European Psychiatry 30 (2015) 778–788

Contents lists available at ScienceDirect

European Psychiatry

journal homepage: http://www.europsy-journal.com

Original article

Gender differences in psychotropic use across Europe: Results from a large cross-sectional, population-based study

A. Boyd [a,b], S. Van de Velde [a,c], M. Pivette [a], M. ten Have [d], S. Florescu [e], S. O'Neill [f], J.-M. Caldas-de-Almeida [g], G. Vilagut [h,i], J.M. Haro [j], J. Alonso [h,i,k], V. Kovess-Masféty [a,*], the EU-WMH investigators

[a] École des hautes études en santé publique (EHESP), EA 4057, Paris Descartes University, 75014 Paris, France
[b] Inserm UMR_S1136, Institut Pierre-Louis d'Épidémiologie et de Santé Publique, 75013 Paris, France
[c] Ghent University, Ghent, Belgium
[d] Netherlands Institute of Mental Health and Addiction, Utrecht, The Netherlands
[e] National School of Public Health, Management and Professional Development, Bucharest, Romania
[f] Bamford Centre for Mental Health and Well-Being, University of Ulster, Londonderry, Northern Ireland
[g] Chronic Diseases Research Center (CEDOC) and Department of Mental Health, Faculdade de Ciências Médicas, Universidade Nova de Lisboa, Lisbon, Portugal
[h] Health Services Research Unit, IMIM (Hospital del Mar Medical Research Institute), Barcelona, Spain
[i] CIBER Epidemiología y Salud Pública (CIBERESP), Spain
[j] Parc Sanitari Sant Joan de Déu, University of Barcelona, CIBERSAM, Sant Boi de Llobregat, Barcelona, Spain
[k] Department of Experimental and Health Sciences, Pompeu Fabra University (UPF), Barcelona, Spain

ARTICLE INFO

Article history:
Received 16 November 2014
Received in revised form 11 March 2015
Accepted 2 May 2015
Available online 4 June 2015

Keywords:
Antidepressant
Benzodiapine
Mood stabilizers
Anxiety disorders
Mood disorders

ABSTRACT

Background: In many epidemiological studies, women have been observed to consume psychotropic medication more often than men. However, the consistency of this relationship across Europe, with differences in mental health care (MHC) resources and reimbursement policies, is unknown.
Methods: Questions on 12-month psychotropic use (antidepressants, benzodiazepines, antipsychotics, mood stabilizers) were asked to 34,204 respondents from 10 European countries of the EU-World Mental Health surveys. Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) criteria were used to determine 12-month prevalence of mood/anxiety disorders using the Composite International Diagnostic Interview (v3.0).
Results: For all participating countries, women were significantly more likely than men to use psychotropic medication within the previous 12 months (overall-OR = 2.04, 95% CI: 1.81–2.31). This relationship remained significant after adjusting for common sociodemographic factors (age, income level, employment status, education, marital status) and country-level indicators (MHC provision, private household out-of-pocket expenditure, and Gender Gap Index). In multivariable gender-stratified risk-factor analysis, both women and men were more likely to have taken psychotropic medication with increasing age, decreasing income level, and mental health care use within the past 12 months, with no significant differences between genders. When only including participants with a mental disorder, gender differences overall were still significant with any 12-month mood disorder but not with any 12-month anxiety disorder, remaining so after adjusting for sociodemographic characteristics and country-level indicators.
Conclusions: Women use psychotropic medication consistently more often than men, yet reasons for their use are similar between genders. These differences also appear to be contingent on the specific mental disorder.

1. Introduction

Psychotropic medication is more frequently used in women as compared to men. This finding has been replicated whether data originate from population-based surveys [11,27,38], national prescription registries [8,28] and/or primary health care settings

* Corresponding author. EHESP, rue du Pr-Léon-Bernard, 35043 Rennes, France. Tel.: +33299022536; fax: +33958492289.
E-mail address: viviane.kovess@ehesp.fr (V. Kovess-Masféty).

http://dx.doi.org/10.1016/j.eurpsy.2015.05.001
0924-9338/

[15,31]. The bulk of these studies have also confirmed that the more commonly prescribed drug classes, namely antidepressants and benzodiazepines, are used more frequently in women than men. Meanwhile, the gender difference in psychotropic use has been a consistent and strong trend for the past several decades, regardless of overall increases in treatment [1,26,43].

In Europe, several reasons for these differences have been broached in the literature. First, surveys in different countries have consistently demonstrated that women suffer more from anxiety and depressive disorders and men from addictive and impulsive disorders [35,42]. Since the large majority of psychotropic drugs target anxiodepressive disorders rather than addictive and externalizing ones, gender differences in psychotropic use might be a proxy for the prevalence of mental disorders in women and men. Second, prescription of psychotropic medication is given more frequently by general practitioners (GP) than other mental health professionals [12,30]. Considering that women seek GPs for their mental health care (MHC) much more often than men [21], psychotropic use between women and men could be more a reflection of MHC preferences, the services providing MHC, or to a greater extent, the country's resources devoted to MHC. Third, gender differences in mental health are strongly impacted by the degree of gender inequality within a country [40,41]. How social equality between genders affects psychotropic use remains mostly unknown. Finally, sociodemographic variables may play a role, yet prior research has shown that many of such factors tend to affect prescription of psychotropic medication similarly within genders [14,20,34,37].

