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# Induced Abortion among Women Veterans: Data from the ECUUN study

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## Abstract

**Objective—**We compared rates of induced abortion among women Veterans receiving VA healthcare to rates in the general US population, as current policy prohibits VA provision of abortion counseling or services, even when pregnancy endangers a Veteran's life.

**Methods—**We analyzed data from 2, 298 women Veterans younger than 45 years, who completed a telephone-based, cross-sectional survey of randomly-sampled English-speaking women from across the US who had received VA healthcare. We compared lifetime, last 5-year and last-year rates of unintended pregnancy and abortion among participants to age-matched data from the National Survey of Family Growth. As few abortions were reported in the last year, we used multivariable logistic regression to examine associations between abortion in the last 5 years and age, race/ethnicity, income, education, religion, marital status, parity, geography, deployment history, housing instability, past medical and mental health among VA patients.

**Results—**Women Veterans were more likely than matched US women to report ever having an abortion (17.7%, 95%CI: 16.1–19.3% vs. 15.2% of US women). In the last 5 years, unintended pregnancy and abortion were reported by Veterans at rates similar to US women. In multivariable models, VA patients were more likely to report abortion in the last 5 years if their annual income was less than $40,000 (adj. OR 2.95, 95% CI 1.30–6.70), had experienced homelessness or housing instability (adj. OR 1.91, 95% CI 1.01–3.62), were single (adj. OR 2.46, 95% CI 1.23–4.91), and/or had given birth (adj. OR 2.29, 95% CI 1.19–4.40).

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**Conclusion—**Women Veterans face unintended pregnancy and seek abortion as often as the larger US population.

**Keywords**

Women; Veterans; Abortion



## Introduction

The United States has a long tradition of recognizing Veterans' service to our country with a commitment to comprehensively addressing Veterans' healthcare needs.[1] The VA's medical benefits package, codified in Title 38 C.F.R.§17.38, includes a strong focus on Veterans' mental health care and other supportive services. Nonetheless, Veterans remain a vulnerable population, with high rates of mental illness.[2] Veterans are overrepresented within the homeless population, and at higher risk of homelessness than other individuals living in poverty.[3] Women Veterans are a particularly vulnerable population, and are more likely to be homeless than male Veterans or female nonveterans.[4]

Over the last two decades, the number of women Veterans has increased substantially and the number receiving care from the Veterans Administration (VA) is projected to continue increasing in the future.[5] The VA has therefore worked to address the unique health care needs of women Veterans.[6] This has included a focus on reproductive health for the estimated 500,000 women Veterans who are VA patients.[7] VA initiatives have encompassed attention to high quality contraceptive care and effective referrals for maternity services.[8] However, the Veterans Health Care Act of November 1992 (P.L. 102–585 .L. 102–585, Title I, § 106, 106 Stat. 4847) precludes VA from providing abortions, or abortion counseling, even when needed to save a woman's life, and mifepristone is not available through VA pharmacies.[11] Although in 2013, a provision in the National Defense Authorization Act provided active-duty military women with coverage of abortion services when pregnancies are the result of rape or incest, or would endanger the life of the mother if carried to term (U.S. Code § 1093),[10] women Veterans are not yet afforded similar coverage.[11] This makes current VA policy more extreme than the Hyde Amendment which allows Medicaid funding for abortion in cases of rape, incest or life endangerment.[12]

Improving access to effective contraception reduces rates of undesired pregnancy and abortion.[13] Yet, as all contraceptives have some risk of failure,[14] over half of women seeking abortion report contraceptive use in the month they became pregnant.[15] Thus, abortion services may be needed even when access to contraception has been optimized. To guide VA efforts to improve contraceptive service delivery and inform national discussions about healthcare policy,[8] this study estimates the frequency with which women Veterans served by the VA health care system obtain abortion services (without VA support) compared to women in the general US population, and identifies sociodemographic factors associated with Veterans' need for abortion services.

