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Receipt of Prescription Opioids in a National Sample of Pregnant Veterans Receiving Veterans Health Administration Care

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A B S T R A C T

Background: A growing number of reproductive-age women veterans are returning from Operations Enduring Freedom, Iraqi Freedom, and New Dawn (OEF/OIF/OND). In 2010, 42% of women veterans receiving Veterans Health Administration (VHA) services were aged 18 to 45. Prescription opioid use has increased among all veterans over the past decade; however, exposure among pregnant veterans has not been examined.
Methods: We identified 2,331 women who delivered babies within the VHA system between 2001 and 2010. Delivery, opioid prescribing history, and demographic and health-related variables were obtained from a national database of veterans receiving VHA services. Receipt of an opioid prescription was defined as any filled VHA prescription for opioids in the 280-day pregnancy window before delivery. We developed a multivariable logistic regression model adjusted for sociodemographic, service-related, psychiatric diagnosis, and physical health variables to examine the odds of filling an opioid prescription during the pregnancy window.
Findings: Ten percent of pregnant veterans received VHA prescription opioids during their pregnancy window. Significant factors associated with opioid prescriptions included presence of any psychiatric diagnosis (adjusted odds ratio [aOR], 1.67; 95% CI, 1.24–2.26), diagnosis of back problems (aOR, 2.94; 95% CI, 1.92–4.49), or other nontraumatic joint disorders (aOR, 2.20; 95% CI, 1.36–3.58).
Conclusions: This study suggests that a substantial proportion of women veterans received VHA prescriptions for opioids during pregnancy. Providers should be aware of the potential risks of prescription opioid use during pregnancy, assess for potential undertreatment of psychiatric diagnoses, and consider alternate pain management strategies when possible.

Over the past 10 years, an increasing number of women have returned from serving in Operations Enduring Freedom (OEF), Iraqi Freedom (OIF), and New Dawn (OND). Among OEF/OIF/OND women veterans utilizing Veterans Health Administration (VHA) health care in 2010, 42% were between the ages of 18 and 45 (Frayne et al., 2012). The increasing number of young women veterans in VHA care has expanded the need for reproductive

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health care services, including services related to pregnancy and childbirth. From 2008 to 2012, the number of infant deliveries paid for by the VHA increased by 44% (Mattocks et al., 2014).

Prevalence in the use of prescription opioids has surged across the United States in recent years, and use in veterans is no exception (Lew et al., 2009; Wu, Lang, Hasson, Linder, & Clark, 2010). Some evidence suggests that female veterans are more likely to receive prescription opioids compared with male veterans. Data from 2012 suggests a 42.9% rate of prevalent opioid receipt in women veterans compared with 32.9% in male veterans (Mosher et al., 2015). This greater proportion of prescription opioid use in women may be associated with the higher likelihood of women veterans being diagnosed with chronic pain and back, musculoskeletal, or joint conditions compared with men (Higgins et al., 2014), a difference that holds after adjustment for demographic characteristics (Haskell et al., 2012).

Among pregnant women in the United States, estimates of prevalence of prescription opioid use range from 1% to 21% (Bateman et al., 2014; Desai, Hernandez-Diaz, Bateman, & Huybrechts, 2014; Epstein et al., 2013; Keegan, Parva, Finnegan, Gerson, & Belden, 2010; Salihu, Mogos, Salemi, & Salinas, 2013). A study of insurance beneficiaries found that 14.4% of women were dispensed a prescription opioid during their pregnancy (Bateman et al., 2014). Studies on the risks of opioid use during pregnancy for the mother and baby have been somewhat indecisive, given the difficulties in assessing opioid exposure over the course of a pregnancy (Bateman et al., 2014; Chou et al., 2009). However, some studies have found maternal opioid exposure to be associated with an increased risk of fetal neural tube defects (Meyer, 2014; Yazdy, Mitchell, Tinker, Parker, & Werler, 2013), and among chronic users, development of opioid drug withdrawal symptoms, known as neonatal abstinence syndrome (Broussard et al., 2011; Meyer, 2014; Patrick et al., 2012, 2015). Neonatal abstinence syndrome manifests neurologically through symptoms such as tremors, irritability, and seizures, and through gastrointestinal symptoms including vomiting, dehydration, and diarrhea (Hudak & Tan, 2012).

