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GENDER'S ROLE IN RESPONSES TO INFERTILITY

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Infertility is a major life stressor that affects approximately 10% of U.S. married couples. Infertile women and men have reported experiencing depression, helplessness, and marital strain. Given U.S. society's emphasis on women's role as mothers, it has been suggested that women's lives are more disrupted by infertility than those of men. This hypothesis was supported in a survey of 185 infertile couples and 90 presumed fertile couples. Infertile wives, as compared to their husbands, perceived their fertility problem as more stressful, felt more responsible for and in control of their infertility, and engaged in more problem-focused coping. Infertile husbands experienced more home life stress and lower home life performance than did their wives. These differences were not found for presumed fertile couples. Both infertile and presumed fertile wives experienced more depression, more sexual dissatisfaction, and lower self-esteem than did their husbands. Theoretical and counseling implications of these findings are discussed.

Approximately 10% of all U.S. couples in which the woman is of childbearing age are infertile; 18% of couples without children (zero parity) are infertile (Mosher, 1982, 1988; Mosher & Pratt, 1982). Infertility is usually defined as the failure to conceive after 1 year of regular sexual

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intercourse without the use of contraceptives (Benson, 1983). While about 50–60% of infertile couples eventually conceive and deliver, the remaining 40–50% will remain infertile (Collins, Garner, Wilson, Wrixon, & Casper, 1984; Katayama, Ju, Manuel, Jones, & Jones, 1979).

The demand for infertility services has risen dramatically in recent years (Mosher & Pratt, 1982). This is explained both by an improvement in the available medical technology and an increase in fertility problems associated with delayed childbearing, sexually transmitted diseases, environmental exposure to toxins, and an increased usage of intrauterine devices and abortions (Andrews, 1984; Aral & Cates, 1982).

A number of investigators have documented the negative psychological, behavioral, and social effects of infertility on both members of a couple. Infertile couples experience a wide variety of negative emotions, including anxiety, fear, isolation, depression, guilt, frustration, and helplessness (Kirk, 1963; Menning, 1980; Rosenfeld & Mitchell, 1979; Seibel & Taymor, 1982). Infertile individuals frequently report feeling inadequate, damaged, or defective as a woman or man. They perceive their inability to reproduce as evidence that they are not quite whole and are a failure (Seibel & Taymor, 1982). Infertile individuals have reported feeling "like a flop," "hollow" (female), and as if they were "shooting blanks" (male) (Kirk, 1963; Seibel & Taymor, 1982). This diminished sense of femininity or masculinity negatively influences body image and self-esteem (Menning, 1977). Platt, Ficher, and Silver (1973) found that members of infertile couples scored more externally on Rotter's Internal–External Locus of Control Scale than did a fertile control group. Infertile individuals feel helpless regarding an important component of their lives and identity that they had expected to be able to control (Seibel & Taymor, 1982).

A major problem created by infertility is the stress it places on the marriage. For approximately 70% of couples, the infertility is due to only one partner (Benson, 1983). This individual (approximately 40% of the time the woman, 30% of the time the man) frequently feels guilty. Andrews (1984) argued that infertile individuals almost always tell their partners that it is understandable if they want a divorce. Menning (1977) suggested that some infertile individuals are so concerned about being deserted by their partners that they act erratically and create a self-fulfilling prophecy. Furthermore, because of couples' frequent unwillingness to confide in others, they must rely on each other for most of their emotional support (Menning, 1977). While sometimes this can strengthen the relationship, it places an enormous burden on it. Because each partner is in crisis, it may be difficult for them to meet each others' needs. Also, if they are at different points of adjustment (e.g., one is willing to consider alternatives such as adoption while the other is still hoping for a natural pregnancy), then what is helpful to one partner may be harmful to the other (Andrews, 1984).

Many infertile couples report perceiving sex as a chore rather than a

pleasure (Seibel & Taymor, 1982). As one member of an infertile couple stated, "I feel like I must *produce* at a specified, clinical, predetermined moment, when the act of sharing love . . . is something that should be . . . spontaneous" (Menning, 1977, p. 126). Couples feel guilty if they have sex too often, too seldom, or at the wrong times. Spouses follow each other on business trips or avoid taking vacations so they can have sex at the appropriate times and provide the physician with necessary samples (Andrews, 1984). Viewing sex as a test or homework assignment often produces impotence and a reduction in the frequency of sexual intercourse (Freeman, Garcia, & Rickels, 1983; Menning, 1977; Seibel & Taymor, 1982).

A number of authors have described differences in women's and men's responses to infertility, which can make it difficult for spouses to fully understand and support each other. While parenting is a central component of society's expectations for both sexes, motherhood is traditionally perceived as the central role for women, while paid employment is traditionally the central role for men (Russo, 1976). Many infertile women say they cannot imagine a life without children (Mahlstedt, 1985). In contrast, several authors have found that infertile husbands reported being less disappointed by the likelihood of a life without children than did their wives (Batterman, 1985; Greil, Leitko, & Porter, 1988; Van Keep & Schmidt-Elmendorff, 1975). Miall (1985) vividly described how childlessness disqualifies infertile women from being part of the "in-group of mothers" (p. 391). They are frequently treated by women with children as second-class citizens who cannot contribute to conversations about child-rearing. Thus, infertile women may feel more isolated and in need of emotional support than their partners if their lack of children makes it more difficult for them to maintain their same-sex friendships.

Several investigators have found that women more often than men take the initiative to obtain treatment when pregnancy is not achieved and make the majority of the decisions about which treatments to pursue (Greil, Leitko, & Porter, 1988; McGrade & Tolor, 1981). Of the 22 women interviewed by Greil, Leitko, and Porter (1988), 27% were annoyed that their husbands were not more actively involved in their treatment, while some of the husbands thought their wives were overreacting. About 30% of the infertile couples interviewed by McGrade and Tolor (1981) found themselves arguing about their fertility problem.

