtown that show erotic films exclusively. For example, Le Beaver - 5117 Park; Ciné 539 - 539 St. Catherine W.; Piccadilly - 5025 Sherbrooke W.; Eve - 1229 St. Laurent Blvd.; Cinema Guy - Guy & deMaisonneuve. You may plan your evening around viewing an erotic film or tape, or you can read a selection in a novel or look at a magazine just prior to engaging in sexual activity. You may choose to read the erotica in private or together with your mate. You might find it arousing to compare types of erotic in terms of what each

finds exciting.

c) Vibrator-use:

A vibrator is a relatively small device that can be hand-held, and vibrates with a rapid steady rhythm. Vibrators come in different shapes and sizes, usually with different settings for speeds of vibration, and can include different attachments for massaging different body parts. They are generally used to massage the body in order to relax and soothe sore muscles and to provide pleasurable sensations on the genitals.

Many people feel the idea of using an electric vibrator to stimulate themselves or their partner is unnatural. This is ironic since we are quite comfortable with the idea of depending upon other electrical devices to enhance the quality of other aspects of our lives, e.g., electric coffeepots, hair driers, remote control devices, etc. Actually becoming aroused through the use of a vibrator is the same basic physical experience as arousal through other forms of stimulation (e.g., manual or oral). Also, remember that there is a person behind the vibrator controlling it. The advantage of a vibrator is it produces a faster, more steady and more intense type of stimulation than most people can achieve with hand stimulation. It would be helpful if you could regard vibrator stimulation as a convenience and a source of variety. Let it be an option, an enrichment to your sexual repertoire. You can use the vibrator on yourself in front of your partner, or have your partner stimulate you with it. Begin by using the vibrator on different muscle areas of your body - especially the back, neck, arm and leg. When you feel comfortable, concentrate stimulation on the genitals to enhance arousal. The vibrator can be combined with other forms of stimulation (e.g., kissing and touching) and can be used while fantasizing. Many women find clitoral stimulation with the vibrator extremely arousing. Some men enjoy vibrator stimulation on their genitals, others find it too intense.

Vibrators are sold in most department stores, pharmacies and by mail-order catalogue. There are many different models at varying prices, so shop around and compare.

d) Oral and Manual Stimulation:

As explained earlier, it is a myth that only women need stroking to get aroused but men just need to see the partner in the nude to become erect. The fact is the male may have difficulty obtaining or maintaining an erection at a time when intercourse is required, because he is overtired, preoccupied, or feeling pressured to perform well sexually. At these times, the female can help by applying direct stimulation to the penis either with her hand or mouth. A worry that women often have is exactly how to provide good manual or oral stimulation to their partner. If this is true for you, let your partner guide you with some suggestions on what feels best. Remember, if all the attention is focussed upon the male to get erect, feelings of resentment, impatience and guilt are bound to occur. To avoid this, alternate between stimulating, being stimulated and mutual stimulation. Oral-genital stimulation of the female can also

serve to add lubrication to the vagina, if natural lubrication is not occurring. Communication is crucial here. You both will want to make sure you are getting the kind of pleasurable stimulation that feels good to you. Also try not to make too much of it if the odd time the male can't get erect, or loses his erection before intravaginal ejaculation. Avoid internal dialogues with yourself about what's the matter. Instead, discuss together whether the optimal conditions were being met; e.g., Was the male feeling relaxed? Was he focussing on the pleasurable sensations? Was he getting the proper stimulation? Was he feeling aroused? It is expected that erection getting will be difficult if such conditions are not met. The male should try not to set a test for himself the next time. The more pressure he feels to perform, the less likely he is to respond the next time.

e) Setting the Atmosphere:

The preparation involved in setting the table attractively for a special meal; with flowers, intimate lighting, and soft music, adds to the anticipation of the meal and excites many of the senses. Good sex, like a good meal, also requires preparation. Certain nuances and atmospheric details can increase arousal for a sexual encounter when sex has become so scheduled and predictable that it is difficult to get excited about. These ideas are not implemented every time sex occurs, but are used to add variety and to enhance a sexual encounter as needed.

As with going out to eat when you are not particularly hungry, it is possible to whet your appetite by picking a restaurant carefully. The same can be true of developing an interest in sex. Although you might have had a long, hard day, you may find that your desire grows if you create a sensual atmosphere. Reading erotica, incorporating fantasy, and self-stimulation with a vibrator are some of the ways already discussed to get yourself "warmed up" for a sexual encounter. Other conditions that can help whet your sexual appetite include changing the place you usually make love; that is in different rooms, on different pieces of furniture, or going to a motel room. Creating a sensual environment might also include using satin sheets, sharing a special meal prior to sex, going on a "date", wearing sexy lingerie or underwear, making use of special lighting (e.g., candles, oil lamps, fireplaces, etc.), putting on music, rubbing on body oils, or using perfumes. Finally, beginning your sexual encounter with a bubble-bath, a shower, a backrub or body-massage can be both relaxing and sexually enhancing.

f) Expanding your Sexual Repertoire:

There are a variety of intercourse positions that can be explored as a way of increasing your desire for sex. The missionary position, with the woman on the bottom and the partner on top facing her, is usually considered the most likely position to enable sperm to deposit near the cervix. However, one must not rigidly hold to this position at the expense of sexual pleasure. It is probably just as valid to engage in the intercourse position of your choice and then, after intravaginal ejaculation, while the penis is still contained in the vagina, manoeuvre your position so that the woman ends up on her back.

Other intercourse positions include the female astride and on top of the male, side-by-side facing each other, side-by-side with the woman's back against the man's chest, rear-vaginal entry with the male entering the female from behind while she is on her knees, and various standing and sitting positions. Two books that describe and illustrate various positions are "The Joy of Sex" by A. Comfort and "The Kama Sutra" by Vatsayana.

Another way to "spice up" your sexual repertoire is to alternate between "quickie" sex and slow and prolonged sex. Sometimes intercourse can be preceded by extensive foreplay and mutual caressing, other times the male can stimulate himself to erection and enter the female with few preliminaries. Different durations of sexual encounters can be employed depending on your mood and time available. Remember the goal of every sexual encounter doesn't have to be orgasm for the female.

