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Infertility Care Among OEF/OIF/OND Women Veterans in the Department of Veterans Affairs

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Abstract

Background—An increasing number of young women Veterans seek reproductive health care through the VA, yet little is known regarding the provision of infertility care for this population. The VA provides a range of infertility services for Veterans including artificial insemination, but does not provide in vitro fertilization. This study will be the first to characterize infertility care among OEF/OIF/OND women Veterans using VA care.

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Methods—We analyzed data from the OEF/OIF/OND roster file from the Defense Manpower Data Center (DMDC)—Contingency Tracking System Deployment file of military discharges from October 1, 2001–December 30, 2010, which includes 68,442 women Veterans between the ages of 18 and 45 who utilized VA health care after separating from military service. We examined the receipt of infertility diagnoses and care using ICD-9 and CPT codes.

Results—Less than 2% ($n = 1323$) of OEF/OIF/OND women Veterans received an infertility diagnosis during the study period. Compared with women VA users without infertility diagnosis, those with infertility diagnosis were younger, obese, black, or Hispanic, have a service-connected disability rating, a positive screen for military sexual trauma, and a mental health diagnosis. Overall, 22% of women with an infertility diagnosis received an infertility assessment or treatment. Thirty-nine percent of women Veterans receiving infertility assessment or treatment received this care from non-VA providers.

Conclusions—Overall, a small proportion of OEF/OIF/OND women Veterans received infertility diagnoses from the VA during the study period, and an even smaller proportion received infertility treatment. Nearly 40% of those who received infertility treatments received these treatments from non-VA providers, indicating that the VA may need to examine the training and resources needed to provide this care within the VA. Understanding women's use of VA infertility services is an important component of understanding VA's commitment to comprehensive medical care for women Veterans.

Keywords

women's health; Veterans; infertility

Increasing numbers of women Veterans are turning to the Veteran's Health Administration (VHA) for health care after their return from Operations Enduring Freedom (OEF), Iraqi Freedom (OIF), and New Dawn (OND).¹ Many OEF/OIF/OND women Veterans are of childbearing age and may be seeking care for issues related to pregnancy or infertility.² Lifestyle factors that may impact reproductive health for women Veterans include delayed childbearing, obesity, inappropriate diet, smoking, psychological stress, and environmental toxins.^{3,4} Although some recent studies have documented the rising number of women relying on VHA maternity benefits for prenatal care and delivery,⁵ few studies have examined the degree to which women Veterans sought VA care for infertility issues.

Several previous studies have examined infertility among military Veterans following deployment.⁶⁻⁹ Other recent studies of OEF/OIF/OND Veterans using VA health care have documented higher rates of infertility among those with mental health diagnoses.¹⁰ Exposure to sexual assault, including military sexual trauma (MST), has been historically linked with self-reported infertility among women Veterans, perhaps explaining some of the association between mental health conditions (ie, posttraumatic stress disorder and depression diagnoses are common among women Veteran with MST).^{11,12} Most recently, Katon et al¹³ utilized national survey data to examine self-reported infertility among male and female OEF/OIF/OND Veterans, including VA users and nonusers, and found 15.8% of women and 13.8% of men reported a lifetime history of infertility.

Understanding women's use of VA infertility services is an important component of understanding VA's commitment to comprehensive medical care for women Veterans. Moreover, attending to the unique health care needs of women Veterans with sexual trauma exposure and mental health conditions associated with other exposures during military service is essential to the provision of high quality and sex equitable care for women Veterans. To this end, in recent years, the VA has launched efforts to ensure women receive comprehensive medical care at all of its facilities. However, because women remain a numeric minority in the VA, there is wide facility-level variation in the onsite availability of some sex-specific services. Recent studies suggest that though most VA facilities provide basic women's health services,^{14,15} availability of advanced gynecologic care varies widely.^{13,15,16} Much of this variation is dependent on the size and complexity of the services offered at each specific VA medical facility, which is often driven by the volume of female Veterans using that facility for their health care. If sex-specific services are not available on-site, they are provided in the community through non-VA (fee) care or contract services. Furthermore, though the VA provides comprehensive infertility assessment and treatment for qualified Veterans, covered services do not include in vitro fertilization or services for non-Veteran spouses.¹⁷

The present work is a first step toward understanding utilization of VA infertility services for women OEF/OIF/OND Veterans. Specifically, our study objectives were to: (1) determine the prevalence of infertility diagnoses among OEF/OIF/OND women Veterans in VA care and (2) examine the factors that contribute to infertility treatment among those women Veterans with infertility diagnoses.