Many authors have found that infertile wives experience more negative affect than their husbands. Infertile women have been found to be more depressed, anxious, guilty, frustrated, and isolated than infertile men (Bresnick & Taymor, 1979; Daniels, 1989; Daniluk, 1988; Lalos, Lalos, Jacobson, & von Schoultz, 1985). Two studies have found that infertile wives experience lower self-esteem than their husbands (Bernstein, Potts, & Mattox, 1985; McGrade & Tolor, 1981), and another two found that as compared to infertile men, infertile women reported a greater loss of

interest in sexual relations (Daniluk, 1988; Lalos et al., 1985). Freeman, Boxer, Rickels, Tureck, and Mastroianni (1985) found that half the infertile women they interviewed viewed infertility as the most upsetting experience in their lives, as compared to only 15% of the infertile men.

Mahlstedt (1985) found that her male infertile clients were not willing to express their fears as openly as were the female infertile clients. This left the wives upset because they felt their husbands were not adequately concerned. She quotes one man who said, "My wife . . . feels like a failure. . . . I hate going through all of this too, but I am most upset about what it is doing to her. . . . And she believes I am not upset. I'm playing a game and we are both losing" (p. 343). The general literature on gender comparisons suggests that women may be more expressive than men (Spence, Deaux, & Helmreich, 1985). Thus, these findings for infertile couples reflect general gender differences in the ways in which men and women have been socialized to cope with negative affect.

In sum, infertility is a crisis that has a psychological toll on individuals and relationships and that may be more upsetting to women than to men. Most studies that have been conducted have had small sample sizes and used a limited number of instruments. Their general lack of standardization, explicit hypotheses, demographic controls, and/or statistical tests renders them most useful as a source for hypothesis generation rather than as evidence in support of any particular hypothesis.

The purpose of this article is to explore gender differences in response to infertility using a fairly large sample and standardized scales with known reliability. One valuable aspect of this data set is that a comparison group of presumed fertile couples was asked the same questions as were the infertile couples. This allows for the estimation of the extent to which any gender differences found are unique to the infertility experience or reflect more general gender differences in response to stress. Based on the literature reviewed earlier, it was hypothesized that women would perceive infertility as more stressful than would men and would feel more responsible for the situation. It was also hypothesized that gender differences in negative affect would be found for both infertile and presumed fertile couples such that women would report higher levels of depression than would men.

METHOD

Study Participants

Separate in-person interviews were conducted with both wives and husbands in 275 couples (550 individuals). Couples with primary infertility were principally recruited from infertility specialists. All but one of the major infertility practices in southeastern Michigan agreed to collaborate

with this study. Of the eligible nominees, 81% (n = 170) participated in the study. Fifteen infertile couples were recruited from other sources: RESOLVE (a self-help group for infertile individuals, n = 4); the Endometriosis Association (a self-help and information group for individuals with endometriosis, n = 5); newspaper advertisements (n = 1); referrals from study participants (n = 1); and marriage license applicants (n = 4).

Of the infertile couples included in this study, 87% (n = 161) met the standard medical definition of infertility which is 1 year of unprotected sexual intercourse without conceiving or carrying a child to term. The remaining 24 couples had been trying to conceive a child for less than 1 year (7 months on average), but were being treated by an infertility specialist.[1] Sometimes couples with known physical problems related to infertility (e.g., endometriosis) or with wives older than age 35 will seek and receive treatment before 1 year has elapsed.

A comparison group of 90% presumed fertile couples was also included. These couples were required to have no known gynecological or other problems associated with infertility, no children, and a desire to have children in a few years. Of these couples, 42 were recruited from gynecological practices (many of the infertility specialists had a general practice or were affiliated with a general practice), 38 from marriage license applicants, 5 from newspaper advertisements, and 5 from study participants' referrals.

All study participants were married, white, middle-class,[2] with no children by either member of the couple but a desire to have children. This is the sociodemographic profile of people most likely to seek treatment for infertility (Henshaw & Orr, 1987). Having a relatively homogeneous group of respondents allows more sophisticated analyses to be completed with a smaller number of cases. Among those with fertility problems, only couples with primary infertility were accepted because it was expected that the stresses associated with infertility would differ for couples who had had a child and those who had not. For similar reasons, the comparison group couples were required to have no children but to be interested in having children. Infertile couples who had tried in vitro fertilization (IVF) or gamete intrafallopian transfer (GIFT) were excluded because these are often viewed as "last-resort" treatments, and the study sought couples who were still at a relatively early stage in dealing with their infertility.

The infertile couples participating in this research were not intended to be a representative sample from any defined population. In aggregate, however, they are probably fairly typical of U.S., white, middle-class couples who seek to resolve a fertility problem involving a first child—the group that is the largest single seeker of professional help with a fertility problem. The primary purpose of this research is to explore the links among life quality, psychosocial factors, and the resolution of fertility problems, and the data are well suited to that purpose.

Descriptive Profile of Study Participants

Infertile women interviewed for this study ranged in age from 22 to 42; the average age was 32. The infertile men ranged in age from 23 to 44; the average age was 34. These couples had been married 6 years on average.

Presumed fertile women interviewed for this study ranged in age from 18 to 37; their average age was 28. Presumed fertile men ranged in age from 22 to 46; their average age was 30. These couples had been married 2 years on average. Thus, men on average were 2 years older than their wives, and members of infertile couples were on average 4 years older than members of presumed fertile couples.

It is not surprising that married couples who had not yet tried to have a child were somewhat younger and had been married less long than couples who were actively trying to have a child. The infertile couples had been trying to have a child for 34 months on average. Age and number of years married were included in a number of preliminary analyses conducted by the authors. In virtually all cases, these variables were not significantly correlated with the psychosocial concepts examined in this study, and their inclusion in multivariate analyses did not change any of the results.

