Estimating treatment coverage for people with substance use disorders: an analysis of data from the World Mental Health Surveys

Louisa Degenhardt[1], Meyer Glantz[2], Sara Evans-Lacko[3], Ekaterina Sadikova[4], Nancy Sampson[4], Graham Thornicroft[3], Sergio Aguilar-Gaxiola[5], Ali Al-Hamzawi[6], Jordi Alonso[7], Laura Helena Andrade[8], Ronny Bruffaerts[9], Brendan Bunting[10], Evelyn J. Bromet[11], José Miguel Caldas de Almeida[12], Giovanni de Girolamo[13], Silvia Florescu[14], Oye Gureje[15], Josep Maria Haro[16], Yueqin Huang[17], Aimee Karam[18], Elie G. Karam[18,19], Andrzej Kiejna[20], Sing Lee[21], Jean-Pierre Lepine[22], Daphna Levinson[23], Maria Elena Medina-Mora[24], Yosikazu Nakamura[25], Fernando Navarro-Mateu[26], Beth-Ellen Pennell[27], José Posada-Villa[28], Kate Scott[29], Dan J. Stein[30], Margreet ten Have[31], Yolanda Torres[32], Zahari Zarkov[33], Somnath Chatterji[34], Ronald C. Kessler[4], on behalf of the World Health Organization's World Mental Health Surveys collaborators*

[1]National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia; [2]Division of Epidemiology, Services, and Prevention Research, National Institute on Drug Abuse, National Institutes of Health, Bethesda, MD, USA; [3]Centre for Global Mental Health, Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, UK; [4]Department of Health Care Policy, Harvard Medical School, Boston, MA, USA; [5]Center for Reducing Health Disparities, UC Davis Health System, Sacramento, CA, USA; [6]College of Medicine, Al-Qadisiya University, Diwaniya Governorate, Iraq; [7]Health Services Research Unit, Hospital del Mar Medical Research Institute; Pompeu Fabra University; and CIBER en Epidemiología y Salud Pública, Barcelona, Spain; [8]Section of Psychiatric Epidemiology, Institute of Psychiatry, University of São Paulo Medical School, São Paulo, Brazil; [9]Universitair Psychiatrisch Centrum - Katholieke Universiteit Leuven, Campus Gasthuisberg, Leuven, Belgium; [10]School of Psychology, Ulster University, Londonderry, UK; [11]Department of Psychiatry, Stony Brook University School of Medicine, Stony Brook, NY, USA; [12]Chronic Diseases Research Center and Department of Mental Health, Faculdade de Ciências Médicas, Universidade Nova de Lisboa, Lisbon, Portugal; [13]IRCCS S. Giovanni di Dio Fatebenefratelli, Brescia, Italy; [14]National School of Public Health, Management and Professional Development, Bucharest, Romania; [15]Department of Psychiatry, University College Hospital, Ibadan, Nigeria; [16]Parc Sanitari Sant Joan de Déu, CIBERSAM, Universitat de Barcelona, Barcelona, Spain; [17]Institute of Mental Health, Peking University, Beijing, China; [18]Institute for Development, Research, Advocacy and Applied Care, Beirut, Lebanon; [19]Department of Psychiatry and Clinical Psychology, Faculty of Medicine, Balamand University; Department of Psychiatry and Clinical Psychology, St. George Hospital University Medical Center, Beirut, Lebanon; [20]Wroclaw Medical University; University of Lower Silesia, Wroclaw, Poland; [21]Department of Psychiatry, Chinese University of Hong Kong, Tai Po, Hong Kong; [22]Hôpital Lariboisière Fernand Widal, Assistance Publique Hôpitaux de Paris INSERM UMR-S 1144, Paris Diderot and Paris Descartes Universities, Paris, France; [23]Mental Health Services, Ministry of Health, Israel; [24]National Institute of Psychiatry Ramón de la Fuente, Mexico

City, Mexico; [25]Department of Public Health, Jichi Medical University, Shimotsuke, Japan; [26]Subdirección General de Planificación, Innovación y Cronicidad, Servicio Murciano de Salud, Murcia, Spain; [27]Institute for Social Research, University of Michigan, Ann Arbor, MI, USA; [28]Colegio Mayor de Cundinamarca University, Bogota, Colombia; [29]Department of Psychological Medicine, University of Otago, Dunedin, Otago, New Zealand; [30]Department of Psychiatry and Mental Health, University of Cape Town, Cape Town, South Africa; [31]Netherlands Institute of Mental Health and Addiction, Utrecht, The Netherlands; [32]Center for Excellence on Research in Mental Health, CES University, Medellin, Colombia; [33]Directorate for Mental Health, National Center of Public Health and Analyses, Sofia, Bulgaria; [34]Department of Information, Evidence and Research, World Health Organization, Geneva, Switzerland

