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Infertility Evaluation and Treatment among Women in the United States

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Abstract

Objective—To examine the characteristics of women seeking infertility evaluation and treatment.

Design—Cross-sectional survey based on in-person interviews, followed by two-step hurdle analysis.

Participants—4,558 married or cohabitating women ages 25–44

Setting—U.S. household population of women based on the 2006–2010 National Survey of Family Growth

Intervention—None

Main Outcome Measure(s)—Likelihood of seeking preliminary infertility evaluation. Likelihood of seeking infertility treatment once evaluated. Treatment type provided.

Results—623 women (13.7%) reported seeking infertility evaluation, of which 328 reported undergoing subsequent infertility treatment. Age at marriage, marital status, education, health insurance status, race/ethnicity, and religion were associated with the likelihood of seeking infertility evaluation. For example, the predicted probability that a non-White woman who married at 25 will seek evaluation was 12%. This probability increased to 34% for White women with a graduate degree who married at age 30. Among women who are evaluated, income, employment status, and ethnicity correlated strongly with the likelihood of seeking infertility treatment. Infertility drug therapy was the most frequent treatment used. Reproductive surgery and in vitro fertilization (IVF) were used the least.

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Conclusions—The use of infertility services is not random and understanding the socio-demographic factors correlated with use may assist new couples with family planning. Roughly 50% of the women evaluated for infertility progressed to treatment, and only a small proportion were treated with more advanced assisted reproductive technologies (ARTs) such as IVF therapy. Future research aimed at improving access to effective healthcare treatments within the boundaries of affordability is warranted.

Keywords

Infertility Evaluation; Infertility Treatment; Assisted Reproduction; Family Planning; Infertility

INTRODUCTION

Infertility is defined by the National Survey of Family Growth (NSFG) as the failure to conceive after at least 12 consecutive months of unprotected sexual intercourse (1–3). Infertility continues to be a major public health concern in the United States, as illustrated by the sizeable number of women seeking preliminary infertility evaluations and infertility treatments (2,4,5). Today, approximately 12% of women 15 to 44 years of age have reported ever having received any infertility services (evaluation and/or treatment), indicating that 7.4 million women and their partners are affected by fertility-related issues in the US (1,6).

Overall infertility rates may be attributed to trends in delaying pregnancy—an increasingly common choice for couples. Increased reproductive age is a significant factor in reduced fertility. For women, fertility peaks in the early to mid-20s, declines slightly in the early-30s, and then declines significantly in the mid to late-30s (7). For men, sterility is reported to increase substantially in the late-30s and continues to accelerate after age 40 (8). A couple's infertility may also be attributable to an array of biological issues, including female complications such as tubal factors, ovulatory dysfunction, diminished ovarian reserve, endometriosis, and uterine factors and/or male factors such as abnormal ejaculation, semen or varicocele (9,10). However, with recent advances in infertility treatments, these biological factors are not as limiting as increased reproductive age (11). For many couples, the decision to pursue professional development, thereby delaying pregnancy, may impose the greatest risk for involuntary childlessness.

Recent studies suggest racial disparities in the use of infertility services and their outcomes. Chandra and Stephen (3) and Terava et al. (12) report that infertility service use is higher among White women and all women with higher incomes and education. Furthermore, Wellons et al. (13) found evidence indicating that rates of live births following an IVF treatment were highest among White women and lowest among Black women. It is difficult, however, to separate racial disparities in the use of infertility services from other potential variables, such as differences in community perceptions, culture, family values, accessible information, access to care (14), and issues of cost and affordability (3,15–17). In the US, the average cost for one in vitro fertilization (IVF) cycle is \$12,400 (18), though out-of-pocket costs can vary widely depending on third-party insurance coverage. Consequently, financial factors have received the most attention in explaining inequalities in infertility service use (17,19,20).

Although evidence indicates the existence of racial, ethnic, and socioeconomic disparities in the utilization of infertility services, it is unclear whether these disparities exist across the entire range of services available. For instance, some physicians may provide a preliminary evaluation, utilizing options (e.g., semen analysis, anatomy assessment, ovarian reserve, or follicle stimulating hormone counts) that are non-invasive, relatively inexpensive, and may be covered by insurance. In contrast, others may undergo actual procedures, such as surgery,

artificial insemination, or IVF, which are more expensive and often not covered by insurance.