METHODS

Overview of Study Design and Data Sources

This retrospective cohort analysis included OEF/OIF/OND women Veterans of childbearing age who used VA care between October 1, 2001 and December 30, 2010. Data from the Department of Defense Manpower Data Center's (DMDC) Contingency Tracking System roster was used and includes information on sex, race, date of birth, deployment dates, armed forces branch (Army, Navy, Air Force, Marines, or Coast Guard) and component (National Guard, Reserve, or active duty). Data from the OEF/OIF/OND roster were linked to VA's National Patient Care Database (NPCD) and Decision Support Systems (DSS). The NPCD and DSS provide information on Veterans VA health care utilization along with cost, pharmacy, and laboratory data, through documented VA health encounters and coded diagnostic and procedure data associated with inpatient and outpatient visits. VA fee basis files were utilized to examine Veterans' receipt of infertility care from non-VA providers.

Subjects

Of the 749,036 Veterans in the OEF/OIF/OND roster as of December 30, 2010, 88,166 (12%) were women. Of these women, 68,442 (78%) were between the ages of 18 and 45 and had used VA medical or mental health services at least once during the study period. For the current analysis, we included only the 1323 women who had at least 1 infertility diagnosis through either a VA or fee basis provider.

Variables

Infertility diagnoses were quantified by grouping diagnoses according to International Classification of Diseases (ICD), Ninth Revision, Clinical Modification codes and specifications¹⁸ (Appendix A). Infertility assessments and treatments were quantified by using Current Procedural Terminology codes (Appendix A). Demographic characteristics included in the analysis that may impact infertility diagnoses or treatments included age, race, education, marital status, and service-connected disability status. To understand the contribution of lifestyle factors, such as obesity, on infertility diagnosis or treatment, we used weight and height data from the VA administrative records to calculate body mass index (BMI) [weight (kg) divided by height squared (m²)], to evaluate overall obesity, whereas BMI > 30 kg/m² is considered obese. To understand the impact of mental health diagnoses on utilization of care for sex-specific conditions, we assessed the presence of mental health conditions using procedures similar to identifying infertility conditions. We focused on mental health conditions (depression, PTSD, bipolar disorder, and schizophrenia) that are highly prevalent, and often disabling, conditions among Veterans in the VA (Appendix A). Given the prior literature on MST and infertility, we included a positive screen for MST in our analysis. We also examined alcohol use/dependence and drug use/dependence. This methodology has been used in identification of psychiatric disorders in administrative data.¹⁹

To understand how infertility care varies across facilities according to the complexity of clinical services offered at each facility, we utilized the 2008 VA Facility Complexity Model (Veterans Health Administration EDM, 2008) (Appendix B). The Facility Complexity Model variables and weighting are shown in Appendix B. Patient volume includes weighting by clinical encounter and treatment. Clinical services complexity is assessed by evaluating the complexity of intensive care units (ICUs) and complex clinical programs. Education and research capacity are measured by resident slots and Veterans Equitable Resource Allocation (VERA) research dollars. The model produces 3 complexity levels. Complexity level 1 (high) is characterized by high patient risk, high levels of teaching and/or research, and high patient volume. Complexity level 2 (medium) is characterized by medium patient risk, medium levels of teaching/research activity, medium patient volume, and level 3 and 4 ICU units. Complexity level 3 (low) has the least patient volume, little or no teaching/research, the lowest ratio of physician specialists, and level 1 and 2 ICU units.

Analysis

We used bivariate statistics to describe the characteristics of women Veterans with and without infertility care, and bivariate statistics, including the Student *t* test for continuous and the χ^2 test for ordinal or dichotomous variables, to compare the demographic and clinical characteristics of women Veterans with and without infertility assessment and treatment. A separate sensitivity analysis was conducted to examine the association between fertility treatment and BMI by race. Statistical analyses were performed using SAS version 9.3 (SAS Inc., Cary, NC). All statistical tests were 2-tailed with an α -level of 0.05.