## Materials and Methods

We surveyed a random sample of women veterans, aged 18–44 years, who had received VA healthcare in the prior 12 months as part of the "Examining Contraceptive Use and Unmet Need among Women Veterans" (ECUUN) study. The national ECUUN study has been previously described in detail.[16, 17] Briefly, from April 2014 to January 2016, computer-assisted telephone interviews lasting 45 to 60 minutes were conducted with 2,302 women Veterans; participants received $30 for their time. The overall response rate was 28% and the response rate among enrolled participants was 83%. Participants were similar to non-participants from the sampling frame, in race/ethnicity, age, income, education, and marital status recorded in VA administrative data. Information was collected on veterans' pregnancy and abortion history, using measures developed for the National Survey on Family Growth (NSFG). After excluding 4 participants from the ECUUN study with missing data on pregnancy, this analysis included 2,298 participants.

Additional information about participants was obtained from VA administrative databases. Data abstracted from the administrative databases included whether participating Veterans first received VA services 5 or more years prior to completing the ECUUN survey. Participants were identified as having experienced housing instability in the last 5 years if ICD-9 codes V600, V601, V602, V603, V604, V605, V606, V608, V6089, or V609, had been coded in their medical records. This study was approved by the VA Pittsburgh and University of Pittsburgh Institutional Review Boards.

To allow comparisons with the general US population, we also analyzed data from the 2013–2015 cycle of the NSFG. The NSFG is a periodic survey conducted by the National Center for Health Statistics (NCHS), an agency of the Department of Health and Human Services, to provide national estimates of factors affecting the reproductive health of the US population. [17] The NSFG uses a national multistage probability sample to represent women 15–44 years of age in all 50 states and the District of Columbia. As the NSFG cannot identify participants with a history of military service, and veterans differ from the larger US population in age and educational attainment, we excluded NSFG participants with less than a high school education or General Educational Development (GED) certificate as required for US military service, and limited the NSFG sample to women aged 20–44 (no one in the ECUUN sample was <20 years of age). We used a direct standardization technique to enhance comparability with the ECUUN rates. Specifically, we calculated age-specific proportions for participant characteristics and outcomes from the NSFG data and then computed a weighted average by applying those proportions to the ECUUN sample, categorized in the following 5-year increments: 20–24, 25–29, 30–34, 35–39, and 40–44 years. This adjustment provided an estimated rate for each outcome assuming the US general population had the same age distribution as the ECUUN sample. All analyses were conducted using SAS, version 9.4, using appropriate adjustment for the NSFG's complex sample design. Weighted NSFG estimates reflect a national sample size of 47,012,000 US women.

Descriptive statistics were used to characterize the demographic characteristics of veteran participants in ECUUN and allow comparisons to participants in the NSFG. We assessed

rates of pregnancy, unintended pregnancy, and induced abortion over a woman's lifetime, in the last 5 years, and in the last year, and calculated 95% confidence intervals to assess the precision of these estimates. Lifetime pregnancies included both completed and current pregnancies;1 rates of pregnancies in the last 5 years and in the last year included only completed pregnancies, in keeping with the NSFG. Given the relatively small number of veterans who reported an abortion in the last year, we used multivariable logistic regression to examine associations between need for abortion services in the last 5 years and relevant sociodemographic and health variables (age, race/ethnicity, income, education, religion, marital status, parity, geography, deployment history, housing instability, past medical and mental health). Variables were selected for inclusion in multivariable models, a priori. Parsimonious models were built using stepwise elimination. As fully-adjusted models were similar to more parsimonious models, we present the fully-adjusted models, in addition to the unadjusted models, here. As a sensitivity analysis, we examined similar statistical models limited to the subset of veterans who had received VA services for ≥ 5 years.

## Results

Women Veterans of reproductive age were less likely to be White (52% vs. 59%) and more likely to be Black (29% vs.13%) than the general US population (Table 1). Veterans were also less likely to be currently married (41% vs. 54%) or cohabiting (9% vs. 14%) than other US women. Although Veterans were more likely to have completed a college education (53% vs. 42%), they were less likely to have annual incomes over $40,000 (48% vs. 62%). Homelessness or housing instability in the last 5 years was recorded in the medical records of 15% of participating Veterans; similar data is not available in the NSFG. The majority (65%) of ECUUN participants first received VA services 5 or more years ago. Veterans who had received VA services for more than 5 years were similar to the larger population of ECUUN participants, with an average age of 35.8 vs. 34.7 years (Table 1).