In this study, we estimate the likelihood of seeking a preliminary infertility evaluation and the subsequent likelihood of undergoing infertility treatments based on various respondent characteristics.

METHODS

The NSFG is a cross-sectional, multi-cycle survey conducted by the University of Michigan's Institute for Social Research (21). It was originally designed to be the national fertility survey of the US and collects information from a national sample of men and women. Surveys of women were conducted during all 7 cycles (1973, 1976, 1982, 1988, 1995, 2002, and 2006–2010), while surveys of men were conducted only during the two most recent cycles (2002 and 2006–2010).

The 2006–2010 survey was based on 22,682 face-to-face interviews, consisting of 10,403 male and 12,279 female respondents, ages 15 to 44. The sample is nationally representative, including an oversampling of Black, Hispanic, and teenage respondents, which was incorporated into the analysis through the use of sampling weights provided by the NSFG. In-person interviews were administered in both English and Spanish and covered a wide range of topics including health, marriage, and family planning (22).

For this analysis, and because infertility is generally experienced by a couple rather than an individual (16), we restricted our sample to female respondents aged 25 to 44 who were currently married or in a cohabitating relationship. Among the 12,279 female respondents, 4,558 women met these 2 criteria.

During the interviews, female respondents were asked whether they or their husband/partner had ever received medical assistance to become pregnant. Respondents who answered affirmatively were shown a card listing various infertility services (i.e., advice from a physician, testing, drugs to improve ovulation, surgery to correct blocked tubes, artificial insemination, other types of medical help) and asked “which of the services shown...have you or your husband/partner/previous partner had to help you become pregnant? If respondents reported the use of “other types of medical help,” the interviewer then presented a second card listing various treatments (i.e., surgery or drug treatment for endometriosis, IVF, surgery or drug treatment for uterine fibroids, some other female pelvic surgery, other medical help) and asked “which of these other types of medical help did either of you receive for becoming pregnant?”

In a separate set of questions, female respondents were asked if they had ever received medical help to prevent a miscarriage. The NSFG categorizes “medical help to prevent miscarriage” as an additional infertility service, however we do not include these women in our analysis because our focus is only on services that assist women in becoming pregnant. Medical services to help prevent a miscarriage may represent a different set of clinical conditions unrelated to difficulties conceiving.

In separate interviews, a national sample of male respondents (unrelated to female respondents) was asked whether they or their wife/partner had ever undergone infertility treatments. Only one respondent reported his own use of a treatment; whereas, others reported their partner's use of treatments, such as surgery to correct fallopian tubes, artificial insemination, IVF, and drugs to improve ovulation. Therefore, this analysis focused on infertility service use as reported by women only, although the underlying cause could be due to male factors, female factors, or a combination of the two.

The NSFG survey also included questions regarding respondent demographics, socioeconomic status (SES), current living arrangements, and religion (Table 1), which were included as variables that may influence whether a woman wanted to have a child and whether she ever sought medical help to have a child.

Respondents were asked their date of birth, date of marriage (if applicable), and the date they began living with their current husband or partner. For this analysis, age at marriage was divided into two categories using the mean age at marriage (26 years) as the threshold, and length of current relationship was calculated using the respondents age at the time of the interview and their age at cohabitation.

A binary variable was created to indicate whether the respondent had any children prior to the current relationship. Respondents were asked for their racial background and Hispanic ethnicity. Non-Hispanic respondents were categorized into the groups that they believed best described their racial background: White, Black, or Other (Asian; American Indian, or Alaska Native; Native Hawaiian or Other Pacific Islander). If race identification was refused, this portion was completed by interviewer observation.

The SES was measured by current employment status; self-reported household income, which was divided into three categories (below \$20,000 per year, between \$20,000 and \$49,999 per year, between \$50,000 and \$74,999 per year, and above \$75,000 per year); and education attainment level. Health insurance coverage was measured using a binary variable, indicating whether the respondent had lacked health care coverage at any time in the last 12 months.

Current living arrangement was measured by self-reported marital status (whether living with a spouse or partner). Religion was recoded into 4 groups: none, Catholic, Protestant, or Other religions. Other religions included, but were not limited to Jewish, Mormon, Jehovah's Witness, Greek Orthodox, Muslim, Buddhist, and Hindu.

The study involved the use of a secondary dataset that is publicly available and stripped of all identifiers. Therefore formal approval from the Institutional Review Board (IRB) was not required.

