Sexual, Marital, and Social Impact of a Man's Perceived Infertility Diagnosis

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Abstract

Introduction—Male factor infertility is a relatively common problem. This diagnosis may increase sexual, marital, and relationship strain in male partners of infertile couples.

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Aim—To measure the personal, social, sexual, and marital impacts of a male factor infertility diagnosis among men in couples evaluated for infertility.

Methods—Cross-sectional analysis of 357 men in infertile couples from eight academic and community-based fertility clinics. Participants completed written surveys and face-to-face and telephone interviews at study enrollment. This interview queried each participant's perception of their infertility etiology to determine the primary study exposure (i.e., male factor only, male and female factors, female factor only, unknown).

Main Outcome Measures—Personal Impact, Social Impact, Marital Impact, and Sexual Impact scales.

Results—Among the 357 men, no male factor was reported in 47%, isolated male factor was present in 12%, combined male and female factors were present in 16%, and unexplained infertility was present in 25% of couples. Male factor infertility was independently associated with worse Sexual (mean 39 vs. 30, standard deviation [SD] 2.7, $P = 0.004$) and Personal (mean 37 vs. 29, SD 3.8, $P = 0.04$) Impact scores relative to men in couples without male factor infertility. These differences remained statistically significant after controlling for male age, partner age, race, religion, educational level, employment status, prior pregnancy, duration of infertility, and prior paternity.

Conclusions—Male partners in couples who perceive isolated male factor infertility have a lower sexual and personal quality of life compared with male partners of couples without perceived male factor infertility. Social strain is highest among couples without a clear etiology for infertility. These findings highlight the clinically significant negative sexual, personal, and social strains of a perceived infertility diagnosis for men.

Introduction

Impaired fertility affects 7–17% of all couples [1–5]. Isolated male factor infertility may occur in 20% of all infertile couples, while couples with combined male and female infertility comprise an additional 30–40% of the total infertile population [6,7].

The interrelationship between sexual problems and infertility is unclear. Several studies from outside the United States have suggested that infertility does not impact sexual or erectile function after controlling for differences in intercourse frequency and/or socioeconomic factors [8–10]. On the other hand, many studies from within the United States have suggested that infertility is often associated with sexual problems in men. One recent U.S. study demonstrated a high rate of erectile dysfunction, depressive symptoms, and dysfunctional sexual relationships among male partners of infertile couples [11]. Other U.S. studies have found that male partners of infertile couples experience increased sexual stress related to infertility [12], lower sexual satisfaction, and worse erectile function [13], and that specific subtypes of male infertility significantly increase the risk of erectile dysfunction [14]. Based on these data, existing evidence suggests that male factor infertility may indeed be a risk factor for sexual problems in men.

Although male factor infertility has been implicated as a risk factor for increasing personal distress, to our knowledge, no studies to date have simultaneously assessed demographic characteristics, socioeconomic status, racial background, religious affiliation, and fertility history as predictors of the psychosocial impact of male factor infertility. These factors may contribute significantly to the way in which men perceive the impact of their infertility diagnosis. We hypothesized that men in infertile couples who felt responsible for the fertility

problem (i.e., diagnosed with male factor infertility) would experience greater sexual, marital, social, and personal impact relative to men who did not feel they were responsible for the couple's infertility. Furthermore, we hypothesized that these effects would remain significant after adjustment for the potentially confounding effects of demographic characteristics, socioeconomic status, religious affiliation, and prior paternity.

Aim

The objective of this study was to measure the personal, social, sexual, and marital impacts of a male factor infertility diagnosis among couples evaluated for infertility.

Methods

Study Design and Subjects

Couples were recruited into the study cohort from eight participating reproductive endocrinology clinics after the female partner presented for infertility treatment. The inclusion criteria for the study were defined as: currently trying to get pregnant with a male partner, English-speaking, no prior treatment with in vitro fertilization (IVF), no prior sterilization or hysterectomy, living in proximity to one of the eight participating centers, and able to schedule an initial home visit interview within 6 weeks of the index clinic visit. Of 809 women who met inclusion criteria, 437 (54%) agreed to participate (380 couples and 57 women without their partners). Among the 380 couples, 357 (94%) men completed baseline questionnaires and had face-to-face interviews.