Among ECUUN Veterans, 74.2% (n=1,706) reported a lifetime history of pregnancy, 57.2% (n= 1,315) reported one or more unintended pregnancies, and 17.7% (n=406) reported one or more induced abortion (Table 2) which were not paid for or provided by VA. Among women Veterans with a history of induced abortion, 29% reported two or more lifetime abortions (data not shown in tables). When compared to the larger US population of reproductive-aged women, the average number of lifetime pregnancies was similar (2. 6 vs 2.6 among Veterans), as was the average number of unintended pregnancies (1.7 vs 1.9 among veterans, data not shown in tables). Overall, 55.7% of Veterans' pregnancies were unintended compared to 42.0% of US women of reproductive age (Table 3); however, the proportion of unintended pregnancies reported as terminated by abortion (20.2% vs 21.8%) was similar (Table 3).

In the last 5 years, 646 Veterans reported pregnancy, of whom 48% (n=307) reported one or more unintended pregnancy, and 8% (n=52) reported an abortion that was not performed or paid for by VA (data not shown in Tables). The proportion of women who reported pregnancy in the last 5 years was lower for Veterans than the age-matched population of US women (28.1%, 95% CI: 26.3%–29.9% vs. 38.0%). However, rates of unintended pregnancy (13.4% vs. 13.4%) and abortion were similar (2.3%, 95% CI:1.7%–2.9% vs 2.9%, Table 2).

In the last year, 155 women Veterans reported a pregnancy, of whom 39% (n=60) reported unintended pregnancies and 4% (n=6) reported one or more abortions (that were not provided or paid for by VA). Although pregnancy rates in the last year were lower for Veterans than the age-matched population of US women (6.7%, 95% CI: 5.7%–7.7% vs. 10.1%), rates of unintended pregnancy in the last year were similar among Veterans and the age-matched population of US women (2.6%, 95% CI: 1.9%–3.3% vs. 2. 8%). Rates of reported abortion in the last year were lower among Veterans receiving VA healthcare than the age-matched population of US women (2.6, 95% CI 0.5–4.7 vs 4.8 per 1,000 women), although the stability of this estimate is limited by the small sample size.

As expected, Veterans' rates of pregnancy, unintended pregnancy and abortion decreased as women aged. However, in multivariable models, a number of other variables were associated with Veterans' receipt of abortion services in the last 5 years (Table 4), including having an annual income less than $40,000 (aOR:2.95, 95%CI: 1.30–6.70), having experienced homelessness or housing instability (aOR:1.91, 95%CI: 1.01–3.62), being parous (aOR:2.29, 95%CI: 1.19–4.40) and being single (aOR:2.46, 95%CI: 1.23–4.91).

## Discussion

This representative sample of women Veterans of reproductive age served by the VA healthcare system found that women Veterans' rates of unintended pregnancy and abortion are similar to those in the general US population. As suchpolicies which preclude VA provision of abortion services limit Veterans' reproductive freedom and increase women Veterans' out-of-pocket healthcare costs These costs are predominantly borne by the most vulnerable Veterans, as the variable most associated with need for abortion services was poverty. This finding is consistent with data from non-Veteran populations.[19]

Abortion is one of the most common clinical services sought in the United States.[20] A frequent reason US women have abortions is because they are unable to afford another child.[21] In 2014, three-fourths of women who had abortions were low income, with 49% living below the federal poverty level.[22] As abortions typically cost at least $600,[23] the majority of women who need abortions experience difficulty paying for the procedure.[24] Difficulties raising funds to cover costs are a common reason for delay in obtaining abortion services,[23, 25] which in turn increases risks to a woman's health.[26] Being single, a mother, and experiencing housing instability were also significant predictors of Veterans' need for abortion services. As abortion has been shown to increase the number of women able to achieve their educational, employment, and housing goals,[27] abortion services align with larger efforts to facilitate Veterans' economic stability and wellbeing.

