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# MENTAL HEALTH ATLAS 2011



World Health  
Organization



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# FOREWORD

I am pleased to present the World Health Organization's Mental Health Atlas 2011.

There is a substantial gap between the burden caused by mental disorders and the resources available to prevent and treat them. It is estimated that four out of five people with serious mental disorders living in low and middle income countries do not receive mental health services that they need. The mission of WHO in the area of mental health is to reduce the burden of mental disorders and to promote the mental health of the population worldwide. However, this responsibility cannot be fulfilled satisfactorily if countries lack basic information about the existing infrastructure and resources available for mental health care.

Responding to this need for more information on mental health resources, the World Health Organization launched Project Atlas in 2000. The objective of this project is to collect, compile and disseminate relevant information on mental health resources in countries. The first set of publications from the project appeared in October 2001; these were updated in 2005. These publications have already established themselves as the most authoritative source of such information globally. Responding to the continued need for accurate information, WHO has fully revised and updated the Atlas, as Mental Health Atlas 2011.

Project Atlas contributes to one of WHO's key functions – monitoring the health situation and assessing health trends. It also supports the mission of the Noncommunicable Diseases and Mental Health Cluster to develop an evidence base for international action on surveillance, prevention, and control of mental disorders. Findings from this project provide an overview of the major challenges and obstacles that countries face currently in providing care for their citizens with mental disorders. Such information is vital for mental health policy development and service delivery. Moreover, information collected through the Atlas Project is critical for advocacy and for advancing mental health services research that is most appropriate to the needs at present.

Accurate and timely information is vital for health services planning. This is as true for mental health as for any other health services. I hope that the information contained in Mental Health Atlas 2011 will have a major influence on increasing resources for mental health and will be useful to WHO's member states and a wide range of other stakeholders. I also hope that the updated information will facilitate the urgent task of scaling up mental health services as envisaged in WHO's mental health Gap Action Programme (mhGAP).

**Dr Ala Alwan**  
Assistant Director-General  
Noncommunicable Diseases and Mental Health

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## PROJECT TEAM AND PARTNERS

Atlas is a project of the World Health Organization (WHO) Headquarters, Geneva and is supervised and coordinated by Shekhar Saxena. The first set of publications from this project appeared in 2001 (1), and an update was published in 2005 (2). The Mental Health Atlas 2011 represents the project's most updated and revised edition.

Key collaborators from WHO regional offices include:

Sebastiana Da Gama Nkomo & Carina Ferreira-Borges, WHO Regional Office for Africa; Zohra Abaakouk, Victor Aparicio, Hugo Cohen, Tomo Kanda, Florencia Di Masi, Devora Kestel & Jorge Rodriguez, WHO Regional Office for the Americas; Khalid Saeed, WHO Regional Office for the Eastern Mediterranean; Matthijs Muijen, WHO Regional Office for Europe; Vijay Chandra, WHO Regional Office for South-East Asia; Nina Rehn-Mendoza & Xiangdong Wang, WHO Regional Office for the Western Pacific.

They have contributed to planning the project, obtaining and validating the information from Member States, and reviewing the results.

WHO representatives and staff in WHO country offices provided crucial support and assistance with a number of tasks throughout the project.

Ministry of health officials in Member States provided the information and responded to the many requests for clarification that arose from the data.

In the course of the project, a number of colleagues at WHO Headquarters provided advice, guidance, and feedback. Significant among them are: Nicolas Clark, Daniel Chisholm, Natalie Drew, Tarun Dua, Alexandra Fleischmann, Daniela Fuhr, Michelle Funk, Vladimir Poznyak, Geoffrey Reed, Dag Rekve, Chiara Servili, Yutaro Setoya, Kanna Suguira, Isy Vromans, Mark van Ommeren, and M Taghi Yasamy.

Crick Lund, Mandisi Majavu, and Thandi Van Heyningen played an instrumental role in the collection and validation of information from the African Region countries.

A number of experts reviewed the Atlas questionnaire and provided their feedback including Jose Miguel Caldas de Almeida, Richard Hermann, Itzhak Levav, Crick Lund, Anita Marini, Alberto Minoletti, Pratap Sharan, Graham Thornicroft, and Yan Jun.

This report was peer reviewed by Graham Thornicroft, Itzhak Levav, Pallab Maulik, and Pratap Sharan.

Liubov Basova, Laurent Constantin, and David Ott provided essential support and assistance with the development of the DataCol (on-line) questionnaire.

Antonio Lora, who was seconded to the WHO from the Health Authority of Regione Lombardia to work on the Atlas Project, made significant contributions at every stage, from questionnaire development to writing the report.

Jodi Morris was the overall project manager for the Mental Health Atlas 2011. Ryan McBain, Claire Wilson, and Nirupama Yechoor actively contributed to the project during their internships with the department. In addition, Amy Daniels, Joao Correia, Ryan McBain and Gordon Shen served as consultants to the project. Leah Hathaway helped with the project as a volunteer. Adeline Loo, Grazia Motturi, and Rosemary Westermeyer provided administrative support.

The contribution of each of these team members and partners, along with the input of many other unnamed people, has been vital to the success of this project.

The graphic design of this volume has been done by Erica Lefstad and Christian Bäuerle.

# PREFACE

We are pleased to present the Mental Health Atlas 2011. This publication provides the latest estimates on available resources for treatment and prevention of neuropsychiatric disorders globally, in WHO regions, and in groups of countries with different levels of economic development.

The WHO Mental Health Atlas Project was launched in 2001 and updated in 2005 to address the information gap on mental health resources. There have been a number of key changes between the 2005 and 2011 editions of Atlas. First, in order to more easily track progress over time, more quantitative indicators have been included in the 2011 edition. In addition, the indicators are now more consistent to those in the *WHO Assessment instrument for Mental Health Systems (WHO-AIMS)*, a WHO tool that allows for an in-depth assessment of a country's mental health system. Harmonization between the instruments of these two key WHO projects facilitates the comparison of data across projects and decreases the data collection burden on countries who wish to participate in both.

Results from Atlas 2011 confirm findings from prior editions that resources remain insufficient to meet the growing burden of neuropsychiatric disorders. However, the shortage of resources is not evenly distributed, as the gap between

resources and burden is far larger in low income countries in comparison to high income countries. However, one potentially positive finding is that beds located within mental hospitals appear to be decreasing in the majority of countries. This finding may indicate that countries are reducing institutional care in favor of community care, a key WHO recommendation.

The value of the Atlas is that it replaces impressions and opinions with facts and figures. We hope that the Mental Health Atlas 2011 will assist health planners and policy-makers within countries to identify areas that need urgent attention. Researchers will find the Atlas 2011 data useful for health services research. We also hope that mental health professionals and non-governmental organizations will continue to use the Mental Health Atlas in their efforts to advocate for more and better resources for mental health.

**Dr Shekhar Saxena**

Director, Department of Mental Health and Substance Abuse,  
World Health Organization, Geneva, Switzerland

# EXECUTIVE SUMMARY



## KEY MESSAGES

### 1. RESOURCES TO TREAT AND PREVENT MENTAL DISORDERS REMAIN INSUFFICIENT

- Globally, spending on mental health is less than two US dollars per person, per year and less than 25 cents in low income countries.
- Almost half of the world's population lives in a country where, on average, there is one psychiatrist or less to serve 200,000 people.

### 2. RESOURCES FOR MENTAL HEALTH ARE INEQUITABLY DISTRIBUTED

- Only 36% of people living in low income countries are covered by mental health legislation. In contrast, the corresponding rate for high income countries is 92%. Dedicated mental health legislation can help to legally reinforce the goals of policies and plans in line with international human rights and practice standards.
- Outpatient mental health facilities are 58 times more prevalent in high income compared with low income countries.
- User/consumer organizations are present in 83% of high income countries in comparison to 49% of low income countries.

### 3. RESOURCES FOR MENTAL HEALTH ARE INEFFICIENTLY UTILIZED

- Globally, 63% of psychiatric beds are located in mental hospitals, and 67% of mental health spending is directed towards these institutions.

### 4. INSTITUTIONAL CARE FOR MENTAL DISORDERS MAY BE SLOWLY DECREASING WORLDWIDE

- Though resources remain concentrated in mental hospitals, a modest decrease in mental hospital beds was found from 2005 to 2011 at the global level and in almost every income and regional group



## BACKGROUND

Project Atlas was launched by the WHO in 2000 in an attempt to map mental health resources in the world. This information was updated in 2005. The 2011 version of the Atlas represents the latest global picture of resources available to prevent and treat neuropsychiatric disorders, provide rehabilitation, and protect human rights.

## METHODS

A survey was sent to all Member States and Associate Territories. Data were obtained from 184 of 193 Member states, covering 95% of WHO Member States and 98% of the world's population.

## KEY FINDINGS

### Governance

- Sixty percent of countries report having a dedicated mental health policy; 71% possess a mental health plan; and 59% report having dedicated mental health legislation.
- The vast majority of policy and plan documents have been approved or updated since 2005 and the vast majority of legislative documents since 2001.
- A much higher percentage of high income countries report having a policy, plan, and legislation than low income countries.

### Financing

- Median mental health expenditures per capita are US\$ 1.63 with large variation among income groups, ranging from US\$ 0.20 in low income countries to US\$ 44.84 in high income countries.
- Globally, 67% of financial resources are directed towards mental hospitals.

### Mental Health Services

- The global median number of facilities per 100,000 population is 0.61 outpatient facilities, 0.05 day treatment facilities, 0.01 community residential facilities, and 0.04 mental hospitals. In terms of psychiatric beds in general hospitals, the global median is 1.4 beds per 100,000 population.
- Higher income countries typically have more facilities and higher admission/utilization rates.
- A significant majority (77%) of individuals admitted to mental hospitals remain there less than one year. However, this also implies that almost a quarter of people admitted to mental hospitals remain there longer than a year after admission.

- Only 32% of countries have a majority of facilities that provide follow-up care. This figure varies across income classifications; 7% of low income, 29% of lower-middle income, 39% of upper-middle income, and 45% of high income countries provide follow-up care at a majority of facilities.
- Similarly, only 44% of countries have a majority of facilities which provide psychosocial interventions, a figure which also varies by income classification; 14% of low income, 34% of lower-middle income, 61% of upper-middle income, and 59% of high income countries provide psychosocial care at a majority of facilities.

### Human Resources

- Globally, nurses represent the most prevalent professional group working in the mental health sector. The median rate of nurses in this sector (5.8 per 100,000 population) is greater than the rate of all other human resources groups combined.
- For all human resources, there is a clear pattern whereby greater rates of human resources are observed in higher income countries. For example, there is a median rate of 0.05 psychiatrists (per 100,000 population) in low income countries, 0.54 in lower-middle income countries, 2.03 in upper-middle income countries, and 8.59 in high income countries.
- User and family associations are present in 64% and 62% of countries, respectively. User associations are more prevalent in higher income countries – in 83% of high income countries versus 49% of low income countries – as are family associations, which are present in 80% of high income countries and 39% of low income countries.

### Medicines for Mental and Behavioural Disorders

- Globally, the estimated median expenditure on medicines for mental and behavioural disorders is US\$ 6.81 per person per year. However, the true figure is likely to be substantially lower; only 49 of 184 countries (27%) reported these data, and respondents were disproportionately high income countries.

### Information Systems

- A majority of countries collect data on (I) the number of people treated and (II) service user diagnosis at mental hospitals, general hospitals and outpatient facilities. In contrast, only a minority of countries have these data from primary care facilities and community residential facilities.

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# INTRODUCTION

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Project Atlas was launched by the WHO in 2000 in an attempt to map mental health resources in the world. The primary objective of the project is to collect, compile, analyse, and disseminate basic information on mental health resources from WHO Member States and Associated Territories required for treatment, prevention, and rehabilitation of neuropsychiatric disorders.

The first edition of Atlas was published in 2001 (1), and the second edition was published four years later in 2005 (2). Atlas data are needed at the country level to assess the current situation and to assist in developing policies, plans and programs and at the regional and global levels to develop an aggregate picture of available mental health resources and overall needs.

Neuropsychiatric disorders are estimated to contribute to 13% of the global burden of disease (3). Though the extent of the burden varies from country to country, neuropsychiatric disorders account for a substantial amount of the disease burden in every country of the world. Moreover, results from previous editions of Atlas suggest that the gap between burden and resources is large.

Mental Health Atlas 2011 maintains some comparability with the previous two versions, but the current version stresses more directly the importance of quantitative data. The experience of the *WHO Assessment Instrument for Mental Health Systems* (WHO-AIMS), a set of indicators aimed to evaluate the mental health systems of low and middle income countries, has been important in the development of Atlas 2011 (4). Taken together, the existence of the Mental Health Atlas at three time points, alongside comprehensive WHO-AIMS country reports, allows for a broader view of how resources for mental health have developed over the last ten years at a global level.

Over this time period, increasing attention has been brought to the detrimental impacts of neuropsychiatric disorders on individuals, families, and communities. Starting with the World Health Report of 2001 that focused on mental health (5) and extending to the recent launch of the WHO mhGAP Intervention Guide (6), mental health has become a priority in the global health agenda. This emphasis by the WHO has been strengthened by calls for action in top scientific journals, including the *Lancet Series on Global Mental Health in 2007* (7) and the *Grand Challenges in Global Mental Health* initiative recently outlined in *Nature* (8).

The current edition of Atlas covers these years of intense global action to increase awareness and resources for mental health. Though changes to the instrument make it challenging to make direct comparisons in a number of domains, a few key indicators, such as governance (policy, plans, and legislation on mental health), human resources, and the availability of beds can be tracked. It is critical to monitor progress as even small improvements in the global situation could lead to significant quality-of-life benefits, as well as human rights and economic improvements worldwide (8).

## METHODOLOGY

The Mental Health Atlas Project has involved staff at WHO headquarters, regional and country offices, and ministries of health in collecting information on national resources for mental health. The project included multiple administrative and methodological steps, starting from the development of the questionnaire and ending with the statistical analyses and presentation of data. The sequence of action is briefly outlined below.

### STAGE 1: QUESTIONNAIRE DEVELOPMENT

The Atlas questionnaire was developed in collaboration with WHO regional offices. Alongside the questions, a glossary was provided to standardize terms and to ensure that the conceptualizations of resources were understood equally by all respondents. The questionnaire was drafted in English and translated into three official United Nations languages – French, Russian and Spanish.

### STAGE 2: PEER REVIEW

The questionnaire was sent to all Regional Advisors for Mental Health as well as nine experts in the field for their feedback. Experts were from ministries of health, WHO country offices, and academic institutions. The vast majority of these experts were based in low and middle income countries (LAMICs). The questionnaire was modified based on peer feedback.

### STAGE 3: FOCAL POINT NOMINATION

In the respective countries, WHO headquarters together with WHO regional and country offices requested ministries of health or other responsible ministries to appoint a focal point to complete the Atlas questionnaire. The focal point was encouraged to contact other experts in the field to obtain information relevant to answering the survey questions.

# INTRODUCTION

## STAGE 4: QUESTIONNAIRE SUBMISSION

Close contact with the focal points was maintained during the course of their nomination and through questionnaire submission. A staff member at WHO headquarters was available to respond to enquiries, to provide additional guidance, and to assist focal points in filling out the Atlas questionnaire. The Atlas questionnaire was available on-line, and countries were strongly encouraged to use this method for submission. However, a Word version of the questionnaire was available whenever preferred.

## STAGE 5: CLARIFICATION PROCESS

Once a completed questionnaire was received, it was screened for incomplete and inconsistent answers. To ensure high quality data, respondents were contacted again and were asked to respond to the requests for clarification and to correct their responses.

## STAGE 6: DATA MANAGEMENT

Upon receipt of the final questionnaires, data were entered into a statistical package (SPSS 16). Data were aggregated by WHO region and by World Bank income group (9). Economies are divided according to annual gross national per capita income per capita. According to the World Bank, these groups are low income countries (having a gross national per capita income of US\$ 1005 or less), lower middle-income countries (US\$ 1,006 to US\$ 3,975), higher middle-income countries (US\$ 3,976 to US\$ 12,275) and high income countries (US\$ 12,276 or over). Lists of countries by WHO region and by World Bank income group are provided at the end of this report.

## STAGE 7: DATA ANALYSIS AND PRESENTATION

Frequency distributions and measures of central tendency were calculated as appropriate, and data were disaggregated according to WHO region and World Bank income group. Rates per 100,000 population were calculated using *World population prospects* data from the United Nations (10). To illustrate the information obtained, data were exported into Microsoft Office Excel to produce tables, graphs, and figures.

Data were obtained from 184 of 193 Member States, covering 95% of all WHO Member States and 98% of the world's population. However, the response rate for many questionnaire items was below 184. In addition, three of the 184 Member States that participated in the survey are not World Bank Member States and therefore do not have a World Bank income group classification. Thus, the total possible response rate for analyses conducted by income group is 181.

Of the 184 countries that provided data for Atlas 2011, 175 countries submitted the Atlas questionnaire. For three countries (the Marshall Islands, Palau, and Solomon Islands) permission was granted to use data from PIMHnet Country Summaries to complete the Atlas questionnaire. For a further six countries (Barbados, Dominica, Grenada, St Kitts, St Lucia, and St Vincent) permission was granted to use data from WHO-AIMS reports to complete the Atlas questionnaire.

WHO regions	Countries Responding	Percent Responding
AFR (Africa)	45 / 46	97.8
AMR (Americas)	32 / 35	91.4
EMR (Eastern Mediterranean)	19 / 21	90.5
EUR (Europe)	52 / 53	98.1
SEAR (South-East Asia)	10 / 11	90.9
WPR (Western Pacific)	26 / 27	96.3
<b>World</b>	<b>184 / 193</b>	<b>95.3</b>

## ORGANIZATION OF RESULTS

The global and regional analyses are organized into six broad themes. These include governance, finance, mental health care delivery, human resources, medicines for mental and behavioural disorders, and information gathering systems. The working definitions used for key terms in the questionnaire are provided at the beginning of each thematic section. The results of the analyses are presented for the world, the six WHO regions, and the four World Bank income groups.

## LIMITATIONS

A number of limitations should be kept in mind when examining the results.

While best attempts have been made to obtain information from countries on all variables, some countries could not provide data for a number of indicators. The most common reason for the missing data is that such data simply do not exist within the countries. Also, in some cases it was difficult for countries to report the information in the manner requested in the Atlas questionnaire. For example, a few countries had difficulty providing information about the mental health budget because mental health care in their country is integrated within the primary care system, as recommended by the WHO. Similarly, in some countries health budgets of federal/central governments and regional/local governments may be separate, and in some cases, larger budgets may be with regional/local governments. The extent of missing data can be determined from the number of countries that have been able to supply details. Each individual table contains the number and percent of respondent countries, out of a total of 184 for analyses by WHO region and 181 for analyses by World Bank income group.

Another limitation concerns the reliability of the terms used in the survey. The project has used working definitions arrived at through consultations with experts. The aim was to strike a balance between the definitions that are most appropriate and those that the countries currently use. At present, definitions for mental health resources like policy, outpatient facilities, and primary health care facilities vary from country to country. As a result, countries may have had difficulty in interpreting the definitions provided in the glossary and in reporting accurate information.

Although Atlas 2011 attempted to use more quantitative indicators to increase the reliability of the reported data, there were a number of sections where it was difficult to do so. Thus, a number of items were framed so that countries could respond with a 'yes' or 'no' answer. Although this helped increase the response rate for these indicators, it failed to take into account differences in coverage and quality. Moreover, even when quantitative data is reported it is only at the aggregate level and may mask important regional differences. For example, the information collected on the number of psychiatric beds and professionals gives the average figure for the country but does not provide information about distribution across rural or urban settings or distribution across different regions within the country. Likewise, though some Atlas data are disaggregated by gender and age, the vast majority are not disaggregated making it difficult to assess resources for particular populations within a country such as children, adolescents, or the elderly.

Project Atlas is an on-going activity of the WHO. As more accurate and comprehensive information covering all aspects of mental health resources become available and the concepts and definitions of resources become more refined, it is expected that the database will also become better organized and more reliable. While it is clear that, in many cases, countries' information systems are poor or non-existent, the Atlas may serve as a catalyst for further development by demonstrating the utility of such systems.

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RESULTS

# GOVERNANCE



## 1.1 MENTAL HEALTH POLICY

### DEFINITION

*Mental health policy:* The official statement of a government conveying an organized set of values, principles, objectives and areas for action to improve the mental health of a population.

### BACKGROUND

- Respondents were asked to report whether their country has an officially approved, dedicated mental health policy and if so, the year of its latest revision. In addition, they were asked to report whether mental health is mentioned in the general health policy.
- Findings are based on the number of countries reporting valid data for each item.

### SALIENT FINDINGS

- A dedicated mental health policy is present in approximately 60% of countries covering roughly 72% of the world's population.
- There are clear differences between regions (Table 1.1.1); dedicated mental health policies are less present in AFR, AMR and WPR and more present in EMR, EUR and SEAR. Although, 70% of SEAR countries report a dedicated mental health policy, the population coverage is only 32%. This is because India, the most populous country in SEAR, does not currently have a dedicated mental health policy.
- Table 1.1.2 shows that there is a clear pattern by World Bank income group with policies being present more often in high income countries (77.1%) than low income countries (48.7%).

