



Original Article

Prevalence, pharmacotherapy and clinical correlates of diagnosed insomnia among veterans health administration service users nationally

Eric Hermes^{a,*}, Robert Rosenheck^b

^a VA New England Mental Illness Research, Education and Clinical Center, Department of Psychiatry, Yale School of Medicine and the VA Connecticut Health Care System, 950 Campbell Ave., West Haven, CT 06516, USA

^b VA New England Mental Illness, Research, Education and Clinical Center, Department of Psychiatry, Epidemiology and Public Health, and the Child Study Center, Yale School of Medicine and the VA Connecticut Health Care System, 950 Campbell Ave., West Haven, CT 06516, USA

ARTICLE INFO

Article history:

Received 23 September 2013

Received in revised form 17 December 2013

Accepted 19 December 2013

Available online 8 February 2014

Keywords:

Insomnia

Epidemiology

Veterans

Psychiatric disorders

Pharmaco-epidemiology

Sleep disorders

ABSTRACT

Objective: There is little information on diagnostic rates or treatment correlates of insomnia in real-world practice. Study objectives were to identify the 1-year prevalence, psychotropic pharmacotherapy and clinical correlates of diagnosed insomnia, nationally in the Veterans Health Administration (VHA).

Method: The study used national administrative data on all individuals receiving VHA care in 2010. Receipt of insomnia, in addition to co-morbid diagnoses, was identified using relevant International Classification of Diseases (ICD)-9 diagnostic codes. The adjusted mean number of psychotropic prescription fills and co-morbid conditions associated with insomnia were identified using bivariate and multivariable regression models.

Results: Of the 5,531,379 individuals receiving VHA care in 2010, 190,378 (3.4%) received an insomnia diagnosis. Controlling for clinical characteristics, the presence of an insomnia diagnosis was associated with an average of four additional psychotropic prescription fills over the year. Among demographic characteristics, deployment to recent conflicts in Iraq/Afghanistan (adjusted odds ratio (AOR) = 1.62) displayed the strongest independent association, while age, unexpectedly, did not display any association with insomnia. Among diagnostic variables, anxiety disorders other than post-traumatic stress (AOR = 2.12) and depressive disorders other than major depression (AOR = 2.05) displayed the strongest independent associations with insomnia.

Conclusion: The diagnosis of insomnia is associated with the filling of more psychotropic prescriptions, net of the presence of psychiatric co-morbidity in national VHA administrative data, and the prevalence of diagnosed insomnia is lower than that found in systematic surveys of the general population, a potential impediment to optimal treatment.

Published by Elsevier B.V.

1. Introduction

Insomnia is a disorder characterised by difficulty initiating or maintaining restorative sleep [1]. Individuals with insomnia report having a decreased quality of life, are at higher risk for occupational mishaps and use significantly more health services, the direct and indirect costs of which total several billion dollars a year in the U.S. [2–5]. The disorder is especially relevant to organisations such as the Veterans Health Administration (VHA) which is responsible for the care of individuals who may be more severely

impacted by insomnia, such as veterans with recent combat exposure, those diagnosed with post-traumatic stress disorder (PTSD) and the elderly [1,6,7].

The prevalence of insomnia and the epidemiology of its treatment have been difficult to ascertain due to variance in the methods and case definitions used [6]. When criteria for the diagnosis of insomnia such as that of the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV-TR are applied in epidemiologic studies of the general population, the prevalence is generally between 4% and 10% [8–10], and in some studies as high as 22% [11].

There are strong associations between insomnia and psychiatric disorders such as PTSD, depression and anxiety disorders, as well as physical conditions such as chronic obstructive pulmonary

* Corresponding author. Tel.: +1 (203) 932 5711x7422; fax: +1 (203) 937 3472.

E-mail addresses: eric.hermes@yale.edu (E. Hermes), Robert.Rosenheck@yale.edu (R. Rosenheck).

disease and neurologic disorders [1,6,12,13]. Insomnia is also a common diagnosis among those with military experience. Between 30% and 40% of deployed or recently deployed individuals report difficulty falling or staying asleep [7,14,15], a figure which is similar among Vietnam-era VHA service users [16,17]. However, few studies have evaluated the rate of provider-diagnosed insomnia using data from real-world clinical practice, where high levels of both psychiatric and medical morbidity may result in higher actual prevalence compared to that found in epidemiologic studies of the general population [18].

Reports on the rate of pharmacologic treatment of insomnia are also dependent on the methods used. Between 4% and 11% of the general population report using medications to improve sleep [19,20] and among treatment-seeking adults with insomnia, up to 60% are prescribed sedative/hypnotic medications [21,22]. However, these studies have not examined the number of additional psychotropic prescriptions associated with a diagnosis of insomnia net of co-morbid psychiatric disorders, disorders which are commonly associated with insomnia and for which prescribed treatments often overlap.