Study participants completed questionnaires at the time of enrollment that contained medical and surgical histories, socioeconomic and demographic data, history of prior paternity, and four psychosocial impact scales detailed below. Separate face-to-face in-home interviews of each member of the couple were conducted by female interviewers within 6 weeks of enrollment to determine participants' perception of the etiology of their infertility problems, previous treatments used, and treatments they were planning. Interviewers received extensive training, and during the study, interviews were audiotaped and a random 10% were reviewed for accuracy and appropriate implementation of study protocol. The study was approved by the Institutional Committee on Human Research and all subjects provided written consent.

The treatments utilized by these couples prior to study entry included oral medications (65%), injectable fertility drugs (25%), intrauterine insemination (IUI) with husband's sperm (34%), and IUI with donor sperm (1.5%). Most couples had been seen by reproductive endocrinologists (92%) or gynecologists (75%), a minority was seen by urologists (15%), and most men had semen analyses prior to enrolling in the study (80%). In fact, 99% of men in this study had been seen by at least one of these specialists prior to enrolling in the study and completing the initial interview. The majority of men were in their first marriage (81%), while a minority was in their second (18%) or third marriage (1%).

Infertility Classification

The presence or absence of male and female factor infertility was determined from the enrollment interview. During this interview, male and female members of the couple were asked in their individual interviews if the doctor told them the reason for their "problems having a baby." Responses to these questions by the male member of the couple were used to define baseline perceptions of male and/or female factor infertility. Four exposure categories were possible: no male factor infertility (i.e., female factor infertility or no male or female factors), male factor in the absence of female factor infertility, concurrent male and female factor infertility, and unexplained infertility. The "actual" infertility diagnosis was determined through a medical record abstraction of all participants at the conclusion of the 18-month study

period. Perception of infertility etiology was chosen for this classification given that the primary aim of this study was to assess the psychosocial impact of the perceived infertility diagnosis.

Main Outcome Measures

Questionnaire Development and Validation

The Personal Impact, Social Impact, Sexual Impact, and Marital Impact scales were developed to address four impact areas (Appendix I). Topics for items were identified through focus groups with a small number of infertility patients. Based on these topics, items were generated, reviewed by experts in the fields of psychometrics, clinical psychology, and reproductive health, and then pilot tested among another small group of infertility patients. Problematic items were revised or discarded.

The 5-item Personal Impact scale assessed feelings of lack of control, missing something in life, inability to meet life goals, or feeling defective because of infertility. The 25-item Social Impact scale assessed the comfort level with which study participants discussed fertility issues with family and friends, the understanding that participants received when discussing fertility issues with family and friends, and participants' avoidance of social activities related to children or babies. For both of these scales; responses were scored from "never" (0) to "very often" (10), with higher scores representing greater impact. The 7-item Marital Impact scale evaluated the effect of infertility on each man's feelings of satisfaction with his partner, frequency of disagreements with his partner, enjoyment of time with his partner, stability of relationship, feelings of closeness, and overall satisfaction with the relationship. Responses were made on a 5-point scale, from "Very Negative Effect" (0) to "Very Positive Effect" (4). Finally, rather than generate new items to assess sexual impact, we used five items from the Fertility Problems Inventory [15]. Items included: level of sexual enjoyment, perceived attractiveness to partner, failure with sex because of fertility problems, and persistent thoughts of having a child during intercourse. Responses were made on a 5-point scale from "Very Negative Effect" (0) to "Very Positive Effect" (4).