The average annual household income reported by couples was in the range of $40,000 to $49,999. Infertile and presumed fertile women and men averaged approximately 3 years of college education. Ninety-nine percent of the men and 92% of the women were active members of the workforce.

Religious preference was also highly similar among the infertile and fertile couples. Approximately 40% of the men were Catholic, 30% were Protestant, 7% were Jewish, 20% had no religious preference, and the remainder had another religious preference. Approximately 46% of the women were Catholic, 35% were Protestant, 6% were Jewish, 11% had no religious preference, and the remainder had another religious preference. Both infertile and presumed fertile men were somewhat more likely than women to state that they had no religious preference.

Procedures

Patients who fit this study's criteria were asked by their physician if they were willing to participate in a university study of marriage, family, and childbearing issues. In order to supplement the sample, midway through the recruitment period, self-help group members were recruited through an article printed in their organization's monthly newsletter, and advertisements were placed in several local newspapers. Study participants were sent a letter asking if they knew of any eligible couples who would be interested in participating. A sample of the previous year's marriage license applicants from the county in which most study participants lived were also sent a letter inviting them to participate.

Couples who agreed to participate were sent a brochure describing the study, and then they were contacted by a professional interviewer from the Survey Research Center at The University of Michigan. Separate 1-hour, in-person interviews were conducted with each member of the couple. Husbands and wives were usually interviewed on the same day, and neither was able to hear the other's responses.

Measures

Only the scales and items discussed in the analyses reported in this article are described here. Indicators of stress, performance, well-being, attributions and control, perceptions of meaning, social relations, coping, and the importance of children are included in this report. Prior to forming scales, the distributions of all items were checked to ensure that there were no serious skews.

Stress. Infertile individuals answered a series of nine questions about the amount of stress and disruption their fertility problem had produced overall and in various domains of their life during the last 12 months (e.g., physical health, mental health, marriage, sex life; see the Appendix for the precise phrasing of all items included in scales). Presumed fertile individuals answered the same series of items in terms of the biggest problem in their life. These items were answered using 5-point Likert-type scales with response options that ranged from *none at all* to *a great deal.* Cronbach's coefficient alpha was .88 for fertility problem stress and .80 for biggest problem stress.

Home life stress was measured with three items designed to assess how much role ambiguity respondents were experiencing in their home life. They were asked how sure they were that they had been fulfilling their household responsibilities during the last 4 weeks. These items were based on previous research regarding work and home life role ambiguity (Caplan, Abbey, Abramis, Andrews, Conway, & French, 1984; Caplan, Cobb, French, Harrison, & Pinneau, 1980). Responses were made on 5-point Likert-type scales with options ranging from *very unsure* to *very sure.* The Cronbach alpha was .67.

Performance. Respondents rated their own home life performance during the last 4 weeks on four items focusing on responsibilities, commitments, and duties. These items were also based on previous research (Caplan et al., 1980, 1984). Answers were made on 5-point Likert-type scales with response options that ranged from *very poorly* to *very well.* The Cronbach alpha was .86.

Respondents also rated their spouse's home life performance using the same four items (at a different place in the interview to reduce contamination of responses). The Cronbach alpha for this scale was .89.

Well-being. Five different indicators of well-being were included. Each referred to the last 4 weeks. Self-esteem was measured using an abbreviated version of Rosenberg's Self-Esteem Scale (Rosenberg, 1965). The Cronbach alpha was .76. Sexual dissatisfaction was measured with six items designed to assess satisfaction with sexual performance and enjoyment of sex. This scale had a Cronbach alpha of .82. Both these indices used 5-point scales with response options that ranged from *strongly disagree* to *strongly agree.*

Subscales from Andrews and Withey's (1976) study of life quality were used. Marital life quality was assessed with two items that examined how satisfied respondents were with their marriage and their spouse. Global life quality was assessed with two items asking respondents about their happiness and satisfaction with their life as a whole. Responses were made on 5-point Likert-type scales with options which ranged from *very dissatisfied* to *very satisfied*, except for the happiness item, which was measured on a 3-point scale. The happiness item has been used by the Survey Research Center since the mid-1950s and was included for consistency with past life quality surveys. The Cronbach alphas were .85 and .74, respectively.

Depression was measured with a three-item subset of the Hopkins Symptom Checklist items (lonely, blue, hopeless) (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). The Cronbach alpha was .69.

Attributions and control. Respondents were asked a series of questions about the extent to which they thought various people or things were responsible for their fertility problem (if infertile) or biggest problem (if presumed fertile). Answers were made on 5-point Likert-type scales with response options that ranged from *not at all* to *extremely*. Attributions of responsibility to oneself, one's spouse, and chance were assessed.

Respondents were also asked how much control they and their spouse had over the solution to their problem.

Perceptions of meaning and positive benefits. Based on previous research that suggests that negative outcomes prompt an attributional search, respondents were asked how they had, or how they would, answer the question, "Why me?" (Bulman & Wortman, 1977). They were then asked to assess on a 5-point scale how satisfied they were with this response. A number of researchers have hypothesized that negative events will produce less strain if some positive lesson or benefit can be found (Silver & Wortman, 1980; Taylor, 1983). Thus, respondents were asked three questions about the extent to which their fertility or biggest problem had taught them something important about themselves, their spouse, and their marriage. Responses were made on 5-point Likert-type scales with options that ranged from *strongly disagree* to *strongly agree*. The Cronbach alpha was .75.

Social relationships. Global network support, social support received from one's spouse, and interpersonal conflict received from one's spouse were assessed. A four-item short form of Sarason, Levine, Basham, and Sarason's (1983) satisfaction with social support measure was used. It assessed study participants' overall satisfaction during the past 12 months with the social support available to them from network members. Respondents rated how satisfied they were with how much they could count on others to accept, care, console, and relax them using 5-point Likert-type scales with response options ranging from *very dissatisfied* to *very satisfied*. The Cronbach alpha was .82.