WHO Region	Countries with MH Policy	Percent with MH Policy	Population Coverage (%)
AFR	19/45	42.2	60.1
AMR	18/32	56.3	88.1
EMR	13/19	68.4	84.8
EUR	38/52	73.1	90.8
SEAR	7/10	70.0	31.8
WPR	15/26	57.7	94.9
<b>World</b>	<b>110/184</b>	<b>59.8</b>	<b>71.5</b>

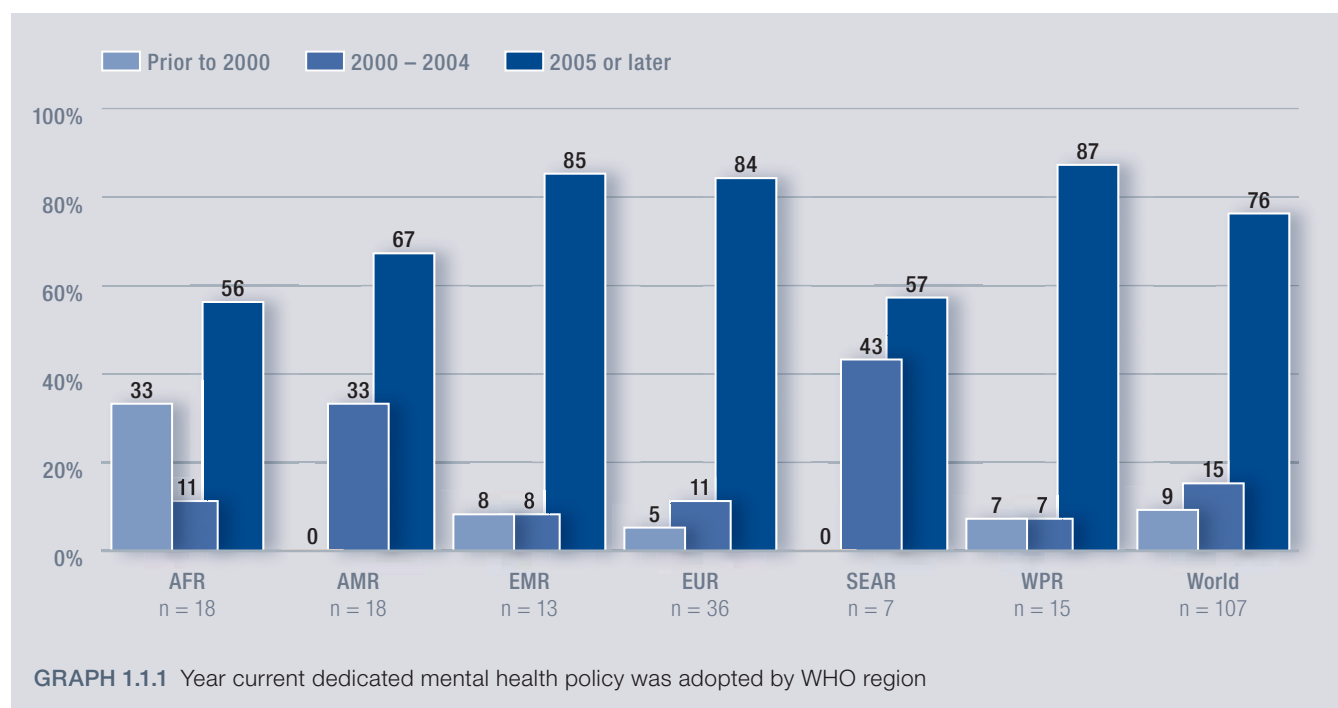
TABLE 1.1.1 Presence of dedicated mental health policy by WHO region

Income Group	Countries with MH Policy	Percent with MH Policy	Population Coverage (%)
Low	19/39	48.7	62.5
Lower-Middle	28/51	54.9	62.8
Upper-Middle	26/43	60.5	93.4
High	37/48	77.1	92.8
<b>World</b>	<b>110/181</b>	<b>60.8</b>	<b>71.8</b>

TABLE 1.1.2 Presence of dedicated mental health policy by World Bank income group

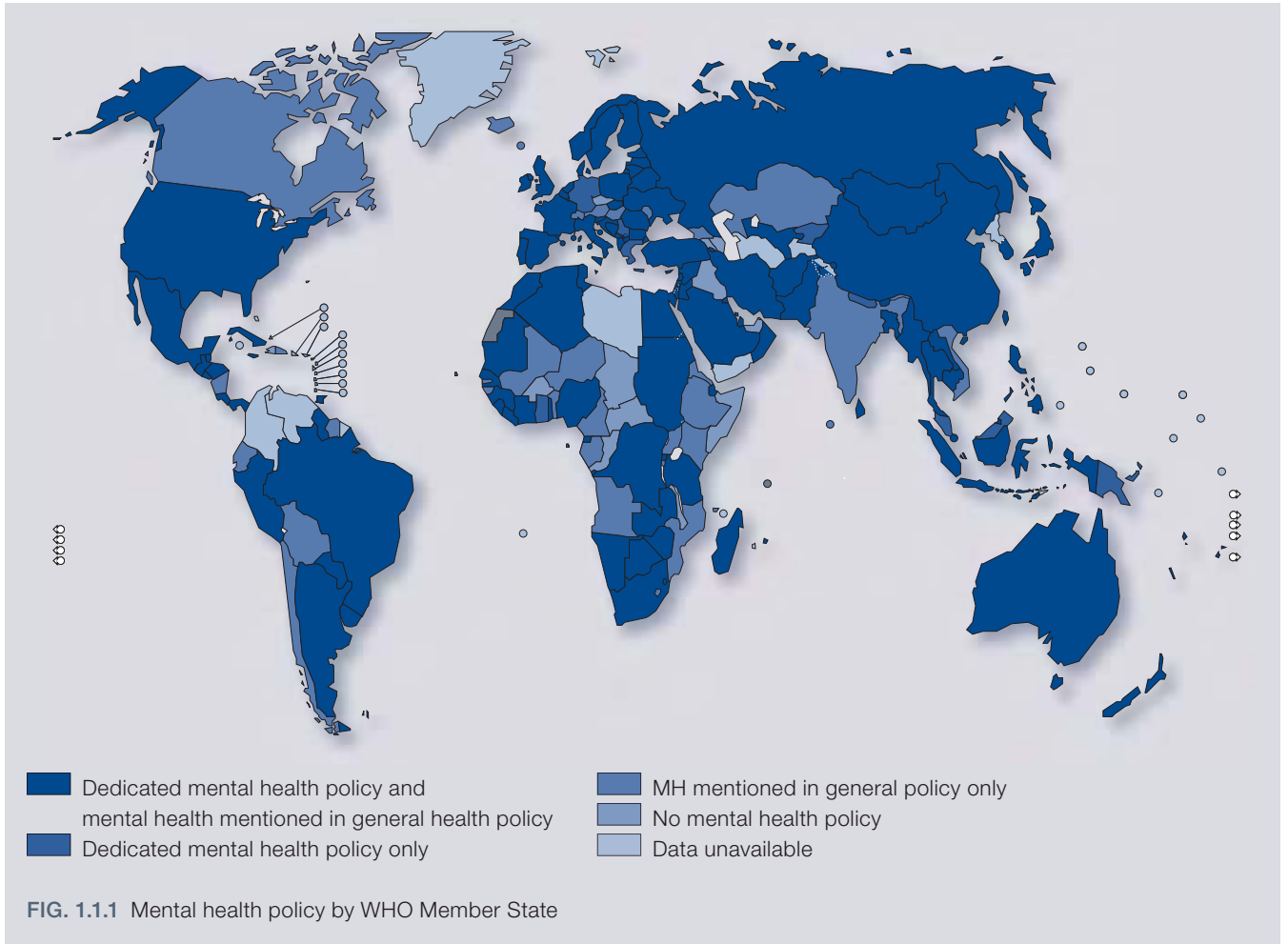
# GOVERNANCE

## 1.1 MENTAL HEALTH POLICY



- Among countries with a dedicated mental health policy, it is notable that the policy was recently approved or updated (since 2005) in 76% of countries (Graph 1.1.1). The percent of countries by WHO region with recently approved or updated mental health policies is as follows: AFR 56%, AMR 67%, EMR 85%, EUR 84%, SEAR 57%, and WPR 87%.
- In addition to dedicated mental health policies, 77% of countries report that mental health is mentioned in their general health policy. The results by region are as follows: AFR 80%, AMR 78%, EMR 74%, EUR 81%, SEAR 80%, and WPR 65%.
- In examining the presence of a dedicated mental health policy as well as whether mental health is mentioned in the general health policy, the majority of Member States (54%) have both a dedicated mental health policy and specifically mention mental health in their general health policy. A sizable number of countries (23%) only include mental health in their general health policy with no separate dedicated mental health policy. A small proportion of countries (2%) only have a dedicated mental health policy with no mention of mental health in the general health policy, and 8% of countries have no policy coverage (i.e. no dedicated mental health policy and mental health is not mentioned in the general health policy). The situation according to each country is reported in Figure 1.1.1.





# GOVERNANCE

## 1.2 MENTAL HEALTH PLAN

### DEFINITION

*Mental health plan:* A detailed pre-formulated scheme that details the strategies and activities that will be implemented to realize the objectives of the policy. It also specifies other crucial elements such as the budget and timeframe for implementing strategies and activities and specific targets that will be met. The plan also clarifies the roles of different stakeholders involved in the implementation of activities defined within the mental health plan. For the purposes of this survey, mental health programmes are included within the mental health plan category. A mental health programme is a targeted intervention, usually short-term, with a highly focused objective for the promotion of mental health, the prevention of mental disorders, and treatment and rehabilitation.

### BACKGROUND

- Respondents were asked to report whether their country has an officially approved mental health plan and if so, the year of its latest revision. If a plan is present, respondents were asked to indicate whether timelines for the implementation of the mental health plan are stated in the document, funding is allocated for the implementation of half or more of the items, a shift of services and resources from mental hospitals to community mental health facilities is a clearly stated component of the mental health plan, and integration of mental health services into primary care is a clearly stated component of the mental health plan.
- Findings are based on the number of countries reporting valid data for each item.

### SALIENT FINDINGS

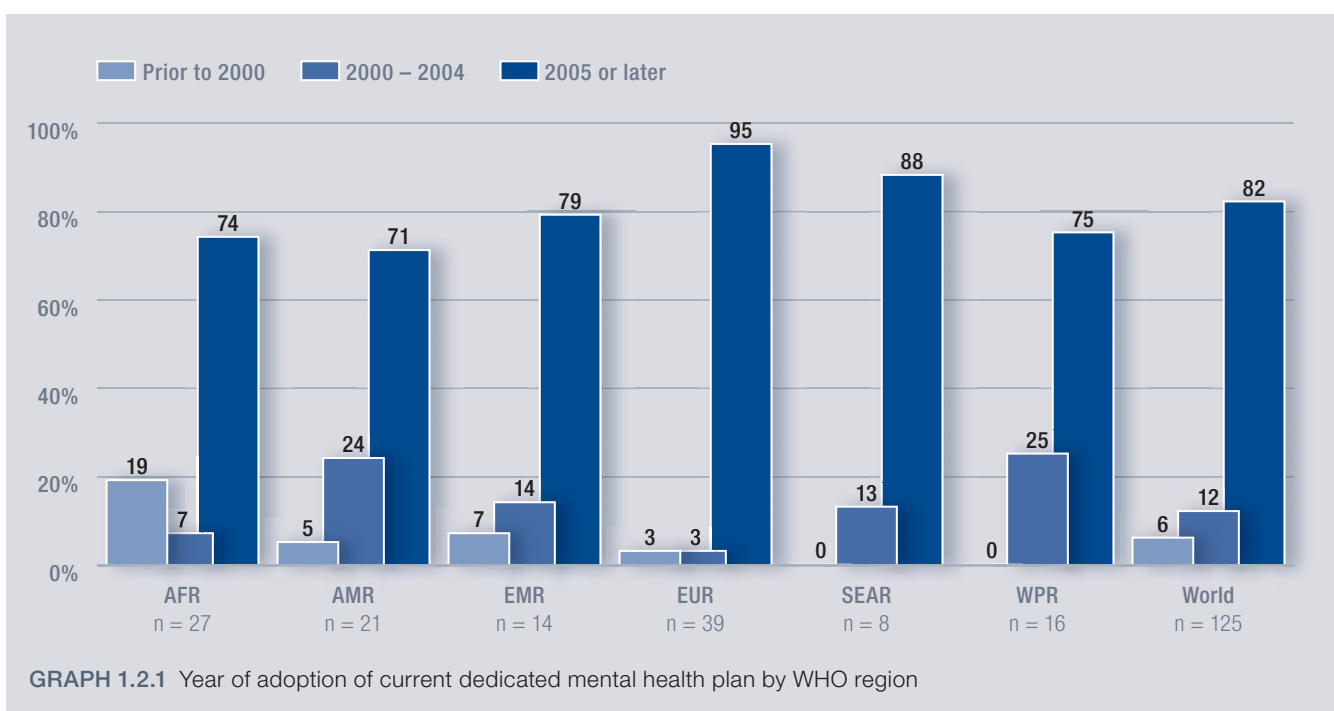
- A mental health plan is present in almost three-quarters (72%) of responding Member States covering 95% of the world's population.
- There are notable differences by WHO region (Table 1.2.1), with fewer plans present in WPR (62%), AMR (66%) and AFR (67%) as compared with EMR (74%), SEAR (80%) and EUR (81%). The population coverage was below 95% only in AFR and EMR. Although only 62% of WPR countries reported a plan, population coverage was over 99%. This is because most of the WPR countries lacking a mental health plan are small Pacific Islands.
- There is also a clear pattern by World Bank income group (Table 1.2.2), with plans being more frequent in wealthier countries. Population coverage was below 95% only in low income countries.
- Among countries with mental health plans, 82% approved or revised their mental health plan in 2005 or later, while only 6% continued with plans created or adapted before 2000. There are some differences between WHO region (Graph 1.2.1); a lower percentage of mental health plans were updated in 2005 or later in WPR (75%), AMR (71%) and AFR (74%), as compared with EUR (95%), EMR (79%) and SEAR (88%).
- Among countries with a mental health plan, 80% have timelines for the implementation of the document, more than half (55%) provide funding for the implementation of the plan, three quarters (76%) clearly state a shift of services and resources from mental hospitals to community mental health facilities, and 88% emphasize the integration of mental health care in primary care.

WHO Region	Countries with MH Plan	Percent with MH Plan	Population Coverage (%)
AFR	30/45	66.7	78.7
AMR	21/32	65.6	97.0
EMR	14/19	73.7	87.6
EUR	42/52	80.8	95.2
SEAR	8/10	80.0	98.3
WPR	16/26	61.5	>99.0
<b>World</b>	<b>131/184</b>	<b>71.2</b>	<b>94.8</b>

TABLE 1.2.1 Presence of mental health plan by WHO region

Income Group	Countries with MH Plan	Percent with MH Plan	Population Coverage (%)
Low	24/39	61.5	72.1
Lower-Middle	37/51	72.5	98.1
Upper-Middle	28/43	65.1	96.3
High	42/48	87.5	99.5
<b>World</b>	<b>131/181</b>	<b>72.4</b>	<b>94.8</b>

TABLE 1.2.2 Presence of mental health plan by World Bank income group



GRAPH 1.2.1 Year of adoption of current dedicated mental health plan by WHO region

# GOVERNANCE

## 1.3 MENTAL HEALTH LEGISLATION

### DEFINITIONS

- Mental health legislation:** Mental health legislation may cover a broad array of issues including access to mental health care and other services, quality of mental health care, admission to mental health facilities, consent to treatment, freedom from cruel, inhuman and degrading treatment, freedom from discrimination, the enjoyment of a full range of civil, cultural, economic, political and social rights, and provisions for legal mechanisms to promote and protect human rights (e.g. review bodies to oversee admission and treatment to mental health facilities, monitoring bodies to inspect human rights conditions in facilities and complaints mechanisms).
- Dedicated mental health legislation:** Covers all issues of relevance to persons with mental disorders. Mental health, general health and non-health areas are usually included in a single legislative document. Human rights-oriented mental health legislation can help to legally reinforce the goals of policies and plans in line with international human rights and good practice standards.

### BACKGROUND

- Respondents were asked to report whether their country has dedicated mental health legislation and if so, the year of its latest revision. In addition, they were asked to report whether the existence of legal provisions on mental health are covered in other laws (e.g. welfare, disability, employment, anti-discrimination, general health legislation, etc.).
- Findings are based on the number of countries reporting valid data for each item.

### SALIENT FINDINGS

- Only 59% of people worldwide live in a country where there is dedicated mental health legislation (Table 1.3.1).
- Table 1.3.1 indicates that clear differences by WHO region exist; mental health legislation is less frequent in AFR and SEAR and more frequent in AMR, EMR, WPR and EUR. Although 54% of WPR countries report dedicated mental health legislation, there is only 14% population coverage. This is because the People's Republic of China, the most populous country in the WPR, does not have dedicated mental health legislation.
- A pattern by World Bank income group is evident; dedicated mental health legislation is present in 77% of high income countries in comparison with only 39% of low income countries (Table 1.3.2).

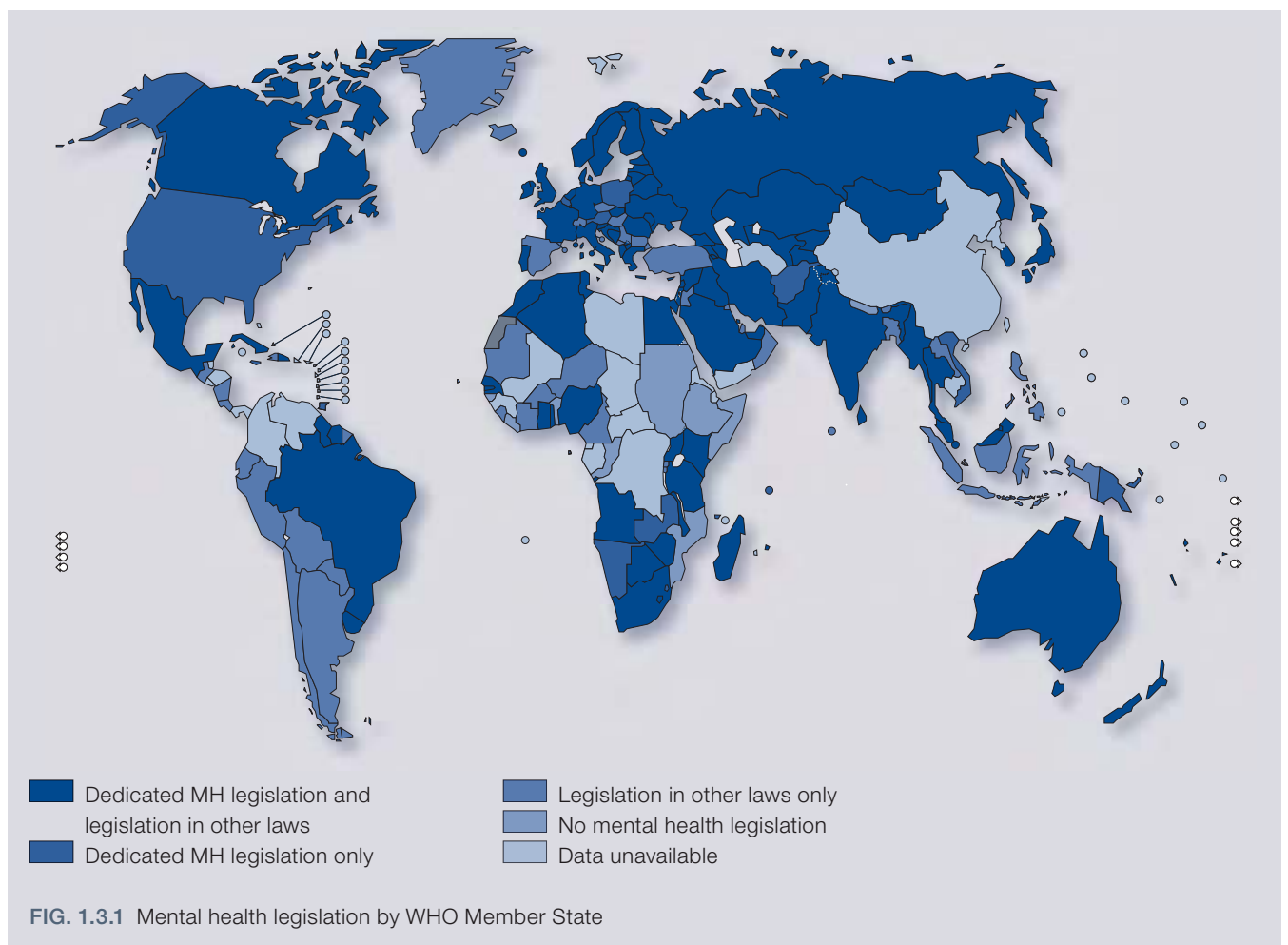
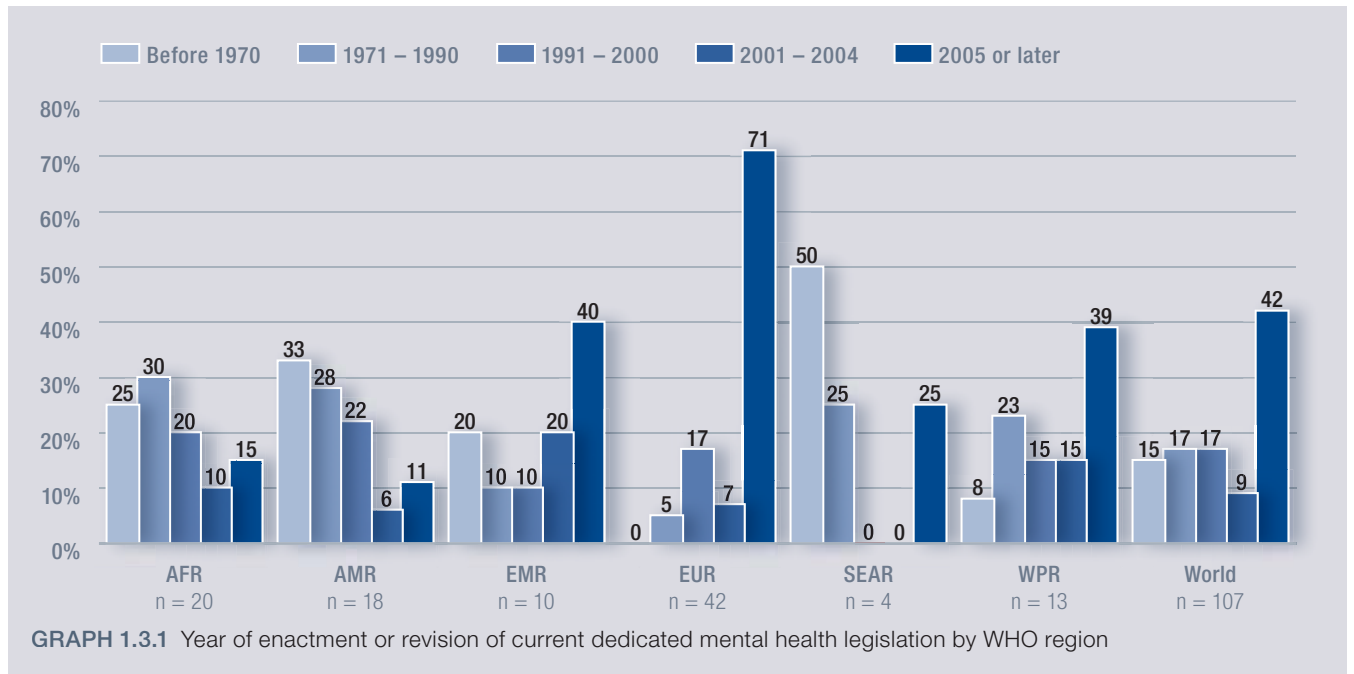
- Among countries with dedicated legislation, almost half (42%) were enacted or revised in 2005 or later, while 15% continued with legislations enacted before 1970 (Graph 1.3.1). Legislation was initiated or revised in 2005 or later in 15% of the AFR countries, 11% of AMR countries, 40% of the EMR countries, 71% of EUR countries, 25% of SEAR countries, and 39% of WPR countries.
- Legal provisions on mental health in non-dedicated legislation (e.g. welfare, disability, anti-discrimination, employment, general health legislation, etc.) are present in the majority of the countries (71%).
- Six percent of countries have neither dedicated mental health legislation nor mental health provisions covered in other laws; 26% have provisions covered in other laws but do not have specific mental health legislation; 6% have dedicated mental health legislation but no legal provisions in other laws; and 45% have both dedicated legislation as well as legal provisions in other laws. The situation according to each country is reported in Figure 1.3.1.

WHO Region	Countries with MH Legislation	Percent with MH Legislation	Population Coverage (%)
AFR	20 / 45	44.4	56.2
AMR	18 / 32	56.3	80.2
EMR	11 / 19	57.9	83.0
EUR	42 / 52	80.8	81.2
SEAR	4 / 10	40.0	75.9
WPR	14 / 26	53.8	13.6
<b>World</b>	<b>109 / 184</b>	<b>59.2</b>	<b>58.5</b>

TABLE 1.3.1 Presence of dedicated mental health legislation by WHO region

Income Group	Countries with MH Legislation	Percent with MH Legislation	Population Coverage (%)
Low	15 / 39	38.5	35.9
Lower-Middle	24 / 51	47.1	48.9
Upper-Middle	33 / 43	76.7	79.3
High	37 / 48	77.1	92.4
<b>World</b>	<b>109 / 181</b>	<b>60.2</b>	<b>58.5</b>

TABLE 1.3.2 Presence of dedicated mental health legislation by World Bank income group



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RESULTS

# FINANCING



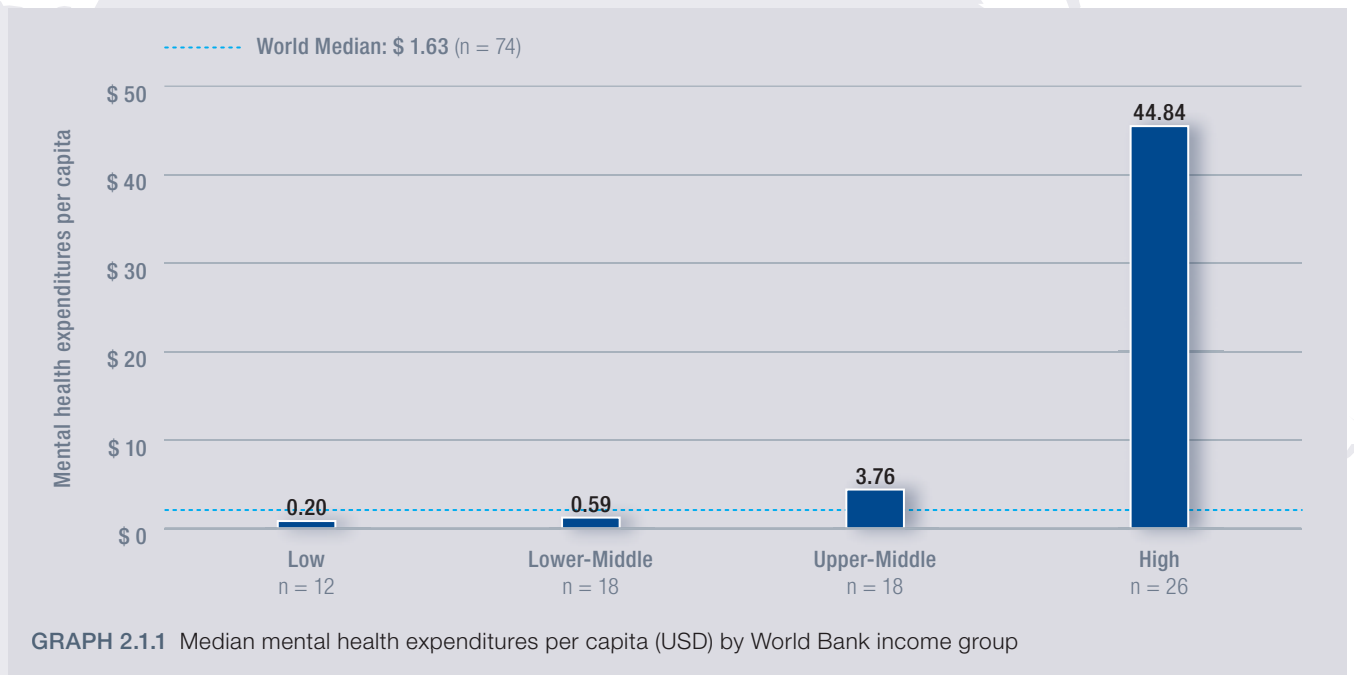
## 2.1 ALLOCATION OF BUDGET

### BACKGROUND

- Respondents were asked to report total mental health spending and spending on mental hospitals in local currency. Local currency figures were converted to USD (May 1, 2011) in order to compare mental health spending across Member States.
- Findings are based on the number of countries reporting valid data for each item.

