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### Title

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### Permalink

<https://escholarship.org/uc/item/1k82x4qr>

### Journal

Journal of Women's Health, 23(9)

### ISSN

1540-9996

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### Publication Date

2014-09-01

### DOI

10.1089/jwh.2013.4466

Peer reviewed

# Contraceptive Provision in the VA Healthcare System to Women Who Report Military Sexual Trauma

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## Abstract

**Background:** Women Veterans who suffered military sexual trauma (MST) may be at high risk for unintended pregnancy and benefit from contraceptive services. The objective of this study is to compare documented provision of contraceptives to women Veterans using the Department of Veterans Affairs (VA) health system who report or deny MST.

**Methods:** This retrospective cohort study included women Veterans aged 18–45 years who served in Operation Enduring or Iraqi Freedom and had at least one visit to a VA medical center between 2002 and 2010. Data were obtained from VA administrative and clinical databases. Chi-squared tests and logistic regression were conducted to evaluate the association between MST, ascertained by routine clinical screening, and first documented receipt of hormonal or long-acting contraception.

**Results:** Of 68,466 women Veterans, 13% reported, 59% denied and 28% had missing data for the MST screen. Among the entire study cohort, 30% of women had documented receipt of a contraceptive method. Women reporting MST were significantly more likely than those denying MST to receive a method of contraception (adjusted odds ratio [aOR] 1.12, 95% confidence interval [CI] 1.07–1.18) including an intrauterine device (odds ratio [OR] 1.29, 95% CI 1.17–1.41) or contraceptive injection (OR 1.17, 95% CI 1.05–1.29). Women who were younger, unmarried, seen at a women's health clinic, or who had more than one visit were more likely to receive contraception.

**Conclusions:** A minority of women Veterans of reproductive age receive contraceptive services from the VA. Women Veterans who report MST, and particularly those who seek care at VA women's health clinics, are more likely to receive contraception.

## Introduction

WOMEN CURRENTLY COMPRISE 8% of the U.S. Veteran population; this is expected to steadily increase to 15% by 2035.<sup>1</sup> Women Veterans are among the fastest growing groups of new Department of Veterans Affairs (VA) health-care users,<sup>2</sup> yet over 50% also seek non-VA sources for health care.<sup>3</sup> As over 40% of all women Veterans and nearly 90% of women who served in Operations Enduring Freedom or Iraqi Freedom (OEF/OIF) are between 18 and 44 years old,

a significant proportion of women Veterans are of reproductive age.<sup>4</sup>

Little is known about the contraceptive services provided to the growing population of women Veterans of reproductive age. No published research is available about contraceptive use among women Veterans who seek care outside the VA and limited available data suggests that few women receive contraception from the VA.<sup>5,6</sup> Only 22% of all women Veterans and 10% of OEF/OIF women Veterans who have returned from deployment in the last year have

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documented receipt of contraceptive services from a VA clinician or pharmacy.<sup>5,6</sup>

Women Veterans who experienced military sexual trauma (MST), defined as sexual assault or harassment while in the military,<sup>7</sup> may face particular challenges in seeking reproductive healthcare and thus may be less likely to receive needed contraceptives. Approximately 20% of all women Veterans and 15% of OEF/OIF women Veterans seeking care within the VA system screened positive for MST.<sup>8,9</sup> Women Veterans who experience MST are more likely to have suffered childhood sexual assault, sexual abuse as adults outside of the military and intimate partner violence compared to those who have not.<sup>10,11</sup> Additionally, women who have experienced lifetime sexual violence are more likely to be in abusive relationships, are unable to avoid unwanted sex, less able to negotiate contraceptive use, and often have high-risk sexual partners.<sup>12,13,14</sup> These women may also perceive less ability to obtain needed contraceptive services.<sup>14-16</sup> This may explain why women who have experienced lifetime sexual violence are at 40%-70% increased risk for unintended pregnancy compared with their non-abused counterparts.<sup>14,15,17,18</sup>