ANALYSIS

Female respondents were categorized into three subsamples: (1) those who had never used any infertility services (N=3,935); (2) those who sought a preliminary infertility evaluation, but did not undergo subsequent treatments (N=295); and (3) those who sought an evaluation and received infertility treatments (N=328).

The statistical model had two parts: (1) a complementary log-log (CLL) component to estimate the likelihood of infertility evaluation based on the rate at which they sought an evaluation given the length of their current relationship and (2) a logit component to estimate the odds of treatment conditional on having received an evaluation. This two-part model is known as a hurdle model (23–25) and represents the hierarchical nature of health service utilization. At each stage, the model included covariates to incorporate the various determinants of medical service use, such as a woman's age, age at marriage (if applicable), race/ethnicity, education, income, employment status, insurance coverage, and religion. The maximum likelihood estimations incorporated the complex sampling design of the NSFG in both probability weights and stratified sampling (26).

Using the CLL estimates, we predicted the likelihood that a newlywed woman would seek an infertility evaluation prior to her 45th birthday (age 45 was selected due to data

availability). These predictions were stratified by the woman's age at marriage, race/ethnicity, and education level. Using the logit results, we further predicted the probability that a woman who received evaluation would also undergo treatment, stratified by race/ethnicity.

RESULTS

Table 1 reports descriptive statistics (with sampling weights) for the full sample and the three subsamples. Among the 4,558 women in the sample, 623 sought infertility services, and among these, 47.3% sought an infertility evaluation only, and 52.6% received an evaluation and underwent treatment. For those who reported treatment, ovulation drug therapy was reported most often (N=2827; 86%), followed by artificial insemination (N=97; 30%), surgery to correct blocked tubes (N=66; 20.1%), IVF (N=41; 12.5%), treatment for endometriosis (N=26; 7.9%), and finally, treatment for uterine fibroids (N=9; 2.7%) (not reported in Table 1). These self-reported estimates reflect prevalence within the sample, but do not account for respondent characteristics or predict the likelihood of treatment.

In Table 2 we estimate the likelihood of seeking a preliminary infertility evaluation given the length of a woman's current relationship (years living with husband or current partner). Specifically, by using the complementary log-log function we can estimate the yearly rate at which women seek a preliminary evaluation as well as how mediating factors such as age at marriage, race/ethnicity, education, etc. can (proportionally) increase or decrease this yearly rate. For example, Table 2 indicates that, for each additional year in a relationship (living with husband or current partner), the likelihood of seeking an evaluation increased by a rate of 1.5%. However, this rate also depended on respondent characteristics. For example, the evaluation rate was 53% lower for women married at or before the age of 26; specifically, for a woman married at 26 or younger, the likelihood of seeking a preliminary evaluation only increased by a rate of 0.71% (53% less than 1.5%) per additional year living with her husband (including any years of cohabitation before they were married). Relative to White women, the likelihood of seeking a preliminary evaluation was 51% lower for Hispanic women and 32% lower for women from the Other race category. Specifically, for Hispanic women, the likelihood of seeking a preliminary evaluation increased by a rate of 0.74% per year and for women from the Other race category, the likelihood increased by a rate of 1% per year. Evaluation was positively associated with educational attainment. Compared to high school graduates, the evaluation rate was lower for women without a high school diploma. Conversely, the evaluation rate for high school graduates was lower than those with an undergraduate degree and lower than the rate for women with a graduate degree. Household income had no impact on the likelihood of evaluation, nor did current employment status, insurance status, or religion.

Using the maximum likelihood estimates in Table 2, we predicted the probability that a married woman would seek infertility evaluation prior to her 45th birthday, assuming survival and relationship stability (the predicted probabilities are plotted in Supplemental Figures 1 and 2; available online). Based on the estimates in Table 2, the predicted probability that White women who married at the age of 25 would seek evaluation prior to age 45 was 16.6%; however the probability among similar non-White women (Black, Hispanic, or Other) was only 12%.

The predicted probability that White women married at 30 would seek evaluation prior to age 45 was higher than among similar non-White women. Furthermore, the predicted probability of evaluation prior to age 45 diminished among those married after age 30.

In Supplemental Figure 2 we plot the predicted probability of seeking an evaluation for married White women, stratified by education attainment level. Supplemental Figure 2 indicates that seeking infertility evaluation increased with education. Approximately 34% of White women, married at age 30 with a graduate degree would receive an evaluation prior to the age of 45. Among similar women with an associate's or bachelor's degree the predicted probability was higher than among high school graduates or dropouts.