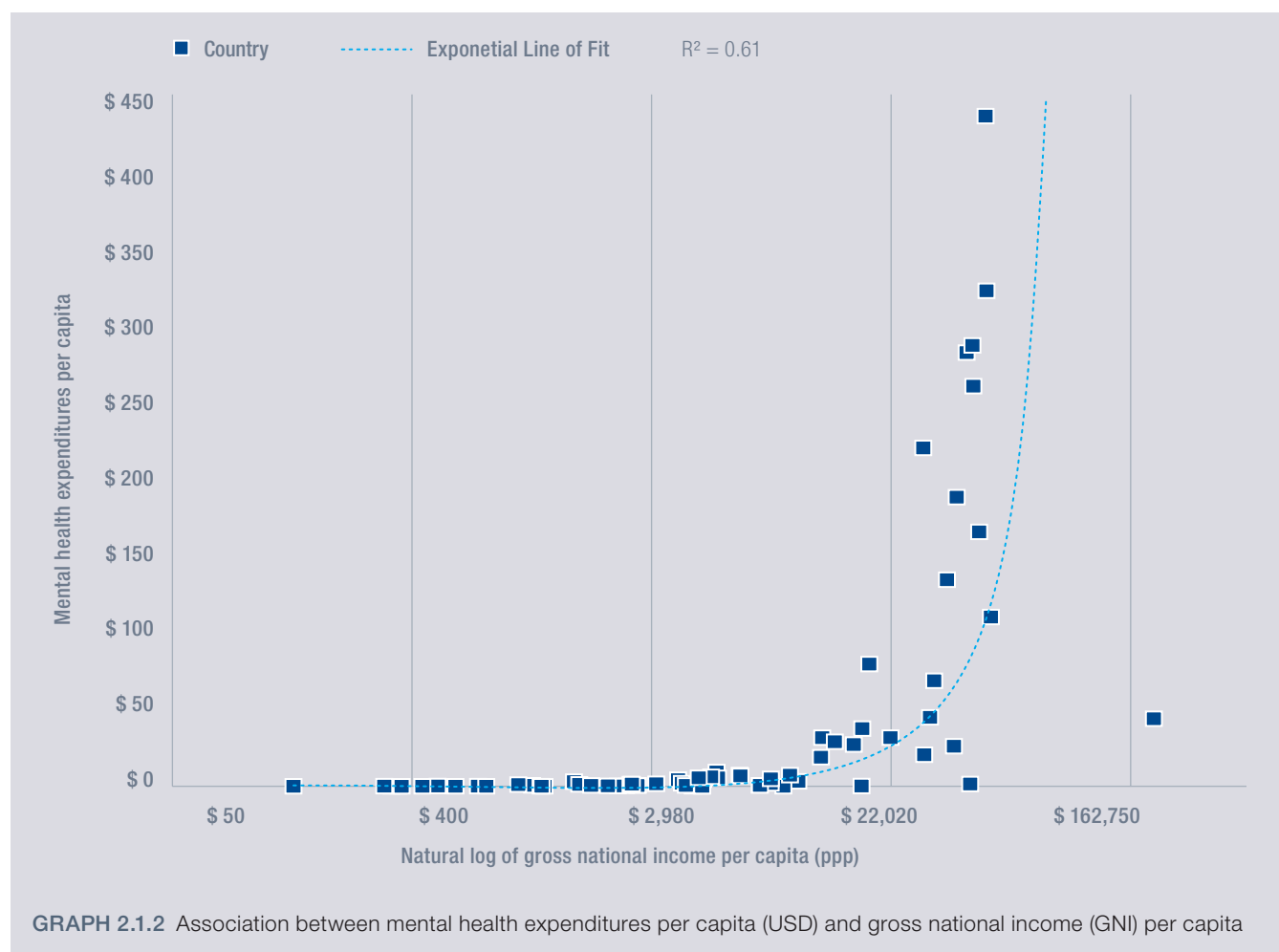
### SALIENT FINDINGS

- Global median mental health expenditures per capita is US\$ 1.63 per year. Mental health expenditures per capita are more than 200 times greater in high income countries compared with low income countries (Graph 2.1.1). However, median gross national income (GNI) per capita is only 76 times greater in high income countries compared with low income countries, which suggests that income level does not fully account for lower funding for mental health in low income countries.



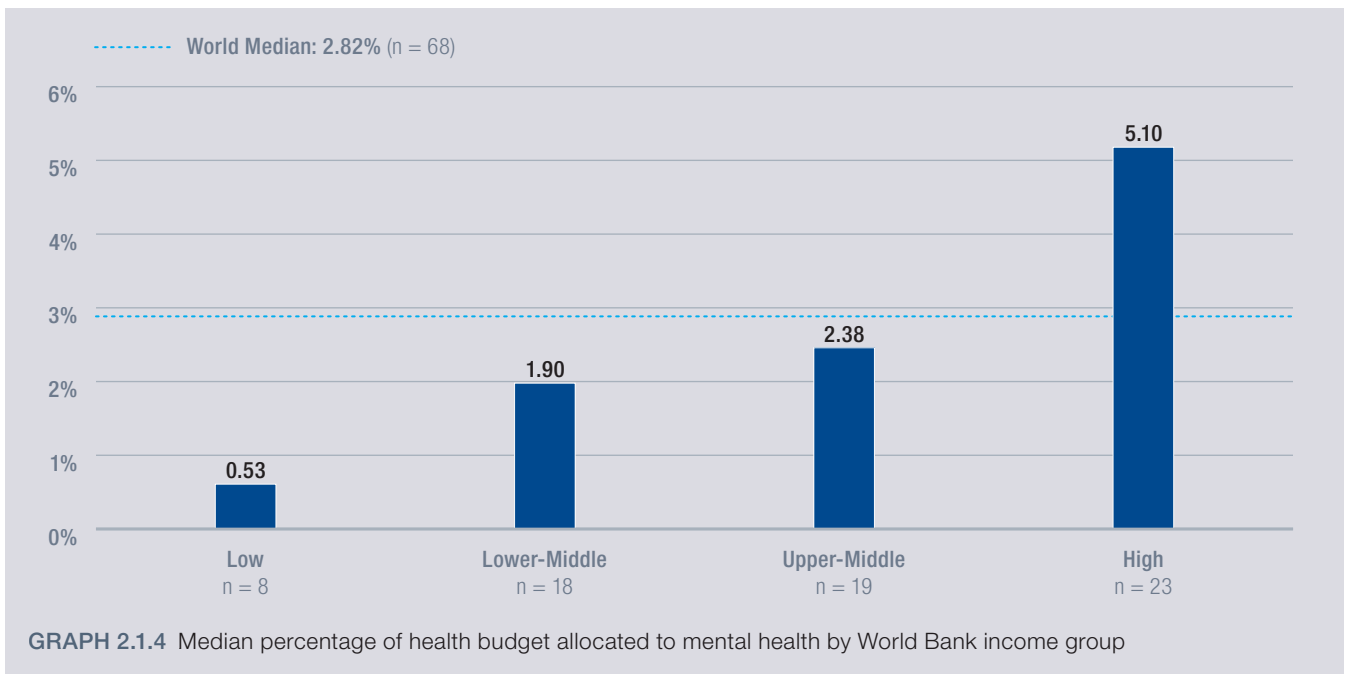
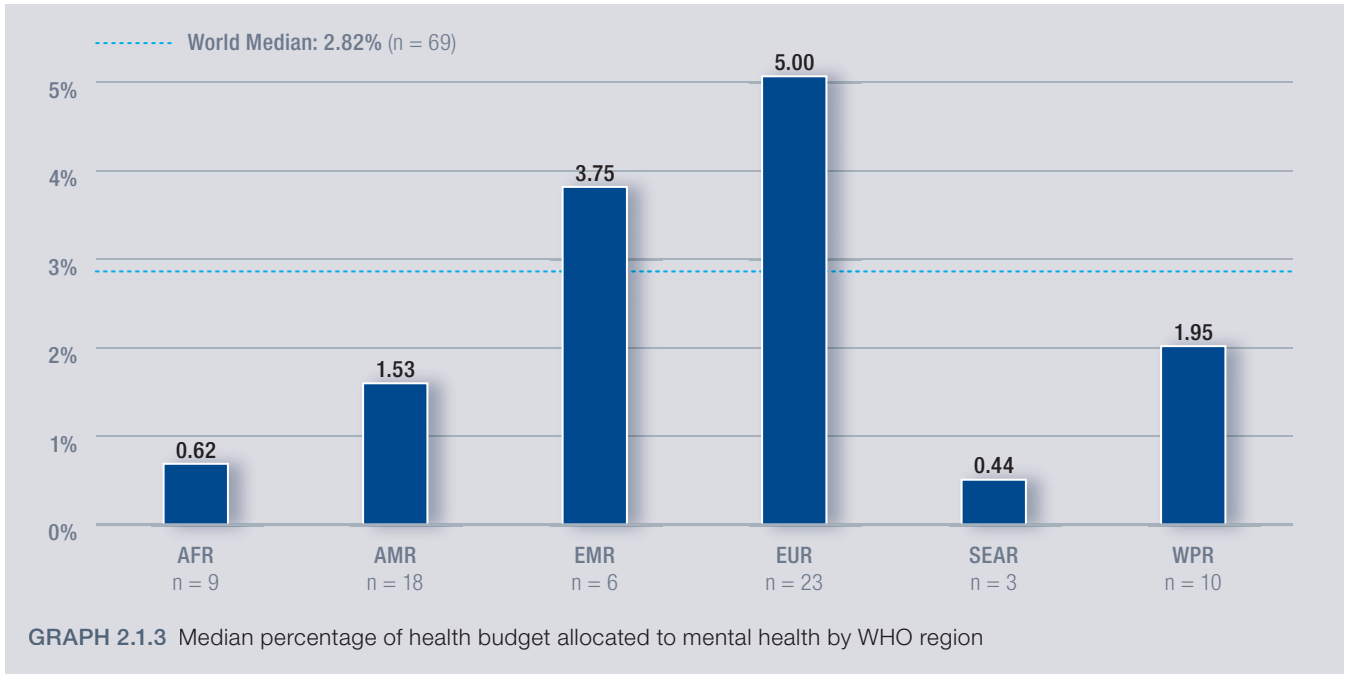
# FINANCING

## 2.1 ALLOCATION OF BUDGET



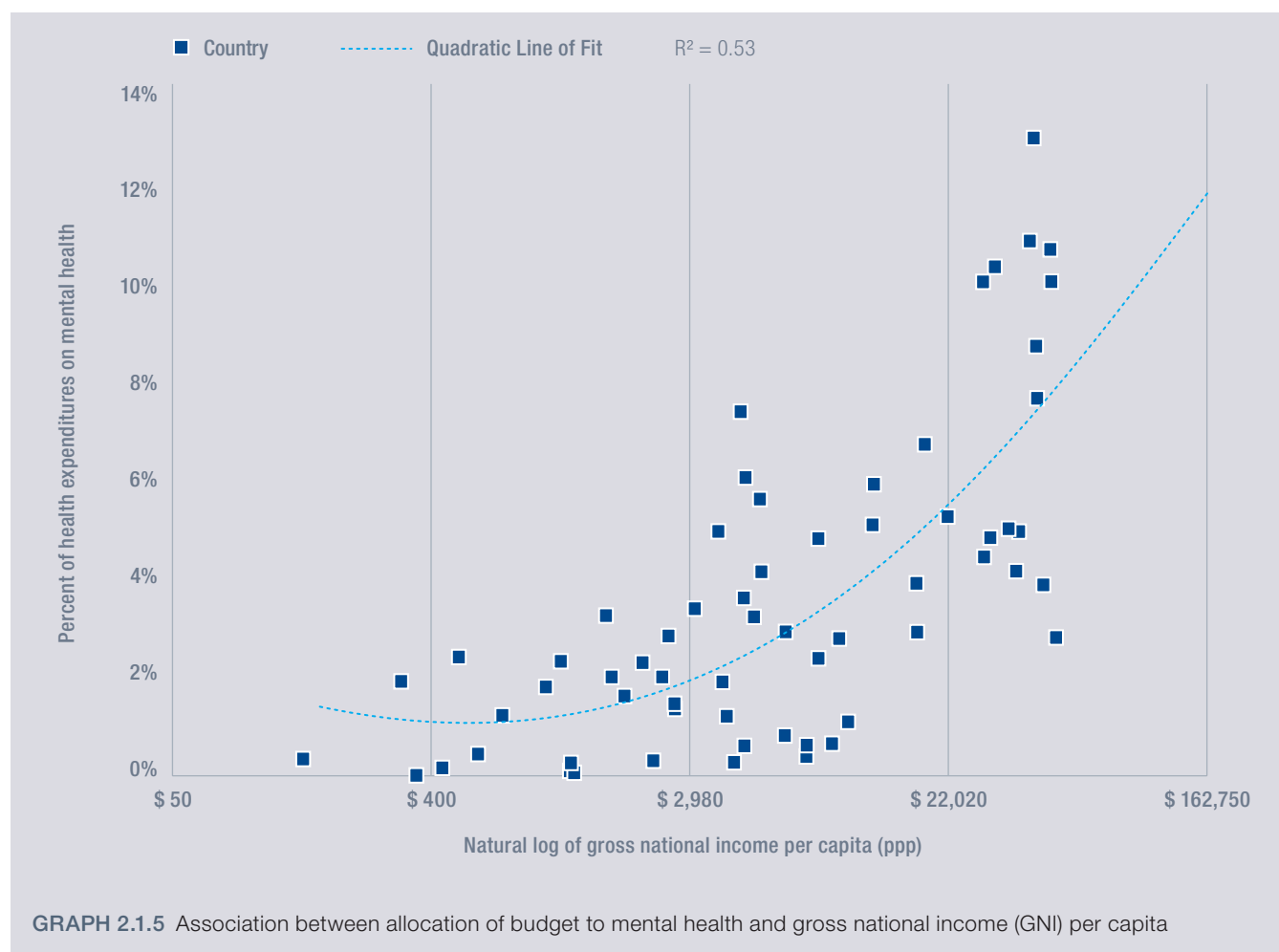
- There is a robust correlation ( $r = 0.78$ ) between Gross National Income (GNI) per capita and mental health expenditures per capita, suggesting that a country's financial resources is an important factor in mental health spending, although other factors clearly play a role in the priority given to mental health spending (Graph 2.1.2).
- The proportion of total health expenditures directed towards mental health is an indication of the priority given to mental health within the health sector. In terms of overall mental health expenditures, the global median percentage of government health budget expenditures dedicated to mental health is 2.8%. This level of allocation is considerably higher in EUR and EMR and is lowest in AFR and SEAR (Graph 2.1.3).
- Proportionally, lower income countries spend a smaller percentage of their health budget on mental health (Graph 2.1.4). The median percentage of health expenditures dedicated to mental health is 0.5% in low income countries and 5.1% in high income countries, with graduated values in lower- and upper-middle income countries.



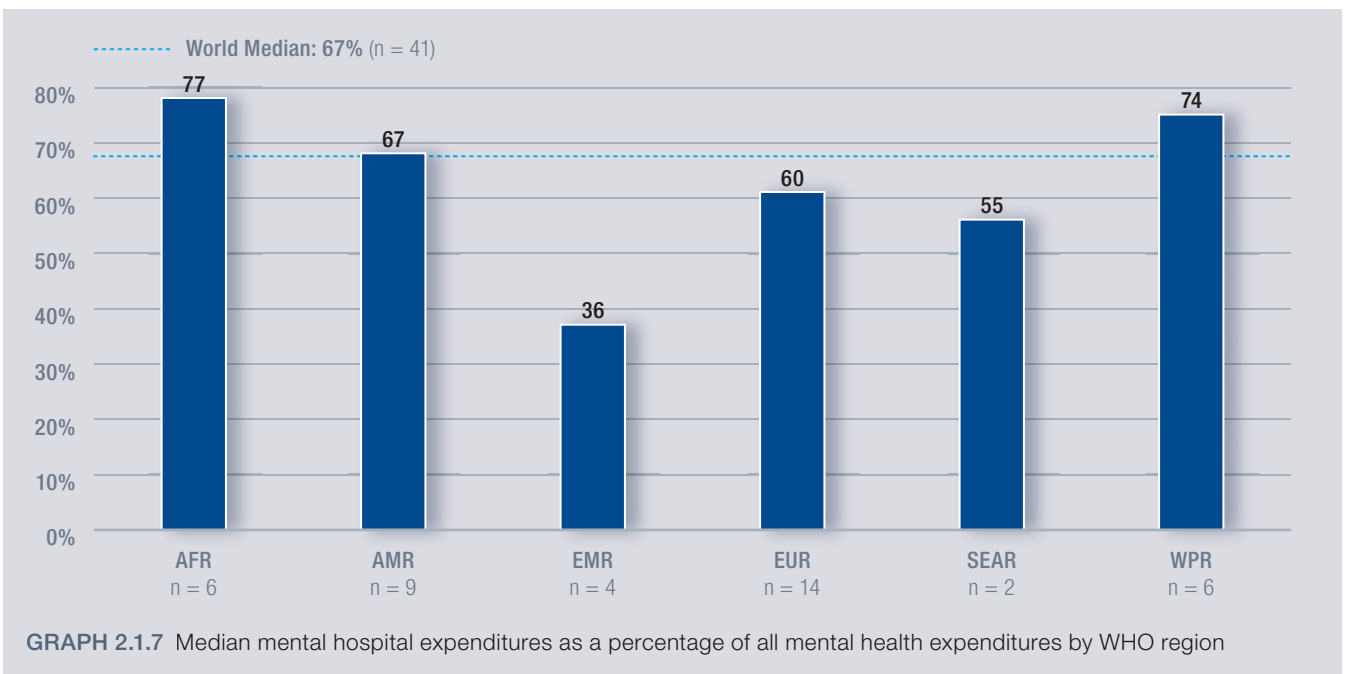
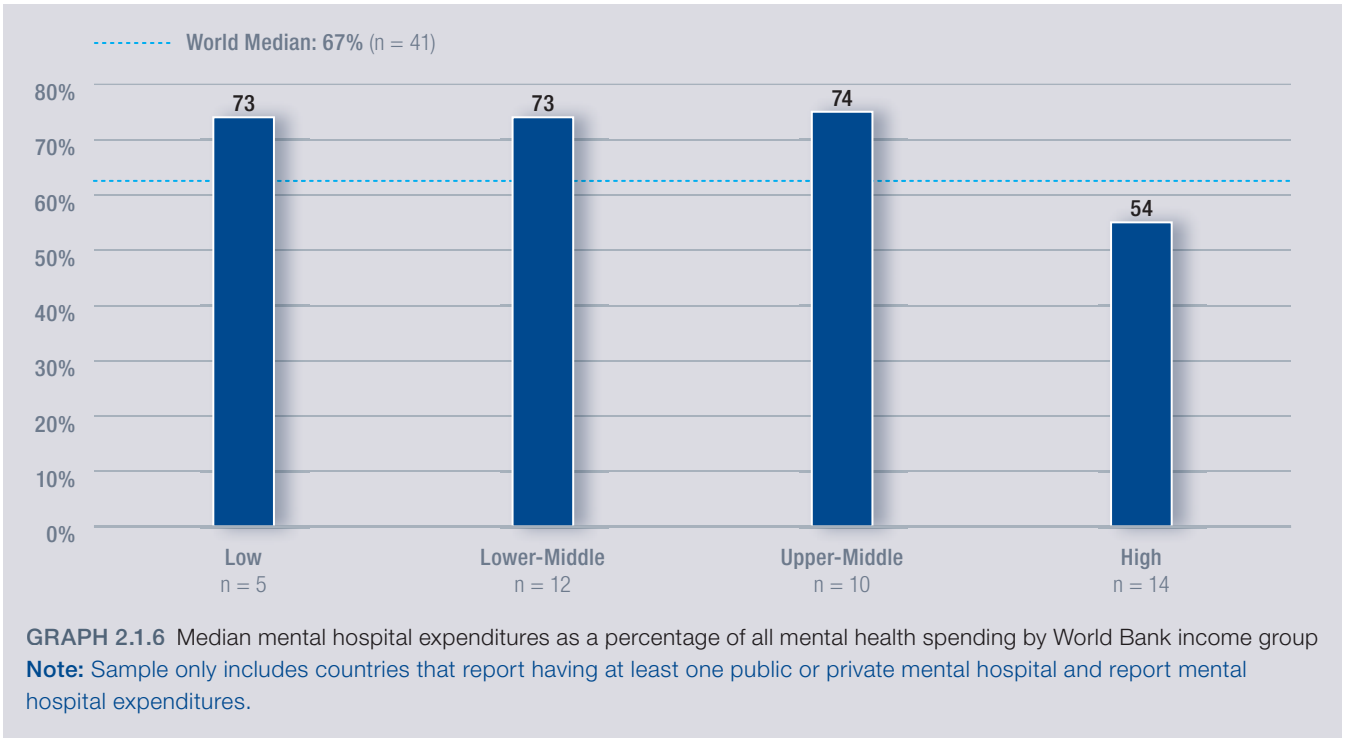


# FINANCING

## 2.1 ALLOCATION OF BUDGET



- The overall association between country income level, as measured by GNI, and allocation of the health budget to mental health is illustrated in Graph 2.1.5 ( $r = 0.73$ ). In general wealthier countries devote a larger proportion of their health budget to mental health.
- The percentage of mental health expenditures allocated to mental hospitals is consistent across the low and middle income groups but is slightly lower in the high income group (Graph 2.1.6).
- The percentage of mental health expenditures on mental hospitals varies considerably across WHO regions (Graph 2.1.7), with a low of 36% in EMR to a high of 77% in AFR. However, these numbers are also likely to be biased by the low number of countries reporting total mental hospital expenditures (only 41 of 184 countries). The number of reporting countries was particularly low in EMR and SEAR.



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RESULTS

# MENTAL HEALTH CARE DELIVERY



### 3.1 PRIMARY HEALTH CARE

#### DEFINITIONS

- *In-service training on mental health:* The provision of essential knowledge and skills in the identification, treatment, and referral of people with mental disorders. Refresher training occurs after university (or vocational school) degree training. Eight hours of training is equivalent to one day of training.
- *Primary health care (PHC):* Encompasses any health clinic that offers the first point of entry into the health system. These clinics usually provide initial assessment and treatment for common health conditions and refer those requiring more specialized diagnosis and treatment to facilities with staff with a higher level of training and resources.
- *Primary health care doctor:* A general practitioner, family doctor, or other non-specialized medical doctor working in a primary health care clinic.
- *Primary health care nurse:* A general nurse working in a primary health care clinic.

#### BACKGROUND

- Respondents were asked to report about regulations and procedures, mental health training, and resources in PHC settings. In terms of regulations and procedures, countries were asked to provide information regarding (I) whether PHC physicians and nurses are allowed to prescribe medicines for mental and behavioural disorders, (II) whether official policies

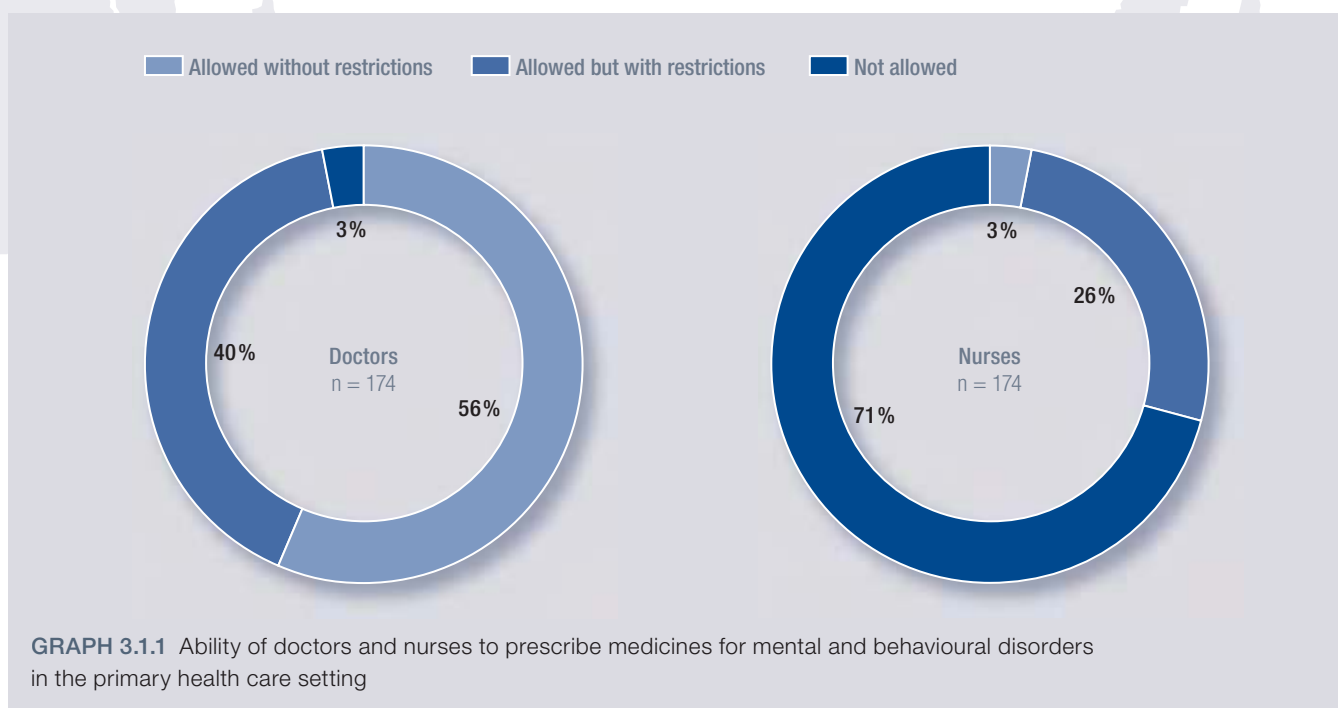
have been established to enable PHC nurses to independently diagnose and treat mental disorders, and (III) whether there are specific procedures for referring patients from primary care to secondary/tertiary care (and vice versa). With respect to training, respondents were asked whether a majority of physicians and/or nurses have received mental health training in the past five years. Lastly, in terms of resources, countries were asked about the availability of treatment manuals in PHC settings.