The amount of social support and interpersonal conflict received from one's spouse during the last 4 weeks was also measured using scales developed in previous research (Abbey & Rovine, 1985). Esteem social support was measured with three items assessing the extent to which respondents felt that their spouse appreciated, respected, and cared for them. Interpersonal conflict was measured with four items assessing the extent to which respondents felt that their spouse acted cold or showed dislike. Ratings were made on 5-point Likert-type scales with response options ranging from *not at all* to *a great deal*. Cronbach alphas were .79 and .75, respectively.

Coping. Two measures of coping were included based on Folkman and Lazarus' Ways of Coping scale (1985). A five-item, problem-solving coping scale assessed the extent to which respondents engaged in active problem-solving strategies, such as planning, analyzing, and reading to deal with their fertility or biggest problem during the past 12 months. The four-item, escape-coping scale assessed the extent to which respondents engaged in escapist strategies such as fantasizing, wishing, or hoping for miracles. Responses for each index were made on 4-point Likert-type scales with options ranging from *not at all* to *a great deal*. Cronbach alphas were .62 and .69, respectively.

Children. A 5-point Likert-type scale was used to ask respondents how confident they were that they (or their wives) would bear a child of whom they both were the biological parents.

A three-item importance of children scale was developed to assess the value of children and parenting to respondents (e.g., it's hard for me to imagine a life without children). Responses were made on 5-point Likert-type scales with options that ranged from *strongly disagree* to *strongly agree*. The Cronbach alpha was .75.

RESULTS AND DISCUSSION

Husbands' and wives' mean levels on the concepts described in the Measures section of this article were compared. Infertile and presumed fertile

couples were analyzed separately so that the similarities and differences between fertile and infertile men and women could be compared. In order to ensure that the correlations between the dependent variables were not affecting the inferential error rate, MANOVAs were first computed for the infertile and presumed fertile couples. The gender effect was statistically significant for both groups, $F(23, 192) = 9.67$, $p < .001$; $F(23, 191) = 2.37$, $p < .01$, respectively.

Univariate paired t tests were then conducted. Table 1 presents the results of these analyses. The discussion of Table 1 is divided into three sections: variables for which there were significant gender differences primarily for infertile couples, variables for which there were significant gender differences for both infertile and fertile couples, and variables for which there were no gender differences.

Gender Comparisons among Infertile Couples

As can be seen in Table 1, infertile wives perceived their fertility problem as significantly more stressful than their husbands. Infertile wives, as compared to their husbands, felt that they had experienced more disruption and stress in their personal, social, and sex lives. Infertile wives also perceived having children as more important than did their husbands. These findings support those of other authors that suggest that infertility is more stressful for women than for men (Batterman, 1985; Freeman et al., 1985).

Infertile husbands perceived more home life stress than did their wives. In a complementary manner, infertile wives perceived their home life performance as being better than their husbands' perceived their own performance. And spouses had similar perceptions of each other: men perceived their spouses' performance as being higher than women did (this difference was also significant for fertile couples). Both women and men agreed that wives' home life performance was better than that of husbands'. This finding had not been anticipated. Women's greater fertility problem stress did not directly spillover into the home life domain.

Infertile women engaged in more problem-solving and escape-coping than did their husbands (the former was true for infertile couples only; the latter was true for both infertile and presumed fertile couples). As Lazarus (1983) argued, successful coping may involve both active problem-solving efforts and periods of denial or escape. Adaptation to chronic long-term stressors may require active coping intermixed with periods of denial during which psychological resources and positive affect can be restored. Because women perceived infertility as more stressful than did their husbands, it seems reasonable that they engaged in more coping efforts.

Infertile wives attributed more responsibility for the fertility problem to themselves than their husbands did to themselves. In a parallel manner, infertile husbands held their spouses more responsible. Thus, both men and women held the woman more responsible. Infertile husbands perceived chance factors as more responsible for their fertility problem than did infertile wives.

It should be noted that for these study participants, women were more likely than men to have a physical problem diagnosed as a cause of the infertility. Based on their self-reports, 46% of the couples' infertility problems were due to female factors, 10% were due to male factors, 30% were due to a combination of male and female factors, and 14% were unexplained. This is a somewhat lower rate of male factors than appears to exist in the general population (Benson, 1983).

In order to control for women's greater likelihood of having a physiological problem that contributed to the infertility, analyses of variance were conducted in which the source of the problem and gender were the independent variables and attributions were the dependent variables. There were significant main effects for gender and source of the problem, and a significant gender by source interaction for self and spouse attributions. As can be seen in Table 2, both men and women held themselves least responsible for the fertility problem when their spouse was the sole diagnosed cause of the problem. Men and women also held their spouse least responsible when they (the respondents) were the sole diagnosed cause of the problem. However, when respondents were the sole diagnosed source of the problem, women perceived themselves as more responsible than did men (2.91 vs. 2.77; significantly different with Newman-Keuls test, $p < .05$). Similarly, when their spouse was the sole diagnosed source of the problem, men perceived their wives as more responsible than women perceived their husbands (3.07 vs. 2.90, n.s.). Thus, attributions of responsibility were sensitive to physiological causes, but also to gender stereotypes that presume that women are responsible for fertility problems.

Infertile wives perceived themselves as having more control over the solution to the infertility problem than did infertile husbands (see Table 1). In a parallel fashion, infertile husbands perceived their spouses as having more control over the solution to the problem than did infertile wives. Thus, infertile wives perceived more responsibility and more control over their fertility problem than did their husbands. Previous research documents the importance of perceived control to individuals' sense of well-being and self-efficacy (deCharms, 1968; Lefcourt, 1973). Perceptions of personal responsibility for some aspect of the problem may be needed in order to feel in control of its solution (Abbey, 1987).

Infertile husbands were more satisfied than their wives were with the meaning they had found in their infertility. Husbands also felt they had learned more from the experience than did their wives.