Given the increasing rates of young women veterans receiving VHA services, the increase in prescription opioid use among veterans overall, and the prevalence of prescription opioid exposure during pregnancy in the general population, there is a need to quantify opioid prescribing patterns in pregnant veterans. Understanding the prevalence and risks of opioid prescriptions in pregnant veterans using VHA care is important to help improve preconception and pregnancy counseling around the risks and benefits of potentially teratogenic medications. Thus, our objectives were two-fold: 1) to describe the prevalence of opioid prescribing to pregnant veterans and 2) to examine predictors for receipt of opioids. We conducted an analysis of administrative data on women veterans enrolled in VHA health care from 2001 to 2010.

Methods

Study Design and Data Source

This study was conducted using data from the Women Veteran's Cohort Study, described previously elsewhere (Haskell et al., 2011; Scott et al., 2013). The study population was obtained from the OEF/OIF/OND roster received from the Department of Defense Manpower Data Center. The roster was merged with Veterans Affairs (VA) administrative data, including the VA National Patient Care Database, the VA Corporate Data Warehouse (electronic health record data), and the VA Decision Support Systems database. The roster contains 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). Additionally, the VA National Patient Care Database and Decision Support Systems databases include information on health care use and cost, pharmacy and laboratory data, and diagnostic and procedure data for both inpatient and outpatient visits. VA fee basis files were used to examine veterans' receipt of pregnancy care from non-VA providers. This pooled database consists of 739,683 veterans who were enrolled in VHA health care at any point from 2001 to 2010.

Study Sample and Definition of Determinants of Pregnancy

We obtained information on 87,491 women, 67,037 who were of reproductive age (18–45 years old) and had used VHA medical or mental health services at least once during the study period. Our study included 2,331 women who had record of an infant delivery paid for by the VHA during this time period. Each woman contributed only one delivery to this analysis; for those who had multiple deliveries in the database (10.3%), only the first delivery was retained. Deliveries were identified through the identification of diagnostic-related groups (DRGs) related to vaginal or cesarean deliveries (DRGs 370–375, 765–768, 774, 775). These DRGs were found within codes of the Major Diagnostic Category 14 – Pregnancy, Childbirth and Puerperium (Appendix A). This methodology of using DRGs has been used previously with these data (Mattocks et al., 2014).

Definition of Outcome

Opioid prescriptions were identified by an active prescription fill during the pregnancy window of any of the included drugs of interest (Appendix B). We defined receipt of prescription opioids during pregnancy in two different ways. The primary definition, "any prescription" was defined as at least one filled prescription for opioids in the VHA prescription data in the 280 days before delivery. Defining variables based on a 280-day window has been done previously with similar VA pregnancy data to capture all services and prescriptions that may have taken place during pregnancy, from very early stages ending with delivery (Mattocks et al., 2010). Additionally, we defined "long-term prescriptions" as receipt of prescription opioids for 90 consecutive days or longer, with 30 days or less of a gap, during the 280-day pregnancy window. This 90-day time reference for chronic use is commonly used in the literature (Feinberg et al., 2014). Both prescription variables were coded dichotomously, yes versus no. Information on the indication for the prescription was not included in this analysis; therefore, the prescriptions defined here potentially include both analgesics and/or opioid agonist therapies for pregnant women with substance use disorders.

Demographic and Health-Related Factors

We chose potential factors associated with receipt of an opioid prescription based on previous literature on predictors of exposure during pregnancy and available information in our data (Bateman et al., 2014; Desai et al., 2014; Epstein et al., 2013; Keegan et al., 2010). These factors included demographic characteristics, such as age at the time of delivery, race, ethnicity,