*The collaborators of the WHO World Mental Health Surveys are listed in the Appendix

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Substance use is a major cause of disability globally. This has been recognized in the recent United Nations Sustainable Development Goals (SDGs), in which treatment coverage for substance use disorders is identified as one of the indicators. There have been no estimates of this treatment coverage cross-nationally, making it difficult to know what is the baseline for that SDG target. Here we report data from the World Health Organization (WHO)'s World Mental Health Surveys (WMHS), based on representative community household surveys in 26 countries. We assessed the 12-month prevalence of substance use disorders (alcohol or drug abuse/dependence); the proportion of people with these disorders who were aware that they needed treatment and who wished to receive care; the proportion of those seeking care who received it; and the proportion of such treatment that met minimal standards for treatment quality ("minimally adequate treatment"). Among the 70,880 participants, 2.6% met 12-month criteria for substance use disorders; the prevalence was higher in upper-middle income (3.3%) than in high-income (2.6%) and low/lower-middle income (2.0%) countries. Overall, 36.5% of those with 12-month substance use disorders recognized a treatment need; this recognition was more common in high-income (43.1%) than in upper-middle (30.3%) and low/lower-middle income (24.9%) countries. Among those who recognized treatment need, 65.7% made at least one visit to a service provider, and 21.8% of the latter received minimally adequate treatment exposure (26.3% in high, 13.5% in upper-middle, and 9.2% in low/lower-middle income countries). Overall, only 5.2% of those with past-year substance use disorders received minimally adequate treatment: 7.7% in high income, 2.8% in upper-middle income and 1.0% in low/lower-middle income countries. These data suggest that only a small minority of people with substance use disorders receive even minimally adequate treatment. At least three barriers are involved: awareness/perceived treatment need, accessing treatment once a need is recognized, and compliance (on the part of both provider and client) to obtain adequate treatment. Various factors are likely to be involved in each of these three barriers, all of which need to be addressed to improve treatment coverage of substance use disorders. These data provide a baseline for the global monitoring of progress of treatment coverage for these disorders as an indicator within the SDGs.

Key words: Substance use disorders, alcohol, drugs, treatment coverage, World Health Organization, United Nations Sustainable Development Goals

Substance use is one of the biggest risk factors for burden of disease globally, accounting for 11% of total health burden[1]. There is increasing recognition of the need for a public health rather than a criminal justice approach to substance use disorders[2], to reduce current burden and prevent future health loss. This is evident in the United Nations' Sustainable Development Goals for 2030, where prevention and treatment of substance use disorders feature in the targets[3]. Two targets are of particular relevance to the current report: 3.5 - Strengthen prevention and treatment of substance use disorders including opioid use and harmful use of alcohol, and 3.8 - Universal health coverage.

There is considerable concern about barriers to treatment for mental and substance use disorders[4], and treatment coverage is thought to be far too low globally[5]. However, few data currently exist to shed light specifically on treatment coverage of substance use disorders. The World Health Organization (WHO) published its Atlas on Substance Use in 2010[6], which compiled survey responses from member state focal points on levels of service provision for treatment of substance use disorders. Responses indicated a low perceived coverage of services for people with these disorders[6]: 40% of participants (in 15 countries) indicated that they believed that less than 10% of people with alcohol use disorders received outpatient counseling, and 45% of participants (in 95 countries) perceived a similarly low level for drug use disorders[6], but these reports were based on expert judgments rather than actual data.

Empirical data have been lacking to date. This paper presents findings from WHO's World Mental Health Surveys (WMHS) on levels of treatment received by people with substance use disorders, across countries with varied income and social characteristics, examining: a) the 12-month prevalence of DSM-IV substance use disorders in 26 countries worldwide; b) the proportion of people with these disorders who recognize a need for treatment for their condition; c) the proportion of those with perceived need who receive any treatment; and d) the proportion of treatment received that meets minimal standards for adequacy ("minimally adequate treatment").

METHODS

Data come from 26 countries participating in the WMHS (N=28 surveys). These included 12 countries classified by the World Bank[7] as low or middle income (Brazil, Bulgaria, Colombia, Iraq, Lebanon, Mexico, Nigeria, People's Republic of China, Peru, Romania, South Africa and Ukraine) and 14 as high income (Argentina, Belgium, France, Germany, Israel, Italy, Japan, The Netherlands, New Zealand, Northern Ireland, Poland, Portugal, Spain, and the United States). The first study in Colombia (2003) was conducted when that country was classified as lower-middle income, while the second (2011-2012) took

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place when it was classified as upper-middle income. The majority of surveys (N=19) were based on nationally representative household samples; three were representative of urban areas (Colombia, Mexico, Peru); two were representative of selected regions (Japan, Nigeria); and four were representative of selected metropolitan areas (São Paulo in Brazil; Medellin in Colombia; Murcia in Spain; Beijing and Shanghai in People's Republic of China).