Data from the baseline assessments for all impact items were subjected to factor analysis to determine whether items corresponded to the intended scales. Internal consistency was assessed with Cronbach's alpha. Construct validity was assessed by determining the relationship of scale scores with other established measures: the Personal Impact and Social Impact scores with depressive symptoms measured with the Center for Epidemiologic Studies Depression scale (CESD) [16], and the Marital Impact Scale with the Quality of Marriage Index [17]. Test–retest correlations were not conducted with a short (e.g., 1 to 2 weeks) period as would be ideal. In addition, we would expect changes in the Impact scales as individuals experienced changes in their personal situations regarding medical treatment, diagnosis, and/ or outcomes, making test–retest reliability difficult to ascertain over longer periods of time. Finally, all scales were not re-administered due to study time constraints. However, for the Social and Personal Impact scales, correlations between baseline and 4-month scores were greater than 0.60. To simplify interpretation across all scales, all scores were transformed to a scale of 0 to 100, with higher scores representing greater impact.

Other Variables

The potentially confounding effects of male and female partner age, educational level, annual household income, religious affiliation, race, employment status, previous pregnancy, and prior paternity were determined by including them in the final adjusted linear regression modeling. Duration of infertility was determined by the time between couples first attempted to achieve a pregnancy and their study initial evaluation. Marital status (married yes/no), full-time

employment status (yes/no), any religious affiliation (yes/no), college graduate (yes/no), white race (yes/no), previous pregnancy (yes/no), and prior paternity (yes/no) were determined by answers to questionnaires administered at enrollment. Race was dichotomized to white vs. nonwhite from broader racial and ethnic categories due to small samples sizes in subgroups. Annual household income was categorized to five levels: <$60,000, $60,000–$99,000, $100,000–$149,000, $150,000–$199,000, and ≥$200,000. Male and female ages were analyzed as continuous variables.

Statistical Analysis

Descriptive statistics were used to characterize the study population. Bivariate comparisons were made between variables and infertility etiology with chi-square analysis for categorical variables and with linear regression for continuous variables. Linear regression was performed to examine the association between infertility subtype and each outcome measure. Multivariate linear regression was utilized to examine the relationship between infertility subtype and outcome measure while controlling for male age, female age, race, education, employment status, religious affiliation, marital status, prior pregnancy, duration of infertility, and prior paternity. Mean scores, adjusted mean scores, standard deviations from the mean (SD), P values, and confidence intervals (CI) were utilized to describe the results of the regression models. Constant variance was observed, residuals were normally distributed, and removal of outliers did not significantly affect regression coefficients or standard errors. Statistical significance was set at a level of $P < 0.05$. STATA 10 (Statacorp, College Station, TX, USA) was used for all analyses.

Results

Participant Characteristics and Infertility Etiology

The mean age of men (N = 357) in the cohort was 36.9 years (range 21.7–60, SD 5.5). Mean partner age was 35.7 years (range 22–46). Nonwhite men comprised 25% of the sample population, 70% had completed at least a baccalaureate degree, and 67% had household incomes of more than $100,000 annually (Table 1). No male factor (i.e., isolated female factor) was reported by 47%, male factor alone was reported by 12%, male and female factors by 16%, and the diagnosis was unexplained in 25%. In contrast to this *perceived* diagnosis, after full evaluation, 58% had female factor only, 7% had male factor only, 30% of couples were found to have male and female factors, and only 5% had no known factor. The kappa between the *perceived* diagnosis at the baseline interview and the *actual* diagnosis after 18 months was 0.35.

Psychometric Analysis of Questionnaire

Factor analysis yielded four factors, which corresponded to the intended scales. Internal consistency for all measures was good: personal impact, $\alpha = 0.83$; social impact, $\alpha = 0.94$; marital impact, $\alpha = 0.92$; and sexual impact, $\alpha = 0.75$. The impact scales correlate in expected ways with other scales, supporting their validity: The Personal Impact scale was significantly associated with depressive symptoms (CESD, $r = 0.42$), as was the Social Impact ($r = 0.40$). The Marital Impact scale was significantly associated with the Quality of Marriage Index ($r = -0.42$). While these correlations are statistically significant, they are only moderate, suggesting that the impact scales are addressing similar, but not identical, constructs.

Effect of Infertility Diagnosis on Psychosocial Impact

Sexual Impact

Men with male factor and unexplained infertility reported higher mean Sexual Impact scores relative to the no male factor group (male factor mean 37 vs. 30, SD 2.7, P = 0.007; unexplained mean 34 vs. 30, SD 2.0, P = 0.03) (Table 2). After multivariate adjustment (Table 3), the mean sexual impact scores remained higher in the male factor only group (mean 39 vs. 30, SD 2.7, P = 0.004).