marital status, and education level, as well as military service characteristics including years since return from last deployment, service-connected disability rating, rank, component, and branch of service. Service-connected disability rating is measured as a percentage of 0% to 100%, a value determined by the Veterans Benefits Administration. A service-connected disability status of 0% is the lowest level of disability and is different from not having a disability (Frayne et al., 2012). Here, we measured service-connected disability status dichotomously to compare those with either a non-service connected disability or a disability rating of 0% to those with a disability rating of greater than 0% (Frayne et al., 2012). We also examined the potential impact of psychiatric diagnoses, including posttraumatic stress disorder, mild (dysthymia) and major forms of depression, bipolar disorder, and schizophrenia. All of these conditions were identified using *International Conference for the Ninth Revision of the International Classification of Diseases* (ICD-9) codes to flag a diagnosis at any time before delivery (Appendix A; Centers for Disease Control and Prevention & National Center for Health Statistics, 2013). Furthermore, we combined all psychiatric diagnosis categories, as listed, into a single variable that assessed presence of one or more psychiatric diagnosis, operationalized dichotomously as yes versus no. Additionally, we examined ICD-9 codes for drug and alcohol abuse/dependence before delivery (Appendix A). We also included a variable identifying positive screenings for military sexual trauma. The VHA uses a clinical reminder in the patient's electronic medical record to screen for military sexual trauma using a brief screening instrument, which has been described previously (Kimerling, Gima, Smith, Street, & Frayne, 2007). We considered health-related conditions that were diagnosed during the 280-day pregnancy window, because we hypothesized that the diagnosis of back problems, headaches, migraines, sprains and strains, or other nontraumatic joint disorders may be associated with opioid prescribing. All medical conditions were identified with at least one Clinical Classifications Software code (Appendix A; Agency for Healthcare Research and Quality, 2014).

Analytic Approach

We first calculated the proportion of pregnant veterans in our sample who received an opioid prescription during their pregnancy window. Next, we conducted bivariate analyses to compare pregnant veterans on their opioid status: those who received an opioid prescription compared with those who did not receive an opioid prescription. We used χ^2 tests for categorical variables and the Student t test for continuous variables. Sociodemographic, service-related, psychiatric diagnosis, and physical health variables that were significant at the .05 level were included in a logistic regression model which examined the odds of predictors associated with opioid status. Our final multivariable model consisted of the variables from the initial model that further met inclusion criteria in a backward selection process. We evaluated (and ruled out) multicollinearity by examining a correlation matrix of all proposed predictors and condition indices. We conducted a complete case analysis as missing data comprised less than 1.5% of our sociodemographic and service-related characteristics, and there were no differences in missingness between those who did and did not receive a prescription opioid (data not shown). Adjusted odds ratios (aOR) and 95% CIs for each predictor were reported.

Results

In our sample of 2,331 pregnant veterans, 231 (9.9%) filled a VHA prescription for an opioid during their pregnancy window, with 10 (0.4%) receiving prescriptions for more than 90 days with less than a 30-day gap between fill dates. Our population was mostly White (54.7%), non-Hispanic (82.2%), never married (65.9%), and high school graduates (85.5%). The majority of women had served in active duty (71.6%) and 96.9% were enlisted, the majority of in the Army (61.7%; Table 1). Sociodemographic characteristics, with the exception of marital status, were similar between opioid status groups. Those with an opioid prescription were more likely to be married compared with those without a prescription ($p = .04$). The number of years between delivery date and the date of last deployment was greater in women with a prescription opioid compared with women with no prescription during the pregnancy window (mean $\pm$ standard deviation, 3.5 $\pm$ 1.8 vs. 3.1 $\pm$ 1.8 years; $p = .0002$). Service-connected disability rating varied between opioid status groups, where 64.9% of women with a prescription had a service-connected disability rating of greater than 0% compared with 48.3% of women without a filled prescription ($p < .001$).

Table 2 indicates that a greater proportion of women with an opioid prescription during their pregnancy window had posttraumatic stress disorder, mild and major depression, bipolar disorder, and alcohol or drug abuse or dependence at any point before delivery compared with those who did not receive prescription opioids during the pregnancy window. Over half (52.4%) of those with a prescription had at least one psychiatric diagnosis compared with roughly 34% of those without a prescription ($p < .001$). A greater proportion of women with a filled opioid prescription had a positive military sexual trauma screen (17.8%) compared with women without a prescription (12.4%). Women with a filled prescription for an opioid in the 280-day pregnancy window were more likely to be diagnosed with back problems, headaches, migraines, sprains and strains, and other nontraumatic joint disorders during their pregnancies compared with women who did not receive an opioid prescription (all $p < .05$). Assessment of multiple comparisons by employing a Bonferroni adjustment did not affect the bivariate p values substantially. Additionally, the backward selection logistic regression model excluded any variables no longer found to be significant from our final multivariable findings.