RESULTS

A total of 68,442 OEF/OIF/OND women Veterans utilized VA care during the study period. Overall, 1323 of these women (1.9%) received an infertility diagnosis during the study period. An additional 119 women received infertility treatment, but no infertility diagnosis, during the study period and were not included in the final sample of 1323 Veterans with infertility diagnosis.

Women Veterans who received an infertility diagnosis were more likely to be younger, black or Hispanic, married, with a high school degree or less, and an enlisted officer in comparison with women Veterans who did not receive an infertility diagnosis (all P -values <0.001) (Table 1). Women Veterans who received an infertility diagnosis were also significantly more likely to have a service-connected disability than those who did not receive an infertility diagnosis.

Women Veterans who received an infertility diagnosis were also more likely to have a mental health diagnosis than women without an infertility diagnosis, including depression (48% vs. 30%, $P < 0.001$), PTSD (35% vs. 22%, $P < 0.001$), and bipolar disorder (9% vs. 5%, $P < 0.001$) (Table 1). In addition, compared with those without an infertility diagnosis, women Veterans with such a diagnosis were also more likely to have a diagnosis of drug abuse/dependence (3% vs. 2%, $P = 0.019$), and a history of MST (15% vs. 8%, $P = 0.015$). Sixteen percent of women Veterans with an infertility diagnosis or treatment ($n = 211$) received non-VA care for their infertility.

The most common infertility diagnosis was female infertility, NOS/NEC (78% of the sample) (Table 2). A total of 166 women had infertility codes related to anovulation (12% of sample), whereas 82 women in the sample had an infertility diagnosis of tubal origin (6% of sample).

Overall, 22% of women Veterans with an infertility diagnosis received infertility assessment or treatment (Fig. 1). The most common infertility treatment was ovulation drugs (13% of those with an infertility diagnosis), followed by reverse tubal ligation (1% of those with infertility diagnosis) and artificial insemination (1% of those with infertility diagnosis). The most common diagnostic procedure was hysterosalpingography (8.3% of those with infertility diagnosis).

Among women Veterans who received infertility diagnoses, those who also received infertility treatments were slightly younger than women who did not receive infertility treatments (Table 3). The BMI of women Veterans who received infertility assessment or treatment was higher than the BMI of those that did not receive infertility treatment (28.4 vs. 27.7 kg/m², $P = 0.036$), and obese women (BMI > 30 kg/m²) were more likely to receive infertility treatment than to not receive treatment (43.4% vs. 31.3%, $P = 0.027$). There were no differences in utilization of infertility assessments or treatments by race, service-connected disability status, MST history, or mental health diagnoses. Overall, 39% of women Veterans receiving infertility assessment or treatment received this care from non-VA providers.

There was substantial variation in BMI and infertility treatment by race (Table 4). Black women with an infertility diagnosis had a higher BMI than all other women Veterans with an infertility diagnosis, and obese black women (BMI > 30 kg/m²) were also more likely to receive infertility treatment than to not receive infertility treatment, though this treatment difference did not exist within other racial groups.

DISCUSSION

To the best of our knowledge, this is the first study to examine infertility care among women Veterans using VA health care. A relatively small proportion (< 2%) of OEF/OIF/OND women Veterans received infertility diagnoses during the study period, and among those women, 22% received infertility assessments and treatments. Rates of assessment and treatment for infertility were higher among women Veterans using non-VA care. Understanding women's use of VA infertility services is an important component of understanding VA's commitment to comprehensive medical care for women Veterans.

In our analyses, we found that non-white women Veterans were overrepresented among those with an infertility diagnosis, and that a substantial proportion of those black women receiving infertility assessment or treatment had a BMI > 30 kg/m². A population-based study also found that blacks had a 2-fold increased odds (95% confidence interval, 1.3–3.1) of infertility compared with whites after adjustment for socioeconomic position (education and income), correlates of pregnancy intent (marital status and hormonal contraceptive use), and risk factors for infertility (age, smoking, fibroid presence, and ovarian volume).²⁰ Other studies have found that high BMI was related to delayed conception in black women.²¹

The proportion of women Veterans diagnosed with infertility or receiving infertility treatments was substantially lower than rates of fertility reported by the CDC.²² In a national survey conducted from 2006–2010, 6% of married women aged 15–44 reported infertility. In 1 recent study characterizing self-reported lifetime infertility among OEF/OIF/OND women Veterans, 15.8% reported infertility.¹³ However, given that previous studies focused on self-reported infertility and the present work focused only on clinical diagnoses and receipt of VA-paid infertility care, it is impossible to make direct comparisons.