Table 3 reports the odds of undergoing infertility treatment among women who reported seeking an evaluation. Compared to married women, the odds of undergoing treatment were lower among women living with their partners and also lower among Hispanic women. The results indicate that income had the strongest positive association with infertility treatments, as the odds of undergoing treatment were highest among women with an annual household income of \$50,000–\$74,999.

Table 4 presents the predicted probability of infertility treatment among women married after age 26 who sought evaluation, stratified by treatment type and race/ethnicity. The predicted probability of any infertility treatment was similar for married White women, Black women, and married women from the Other race category and lowest for married Hispanic women. Among treatment types, drug therapy was used with the highest probability for White, Black, and Hispanic women, while IVF and surgery were used with the lowest probability.

DISCUSSION

There were three notable observations from our study. First, among the 13.7% of women who sought infertility services to help become pregnant (out of a sample of 4,558 married or cohabitating women), only 52.6% followed up with treatment. Some of these women may have learned that they did not have fertility problems during their evaluation and, therefore, did not proceed with treatment. Furthermore, our study did not determine the prevalence of infertility because not all infertile couples seek an evaluation and because the NSFG does not collect detailed data on the dates of infertility service use. However, the observed drop-off between the number of patients seeking evaluation and the number entering treatment is similar to patterns reported world-wide (27).

Second, among those who sought treatment, the more advanced assisted reproductive technologies (ART) such as IVF therapy were used less frequently (only 12.5% of treatment-seeking women used IVF therapy). By contrast infertility treatments such as ovulation-inducing medications (86%), artificial insemination (29.6%), and reproductive surgery (20.1%), were used more frequently.

Third, we identified factors that influenced whether women sought an evaluation and found these factors to be different than those that influenced whether women chose to undergo treatment. We found that women were less likely to seek an infertility evaluation if they were married prior to age 26, had children from a prior relationship, or were non-White, while respondents were more likely to seek an evaluation if they reported holding a post-secondary degree (associates, bachelor's, or graduate degree). Respondents were less likely to seek treatment if they were living with but not married to their partner and more likely to seek treatment if their annual household income was \$50,000–\$74,999 (compared to those with an annual household income of \$20,000–\$49,999).

Our findings that education was positively associated with evaluation and income was positively associated with treatment are consistent with previous research (3,12,14,18,20,28) and indicate that SES is an important driver in seeking evaluation and treatment, as well as in the choice of treatments. This may be particularly true in the US where the majority of

citizens must pay out-of-pocket for infertility treatments and the average cost of an IVF cycle in 2002 was \$12,400 (18). Furthermore, a link between education and SES is well established—those with higher education are more likely to have higher incomes. Additionally, there is a health literacy factor as less-educated individuals may be less informed about infertility treatment options (17).

Finding that health insurance status is unrelated to the use of infertility services is not uncommon. In general, Medicaid covers neither infertility evaluations nor treatment, while private insurance only occasionally covers infertility services. For example, the Mercer survey found that 50% of all employers in the US covered evaluation by an infertility specialist, 37% covered infertility drug treatment, but only 20% of employers nationwide covered IVF therapy (29). Fifteen states have infertility insurance mandates of various degrees of coverage (30). Furthermore, evidence suggests that the effects of these mandates on utilization is greatest for educated women who are at least age 30 (31). Several studies suggest that mandates that include the provision of IVF actually increases IVF utilization, although the largest effect is on increased use of ovulation-inducing drugs and artificial insemination (29,31–34). Access to care is not the only determinant of infertility service use. Schmidt et al. (35) reported that only 47.4% of infertile Danish women sought infertility treatment, even though access to treatment is comprehensive in Denmark (35). This suggests that the availability of affordable treatment is necessary, but not sufficient, for patients to use infertility services.

In this paper we found that religion had no association with seeking a preliminary evaluation or undergoing treatment. Most religions emphasize the importance of parenthood and family values, suggesting a positive association between religion and infertility service use. However, some religions object to the use of certain treatments. For example, the Jewish, Islamic, and Protestant religions permit the use of assisted reproductive technologies (ART), such as IVF and embryo transfer, as long as the gametes are from the married couple. Whereas Roman Catholicism considers IVF to be morally illicit and Eastern Orthodoxy outright rejects IVF therapy. Artificial insemination with donor sperm (AID) is prohibited by Jewish law, but is accepted by part of the Jewish population in Israel.