Substance use disorders were assessed using the WHO Composite International Diagnostic Interview (CIDI) Version 3.0[8], a fully-structured lay-administered interview generating lifetime and 12-month prevalence estimates of mood, anxiety, behavioural and substance use disorders. The interview translation, back-translation and harmonization protocol required culturally competent bilingual clinicians to review, modify and approve key phrases describing symptoms[9]. Blinded clinical reappraisal interviews using the Structured Clinical Interview for DSM-IV (SCID-I)[10] were carried out in four WMHS countries. Good concordance was found with diagnoses based on the CIDI[11].

Trained lay assessors administered the interviews face-to-face in the homes of participants aged 18 years or older. Standardized interviewer training and quality control procedures were used in each survey. Informed consent was obtained before administering interviews. Ethics committees of the organizations coordinating the surveys approved the procedures for informed consent and protecting human subjects. Full details of the methodology are available elsewhere[12].

To reduce participant burden, the interview was divided into two parts. Part 1 was administered to all participants and included the core diagnostic assessment of mood and anxiety disorders. Part 2 was administered to all respondents with a certain number of mood and anxiety symptoms, and to a random proportion of those who had none, and included questions about disability and additional mental disorders as well as information on physical conditions. Part 2 individuals were weighted by the inverse of their probability of selection to adjust for differential sampling, and therefore provide representative data on the target adult general population. Further details about sampling and weighting are available elsewhere[12].

Substance use disorders in this paper are defined as meeting past 12-month DSM-IV diagnostic criteria for alcohol or drug abuse or dependence. For some countries in the earlier-conducted WMHS, a skip existed whereby those who did not endorse any symptoms of abuse of a substance were not assessed for dependence. In a separate exercise, we imputed data for these countries using data from nine more recently completed surveys without the skip pattern. Full details of this process are described elsewhere[13].

Participants with substance use disorders were asked if they had ever received treatment for emotional or substance use problems and if they had done so in the past year. Those who had received past-year treatment for emotional or substance use problems were asked if they had consulted a specialty mental health provider (psychiatrist, psychologist,

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other mental health professional in any setting, social worker or counsellor in a mental health specialty treatment setting, or a mental health hotline); a general provider (primary care doctor, other medical doctor, any other health care professional in a general medical setting); a non-medical provider (religious or spiritual advisor, social worker or counselor in a non-medical setting, any other type of healer); or a self-help group (e.g., alcoholics anonymous, narcotics anonymous). The treatment provider categories offered were consistent across countries. A more detailed description of WMHS 12-month treatment measures is presented elsewhere[14].

The definition of past-year "minimally adequate treatment" focused on the minimum number of visits typically required for psychosocial treatments. We assumed that pharmacological treatments were less common than psychosocial ones, but questions were not included in the survey that allowed us to determine which type of treatment was received[14]. The number of sessions used as the minimally adequate treatment threshold was four for people reporting treatment from a specialty mental health or general medical provider and six for those receiving treatment from non-medically trained professionals, based on evidence from randomized controlled trials[15-18]. Any participant who was still in treatment at the time of interview was regarded as having met this definition, even if he/she had not yet had the required number of sessions.

Participants with substance use disorders were asked if they had ever talked to a "medical doctor or other professional (e.g. psychologists, counselors, spiritual advisors, herbalists, acupuncturists, and other healing professionals) about their use of alcohol/drugs/alcohol or drugs", and if they had done so in the past year. They were also asked if they had attended a self-help group focusing on alcohol or drugs in the past year. Those who reported any of these in the past year, and who had had at least the above-mentioned number of sessions of treatment, or those receiving such treatment at the time of interview, were defined as having received "minimally adequate treatment".

Since substance use disorders are often comorbid with various mental disorders, we also used a broader definition of "minimally adequate treatment". This included people receiving treatment for substance use or emotional problems in the past year for at least the above-mentioned number of sessions, or those receiving such treatment at the time of interview.

Survey sampling weights were applied in all analyses to make samples representative of target populations in terms of socio-demographic and geographic characteristics. Standard errors were estimated using Taylor series linearization implemented in Statistical Analysis System (SAS) to account for weighting and clustering[19]. To test for differences between countries; between high, upper-middle and low/lower-middle income country

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groups; and between countries within each of the three income groups, χ^2 tests were applied.