Lastly, you can enhance your repertoire by engaging in non-coital types of sexual activity (e.g., masturbation, mutual masturbation, oral-genital stimulation, etc.) during non-fertile times, or by incorporating any of these activities in addition to sexual intercourse.

g) Conclusions:

Sharing your reactions to this reading with your partner can be a good beginning of the sexual communication process. After you have had time to reread and digest the material in this pamphlet, set aside a time when you can talk to each other, without distractions, about your reactions to it. For example, share with your partner how you think you'd feel if he/she guided your hand during sexual activity to show you what kinds of stimulation were preferable. How comfortable are you with the idea of your partner telling you verbally what gives him/her pleasure? Do you think you'd be embarrassed, insulted, relieved, or accomodating? One way of letting your partner know what you'd like him/her to do to maximize your pleasure and minimize worry, is to go through each of the suggestions in this reading in terms of whether they appeal to you or not. For example, would you find a back rub an arousing activity? Does the idea of using a vibrator surprise you? Would you prefer to separate love-making from baby-making? Finally, discuss your reservations and expectations about the effect these techniques might have on your sexual relationship. Decide together how you want to proceed and how you will communicate about sexual issues in the future.

What if you've tried a number of the suggestions in this hand-out, and nothing seems to help? A good step would be to see a counsellor knowledgeable about infertility, or a therapist who specializes in couple sexual difficulties. The coordinator of this project can direct you to the professional service that will most benefit you. Please inquire. If there's a silver-lining in the cloud of infertility, it is that these skills and techniques that couples are sometimes forced to learn, will stand them in good stead for the rest of their lives.

Footnote:

Parts of this hand-out originated from:

Barbach, L. & Levine, L. (1981) Shared Intimacies: Women's Sexual Experiences. Toronto: Bantam Books.

Bombardieri, M. (1984) Coping with the Stress of Infertility. Belmont, Mass.: Resolve, Inc.

Gottman, J. (1976) A Couple's Guide to Communication. Champaign, Illinois: Research Press.

Helman, J., LoPiccolo, L. & LoPiccolo, J. (1976) Becoming Orgasmic: A Sexual Growth Program for Women. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Zilbergeld, B. (1978) Male Sexuality. Toronto: Bantam Books.

Appendix E

Rationales:

Doctor's Explanation to Patient

Description of Study

Authorization Form

Rationale for Control Video

Rationale for Emotional Video

Rationale for Sex Pamphlet

Doctor's Explanation to Patient

"I am collaborating on a research project with a team of psychologists here at the hospital, examining the psychological side-effects of the infertility investigation that you are about to begin. This project will give us a better understanding of the impact of the infertility investigation and will provide you with some information that might make the investigation less stressful for you. If you are interested in participating, or simply learning more about it, I will have the project coordinator, Janet Takefman, call you. Is that agreeable? If yes, my secretary will take your name and phone number which will be passed on to Janet."

"If no, or if you are uncomfortable with giving your number out, please take this card which explains a bit about the project and contains the number of the project coordinator for you to contact if you so choose."

(If patient wishes more detail in terms of requirements of project, duration, etc., suggest that Janet call them to answer any of their questions, and that they are under no obligation to participate at this point.)

DESCRIPTION OF STUDY

(to be given after interview before
consent form)

Infertility, the absence of a successful pregnancy following a year of regular sexual relations, is a problem that affects about one in six couples of child-bearing age. A thorough medical investigation will usually locate the cause of the infertility problem in most cases, so that it can be treated appropriately. However the infertility investigation itself, which usually takes several months, is considered by some patients to be a stressful process for themselves and for their marriage. For this reason, the aim of this research project is two-fold. Firstly, this project will assess the specific psychological effects of the infertility investigation on couples, so that future investigations can be made more tolerable. Secondly, this study will offer couples an informational program early in the investigative process, in the hope of reducing its negative personal and interpersonal side-effects.

Your participation will involve coming into the office to fill out some questionnaires so that we can learn more about you. Following that we will provide you with a program that may help you better cope with the infertility investigation. We will then maintain contact with you by telephone. Once a month we will call you to find out where you are in the investigation and how you have been feeling. At the end of your infertility investigation we will ask you to meet with us again to complete the same questionnaire battery that you filled out initially. Your participation and your answers to the questionnaires will be held in the strictest of confidence. You will only meet with a project worker,

never in a group with other couples, and you will fill out all questionnaire material in private, by yourself, not together with your partner.

Overall we believe your participation in this study will be informative to you and will benefit future couples in your situation. This consent form clearly describes what our responsibility is to you in this project and what your participation will involve. Please read it and then we can go over it together.....

RATIONALE FOR CONTROL VIDEO

This is a film that portrays a couple undergoing an investigation for infertility. It describes the standard medical investigation that most likely will be followed in your own case, though the number and order of tests may vary.

The purpose of showing you this film is to make you familiar with the test procedures of the investigation. Research has shown that patients who are given information about how a test procedure is carried out and why it is done are better prepared, and therefore find the procedure less stressful. We believe that providing you with information about your medical work-up will give you a greater sense of understanding and control over your situation, and thus make you less anxious about each upcoming test procedure.

The film is about 15 minutes long. It contains a lot of information so if you wish to view either parts of it, or all of it a second time, please let me know. Afterwards I'll try to answer any questions you might have regarding the film.

Rationale for Emotional Video

This is a film that portrays three couples who have been through the infertility investigation and treatment. Though the film is an American production it describes the standard medical investigation that most likely will be followed in your own case, though the order of tests may vary. It should be kept in mind that the couples telling their story in this film have been investigated and treated over several years and at the time of the making of this film have had no success at pregnancy.

The purpose of showing you this film is to make you familiar with the test procedures of the investigation as well as some of the emotional reactions you may experience at different times in the work-up. Research has shown that patients who are given information about a medical procedure, information about how the test is carried out, why it is done and feelings experienced, are better prepared and therefore find the procedure less stressful. We believe that providing you with information about your medical work-up will give you a greater sense of understanding and control over your situation, and thus make you less anxious about each upcoming test procedure. In addition, feelings about infertility are often difficult for couples to discuss with their friends and relatives and thus patients often feel alone and isolated. This film will convey the fact that many people have had to deal with fertility difficulties and the feelings you may experience are not unusual, but common to couples undergoing an infertility investigation.

The film is about 15 minutes long. It contains a lot of information so if you wish to view either parts of it, or all of it a second time, please let me know. Afterwards I'll try to answer any questions you might have.