Personal Impact

Unadjusted linear regression comparing male factor only to the no male factor group demonstrated higher mean scores (mean 39 vs. 29, SD 3.8, P = 0.011) in the male factor group (Table 2). After multivariate adjustment, the difference between these two groups remained significant (adjusted mean score 37 vs. 29, SD 3.8, P = 0.04) (Table 3). Mean scores for the combined male and female factors (P = 0.4) and unexplained (P = 0.7) groups were not significantly different from the no male factor infertility group.

Social Impact

Men who did not know their diagnosis ("unexplained" group) reported higher mean Social Impact scores (Table 2) relative to the no male factor group (mean 23 vs. 18, SD 2.2, P = 0.037). Adjustment for potential confounding factors (Table 3) decreased the strength of this relationship slightly (mean 23 vs. 18, SD 2.3, P = 0.06). Mean scores for men with male factor infertility were higher than the no male factor group (mean 23 vs. 18, SD 2.9, P = 0.09); however, this did not achieve statistical significance. The mean score for the combined male and female factor group was not statistically different from the no male factor group (P = 0.31).

Marital Impact

No significant differences were seen between infertility groups in terms of Marital Impact scores with the unadjusted (Table 2) or adjusted (Table 3) analyses.

Discussion

This study demonstrated an increased negative sexual and personal impact for male partners in couples with isolated male factor infertility. This effect was independent of age, partner age, race, religion, educational level, employment status, prior pregnancy, and prior paternity. These findings suggest that men who perceive themselves to be the sole contributor to the couple's infertility feel less in control of their lives, less able to meet their goals, and more personally responsible for their fertility problems. Furthermore, this group of men has lower sexual satisfaction, more feelings of sexual failure, and less enjoyment of sexual activity. The magnitude of these differences suggests a clinically significant as well as a statistically significant difference [18].

Interestingly, the group of men who did not know their diagnosis and men with isolated male factor infertility appeared to feel the greatest social impact; however, the 95% confidence intervals were too wide to convincingly rule out the possibility of no effect. These findings suggest that these men have problems discussing fertility concerns with friends and family, have problems with others understanding their concerns, and avoid social situations because of their fertility problems.

Although many studies have demonstrated a negative marital impact of male factor infertility, this was not observed in this analysis. A recent longitudinal 12-month study of infertile couples who failed management with IVF [19] demonstrated that male factor infertility was not an

independent predictor of physical or emotional distress; however, in that same study, emotional, marital, and physical stress increased for all groups over time. There are several possibilities why no difference was observed between infertility subgroups and marital impact in the present study. It may be that perception of infertility etiology does not significantly affect the quality of a couple's marriage. While, in theory, a larger sample size might have allowed for the detection of a true underlying difference, it seems clear from these data that differences in marital impact scores were almost nonexistent. Alternatively, marital strain may develop over time and men with newly diagnosed infertility may begin to experience increasing marital strain over time as seen in the study by Peronace et al. Furthermore, the questions asked in this study may have ascertained different features of marital strain than those evaluated in the present study.

Infertility may place significant stress on a man's social and marital relationships [15]. Couples often feel that they lose control of the fertility process and over their own bodies [20,21]. Infertility stress and unsuccessful treatment can result in significant negative marital effects [20,22]. In a study of 256 couples treated unsuccessfully with IVF, male partners were found to have increased marital and social stress, decreased overall mental health, increased physical and social stress, and increased coping effort [19]. No differences in risk of problems/stress were found between different etiologies of infertility, although *not knowing* the reason for infertility had the greatest negative social impact.

Male partners of infertile couples may have worse overall mental health relative to normative data [11]. Infertility in general is a risk factor for poorer mental health, but the diagnosis of male factor infertility has been associated with even greater risk for psychosocial problems and decreased quality of life. On average, men with male factor infertility have lower self-esteem and greater feelings of stigma and loss compared to men without male factor infertility [23,24]. Furthermore, men who are diagnosed as responsible for the couple's infertility report lower overall life satisfaction, heightened distress, and higher treatment-related anxiety after being diagnosed as the party responsible for the couple's infertility [25].