- Findings are based on the number of countries reporting valid data for each item.

#### 3.1.1 PRESCRIPTION OF MEDICINES FOR MENTAL AND BEHAVIOURAL DISORDERS BY PRIMARY HEALTH CARE STAFF

##### SALIENT FINDINGS

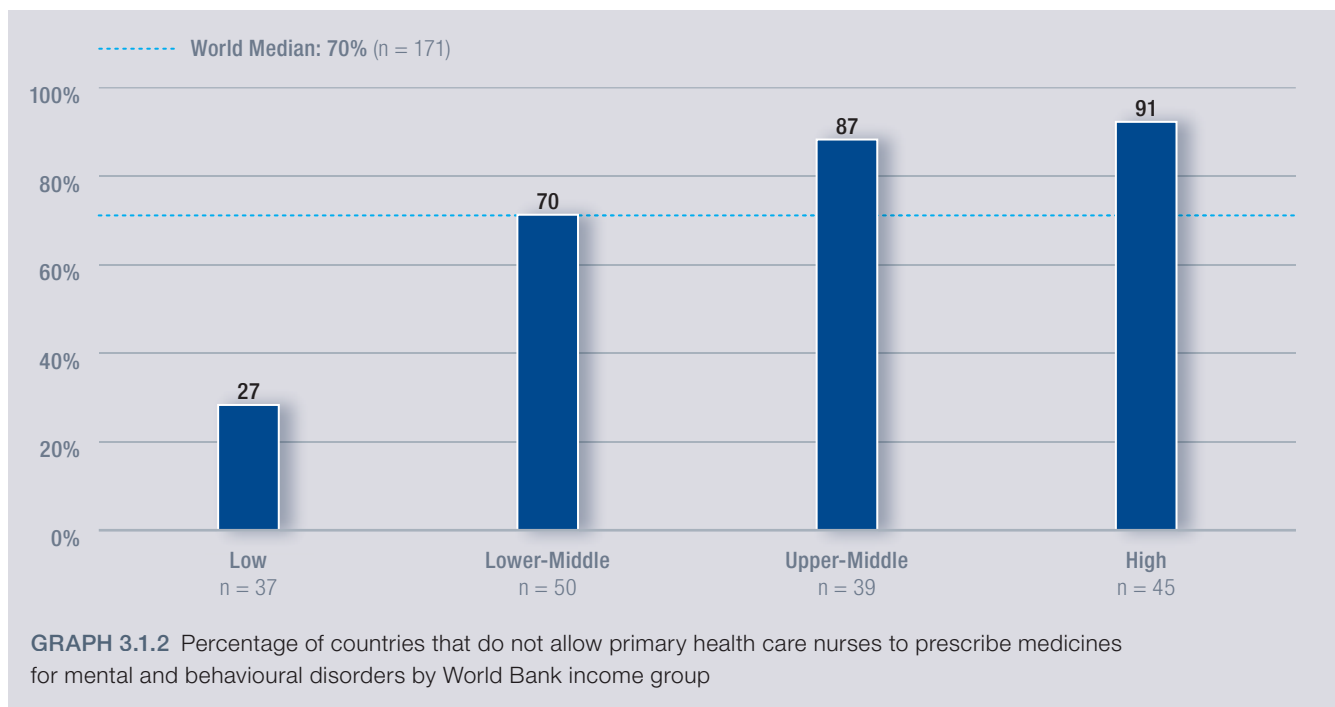
- As shown in Graph 3.1.1, a majority of countries allow PHC doctors to prescribe and/or continue prescribing medicines for mental and behavioural disorders either without restrictions (56%) or with some legal restrictions (40%), such as allowing prescriptions only in certain categories of medicines or only in emergency settings. Three percent of respondent countries did not allow any form of prescription by PHC doctors.
- In contrast, 71% of countries do not allow nurses to prescribe or continue to prescribe these medicines (Graph 3.1.1). Twenty-six percent of countries allow nurses to prescribe with restrictions, and 3% to do so without restrictions.



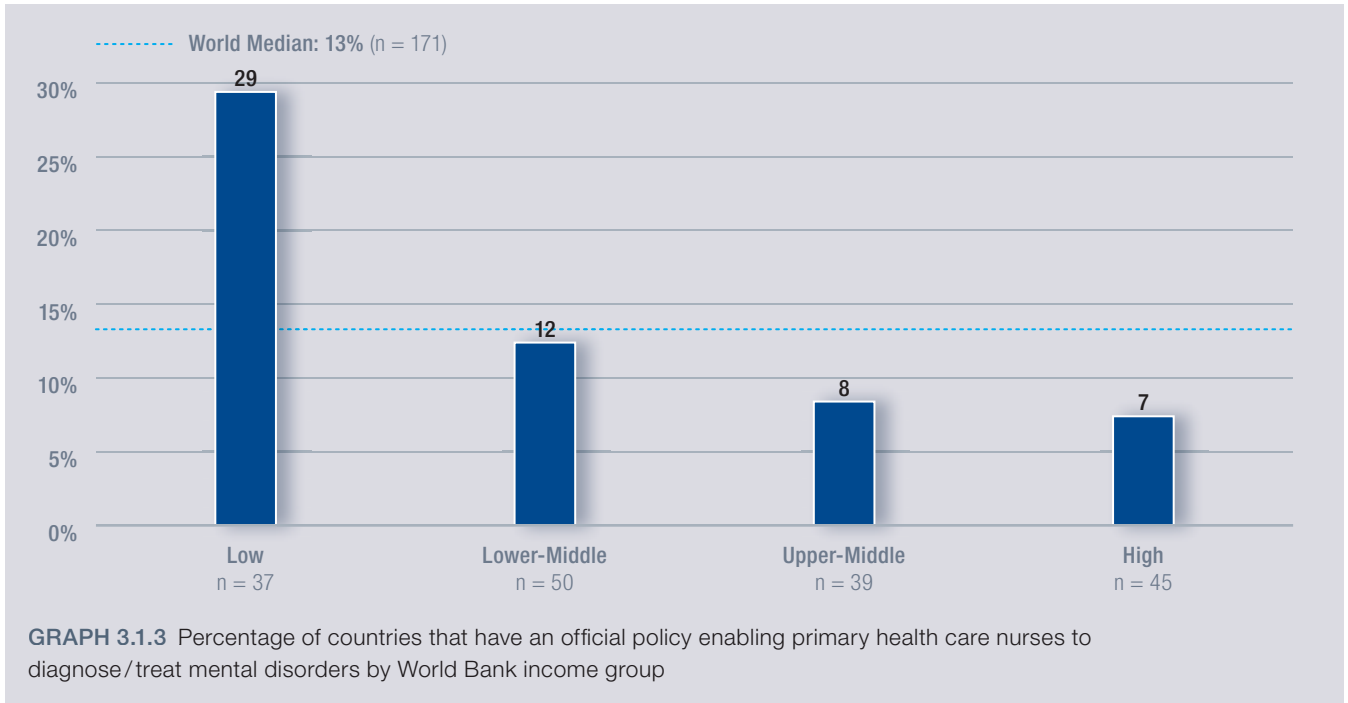
GRAPH 3.1.1 Ability of doctors and nurses to prescribe medicines for mental and behavioural disorders in the primary health care setting

# MENTAL HEALTH CARE DELIVERY

## 3.1 PRIMARY HEALTH CARE



- Regions in which a greater percentage of countries allow PHC doctors to prescribe without regulations include AMR (68%) and AFR (61%). In contrast, the proportion of countries that allow PHC doctors to prescribe in EMR (53%), EUR (52%), WPR (48%) and SEAR (44%) are considerably less. Conversely, regions in which a greater percentage of countries allow PHC nurses to prescribe without restrictions include AFR (9%) and WPR (4%), and no countries in AMR (0%), EMR (0%), EUR (0%) and SEAR (0%) allow such a practice. The lack of availability of psychiatrists as well as geographic barriers may play a role in whether countries permit PHC staff to prescribe medicines for mental and behavioural disorders. For example, AFR may see a higher number of countries permitting PHC doctors and nurses to prescribe medicines for mental and behavioural disorders because there are fewer psychiatrists available. Likewise, the higher rate of prescription privileges for PHC nurses in WPR may be due to the fact that many countries in this region are spread across many islands.
- There is also moderate variation in prescription regulations by World Bank income group. Approximately two-thirds of high and low income countries allow PHC physicians to prescribe without restrictions, in contrast to only 45% and 55% in lower-middle and upper-middle income countries, respectively. A more straightforward pattern emerges when examining prescription regulations for nurses; 27% of low income countries do not allow nurses to prescribe medicines. In contrast, a majority of nurses in lower-middle income (70%), upper-middle income (87%) and high income (91%) countries are not permitted to prescribe medicines for mental and behavioural disorders (Graph 3.1.2).



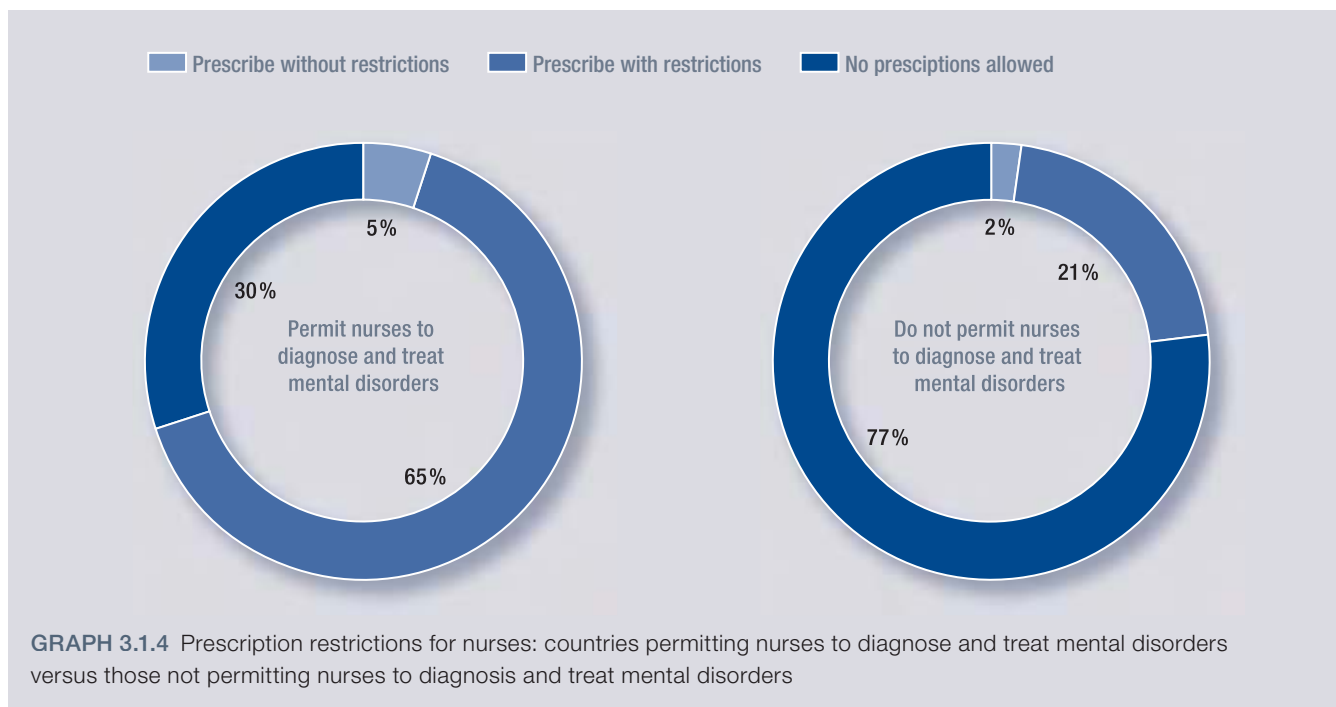
### 3.1.2 IN-SERVICE TRAINING IN PRIMARY HEALTH CARE

#### SALIENT FINDINGS

- In 28% of countries, the majority of PHC doctors (greater than 50%) have received official in-service training on mental health issues within the last five years; this figure is lower (22%) for PHC nurses.
- Regions with a greater percentage of countries in which a majority of PHC doctors have received training on mental health include AMR (38%) and SEAR (30%). The lowest levels are found in AFR (23%) and WPR (22%). Similarly, regions with a higher percentage of countries in which the majority of PHC nurses have received training on mental health issues include SEAR (50%) and AMR (30%). Much lower percentages are found in EMR (13%), WPR (17%), EUR (13%) and AFR (24%).
- Based on income group, a similar percentage of high (22%) and low (24%) income countries have provided mental health training to the majority of PHC physicians. In terms of PHC nurses, more nurses in lower income countries than higher income countries have received mental health training; 26% in low income and 29% in lower-middle income countries have received training in the past five years as compared with 19% of upper-middle income and 9% of high income countries.
- Thirteen percent of countries have an official policy or law enabling PHC nurses to independently diagnose and treat mental disorders within the primary care system. At the regional level, such policies are more frequent in AFR (27%) and EMR (21%), with fewer to no policies existing in EUR (6%) and SEAR (0%). Official policies are also less common in higher income countries; the frequency of countries with policies or laws enabling PHC nurses to diagnose and treat mental disorders within primary care systems is 29% of low income countries, 12% of lower-middle income countries, 8% of upper-middle income countries and 7% of high income countries (Graph 3.1.3).

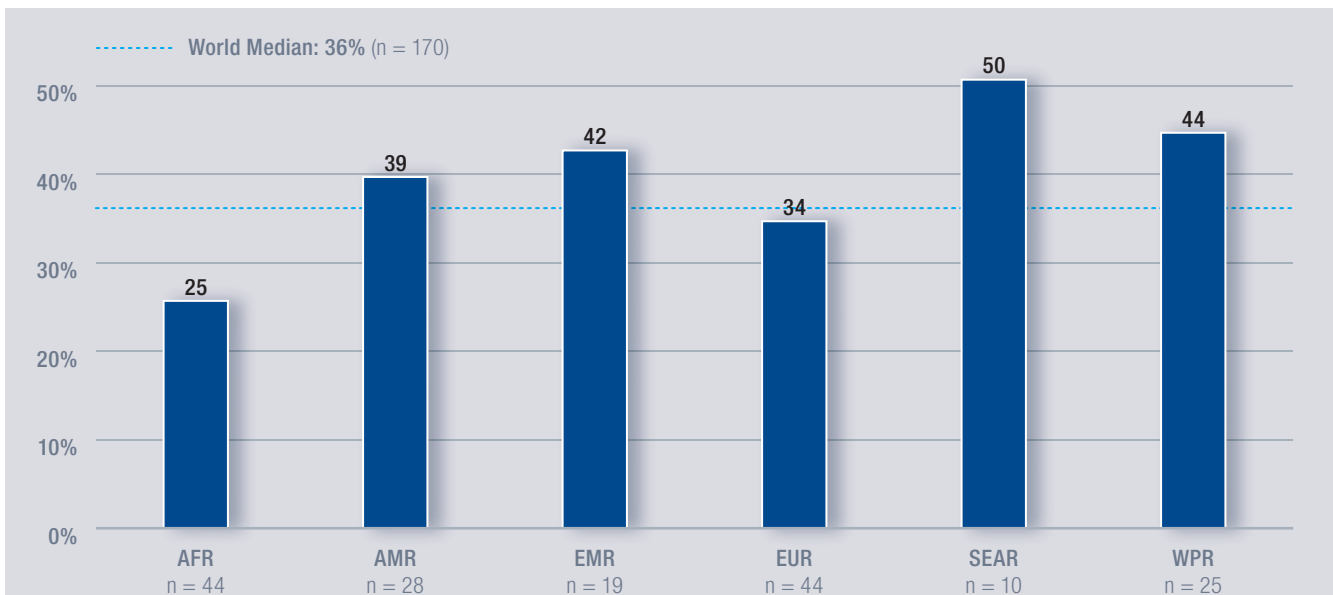
# MENTAL HEALTH CARE DELIVERY

## 3.1 PRIMARY HEALTH CARE



- As shown in Graph 3.1.4, of countries that *do* permit nurses to diagnose and to treat mental disorders, only 30% prohibit prescriptions by nurses; 65% allow prescriptions with restrictions and 5% allow prescriptions without restrictions. In contrast, of countries that *do not* permit PHC nurses to diagnose and to treat mental disorders independently, 77% also do not permit nurses to prescribe medicines for mental and behavioural disorders. Twenty-one percent allow prescription with restrictions, and 2% allow prescription without restrictions.





**GRAPH 3.1.5** Availability of manuals on the management and treatment of mental disorders in the majority of primary health care settings

### 3.1.3 AVAILABILITY OF TREATMENT MANUALS

#### SALIENT FINDINGS

- Approximately one third (36%) of countries have officially approved manuals on the management and treatment of mental disorders that are available at the majority (greater than 50%) of PHC clinics. There is modest variability among regions (Graph 3.1.5). The highest percentage of countries with a majority of PHC facilities possessing manuals includes SEAR (50%), WPR (44%), EMR (42%) and AMR (39%), while the lowest include EUR (34%) and AFR (25%). A similar amount of variability is observed by income group classification, with 26% of low income countries, 43% of lower-middle income countries, 39% of upper-middle income countries, and 32% of high income countries possessing manuals at a majority of PHC facilities.
- Official referral procedures from primary care to secondary/tertiary care exist in over three quarters (76%) of countries, although there is some variability across regions, with the greatest percentage of countries with referral procedures being in EUR (84%) and the lowest in AFR (69%). The percentage of countries with referral procedures from

primary to secondary/tertiary care do not vary much by income level; while 72% of low income countries and 71% of lower-middle income countries have procedures in place, 79% of upper-middle income and 82% of high income countries have referral procedures.

- A majority (65%) of countries also have referral procedures from secondary/tertiary care to primary care. There is considerable variation by WHO region, with the highest percentage of countries with referral procedures being in SEAR (80%) and AMR (74%) and the lowest being in EMR (50%) and AFR (60%). There is limited variability by income group; 62% of low income countries, 69% of lower-middle income countries, 63% of upper-middle income countries and 62% of high income countries have referral procedures from secondary/tertiary care to primary care.
- Though a high proportion of countries report the existence of official referral procedures, the extent to which these procedures are followed is unknown.

# MENTAL HEALTH CARE DELIVERY

## 3.2 MENTAL HEALTH FACILITIES

### DEFINITIONS

- *Mental health outpatient facility:* A facility that specifically focuses on the management of mental disorders and related clinical problems on an outpatient basis. These facilities are staffed with health care providers specifically trained in mental health.
- *Mental health day treatment facility:* A facility that provides care for users during the day. The facilities are generally available to groups of users at the same time and expect users to stay at the facilities beyond the periods during which they have face-to-face contact with staff and/or participate in therapy activities. Attendance typically ranges from a half to one full day (4–8 hours), for one or more days of the week.
- *Psychiatric ward in a general hospital:* A ward within a general hospital that is reserved for the care of persons with mental disorders.
- *Community residential facility:* A non-hospital, community-based mental health facility that provides overnight residence for people with mental disorders. Usually these facilities serve users with relatively stable mental disorders not requiring intensive medical interventions.
- *Mental hospital:* A specialized hospital-based facility that provides inpatient care and long-stay residential services for people with severe mental disorders. Usually these facilities are independent and standalone, although they may have some links with the rest of the health care system. The level

of specialization varies considerably; in some cases only long-stay custodial services are offered, in others specialized and short-term services are also available.

### BACKGROUND

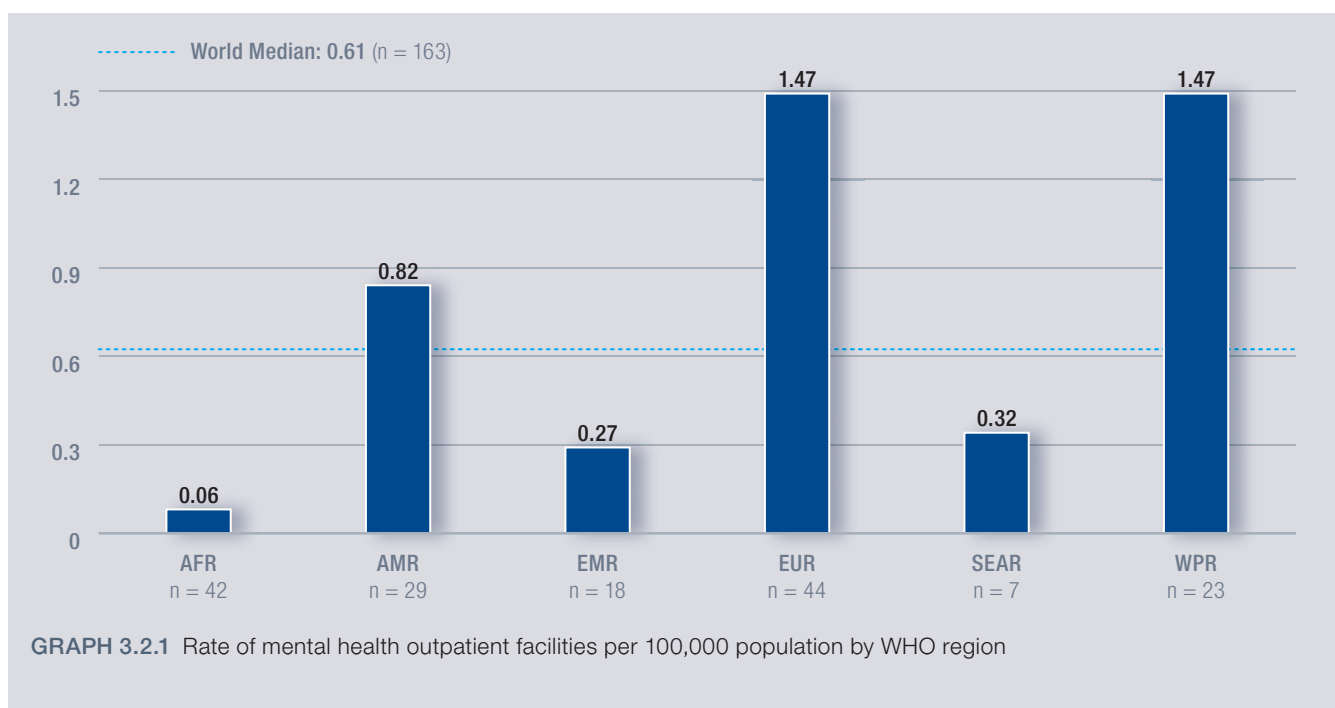
- Respondents were asked to report the number of facilities, beds, admissions and follow-up contacts at outpatient facilities, day treatment facilities, psychiatric wards in general hospitals, community residential facilities and mental hospitals. Additional information was also requested on the number of facilities and beds reserved for children and adolescents, as well as the percentage of persons who were female and under 18 years of age. Respondents were asked to report information on the length of stay of persons residing in mental hospitals as of December 31st of the year on which data are based, as well as on the proportion of mental health facilities which provide routine follow-up care and/or offer psychosocial interventions.

- Findings are based on the number of countries reporting valid data for each item.