Although the ECUUN study provides the most detailed data to date on the reproductive health of women Veterans served by the VA, certain limitations must be acknowledged. First, this self-reported data may be subject to recall bias and social-desirability bias. In particular, rates of induced abortion are often underreported due to social desirability bias.[18] However, we have attempted to contextualize this under-reporting by comparing ECUUN data to NSFG data, noting that published rates of abortion in the US,[19] which use multiple data sources to address underreporting in the NSFG, are considerably higher than

those provided by either the NSFG alone or the ECUUN study. In addition, as ECUUN participants answered questions by phone, while NSFG participants used computer-assisted self-interviews for sensitive questions, ECUUN participants may be more subject to social desirability bias.

An additional limitation is the fact that all ECUUN participants had accessed VA healthcare services in the prior 12 months, while the NSFG is a population-based sample which includes women who may lack access to health care. It is estimated that in 2015 only 22% of women Veterans received healthcare from the VA.[28] As VA patients tend to be poorer and more burdened by chronic conditions than other Veterans,[29] ECUUN data may not be generalizable to all Veterans. Further, the ECUUN response rate (although similar to other telephone-based surveys) was significantly lower than the in-home NSFG's. However, we did not identify meaningful differences between Veterans in the eligible sampling frame who did and did not participate in ECUUN. ECUUN participants were similar to non-participants with respect to age, race/ethnicity, marital status, income, presence of medical and mental illness, and geographic region,[16] suggesting that the ECUUN sample is representative of the larger population of reproductive-aged female VA-users. A final limitation is the fact that the NSFG does not collect data on participants' military service or veteran status and it is possible that some NSFG respondents are in fact veterans; however, as women veterans form less than 2% of the US female population of reproductive age, this should be a relatively small effect.

In conclusion, women Veterans face unintended pregnancies and seek abortion services as frequently as other US women. Policies which preclude VA provision of abortion services increase out-of-pocket healthcare costs for vulnerable Veterans and limit Veterans' reproductive freedom.

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## Implications

The Veterans Health Care Act, which prohibits provision of abortion services, increases vulnerable Veterans' out-of-pocket healthcare costs and limits Veterans' reproductive freedom.

## Table 1

Characteristics of women Veterans served by VA and the age-adjusted US population, aged 20–44.

| Characteristic | Age-adjusted US population, 2013–2015* (n=4,120) | Women Veterans served by VA, 2014–2015† (n=2,298) | ECUUN participants with VA services for ≥5 years‡ (n=1,483) |
|---|---|---|---|
| Age, years, mean (SD) | 31.8 | 34.7 (5.6) | 35.8 (5.0) |
| Parity | 70.6 | 63.6 | 64.9 |
| **Race** | | | |
| Hispanic | 15.5 | 12.4 | 11.5 |
| Non-Hispanic White | 59.4 | 51.7 | 52.5 |
| Non-Hispanic Black | 13.1 | 28.8 | 30.0 |
| Non-Hispanic Other/Unknown | 12.1 | 7.1 | 6.0 |
| **Marital status** | | | |
| Single | 21.1 | 23.3 | 22.0 |
| Married | 54.2 | 41.2 | 41.7 |
| Cohabiting | 13.8 | 8.9 | 9.3 |
| Divorced, separated or widowed | 10.9 | 26.7 | 27.1 |
| **Education** | | | |
| High school/technical school | 25.2 | 8.6 | 7.6 |
| Some college, no bachelor's degree | 32.6 | 38.3 | 34.4 |
| Bachelor's degree or higher | 42.2 | 53.0 | 58.0 |
| **Income** | | | |
| <$20,000 | 17.5 | 20.2 | 17.3 |
| $20,000 – <$40,000 | 20.8 | 31.9 | 30.4 |
| ≥$40,000 | 61.7 | 47.8 | 52.3 |
| **Religion** | | | |
| No religion | 22.1 | 17.1 | 15.7 |
| Protestant | 49.2 | 13.7 | 14.3 |
| Catholic | 20.4 | 11.8 | 11.1 |
| Other religion | 8.3 | 57.4 | 58.8 |
| **Region** | | | |
| Midwest | | 17.8 | 19.0 |
| Northeast | n/a | 8.7 | 9.1 |
| South | | 53.1 | 51.4 |
| West | | 20.4 | 20.5 |
| Housing instability in the last 5 years | n/a | 14.8 | 17.1 |
| Has additional non-VA health insurance | n/a | 52.1 | 53.6 |
| Ever deployed | n/a | 55.4 | 52.0 |
| History of military sexual trauma | n/a | 55.0 | 57.2 |
| ≥1 mental health condition | n/a | 68.8 | 71.1 |
| ≥1 medical health condition | n/a | 56.2 | 58.6 |