Rationale For Sex Pamphlet

This pamphlet was written because couples often experience some strain on their sexual relationship during the infertility investigation. One main reason for writing this pamphlet was to inform couples that this is a common and mostly, temporary occurrence. Secondly, research has shown that informing couples about potential difficulties will often serve to either decrease or prevent their occurrence. The rationale is that couples who are given information about sexual functioning during the infertility investigation are better prepared to nip any potential problem in the bud. In this pamphlet you'll read how sexual difficulties can develop as a result of the infertility investigation or as a result of trying to conceive each month. You will also read how good communication between partners is important to prevent sexual stresses from becoming full-blown sexual problems. The last part of this pamphlet offers a variety of suggestions and techniques you can use to aid you if you begin to perceive the infertility problem as negatively affecting your sexual relationship. Because every couple is unique with their own sexual tastes and preferences, the techniques offered are numerous and varied. This allows you to pick and choose those suggestions that are appropriate to your situation.

I will ask you both to read the entire pamphlet now so that I can answer any questions you might have regarding its contents. Then you are asked to take this pamphlet home and reread it or refer to it as the need arises.

Appendix F

ANOVA Summary Tables

T-Test Summary Tables

Chi-Square Analyses

ANOVA Summary Tables for Differences Among Informational
Groups at Baseline Testing

(Note. $t p \leq .10$, $* p \leq .05$, $** p \leq .01$, $*** p \leq .001$)

F.1

Age:

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	67.85	135.69	2	1.95
error	34.72	1249.85	36	
Sex	123.13	123.13	1	15.64***
Sex X Group	5.74	11.49	2	.73
error	7.87	283.38	36	

F.2

Education:

Info group	39.71	79.41	2	3.57*
error	11.13	400.92	36	
Sex	4.15	4.15	1	.70
Sex X Group	3.58	7.15	2	.60
error	5.93	213.69	36	

F.3

Years Married:

Info group	32.71	65.42	2	2.93 ^t
error	11.14	401.35	36	

F.4

Years Infertile:

Info group	5.15	10.30	2	.91
error	5.68	204.36	36	

F.5

Health:

Info group	.36	.72	2	.91
error	.40	14.23	36	
Sex	.21	.21	1	.50
Sex x Group	.05	.10	2	.13
error	.41	14.69	36	

F.6					
<u>Support</u>					
	<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
	Info group	6.51	13.03	2	.50
	error	12.97	466.85	36	
	Sex	22.62	22.62	1	2.04
Sex x	Group	8.00	16.00	2	.72
	error	11.06	398.38	36	
F.7					
<u>Infertility Feelings</u>					
	Info group	121.27	242.54	2	1.69
	error	71.93	2589.62	36	
	Sex	1240.01	1240.01	1	21.58***
Sex x	Group	72.40	144.79	2	1.26
	error	57.46	2068.69	36	
F.8					
<u>Alternatives</u>					
	Info group	17.78	35.56	2	2.24
	error	7.95	286.23	36	
	Sex	10.78	10.78	1	1.76
Sex X	Group	12.01	24.02	2	1.96
	error	6.13	220.69	36	
F.9					
<u>Conception Expectation</u>					
	Info group	1.04	2.08	2	.63
	error	1.66	59.77	36	
	Sex	3.28	3.28	1	2.72
Sex x	Group	1.63	3.26	2	1.35
	error	1.21	43.46	36	
F.10					
<u>Marital Disharmony</u>					
	Info group	13.63	27.26	2	.72
	error	19.00	684.23	36	
	Sex	1.04	1.04	1	.08
Sex x	Group	.73	1.46	2	.06
	error	12.69	457.00	36	

F.11
Fertility Knowledge

	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	21.70	43.41	2	2.69 ^t
error	8.08	290.46	36	
Sex	6.78	6.78	1	.99
Sex x Group	3.32	6.64	2	.48
error	6.86	247.07	36	

F.12
BDI

Info group	20.97	41.95	2	1.05
error	19.93	717.38	36	
Sex	149.54	149.54	1	8.63**
Sex x Group	.46	.92	2	.03
error	17.32	623.54	36	

F.13
Affect

Info Group	191.42	382.85	2	1.24
error	154.02	5544.69	36	
Sex	538.78	538.78	1	4.24*
Sex x Group	42.40	84.79	2	.33
error	127.16	4577.92	36	

F.14
STAI-state

Info group	16.88	33.77	2	.20
error	85.96	3094.85	36	
Sex	15.71	15.71	1	.22
Sex x Group	.55	1.10	2	.01
error	70.24	2528.69	36	

F.15
STAI-trait

Info group	29.11	58.03	2	.46
error	63.40	2282.46	36	

	Sex	344.82	344.82	1	5.08*
Sex x	Group	7.32	14.64	2	.11
	error	67.93	2445.54	36	
F.16					
<u>Symptom</u>					
	<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
	Info group	102.40	204.79	2	.59
	error	174.36	6277.08	36	
	Sex	146.78	146.78	1	1.24
Sex x	Group	146.47	292.95	2	1.24
	error	117.91	4244.77	36	
F.17					
<u>Neuroticism</u>					
	Info group	7.70	15.41	2	.33
	error	23.20	835.54	36	
	Sex	453.13	453.13	1	20.27***
Sex x	Group	25.47	50.94	2	1.14
	error	22.35	804.92	36	
F.18					
<u>Extraversion</u>					
	Info group	16.55	33.10	2	1.71
	error	9.70	349.08	36	
	Sex	.01	.01	1	.00
Sex x	Group	28.09	56.17	2	2.51 ^t
	error	11.18	402.31	36	
F.19					
<u>Lie Scale</u>					
	Info group	8.81	17.62	2	3.70*
	error	2.38	85.76	36	
	Sex	.05	.05	1	.02
Sex x	Group	3.94	7.87	2	1.51
	error	2.61	94.07	36	
F.20					
<u>Coping Style</u>					
	Info group	4.31	8.61	2	.30
	error	14.56	524.00	36	

	Sex	23.71	23.71	1	2.20
Sex x	Group	10.05	20.10	2	.93
	error	10.77	387.69	36	

F.21
Film Retention

	<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
	Info group	18.04	36.08	2	3.07 ^t
	error	5.88	211.46	36	
	Sex	9.35	9.35	1	3.56 ^t
Sex x	Group	.81	1.61	2	.31
	error	2.63	94.53	36	