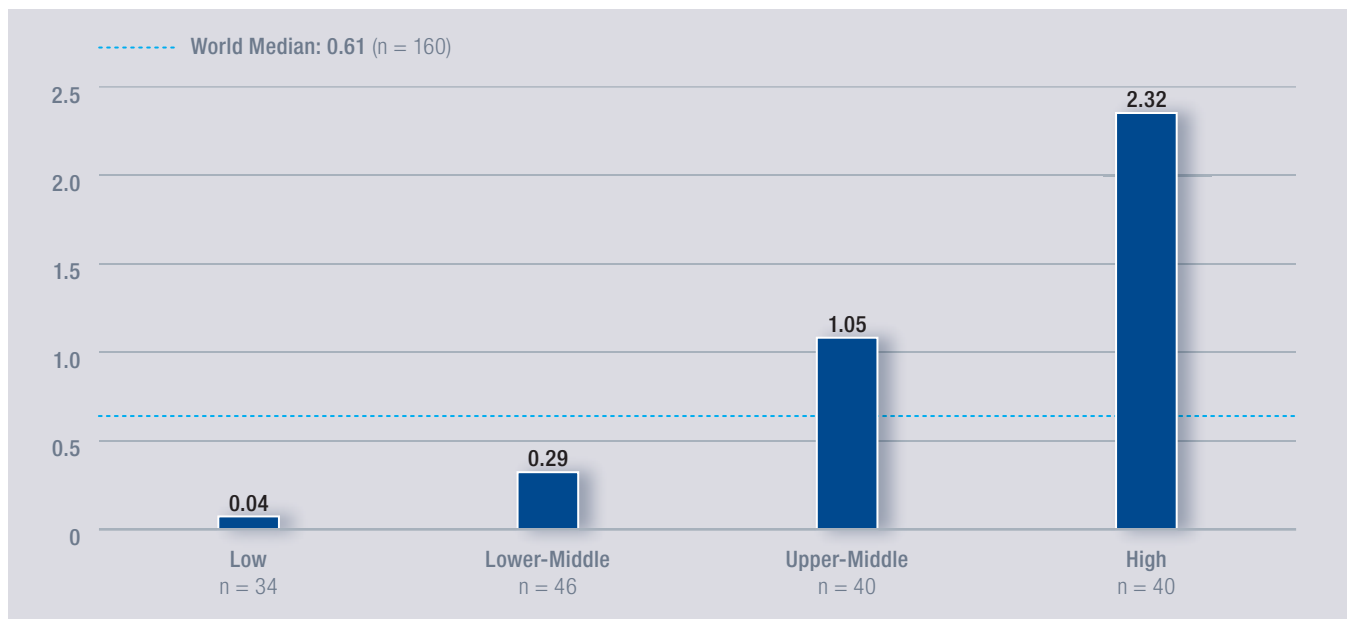
### 3.2.1 OUTPATIENT FACILITIES

#### SALIENT FINDINGS

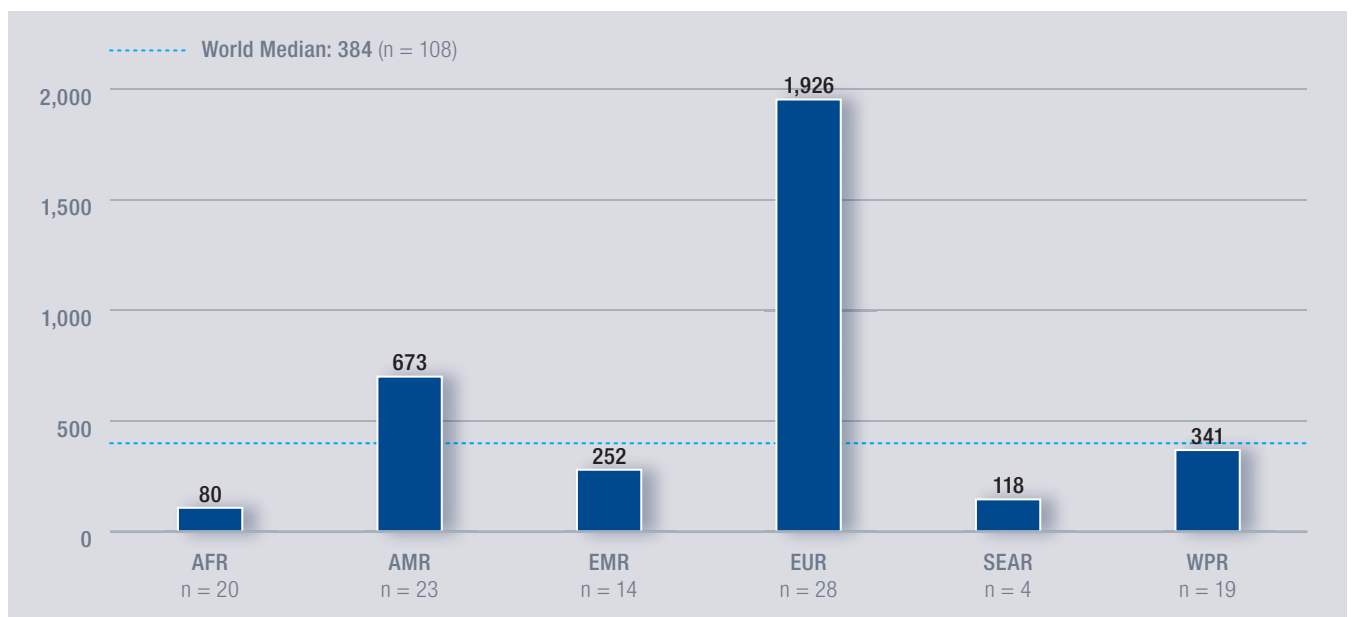
- Globally, there are 0.61 outpatient facilities per 100,000 population. As shown in Graph 3.2.1, this figure varies widely at the regional level, with the highest rates of facilities in EUR and WPR (both 1.47), and the lowest rate in AFR (0.06).



- The availability of facilities by income group follows a clear pattern, and the median rate of facilities in high income countries is 58 times greater than in low income countries (Graph 3.2.2).
- The median annual rate of outpatients per 100,000 population is 384, with substantial variability by region (Graph 3.2.3), ranging from 80 outpatients per 100,000 population in AFR to 1,926 outpatients per 100,000 population in EUR.



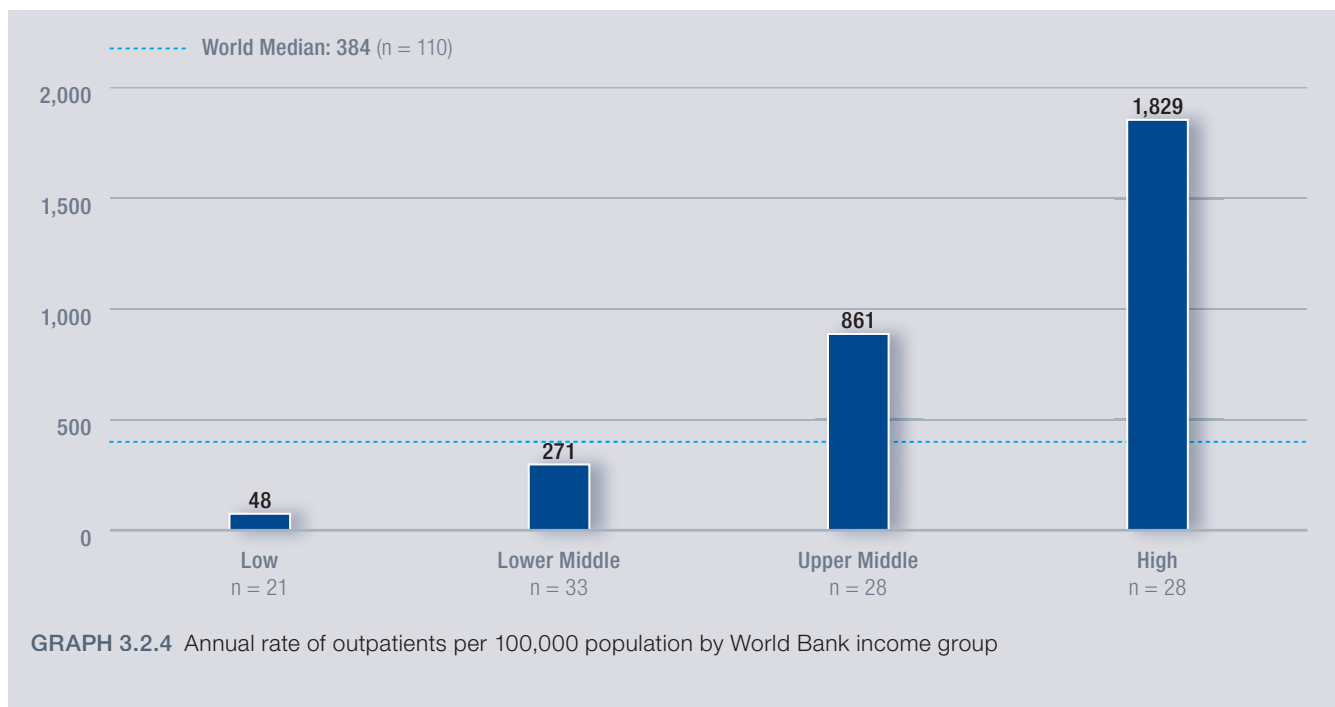
GRAPH 3.2.2 Rate of mental health outpatient facilities per 100,000 population by World Bank income group



GRAPH 3.2.3 Annual rate of outpatients per 100,000 population by WHO region

# MENTAL HEALTH CARE DELIVERY

## 3.2 MENTAL HEALTH FACILITIES

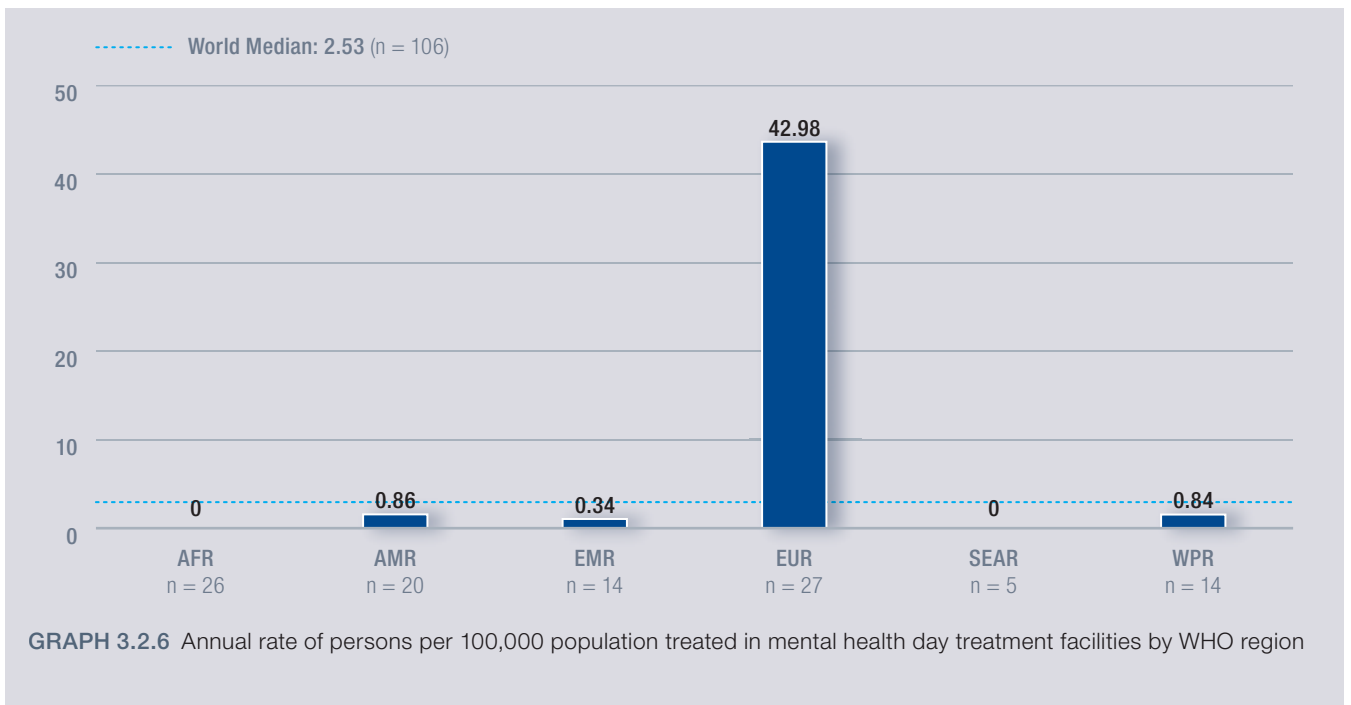
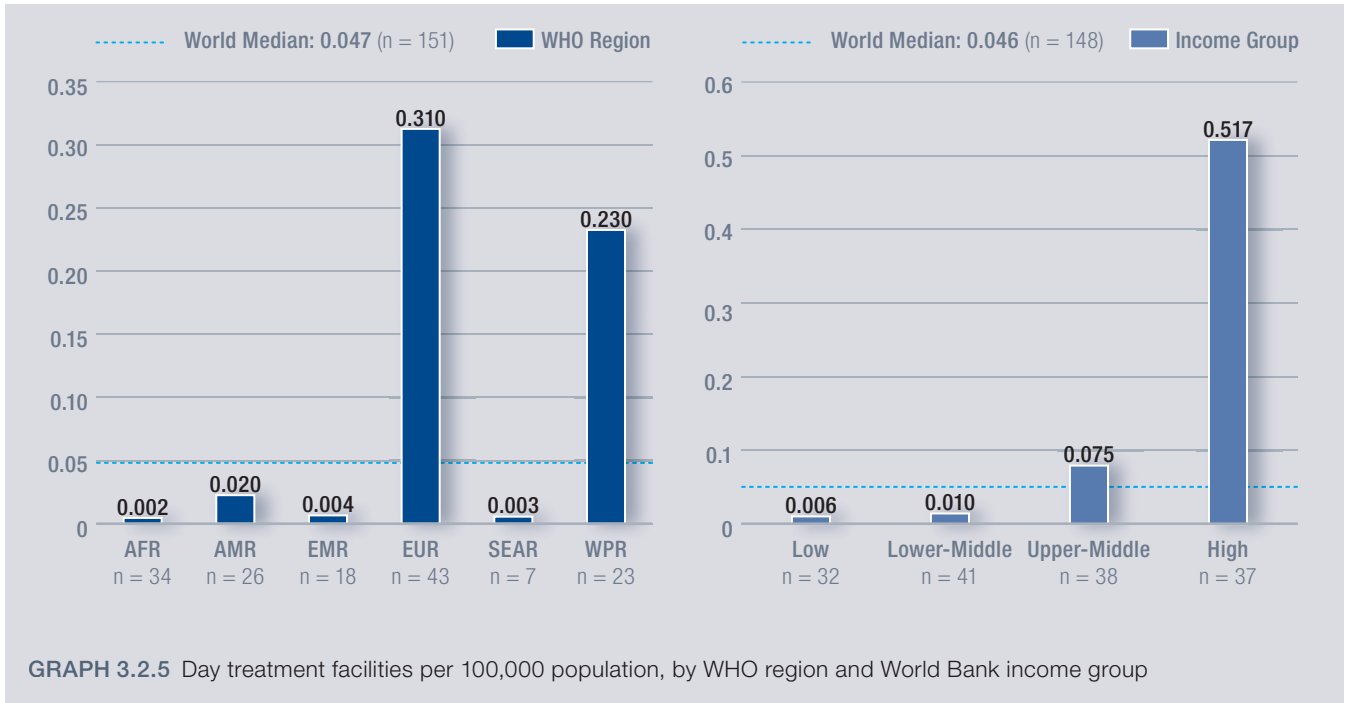


- The annual median rate of outpatients per 100,000 increases according to World Bank income level (Graph 3.2.4); the rate of outpatients is 38 times greater in high income countries as compared to low income countries.
- Regional variation in day treatment facilities is even more pronounced when examining treatment rates (Graph 3.2.6). Where 43 persons per 100,000 population are treated in day treatment facilities in EUR countries, the next highest rate of treatment, represented by AMR, is approximately 50 times smaller.

### 3.2.2 DAY TREATMENT FACILITIES

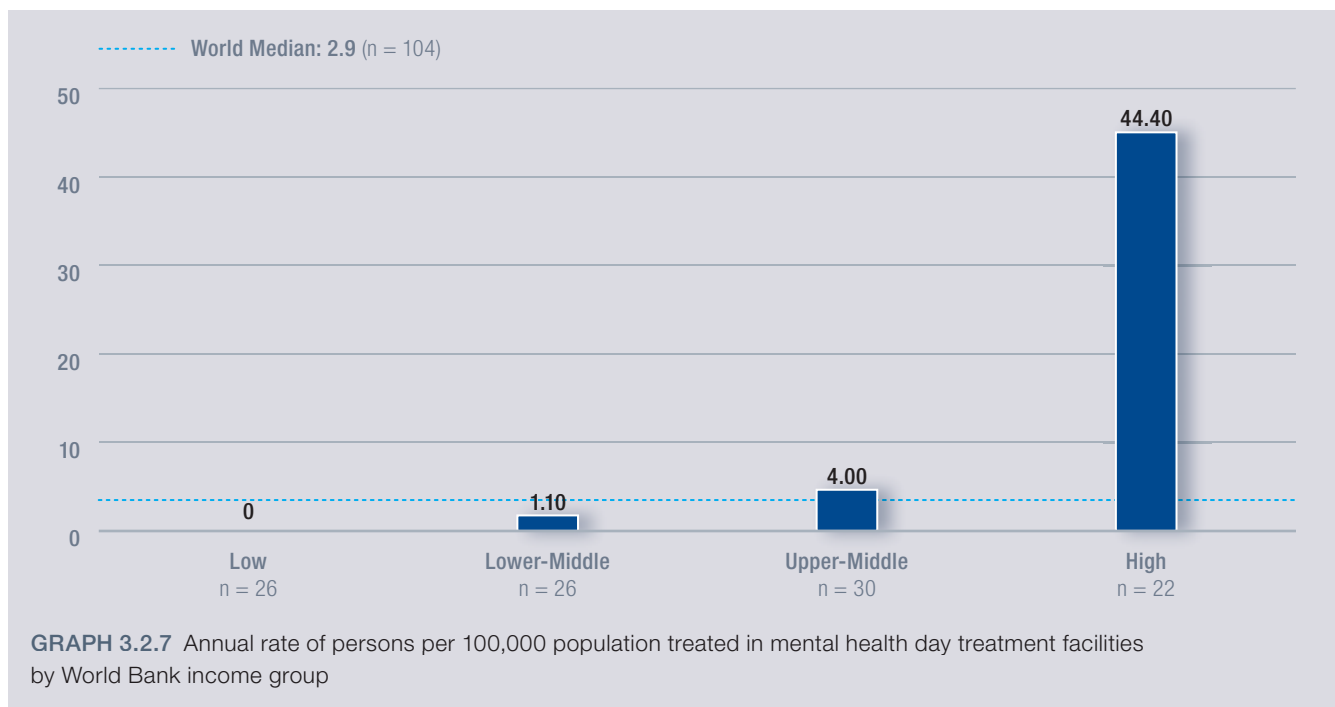
#### SALIENT FINDINGS

- Day treatment facilities are present in 74% of countries. The median rate of day treatment facilities per 100,000 population is 0.05, with significant variation by region and income group (Graph 3.2.5); median rates are much higher in EUR (0.31) and WPR (0.23) as compared to other regions, and increase dramatically by income group.



# MENTAL HEALTH CARE DELIVERY

## 3.2 MENTAL HEALTH FACILITIES



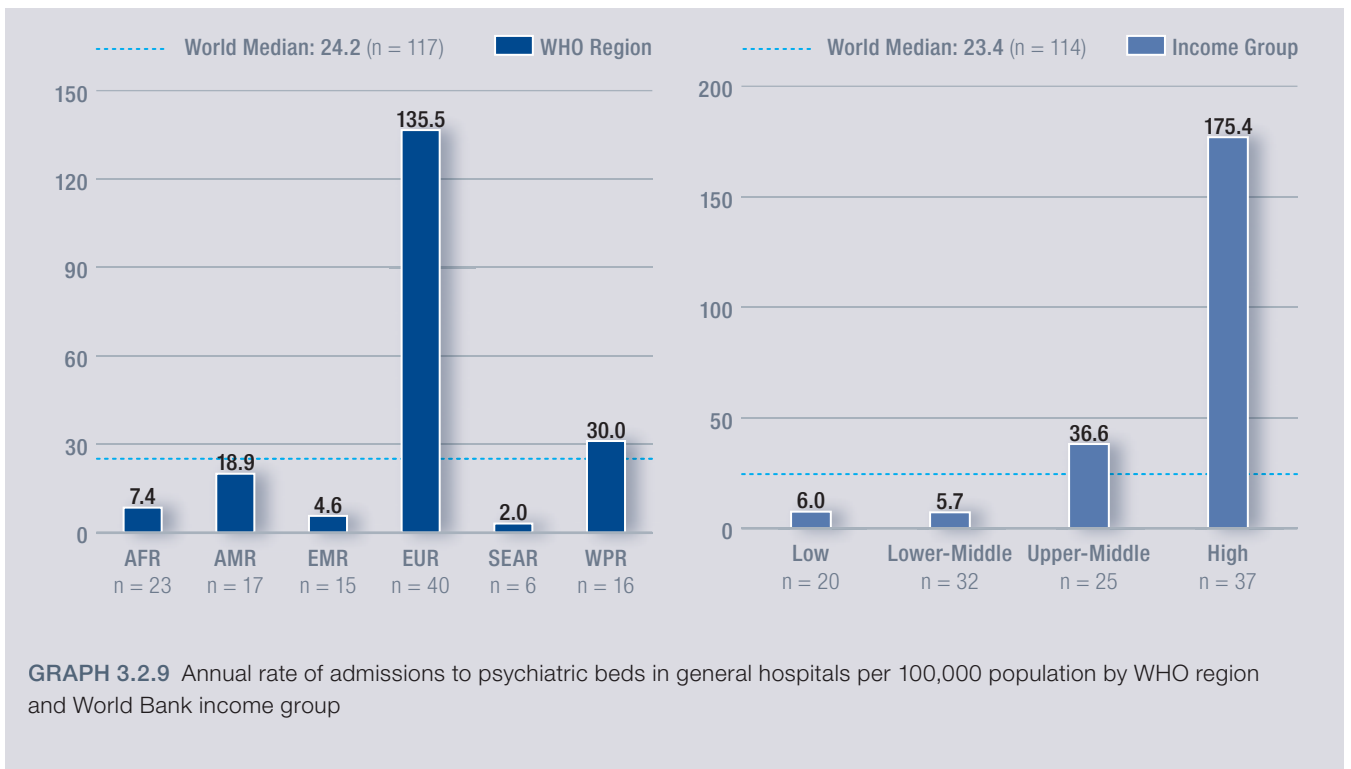
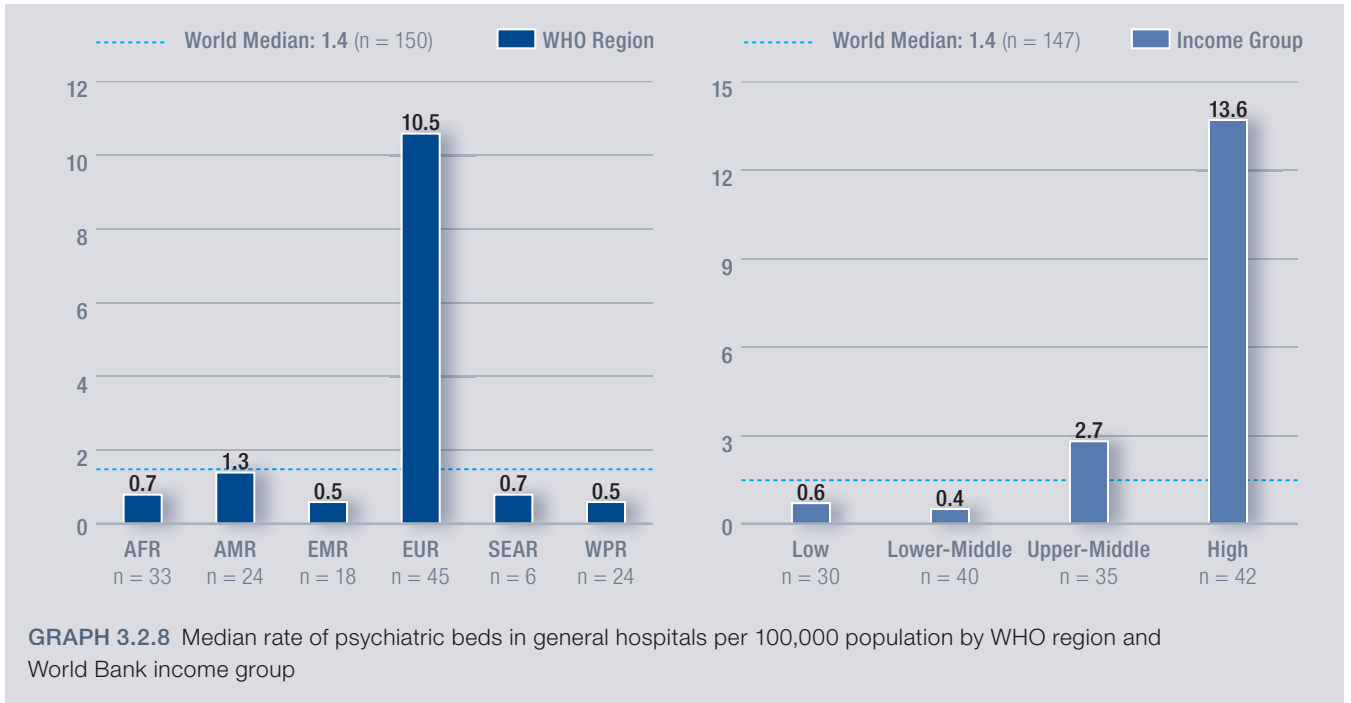
- When analysed by income level, variation in treatment rates at day treatment facilities is much more apparent (Graph 3.2.7); the median treatment rate is 0.0 persons per 100,000 people in low income countries, 1.1 in lower-middle income countries, 4.0 in upper-middle income countries and 44.4 in high income countries.