The underlying quality of marriage may influence or predispose men to personal, marital, or sexual strains; these problems may be unrelated to and predate the diagnosis of infertility. Strong marriages may help to protect individuals from the psychosocial stressors of an infertility diagnosis and subsequent treatment [26]. Men with preexisting anxiety, depression, or dysfunctional coping styles may be at increased risk for psychosocial dysfunction when faced with the difficulties of this treatment [25,27–31].

It has been shown that the interplay of stressors and coping mechanisms within each couple play a significant role in determining overall psychosocial impact [21,32]. It is interesting to note that at study enrollment, in couples with male and female factor infertility, men did not experience greater impacts on their Personal, Social, Sexual, or Marital Impact scores compared with men without male factor infertility. Couples may have been supporting each other more actively in this group. Spousal support has been shown to be very important in coping with the stresses of an infertility diagnosis [21]. A large study of the coping styles of men and women undergoing IVF found that women chose confronting, accepting responsibility, seeking social support, and escaping/avoiding styles more often than did men [32]. They also found that men and women with escape/avoidance coping mechanisms had the highest levels of infertility-related stress.

Our results demonstrate an association between infertility and psychosocial impact, but causality cannot be definitively inferred from this analysis. While it seems most plausible that the diagnosis of infertility leads to negative psychosocial impact, a temporal association between psychological dysfunction and subsequent determination of semen analysis

abnormality has been demonstrated [33]. Poorer semen quality has been found in men under stress [34,35]. Furthermore, it has been demonstrated that significantly worse fertility outcomes are seen for men and women with the highest psychological stress [36]. If psychosocial impact is associated with worsened fertility outcomes, it would have significant implications for the treatment of infertile men.

Several limitations of our study merit mention. Our results suggest that the mechanism underlying the relationship between a man's perception of infertility diagnosis and decreased quality of life is not significantly related to socioeconomic, demographic, or prior fertility characteristics. Despite these observations, this population may not adequately reflect a population of infertile men who have a lower socioeconomic status. It may be that imperfect measurement of these variables or inadequate sample size made it impossible to adequately adjust for these factors. Residual confounding by some of these variables might account for some portion of the differences identified. For example, our nonwhite sample size was too small to convincingly rule out different cultural experiences as an explanation for the differences seen, and differing cultural experiences have been shown to affect the experience of infertility [37]. The validation process for this study did not evaluate the gender-specific implications of using female interviewers. While it is possible that male study participants did not accurately respond to female interviewers, we suspect that this potential bias had only a small effect. We did not adjust for baseline differences in psychological profiles or coping styles that might explain the differences we observed. This study also demonstrated a lower prevalence of isolated male factor infertility (12%) than in other studies (20–40%) [38], likely representing the recruitment of couples based on the presentation of women to reproductive endocrinology clinics. Furthermore, only 15% of men in this study had been evaluated by a urologist prior to enrolling in this study. It is possible that men evaluated by a urologist would experience a lower psychosocial impact as a result of detailed discussion of the meaning of an infertility diagnosis. It is also possible that men without male factor infertility were more likely to participate, resulting in a higher prevalence of men less affected by the strains of male factor infertility. Inclusion of a broader sample of men may have resulted in larger differences than those identified in this data.

Male partners in infertile couples who feel that they are solely responsible for the couple's infertility are at a higher risk for sexual, emotional, and psychological strain relative to men without this belief. Careful patient counseling and education regarding etiology and treatment options decreases the anxiety faced by infertile men [39–41]. Feelings of control improve with timely reporting of test results, description of the diagnostic and treatment process, and clear estimates of the time commitment necessary for treatment [42]. Reproductive care providers should screen their male patients for sexual, relationship, and other psychosocial problems and offer appropriate treatment or referral should they arise. This intervention may significantly decrease the amount of psychosocial strain experienced by men with an infertility diagnosis.