Table 3 shows the results from the multivariable logistic model. Adjusted odds ratios were attenuated slightly from crude odds ratios. Our results suggest that service-connected disability ratings of greater than 0% increased the odds of a filled opioid prescription during the pregnancy window by 46% (95% CI, 1.07–1.99), after adjusting for other factors in the model. The presence of one or more psychiatric diagnosis increased the adjusted odds of a filled opioid prescription 1.7 times compared to those without a psychiatric diagnosis (95% CI, 1.24–2.26). Physical health conditions, specifically back problems (aOR, 2.94; 95% CI, 1.92–4.49) and other nontraumatic joint disorders (aOR, 2.20; 95% CI, 1.36–3.58), were associated with prescription opioid receipt during the pregnancy window. Although positive military sexual trauma screens or diagnosis of headache, migraine, or sprains and strains did not meet the significance level for inclusion in the final logistic model, all suggested a trend toward higher odds of filling an opioid prescription given presence of that specific condition.

Table 1
Sociodemographic and Service-Connected Characteristics in Pregnant Veterans by Receipt of a Prescription Opioid

Characteristic	Total (n = 2,331)	Any Filled prescription for Opioids in the Pregnancy Window		p Value
		Yes (n = 231)	No (n = 2,100)	
Sociodemographic				
Age at delivery (y), mean ± SD (range)	23.6 ± 3.6 (18–41)	23.7 ± 3.6 (19–38)	23.6 ± 3.6 (18–41)	.49
Race, n (%)				
White	1274 (54.7)	121 (52.4)	1153 (54.9)	.85
Black	461 (19.8)	49 (21.2)	412 (19.6)	
Other	479 (20.6)	46 (19.9)	433 (20.6)	
Unknown	115 (4.9)	13 (5.6)	102 (4.9)	
Ethnicity, n (%)				
Hispanic	298 (12.8)	24 (10.4)	274 (13.0)	.49
Non-Hispanic	1916 (82.2)	192 (83.1)	1724 (82.1)	
Unknown	115 (4.9)	13 (5.6)	102 (4.9)	
Marital status, n (%)				
Married	688 (29.5)	83 (35.9)	605 (28.8)	.04
Divorced/separated/widowed	98 (4.2)	6 (2.6)	92 (4.4)	
Never married	1537 (65.9)	138 (59.7)	1399 (66.6)	
Education level, n (%)				
Less than high school	36 (1.5)	2 (0.9)	34 (1.6)	.60
High school graduate	1992 (85.5)	199 (86.2)	1793 (85.4)	
Greater than high school	268 (11.5)	24 (10.4)	244 (11.6)	
Service connected				
Time at delivery since return from last deployment (y), mean ± SD (range)	3.1 ± 1.8 (0.03–8.4)	3.5 ± 1.8 (0.5–8.3)	3.1 ± 1.8 (0.03–8.4)	<.001
Service-connected disability rating, n (%)				
Non-service connected/0%	1155 (49.6)	79 (34.2)	1076 (51.2)	<.001
>0%	1165 (50.0)	150 (64.9)	1015 (48.3)	
Rank, n (%)				
Enlisted	2259 (96.9)	223 (96.5)	2036 (97.0)	.72
Officer	70 (3.0)	6 (2.6)	64 (3.0)	
Component, n (%)				
Guard	342 (14.7)	30 (13.0)	312 (14.9)	.76
Active	1668 (71.6)	168 (72.7)	1500 (71.4)	
Reserves	319 (13.7)	31 (13.4)	288 (13.7)	
Branch of service, n (%)				
Army	1439 (61.7)	141 (62.0)	1298 (61.8)	.31
Coast Guard	1 (<1.0)	0 (0.0)	1 (<1.0)	
Air Force	334 (14.3)	38 (16.5)	296 (14.1)	
Marine Corps	148 (6.4)	19 (8.2)	129 (6.1)	
Navy	407 (17.5)	31 (13.4)	376 (17.9)	

Discussion

We found that 10% of women veterans who used VHA care filled a prescription for an opioid at least once during their pregnancy window, which is comparable with a recent study conducted in the general U.S. population, where 14.4% of women had at least one filled prescription for an opioid during pregnancy (Bateman et al., 2014). Other studies have found that with the exception of cancer-related pain, headaches, chronic pain, genitourinary syndromes, and other orthopedic conditions were the most likely reasons for opioid use during pregnancy (Campbell et al., 2010; Darnall, Stacey, & Chou, 2012; Kellogg, Rose, Harms, & Watson, 2011; Meyer, 2014). In OEF/OIF/OND veterans, increases in the likelihood of receiving an opioid prescription in those with back pain, migraines, and posttraumatic stress disorder have been noted (Macey, Morasco, Duckart, & Dobscha, 2011). This is consistent with the increased odds of exposure in pregnant veterans diagnosed with back pain, other nontraumatic joint disorders, and psychiatric diagnoses, including posttraumatic stress disorder, observed in our study.