### 3.2.3 PSYCHIATRIC WARDS IN GENERAL HOSPITALS

#### SALIENT FINDINGS

- Psychiatric wards in general hospitals are present in 85% of countries. While the global median rate of beds in psychiatric wards is 1.4 per 100,000 population, all WHO regions other than EUR have less than 2 beds per 100,000 people (Graph 3.2.8). Low and lower-middle income countries have similar median rates of psychiatric beds in general hospitals, and higher rates are observed in upper-middle (2.7 beds per 100,000 population) and high income (13.6 beds per 100,000) countries.

- Globally, the median rate of the admissions in general hospitals is 24.2 per 100,000 population. Across regions, only WPR and EUR were higher than the global median, with the rate in EUR being more than five times this figure (Graph 3.2.9).
- By income group (Graph 3.2.9) low and lower-middle income countries have similarly low annual rates (around 6 admissions per 100,000 population), with upper-middle income countries being substantially higher (36.6 per 100,000 population). High income countries have median rates that are almost 30 times greater than the low and lower-middle income countries.



# MENTAL HEALTH CARE DELIVERY

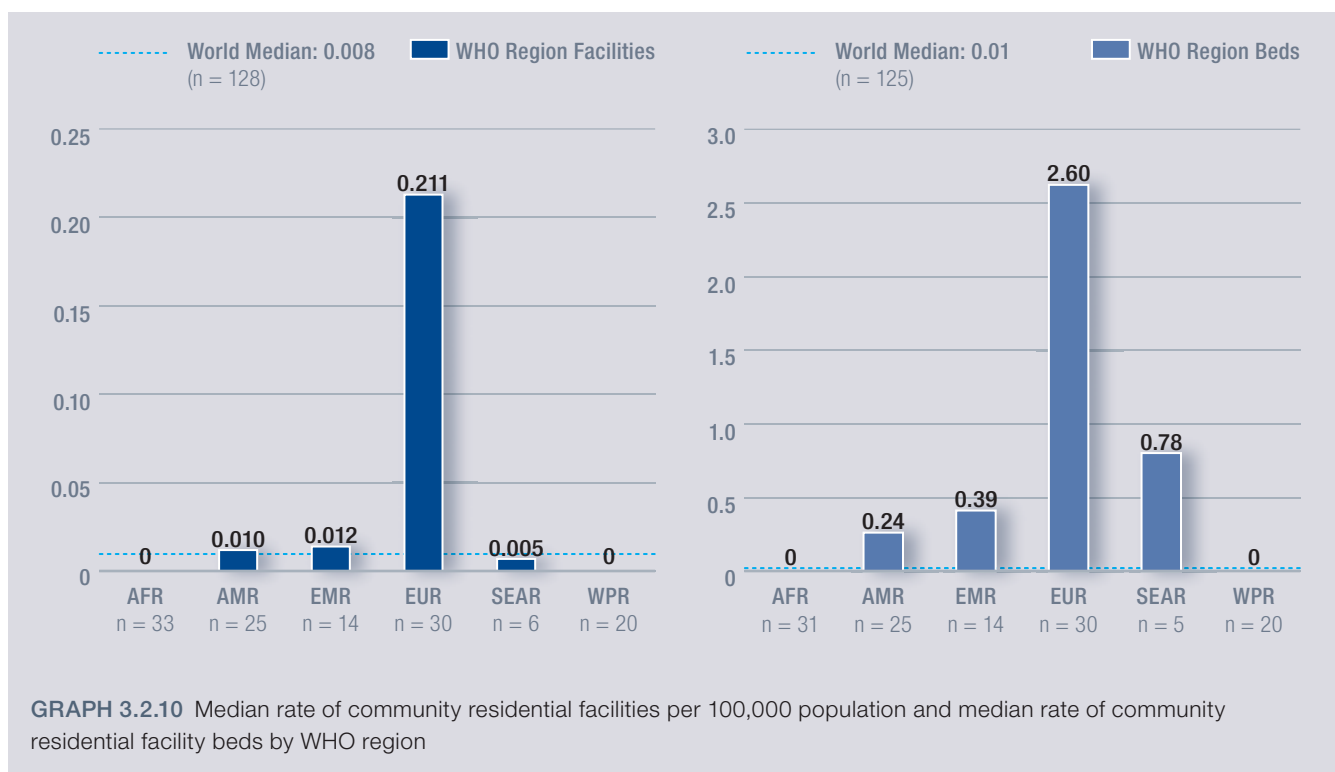
## 3.2 MENTAL HEALTH FACILITIES

### 3.2.4 COMMUNITY RESIDENTIAL FACILITIES

#### SALIENT FINDINGS

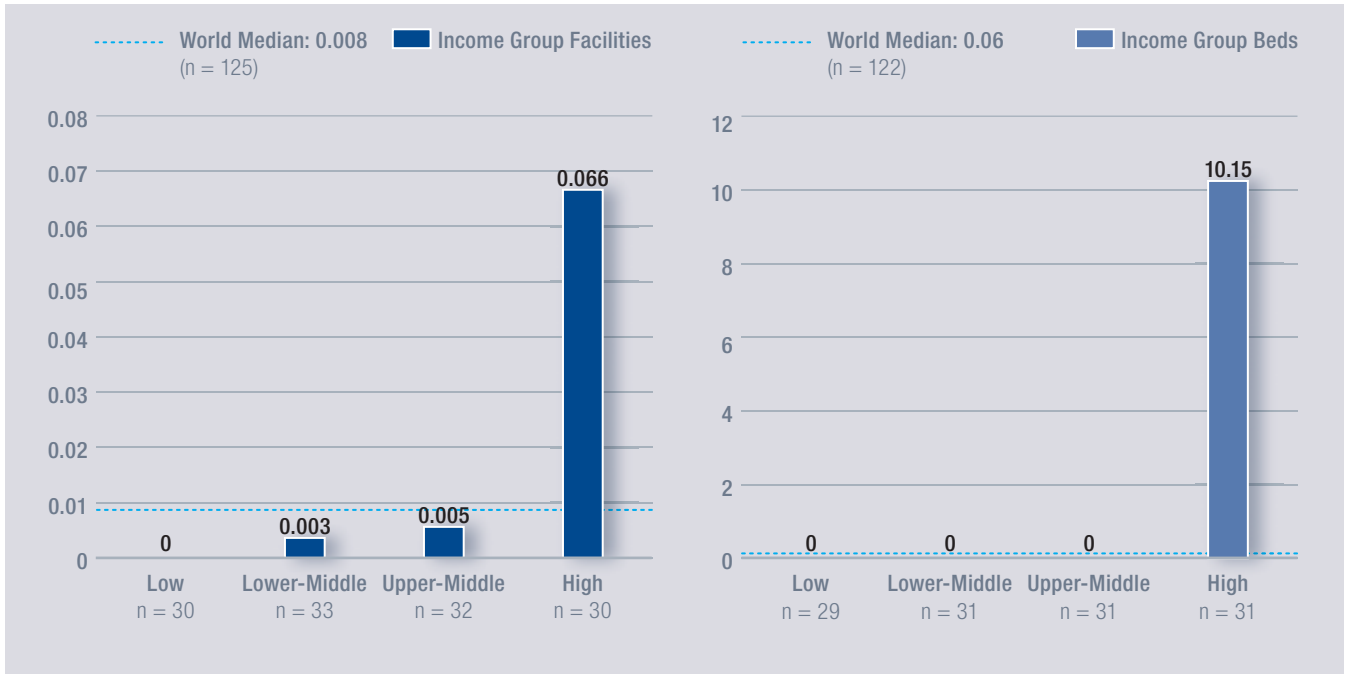
Community residential facilities are present in 54% of countries. While the global median rate of community residential facilities is 0.008 per 100,000 population (or 8 per 100 million population), EUR has a substantially greater number of facilities than all other regions (Graph 3.2.10). In contrast, the number of residential facility beds per 100,000 population (Graph 3.2.10) varies more substantially from region to region, with EUR and SEAR having the highest median rates, at 2.60 and 0.78 per 100,000 population, respectively, and AFR and WPR having the lowest, both at 0.00 per 100,000 population. In a similar vein, the median rate of facilities (Graph 3.2.11) and beds (Graph 3.2.11) is markedly greater in high income countries as compared with low, lower-middle and upper-middle income countries.

Due to the low rates of community residential facilities and missing data (100 of 184 countries reported data), the global median rate of individuals staying in these facilities is 0 per 100,000 population (Graph 3.2.12). However, the median rate is significantly higher in EUR (2.0) and SEAR (0.78), as well as in high income countries (5.8) as compared with low, lower-middle and upper-middle income countries, all of which have a median rate of 0 residents per 100,000 population (Graph 3.2.12).

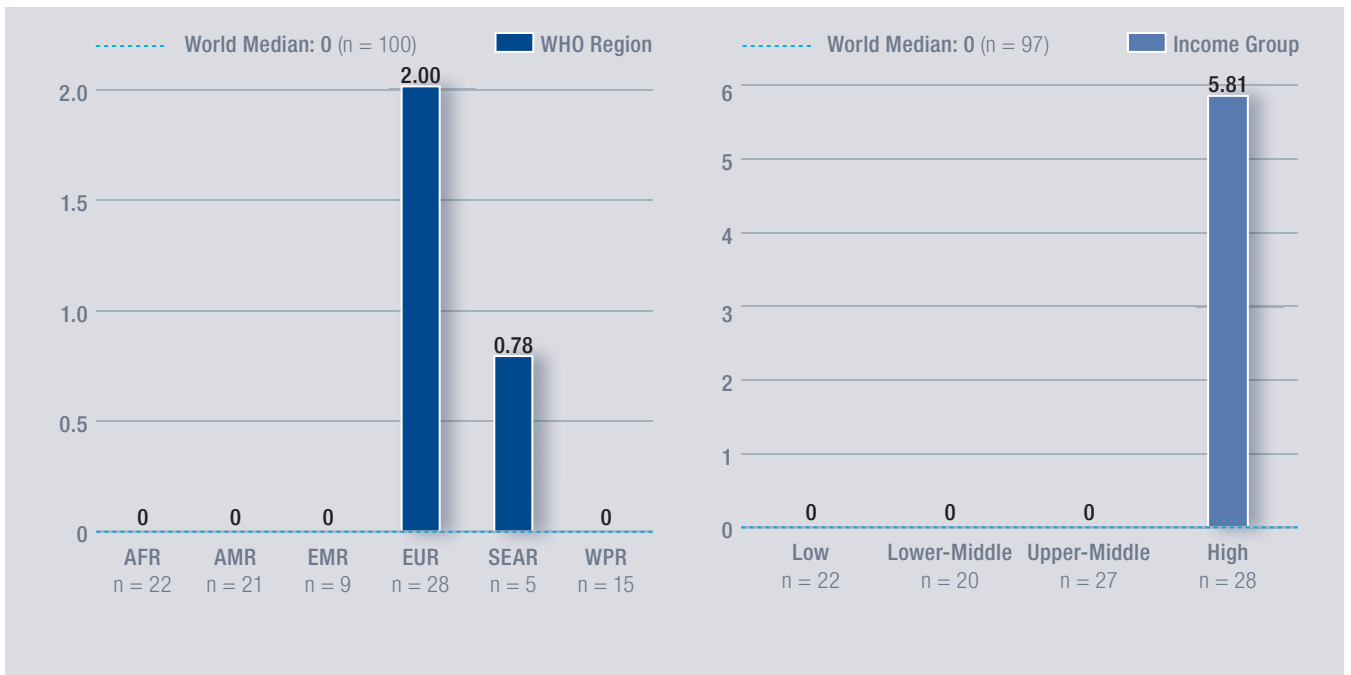


GRAPH 3.2.10 Median rate of community residential facilities per 100,000 population and median rate of community residential facility beds by WHO region





GRAPH 3.2.11 Median rate of community residential facilities per 100,000 population and median rate of community residential facility beds by World Bank income group



GRAPH 3.2.12 Median rate of persons staying in community residential facilities per 100,000 population at the end of the previous year by WHO region and World Bank income group

# MENTAL HEALTH CARE DELIVERY

## 3.2 MENTAL HEALTH FACILITIES

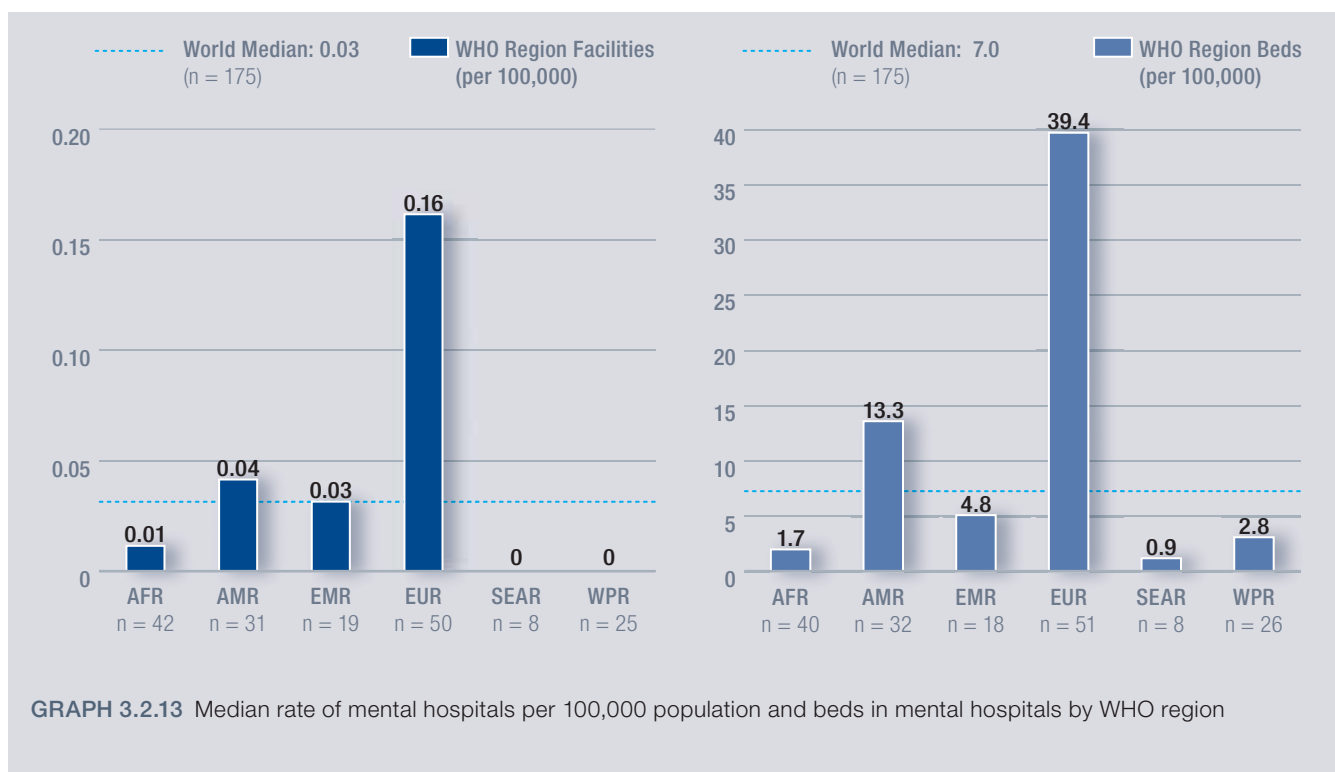
### 3.2.5 MENTAL HOSPITALS

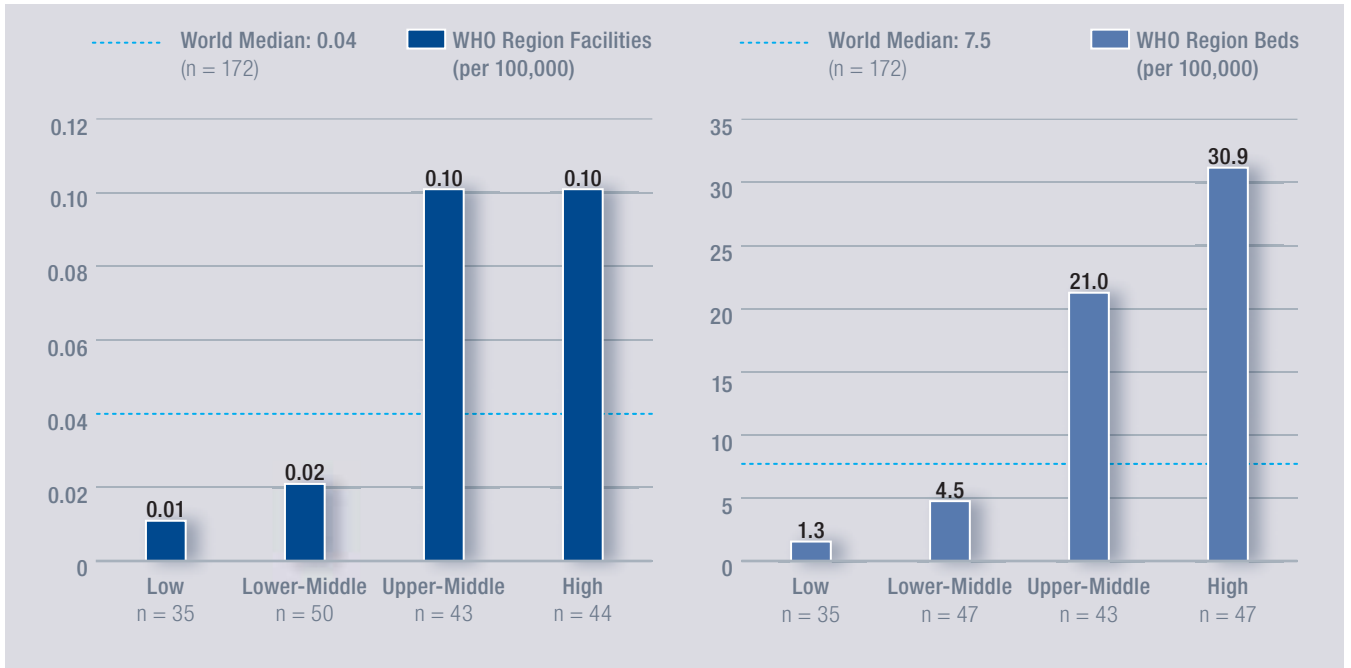
#### SALIENT FINDINGS

- Mental hospitals are present in 80% of countries. Countries where mental hospitals do not exist include small islands in the Americas and the Western Pacific region, ten African countries, and some European countries with exclusively community-based systems of care, such as Iceland, Italy and Sweden. Globally, the median rate of mental hospitals is 0.03 per 100,000 population and ranges from 0.002 per 100,000 in WPR to 0.16 in EUR (Graph 3.2.13). Similarly, there is significant regional variability in the rate of beds in mental hospitals; globally, there are 7.04 beds per 100,000 population, but this figure ranges from 0.9 in SEAR to 39.4 in EUR.
- In addition to regional variability in the rate of mental hospital facilities and beds, there is also considerable variability by income classification (Graph 3.2.14). The number of facilities

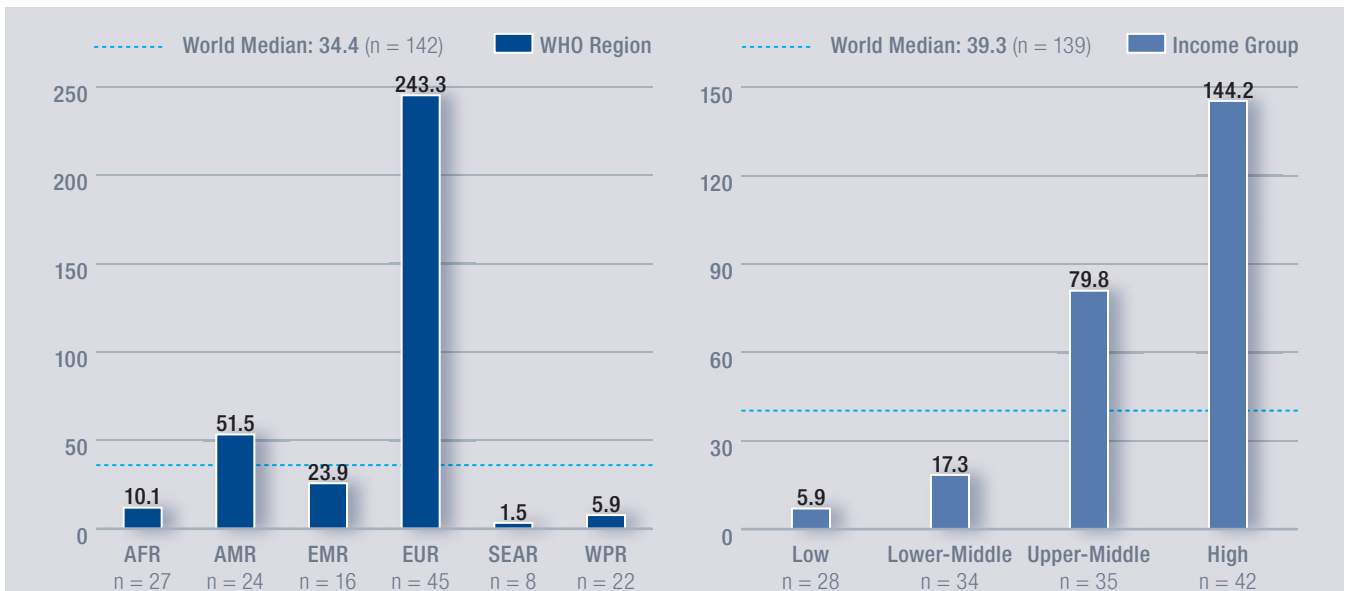
is roughly five times greater in upper-middle and high income countries (both 0.10 per 100,000 population) as compared with low and lower-middle income countries (0.01 and 0.02 per 100,000 population, respectively). Similarly, the number of beds in mental hospitals ranges from a median of 1.3 per 100,000 population in low income countries to 30.9 per 100,000 in high income countries.

- In terms of admissions to mental hospitals, there is a large disparity between the annual rate of admissions in EUR countries as compared with all other regions (Graph 3.2.17). The smallest difference is with AMR (a fivefold lower median rate of admissions as compared to EUR), and the largest is with SEAR (a rate roughly 160 times lower than EUR). Like regional discrepancies, variability may also be viewed in terms of income group (Graph 3.2.15); low income countries have a median annual rate of 6 admissions per 100,000 population, and high income countries have a median rate of 144 admissions per 100,000 population.