The VA has made concerted efforts to provide support to victims of MST. In 2000, the VA mandated universal screening for MST.<sup>19</sup> Additionally, Veterans can receive free healthcare for mental and physical conditions related to MST at VA health care facilities.<sup>7</sup> Despite these efforts, women Veterans with a history of MST are more likely to report delaying or forgoing needed healthcare compared to women without MST.<sup>20</sup> There is no current VA protocol to reflexively offer contraceptive services to women following a positive screen for MST and this may be one component of healthcare these women forgo, but this has not yet been examined.

Given that OEF/OIF women Veterans are predominantly of reproductive age, have a high prevalence of MST, and have low rates of contraceptive receipt within the year following deployment per one study<sup>6</sup>, this group may be at uniquely high risk for not receiving this important reproductive health service. The purpose of this study was, therefore, to evaluate documented receipt of contraceptive services among OEF/OIF women Veterans who report MST and obtained care within the VA over an 8-year period. Based on available evidence, we hypothesized that women Veterans who report MST would be less likely to receive contraceptive services from the VA compared with those who denied MST.

## Materials and Methods

### *Study population*

All women Veterans aged 18-45 years who served in Operation Enduring Freedom or Operation Iraqi Freedom and who enrolled in VA healthcare were identified using the VA's OEF/OIF roster provided by Defense Manpower Data Center-Contingency Tracking System Deployment File. The VA OEF/OIF roster includes information on date of birth, race, ethnicity, marital status, education, armed services branch (Army, Navy, Air Force, Marines, or Coast Guard) and component (active duty, Reserve, or National Guard), and military rank (enlisted, officer, or warrant officer). Eligible study participants had at least one visit to the VA between 2002 and 2010. This study was approved by Institutional Review Boards at West Haven and Providence VA Medical Centers and Women and Infants Hospital of Rhode Island.

### *Data sources*

Data on eligible Veterans were linked with VA administrative and clinical data contained within the VA National Patient Care Database, Decision Support Systems (DSS), and the Corporate Data Warehouse. These databases provide healthcare utilization data, pharmacy data, clinical information including MST, health encounters and coded procedure data (Current Procedural Terminology [CPT]) associated with all VA outpatient encounters.

### *Measures*

Per VA mandate, all Veterans who obtain outpatient VA services must be screened for MST at least once as part of routine clinical care. A clinical reminder, recorded as a health factor, in the patient's electronic medical record prompts the healthcare provider to screen for MST. The screening instrument consists of two items, "While you were in the military: a) Did you receive uninvited and unwanted sexual attention, such as touching, cornering, pressure for sexual favors or verbal remarks?; b) Did someone ever use force or threat of force to have sexual contact with you against your will?". Response options to MST screening at all sites include yes, no or declined to answer. Patients are coded as having a positive MST screen if they respond affirmatively to either screening item.

The outcome of interest was receipt of a new hormonal or long-acting contraceptive method or documented tubal sterilization within the VA system. For example, if a woman received a prescription for oral contraceptive pills but then later had an intrauterine device (IUD) inserted, both would be counted. If the same woman later received another prescription for oral contraceptive pills, only the first prescription would be counted. To provide the most conservative estimate of the difference in contraceptive use among women who routinely refilled contraceptive prescriptions and those who were one-time users, only first-time contraceptive documentation was evaluated. The DSS pharmacy files were used to identify first-time prescriptions for combined oral contraceptive pills, contraceptive patch, vaginal contraceptive ring, progestin-only pills, or the contraceptive injection. CPT codes were used to identify first time IUD insertion or contraceptive implant placement, first time contraceptive injection administration, and documented tubal sterilization. Only the contraceptive services provided by a VA clinician or pharmacy were included in this analysis. If women received contraceptive services outside the VA, but had these services paid for by the Department of Veterans Affairs (i.e., fee-basis care), that was not included in this analysis.