F.22
Feelings about Film

	Info group	1.28	2.56	2	1.12
	error	1.14	41.15	36	
	Sex	.01	.01	1	.06
Sex x	Group	.21	.41	2	.91
	error	.22	8.08	36	

F.23
MAS

	Info group	29.58	59.76	2	.15
	error	198.52	7146.62	36	
	Sex	15.71	15.71	1	.24
Sex x	Group	19.24	38.48	2	.29
	error	66.06	2378.31	36	

F.24
Frequency of Intercourse

	Info group	.05	.10	2	.03
	error	1.60	57.77	36	
	Sex	.32	.32	1	.62
Sex x	Group	.82	1.64	2	1.59
	error	.51	18.54	36	

F.25
Sexual Knowledge

Info group	51.96	103.92	2	
error	150.74	5426.62	36	.34
Sex	27.13	27.13	1	.26
Sex x Group	49.63	99.26	2	.47
error	104.79	3772.62	36	

F.26
Body Image

	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	515.24	1030.49	2	
error	138.74	4994.69	36	3.71*
Sex	62.82	62.82	1	.82
Sex x Group	15.55	31.10	2	.20
error	76.44	2752.08	36	

F.27
Sexual Satisfaction

Info group	93.74	187.49	2	.95
error	98.95	3562.38	36	
Sex	.01	.01	1	.00
Sex x Group	13.90	27.79	2	.34
error	40.51	1458.69	36	

F.28
DSFI summary score

Info group	8.17	16.33	2	.04
error	185.76	6687.46	36	
Sex	46.15	46.15	1	.45
Sex x Group	65.88	131.77	2	.65
error	101.85	3666.0	36	

F.29
Sex for Procreation

Info group	10.55	21.10	2	.93
error	11.34	408.38	36	
Sex	.05	.05	1	.01
Sex x Group	8.70	17.41	2	1.24
error	7.01	252.54	36	

F.30
Communication

Info group	10.55	21.10	2	
error	11.34	408.38	36	.93
Sex	.05	.05	1	.01
Sex x Group	8.70	17.41	2	1.24
error	7.01	252.54	36	

F.31
Female Sex Problem

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info Group	6.87	13.74	2	1.08
error	6.38	229.69	36	

F.32
Male Sex Problem

Info group	3.10	6.21	2	.52
error	5.93	213.38	36	

ANOVA Summary Tables for Post Investigation Variables by
Information Groups

F.33

Investigation Time

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	5.31	10.62	2	.07
error	72.64	2325.35	32	

F.34

Compliance

Info group	6.46	12.92	2	.81
error	8.01	288.31	36	

F.35

Film Retention

Info group	18.04	36.08	2	3.07 ^t
error	5.88	211.46	36	
Sex	9.35	9.35	1	3.56 ^c
Sex x Group	.81	1.61	2	.31
error	2.63	94.53	36	

ANOVA Summary Table by Information Group over Time for
Emotional Adjustment

F.36
STAI-state

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	60.10	120.21	2	.30
error	199.47	6383.18	32	
Time	206.99	206.99	1	4.33*
Time x Group	2.05	4.11	2	.04
error	47.79	1529.14	32	
Sex	51.80	51.80	1	.69
Sex x Group	18.03	36.07	2	.24
error	75.19	2406.03	32	
Time x Sex	.91	.91	1	.02
T x S x G	12.10	24.00	2	.27

ANOVA Summary Tables for Reactions to Diagnostic Tests by Information Groups

F.37

Semen Analysis

(physical)

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	.07	.14	2	.52
error	.14	4.62	34	

(emotional)

Info group	.87	1.73	2	2.94 ^t
error	.29	10.00	34	

F.38

Hysterosalpingogram

(physical)

Info group	.53	1.06	2	.56
error	.91	29.91	33	

(emotional)

Info group	2.33	4.67	2	3.79*
error	.62	20.33	33	

F.39

Post-Coital Test (PCT)

(physical)

Info group	.00	.00	2	1.00
error	.00	.00	33	

(emotional)

Info group	.43	.86	2	1.04
error	.41	9.88	24	

F.40

Basal Body Temperature

(emotional)

Info group	.42	.83	2	.742
error	.56	16.81	30	

ANOVA Summary Tables for the Post-Test Questionnaire by
Information Group

F.41

Feelings About Film

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	1.28	2.56	2	1.12
error	1.14	41.15	36	
Sex	.01	.01	1	.06
Sex x Group	.21	.41	2	.91
error	.22	8.08	36	

F.42

Coping

Info group	2.74	5.48	2	3.05 ^t
error	.90	28.89	32	
Sex	.09	.09	1	.15
Sex x Group	.23	.46	2	.40
error	.58	18.48	32	

F.43

Sexual Image

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Info group	.94	1.87	2	1.60
error	.58	18.70	32	
Sex	.07	.07	1	.41
Sex x Grp	.10	.21	2	.58
error	.18	5.73	32	

F.44

Self-Image

Info group	1.00	2.00	2	2.59 ^t
error	.39	12.37	32	
Sex	.55	.55	1	.88
Sex x Group	.33	.66	2	.59
error	.62	19.82	32	

F.45

Evaluation

Info group	.12	.23	2	.09
error	1.32	42.11	32	
Sex	1.21	1.21	1	3.78 ^t
Sex x Group	.07	.13	2	.21
error	.32	10.21	32	

T-test Summary Tables for Female Variables by Coping Groups

F.46

<u>Variables</u>	<u>Blunters</u>	<u>Monitors</u>	<u>df</u> 28	<u>t</u>
Years Infertile	2.83 (2.14)	2.11 (1.34)		1.05
Film Retention	16.41 (1.94)	17.38 (1.94)		-1.36
Compliance	1.71 (1.57)	1.53 (1.94)		.26

ANOVA Summary Tables for Female Variables by Coping Groups over Time

F.47

Fertility Knowledge

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Coping group	12.74	12.74	1	1.55
error	8.24	230.61	28	
Time	15.06	15.06	1	5.77*
Time x Group	.40	.40	1	.15
error	2.61	73.08	28	

F.48

Infertility Feelings

Coping group	779.99	779.99	1	4.79*
error	162.84	4559.61	28	
Time	1.48	1.48	1	.07
Time x Group	5.74	5.74	1	.27
error	21.49	601.85	28	