GRAPH 3.2.14 Median rate of mental hospitals per 100,000 population and beds in mental hospitals by World Bank income group



GRAPH 3.2.15 Annual rate of admissions per 100,000 population to mental hospitals by WHO region and World Bank income group

## 3.3 SERVICE DIMENSIONS

### 3.3.1 LENGTH OF ADMISSIONS TO MENTAL HOSPITALS

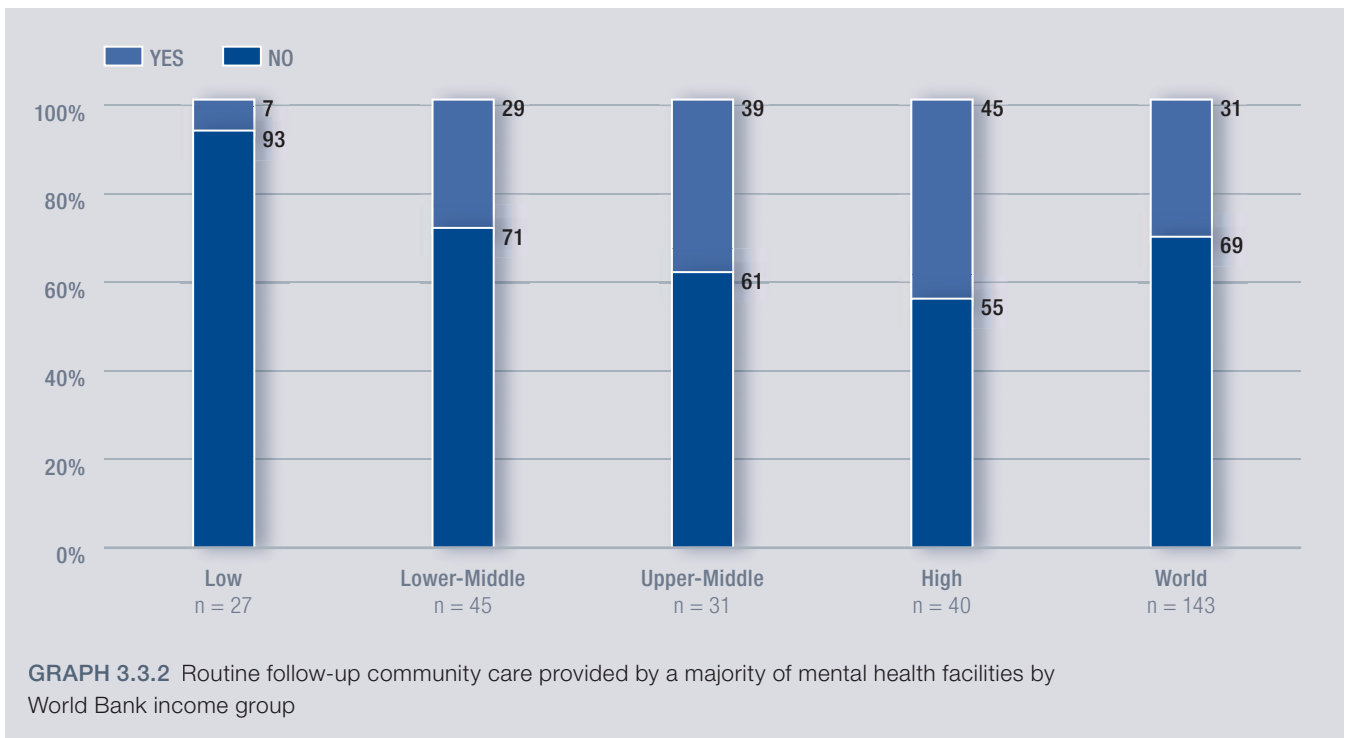
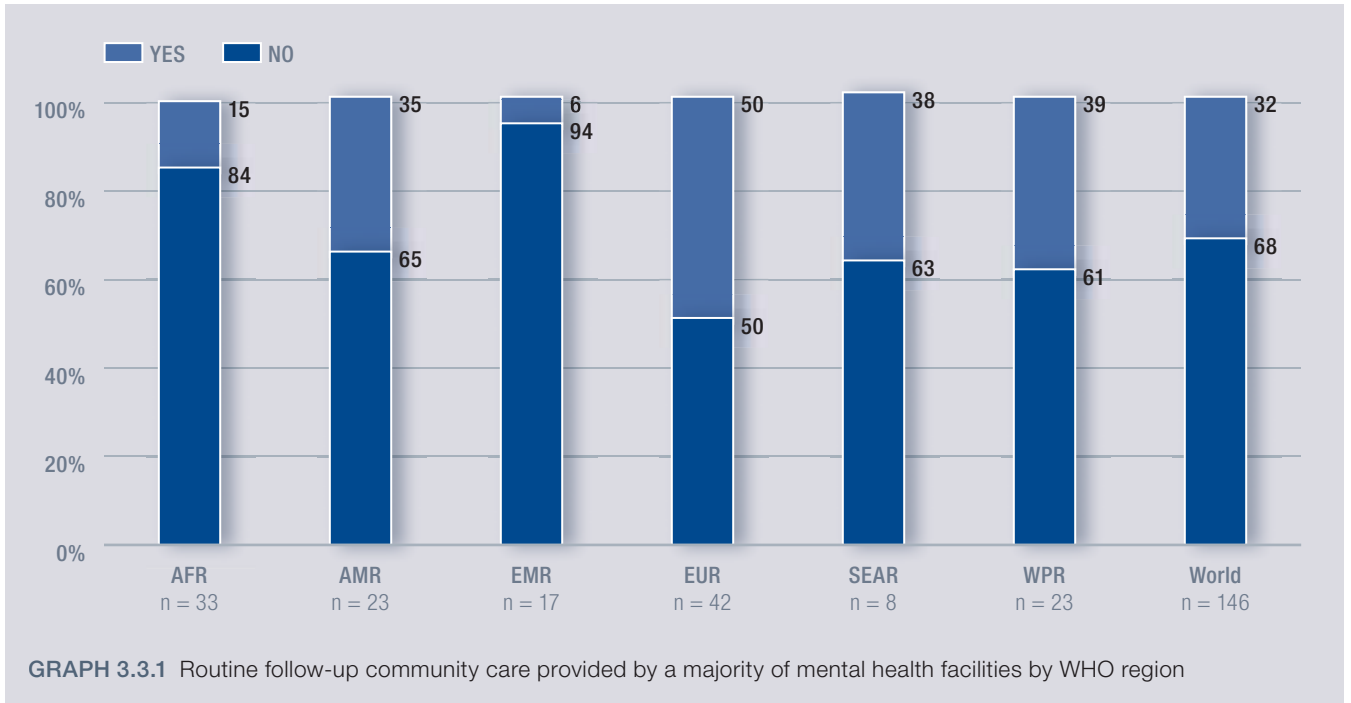
#### SALIENT FINDINGS

- Across all countries reporting data on admissions to mental hospitals (n = 72), a median of 77% of individuals admitted to mental hospitals stay for under one year. Almost a quarter (23%) remains in mental hospitals for longer than one year following admission. This value varies modestly by income group; the median percentage of individuals admitted to mental hospitals who remain for less than one year is 95% in low income countries, 77% in lower-middle income countries, 67% in upper-middle income countries and 71% in high income countries.

### 3.3.2 FOLLOW-UP CARE

#### SALIENT FINDINGS

- In 32% of countries, a majority of facilities provide follow-up community care (e.g. follow-up home visits to check medication, identify early signs of relapse, and assist with rehabilitation). However, there is significant variability in this estimate across WHO regions (Graph 3.3.1) and World Bank income groups (Graph 3.3.2). By region, EUR has the greatest percentage of countries in which a majority of facilities provide follow-up community care (50%), and EMR has the smallest percentage (6%). By income group, 7% of low income countries, 29% of lower-middle income countries, 39% of upper-middle income, and 45% of high income countries provide follow-up care at a majority of mental health facilities. However, it should be noted that the definition of follow-up community care may differ by country.



# MENTAL HEALTH CARE DELIVERY

## 3.3 SERVICE DIMENSIONS

### 3.3.3 PSYCHOSOCIAL INTERVENTIONS

#### DEFINITION

- *Psychosocial intervention*: An intervention using primarily psychological or social methods for the treatment and/or rehabilitation of a mental disorder or substantial reduction of psychosocial distress.

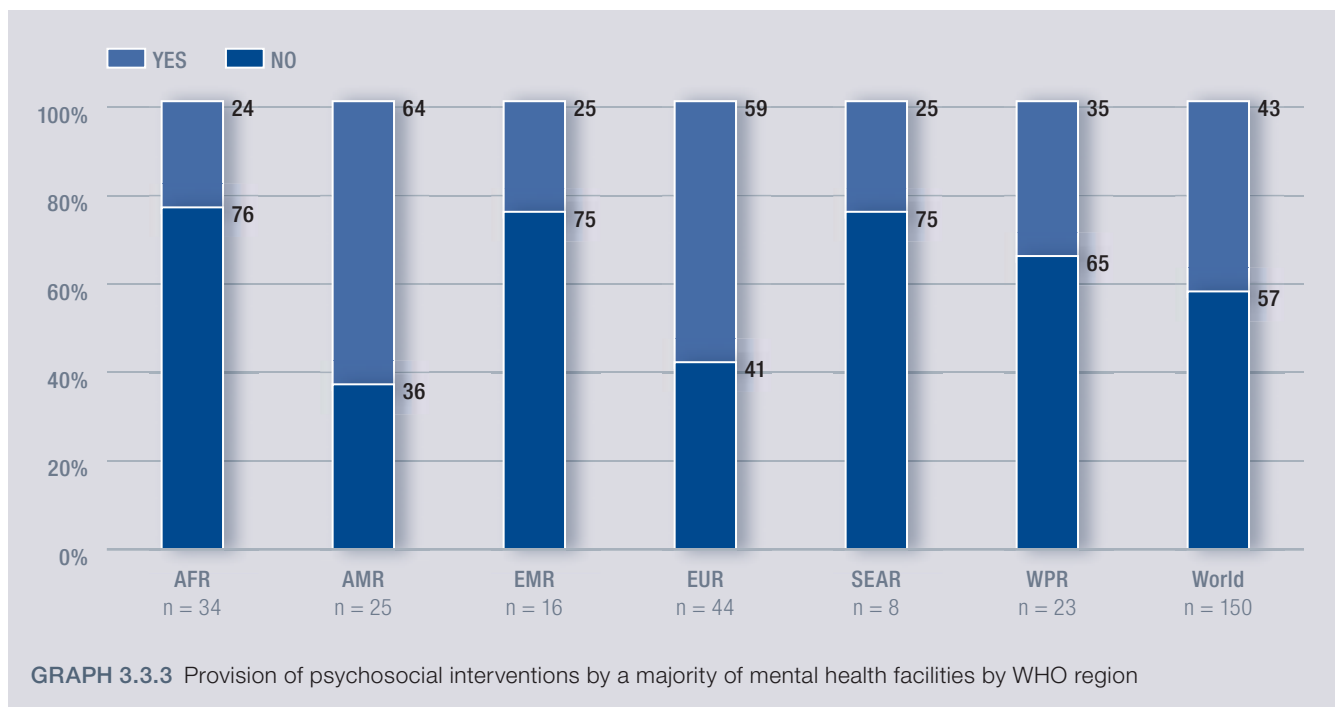
#### SALIENT FINDINGS

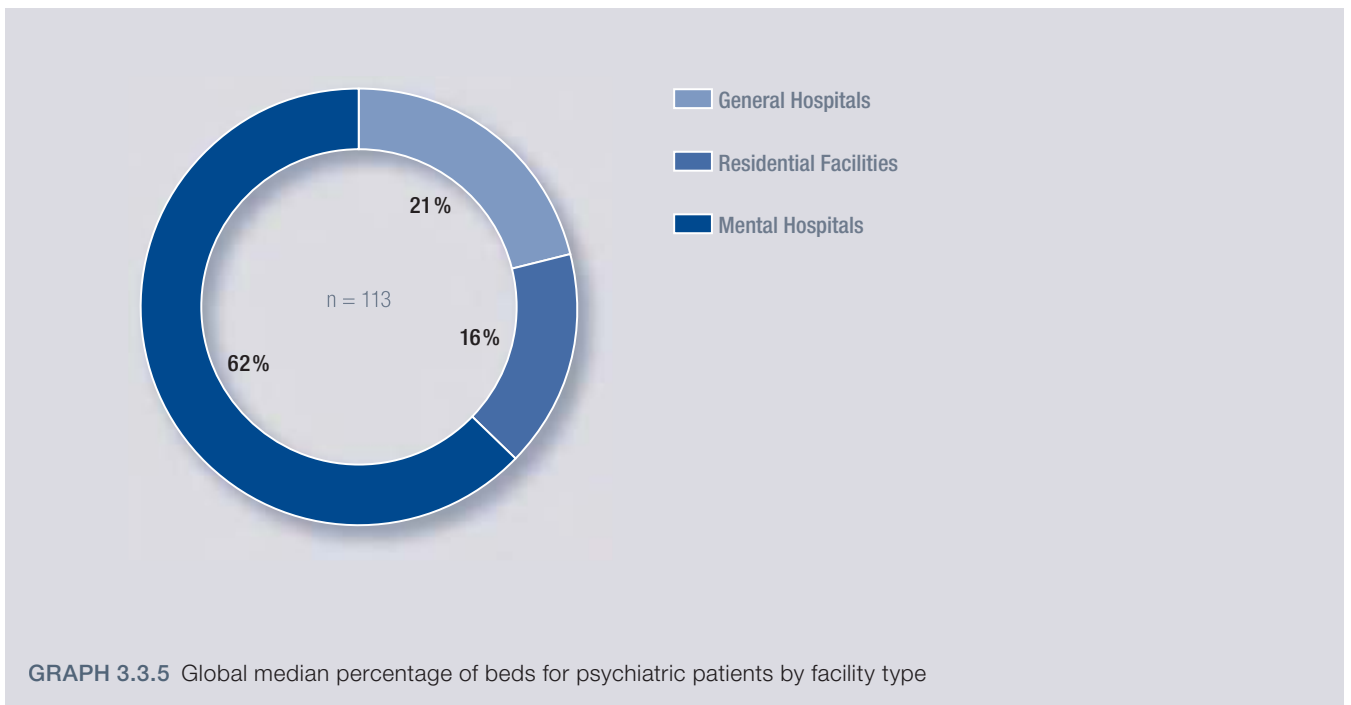
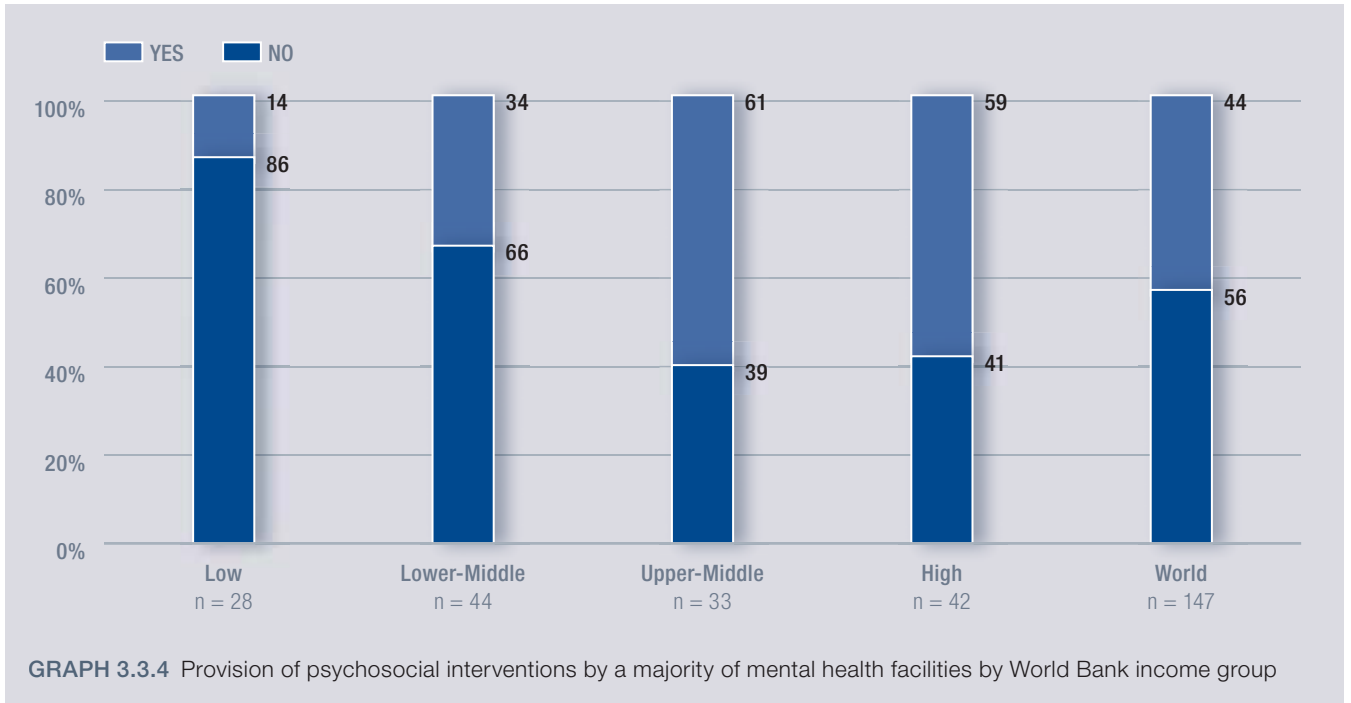
- In 44% of countries, a majority of facilities provide psychosocial interventions. This figure varies considerably by region (Graph 3.3.3) and income (Graph 3.3.4). In AMR and EUR, 64% and 59% of countries have a majority of facilities providing psychosocial interventions, respectively. In contrast, 24% of countries in AFR and 25% of countries in EMR and SEAR have a majority of facilities providing such care. By income level, 14% of low income countries, 34% of lower-middle income countries, 61% of upper-middle income countries and 59% of high income countries have greater than 50% of such facilities equipped to provide psychosocial care.

### 3.3.4 DISTRIBUTION OF BEDS ACROSS FACILITIES

#### SALIENT FINDINGS

- Accounting for all beds in community residential facilities, psychiatric wards of general hospitals and mental hospitals, there is a global median rate of 3.2 beds per 100,000 population, with large disparities across WHO regions. The AFR (0.60), EMR (0.62) and SEAR (0.23) regions fall well below the global median, while in EUR countries (7.09) the rate is more than double the world median.
- Beds in mental hospitals represent almost two thirds (62%) of all beds in psychiatric facilities throughout the world, while beds in general hospitals (21%) and residential facilities (16%) make up smaller percentages of the total (Graph 3.3.5). Across regions and income groups, there is only moderate variability in these estimates.





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RESULTS

# HUMAN RESOURCES





## 4.1 TRAINING

### DEFINITIONS

- *Psychiatrist*: A medical doctor who has had at least two years of post-graduate training in psychiatry at a recognized teaching institution leading to a recognized degree or diploma.
- *Medical doctor*: A health professional with a degree in modern/western/allopathic medicine who is authorized/licensed to practice medicine under the rules of the country. For the purposes of this section, a *medical doctor* refers to a doctor not specialized in psychiatry.
- *Nurse*: A health professional who has completed formal training in nursing at a recognized, university-level school for a diploma or degree in nursing.
- *Psychologist*: A health professional who has completed formal training in psychology at a recognized, university-level school for a diploma or degree in psychology.
- *Social worker*: A health professional who has completed formal training in social work at a recognized, university-level school for a diploma or degree in social work.
- *Occupational therapist*: A health professional who has completed formal training in occupational therapy at a recognized, university-level school for a diploma or degree in occupational therapy.

### BACKGROUND

- Respondents were asked to report about training of health professionals in educational institutions. Specifically, countries were requested to provide information on the number of psychiatrists, other medical doctors, nurses, psychologists, social workers and occupational therapists who graduated from educational institutions in the last academic year. In conjunction with this, the number of total training hours as well as the number of training hours devoted to psychiatry and mental health-related subjects were requested for medical doctors and nurses.
- Findings are based on the number of countries reporting valid data for each item.

# HUMAN RESOURCES

## 4.1 TRAINING

### SALIENT FINDINGS

- At the global level, there are more graduates with degrees in nursing (5.15 per 100,000 population) than in any other health profession working in the field of mental health. After nurses, the most common health professional graduate is medical doctors (3.38 per 100,000 population). Comparatively, there is a much smaller pool of psychologists, psychiatrists, social workers and occupational therapists who graduated in the past academic year.
- At the regional level, there are considerable differences in median levels of graduates in the field of mental health (Table 4.1.1). Median rates of psychiatrists who graduated in the past academic year range from 0 per 100,000 population in AFR to 0.36 per 100,000 in EUR. Similarly, rates of other medical doctors who graduated in the past academic year range from 0.17 (AFR) to 9.54 (EUR) per 100,000, nurses from 1.75 (AFR) to 22.85 (EUR) per 100,000, psychologists from 0 (WPR) to 2.71 (EUR) per 100,000, social workers from 0 (AMR and WPR) to 3.33 (EUR) per 100,000 and occupational therapists from 0 (AFR, AMR, EMR and WPR) to 0.07 (EUR) per 100,000.
- Variability in median levels of human resources graduates can also be viewed across income groups (Table 4.1.2). While the rate of social workers and occupational therapists differs only between high income countries and other income group classifications, disparities in the number of doctors, nurses and psychologists are much more pronounced across income groups. The largest difference is in the rate of psychologists, which is over 100 times greater in high income compared with low income countries. The median rate of psychiatrists is approximately 30 times greater in high income countries compared with low income countries.

- Globally, 2.8% of training for medical doctors is devoted to psychiatry and mental health-related subjects, with modest variability across regions (from 2.2% in AMR to 4.0% in SEAR). For nurses, 3.3% of training is devoted to psychiatry and mental-health related subjects, with modest variability across regions (from 2.0% in SEAR to 4.0% in AFR).

### LIMITATIONS

- It should be noted that rates for psychologists and social workers are low in comparison to other estimates (11). Although total numbers of graduates were requested, it is possible that some countries provided the number of graduates with specific training in clinical psychology or psychiatric social work. In general, countries reported that providing graduation figures for these categories of professionals was more difficult than the other categories.

WHO Region	Psychiatrists	Other medical doctors	Nurses	Psychologists	Social workers	Occupational therapists
<b>AFR</b> n = 29 – 41	0.00	0.17	1.75	0.01	0.01	0.00
<b>AMR</b> n = 14 – 28	0.06	5.30	5.13	0.31	0.00	0.00
<b>EMR</b> n = 10 – 15	0.10	3.86	5.02	0.11	0.06	0.00
<b>EUR</b> n = 18 – 35	0.36	9.54	22.85	2.71	3.33	0.07
<b>SEAR</b> n = 6 – 10	0.02	3.35	2.96	0.01	0.06	0.02
<b>WPR</b> n = 14 – 21	0.03	3.58	4.88	0.00	0.00	0.00
<b>World</b> n = 91 – 148	<b>0.04</b>	<b>3.38</b>	<b>5.15</b>	<b>0.08</b>	<b>0.01</b>	<b>0.00</b>

TABLE 4.1.1 Median rate of human resources graduates in the past academic year per 100,000 population by WHO region

Income Group	Psychiatrists	Other medical doctors	Nurses	Psychologists	Social workers	Occupational therapists
<b>Low</b> n = 26 – 35	0.01	0.47	1.34	0.02	0.01	0.00
<b>Lower-Middle</b> n = 24 – 45	0.04	2.47	4.88	0.03	0.00	0.00
<b>Upper-Middle</b> n = 18 – 34	0.08	5.33	5.53	0.15	0.00	0.00
<b>High</b> n = 27 – 40	0.30	8.67	19.35	2.15	4.10	0.75
<b>World</b> n = 89 – 145	<b>0.04</b>	<b>3.34</b>	<b>5.15</b>	<b>0.09</b>	<b>0.01</b>	<b>0.00</b>

TABLE 4.1.2 Median rate of human resources graduates in the past academic year per 100,000 population by World Bank income group