RESULTS

The characteristics of the study sites are shown in Table 1. The weighted average response rate across all surveys was 69.9%. A total of 70,880 participants were assessed for substance use disorders.

Across all countries, 2.6% of participants met 12-month criteria for a DSM-IV substance use disorder (Table 2). The prevalence was higher in upper-middle (3.3%) than in high (2.6%) and low/lower-middle (2.0%) income countries.

Across surveys, 36.5% participants with 12-month substance use disorders reported that they perceived a need for treatment. Levels of perceived need were higher in high (43.1%) than in upper-middle (30.3%) and low/lower-middle (24.9%) income countries.

Among people with substance use disorders who perceived a need for treatment, 65.7% had any contact with a service provider or self-help group in the past year. Again, the proportions were much higher in high and upper-middle (67.5% and 69.6% respectively) than in low/lower-middle (45.0%) income countries.

Among people with substance use disorders who received any treatment, 21.8% received minimally adequate treatment. Levels were lower in low/lower-middle (9.2%) and upper-middle (13.5%) than in high (26.3%) income countries.

Among all people with substance use disorders, only 5.2% had received at least minimally adequate treatment in the past year (7.7%, 2.8% and 1.0%, respectively, in high, upper-middle, and low/lower-middle income countries) (Table 2). This was a joint function of only around one-third (36.5%) of those with such disorders perceiving that they needed treatment; two-thirds of the latter (65.7%) receiving any treatment; and around one in five of those with any treatment (21.8%) receiving a level of treatment that was minimally adequate (i.e., 0.365 x 0.657 x 0.218 = 5.2%). The two components driving this level down in particular were the proportion of people with substance use disorders perceiving a need for treatment and the proportion of those receiving any intervention who had a minimally adequate exposure to treatment. Nonetheless, it is important to recognize that it is the conjunction of all three components being considerably lower than 100% that leads to the very low overall prevalence of minimally adequate treatment.

The differences across all surveys and across country income groups with respect to the above variables were all significant at the p<0.0001 level. There were also significant differences within each country income group. Exceptions to this included that in low and

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middle income countries there was no variation in what were very low levels of minimally adequate treatment coverage.

Using the broader definition of minimally adequate treatment, which could have been for emotional or substance use problems, estimated levels of minimally adequate treatment were around three times higher (see Table 3). Among all people with past-year substance use disorders, using this broader definition, 14.1% had received minimally adequate treatment in the past year (20.5%, 7.7% and 3.6%, respectively, in high, upper-middle and low/lower-middle income countries).

DISCUSSION

Substance use disorders are prevalent in many countries, yet there have been no estimates of treatment coverage for these disorders cross-nationally. We found that, even using a definition of minimally adequate treatment that required relatively low levels of treatment exposure, coverage was extremely low: one in 13 people with these disorders in high income countries, one in 36 people in upper-middle income countries, and only one percent of people in low/lower-middle income countries. Few countries, even in high income settings, had high coverage of minimally adequate treatment.

Several limitations of our study need to be considered. There might be differential social, religious and legal contexts across countries that affected willingness to report substance use. Several strategies were used to maximize the likelihood of honest reporting. First, pilot testing was carried out to determine the best way to describe the study in order to increase willingness to respond honestly and accurately. Second, in countries that do not have a tradition of public research, and where concepts of anonymity and confidentiality are less familiar, community leaders were contacted to explain the study and obtain formal endorsement; these leaders announced the study and encouraged participation. Third, interviewers were centrally trained in use of non-directive probing, which is designed to encourage thoughtful, honest responding. Finally, especially sensitive questions were asked in a self-report rather than an interviewer-report format (among those who could read). These strategies were probably not effective in removing all cross-national differences in willingness to report, and remaining differences that could have contributed to reporting biases should be borne in mind. Nonetheless, the cross-national variations we found in the prevalence of substance use disorders are consistent with other global and country-level reports on substance use epidemiology[20-23].

We focused on psychosocial treatments, and did not include pharmacotherapies. However, although there is good evidence for the efficacy and effectiveness of opioid

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substitution therapy for opioid dependence[24,25], the evidence concerning other substance use disorders is less compelling. Evidence is mixed as regards pharmacotherapies for cannabis dependence[26] and lacking for psychostimulant dependence[27-29]. Medications for alcohol dependence (by far the most prevalent substance use disorder), such as naltrexone, have evidence of efficacy[30], but uptake and adherence are very low.