### *Statistical analyses*

Descriptive statistics including chi-squared tests were used to assess differences in characteristics between women Veterans who reported, denied, or had missing data for the MST screen. Women who had documented receipt of any contraceptive method were categorized as such and compared to those who did not. Chi-squared tests were used to evaluate differences in characteristics among women Veterans who did and did not receive any contraceptive method. Frequencies of receipt of each contraceptive type were calculated and comparisons between women who reported or denied MST are reported as unadjusted odds ratios with 95% confidence intervals. A logistic regression model was created

to evaluate the effect of MST on receipt of any contraceptive method while adjusting for potential confounding variables including age, race, marital status, military branch, military component, education, women's health clinic visit, or number of visits. Variables that resulted in a 10% change in the unadjusted odds ratio were included in the final logistic regression model. None of the variables significantly changed the odds ratio, however based on prior research which has associated age, race and marital status with MST and contraceptive use,<sup>9,21,22</sup> these three variables were included in our final model. Results of the final logistic regression models comparing women who reported or denied MST and those

who did or did not have an MST response are reported as adjusted odds ratios with 95% confidence intervals.

Subgroup analyses of women Veterans who had a documented visit in the emergency department, a primary care clinic (including the general internal medicine, primary care, or women's health clinic), or for gynecologic care (including the gynecology or women's surgery clinic or breast or cervical cancer screening) within the VA during 2002 and 2010 were performed to evaluate responses to MST screening and receipt of any contraceptive method using chi-squared tests. All statistical analyses were performed using STATA version 11 (STATA Corp.).

TABLE 1. CHARACTERISTICS BY RESPONSE TO SCREENING FOR MILITARY SEXUAL TRAUMA

	Total	Provided a response, n (%)		Missing response, n (%)	
		MST+	MST-		
<b>Total population</b>	68,466	9,043 (13)	40,250 (59)	19,173 (28)	
<b>Age (years)</b>					<i>p</i> < 0.001
18–24	31,241 (46)	4,445 (49)	19,483 (48)	7,313 (38)	
25–29	16,415 (24)	2,023 (22)	9,491 (24)	4,901 (26)	
30–34	7,165 (10)	941 (10)	4,062 (10)	2,162 (11)	
35–39	6,956 (10)	883 (10)	3,710 (9)	2,363 (12)	
40–45	6,685 (10)	750 (8)	3,501 (9)	2,434 (13)	
<b>Race/ethnicity</b>					<i>p</i> < 0.001
White	32,887 (48)	4,734 (52)	18,724 (47)	9,429 (49)	
Black	17,239 (25)	1,929 (21)	11,024 (27)	4,286 (22)	
Hispanic	7,333 (11)	970 (11)	4,450 (11)	1,913 (10)	
Other	5,423 (8)	696 (8)	2,914 (7)	1,813 (10)	
Unknown	5,584 (8)	714 (8)	3,138 (8)	1,732 (9)	
<b>Marital status</b>					<i>p</i> < 0.001
Married	22,647 (33)	2,968 (33)	12,634 (31)	7,045 (37)	
Divorced/separated/widowed	5,436 (8)	813 (9)	2,976 (7)	1,647 (9)	
Unmarried	40,317 (59)	5,254 (58)	24,595 (61)	10,468 (55)	
Unknown	66 (0.1)	8 (0.1)	45 (0.1)	13 (0.1)	
<b>Service branch</b>					<i>p</i> < 0.001
Air Force	11,936 (17)	1,277 (14)	5,956 (15)	4,703 (24)	
Army	42,438 (62)	5,647 (62)	25,956 (65)	10,835 (57)	
Coast Guard	37 (0.1)	10 (0.1)	14 (0)	13 (0.1)	
Marine Corps	2,853 (4)	469 (5)	1,706 (4)	678 (4)	
Navy	11,202 (16)	1,640 (18)	6,618 (16)	2,944 (15)	
<b>Armed services component</b>					<i>p</i> < 0.001
Active duty	41,538 (61)	6,107 (67)	24,030 (60)	11,401 (60)	
Reserve	12,753 (19)	1,454 (16)	7,470 (19)	3,829 (20)	
National Guard	14,175 (21)	1,482 (16)	8,750 (22)	3,943 (21)	
<b>Military rank</b>					<i>p</i> < 0.001
Enlisted	62,796 (92)	8,478 (94)	37,626 (94)	16,692 (87)	
Officer	5,361 (8)	525 (6)	2,464 (6)	2,372 (12)	
Warrant	309 (0.5)	40 (0.4)	160 (0.4)	109 (0.6)	
<b>Education</b>					<i>p</i> < 0.001
< High school	828 (1)	94 (1)	504 (1)	230 (1)	
High school diploma or GED	51,123 (75)	7,096 (78)	30,982 (77)	13,045 (68)	
> High school	16,512 (24)	1,853 (21)	8,762 (22)	5,897 (31)	
<b>Number of Visits</b>					<i>p</i> < 0.001
1	23,561 (34)	1,589 (18)	9,112 (23)	12,860 (67)	
2–3	26,270 (38)	3,779 (41)	17,380 (43)	5,111 (27)	
4–6	15,985 (23)	3,076 (34)	11,894 (30)	1,015 (5)	
7+	2,650 (4)	599 (7)	1,864 (5)	187 (1)	
<b>WHC Visit</b>	28,765 (42)	5,170 (57)	21,001 (52)	2,594 (14)	<i>p</i> < 0.001