Table 1

Comparison of mean scores for wives and husbands separately for infertile and presumed fertile couples

	Infertile Couples					*Presumed Fertile Couples*				
	Wives		*Husbands*			*Wives*		*Husbands*		
	M	*(SD)*	*M*	*(SD)*	*Paired t tests*	*M*	*(SD)*	*M*	*(SD)*	*Paired t tests*
Stress										
Fertility/Biggest Problem Stress	2.54	(.73)	2.13	(.70)	−6.88***	2.29	(.71)	2.22	(.62)	n.s.
Home Life Stress	1.81	(.76)	2.09	(.77)	3.93***	1.98	(.88)	1.89	(.63)	n.s.
Performance										
Respondent's Home Performance	3.86	(.69)	3.64	(.75)	−3.31**	3.74	(.76)	3.77	(.71)	n.s.
Spouse's Home Performance	3.80	(.86)	4.22	(.63)	5.81***	3.79	(.83)	4.20	(.68)	3.94***
Well-Being										
Self-Esteem	4.15	(.54)	4.26	(.56)	2.28*	4.19	(.55)	4.42	(.44)	3.11**
Sexual Dissatisfaction	2.11	(.66)	1.93	(.83)	−2.66**	2.12	(.78)	1.84	(.67)	−2.87**
Global Life Quality	3.16	(.68)	3.25	(.62)	n.s.	3.31	(.54)	3.37	(.54)	n.s.
Marital Life Quality	4.72	(.55)	4.68	(.61)	n.s.	4.60	(.71)	4.68	(.62)	n.s.
Depression	2.00	(.69)	1.78	(.63)	−3.63***	1.84	(.46)	1.57	(.58)	−3.52***
Coping										
Problem-Solving	2.76	(.59)	2.38	(.61)	−6.35***	2.47	(.53)	2.37	(.54)	n.s.
Escape	2.77	(.75)	2.14	(.69)	−9.14**	2.33	(.65)	2.09	(.71)	−2.23*

Support and Conflict						
Satisfaction with Network Support	4.37 (.64)	4.09 (.71)	−4.38***	4.36 (.71)	4.17 (.67)	−2.38*
Spouse Support	4.25 (.66)	4.15 (.65)	n.s.	4.27 (.58)	4.14 (.67)	n.s.
Spouse Conflict	1.59 (.52)	1.79 (.58)	4.35***	1.66 (.52)	1.79 (.50)	2.01*
Attributions						
Self	2.78 (1.36)	2.34 (1.19)	−3.19**	3.03 (1.20)	3.34 (1.41)	n.s.
Spouse	1.93 (1.11)	2.61 (1.29)	4.90***	2.31 (1.16)	1.93 (1.40)	n.s.
Chance	2.11 (1.12)	2.45 (1.31)	3.11***	1.59 (1.02)	1.70 (.82)	n.s.
Perceived Control over Solution to Problem						
Self	3.12 (1.19)	2.85 (1.08)	−2.18*	3.59 (1.12)	3.85 (1.12)	n.s.
Spouse	2.74 (1.19)	3.03 (1.20)	2.17*	3.01 (1.42)	2.93 (1.34)	n.s.
Satisfied with Meaning Found in Event	2.86 (.94)	3.25 (.76)	3.17**	3.36 (.65)	3.28 (.79)	n.s.
Positive Learning Experience	1.98 (.72)	2.24 (.74)	4.13***	2.17 (.78)	2.32 (.66)	n.s.
Children						
Confidence Will Have a (Biological) Child	3.03 (1.18)	3.26 (1.22)	2.71**	4.18 (.87)	4.45 (.74)	2.64**
Importance of Children	4.24 (.79)	3.80 (.86)	−6.15***	3.92 (.89)	3.94 (.90)	n.s.

Note: There are 185 infertile couples and 90 presumed fertile couples included in these analyses.
*$p < .05$; **$p < .01$; ***$p < .001$.

Table 2

Mean attribution ratings as a function of gender and physical source of the fertility problem

	Self Attribution		*Spouse Attribution*	
Source	*Women*	*Men*	*Women*	*Men*
Female factors	2.91	1.62	1.40	3.07
Male factors	1.53	2.77	2.90	1.05
Both	2.78	3.00	2.50	2.70
Unexplained	2.95	2.48	2.05	2.38

Note: Self Attribution: Gender main effect, $F(1, 302) = 11.40$, $p < .001$; source of problem main effect, $F(3, 302) = 8.03$, $p < .001$; Gender × Source interaction effect, $F(3, 302) = 14.61$, $p < .001$. Spouse Attribution: Gender main effect, $F(1, 302) = 34.42$, $p < .001$; source of problem main effect, $F(3, 302) = 2.91$, $p < .03$; Gender × Source interaction effect, $F(3, 302) = 27.76$, $p < .001$.

Gender Comparisons among Both Infertile and Presumed Fertile Couples

Both infertile and presumed fertile women had lower self-esteem and higher sexual dissatisfaction than did their husbands. Gender differences in self-esteem have sometimes been reported, although most studies find no differences (Maccoby & Jacklin, 1974; Meddin, 1986). Other infertility researchers have found gender differences in self-esteem and sexual dissatisfaction (Lalos et al., 1985; McGrade & Tolor, 1981). The present study's results suggest that these differences may not be due to infertility.

Women also reported experiencing more depression than did men. Gender differences in the expression of negative affect have frequently been reported in general population studies (Diener, 1984; Spence et al., 1985).

Both infertile and presumed fertile women were more satisfied with their network social support than were infertile and presumed fertile men. Many authors have found that women report receiving more network social support than men do (Abbey & Rovine, 1985; Burda, Vaux, & Schill, 1984; Sarason, Sarason, Hacker, & Basham, 1985). Both infertile and presumed fertile men reported receiving more interpersonal conflict from their spouse than did infertile and presumed fertile women. Interpersonal conflict has received less research attention than social support. No gender differences were found in an earlier study that used a similar measure of interpersonal conflict; however, it assessed global rather than spouse specific conflict (Abbey & Rovine, 1985).