Infertility treatments fall into 3 categories: (1) medication, (2) surgical, and (3) assisted reproductive technologies.²³ In our study, the most common infertility treatment was infertility medications, with nearly 13% of women Veterans with diagnosed infertility taking oral or injectable infertility medications. In contrast, only 1% of women had surgical infertility treatments, and <1% received artificial insemination through intrauterine insemination. Because the VA does not pay for in vitro fertilization, no women in our study received IVF treatments.

Overall, few women Veterans with infertility diagnoses received VA infertility treatment during the study period, with only 13 Veterans receiving artificial insemination between 2001 and 2010. This low rate of artificial insemination may be attributable to VA policy that extends infertility benefits only to the Veteran and not to her partner. For women to receive artificial insemination services, their partner's sperm must be analyzed, processed, and

prepared for insemination. However, if the partner is not a Veteran, these services are not covered by VA benefits.

One important finding in this study is strong association between infertility and mental health diagnoses. This echoes findings from previous studies that have shown higher rates of infertility among those women with depression or PTSD.¹² Although many women may experience depression after repeated, unsuccessful attempts to become pregnant, the association between infertility and depression may be related to women who seek VA care. Previous studies have demonstrated that women with service-connected disabilities, including depression and PTSD, are more likely to receive VA care,^{1,2,7,12,14} and because these women are already in VA care, they may be more likely to speak with their VA health care providers about problems related to conception. Women with mental health conditions and service-connected disabilities may also be more dependent on VA care due to lack of resources and thus less likely to seek reproductive care outside the VA health care system.

Findings from this study have several important policy implications to ensure delivery of comprehensive care in the VA. Evaluating the care that these women need, and tailoring VA women's health programs to meet the needs of these women is crucial. Some women Veterans may not want treatment for infertility, or the diagnosis may have been incorrectly entered, or may represent a carry-forward diagnosis in which the provider is recording that she had infertility treatment in the past or they may have become pregnant without any medical intervention. Future studies should examine the extent to which women Veterans use private health insurance to seek infertility care, especially for services not covered by the VA such as in vitro fertilization.

There are several important limitations to our study. First, study conditions were ascertained by ICD-9 codes, and, as others have noted, it is possible that conditions were underascertained.²⁴ Second, women may have received infertility care from non-VA providers through other insurance arrangements, including private insurance or TRICARE. The VA administrative databases do not capture this care, and therefore we are unable to ascertain whether women received care from other providers if that provider did not submit a VA claim. Third, we used the VA complexity measure as a predictor of infertility care. However, the complexity measure is used primarily to understand care delivered at VA medical centers, and not care delivered from community-based outpatient clinics. Consequently, the availability of infertility care may have been overestimated among women who primarily receive care at community-based outpatient clinics. Finally, we studied OEF/OIF/OND women Veterans in VA care, and findings may not be generalizable to OEF/OIF/OND women Veterans who do not use the VA, women Veterans of other eras, or non-Veteran women.

Nevertheless, this study makes several important contributions to the literature on women Veterans and infertility. It is the first study to examine infertility care among OEF/OIF/OND women Veterans. Overall, we found a small proportion of women Veterans with infertility diagnoses, and an even smaller proportion of women utilizing VA care for infertility treatment. Women with non-VA care diagnoses of infertility were more likely to receive an infertility assessment or treatment. Future studies should examine women's experience with

VA infertility care and determine how many ultimately utilize VA maternity benefits. The VA should also examine how women make decisions regarding infertility care if the services they require are not covered by VA insurance mechanisms.