Conclusions

Male factor infertility is an important clinically significant predictor of sexual and personal strain independent of age, race, religion, household income, educational level, and prior fertility characteristics. These findings provide convincing evidence that (i) sexual and personal quality of life for the male partner of infertile couples is influenced by the perceived source of the fertility problem and (ii) a lack of a clear infertility diagnosis is associated with increased social strain in these men. This knowledge should be used to help guide clinicians in their counseling of infertile couples.

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Appendix I

Description of Psychosocial Measures Used to Evaluate the Impact of an Infertility Diagnosis

Personal Impact

Because of your fertility problems, how often have you felt (0 Never, 10 Very Often):

1. Not in control of your life?
2. That you might miss something important in life?
3. That you couldn't meet your life goals?
4. That you must have done something to deserve these problems?
5. Defective?

Total score determined by sum of 5 questions divided by 50 and multiplied by 100. Higher scores represent greater impact.

Sexual Impact

What effect have your fertility problems had on your sexual relationship? (0 Strongly Disagree, 4 Strongly Agree)

1. * I find I've lost my enjoyment of sex because of our fertility problem.
2. * I feel just as attractive to my partner as before our fertility problem (reverse-scored)
3. * I don't feel any different from other members of my sex because of our fertility problems (reverse-scored)
4. * I feel that I've failed at sex because I can't get my partner pregnant.
5. * During sex, all I can think about is wanting a (another) child.

Total score determined by sum of 5 questions divided by 28 and multiplied by 100. Higher scores represent greater impact.

***Questions taken from Fertility Problem Inventory** (Newton et al. The Fertility Problem Inventory: measuring perceived infertility-related stress. Fertility and Sterility. 1999)

Marital Impact

What effect have your fertility problems had on … (0 Very negative effect, 4 Very positive effect)

1. How much you enjoy the time you spend with your partner? (reverse-code)
2. How often you and your partner have disagreements and arguments? (reverse-code)
3. How satisfied you are with your partner? (reverse-code)
4. How satisfied you are with your relationship in general? (reverse-code)
5. How stable your relationship is? (reverse-code)
6. How much you feel that you and your partner are a team? (reverse-code)
7. How close you feel to your partner? (reverse-code)

Total score determined by sum of 7 questions divided by 28 and multiplied by 100. Higher scores represent greater impact.

Social Impact

How often do you feel uncomfortable (0 Never, 10 Very Often)

1. with family members because they ask when you and your partner are going to have a (another) baby?

2. with family members because they give you unwanted or unhelpful advice about having a (another) baby?

3. with family members because they minimize what you are going through to try to have a (another) baby?

4. with family members because they make insensitive comments about your fertility problems or getting pregnant?

5. with friends because they ask when you and your partner are going to have a (another) baby?

6. with friends because they give you unwanted or unhelpful advice about having a (another) baby?

7. with friends because they minimize what you are going through to try to have a (another) baby?

8. with friends because they make insensitive comments about your fertility problems or getting pregnant?

9. when your friends talk about their pregnancies or their children?

10. around friends or family members who are pregnant or who have new babies?

11. with co-workers because they know about your fertility problems?

12. around babies or young children in your extended family?

How often do you feel that … (0 Never, 10 Very Often)

13. your partner doesn't understand your feelings about having a (another) baby?

14. your partner doesn't understand what trying to have a (another) baby is like for you?

15. you can't talk to your partner about having a (another) baby?

16. your family doesn't understand what trying to have a (another) baby is like for you?

17. you can't talk to your family about your problems having a (another) baby?

18. your friends don't understand what trying to have a (another) baby is like for you?

19. you can't talk to your friends about your problems having a (another) baby?

20. people avoid talking to you about your problems having a (another) baby?

21. you don't have anything in common with your friends who have not had fertility problems?

How often have you avoided … (0 Never, 10 Very Often)

22. being around some of your friends because of your problems having a (another) baby?

23. being around some members of your family because of your problems having a (another) baby?

24. going to holiday gatherings because of your problems having a (another) baby?

25. going to other social gatherings because of your problems having a (another) baby?