F.49

Marital Disharmony

Coping group	48.63	48.63	1	1.60
error	30.39	850.86	28	
Time	44.13	44.13	1	2.22
Time x Group	1.07	1.07	1	.05
error	19.84	555.62	28	

F.50

STAI-state

Coping group	266.55	266.55	1	1.72
error	155.31	4348.79	28	
Time	138.67	138.67	1	3.61 ^t

Time x Group	59.47	59.47	1	1.55
error	38.46	1076.93	28	

F.51
Sexual Satisfaction

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Coping group	2.26	2.26	1	.01
error	183.01	5124.23	28	
Time	8.46	8.46	1	.26
Time x Group	16.73	16.73	1	.50
error	33.13	927.62	28	

T-test Summary Tables for Male Variables by Coping Group

F.52

<u>Variables</u>	<u>Blunters</u>	<u>Monitors</u>	<u>df</u> 26	<u>t</u>
Years Infertile	2.45 (2.26)	2.23 (1.44)		.31
Invest. Time	16.75(10.55)	11.75 (4.85)		-1.52
Film Verif.	15.81 (2.43)	16.92 (1.98)		1.29
Summary Coping	6.88 (1.78)	6.58 (.90)		-.52
Compliance	1.25 (1.57)	.67 (.99)		-1.13

F.53

Fertility Knowledge

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Coping Group	.38	.38	1	.08
error	4.63	120.33	26	
Time	1.52	1.52	1	.89
Time x Group	1.52	1.52	1	.89
error	1.71	44.33	26	

F.54

Infertility Feelings

Coping group	143.93	143.93	1	3.45 ^t
error	41.75	1085.55	26	
Time	2.26	2.26	1	.11
Time x Group	4.83	4.83	1	.24
error	19.73	513.22	26	

F.55

Marital Disharmony

Coping group	124.29	124.29	1	4.84*
error	25.69	668.05	26	
Time	9.29	9.29	1	2.26
Time x Group	.001	.001	1	.00
error	4.12	107.05	26	

F.56

STAI-state

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Coping group	116.67	116.67	1	1.46
error	80.13	2083.33	26	
Time	23.63	23.63	1	.46

Time	23.63	23.63	1	.46
Time x Group	108.48	108.48	1	2.11
error	51.82	1334.38	26	

F.57

Sexual Satisfaction

<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
Coping group	.02	.02	1	.00
error	72.03	1872.83	26	
Time	6.48	6.48	1	.61
Time x Group	.48	.48	1	.05
error	10.71	278.38	26	

ANCOVA Summary Tables for Couple Variables by Diagnostic Groups

F.58
Infertility Feelings

Diagnostic grp	5.96	17.89	3	.18
covariate	560.80	560.80	1	16.98***
error	33.04	991.09	30	

F.59
Conception Expectation

Diagnostic grp	.44	1.31	3	.64
covariate	20.91	20.91	1	30.65***
error	.68	20.46	30	

F.60
Alternative

Diagnostic grp	4.29	12.86	3	1.27
covariate	63.76	63.76	1	18.94***
error	3.37	101.02	30	

F.61
BDI (log)

Diagnostic grp	.04	.11	3	.57
covariate	2.57	2.57	1	40.26***
error	.06	1.92	30	

F.62
STAI-state

Diagnostic grp	1.17	3.50	3	.02
covariate	1207.42	1207.42	1	23.75***
error	50.84	1525.26	30	

F.63
Body Image

Diagnostic grp	14.63	43.88	3	.60
covariate	1740.53	1740.53	1	70.83***
error	24.57	737.25	30	

F.64

BDI

	<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
	Info group	20.73	41.46	2	1.19
	error	46.86	1499.42	32	
	Time	1.79	1.79	1	.08
Time x	Group	12.51	25.02	2	2.06
	error	9.50	304.13	32	
	Sex	218.41	218.41	1	5.88*
Sex x	Group	13.39	26.79	2	.22
	error	31.65	1012.78	32	
Time x	Sex	4.20	4.20	1	1.26
T x S x G		11.65	23.29	2	1.08
	error	7.43	237.85	32	

F.65

DSFI Symptom Score

	<u>Source</u>	<u>MS</u>	<u>SS</u>	<u>df</u>	<u>F</u>
	Info group	455.61	911.21	2	1.67
	error	272.51	8720.33	32	
	Time	101.27	101.27	1	2.07
Time x	Group	17.01	34.02	2	.35
	error	48.85	1563.15	32	
	Sex	66.91	66.91	1	.34
Sex x	Group	75.82	151.64	2	.38
	error	198.02	6336.53	32	
Time x	Sex	51.89	51.89	1	1.26
T x S x G		18.55	37.10	2	.45
	error	41.34	1322.87	32	

F.66

Chi-square analyses: Coping Style by Information Group

Adjacent cells of the intervention categories were collapsed to compute the chi-square statistic because some of the cells of the 2x3 tables were less than 5. The chi-squares were computed separately for males and females.

Females:

comparing Low and High Information versus High and Sex
Information group

$\chi^2(1) = .23, p = N.S.$

comparing Low Information versus High and High and Sex
Information group

$\chi^2(1) = 1.26, p = N.S.$

Males:

comparing Low and High Information versus High and Sex
Information group

$\chi^2(1) = .05, p = N.S.$

comparing Low Information versus High and High and Sex
Information group

$\chi^2(1) = .00, p = N.S.$

Appendix G
Correlation Matrices

Correlation Matrices for Infertility Adaptation Variables

G.1

Males, Pre-Investigation

	1	2	3	4
1. Support	**			
2. Infertility Feelings	-.0998 (.568)	**		
3. Conception Expectation	.0047 (.979)	-.2247 (.194)	**	
4. Fertility Knowledge	-.0684 (.696)	.2179 (.208)	-.0659 (.707)	**

G.2

Males, Post-Investigation

	1	2	3	4
1. Support	**			
2. Infertility Feelings	.1091 (.533)	**		
3. Conception Expectation	-.1128 (.519)	.0072 (.967)	**	
4. Fertility Knowledge	.0997 (.569)	.2229 (.198)	-.1411 (.419)	**

G.3
Females Pre-Investigation

	1	2	3	4
1. Support	**			
2. Infertility Feelings	.3400 (.046)	**		
3. Conception Expectations	.1188 (.497)	-.0150 (.932)	**	
4. Fertility Knowledge	-.0808 (.644)	-.0769 (.660)	-.0157 (.929)	**