MST, military sexual trauma; WHC, women's health clinic.

Results

The study population included 68,466 OEF/OIF women Veterans with a mean age of 27.6±7.0 years who sought healthcare at the VA at least once between 2002 and 2010. Of the 72% who had a documented response to the MST screen, 17% (n=9,043) reported, 82% denied, and 1% declined to answer the MST screen. Twenty-eight percent of women Veterans had missing data for the MST screen. Compared to those who provided a response to the MST screen, those with missing data were older, more likely to be married, serve in the Air Force, have officer military rank, have greater than high school education, have only one visit to the VA, and were less likely to be seen in a women’s health clinic. Compared with those who denied MST, women Veterans who reported MST were more likely to be white, married, serve in the active duty component, and have visited a women’s health clinic (Table 1).

Among the entire study cohort, 30% had documented receipt of a contraceptive method from a VA provider within the eight year study period including 7% who received more than one contraceptive type. Women who were 18–24 years old, unmarried, active duty, enlisted military rank, graduated from high school or earned a GED, and had 4–6 visits were more likely to have received a contraceptive method from a VA provider. Women Veterans who had been seen at a women’s health clinic were far more likely than those seen by other clinicians to have documented receipt of contraception (71% vs. 29%, *p* < 0.001) (Table 2).

Overall, 41% of women who reported MST received a contraceptive method from a VA pharmacy or clinician. Oral contraceptive pills were most commonly provided (28%), followed by progestin-only pills (8%), the IUD (7%), vaginal contraceptive ring (6%), and the contraceptive injection (5%). Few women were provided with the contraceptive patch, implant, or tubal sterilization (Table 3)

In unadjusted analyses, compared to women who denied MST, those who reported MST were significantly more likely to receive a prescription for progestin-only pills (odds ratio [OR] 1.25, 95% confidence interval [CI] 1.15–1.37), the vaginal contraceptive ring (OR 1.24, 95% CI 1.12–1.37), the contraceptive injection (OR 1.17, 95% CI 1.05–1.29), or an IUD (OR 1.29, 95% CI 1.17–1.41). There was no significant difference in oral contraceptive pill (OR 1.04, 95% CI 0.98–1.09), or contraceptive patch (OR 0.91, 95% CI 0.75–1.11) prescriptions between women who reported or denied MST (Table 3). Among women who reported MST, those who were seen at a women’s health clinic were significantly more likely to receive a contraceptive method compared with those who were not seen at this clinic (53% vs. 24%, *p* < 0.001).