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APPENDIX

TABLE A1

List of All ICD-9 and CPT Codes Used for Analysis

ICD-9 Codes	CPT Codes
Infertility diagnoses	Infertility assessments or treatments
Infertility—anoovulation: 6280	Evaluation cervical mucus: 89330
Infertility—pituitary origin: 6281	Unlisted reprod med lab proc: 89398
Infertility—tubal origin: 6282	Artificial insemination: 58321
Infertility—uterine origin: 6283	Ovulation management per cycle: S4042
Infertility—cervical origin: 6284	Reverse tubal ligation: 58750
Female infertility NEC: 6288	Chromotubation of oviduct, including materials: 58350
Female infertility NOS: 6289	Create new tubal opening: 58770
	Tubal cannulation: 58345
Mental health disorders	
Depression: 293.83 296.20, .21, .22, .23, .24, .25, .30, .31, .32, .33, .34, .35, 300.4, 311	Hysterosalpingography, radiological supervision, and interpretation: 74740, together with catheterization and introduction of saline or contrast material for saline infusion sonohysterography (SIS) or hysterosalpingography: 58340
PTSD: 309.81	
Anxiety: 300.00	
Schizophrenia: 295.0, .00, .01, .02, .03, .04, .05, .1, .10, .11, .12, .13, .14, .15, .2, .20, .21, .22, .23, .24, .25, .3, .30, .31, .32, .33, .34, .35, .4, .40, .41, .42, .43, .44, .45, .5, .50, .51, .52, .53, .54, .55, .6, .60, .61, .62, .63, .64, .65, .8, .80, .81, .82, .83, .84, .85, .9, .90, .91, .92, .93, .94, .95	Saline infusion sonohysterography (SIS), including color flow Doppler, when performed, together with any other previously listed CPT in this table; oral infertility medications (eg, Clomid); injectable infertility medications: 76831
V11.0	
Substance abuse disorders	
Alcohol abuse and dependence: 303.00, .01, .02, .03, .90, .91, .92, .93	
305.00, .01, .02, .03	
Drug abuse or dependence: 304.00, .01, .02, .10, .11, .12, .13, .20, .21, .22, .23, .30, .31, .32, .33, .40, .41, .42, .43, .50, .51, .52, .53, .60, .61, .62, .63, .70, .71, .72, .73, .80, .81, .82, .83, .90, .91, .92, .93	
305.20, .21, .22, .23, .30, .31, .32, .33, .40, .41, .42, .43, .50, .51, .52, .53, .60,	

ICD-9 Codes	CPT Codes
.61, .62, .63, .70, .71, .72, .73, .80, .81, .83, .90, .91, .92, .93	

TABLE A2

FY2008 Facility Complexity Model Variables

Complexity Model Category	Variable Name	Variable Description	Weight	Total Category Weight
Patient population	Veterans equitable resource allocation (VERA) prorated person (PRP)	This variable represents the total number of PRPs seen at each VHA facility, based on the VERA model. In this model, each patient in the VHA system is classified into a patient class that represents the level of treatment provided in the preceding year. The class is based on clinical encounters and treatments. Each individual patient equates to 1 PRP, which is proportionately distributed among VHA facilities where treatment occurred, based on costs incurred	0.25	0.40
	Patient risk	This is a Medicare Relative Risk score calculated from all VHA patient diagnoses from all sources, benchmarked to an average expected Medicare costliness of 1.00 for those diagnoses	0.15	
Clinical services complexity	Level of intensive care unit	This variable reflects the categorization of intensive care units. Intensive care units within VHA facilities are categorized into levels based on specified criteria that tend to contribute to the complexity of intensive care units, such as type of services provided and availability of subspecialty services	0.20	0.45
	Complex clinical programs	This variable represents the number of complex clinical programs at the facility. There are a total of 11 complex clinical programs	0.25	
Education and research	Total resident slots	This variable represents the number of resident programs within the facility. Total resident slots is stated as the number of slots allotted to each residency program within the facility	0.05	0.15
	Herfindahl index (HHI) resident slots	The HHI represents the proportion of residency slots in each residency program, squared, and then summed across all residency programs within the facility. Therefore, a facility with numerous residency programs will have a very low value	0.05	
	VERA research	This variable represents the total amount of research dollars managed by a VHA facility, divided by the total number of prorated persons in 2006, as calculated according to the VERA model	0.05	

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FIGURE 1.

Infertility treatment among OEF/OIF/OND women Veterans, 2001–2010 (n = 290). Any infertility treatment or procedure (n = 290, 21.9%); ovulation drugs (n = 170, 12.8%); diagnostic procedures (n = 110, 8.3%); surgery (n = 18, 1.4%); artificial insemination (n = 13, 1%).