Women receiving pregnancy care in the VA are twice as likely to be diagnosed with posttraumatic stress disorder, depression, anxiety, schizophrenia, or bipolar disorder as compared with women without record of receiving pregnancy care in the VA (Mattocks et al., 2010). More than 35% of the women in our sample had at least one of these psychiatric diagnoses, the presence of which increased the odds of filling a prescription for an opioid. The number of veterans utilizing VA maternity benefits increased to 17.8 infant deliveries per 1,000 veterans from 2008 to 2012, with the majority of women having a service-connected disability rating (Mattocks et al., 2014). If current trends continue, it is possible that greater numbers of women veterans will be seeking maternity care within the VA health care system, a substantial proportion of whom may have a comorbid physical health condition or psychiatric diagnosis. This necessitates the successful coordination of mental, physical, and maternal medical care for these women, especially in cases of chronic pain management where prescription opioids may be considered. Unfortunately, little is currently known about the coordination between VA care providers or outcomes for women who deliver in the VA (Bean-Mayberry et al., 2011; Mattocks et al., 2010, 2014; West & Lee, 2013).

The Food and Drug Administration recently implemented labeling changes for extended-release and long-acting opioids to include detailed information on the risk of neonatal opioid withdrawal syndrome if these medications are taken during pregnancy (U.S. Food and Drug Administration, 2014). The Food and Drug Administration (Schwarz et al., 2010; U.S. Food and

Table 2
Psychiatric Diagnoses and Physical Health Conditions of Pregnant Veterans by Receipt of a Prescription Opioid

Diagnoses	Total (n = 2,331), n (%)	Any Filled Prescription for Opioids in the Pregnancy Window, n (%)		p Value
		Yes (n = 231)	No (n = 2,100)	
Psychiatric Diagnoses (ever diagnosed prior to delivery)				
Posttraumatic stress disorder	483 (20.7)	69 (29.9)	414 (19.7)	<.001
Mild depression	570 (24.5)	85 (36.8)	485 (23.1)	<.001
Major depression	274 (11.8)	45 (19.5)	229 (10.9)	<.001
Bipolar disorder	105 (4.5)	20 (8.7)	85 (4.1)	<.01
Schizophrenia	3 (0.1)	0 (0.0)	3 (0.1)	.57
Any psychiatric diagnosis	837 (35.9)	121 (52.4)	716 (34.1)	<.001
Alcohol abuse/dependence	114 (4.9)	18 (7.8)	96 (4.6)	.03
Drug abuse/dependence	51 (2.2)	12 (5.2)	39 (1.9)	<.01
Positive military sexual trauma screen	302 (13.0)	41 (17.8)	261 (12.4)	.02
Physical health conditions (diagnosis during pregnancy window)				
Back problems	139 (6.0)	40 (17.3)	99 (4.7)	<.001
Headache	39 (1.7)	11 (4.8)	28 (1.3)	<.001
Migraine	48 (2.1)	14 (6.1)	34 (1.6)	<.001
Sprains and strains	19 (0.8)	5 (2.2)	14 (0.7)	.02
Other nontraumatic joint disorder	111 (4.8)	29 (12.6)	82 (3.9)	<.001

Drug Administration, 2008) and the VA (Department of Veterans Affairs & Department of Defense, 2010) both categorize opioids as class B or C medications, where there is some evidence of risk to the developing fetus, but not enough information is available to conclude that fetal risks outweigh the maternal benefits of use. Current VA opioid "safe prescribing" procedures involve a lengthy process of assessing current symptoms and medical history to determine the best therapeutic plan for chronic pain and other disorders, informing patients of potential risks and benefits, and screening for co-occurring substance use disorders (Department of Veterans Affairs & Department of Defense, 2010; Department of Veterans Affairs, 2013; VA National Pain Management Program and VA National Center for Ethics in Health Care, n.d.). The VA also has a computerized pharmacy order check that alerts providers when providing potentially teratogenic medications to women of childbearing age. In a recent review, VA guidelines for opioid prescriptions were found to be similar to those from other institutions, with comparable dosing thresholds, awareness of other drug interactions, drug testing standards, and risk assessment (Nuckols et al., 2014). Although opioid use may be indicated during pregnancy for certain conditions, current guidelines do not provide specific information on risks and benefits. Understanding patients' specific needs is important to help reduce the potential risks to the fetus and mother.