In adjusted models, women who reported MST were more likely than those who denied MST to receive a contraceptive method (adjusted odds ratio [aOR] 1.12, 95% CI 1.07–1.18). Women who provided a response to the MST screen were more likely than those who had missing data to receive any of the contraceptive methods (aOR 7.00, 95% CI 6.61–7.40) (Table 4).

Results of the subgroup analyses for women Veterans who had a documented emergency, primary care, or gynecology related visit are similar to the entire study population. Among the entire study population, 91% (n = 62,253) had one of these visit types. Within this subgroup, 14% reported MST, 63% denied MST, and 23% had missing data for the MST screen. Of all women in this subgroup, 33% had documented receipt

TABLE 2. FACTORS ASSOCIATED WITH DOCUMENTED RECEIPT OF ANY CONTRACEPTIVE METHOD AMONG WOMEN VETERANS

	<i>Documented receipt of any contraceptive method, n (%)</i>		
	<i>Yes</i>	<i>No</i>	
<b>Total population</b>	20,549 (30)	47,917 (70)	
<b>Age (years)</b>			<i>p</i> < 0.001
18–24	12,091 (59)	19,150 (40)	
25–29	5,130 (25)	11,284 (23)	
30–34	1,635 (8)	5,530 (12)	
35–39	1,024 (5)	5,931 (12)	
40–45	667 (3)	6,018 (13)	
<b>Race/ethnicity</b>			<i>p</i> < 0.001
White	10,217 (50)	22,670 (47)	
Black	5,253 (26)	11,986 (25)	
Hispanic	2,351 (11)	4,982 (10)	
Other	1,548 (8)	3,875 (8)	
Unknown	1,180 (6)	4,404 (9)	
<b>Marital status</b>			<i>p</i> < 0.001
Married	5,405 (26)	17,242 (36)	
Divorced/separated/ widowed	1,215 (6)	4,221 (9)	
Unmarried	13,907 (68)	26,410 (55)	
Unknown	22 (0.1)	44 (0.1)	
<b>Service branch</b>			<i>p</i> < 0.001
Air Force	3,093 (15)	8,843 (19)	
Army	12,822 (62)	29,616 (62)	
Coast Guard	9 (0)	28 (0.1)	
Marine Corps	1,017 (5)	1,836 (4)	
Navy	3,608 (18)	7,594 (16)	
<b>Armed services component</b>			<i>p</i> < 0.001
Active duty	13,141 (64)	28,397 (59)	
Reserves	3,561 (17)	9,192 (19)	
National Guard	3,847 (19)	10,328 (22)	
<b>Military rank</b>			<i>p</i> < 0.001
Enlisted	19,530 (95)	43,266 (90)	
Officer	984 (5)	4,377 (9)	
Warrant	35 (0.2)	274 (0.6)	
<b>Education</b>			<i>p</i> < 0.001
< High school	288 (1)	540 (1)	
High school diploma or GED	16,760 (82)	34,363 (72)	
> High school	3,501 (17)	13,011 (27)	
<b>Number of Visits</b>			<i>p</i> < 0.001
1	2,257 (11)	21,304 (44)	
2–3	8,293 (40)	17,977 (38)	
4–6	8,379 (41)	7,606 (16)	
7+	1,620 (8)	1,030 (2)	
<b>WHC Visit</b>	14,663 (71)	14,102 (29)	<i>p</i> < 0.001

of any contraceptive method. Additionally, within this subgroup, 42% of those who reported MST, 39% of those who denied MST and 11% who had a missing MST response received any contraceptive method.