The available information suggests that pharmacotherapies may be even less frequently utilized to treat substance use disorders than psychosocial interventions we included here. For example, a systematic review found that only 8 per 100 people who inject drugs received opioid substitution therapy in the previous year[31]. In Australia, only around 0.5% of alcohol dependent people are estimated to have been prescribed naltrexone or acamprosate for the recommended 3-month duration[32].

We have not examined the role of comorbid disorders in affecting recognition of treatment need and access to services. This is not really a limitation of our study, in that we were primarily interested in treatment coverage among all people with substance use disorders. It is nonetheless important to acknowledge that these people, when they have additional mental disorders, may seek treatment for those other disorders, presumably increasing the likelihood of recognition of substance use disorders and the relevant treatment need.

The data we presented here are on self-reported service use. WMHS attempted to minimize inaccuracies in self-report by using commitment probes (i.e., questions measuring a subject's commitment to the survey), and excluding respondents who did not endorse such probes. Without studies that involve linkage to routine administrative or facility-based datasets on substance use treatment, there is no viable alternative. In many countries no such study designs are yet feasible, particularly in those with more limited infrastructure, due to both clinical and technological reasons.

Some surveys were conducted over a decade ago, raising the possibility that treatment rates in the relevant countries have changed since. We consider this unlikely, since more recent data on service provision collected for the WHO Atlas on Substance Use[6], and as part of the work of the Reference Group to the United Nations on HIV and Injecting Drug Use[31], similarly revealed very low perceived[6] and actual[31] coverage of services.

Response rates in the WMHS varied widely. We attempted to control for differential response through post-stratification adjustments, but it remains possible that survey response was related to the presence and severity of substance use disorders or treatment in ways that were not corrected. Having said that, existing evidence suggests that household and community-based surveys produce underestimates of problematic substance use for a number of reasons[20,33,34], suggesting that the estimates of prevalence reported here are conservative, and estimates of coverage potentially higher than actual levels.

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The issue of perceived need for treatment is important. Even if treatment were easily available to all people with substance use disorders, our findings suggest that only one in three across countries would feel they need help, with slightly lower levels in low income settings. This strongly indicates that efforts to improve treatment coverage for substance use disorders will need to address both scaling up of services as well as supporting people with these disorders to recognize need for help and seek treatment. The latter is challenging, and complex public health interventions may be required that increase recognition of and willingness to address the problem among those living with these disorders, as well as their family and community.

Even among those who recognized the problem, a significant proportion did not access any services. This is likely to be the result of a complex array of individual, social and structural level barriers to seeking help. These include treatment availability, awareness of and access to effective treatment[35], fear of stigma (from family and community), financial barriers in contexts where treatment must be paid for by the individual, as well as legal, policy, service and even law-enforcement barriers to people with substance use disorders being able to access services[36-39].

Treatment access *per se* is not sufficient. There is a need to ensure treatment quality, which includes delivery of effective interventions in sufficient doses. There may be alternative methods of defining minimally adequate treatment within the constraints of the WMHS measure. It is clear, however, that most people needing treatment did not receive a minimally adequate level, even though our definition involved a relatively small number of service contacts. Overall, only one in 20 people with substance use disorders were receiving minimally adequate treatment.

Quality improvement initiatives, such as adoption of the evidence-based WHO Mental Health Gap Action Programme (mhGAP) Intervention Guide[40-42] and work of the United Nations Office for Drug and Crime and the WHO in improving treatment quality in low and middle income countries (Treatnet)[43,44] are important efforts in this regard. However, significant investment in service systems and capacity building will need to occur in countries that currently have little to no formal treatment services or where substance use disorders are addressed outside of the health system.

Improving treatment coverage will hence require action at several levels: low rates of recognition of treatment need by people with substance use disorders, low rates of consultation by people who do recognize that they have a problem, and finally, inadequate treatment exposure when it is received. There is a need to act across all these levels to improve the coverage and quality of treatment for people with these disorders.

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CONCLUSIONS

The United Nations Sustainable Development Goals reflect political commitment to scale up treatment coverage of substance use disorders. We have presented unique person-level data on services use by people with these disorders cross-nationally, demonstrating very low treatment coverage. This is true across country income levels, but worryingly, lowest in lower income countries, which also include the greatest share of the world's population.

Access to services is not the only barrier. A combination of limited recognition of treatment need, barriers to accessing treatment, and inadequacy of treatments delivered are all responsible for this low coverage.

These data might be considered as a baseline measure of this key sustainable development goal (and indeed for the WHO's Mental Health Action Plan 2013-2020, which aims to increase service coverage for severe mental disorders by 20% by the year 2020[45]). Given how poor current coverage is, it seems clear that substantial efforts across the above levels are needed to achieve the goal set by the United Nations for the year 2030. Regular review of this coverage indicator will be crucial.