Unfortunately, very few studies have directly investigated the use of psychotropic drugs in representative samples of the general European population together with validated measures of mental disorders. One more recent and well-designed study across six European countries did observe consistently higher psychotropic use among women, who were generally given more adequate treatment compared to men [4]. However, the restricted number of countries limits the generalizability of these findings to other Southern and Eastern European countries, where there are vast differences in the types of services providing MHC, health expenditure allocated to MHC, and socioeconomic gap between women and men.

The objective of the present study was then to examine the potential reasons behind gender differences in psychotropic drug consumption across ten European countries. More specifically, we aimed to study the influence of psychotropic consumption between genders after accounting for socioeconomic factors, MHC use, and health system indicators. Since the prevalence of specific mental disorders may be a key driving factor for the gender effects observed in previous studies, we sought to determine whether gender differences in psychotropic use remained among those with any mood or anxiety disorder. These objectives were addressed by using data from the European Union's contribution to the World Mental Health (EU-WMH) survey, which includes precise questions on psychotropic use.

2. Methods

2.1. Study sample

The WMH Surveys Initiative (http://www.hcp.med.harvard.edu/wmh/) aimed to assess the prevalence of common mental disorders, including their correlates and relationship to service use. The European part comprises six countries participating in a cross-sectional, population-based, household survey (the Netherlands, Belgium, Germany, France, Spain, Italy [2]) and four other countries conducting individual surveys with similar methodology (Bulgaria, Romania, Northern Ireland, and Portugal).

A stratified, multi-stage, random sample without replacement was drawn in each country. The sampling frame and the number of sampling stages used to obtain the final sample differed across countries. The target population was represented by non-institutionalized adults (aged $\geq$ 18 years) identified from a national household list or a list of residents in each country. This list was obtained from the census, local postal registries, or, in the case of France, telephone lists.

Respondents underwent the Composite International Diagnostic Interview (CIDI), in which a face-to-face, computer-assisted personal interview was conducted by a trained interviewer, speaking in lay terms [33], except for Bulgaria where a paper version was administered. The interview was conducted in two phases for all countries except Romania. Part 1 (given to all respondents) included sociodemographic variables, core diagnostic assessment of mental disorders and suicidal behaviors. All Part 1 respondents who met criteria for any lifetime mental disorder, and a 25% probability sample of other respondents, were administered Part 2 of the survey. Part 2 included in-depth questions about additional mental disorders, mental health service use (only for Northern Ireland, Bulgaria, and Portugal; otherwise, these items were asked in the Part 1 sample), as well as specific demographic, lifestyle features, and religious beliefs. Details for each participating country are given in Appendix A.

From 2001–2005 (except Portugal, 2008), data were obtained on a total of 37,289 respondents, ranging from 2357 in Romania to 5473 in Spain. Response rates varied from 45.9% in France to 78.6% in Spain. The sample was weighted to take into account different selection probabilities within countries (including the Part 2 sample), and post-stratification weights to restore specific age and gender distributions of the general population in each country. In this study, data from the Part 1 sample were used for all countries, except for Bulgaria where questions on psychotropic medication were only asked to participants in the Part 2 sample.

2.2. Assessment of psychotropic use

Information from respondents, regardless of diagnostic status, was obtained on the use of any psychotropic medication during the last 12 months. In order to reduce potential recall bias, all respondents during the face-to-face interview were presented with a standardized booklet containing high-quality pictures of psychotropic drugs commonly used to treat mental disorders, adapted for each country. They were then asked "Did you take any of the medicines on this card at any time in the past 12 months?" and, if so, requested to specify which medications on the card were taken. The analyses presented in this paper refer to any episode of use of psychotropic drugs in the last 12 months.

Psychotropic drugs were recorded during the interviews using local brand names and then converted into Anatomical Therapeutic Chemical (ATC) classification identifiers [46]. Although data were collected on specific compounds from each drug category, we limit our analysis to four main drug categories: antidepressants (including tricyclics and new generation antidepressants), benzodiazepines, antipsychotics (including traditional and atypical antipsychotics, such as clozapine, olanzapine, quetiapine and risperidone), and mood stabilizers (including lithium, carbamazepine, valproate, gabapentin, topiramate and lamotrigine). The specific agents of each category are given in Box 1.

2.3. Assessment of mental disorders and MHC-use

Twelve-month presence of mental disorders was determined by diagnostic criteria defined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Organic exclusion rules were imposed in making all diagnoses. The