



Treatment for depression in 63 countries worldwide: Describing and explaining cross-national differences[☆]



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ABSTRACT

This study describes differences between 63 countries in treatment for depression and explores explanations for these differences. Treatment for depression is measured as the overall chance that an individual receives treatment, plus as the chance to receive treatment given the presence of depressive symptoms. Using the World Health Survey (2002–2004, $N=249,116$), we find strong cross-national variation in the chance to receive treatment for depression. Additionally, multilevel regression analyses reveal that urbanization, employment status, marital status, level of education, gender, age, and national wealth all partly explain cross-national differences in the chance to receive treatment for depression.

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1. Introduction

The importance of depression for the global burden of disease has been increasing over time and in 2010 it was the second cause of disability worldwide (Ferrari et al., 2013a; Murray et al., 2012; Üstün et al., 2004; Vos et al., 2012; WHO, 2002). Depression impairs functioning in all areas of life and is related to suicide and poor general health (Hawton and Van Heeringen, 2009; Kawakami et al., 2012; Kessler and Bromet, 2013; Moussavi, et al., 2007; Wells et al., 1989). Therefore, it is not surprising that an increasing number of people seek treatment for depression in order to reduce suffering and in order to prevent these negative consequences from happening (OECD, 2013).

This study describes differences between 63 countries worldwide in 2002–2004 in treatment for depression, and explores explanations for these differences. Treatment includes all types of treatment, either pharmacological or psychological. We not only study the overall chance that an individual in a certain country receives treatment for depression, but also the chance to receive treatment given the presence of depressive symptoms. The added value of this two-step approach, where we first analyse treatment among the total population and then proceed to examine treatment among those reporting depressive symptoms, is that it allows us to distinguish cross-national

variation due to differences in the prevalence of depressive symptoms from cross-national variation due to differences in the degree to which depression is seen as a condition that needs treatment. Furthermore, with this approach we are able to learn how the different components are influenced by a range of explanatory factors.

We contribute to the understanding of depression and its treatment in three ways. First, while previous studies already showed cross-national differences in suicide rates (WHO, 2011), depressive symptoms (Andrade et al., 2003; Bromet et al., 2011; Ferrari et al., 2013b; Hwu et al., 1996; Kessler and Bromet, 2013; Rai et al., 2013; Simon et al., 2002), use of antidepressants (Mamdani and Wilby, 2013; OECD, 2011), mental health treatment and mental health treatment given the presence of a mental disorder (Alegria et al., 2000; Andrade et al., 2013; Bijl et al., 2003; Demyttenaere et al., 2004; Wang et al., 2007), little is known about country differences in treatment for depression and in tendencies to seek treatment given the presence of depressive symptoms. One interesting property of treatment as outcome measure is its clarity, palpability, and visibility. In order to answer the question whether they received treatment, people do not have to compare themselves to others. Moreover, studying treatment has clear societal relevance because of the large amount of financial resources spent on it (OECD, 2013). Additionally, although it may be difficult to influence depression in itself through government intervention, there is a clear potential for policy that affects the availability and affordability of depression treatment.

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Second, even though mapping country differences in treatment for depression worldwide constitutes a novel contribution to the literature in itself, we also aim to explore explanations for these differences. After all, in research on related outcomes, the presence of cross-national differences in related outcome measures has indeed been demonstrated, but an examination of the explanations for these differences is usually lacking. Although some studies (e.g. Bromet et al., 2011; Hwu et al., 1996; Simon et al., 2002) propose potential explanations for the existence of country differences, they have not actually been analysed for any related outcome measure. Using multilevel regression analyses, we study the extent to which country differences in treatment for depression can be explained by differences in countries' sociodemographic compositions and national characteristics. We explore the relationship between a range of factors that have been linked to treatment for depression or related outcomes in earlier studies. Compositional factors included are urbanization, employment status, marital status, level of education, gender, and age. At the national level, we examine the roles of income inequality, wealth, government expenditure on health, secondary school enrolment, and the presence of physicians and pharmaceutical personnel. As such, we cover a broad range of domains that may have direct or indirect effects on treatment for depression, including the healthcare system, social and educational policy, and individual background characteristics. Even though these factors appear to be influential for related outcome measures according to previous research (Andrade et al., 2003; Biji et al., 2003; Bromet et al., 2011; Chung et al., 2013; Fone and Dunstan, 2006; Hamilton et al., 1997; Hwu et al., 1996; Kessler et al., 2003; Muramatsu, 2003; Sundquist and Ahlen, 2006; Wilkinson and Pickett, 2006, 2009; Zimmerman and Katon, 2005), there is only one study of a related outcome measure (namely depressive symptoms (Rai et al., 2013)) taking into account as many potential explanations as we do. Hence, the second way in which we improve the understanding of depression and its treatment is by providing an initial exploration of potential explanations for patterns of cross-national variation in treatment for depression, rather than merely describing these patterns.