Discussion

In contrast to our hypothesis that women reporting MST would be less likely to receive contraception, this study demonstrates that women Veterans who reported MST were



TABLE 3. DOCUMENTED CONTRACEPTIVE RECEIPT BY RESPONSE TO SCREENING FOR MILITARY SEXUAL TRAUMA

	Total	Provided a response, n (%)		OR (95% CI)	Missing response, n (%)	All three categories
		MST+	MST-	MS+ vs. MST-		
Any contraceptive method	20,549 (30)	3,671 (41)	15,352 (38)	1.11 (1.06–1.16)	1,526 (8)	$p < 0.001$
Tubal sterilization	410 (0.6)	96 (1.1)	276 (0.7)	1.56 (1.23–1.96)	38 (0.2)	$p < 0.001$
Intrauterine device	2,926 (4)	610 (7)	2,140 (5)	1.29 (1.17–1.41)	176 (1)	$p < 0.001$
Contraceptive implant	83 (0.1)	20 (0.2)	59 (0.1)	1.51 (0.91–2.51)	4 (0.03)	$p < 0.001$
Contraceptive injection	2,521 (4)	484 (5)	1,859 (5)	1.17 (1.05–1.29)	178 (1)	$p < 0.001$
Oral contraceptive pills	14,823 (22)	2,568 (28)	11,147 (28)	1.04 (0.98–1.09)	1108 (6)	$p < 0.001$
Contraceptive patch	764 (1)	121 (1)	589 (2)	0.91 (0.75–1.11)	54 (0.3)	$p < 0.001$
Vaginal contraceptive ring	2,410 (4)	509 (6)	1,755 (4)	1.24 (1.12–1.37)	146 (1)	$p < 0.001$
Progestin-only pills	3,427 (5)	698 (8)	2521 (6)	1.25 (1.15–1.37)	208 (1)	$p < 0.001$

CI, confidence interval; OR, odds ratio.

significantly more likely than women who denied MST to receive contraceptive services within the VA healthcare system. Importantly, women who reported MST were more likely to receive highly effective methods of contraception such as the IUD. This higher rate of contraceptive receipt may be due to the fact that women who are more frequently seen in a VA women's health clinic are more likely to be screened for MST, feel comfortable enough with their clinician to report MST, and have the opportunity to discuss a need for contraception.

Among the entire study population, 30% of women had documented receipt of some form of contraception from a VA provider or pharmacy between 2002 and 2010. This prevalence of contraceptive use is higher than the 10%–22% prevalence reported in other studies of women Veterans that evaluated data from a single year,<sup>5,6</sup> but still lower than the U.S. general population. Among women aged 15–44 in the U.S. general population, 42% reported using one of the methods of contraception assessed in this study during the month of interview when surveyed between 2006 and 2010.<sup>22</sup> These data suggest that current contraceptive use may be even lower for women Veterans compared with the general population.

Thirteen percent of the entire study population and 17% of those who provided a response reported MST. The positive screen rate in our study is comparable to other data regarding the prevalence of MST.<sup>8,9</sup> The VA has the most comprehensive health policy response to sexual violence of any major US healthcare system.<sup>8</sup> Screening for MST has been shown to promote access to VA mental health services,<sup>23</sup> and may also lead to increased use of other healthcare services. In this study, a greater proportion of women Veterans who reported MST were seen at a women's health clinic compared to those who denied MST. Furthermore, a visit to a women's health clinic was associated with greater documented receipt

of any contraceptive method. These findings are important in informing ongoing VA planning and policy with respect to healthcare delivery to women Veterans, including those who have experienced MST. For example, for women Veterans who have experienced MST and receive mental and behavioral health counseling or medications within patient-centered medical homes or patient-aligned care teams in the VA, provision of contraceptive services within those healthcare structures is extremely important to reduce unintended pregnancy and optimize health outcomes.