We also found that Hispanic women used infertility services (preliminary evaluations and treatments) less often than White women. This could be due to language barriers, financial factors, limited access to medical care, and/or cultural and religious differences (19,36,37). Furthermore, Serou and Quintero (38) suggested that, compared to mainstream media, the Hispanic media were less likely to report stories of couples who used ART. Still, other researchers have suggested that the reduced success rates of infertility treatments among minority women are a more likely cause of lack of use (13,39).

In summary, more than 40% of couples who seek infertility evaluation do not pursue treatment. Furthermore, among those who receive treatment, a minority received IVF, which is one of the more advanced but also more expensive treatment options available. Of course, some of these women may have had success with less expensive treatments, and, therefore, did not need to resort to IVF.

Given the substantial financial, physical, and psychological burdens of first pursuing an evaluation and then pursuing treatments that could be futile, it may be short-sighted to limit a patient's access to only those infertility treatments that are affordable to the patient or are covered by insurance. Furthermore, while these decisions are based on individual choice, information about the costs and likelihood of needing treatment should be communicated to young professionals to aid in their decision-making process.

In future research, we propose that a health care model that covers infertility services, including IVF, be studied. An integral component of the model could be the introduction of mandatory single embryo transfer (SET) policies in IVF for good prognosis patients. Recently, several countries, where IVF is covered by the government, have enacted SET policies in IVF. The rationale has been that SET will drastically reduce the twin pregnancy rate, leading to a drop in premature deliveries, decreasing the cost of having fewer premature babies who require NICU support at birth and ongoing support for disease. Data on this approach is encouraging from both a medical and economic perspective (40–45).

An analysis of affordability would include the increased cost of wider provision of infertility services, offset by the cost reductions achieved by substantially decreasing premature deliveries, neonatal intensive care unit (NICU) admissions, and lifelong care for sequelae of premature birth. Such a model, if medically effective and cost-effective, would offer a framework from which to enhance the ability of infertile patients to seek infertility advice, choose effective treatments, and achieve their goal of having a family.

LIMITATIONS

This study is the first to use the 2006–2010 NSFG data to predict the likelihood of infertility evaluation and likelihood of subsequent treatments, however, women over the age of 45 were not included in the NSFG survey, so all estimates are restricted to women under age 45. All data reported to NSFG are self-reported and subject to the traditional biases including recall error, social desirability, and accuracy. Additionally, specific to the NSFG survey that asks about physician consultation, the range and depth of a consultation can be highly variable across patients and likely dependent on age and fertility status.

POLICY IMPLICATIONS

The Affordable Care Act of 2010 (ACA) (46) lists maternity and newborn care and preventive and wellness services/chronic disease management as two of its essential health benefits, but is silent with respect to which specific treatments, including infertility, should be covered. As policy makers decide which services should and should not be covered, a balance between affordability and comprehensiveness will need to be established (30). Our findings suggest that the current algorithm for accessing the health care system is not serving infertile patients optimally.

How might changing the coverage of infertility treatments be accomplished in order to improve access to effective treatments within the boundaries of affordability set forth by the ACA? Of 605 employers nationwide with an infertility benefit, 91% responded that providing the benefit had not resulted in a significant increase in health care costs (47), suggesting that the cost of offering infertility services can be managed.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Descriptive Statistics (weighted samples)