TABLE 1

Demographic Characteristics of OEF/OIF/OND Women Veterans, Ages 18–45, With and Without an Infertility Diagnoses (n = 68,442)

Characteristics	N (%)		P
	Women Veterans With Infertility Diagnosis (n = 1323)	Women Veterans without Infertility Diagnosis (n = 67,119)	
Age at infertility diagnosis [mean (SD)]	29.9 (5.3)	—	< 0.001
Age on roster [mean (SD)]	—	27.6 (7.0)	
Race			< 0.001
White	501 (37.9)	32,379 (48.2)	
Black	450 (34.0)	16,784 (25.0)	
Hispanic	178 (13.5)	7155 (10.7)	
Other	99 (7.5)	5318 (7.9)	
Marital status			< 0.001
Married	569 (43.0)	22,068 (32.9)	
Divorced/separated/ annulled/widowed	86 (6.5)	5347 (8.0)	
Never married	664 (50.2)	39,642 (59.1)	
Education			< 0.001
Less than high school	8 (0.6)	820 (1.2)	
High school diploma or equivalent	1037 (78.4)	49,149 (73.2)	
> High school	257 (19.4)	16,243 (24.2)	
Rank			< 0.001
Enlisted	1276 (96.5)	61,504 (91.6)	
Officer	47 (3.6)	5615 (8.4)	
Component			< 0.001
Guard	187 (14.1)	13,984 (20.8)	
Active	948 (71.7)	40,570 (60.4)	
Reserve	188 (14.2)	12,565 (18.7)	
Branch of service			0.001
Army	861 (85.1)	41,564 (61.9)	
Coast Guard	1 (0.1)	36 (0.1)	
Air Force	188 (14.2)	11,740 (17.5)	
Marines	37 (2.8)	2815 (4.2)	
Navy	236 (17.8)	10,964 (16.3)	
Service-connected disability			< 0.001
0%	486 (36.7)	40,334 (60.1)	
> 0%	837 (63.3)	26,785 (39.9)	
Fee basis care for infertility	211 (16.0)	—	
Complexity score of facility where diagnosis/procedure was received			
1a, 1b, 1c	1010 (76.3)	N/A	N/A

Characteristics	N (%)		P
	Women Veterans With Infertility Diagnosis (n = 1323)	Women Veterans without Infertility Diagnosis (n = 67,119)	
2	190 (14.4)	N/A	N/A
3	123 (9.3)	N/A	N/A
At least 1 mental health diagnosis	752 (56.8)	25,380 (37.8)	< 0.001
PTSD	461 (34.9)	14,584 (21.7)	< 0.001
Depression	629 (47.5)	20,335 (30.3)	< 0.001
Bipolar disorder	115 (8.7)	3470 (5.2)	< 0.001
Schizophrenia	7 (0.5)	200 (0.3)	0.130
Alcohol use/dependence	83 (6.3)	3609 (5.4)	0.153
Drug abuse/dependence	43 (3.3)	1525 (2.3)	0.019
Positive military sexual trauma screen	194 (14.7)	5422 (8.1)	0.015

TABLE 2

Infertility Diagnoses Among OEF/OIF/OND Women Veterans (n = 1323)

ICD-9 Code	N (%)
6280: Infertility—anovulation	166 (12.5)
6281: Infertility—pituitary origin	2 (0.2)
6282: Infertility—tubal origin	82 (6.2)
6283: Infertility—uterine origin	2 (0.2)
6284: Infertility—cervical origin	7 (0.5)
6288 or 6289: Female infertility NEC/NOS	1036 (78.3)
62891: Habitual aborter without current pregnancy (begin 2006)	18 (1.4)
8674: Other feminine infertility—closed uterus injury	3 (0.2)
8784: Other feminine infertility—open wound of vulva	3 (0.2)
8786: Other feminine infertility—open wound of vagina	3 (0.2)
9224: Other infertility—contusion of genital organs	1 (0.1)

TABLE 3

Demographic and Clinical Characteristics of Women VA Users, Ages 18–45 Years, With Infertility by Whether or Not They Received an Infertility Assessment or Treatment