G.4
Females, Post-Investigation

	1	2	3	4
1. Support	**			
2. Infertility Feelings	.2433 (.161)	**		
3. Conception Expectations	.0775 (.678)	-.1751 (.314)	**	
4. Fertility Knowledge	-.0802 (.647)	.0216 (.902)	-.1925 (.268)	**

Correlation Matrices for Sexual Adjustment Variables

G.5
Males, Pre-investigation

	1	2	3	4	5	6
1. DSFI Satisfaction		**				
2. SHF Communication		.3942 (.013)	**			
3. Sex for Procreation		.2246 (.169)	.2234 (.172)	**		
4. DSFI Information		-.0016 (.992)	-.0269 (.871)	.4364 (.005)	**	
5. DSFI Intercourse Frequency		.3536 (.027)	.2596 (.111)	.0236 (.887)	.0840 (.611)	**
6. MAS		.6435 (.001)	.5279 (.001)	.1948 (.235)	.0864 (.601)	.3200 (.047)

G.6
Males, Post-investigation

	1	2	3	4	5	6
1. DSFI Satisfaction		**				
2. SHF Communication		.5464 (.001)	**			
3. Sex for Procreation		.3284 (.054)	.5094 (.002)	**		
4. DSFI Information		.1750 (.315)	.0654 (.709)	-.1793 (.303)	**	
5. DSFI Intercourse Frequency		.5018 (.002)	.4823 (.003)	.4663 (.005)	-.1135 (.516)	**
6. MAS		.5160 (.002)	.6099 (.001)	.2383 (.168)	.2874 (.094)	.3986 (.018)

G.7
Females, Pre-investigation

	1	2	3	4	5	6
1. DSFI Satisfaction		**				
2. SHF Communication		.5642 (.001)	**			
3. Sex for Procreation		.1606 (.329)	.1431 (.385)	**		
4. DSFI Information		.0521 (.753)	-.0514 (.756)	-.0368 (.824)	**	
5. DSFI Intercourse Frequency		.3138 (.052)	.4336 (.006)	.3363 (.036)	-.0967 (.560)	**
6. MAS		.2934 (.070)	.6097 (.001)	.1280 (.437)	-.1087 (.510)	.1654 (.314)

G.8
Females, Post-investigation

	1	2	3	4	5	6
1. DSFI Satisfaction		**				
2. SHF Communication		.6798 (.001)	**			
3. Sex for Procreation		-.0249 (.887)	.1133 (.517)	**		
4. DSFI Information		.0629 (.720)	-.0915 (.601)	-.2647 (.124)	**	
5. DSFI Intercourse		.4098 (.014)	.3917 (.020)	.0681 (.697)	.0638 (.716)	**
6. MAS		.3766 (.026)	.6688 (.001)	.2616 (.129)	-.1668 (.338)	.3086 (.071)

Correlation Matrices for Emotional Adjustment Variables

G.9

Males, Pre-investigation

	1	2	3
1. BDI	**		
2. STAI-state	.5860 (.001)	**	
3. Symptom	.4151 (.009)	-.3100 (.055)	**

G.10

Males, Post-investigation

	1	2	3
1. BDI	**		
2. STAI-state	.6798 (.001)	**	
3. Symptom	4.7606 (.001)	.5715 (.001)	**

G.11

Females, Pre-investigation

	1	2	3
1. BDI	**		
2. STAI-state	.6873 (.001)	**	
3. Symptom	-.6601 (.001)	-.5660 (.001)	**

G.12

Females, Post-investigation

	1	2	3
1. BDI	**		
2. STAI-state	.5844 (.001)	**	
3. Symptom	.6672 (.001)	.6739 (.001)	**

Appendix H
MANOVA Summary Tables

MANOVA Summary Table for Infertility Adaptation
H.1

Fertility MANOVA summary

	<u>.Wilks</u>	<u>.SS</u>	<u>.MS</u>	<u>.df</u>	<u>.F</u>
<u>Info Group</u>	.6062			8.58	2.06 ^t
Support		33.30	16.65	2.32	.62
Infertility Feelings		255.19	127.59	2.32	.91
Conception Expectation		9.50	4.75	2.32	1.18
Fertility Knowledge		129.65	64.82	2.32	6.24***

Error

Support		855.59	26.73		
Infertility Feelings		4484.95	140.15		
Conception Expectation		128.54	4.01		
Fertility Knowledge		332.23	10.38		

.Hotelling

<u>Time</u>	69.27			4.29	15.69***
Support		.53	.53	1.32	.09
Infertility Feelings		109.74	109.74	1.32	4.16*
Conception Expectation		14.55	14.55	1.32	22.21***
Fertility Knowledge		54.50	54.50	1.32	16.70***

.Wilks

<u>Time x Info Group</u>	.463			8.58	3.40**
Support		29.84	14.92	2.32	2.53 ^t
Infertility Feelings		328.86	164.93	2.32	6.26**
Conception Expectation		.82	.41	2.32	.62
Fertility Knowledge		22.18	11.09	2.32	3.40*

Error

Support		188.55	5.89		
Infertility Feelings		843.31	26.35		
Conception Expectation		20.97	.66		
Infertility Feelings		104.42	3.26		

.Hotelling

<u>Sex</u>	33.90			4.29	7.68***
Support		9.74	9.74	1.32	.79
Infertility Feelings		218.35	218.35	1.32	28.19***

Conception Expectation	1.19	1.19	1.32	.66
Fertility Knowledge	27.29	27.29	1.32	4.32*
	<u>.Wilks</u>	<u>.SS</u>	<u>.MS</u>	<u>.df</u>

<u>Sex x Info Group</u>	.737		8.58	1.20
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Support	35.17	17.59	2.32	1.42
Infertility Feelings	431.14	215.57	2.32	1.78 ^t
Conception Expectation	.41	.20	2.32	.11
Fertility Knowledge	2.56	1.28	2.32	.20

Error

Support	395.90	12.37		
Infertility Feelings	2478.40	77.45		
Conception Expectation	57.63	1.80		
Fertility Knowledge	201.99	6.31		

.Hotellings

<u>Time x Sex</u>	2.25		4.29	.51
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Support	1.24	1.24	1.32	.29
Infertility Feelings	.22	.22	1.32	.01
Conception Expectation	.54	.54	1.32	1.52
Fertility Knowledge	.29	.29	1.32	.11