Both infertile and presumed fertile men were more confident that they would someday have a child biologically related to them and their spouses than were women. Gender differences have not been explored in this dimension in previous fertility research.

Concepts for which No Gender Effects Were Found

No gender differences were found in global or marital life quality among infertile or presumed fertile couples. Despite gender differences in stress, self-esteem, negative affect, coping, and performance, perceptions of life quality were comparable. In the general population, gender differences in life quality are not typically found (Andrews & Withey, 1976). In the infertility literature, the findings are mixed; some authors report no gender differences (Daniluk, 1988), while others report lower life satisfaction in wives as compared to husbands (Link & Darling, 1986).

Fertility Status Comparisons

While not the main focus of this article, infertile and presumed fertile couples were compared on all of the concepts included in Table 1 through a series of MANOVAs. Main effects of fertility status were found for self-esteem, depression, self and chance attributions, problem-solving and escape coping, positive learning experience, and confidence one will have a biological child, Hoetling's $Fs(2, 272) = 2.86$, $p < .06$; 4.76, $p < .01$; 19,77, $p < .001$; 17.39, $p < .001$; 5.36, $p < .005$; 6.34, $p < .002$; 4.27, $p < .02$; 46.17, $p < .001$, respectively. Presumed fertile couples had marginally higher self-esteem (as can be seen in Table 1, this difference was principally found for men) and significantly lower rates of depression. Presumed fertile individuals felt significantly more personal responsibility and less chance responsibility for their biggest problem. Infertile couples engaged in significantly more problem-solving (women only) and escape-coping (men and women) than did presumed fertile couples. Infertile couples rated their infertility as less of a positive learning experience than presumed fertile couples rated their biggest problem. Not surprisingly, presumed fertile couples were significantly more confident that they would have a child biologically related to themselves. These results support those of other researchers who have found that infertile couples experience more negative affect than do presumed fertile couples and engage in extensive efforts to cope with their fertility problem (Freeman et al., 1985; Kedem, Mikulincer, Nathanson, & Bartoov, 1990).

GENERAL DISCUSSION

Several caveats are necessary before the implications of this study's results are described. First, the infertile couples interviewed for this study were not randomly sampled; instead, they were primarily white, middle-class, married couples seeking treatment from an infertility specialist. Descriptive information was provided about study participants in order to document the types of people to whom these results might generalize. The

scales used had adequate reliability, and many have been used in past research; however, validity data is unavailable. Replication of these results with additional indicators and low-income and minority couples would be of value.

The presumed fertile couples also were not randomly sampled. They were recruited from the same sources as the infertile study participants; however, they cannot be considered a true control group. The best way to examine the psychosocial effects of infertility would be to conduct a large prospective study of newly married couples and compare those who did and did not develop fertility problems. Also, only cross-sectional results have been reported. No statements about causal direction can be made based on these data. Two additional annual waves of data are being collected. When multiple waves of data are available, it will be possible to determine the effects of fertility problem stress over time. There may be long-term effects of husbands' and wives' different responses to infertility that were not evident from one wave of data.

There are two major implications of the gender differences described in this article. The first is that men and women differ in their response to infertility. Women desire a child more, yet feel less confident that they will have one. Women experience more stress, engage in more problem- and emotion-focused coping, feel more responsible and more in control, and have found less meaning in the situation. Their infertility seems to be more central to their lives and more frequently on their minds. As one infertile woman stated during the interview, "The infertility is always there casting a shadow over everything in my life." Another infertile woman in this study said, "It's a bitch. It's something that's always there. It has driven a wedge between my brother and me because he has a 2-year-old kid I've never met. I just can't deal with it."

Infertile men experience a different set of problems. Compared to their wives, they experience more home life stress, lower home life performance, more interpersonal conflict, and less perceived control over the situation. Women fare worse principally in regards to infertility-related aspects of life, while men fare worse principally in general aspects of marital life. One can imagine men experiencing home life problems as they struggle to cope with their wives' distress about their fertility problem. As one infertile man in this study stated, "My wife feels this problem more than I do. I've resolved myself to not having kids. I would do anything to help her feel better." Another infertile man said, "It's not that big a deal to me, 'What happens happens,' but my wife doesn't feel that way and that makes it difficult."

Women's greater infertility-related stress has many causes. Regardless of which member of the couple has physical problems producing the infertility, the majority of the tests and treatments focus on the woman's body. She is the one who must take her temperature each morning before rising, keep track of when she and her husband should be having sexual inter-

course, and attend to her cyclical changes each month, including the depressing evidence of failure associated with menstruation. As one woman interviewed in this study stated about her husband: "He will do anything I ask but I have to *ask*. He puts the whole burden of planning on me. I am the one who has to know what the [ovulating] days are." This woman felt that her husband's response increased the stress of infertility for her, and her resentment may have increased his home life stress.

The centrality of the motherhood role causes many infertile women to feel personally inadequate and unfulfilled. Other people typically assume that infertility is the woman's fault (Andrews, 1984), and this adds to the social stigma associated with her childless status. For all these reasons, some infertile women may benefit from either individual or group counseling that focuses on helping them acknowledge the psychological and social burdens associated with their situation. A number of these women had participated in Resolve, a self-help group for infertile individuals, and had benefited from the opportunity to share their concerns with similar others who could reassure them that their responses were typical. Their husbands may benefit from counseling that focuses on helping them understand the unique stressors their wives are experiencing and ways they can participate more actively in their treatment. Efforts to help infertile men find additional sources of social support may reduce the emotional burden placed on their wives, and consequently, improve the quality of infertile couples' marital and sexual relationships.