Characteristics	N (%)		P
	Received Infertility Assessment or Treatment (n = 290)	Did Not Receive Infertility Assessment or Treatment (n = 1033)	
Age at infertility diagnosis [mean (SD)]	29.4(4.8)	30.1 (5.4)	0.052
BMI [mean (SD)]	28.4 (5.2)	27.7 (5.3)	0.036
BMI 30	109 (37.6)	294 (28.5)	0.004
Race			0.213
White	104 (35.9)	397 (38.4)	
Black	99 (34.1)	351 (34.0)	
Hispanic	50 (17.2)	128 (12.4)	
Other	21 (7.2)	78 (7.6)	
Marital status			0.137
Married	116 (40.0)	453 (43.9)	
Divorced/separated/annulled/ widowed	14 (4.8)	72 (7.0)	
Never married	159 (54.8)	505 (48.9)	
Education			0.729
Less than high school	1 (0.3)	7 (0.7)	
High school diploma or equivalent	224 (77.2)	813 (78.7)	
> High school	59 (20.3)	198 (19.2)	
Rank			0.236
Enlisted	283 (97.6)	993 (96.1)	
Officer	7 (2.4)	40 (3.9)	
Component			0.177
Guard	50 (17.2)	137 (13.3)	
Active	204 (70.3)	744 (72.0)	
Reserve	36 (12.4)	152 (14.7)	
Branch of service			0.270
Army	179 (61.7)	682 (66.0)	
Coast Guard	0 (0.0)	1 (0.1)	
Air Force	38 (13.1)	150 (14.5)	
Marines	11 (3.8)	26 (2.5)	
Navy	62 (21.4)	174 (16.8)	
Service-connected disability			0.833
0%	105 (36.2)	381 (36.9)	
> 0%	185 (63.8)	652 (63.1)	
Fee basis care for infertility	113 (39.0)	98 (9.5)	< 0.001
Complexity score of facility where diagnosis/procedure was received			0.102
1a, 1b, 1c	235 (81.0)	775 (75.0)	

Characteristics	N (%)		P
	Received Infertility Assessment or Treatment (n = 290)	Did Not Receive Infertility Assessment or Treatment (n = 1033)	
2	24 (11.7)	156 (15.1)	
3	21 (7.2)	102 (9.9)	
At least 1 mental health diagnosis	171 (59.0)	581 (56.2)	0.408
PTSD	108 (37.2)	353 (34.2)	0.332
Depression	142 (49.0)	487 (47.1)	0.583
Bipolar disorder	22 (7.6)	93 (9.0)	0.449
Schizophrenia	2 (0.7)	5 (0.5)	0.670
Alcohol use/dependence	17 (5.9)	66 (6.4)	0.744
Drug abuse/dependence	11 (3.8)	32 (3.1)	0.555
Positive military sexual trauma screen	41 (14.1)	153 (14.8)	0.283
Diagnoses (ICD-9 code)			0.667
6280: Infertility—ovulation	43 (14.8)	123 (11.9)	
6281: Infertility—pituitary origin	0 (0.0)	2 (0.2)	
6282: Infertility—tubal origin	20 (6.9)	62 (6.0)	
6283: Infertility—uterine origin	0 (0.0)	2 (0.2)	
6284: Infertility—cervical origin	2 (0.7)	5 (0.5)	
6288 or 6289: Female infertility NEC/NOS	222 (76.6)	814 (78.8)	

TABLE 4

BMI Stratified by Race for Women VA Users, Ages 18–45 Years, With Infertility by Whether or Not They Received an Infertility Assessment or Treatment

Characteristics	Received Infertility Treatment (n = 290)	Did Not Receive Infertility Treatment (n = 1033)	P
BMI by race [mean (SD)]			
Black	29.1 (5.4)	27.9 (5.1)	0.040
White	27.9 (4.9)	27.3 (5.6)	0.312
Hispanic	27.3 (4.6)	27.4 (4.6)	0.866
Other	28.0 (5.5)	27.9 (5.2)	0.953
Obesity by race (BMI ≥ 30) [n (%)]			
Black	43 (43.4)	110 (31.3)	0.027
White	37 (35.6)	108 (27.2)	0.113
Hispanic	14 (28.0)	27 (21.1)	0.339
Other	6 (28.6)	21 (26.9)	0.933

BMI indicates body mass index.