The primary limitation of this study is the large proportion of the study cohort who had missing data for the MST screen. The data for this study were collected beginning in the early period of MST screening which may have resulted in a lot of missing data. Despite the mandate for universal screening, some VA facilities used nonstandard screening questions, had clinical reminder implementation problems, or had incomplete transmission of MST data from the local facility to national data warehouses that led to missing MST data.<sup>24</sup> In 2010, the screening rate for MST in the VA increased to 97%.<sup>25</sup> Studies utilizing data beyond 2010 may provide greater detail about the association between MST and contraceptive use. Additionally, we were unable to determine the extent to which provision of contraceptive services reflect underlying child-bearing intentions. Our finding that older, married Veterans were less likely to receive contraception from a VA provider may reflect a desire for pregnancy in this population. Women Veterans who are not in relationships with men, had a hysterectomy or tubal sterilization not documented within VA records, or who are infertile are also not at risk for unintended pregnancy. In a similar manner, women who obtain contraception outside the VA were not accounted for in our study. In this study, women with missing MST data had less contact with VA clinicians and may have sought contraceptive services outside the VA healthcare system.

## Conclusions

The findings from this study demonstrate that women Veterans who report MST are receiving contraceptive services and using women's health clinics in VA settings at higher rates than women Veterans who have not reported experiencing MST. However, a larger remaining proportion of women Veterans in both groups who could benefit from contraception do not receive this service from the VA. Additionally, women Veterans who have experienced MST but

TABLE 4. ASSOCIATION BETWEEN MILITARY SEXUAL TRAUMA AND DOCUMENTED RECEIPT OF ANY CONTRACEPTIVE METHOD

	OR (95% CI)
MST+ vs. MST-	
Unadjusted	1.11 (1.06–1.16)
Adjusted for age, race, marital status	1.12 (1.07–1.18)
MST response documented vs. MST missing	
Unadjusted	7.27 (6.88–7.68)
Adjusted for age, race, marital status	7.00 (6.61–7.40)

do not report it or who do not seek care at a VA, and specifically a VA women's health clinic, may be less likely to receive contraceptive services.<sup>5</sup> Future studies are needed to inform the development of optimal reproductive health care delivery programs for all women Veterans.

### Acknowledgments

This work was funded by VA Health Services Research and Development grant No. DHI 07-065 (PIs: Cynthia Brandt and Sally Haskell). Dr. Goyal was supported by award number K12HD050108 from the Office of the Director, National Institutes of Health, and the Eunice Kennedy Shriver National Institute of Child Health and Human Development. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Eunice Kennedy Shriver National Institute of Children Health and Human Development of the National Institutes of Health.

### Disclosure Statement

No competing financial interests exist. The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs.