Third, although several cross-national studies have been conducted on related outcome measures, none of these studies incorporated as many countries as we do. Studies on depressive symptoms and use of antidepressants generally include 10 to 25 countries. Studies on treatment of mental disorders include sixteen countries at most. And although suicide rates are known for about hundred countries, there is no cross-national study relating suicide to potential explanatory factors. By studying 63 countries worldwide, we are able to draw conclusions about a much larger area than previous studies. Moreover, many of these 63 countries have not been studied so far. Since depression is a global problem, it is important to include a wide variety of countries from all global regions. Furthermore, from a methodological perspective, including a large number of countries enables us to study the impact of several national characteristics simultaneously.

Our research questions read as follows: (1) What country differences are there in 2002–2004 in treatment for depression (a) taken as a percentage of the total population and (b) taken as a percentage of the subpopulation that reports depressive symptoms? (2) To what extent are observed country differences attributable to differences between countries in their sociodemographic composition and national contextual characteristics?

2. Data

Data from the *World Health Survey* were used to answer our research questions. This survey was conducted in 70 countries worldwide between 2002 and 2004 and the target population included any adult aged 18+ living in private households. Respondents were

selected through either a single-stage random sample (in 10 countries) or a multistage stratified sample (in the other countries). In each country, populations were stratified by province; in 58 countries, populations were additionally stratified by country. The selection of sampling units was based on probability proportional to population size, after which households were selected randomly. For most countries, households and enumeration areas (i.e., geographical areas canvassed by one representative) were additionally applied for stratification. All members of the household (i.e. “someone who usually stays in the household, sleeps and shares meals, who has that address as primary place of residence or who spends more than six months living there”) aged 18+ were eligible as respondents for the survey. Within households, respondents had equal probabilities of being selected. The questionnaires were translated and back-translated and the translation quality was verified by bilinguals. Interviews were done face-to-face in all countries except Luxembourg and Israel, where interviews were done by telephone. The obtained samples are nationally representative and altogether, the WHS includes about 300,000 individuals. As will be described later on, some countries were lost because of missing values on the individual level variables.

2.1. Dependent variable

People were asked first “Have you ever been diagnosed with depression?”, second “Have you ever been treated for it?” and third “Have you been taking any medications or other treatment for it during the last 2 weeks?” Each question could be answered with “yes” or “no”. We use the answer to the third question as dependent variable.¹ It should be noted that the exact routing of these questions on treatment for depression varied across countries: in some countries people had to answer “yes” to the first question to get posed the second. Similarly, in some countries people had to answer “yes” to the second question to get posed the third. Therefore we had to assign people a “no” on the treatment during the last two weeks variable in case they have never been diagnosed and treated. This means that all people who score a “yes” on our dependent variable, answered affirmatively to all three questions. To account for the possibility that differences in questionnaire routing across countries may influence our results, we have included dummy variables in the analyses that signal country differences in the exact questionnaire routing of the items on treatment for depression. Because of the limited number of cases at the national level, we could not include a large number of dummy variables that reflects the exact cross-national differences in the question routing in great detail. We therefore decided to include three dummy variables to mark the most important differences between countries in the routing of the questions on treatment for depression: countries where (1) less than 10 percent, (2) over 95 percent, and (3) between 10 and 95 percent of the people who responded to the second question that they had never been treated were not given the third question about having received treatment in the last two weeks. The first category was used as the reference in the analyses, because this routing applied to the vast majority of countries.

2.2. Independent variables

2.2.1. Urbanization

Supervisors² had to determine whether the area a respondent lives in is rural, peri-urban/semi-urban or urban. Since the middle

¹ The reason we have chosen treatment during the last two weeks instead of treatment ever as our dependent variable is to avoid the problem of recall bias and to be able to be explicit about the period we are studying. After all, people who answered affirmatively to the question whether they ever received treatment for depression, could for example in fact have been treated in the 1980s.

² Supervisors are responsible for monitoring the progress and quality of data collection, e.g., they recruit and train interviewers.

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