APPENDIX

The WHO World Mental Health Surveys collaborators are Tomasz Adamowski, Sergio Aguilar-Gaxiola, Ali Al-Hamzawi, Mohammad Al-Kaisy, Jordi Alonso, Yasmin Altwaijri, Laura Helena Andrade, Lukoye Atwoli, Randy P. Auerbach, William G. Axinn, Corina Benjet, Guilherme Borges, Evelyn J. Bromet, Ronny Bruffaerts, Brendan Bunting, José Miguel Caldas de Almeida, Graça Cardoso, Stephanie Chardoul, Somnath Chatterji, Alexandre Chiavegatto Filho, Alfredo H. Cia, Pim Cuijpers, Louisa Degenhardt, Giovanni de Girolamo, Ron de Graaf, Peter de Jonge, David D. Ebert, Sara Evans-Lacko, John Fayyad, Silvia Florescu, Sandro Galea, Laura Germine, Dirgha J. Ghimire, Stephen E. Gilman, Meyer D. Glantz, Semyon Gluzman, Oye Gureje, Josep Maria Haro, Meredith G. Harris, Yanling He, Hristo Hinkov, Chi-Yi Hu, Yueqin Huang, Aimee Nasser Karam, Elie G. Karam, Norito Kawakami, Ronald C. Kessler, Andrzej Kiejna, Karestan C. Koenen, Viviane Kovess-Masfety, Carmen Lara, Sing Lee, Jean-Pierre Lepine, Itzhak Levav, Daphna Levinson, Zhaorui Liu, Silvia S. Martins, John J. McGrath, Katie A. McLaughlin, Maria Elena Medina-Mora, Zeina Mneimneh, Jacek Moskalewicz, Fernando Navarro-Mateu, Matthew K. Nock, Siobhan O'Neill, Johan Ormel, Beth-Ellen Pennell, Marina Piazza, Patryk Piotrowski, José Posada-Villa, Ayelet M. Ruscio, Kate M. Scott, Tim Slade, Jordan W. Smoller, Juan Carlos Stagnaro, Dan J. Stein, Amy E. Street, Hisateru Tachimori, Margreet ten Have, Graham Thornicroft, Yolanda Torres, Gemma Vilagut, Maria Carmen Viana, Elisabeth Wells, David R. Williams, Michelle A. Williams, Bogdan Wojtyniak, and Alan M. Zaslavsky.

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Table 1 World Mental Health Surveys: characteristics of the samples

Country	Sampling	Field dates	Age range	Sample size			Response rate
				Part 1	Part 2	Part 2 and age ≤44	
Low and lower-middle income countries							
Colombia	All urban areas of the country (about 73% of the total national population)	2003	18-65	4,426	2,381	1,731	87.7%
Iraq	Nationally representative	2006-7	18-96	4,332	4,332	–	95.2%
Nigeria	21 of the 36 states in the country (about 57% of the national population)	2002-4	18-100	6,752	2,143	1,203	79.3%
China	Beijing and Shanghai metropolitan areas	2001-3	18-70	5,201	1,628	570	74.7%
Peru	All urban areas of the country	2004-5	18-65	3,930	1,801	1,287	90.2%
Ukraine	Nationally representative	2002	18-91	4,725	1,720	541	78.3%
Total				**29,366**	**14,005**	**5,332**	**82.8%**
Upper-middle income countries							
Brazil	São Paulo metropolitan area	2005-8	18-93	5,037	2,942	–	81.3%
Bulgaria	Nationally representative	2002-6	18-98	5,318	2,233	741	72.0%
Colombia	Medellin metropolitan area	2011-12	19-65	3,261	1,673	–	97.2%
Lebanon	Nationally representative	2002-3	18-94	2,857	1,031	595	70.0%
Mexico	All urban areas of the country (about 75% of the total national population).	2001-2	18-65	5,782	2,362	1,736	76.6%
Romania	Nationally representative	2005-6	18-96	2,357	2,357	–	70.9%
South Africa	Nationally representative	2002-4	18-92	4,315	4,315	–	87.1%
Total				**28,927**	**16,913**	**3,072**	**78.5%**
High income countries							
Argentina	Nationally representative	2015	18-98	3,927	2,116	–	77.3%
Belgium	Nationally representative	2001-2	18-95	2,419	1,043	486	50.6%
France	Nationally representative	2001-2	18-97	2,894	1,436	727	45.9%
Germany	Nationally representative	2002-3	19-95	3,555	1,323	621	57.8%
Israel	Nationally representative	2003-4	21-98	4,859	4,859	–	72.6%
Italy	Nationally representative	2001-2	18-100	4,712	1,779	853	71.3%
Japan	Eleven metropolitan areas	2002-6	20-98	4,129	1,682	–	55.1%