A second implication of this study's results is that responses to infertility are in some ways similar to responses to other life crises. The gender differences found among both infertile and presumed fertile couples in expressed network social support, depression, self-esteem, and sexual dissatisfaction serve as a reminder that some differences found between infertile men and women cannot be presumed to be unique to fertility problems; instead, they reflect more general gender differences in response to stress. This finding does not minimize the impact that these gender differences may have on infertile couples; instead, it simply places these gender differences in a broader context.

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NOTES

1. Although the words "infertile" and "infertility" are used in this article, they were not used with the couples who participated in the research. Pilot testing indicated that the term "infertile" connoted a sense of finality that the study participants found unsettling. Instead, in the interview the term "fertility problem" was used.
2. Middle class was defined as having a high school education and a family income in 1987 in the approximate range of $20,000 to $100,000. One male participant was included who did not have a high school diploma because his wife met the education criterion, and their family income fell in the study range.

REFERENCES

Abbey, A. (1987). Perceptions of personal avoidability versus responsibility: How do they differ? *Basic and Applied Social Psychology, 8*, 3–19.

Abbey, A., & Rovine, M. (1985, August). *An examination of the effects of positive and negative aspects of social relations on well-being*. Paper presented at the Annual Meeting of the American Psychological Association, Los Angeles.

Andrews, F. M., & Withey, S. B. (1976). *Social indicators of well-being: American's perceptions of life quality*. New York: Plenum.

Andrews, L. B. (1984). *New conceptions*. New York: St. Martin's.

Aral, S. O., & Cates, W. (1982). The increasing concern with infertility: Why now? *Journal of the American Medical Association, 250*, 2327–2331.

Batterman, R. (1985). A comprehensive approach to treating infertility. *Health and Social Work, 10*, 46–54.

Benson, R. C. (1983). *Handbook of obstetrics and gynecology*. Los Altos, CA: Lange Medical Publishers.

Bernstein, J., Potts, N., & Mattox, J. H. (1985). Assessment of psychological dysfunction associated with infertility. *Journal of Obstetric, Gynecological and Neonatal Nursing, 14*, 635–665.

Bresnick, E., & Taymor, M. L. (1979). The role of counseling in infertility. *Fertility and Sterility, 32*, 154–156.

Bulman, R. J., & Wortman, C. B. (1977). Attributions of blame and coping in the "real world": Severe accident victims react to their lot. *Journal of Personality and Social Psychology, 35*, 351–363.

Burda, P. C., Jr., Vaux, A., & Schill, T. (1984). Social support resources: Variation across sex and sex role. *Personality and Social Psychology Bulletin, 10*, 119–126.

Caplan, R. D., Abbey, A., Abramis, D. J., Andrews, F. M., Conway, T. L., & French, J. R. P., Jr. (1984). *Tranquilizer use and well-being*. Ann Arbor, MI: Institute for Social Research.

Caplan, R. D., Cobb, S., French, J. R. P., Jr., Harrison, R. V., & Pinneau, S. R., Jr. (1980). *Job demands and worker health: Main effects and occupational differences*. Ann Arbor, MI: Institute for Social Research.

Collins, J. A., Garner, J. B., Wilson, E. H., Wrixon, W., & Casper, R. F. (1984). A proportional hazard's analysis of the clinical characteristics of infertile couples. *American Journal of Obstetrics and Gynecology, 148*, 527–532.

Daniels, K. R. (1989). Psychosocial factors for couples awaiting in vitro fertilization. *Social Work in Health Care, 14*, 81–98.

Daniluk, J. C. (1988). Infertility: Intrapersonal and interpersonal impact. *Fertility and Sterility, 49*, 982–990.

deCharms, R. (1968). *Personal causation*. New York: Academic.

Derogatis, L. R., Lipman, R. S., Rickels, L., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A measure of primary system disorders. In D. Pichot (Ed.), *Psychological measurements in psychopharmacology: Modern problems in pharmapsychiatry* (Vol. 7, pp. 79–110). Basel: Karger.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542–575.

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology, 48*, 150–170.

Freeman, E. W., Boxer, A. S., Rickels, K., Tureck, R., & Mastroianni, L., Jr. (1985). Psychological evaluation and support in a program of in vitro fertilization and embryo transfer. *Fertility and Sterility, 43*, 48–53.

Freeman, E. W., Garcia, C. R., & Rickels, K. (1983). Behavioral and emotional factors: Comparisons of anovulatory infertile women with fertile and other infertile women. *Fertility and Sterility, 40*, 195–201.

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

Henshaw, S. K., & Orr, M. T. (1987). The need and unmet need for infertility services in the United States. *Family Planning Perspectives, 19*, 180–186.

Katayama, K. P., Ju, K., Manuel, M., Jones, G. S., & Jones, H. W. (1979). Computer analysis of etiology and pregnancy rate in 636 cases of primary infertility. *American Journal of Obstetrics and Gynecology, 135*, 207–214.

Kedem, P., Mikulincer, M., Nathanson, Y. E., & Bartoov, B. (1990). Psychological aspects of male infertility. *British Journal of Medical Psychology, 63*, 73–80.

Kirk, H. D. (1963). Nonfecund people as parents – Some social and psychological considerations. *Fertility and Sterility, 14*, 310–319.

Lalos, A., Lalos, O., Jacobsson, L., & von Schoultz, B. (1985). A psychosocial characterization of infertile couples before surgical treatment of the female. *Journal of Psychosomatic Obstetrics and Gynecology, 4*, 83–93.

Lazarus, R. S. (1983). The costs and benefits of denial. In S. Breznits (Ed.), *The denial of stress* (pp. 1–30). New York: International Universities Press.

Lefcourt, H. M. (1973). The function of the illusion of control and freedom. *American Psychologist, 28*, 417–425.

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

Maccoby, E. E., & Jacklin, C. N. (1974). *The development of sex differences*. Stanford, CA: Stanford University Press.

Mahlstedt, P. P. (1985). The psychological component of infertility. *Fertility and Sterility, 43*, 335–346.