.Wilks

<u>Time x Sex x Info Grp</u>	.649		8.58	1.75
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Support	31.28	15.64	2.32	3.66*
Infertility Feelings	.25	.12	2.32	.01
Conception Expectation	2.31	1.16	2.32	3.26 ^t
Fertility Knowledge	3.09	1.54	2.32	.61

Error

Support	136.76	4.27		
Infertility Feelings	618.50	19.33		
Conception Expectation	11.36	.36		
Fertility Knowledge	80.45	2.51		

MANOVA Summary Table for Sexual Adjustment

H.2

Sex MANOVA summary

	<u>.Wilks</u>	<u>.SS</u>	<u>.MS</u>	<u>.df</u>	<u>.F</u>
<u>Info Group</u>	.779			8.58	.96
MAS		247.65	123.82	2.32	.25
Intercourse Frequency		2.80	1.40	2.32	.54
Sexual Knowledge		601.40	300.70	2.32	1.43
Sex for Procreation		22.78	11.39	2.32	.77
<u>Error</u>					
MAS		6086.45	502.71		
Intercourse Frequency		82.87	2.59		
Sexual knowledge		6720.99	210.03		
Sex for Procreation		472.60	14.77		
<u>.Hotelling</u>					
<u>Time</u>	31.90			4.29	7.23***
MAS		403.15	403.15	1.32	6.19*
Intercourse Frequency		1.30	1.30	1.32	4.56*
Sexual Knowledge		569.59	569.59	1.32	20.49***
Sex for Procreation		9.95	9.95	1.32	1.85
<u>.Wilks</u>					
<u>Time x Group</u>	.792			8.58	.90
MAS		11.53	5.76	2.32	.09
Intercourse Frequency		.97	.48	2.32	1.69
Sexual Knowledge		56.94	28.47	2.32	1.02
Sex for Procreation		14.96	7.48	2.32	1.39
<u>Error</u>					
MAS		2082.51	65.08		
Intercourse Frequency		9.13	.29		
Sexual Knowledge		889.53	27.80		
Sex for Procreation		172.51	5.39		
<u>.Hotelling</u>					
<u>Sex</u>	1.53			4.29	.35
MAS		10.48	10.48	1.32	.07
Intercourse Frequency		.80	.80	1.32	1.45

Sexual Knowledge	11.72	11.72	1.32	.10
Sex for Procreation	.00	.00	1.32	.00
	<u>.Wilks</u>	<u>.SS</u>	<u>.MS</u>	<u>.df</u>

<u>Sex x Info Group</u>	.919		8.58	.31
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MAS	47.87	23.93	2.32	.17
Intercourse Frequency	1.15	.57	2.32	1.04
Sexual Knowledge	17.74	8.87	2.32	.07
Sex for Procreation	2.88	1.44	2.32	.18

Error

MAS	4581.63	143.18		
Intercourse Frequency	17.64	.55		
Sexual Knowledge	3847.33	120.22		
Sex for Procreation	263.36	8.23		

.Hotelling

<u>Time x Sex</u>	4.43		2.29	1.00
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MAS	63.47	63.47	1.32	1.80
Intercourse Frequency	.04	.04	1.32	.12
Sexual Knowledge	138.16	138.16	1.32	2.49
Sex for Procreation	.39	.39	1.32	.06

.Wilks

<u>Time x Sex x Info Grp</u>	.790		8.58	.91
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MAS	73.69	36.85	2.32	1.04
Intercourse Frequency	1.37	.68	2.32	1.97
Sexual Knowledge	28.08	14.04	2.32	.25
Sex for Procreation	13.08	6.54	2.32	.94

Error

MAS	1128.55	35.27		
Intercourse Frequency	11.10	.35		
Sexual Knowledge	1775.30	55.48		
Sex for Procreation	221.59	6.92		

Appendix I
Preliminary Statistics for Discriminant Analyses

I.1 Preliminary Statistics for Sexual Adjustment Discriminant Analysis

T-test Summary Table

<u>Variables</u>	<u>.Poorly .Adjusted</u>	<u>.Well .Adjusted</u>	<u>df 30</u>	<u>t</u>
Years Infertile	3.42 (2.10)	2.13 (1.60)		1.83 ^t
Years Married	4.97 (3.48)	4.06 (2.24)		.85
Marital Disharmony	21.00 (3.47)	21.61 (3.09)		-.48
Communication (SHF)	15.95 (3.03)	17.80 (1.78)		-2.05 [*]
STAI-state	33.75 (3.35)	32.36 (7.07)		.58

I.2

Correlation Matrix for Variables with Significant Group Differences

	1	2	3	4
1. MAS	**			
2. Sex for Procreation	.2130 (.276)	**		
3. Sexual Satisfaction	.6458 (.000)	.3872 (.042)	**	
4. Intercourse Frequency	.5160 (.005)	.4398 (.019)	.6715 (.000)	**
5. Communication	.7601 (.001)	.3136 (.104)	.6583 (.001)	.5743 (.001)

I.3 Preliminary Statistics for Emotional Discriminant Analysis
(composite scores) - Males

T-test Summary Table

<u>Variables</u>	<u>.Well-Adjusted</u>	<u>.Poorly .Adjusted</u>	<u>df</u> 33	<u>t</u>
Years Infertile	2.45 (1.86)	2.14 (1.59)		.52
Years Married	4.74 (2.50)	3.37 (2.38)		1.56
Age	32.69 (5.39)	31.83 (4.26)		.48
Fertility Knowledge	23.35 (2.99)	24.00 (3.38)		-.59
Conception Expect	3.74 (1.28)	4.17 (1.19)		-.96
Support	9.17 (3.46)	9.91 (3.82)		-.58
Infertility Feeling	16.78 (6.54)	17.33 (7.20)		-.23
Sex for Procreation	21.04 (2.18)	22.50 (2.07)		-1.91
Coping Style	6.04 (3.24)	7.17 (3.27)		-.97
Neuroticism	5.91 (4.56)	9.33 (4.58)		-2.10*
Intercourse Freq	3.57 (1.04)	4.33 (.78)		-2.25*
MAS	116.61(10.08)	120.33(13.69)		-.92

I.4 Preliminary Statistics for Emotional Discriminant Analysis
(composite score) - Females