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The Netherlands	Nationally representative	2002-3	18-95	2,372	1,094	516	56.4%
New Zealand	Nationally representative	2004-5	18-98	12,790	7,312	–	73.3%
North Ireland	Nationally representative	2005-8	18-97	4,340	1,986	–	68.4%
Poland	Nationally representative	2010-11	18-65	10,081	4,000	2,276	50.4%
Portugal	Nationally representative	2008-9	18-81	3,849	2,060	1,070	57.3%
Spain	Nationally representative	2001-2	18-98	5,473	2,121	960	78.6%
Spain	Murcia region	2010-12	18-96	2,621	1,459	–	67.4%
United States	Nationally representative	2001-3	18-99	9,282	5,692	3,197	70.9%
Total				**77,303**	**39,962**	**10,706**	**63.5%**
Overall sample				**135,596**	**70,880**	**19,110**	**69.9%**

Table 2 12-month prevalence (% and standard error) of substance use disorders, perceived need for treatment, receipt of any treatment, and receipt of minimally adequate treatment

	12-month diagnosis of substance use disorders	Perceived need for treatment among those with substance use disorders	Any 12-month treatment among those with perceived need	Minimally adequate treatment among those with any treatment	Minimally adequate treatment among all those with substance use disorders	
Low and lower-middle income						**N**
Colombia	2.9±0.4	42.7±5.9	18.8±6.5	12.8±4.0	1.0±0.9	90
Iraq	0.2±0.1	61.5	84.7	0.0	0.0	7
Nigeria	0.9±0.2	21.3±5.5	95.4±0.1	0.0	0.0	37
Peru	2.3±0.4	44.2±5.8	26.5±4.3	20.0	2.3±1.8	50
China (Beijing/Shanghai)	1.7±0.4	8.1±1.2	100.0	0.0	0.0	52
Ukraine	6.6±0.8	8.3±1.8	100.0±0.0	13.3±6.4	1.1±0.8	153
Total	**2.0±0.2**	**24.9±2.0**	**45.0±4.0**	**9.2±2.1**	**1.0±0.5**	**389**
Upper-middle income						
Brazil (São Paulo)	3.8±0.4	38.0±5.0	51.0±7.4	24.8±9.1	4.8±2.4	164
Bulgaria	1.2±0.3	12.9±6.0	30.6	59.6	2.4±0.2	39
Lebanon	1.3±0.8	11.4±0.5	100.0	43.0	4.9±0.2	12
Colombia (Medellin)	4.1±0.6	31.3±5.9	37.8±11.7	8.2±8.6	1.0±1.0	85
Mexico	2.6±0.4	41.0±3.9	45.3±3.1	8.6±0.1	1.6±1.3	80
Romania	1.0±0.2	14.0±8.7	72.8	100.0	10.2±8.0	20
South Africa	5.8±0.6	28.3±3.9	100.0±0.0	7.2±0.5	2.0±1.0	214
Total	**3.3±0.2**	**30.3±2.2**	**69.6±3.0**	**13.5±2.0**	**2.8±0.8**	**614**
High income						
Argentina	2.4±0.3	37.1±5.8	59.5±4.6	12.2±4.9	2.7±1.2	73
Belgium	2.7±0.8	28.7±4.1	66.4±8.1	35.8±16.5	6.8±1.5	30
France	1.5±0.3	44.4±9.2	75.9±9.1	32.5±14.8	10.9±6.4	31
Germany	1.6±0.5	12.8±0.8	63.5±25.5	100.0	8.2±3.0	25
Israel	1.4±0.2	23.8±4.4	54.9±5.8	10.6±0.8	1.4±1.4	70
Italy	0.4±0.1	27.2±9.2	58.1	0.0	0.0	11