McGrade, J. J., & Tolor, A. (1981). The reaction to infertility and the infertility investigation: A comparison of the responses of men and women. *Infertility, 4*, 7–27.

Meddin, J. R. (1986). Sex differences in depression and satisfaction with self: Findings from a United States National Survey. *Social Science and Medicine, 22*, 807–812.

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

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

Miall, C. E. (1985). Perceptions of informal sanctioning and the stigma of involuntary childlessness. *Deviant Behavior, 6*, 383–403.

Mosher, W. D. (1982). Infertility trends among U.S. couples: 1965–1976. *Family Planning Perspectives, 14*, 22–27.

Mosher, W. D. (1988). Fecundity and infertility in the United States. *American Journal of Public Health, 78*, 181–182.

Mosher, W. D., & Pratt, W. F. (1982). *Reproductive impairments among married couples: United States*. Washington, DC: U.S. Government Printing Office.

Platt, J. J., Ficher, I., & Silver, M. J. (1973). Infertile couples: Personality traits and self-ideal concept discrepancies. *Fertility and Sterility, 24*, 972–976.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rosenfeld, D. L., & Mitchell, E. (1979). Treating the emotional aspects of infertility: Counseling services in an infertility clinic. *American Journal of Obstetrics and Gynecology, 135*, 177–180.

Russo, N. F. (1976). The motherhood mandate. *Journal of Social Issues, 32*, 143–153.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology, 14*, 127–139.

Sarason, B. R., Sarason, I. G., Hacker, T. A., & Basham, R. B. (1985). Concomitants of social support: Social skills, physical attractiveness and gender. *Journal of Personality and Social Psychology, 49*, 469–480.

Seibel, M. M., & Taymor, M. L. (1982). Emotional aspects of infertility. *Fertility and Sterility*, *37*, 137–145.

Silver, R. L., & Wortman, C. B. (1980). Coping with undesirable life events. In J. Garber & M. E. P. Seligman (Eds.), *Human helplessness: Theory and applications*. New York: Academic.

Spence, J. T., Deaux, K., & Helmreich, R. L. (1985). Sex roles in contemporary American society. In G. Lindzey and E. Aronson (Eds.), *Handbook of social psychology* (3rd ed., Vol. 2, pp. 149–178). New York: Random House.

Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, *41*, 1161–1173.

Van Keep, P. A., & Schmidt-Elmendorff, H. (1975). Involuntary childlessness. *Journal of Biosocial Science*, *7*, 37–48.

APPENDIX

ITEMS USED IN SCALES

Fertility Problem/Biggest Problem Stress

1. How much has your life been disrupted because of this (fertility/biggest) problem?
2. How much has your life changed because of this (fertility/biggest) problem?
3. How stressful has it been for you to deal with this (fertility/biggest) problem?

Different people report that problems create different types of stresses. How much stress has your (fertility/biggest) problem placed on each of the following:

4. Your sex life?
5. Your financial condition?
6. Your marriage?
7. Your relationships with people with children?
8. Your physical health?
9. Your mental health?

Home Life Stress

How sure were you about . . .

1. whether your spouse approved of the way you were doing your work around the house?
2. whether you could keep up with all the responsibilities and demands of your household?
3. what your spouse expected of you at home?

Home Life Performance

1. How well have you handled the responsibilities and daily demands of your home life?
2. How well have you kept up with all your household duties?
3. How well have you done at getting things done on time at home?
4. How well have you done at keeping any promises or commitments you made at home?

Self-Esteem

1. I feel that I have a number of good qualities.
2. All in all, I am inclined to feel that I am a failure.*
3. I am able to do things as well as most other people.
4. I feel I do not have much to be proud of.*
5. I take a positive attitude toward myself.
6. I wish I could have more respect for myself.*

*Reversed.

Sexual Dissatisfaction

1. I am dissatisfied with my sexual performance.
2. I am seldom in the mood for sex.
3. I don't feel like a whole (woman/man).
4. I feel inadequate sexually.
5. I enjoy sex less than I used to.
6. I feel like sex is a responsibility, not a pleasure.

Quality of Life: Life-as-a-Whole

1. How satisfied are you with your life as a whole?
2. How would you say things are these days? Would you say you are very happy, pretty happy, or not too happy?

Quality of Life: Marriage

1. How satisfied are you with your marriage?
2. How satisfied are you with your (husband/wife)?

Depression

How often during the past 4 weeks did you feel . . .

1. lonely?
2. blue?
3. hopeless about the future?

Positive Learning Experience

My (fertility/biggest) problem has taught me something important about . . .

1. myself.
2. my spouse.
3. led my (husband/wife) and me to relate better to each other.

Satisfaction with Network Support

How satisfied are you with the extent to which you can really count on others to . . .

1. help you feel more relaxed when you are under pressure or tense?
2. accept you totally, including both your best and worst points?
3. care about you in both good times and bad times?
4. console you when you are very upset?

Spouse Social Support

To what extent did your spouse . . .

1. act in ways that showed (he/she) appreciated you?
2. treat you with respect?
3. show that (he/she) loved and cared for you?

Spouse Interpersonal Conflict

To what extend did your spouse . . .

1. act in an unpleasant or angry manner toward you?
2. act cold or impersonal?
3. argue with you?
4. act as if (he/she) didn't care for you?

Problem-Solving Coping

To what extent have you . . .

1. tried to analyze the situation in order to understand it better?
2. read books or magazines or watched television shows about the problem?
3. asked someone for advice and followed it?
4. knew what had to be done and doubled your efforts to make things work?
5. made a plan of action and followed it?

Escape-Coping

To what extent have you . . .

1. hoped a miracle would happen?
2. wished the situation would go away or be over with?
3. kept busy so you wouldn't worry about it?
4. had fantasies or wishes about how things might turn out?

Importance of Children

1. Having a child is very important to me.
2. It's hard for me to imagine a life without children.
3. Being a parent is one of the most important things a person can do.