### References

- Department of Veterans Affairs. Veteran population projections model (VetPop). Projected female veteran population 17 years and older: 2000 to 2036. Available at: [www.va.gov/vetdata/docs/quickfacts/Population-slideshow.pdf](http://www.va.gov/vetdata/docs/quickfacts/Population-slideshow.pdf) Accessed June 1, 2012.
- Batuman F, Bean-Mayberry B, Goldzweig C, et al. Health effects of military service on women veterans. VA-ESP Project #05-226. Washington, DC: Department of Veteran's Affairs, 2011.
- Mengeling MA, Sadler AG, Torner J, Booth BM. Evolving comprehensive VA women's health care: Patient characteristics, needs, and preferences. *Womens Health Issues* 2011;21:S120-S129.
- Washington DL. Findings from the National Survey of Women Veterans. Proceedings of the VA HSR&D Cyber Seminar, January 12, 2011, Los Angeles, CA.
- Borrero S, Mor MK, Zhao X, McNeil M, Ibrahim S, Hayes P. Contraceptive care in the VA health care system. *Contraception* 2012;85:580-588.
- Haskell SG, Mattocks K, Goulet JL, et al. The burden of illness in the first year home: Do male and female VA users differ in health conditions and healthcare utilization. *Womens Health Issues* 2011;21:92-97.
- Department of Veterans Affairs. Military sexual trauma. Available at: [www.mentalhealth.va.gov/msthome.asp](http://www.mentalhealth.va.gov/msthome.asp) Accessed April 30, 2012.
- Kimerling R, Gima K, Smith MW, Street A, Frayne S. The Veterans Health Administration and military sexual trauma. *Am J Public Health* 2007;97:2160-2166.
- Kimerling R, Street AE, Pavao J, et al. Military-related sexual trauma among veterans health administration patients returning from Afghanistan and Iraq. *Am J Public Health* 2010;100:1409-1412.
- Sadler AG, Booth BM, Cook BL, Doebbeling BN. Factors associated with women's risk of rape in the military environment. *Am J Ind Med* 2003;43:262-273.
- Luterek JA, Bittinger JN, Simpson TL. Posttraumatic sequelae associated with military sexual trauma in female veterans enrolled in VA outpatient mental health clinics. *J Trauma Dissociation* 2011;12:261-274.
- Alvarez J, Pavao J, Mack KP, Chow JM, Baumrind N, Kimerling R. Lifetime interpersonal violence and self-reported chlamydia trachomatis diagnosis among California women. *J Womens Health (Larchmt)* 2009;18:57-63.
- Weaver TL. Impact of rape on female sexuality: Review of selected literature. *Clinical Obstet Gynecol* 2009;52:702-711.
- Gomez AM. Sexual violence as a predictor of unintended pregnancy, contraceptive use, and unmet need among female youth in Colombia. *J Womens Health (Larchmt)* 2011;20:1349-1356.
- Cripe SM, Sanchez SE, Perales MT, Lam N, Garcia P, Williams MA. Association of intimate partner physical and sexual violence with unintended pregnancy among pregnant women in Peru. *Int J Gynaecol Obstet* 2008;100:104-108.
- Miller E, Decker MR, McCauley HL, et al. Pregnancy coercion, intimate partner violence, and unintended pregnancy. *Contraception* 2010;81:316-322.
- Pallitto CC, Garcia-Moreno C, Jansen HA, et al. Intimate partner violence, abortion, and unintended pregnancy: Results from the WHO Multi-country Study on Women's Health and Domestic Violence. *Int J Gynaecol Obstet* 2013;120:3-9.
- Silverman JG, Gupta J, Decker MR, Kapur N, Raj A. Intimate partner violence and unwanted pregnancy, miscarriage, induced abortion, and stillbirth among a national sample of Bangladeshi women. *BJOG* 2007;114:1246-1252.
- Turchik JA, Pavao J, Hyun J, Mark H, Kimerling R. Utilization and intensity of outpatient care related to military sexual trauma for veterans from Afghanistan and Iraq. *J Behav Health Serv Res* 2012;39:220-233.
- Washington DL B-MB, Riopelle D, Yano EM. Access to care for women veterans: Delayed healthcare and unmet need. *J Gen Intern Med* 2011;26(S2): 655-661.
- Suris A, Lind L. Military sexual trauma: A review of prevalence and associated health consequences in veterans. *Trauma Violence Abuse* 2008;9:250-269.
- Jones J, Mosher WD, Daniels K. Current contraceptive use in the United States, 2006-2010, and changes in patterns of use since 1995. *Natl Health Stat Report* 2012;60:1-26.
- Kimerling R, Street AE, Gima K, Smith MW. Evaluation of universal screening for military-related sexual trauma. *Psychiatr Serv* 2008;59:635-640.
- Kimerling R, Hyun JK. Conducting research with VA data on military sexual trauma women's health. Proceedings of the VA HSR&D Cyber Seminar, Jan 19, 2012.
- Hyun JK, Kimerling R, Cronkite RC, McCutcheon S, Frayne SM. Organizational factors associated with screening for military sexual trauma. *Womens Health Issues* 2012;22:e209-e215.

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