Respondent Characteristic	Full Sample (N = 4,558^a)	No Infertility services (N = 3,935^b)	Infertility Evaluation but no Infertility Treatments (N = 295^c)	Infertility Evaluation and Infertility Treatments (N = 328^d)
Age in Years				
25–28	18%	19%	17%	8%
29–32	19%	20%	17%	17%
33–36	19%	19%	15%	24%
37–40	23%	22%	27%	30%
41–45	21%	20%	23%	22%
Children before current relationship	25%	27%	15%	10%
Married to current husband at age 26 or before	48%	47%	48%	54%
Married to current husband after the age of 26	36%	35%	43%	44%
Living with partner (not married)	16%	18%	9%	2%
Length of time living with husband or current partner (in years) ^e	10.2	10.1	10.2	11.7
Race/Ethnicity				
Any race, Hispanic	17%	19%	13%	6%
White, non-Hispanic	66%	64%	69%	81%
Black, non-Hispanic	9%	9%	8%	6%
Other, non-Hispanic	8%	8%	9%	7%
Educational Achievement				
No High School Diploma	14%	15%	7%	8%
High School Graduate or Student	41%	42%	37%	33%
Associate or Bachelor's Degree	35%	33%	37%	44%
Graduate Degree	10%	9%	19%	15%
Household income (yearly)				
Below \$20,000	18%	19%	14%	9%
\$20,000 – \$49,999	27%	28%	23%	16%
\$50,000 – \$74,999	24%	24%	19%	32%
Above \$75,000	32%	30%	44%	43%
Currently Employed	72%	72%	74%	69%
Had health care coverage in last 12 months	76%	74%	81%	90%
Current Religion				
Catholic	27%	27%	25%	27%
Protestant	48%	47%	46%	54%
Other	10%	10%	12%	10%
None	16%	16%	16%	9%

^a reflects a population size of 27,947,737 women^b reflects a population size of 23,664,467 women

^c reflects a population size of 19,14,518 women

^d reflects a population size of 23,68,752 women

^e for married women this includes any duration of premarital cohabiting with current husband.

Table 2

Proportional Change in Rate of Women Seeking an Infertility Evaluation per Additional Year Living with Husband or Current Partner – (Complementary log-log results)

Respondent Characteristic	Change in Rate (%)
Children before current relationship	−0.42 **
Marriage age 26	−0.53 **
Living with partner	−0.35
Any race, Hispanic	−0.51 **
Black, non-Hispanic	−0.13
Other, non-Hispanic	−0.32 *
No High School	−0.31
Assoc or Bach Degree	0.26 *
Graduate Degree	0.59 **
Hhld Inc Below \$20,000	0.21
Hhld Inc \$50,000–\$74,999	0.23
Hhld Inc Above \$75,000	0.21
Currently Unemployed	0.22
No Health Insurance	−0.25
Catholic	0.30
Protestant	0.26
Other Religion	0.35
Constant	−4.18 **
Rate = $e^{constant}$	0.015 **

Note: The null case is a White, non-Hispanic married woman who married after the age of 26, who had no children before marrying her current husband, had no religious affiliation, was a high school student or graduate that was currently employed, covered by some type of health care plan, and had an annual household income between \$20,000 and \$49,999.

* P-value less than 0.10

** P-value less than 0.05

Table 3

Odds Ratios of Any Infertility Treatment after Infertility Evaluation – (Logit results)

Respondent Characteristic	Odds Ratio
Children before current relationship	0.71
Marriage age 26	1.02
Living with partner	0.31 **
Any race, Hispanic	0.47 **
Black, non-Hispanic	0.71
Other, non-Hispanic	0.85
No High School	1.96
Assoc or Bach Degree	1.02
Graduate Degree	0.71
Hhld Inc Below \$20,000	1.08
Hhld Inc \$50,000–\$74,999	2.20 **
Hhld Inc Above \$75,000	1.21
Currently Unemployed	1.34
No Health Insurance	0.70
Catholic	1.50
Protestant	1.56
Other Religion	1.12
Constant	0.78

Note: The null case is a White, non-Hispanic married woman who married after the age of 26, who had no children before marrying her current husband, had no religious affiliation, was a high school student or graduate that was currently employed, covered by some type of health care plan, and had an annual household income between \$20,000 and \$49,999.

* P-value less than 0.10

** P-value less than 0.05

Table 4
Likelihood of Infertility Treatments after Infertility Evaluation among Women Married After the Age of 26 by Race/Ethnicity

Race	Any Infertility Treatment	Type of Infertility Treatments				Surgery for Endometriosis or Uterine Fibroids
		Drugs to Improve Ovulation	Artificial Insemination	Surgery to Correct Blocked Tubes	In Vitro Fertilization	
White	44%	31%	27%	22% *	6% **	6% **
Hispanic	27% **	20% *	15% *	3% **	4%	2%
Black	36%	26%	17%	21%	1% **	3%
Other Race	40%	28%	41%	32%	10%	7%

Note: The null case is a White, non-Hispanic married woman who married after the age of 26, who had no children before marrying her current husband, had no religious affiliation, was a high school student or graduate that was currently employed, covered by some type of health care plan, and an annual household income between \$20,000 and \$49,999.

* P-value less than 0.10

** P-value less than 0.05