[*] Age-specific estimates were obtained from the 2013–2015 NSFG data for women aged 20–44 with at least a high school education or GED and applied to the VA population age distribution. Age was categorized by 5 years as follows: 20–24, 25–29, 30–34, 35–39, and 40–44. The weighted sample size is 47,012,000.

[†] Missing data for ECUUN participants: marital status (n=2), income (n=25), religion (n=5), deployed (n=4).

[‡] Missing data among ECUUN participants receiving VA services for > 5 years: marital status (n=2), income (n=18), religion (n=3), deployed (n=3).

VA, Veterans Affairs; SD, standard deviation; n/a indicates that similar data is not available in the NSFG dataset.

## Table 2

Rates of unintended pregnancy and abortion among US women Veterans served by VA compared to the larger population of US women, aged 20–44.

| Abortion and Pregnancy | Age-adjusted US population, (n=4,120)* % | Women Veterans served by VA, (n=2,298) % (95%CI) | Subset receiving VA services for ≥5 years (n=1,483) % (95%CI) |
|---|---|---|---|
| **Lifetime** | | | |
| Ever pregnant (%) | 77.8 | 74.2 (72.4–76.0.) | 75.9 (73.7–78.1) |
| Ever unintended pregnancy (%) | 47.8 | 57.2 (55.2–59.2) | 57.8 (55.3–60.3) |
| Ever induced abortion (%) | 15.2 | 17.7 (16.1–19.3) | 18.9 (16.9–20.9) |
| **Last 5 years** | | | |
| Pregnancy rate (%) | 38.0 | 28.1 (26.3–29.9) | 26.2 (24.0–28.4) |
| Unintended pregnancy rate (%) | 13.4 | 13.4 (12.0–14.8) | 11.4 (9.8.–13.0) |
| Abortion in last 5 years (%) | 2.9 | 2.3 (1.7–2.9) | 1.8 (1.1–2.5) |
| **Last year** | | | |
| Pregnancy rate (%) | 10.1 | 6.7 (5.7–7.7) | 6.4 (5.2–7.46) |
| Unintended pregnancy rate (%) | 2.8 | 2.6 (1.9–3.3) | 2.0 (1.3–2.7) |
| Abortion per 1,000 women | 4.8 | 2.6 (0.5–4.7) | 2.7 (0.1–5.34) |

CI, confidence interval.

*Age-specific estimates were obtained from the 2013–2015 NSFG data for women aged 20–44 with at least a high school education or GED and applied to the VA population age distribution. Age was categorized by 5 years as follows: 20–24, 25–29, 30–34, 35–39, and 40–44. The weighted sample size is 47,012,000.

## Table 3

Proportion of pregnancies that were unintended and/or terminated among women Veterans served by the VA and age-adjusted US population, aged 20–44.

| Proportion of pregnancies (%) | Age-adjusted US population, (n=4,120)* | Women Veterans served by VA, (n=2,298) | Subset receiving VA services for ≥5 years (n=1,483) |
|---|---|---|---|
| | % | % (95%CI) | % (95%CI) |
| **Lifetime** | n=7,451 | n=4,500 | n=2,991 |
| Pregnancies that were unintended | 42.0 | 55.7 (54.2–57.2) | 54.9 (53.1–56.7) |
| Unintended pregnancies aborted | 21.8 | 20.1 (18.5–21.7) | 20.8 (18.8–22.8) |
| Pregnancies terminated by abortion | 10.0 | 12.5 (11.5–13.5) | 12.7 (11.5–13.9) |
| **Last 5 years** | n=2,318 | n=933 | n=552 |
| Pregnancies that were unintended | 28.5 | 40.0 (36.9–43.1) | 37.0 (33.0–41.0) |
| Unintended pregnancies aborted | 15.1 | 12.6 (9.2–16.0) | 12.7 (8.1–17.3) |
| Pregnancies terminated by abortion | 6.1 | 6.0 (4.5–7.5) | 5.1 (3.3–6.9) |
| **Last year** | n=467 | n=165 | n=103 |
| Pregnancies that were unintended | 28.2 | 37.0 (29.6–44.4) | 30.1 (21.2–39.0) |
| Unintended pregnancies aborted | 18.3 | 9.8 (2.3–17.3) | 12.9 (1.1–24.7) |
| Pregnancies terminated by abortion | 6.9 | 3.6 (0.8–6.4) | 3.9 (0.2–7.6) |