Table 3
Factors Associated with Any Filled Opioid Prescription within the Pregnancy Window in Veterans (n = 2,331)

Variable	Crude OR	95% CI	Adjusted OR*	95% CI
Marital status (married vs. never/not married)	1.42	1.07–1.89	–	–
Time at delivery since return from last deployment (years)	1.15	1.07–1.24	–	–
Service-connected disability rating (>0% vs. NSC/0%)	2.01	1.51–2.68	1.46	1.07–1.99
Psychiatric diagnoses (any diagnosis [prior to delivery] vs. no diagnosis)				
Any psychiatric diagnosis	2.13	1.62–2.80	1.67	1.24–2.26
Drug abuse/dependence	2.90	1.50–5.62	2.14	1.08–4.26
Alcohol abuse/dependence	1.76	1.05–2.98	–	–
Positive military sexual trauma screen	1.52	1.06–2.18	–	–
Physical health conditions (diagnosis within pregnancy window vs. no diagnosis within pregnancy window)				
Back problems	4.23	2.85–6.29	2.94	1.92–4.49
Headache	3.70	1.82–7.54	–	–
Migraine	3.92	2.07–7.42	2.32	1.16–4.65
Sprains and strains	3.30	1.18–9.24	–	–
Other nontraumatic joint disorder	3.53	2.26–5.53	2.20	1.36–3.58

Abbreviations: NSC, non-service connected disability; OR, odds ratio.

* Adjusted odds ratios from a backward-selection logistic regression model with all factors found to be significant in bivariate analyses initially included (Hosmer and Lemeshow Goodness-of-Fit p = .7619).

Our study has many strengths. We have a large, national sample of pregnant OEF/OIF/OND veterans, on whom opioid prescribing has not previously been studied. Our data include information on prescription opioid use, sociodemographics, physical conditions, psychiatric diagnoses, and delivery information. Our sample was similar to those of other studies of pregnant veterans in terms of demographic and service-related characteristics (Mattocks et al., 2010, 2014). Additionally, we have information from administrative records, which confirm prescription fill. Nonetheless, our study also has limitations that may decrease the generalizability of our findings. We were unable to account for dose or indication in this work and cannot comment on the reasons for filled opioid prescriptions or determine causality from the associations examined herein. Our study sample likely underestimates the true number of veterans who received a prescription for an opioid during their pregnancy window, as we only have information on prescription use and deliveries that were covered by VHA health insurance. The use of our 280-day pregnancy window may have captured some opioid prescriptions outside of the actual duration of pregnancy; however, the VHA does not routinely collect information on other measures such as date of last menstrual period or gestational age at birth of the infant, which may have provided us with a more accurate calculation. Unlike other studies (Bateman et al., 2014), we were unable to examine physical health conditions outside of the pregnancy window, because we only had information on diagnoses during this time. We also could not examine infant measures as the VA does not routinely collect data on birth outcomes. Finally, we only included OEF/OIF/OND veterans who used VHA care during their pregnancy window. Our results may

not be applicable to veterans of other military operations or those who did not use VHA care.

Conclusions

Ten percent of the pregnant veterans included in our study filled a prescription for an opioid at least once during or just prior to their pregnancy window. We found that service-connected disability ratings of greater than 0%, psychiatric diagnoses, and physical health conditions were associated with receipt of prescription opioids during the pregnancy window. Given the higher rates of physical conditions and psychiatric diagnoses of women veterans compared with the general population, future work should aim to capture a bigger representation of pregnant veterans and examine opioid exposure timing in relation to pregnancy.

Implications for Practice and/or Policy

This study suggests that a considerable proportion of women veterans fill a prescription for opioids at least once during their pregnancy window. Clinicians can play a crucial role in determining the needs of patients on a case-by-case basis and to identify alternative sources of pain management when possible. Given the high proportion of service-related disabilities and mental health conditions in veterans who received prescription opioids during their pregnancies, pregnant veterans should be assessed for potentially undertreated psychiatric and pain diagnoses before receipt of prescription opioids. Future guidelines should incorporate information on use of prescription opioids during pregnancy to help providers and patients make decisions regarding their use.

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Supplementary Data

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