T-test Summary Table

<u>Variables</u>	<u>.Well-Adjusted</u>	<u>.Poorly .Adjusted</u>	<u>df</u> 33	<u>t</u>
Years Infertile	2.37 (1.86)	2.32 (1.58)		.08
Years Married	4.32 (2.57)	4.16 (2.50)		-.17
Age	30.71 (4.05)	29.00 (4.22)		1.14
Fertility Knowledge	24.29 (2.52)	25.18 (1.60)		-1.07
Conception Expect	3.50 (1.06)	3.72 (1.42)		-.53
Infertility Feeling	23.00 (9.13)	29.18(10.36)		-1.78 ^t
Sex for Procreation	22.13 (2.82)	19.91 (2.81)		2.17*
Coping Style	5.35 (3.76)	6.40 (3.66)		-.80
Neuroticism	11.20 (5.16)	12.00 (3.66)		-.46
Intercourse Freq	4.17 (.96)	3.63 (1.03)		1.13
MAS	121.75 (9.98)	112.36(13.27,		2.33*

I.5 Preliminary Statistics for Pregnancy Discriminant Analysis - Couple Scores

T-test Summary Table

<u>Variables</u>	<u>.Non- .Pregnant</u>	<u>.Pregnant</u>	<u>df</u> 37	<u>t</u>
Years Infertile	2.47 (1.81)	1.52 (.96)		1.50
Years Married	4.36 (2.57)	3.00 (1.95)		1.46
Age	31.32 (4.49)	30.28 (3.55)		.64
Infertility Feeling	21.25 (6.40)	18.67 (4.78)		1.12
Conception Expect	3.73 (.99)	3.89 (.49)		-.45
MAS	118.05 (9.84)	122.00 (9.26)		-1.07
Sexual Satisfaction	8.53 (1.41)	9.22 (.67)		-1.41
Body Image	41.55 (9.17)	46.17 (8.49)		-1.35
Sex for Porcreation	21.28 (2.32)	21.67 (2.40)		-.43
Frequency Intercour	3.88 (.86)	3.83 (.79)		.16
BDI (log)	.52 (.33)	.34 (.29)		1.47

Appendix J
Tests of assumptions

J.1Tests of Assumptions for Infertility and Sexual Adjustment
MANOVA.

Sample size constraints and unequal n's between groups made it necessary to ensure that all assumptions regarding multivariate statistical analyses were met. Z-score transformations for all 12 cells of the MANOVA design for each dependent variable used in the MANOVAs revealed two variables with one univariate outlier each (Infertility Feelings and MAS for males at post-investigation). As a result of the small number of cases per cell these extreme scores were not deleted, rather they were brought within three standard deviations of the mean of that variable. Inspection of the Mahalanobis distance measure for each MANOVA failed to reveal any multivariate outliers. Examination of skewness coefficients and normal probability plots indicated that variable distributions did not depart significantly from normality. Residual scattergrams, plotting all possible pairwise combinations of the dependent measures, indicated linear relationships among all the dependent variables.

Bartlett-Box F test revealed that the variance between Group x Time x Sex cells was homogeneous across all variables for the infertility adjustment MANOVA: Feelings about Infertility, $F(11, 12616) = 1.70, p = N.S.$; Marital Disharmony, $F(11, 12616) = 1.28, p = N.S.$; Conception Expectation, $F(11, 12616) = .57, p = N.S.$; and Fertility

Knowledge, $F(11,12616) = 1.33$, $p = N.S.$ Box M's test for all dependent variables in the fertility MANOVA was found to be nonsignificant, $F(110,16015) = 1.17$, $p = N.S.$, indicating homogeneity of the variance-covariance matrix.

For the sexual adjustment MANOVA, Bartlett-Box F test was nonsignificant for all variables: Sexual Knowledge $F(11,12616) = .38$, $p = N.S.$; MAS, $F(11,12616) = 1.22$, $p = N.S.$; Frequency of Intercourse, $F(11,12616) = .74$, $p = N.S.$; and Sex for Procreation $F(11,12616) = 1.47$, $p = N.S.$. Box M's test was also nonsignificant, with $F(110,16015) = 1.17$, $p = N.S.$ Thus, MANOVA statistics could be carried out on the dependent variables without any other data transformations.

Appendix J.2Tests of Assumptions for Sexual Adjustment Discriminant Analysis

The assumptions of univariate and multivariate normality for the scores of the three predictor variables (Sex for Procreation, MAS and Intercourse Frequency) were met since the analyses failed to reveal any univariate or multivariate outliers within each group. Variable distributions within each group were judged normal as demonstrated by skewness coefficients and normal probability plots. A second assumption for performing a discriminant analysis requires that relationships between all predictors do not depart greatly from linearity. Residual scatterplots were computed for all possible pairwise combinations of the predictors and these indicated that this assumption had not been violated. Box's M test for the assumption of homogeneity of the variance-covariance matrix within groups on the variables was also not significant with $F(6, 227) = .90, p = N.S.$. Thus the present data set was deemed appropriate for discriminant analysis without any data transformation.

Appendix J.3Tests of Assumptions for Male and Female Emotional Adjustment
Discriminant Analyses

The two sets of predictor variables (Males: Neuroticism and Intercourse Frequency. Females: Sex for Procreation and MAS) used in these discriminant analyses were tested to ensure that they did not violate the assumptions of univariate and multivariate normality, linearity and equal variance-covariance matrices within each group. Examination of z-scores and the Mahalanobis distance measure failed to reveal any univariate or multivariate outliers. Tests for the normality of the distribution were nonsignificant. Box's M test for females $F(3,7890.4) = 1.32, p = \text{N.S.}$, and males $F(3,12272.6) = 1.43, p = \text{N.S.}$ revealed that the variance-covariance matrix in each analysis was homogeneous between groups. Normal probability plots and plots of residuals indicated that the dependent measures were normally distributed and linearly associated.

Appendix J.4Tests of Assumptions for Pregnancy Discriminant Analysis

Scores on the dependent variables (STAI-State and years married) for both groups of subjects were subjected to tests of assumptions. Examination of z-scores and the Mahalanobis distance measure failed to reveal any univariate or multivariate outliers. Tests for the normality of the distribution were nonsignificant. Box's M test for homogeneity of the variance-covariance matrix were not significant with $F(3, 3182) = 1.70, p = N.S.$ Normal probability plots and plots of residuals indicated that the dependent measures were normally distributed and linearly associated.