*Age-specific estimates were obtained from the 2013–2015 NSFG data for women aged 20–44 with at least a high school education or GED and applied to the VA population age distribution. Age was categorized by 5 years increments as follows: 20–24, 25–29, 30–34, 35–39, and 40–44. The weighted sample size is 47,012,000.

## Table 4

Variables associated with need for abortion services in the last 5 years among women Veterans served by VA

| Characteristic | ECUUN sample | | Subset of ECUUN receiving VA services for ≥5 years |
|---|---|---|---|
| | Unadjusted OR (95%CI) | Adjusted OR (95%CI)* | Adjusted OR (95%CI)† |
| Age, years | **0.92 (0.87–0.96)** | **0.92 (0.87–0.98)** | **0.88 (0.81–0.96)** |
| Income <$40,000 | **5.20 (2.44–11.09)** | **2.95 (1.30–6.70)** | **4.04 (1.26–13.01)** |
| Housing instability in the last 5 years | **2.90 (1.61–5.24)** | **1.91 (1.01–3.62)** | 1.63 (0.67–3.95) |
| Ever deployed | 1.53 (0.86–2.73) | 1.70 (0.93–3.10) | **2.50 (1.04–6.02)** |
| Parous | 1.42 (0.78–2.62) | **2.29 (1.19–4.40)** | **3.05 (1.16–8.07)** |
| Single | **3.43 (1.79–6.57)** | **2.46 (1.23–4.91)** | 2.64 (0.98–7.09) |
| Race/Ethnicity (NH White vs. others) | 0.58 (0.33–1.02) | 0.70 (0.38–1.30) | 0.76 (0.31–1.86) |
| College educated | 0.59 (0.34–1.04) | 1.05 (0.57–1.91) | 0.77 (0.33–1.81) |
| Any religion | 0.61 (0.32–1.16) | 0.65 (0.33–1.26) | 0.59 (0.23–1.50) |
| *Region of residence* | | | |
| Central vs East | 1.55 (0.53–4.53) | 1.27 (0.42–3.84) | 0.84 (0.18–3.95) |
| South vs East | 1.18 (0.53–2.60) | 1.08 (0.47–2.48) | 0.81 (0.25–2.59) |
| West vs East | 1.09 (0.43–2.79) | 1.05 (0.40–2.74) | 1.22 (0.36–4.15) |
| Non VA insurance | **0.48 (0.27–0.85)** | 0.66 (0.36–1.21) | 1.04 (0.45–2.39) |
| History of military sexual trauma | 0.88 (0.51–1.53) | 0.92 (0.51–1.67) | 0.63 (0.27–1.48) |
| ≥1 mental health condition | 0.93 (0.52–1.68) | 0.88 (0.46–1.69) | 0.84 (0.33–2.15) |
| ≥1 medical health condition | 0.91 (0.52–1.58) | 1.14 (0.62–2.08) | 1.11 (0.47–2.610) |

VA, Veterans Affairs; OR, odds ratio; CI, confidence interval; NH, non-Hispanic.

Estimates in bold were statistically significant at p-value ≤0.05.

*Adjusted for all variables shown in table. N=2,263 due to missing data; ROC (95%CI): 0.79 (0.73, 0.84); goodness-of-fit p-value >0.99.

†Adjusted for all variables shown in table. N=1,457 due to missing data; ROC (95%CI): 0.84 (0.77, 0.91); goodness-of-fit p-value >0.99.