Total score determined by sum of 25 questions divided by 250 and multiplied by 100. Higher score represents greater impact.

Table 1

Socioeconomic, demographic, and prior fertility characteristics of cohort (N = 357) [*]

	No male factor (N = 167)		Male factor only (N = 44)		Male and female factors (N = 56)		Unexplained (N = 90)	
Age (mean, SD)	37.0	5.6	36.4	4.8	36.7	6.1	37.2	5.3
Partner age (mean, SD)	36.4	5.2	33.9	4.2	35.1	5.2	35.5	3.7
	N	%	N	%	N	%	N	%
White race	121	72.5	35	79.6	42	75.0	69	76.7
College degree or greater	114	68.3	32	72.7	36	64.3	68	75.6
Married	135	80.8	36	81.8	48	85.7	79	87.8
Annual household income								
<$100,000	59	35.3	13	29.6	20	35.7	25	27.8
$100,000–$199,999	85	50.9	25	56.8	23	41.1	47	52.2
≥$200,000	23	13.8	6	13.6	13	23.2	18	20.0
Full employment	148	88.6	41	93.2	51	91.1	78	86.7
Any religious affiliation	139	83.2	37	84.1	39	69.6	69	76.7
Prior pregnancy	47	28.1	8	18.2	12	21.4	24	26.7
Duration of infertility (mean years, SD)	2.0	1.7	2.1	1.4	2.1	1.5	2.3	1.5
Prior paternity	15	9.0	2	4.6	3	5.4	8	8.9

[*] Characteristics did not differ statistically (P values >0.1 in all cases); except for partner age. Women in couples with male factor infertility alone were significantly younger than all others groups (P values <0.01).

SD = standard deviation.

Table 2

Psychosocial impact of infertility diagnosis at study enrollment

Overall	Personal impact N = 354 (Mean 31, SD 23)			Social impact N =348 (Mean 20, SD 17)			Sexual impact N = 347 (Mean 25, SD 18)			Marital Impact N = 350 (Mean 44, SD 15)		
	Mean	(95% CI)	*P* value	Mean	(95% CI)	*P* value	Mean	(95% CI)	*P* value	Mean	(95% CI)	*P* value
No male factor (reference)	29	(25–32)	ref	18	(16–21)	ref	22	(19–25)	ref	44	(42–46)	ref
Male factor only	39	(32–45)	0.011	23	(19–28)	0.08	30	(25–35)	0.01	43	(39–48)	0.72
Male and female factors	31	(25–37)	0.54	20	(15–24)	0.64	25	(21–30)	0.23	45	(41–49)	0.76
Unexplained	30	(25–35)	0.73	23	(20–27)	0.037	27	(23–30)	0.05	45	(42–48)	0.53

CI = confidence interval; SD = standard deviation

Table 3

Psychosocial impact of infertility diagnosis at enrollment after adjustment for socioeconomic status, age, partner age, race, previous pregnancy, duration of infertility, and previous children

Overall	Personal impact[*] N = 354 (Mean 31, SD 23)			Social impact[*] N =348 (Mean 20, SD 17)			Sexual impact[*] N = 347 (Mean 25, SD 18)			Marital impact[*] N = 350 (Mean 44, SD 15)		
	Mean	(95% CI)	P value	Mean	(95% CI)	P value	Mean	(95% CI)	P value	Mean	(95% CI)	P value
No male factor (reference)	29	(25–32)	ref	18	(15–21)	ref	30	(28–33)	ref	44	(42–46)	ref
Male factor only	37	(31–45)	0.04	23	(18–29)	0.09	39	(33–44)	0.004	44	(39–49)	0.98
Male and female factors	34	(28–41)	0.12	21	(16–26)	0.31	34	(30–38)	0.11	45	(41–50)	0.57
Unexplained	29	(24–34)	0.81	23	(19–26)	0.06	34	(30–37)	0.10	45	(41–48)	0.79

[*] Adjusted for male and female age, educational level, annual income, marital status, any religious affiliation, employment status, Caucasian race, previous pregnancy duration of infertility and previous children.

SD = standard deviation.