There is little information on the prevalence, treatment or clinical correlates of insomnia diagnosed by providers practising in large, integrated health-care systems such as VHA where national data can be used to examine diagnostic rates and related prescribing of psychotropic medication. The objective of this study was to identify the prevalence of diagnosed insomnia, the disorder's diagnostic and clinical correlates, as well as the extent of pharmacologic treatment provided to VHA service users with insomnia. We hypothesised a higher prevalence of diagnosed insomnia than that found in the general population given the high co-morbidity of psychiatric and medical disorders among VHA service users, but were unsure if this would be reflected in the available administrative data. We also hypothesised a greater use of psychotropic medications with sedative/hypnotic properties even after controlling for co-morbid diagnoses as well as variables strongly associated with insomnia such as age, recent combat exposure, and psychiatric diagnoses.

2. Method

2.1. Data source

The sample included all individuals using VHA services in fiscal year (FY) 2010 (October 1, 2009–September 30, 2010). Socio-demographic and clinical data were obtained from VHA databases containing data on all VHA outpatient clinic visits and episodes of VHA inpatient care. Psychotropic prescription data were obtained from a database which contained information on all prescriptions filled at VHA pharmacies. The institutional review boards of the VA Connecticut Healthcare System and the Yale University School of Medicine approved this study.

2.2. Measures

There were two dependent variables of interest: receipt of an insomnia-related diagnosis on at least one occasion in FY 2010 based on the following International Classification of Disease Volume 9 (ICD-9) codes: [23] 327.0 x, 307.42, 307.41, 780.51, 780.52 (single dichotomous variable) and the number of psychiatric medication prescriptions recorded in FY 2010, both as a total number of psychotropic prescriptions and stratified by drug class: antidepressants, antipsychotics, anxiolytics/sedative hypnotics, stimulants and mood stabilisers (grouped as five continuous discrete variables for each class and one summary variable for all psychotropics). Drug classifications were based on the primary (initial

Food and Drug Administration indication for each drug, with the exception of mood stabilisers, identified through consultation with expert psycho-pharmacologists as to the medications (primarily anticonvulsants) most often used for this purpose, and trazodone, originally approved as an antidepressant but now most widely used as a sedative/hypnotic and classified as such in this analysis.

Factors evaluated for their association with receiving an insomnia diagnosis included demographic, diagnostic and service use measures, in addition to the number of type of psychotropic prescription fills. Demographic variables included age (continuous variable), gender (male/female), homelessness (homeless/non-homeless), location (urban/rural), income (ordinal variable with four levels), receipt of VHA service-connected disability compensation (ordinal variable with three levels), receipt of VHA pension (pension/no pension) and recent service in Iraq or Afghanistan (deployed/not deployed). Race/ethnicity was not included because of the high proportion of missing data for this variable (67%) in the 2010 VHA databases. Homelessness was defined by the use of any specialised VHA homeless service or a diagnosis code suggesting homelessness. Urban versus rural location was classified into two categories by zip code using Rural Urban Commuting Area Codes [24]. VHA service-connected disability payments are made to veterans on the basis of conditions determined to be associated with military service. Both VHA service connection and pension status give veterans special entitlement to VHA health services. Veterans were categorised as having deployed in support of operations in Iraq and/or Afghanistan based on a database obtained through a collaboration with the Department of Defense. Clinical measures of interest included psychiatric, substance abuse and medical diagnoses identified by ICD-9 codes in addition to overall medical co-morbidity measured by the Charlson Comorbidity Index [25]. The number of VHA outpatient primary care, specialty medical-surgical, general psychiatric, substance abuse and emergency department visits in FY 2010 were recorded using relevant clinic codes.

2.3. Analysis

The 1-year prevalence of provider-diagnosed insomnia was defined as the proportion of veterans receiving at least one insomnia-related diagnosis in FY 2010. Cross-sectional bivariate associations between the receipt of an insomnia diagnosis and individual characteristics are presented as unadjusted effect sizes, odds ratios (ORs) for categorical variables, and Cohen's *D* for continuous variables [26]. Inferential significance testing and reporting *p*-values or confidence intervals were not undertaken for bivariate analysis because the entire population receiving VHA services in FY 2010 was included (over 5 million individuals), making all *p*-values highly significant and 95% confidence intervals very tight.

To determine independent associations with the diagnosis of insomnia, variables in bivariate analysis with an OR of ≥ 1.5 or ≤ 0.67 or a Cohen's *D* of ≥ 0.3 (a moderate effect size) were included for potential selection in a series of multivariable logistic regressions, progressing through a sequence of steps. First, demographic and diagnostic variables were evaluated for inclusion on the basis of a forward stepwise selection at $p < 0.05$ using the PROC STEPWISE function of SAS[®] Version 9.2 (SAS Institute, Cary, NC, USA). Service use variables were then added to the first model, again using the same stepwise function. Variables describing any use of psychiatric medication were then added to the second model.

Analysis of covariance evaluating the number of psychotropic prescriptions filled during the year was used to assess the extent of psychopharmacologic prescribing associated with the receipt of a diagnosis of insomnia. Factors independently associated with insomnia in the previous analysis were used to adjust for

Download English Version:

<https://daneshyari.com/en/article/6060900>

Download Persian Version:

<https://daneshyari.com/article/6060900>

[Daneshyari.com](https://daneshyari.com)