Japan	1.0±0.2	29.5±4.2	55.5±9.4	0.0	0.0	29
The Netherlands	1.8±0.4	28.3±6.7	81.4±0.1	18.0±0.1	4.2±0.9	32
New Zealand	3.7±0.3	51.4±2.7	66.0±2.8	26.1±3.1	8.9±1.6	474
Northern Ireland	3.5±0.5	50.6±3.8	85.3±2.0	11.9±3.9	5.1±1.9	68
Poland	3.6±0.3	24.9±4.1	62.8±3.2	38.5±3.4	6.0±1.8	181
Portugal	1.6±0.3	35.5±8.0	77.7±8.4	13.5±2.5	3.7±0.4	40
Spain	1.1±0.3	13.3±2.9	78.8±17.3	44.7±1.8	4.7 ±1.1	25
Spain (Murcia)	1.0±0.4	53.6	78.2	47.1	19.8	17
United States	4.2±0.4	59.9±2.6	66.1±2.8	29.9±4.0	11.8±1.8	314
Total	**2.6±0.1**	**43.1±1.4**	**67.5±1.4**	**26.3±1.8**	**7.7±0.7**	**1,420**
Overall sample	**2.6±0.1**	**36.5±1.1**	**65.7±1.3**	**21.8±1.3**	**5.2±0.5**	**2,423**
Chi-square tests						
Across all surveys (χ^2, df=27)	727.2 (p<0.0001)	254.9 (p<0.0001)	97.0 (p<0.0001)	42.9 (p<0.0001)	70.3 (p<0.0001)	
Across country income groups (χ^2, df=2)	50.2 (p<0.0001)	58.6 (p<0.0001)	52.8 (p<0.0001)	16.1 (p<0.0001)	33.3 (p<0.0001)	
Across high income countries (χ^2, df=14)	254.2 (p<0.0001)	127.1 (p<0.0001)	15.6 (p=0.0014)	17.6 (p<0.0001)	23.9 (p<0.0001)	
Across upper-middle income countries (χ^2, df=6)	176.4 (p<0.0001)	17.8 (p=0.0084)	3.3 (p=0.2109)	9.9 (p<0.0001)	9.1 (p=0.0822)	
Across low/lower-middle income countries (χ^2, df=5)	271.8 (p<0.0001)	67.0 (p<0.0001)	25.5 (p<0.0001)	0.3 (p=0.5696)	0.5 (p=0.6945)	

Table 3 12-month prevalence (% and standard error) of receipt of minimally adequate treatment using a broader definition including people who required treatment for substance use or emotional problems

	Minimally adequate treatment among those with any treatment	Minimally adequate treatment among all those with substance use disorders	
Low and lower-middle income			**N**
Colombia	47.2±11.2	3.8±1.7	90
Iraq	17.2	9.0	7
Nigeria	0.0	0.0	37
Peru	42.9	5.0±2.5	50
China (Beijing/Shanghai)	50.4	4.1±1.0	52
Ukraine	36.3±9.9	3.0±1.3	153
Total	**32.3±3.6**	**3.6±0.8**	**389**
Upper-middle income			
Brazil (São Paulo)	51.3±5.0	9.9±2.6	164
Bulgaria	59.6	2.4±0.2	39
Lebanon	66.3	7.6±0.3	12
Colombia (Medellin)	78.6±5.6	9.3±3.5	85
Mexico	23.7±0.4	4.4±1.4	80
Romania	100.0	10.2±8.0	20
South Africa	26.0±3.4	7.4±1.8	214
Total	**36.4±2.3**	**7.7±1.1**	**614**
High income			
Argentina	77.6±6.7	17.1±4.7	73
Belgium	57.9±22.7	11.1±2.1	30
France	67.8±5.5	22.8±5.6	31
Germany	100.0	8.2±3.0	25
Israel	80.0±5.2	10.5±3.2	70
Italy	53.2	8.4±1.2	11

Japan	80.5	13.1±2.7	29
The Netherlands	61.6±0.3	14.2±3.1	32
New Zealand	68.5±2.5	23.3±2.0	474
Northern Ireland	58.2±9.4	25.1±4.8	68
Poland	71.8±2.8	11.2±2.4	181
Portugal	81.7±8.7	22.5±6.5	40
Spain	92.9±6.8	9.7±4.4	25
Spain (Murcia)	47.1	19.8	17
United States	74.9±4.4	29.6±3.0	314
Total	**70.6±2.1**	**20.5±1.2**	**1,420**
Overall sample	**58.9±1.7**	**14.1±0.8**	**2,423**
Chi-square tests			
Across all surveys (χ^2, df=27)	102.6 (p<0.0001)	159.2 (p<0.0001)	
Across country income groups (χ^2, df=2)	72.2 (p<0.0001)	98.0 (p<0.0001)	
Across high income countries (χ^2, df=14)	12.2 (p=0.0324)	46.8 (p<0.0001)	
Across upper-middle income countries (χ^2, df=6)	14.6 (p<0.0001)	3.6 (p=0.5474)	
Across low/lower-middle income countries (χ^2, df=5)	2.3 (p=0.0399)	1.5 (p=0.4990)	

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