Original research article

Associations of mental illness and substance use disorders with prescription contraception use among women veterans[☆,☆☆,★]

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Abstract

Objective: To investigate whether mental illness and substance use disorder (SUD) are associated with having a prescription contraceptive method among women veterans.

Study design: We conducted a retrospective analysis of National Veterans Administration (VA) administrative and clinical data for women veterans aged 18–45 years who made at least one primary care visit in 2008. We assessed associations between mental illness (depression, posttraumatic stress disorder, anxiety, bipolar disorder, schizophrenia and adjustment disorder) and SUD (drug/alcohol use disorder) with having a prescription contraceptive method from VA (pill, patch, ring, injection, implant and intrauterine device) using multivariable logistic regression with random effects for VA facility, adjusting for confounders.

Results: Among 94,115 reproductive aged women, 36.5% had mental illness only, 0.6% had SUD only, 5.3% had both mental illness and SUD and 57.7% had neither diagnosis. In these groups, 22.1%, 14.6%, 18.2% and 17.7% (p<0.001), respectively, had documentation in 2008 of prescription contraception. After adjusting for potential confounders, women with mental illness only were as likely as women with neither diagnosis to have a prescription method and were more likely to use a highly effective prescription method (implant or intrauterine device) if using contraception [adjusted odds ratio (aOR) 1.17, 95% confidence interval (CI) = 1.08–1.27]. Women with SUD (with or without mental illness) were significantly less likely to have a prescription method than women with neither diagnosis (aOR 0.73, 95% CI = 0.57–0.95 and aOR 0.79, 95% CI = 0.73–0.86, respectively).

Conclusion: Women veterans with SUD are less likely to have prescription contraception compared to other women, which may increase their risk of unintended pregnancy.
Published by Elsevier Inc.

Keywords: Contraceptive behavior; Veterans health; Mental disorder; Alcohol-related disorders; Substance-related disorders; Highly effective reversible contraception

1. Introduction

Over half (51%) of pregnancies in the United States are unintended, nearly all of which result from a combination of contraceptive nonuse and inconsistent or incorrect use of contraception [1–3]. Established risk factors for contraceptive nonuse and incorrect use include demographic, socioeconomic and reproductive characteristics [4–6]. Emerging data suggest that common mental illnesses such as depression or anxiety and substance use disorders (SUD) may also be important risk factors for poor contraceptive use [7–12]. Inadequately controlled mental illness and SUD also increase risks of adverse perinatal outcomes such as preterm birth, low birth weight and birth defects as well as adverse maternal outcomes such as postpartum depression [13–18]. Effective contraception to prevent unintended pregnancy in this population is therefore particularly critical.

A growing body of evidence suggests that mental illness is associated with contraceptive nonuse, use of less effective methods and reduced adherence with compliance-based methods such as the birth control pill [7–10], although other studies have not found these associations [19,20]. Little data have been published to date on associations between diagnosed SUD and contraceptive use in adults [12,21]. Published studies in teenagers and college students have focused on associations between substance use or binge drinking and condom behavior, rather than associations between substance use or SUD and use of effective contraception [12,22–25]. Moreover, prior studies have not used national data to examine relationships between mental illness and SUD with contraceptive use.

Women veterans have significantly higher rates of mental illness compared to their civilian counterparts [26,27]. A recent study found that 48% of women veterans using the VA health care system users who served in Afghanistan in Operation Enduring Freedom (OEF) or in Iraq in Operation Iraqi Freedom (OIF) screened positive for depression and 21% for posttraumatic stress disorder (PTSD) [26]. The prevalence of alcohol misuse among women veterans is also high, with 17% screening positive using the Alcohol Use Disorders Identification Test (AUDIT-C) in a national sample of OEF/OIF Veterans [28].

In addition to high rates of mental illness and SUD, women veterans have low rates of prescribed contraception compared to national estimates [29]. Given the rapidly increasing number of young women veterans entering the VA health care system [30], understanding determinants of contraceptive nonuse or use of less effective, nonprescription methods is critical for prevention of unintended pregnancies and improving birth outcomes. However, no studies have yet examined the associations between presence of mental illness or SUD and having a prescription contraceptive method in the VA.

We therefore used national VA data to investigate the association of mental illness (depression, PTSD, anxiety, bipolar disorder, schizophrenia and adjustment disorder) and SUD (drug/alcohol use disorders) with having a prescription

contraceptive method [pill, patch, ring, injection, implant and intrauterine device (IUD)]. We also investigated associations between mental illness or SUD and specific types of prescription contraception categorized by level of effectiveness. We hypothesized that women with mental illness or SUD only, as well as women with both diagnoses, would be less likely to have prescription contraception and less likely to use highly effective prescription contraceptive methods (implant or IUD) compared to women without these diagnoses.

2. Materials and methods

2.1. Data sources

We used secondary data from national VA administrative and clinical databases including the Pharmacy Benefits Management (PBM) Database (Version 3) and the Medical SAS inpatient and outpatient data files for fiscal year (FY) 2008 (October 1, 2007 through Sept 30, 2008). The VA uses an electronic medical record system that captures pharmacy and clinical data on all clinical care provided within VA facilities. The PBM Database was used to obtain information on prescribed contraceptive methods. The Medical SAS Datasets contain VA inpatient and outpatient clinical data and were used to obtain demographic measures, mental health and medical International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes, health care utilization and Current Procedural Terminology (CPT) codes for contraceptive procedures including insertions or removals of IUDs or subdermal contraceptive implants. This study was approved by the VA Pittsburgh and VA Puget Sound Institutional Review Boards.

2.2. Study setting and population

The study population included all female veterans aged 18–45 who made at least one visit to a standard primary care clinic or designated women's health primary care clinic during FY2008. Women were excluded if they had evidence of prior hysterectomy, tubal sterilization, infertility or evidence of pregnancy during the study timeframe.

2.3. Outcome variables

The outcome variables for the analyses were (1) any prescription contraceptive method based on pharmacy records or CPT codes for contraception-related procedures and (2) type of prescription contraceptive method used, categorized by level of effectiveness, in FY2008. A woman was considered to have a documented method of contraception if she had filled a prescription for a hormonal contraceptive at any time in FY2008 or if she had evidence of having received a contraceptive implant in the preceding 5 years or IUD in the preceding 10 years and no evidence of removal. Contraceptive methods were categorized using the World Health Organization's tiers of contraceptive effectiveness. Moderately effective contraception was defined as birth control pill, patch, ring or injection; highly effective