# HUMAN RESOURCES

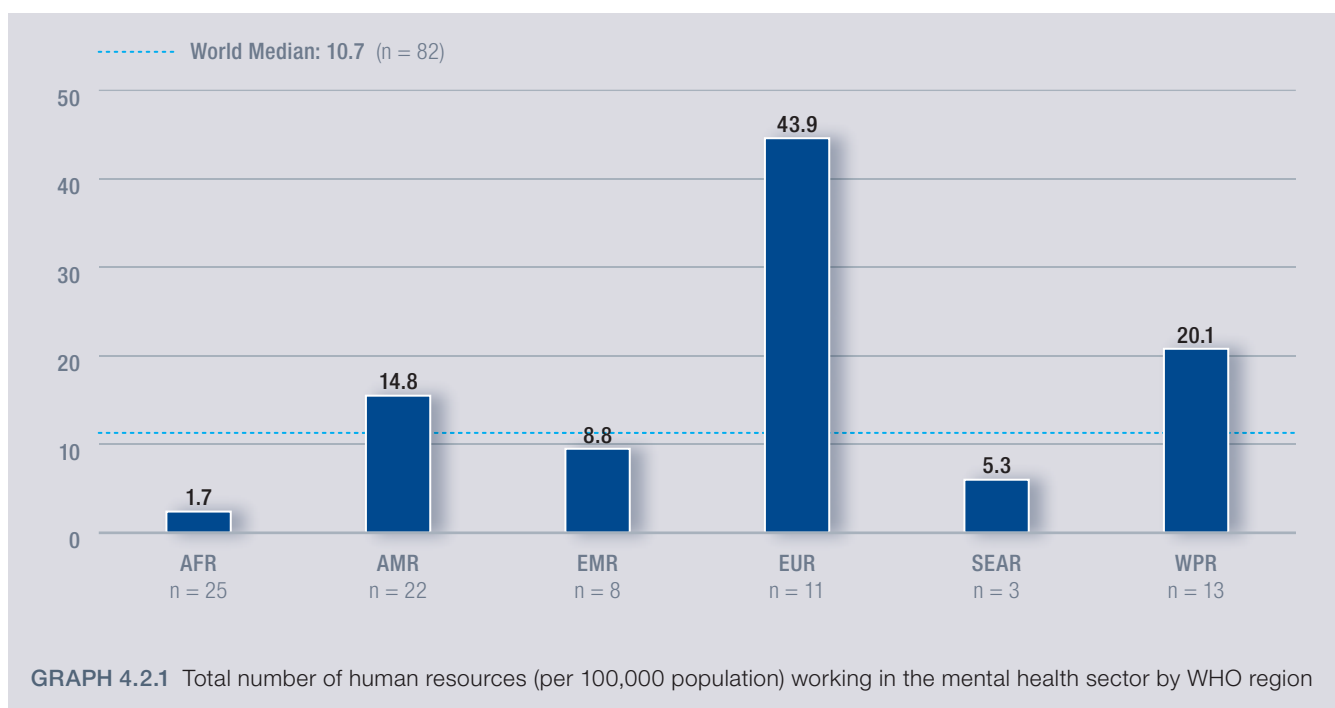
## 4.2 WORKFORCE

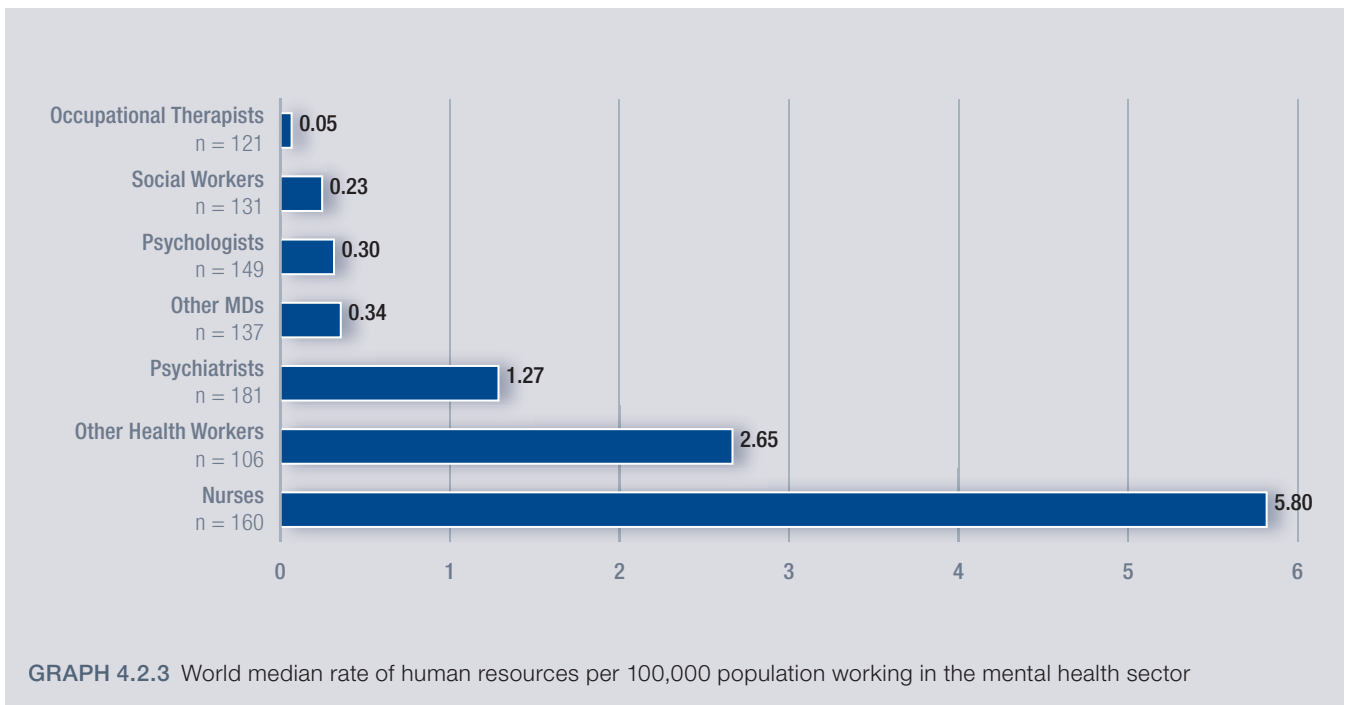
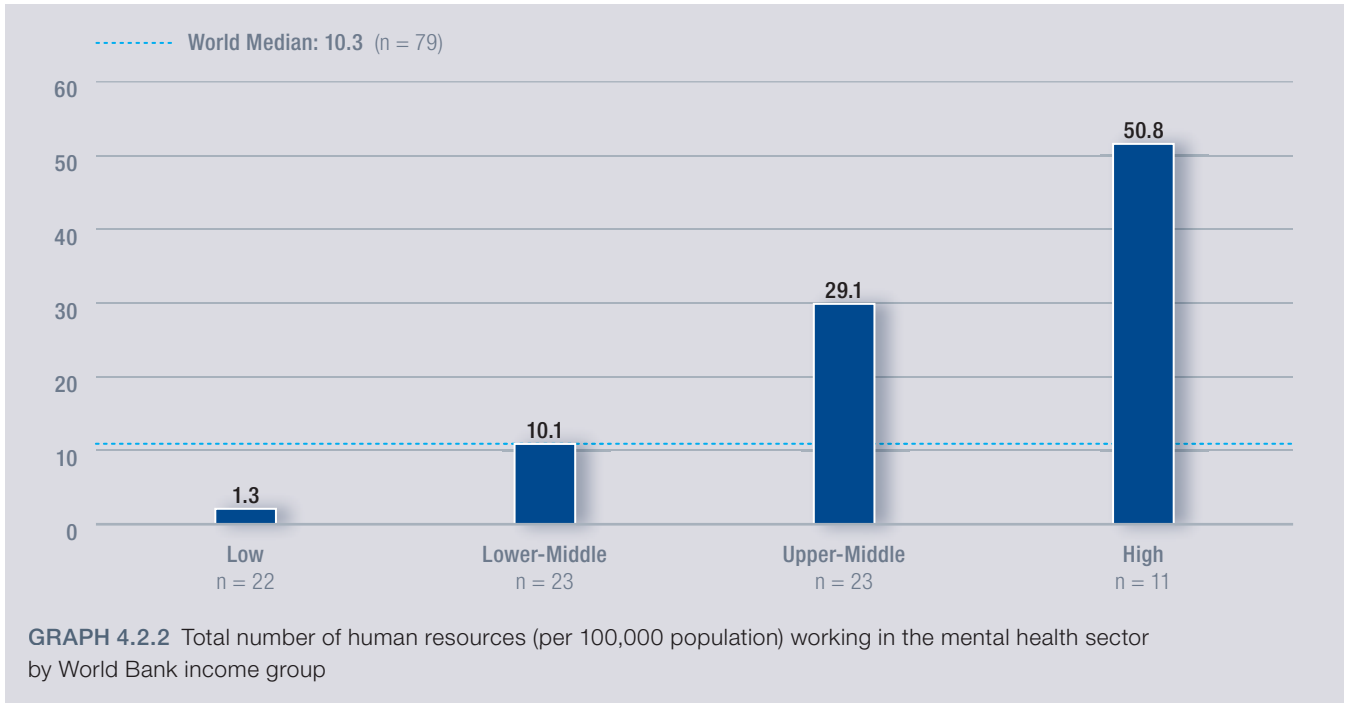
### BACKGROUND

- Respondents were requested to provide information on the overall number of human resources operating in different public and private mental health facilities/institutions. Specifically, respondents were asked to document the number of psychiatrists, other medical doctors, nurses, psychologists, social workers, occupational therapists, and other health workers (i.e. community health workers, nursing associates and/or auxiliaries, etc.) operating in mental health facilities. Additionally, the percentage of psychiatrists working exclusively in private practice and the percentage of psychiatrists and nurses working in mental hospitals were recorded.
- Findings are based on the number of countries reporting valid data for each item.

### SALIENT FINDINGS

- Across all professions, the global median rate for human resources working in the mental health sector is 10.7 workers per 100,000 population. This varies considerably by region (Graph 4.2.1), with AFR having the lowest median rate (1.7) and EUR the highest (43.9). There were also differences by income group (Graph 4.2.2), with low income countries having a median rate of 1.3 workers and high income countries a median rate of 50.8.
- Globally, nurses (psychiatric and non-psychiatric) represent the largest professional group working in the mental health sector. The median rate of nurses in this sector, 5.8 per 100,000, is greater than the rate of all other human resources groups combined (Graph 4.2.3).





# HUMAN RESOURCES

## 4.2 WORKFORCE

- At the regional level (Table 4.2.1), there are considerable differences in median levels of all human resources. The median rate of psychiatrists ranges from 0.05 per 100,000 population in AFR to 8.59 per 100,000 population in EUR. Similarly, the rate of other medical doctors ranges from 0.06 (AFR) to 1.14 (EUR) per 100,000, nurses from 0.61 (AFR) to 21.93 (EUR) per 100,000, psychologists from 0 (WPR) to 2.58 (EUR) per 100,000, social workers from 0 (WPR) to 1.12 (EUR) per 100,000, occupational therapists from 0 (SEAR and WPR) to 0.57 (EUR) per 100,000, and other health workers from 0.04 (SEAR) to 17.21 (EUR) per 100,000.
- There is a clear trend in the rate of human resources by income group, where the rate increases across income group classifications (Table 4.2.2). The smallest difference is for other medical doctors working in mental health facilities; the median rate is 26 times greater in high income countries as compared to low income countries. In contrast, the largest difference is for social workers; the median rate is 216 times greater in high income as compared to low income countries.
- As seen in Table 4.2.2 the number of psychiatrists also differs by income level; there is a median rate of 0.05 psychiatrists (per 100,000 population) in low income countries, 0.54 in lower-middle income countries, 2.03 in upper-middle income countries, and 8.59 in high income countries. By region, EUR consistently has the highest rates of human resources, and AFR has the lowest. The rate of psychiatrists per 100,000 population by Member State appears in Figure 4.2.1. Almost half the people in the world live in a country where there is one psychiatrist to serve 200,000 people or more.
- The percentage of countries where the majority or all psychiatrists work exclusively in mental hospitals is 30%, while 24% of countries have no or less than a quarter of all the psychiatrists in the country working in mental hospitals. With respect to nurses, these figures are 38% and 21%, respectively. In contrast, the percentage of countries where the majority or all psychiatrists are exclusively working in private practice is 9%. No or a few psychiatrists are exclusively working in private practice in a majority of countries (64%).

WHO Region	Psychiatrists	Other medical doctors	Nurses	Psychologists	Social workers	Occupational therapists	Other health workers
<b>AFR</b> n = 29 – 45	0.05	0.06	0.61	0.04	0.03	0.01	0.31
<b>AMR</b> n = 23 – 31	1.57	0.72	3.92	1.29	0.39	0.12	6.37
<b>EMR</b> n = 10 – 19	0.90	0.31	3.18	0.48	0.46	0.04	4.35
<b>EUR</b> n = 23 – 51	8.59	1.14	21.93	2.58	1.12	0.57	17.21
<b>SEAR</b> n = 5 – 10	0.23	0.19	0.77	0.03	0.01	0.00	0.04
<b>WPR</b> n = 16 – 25	0.90	0.81	7.70	0.00	0.00	0.00	2.86
<b>World</b> n = 106 – 180	<b>1.27</b>	<b>0.34</b>	<b>5.80</b>	<b>0.30</b>	<b>0.23</b>	<b>0.05</b>	<b>2.65</b>

TABLE 4.2.1 Median rate of human resources per 100,000 population working in the mental health sector by WHO region

Income Group	Psychiatrists	Other medical doctors	Nurses	Psychologists	Social workers	Occupational therapists	Other health workers
<b>Low</b> n = 25 – 38	0.05	0.06	0.42	0.02	0.01	0.00	0.12
<b>Lower-Middle</b> n = 31 – 52	0.54	0.21	2.93	0.14	0.13	0.01	1.33
<b>Upper-Middle</b> n = 26 – 42	2.03	0.87	9.72	1.47	0.76	0.23	13.07
<b>High</b> n = 24 – 47	8.59	1.49	29.15	3.79	2.16	1.51	15.59
<b>World</b> n = 103 – 178	<b>1.27</b>	<b>0.33</b>	<b>4.95</b>	<b>0.33</b>	<b>0.24</b>	<b>0.06</b>	<b>2.93</b>

TABLE 4.2.2 Median rate of human resources per 100,000 population working in the mental health sector by World Bank income group

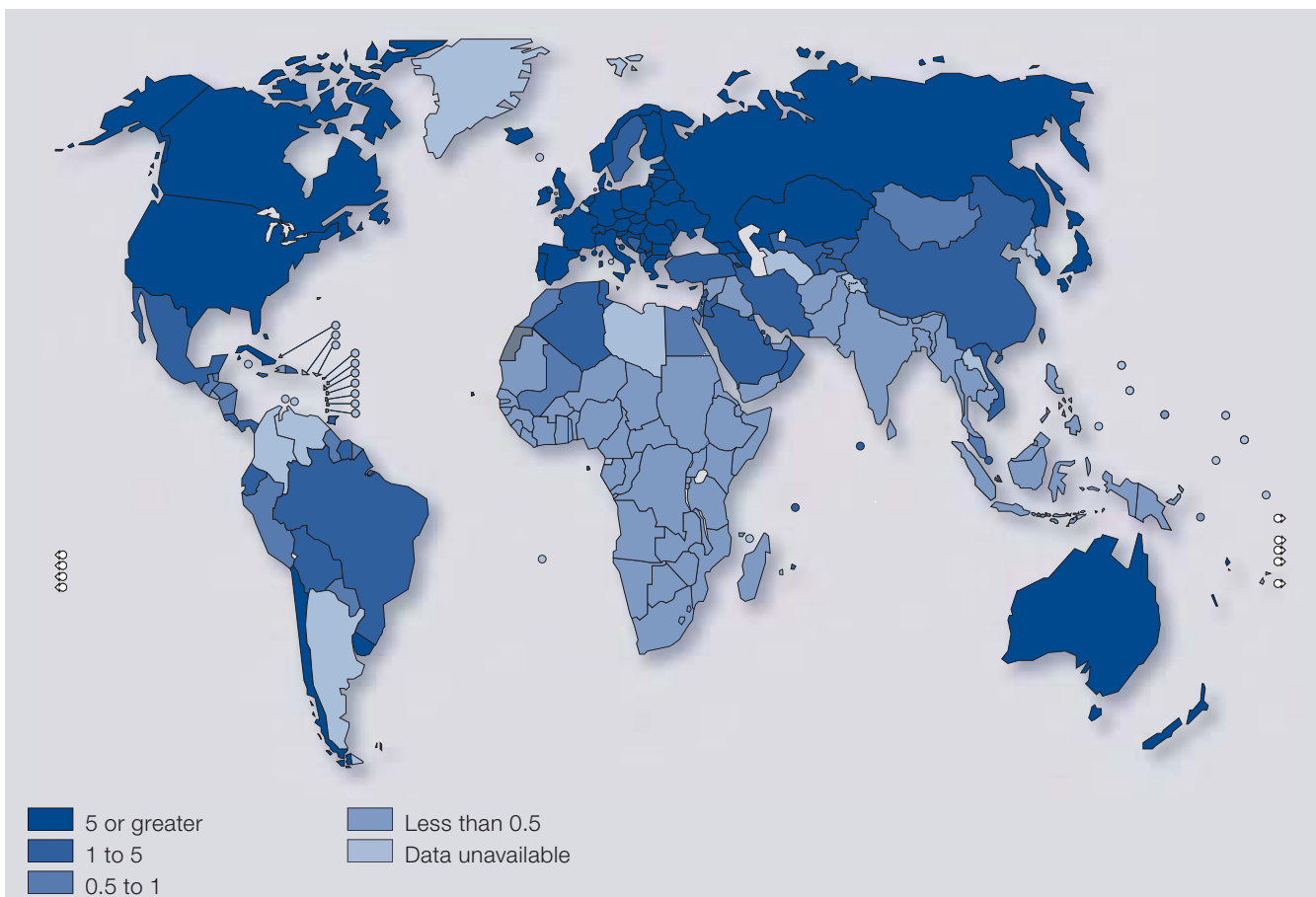


FIG. 4.2.1 Rate of psychiatrists per 100,000 population by WHO Member State

# HUMAN RESOURCES

## 4.3 INFORMAL HUMAN RESOURCES: FAMILY AND USER ASSOCIATIONS

### DEFINITIONS

- *Family* comprises members of the families of persons with mental disorders who act as carers.
- A *user/consumer/patient* is a person receiving mental health care. These terms are used in different places and by different groups of practitioners and people with mental disorders.

### BACKGROUND

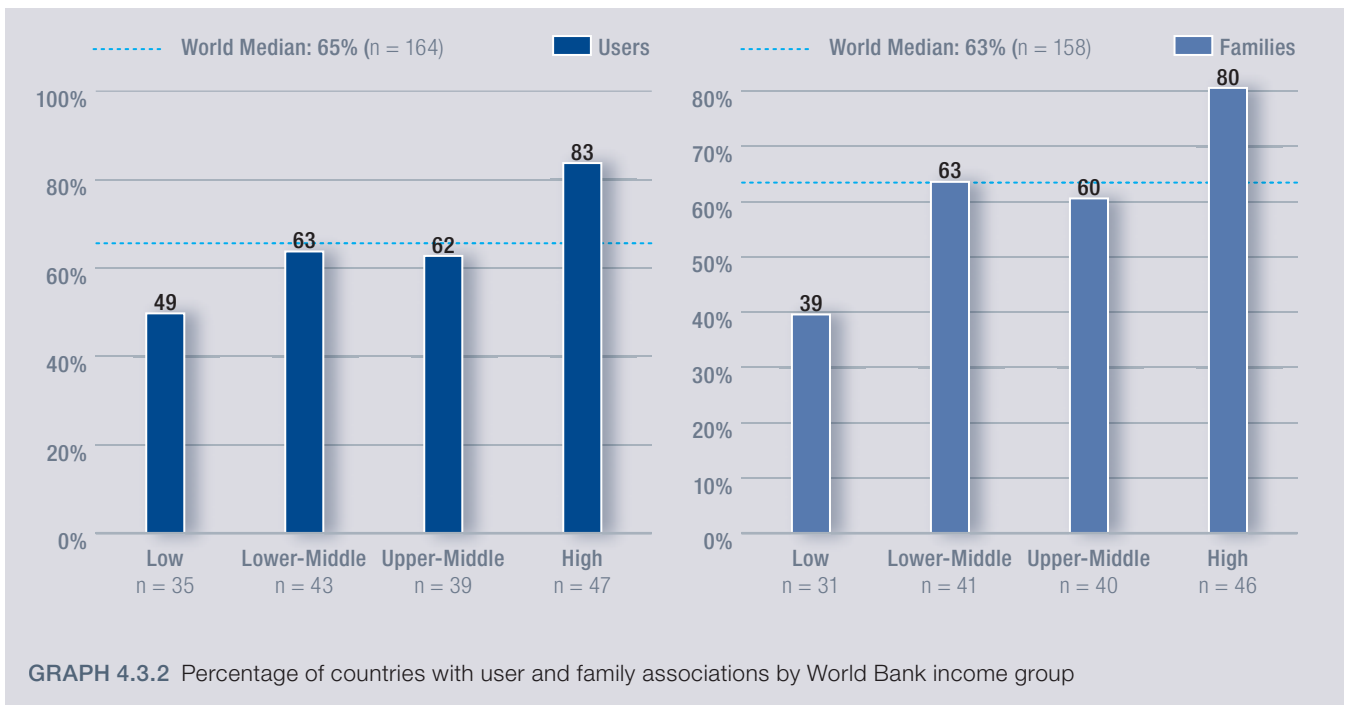
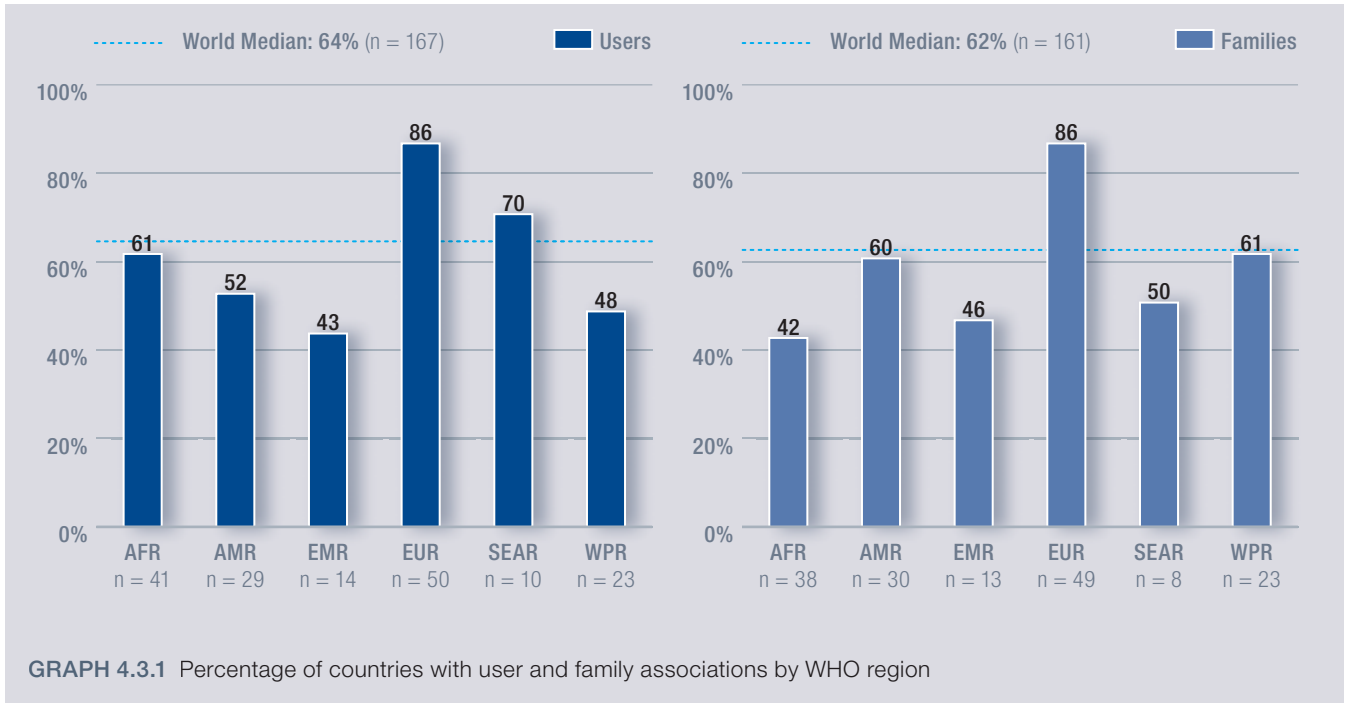
- Respondents were asked whether any (I) user associations and (II) family associations are present within the country and, if so, how many members separately comprise each of these. Additionally, countries were asked whether and to what extent user and family associations have been involved in the formulation or implementation of mental health policies, plans or legislation at the national level within the past two years.

- For the purposes of this questionnaire, if an association/organization is a combined organization (includes both users and family members) it was included under user associations.
- Findings are based on the number of countries reporting valid data for each item.

### SALIENT FINDINGS

- Globally, user and family associations are present in 64% and 62% of countries, respectively. They are more frequent in EUR than any of the other regions (Graph 4.3.1).
- Users associations are present in 83% of high income countries and 49% of low income countries (Graph 4.3.2). Similarly, family associations are present in 80% of high income countries and 39% of low income countries.
- Worldwide there are an estimated 130,000 user association members and 95,000 family association members.





# HUMAN RESOURCES

## 4.3 INFORMAL HUMAN RESOURCES: FAMILY AND USER ASSOCIATIONS

- In countries where users associations are present, 45% had user associations which frequently participated in the formulation or implementation of mental health policies, plans or legislation at the national level over the past two years; 33% of countries had participation less than routinely; and 22% had no level of participation.
- In countries with families associations, 38% had associations that participated frequently in legislation formation and implementation; family associations in 42% of countries did not routinely participate; and 20% did not or rarely participated. As shown in Tables 4.3.1 and 4.3.2, participation is not uniform across regions or income groups.

WHO Region	Users Associations			Family Associations		
	Never or Rarely	Not Routinely	Routinely	Never or Rarely	Not Routinely	Routinely
<b>AFR</b> n = 24	21%	29%	50%	27%	45%	36%
<b>AMR</b> n = 14	36%	14%	50%	33%	28%	39%
<b>EMR</b> n = 6	33%	33%	33%	33%	17%	50%
<b>EUR</b> n = 41	22%	41%	37%	16%	50%	34%
<b>SEAR</b> n = 7	0%	57%	43%	0%	75%	25%
<b>WPR</b> n = 10	10%	20%	70%	8%	38%	54%
<b>World</b> n = 102	<b>22%</b>	<b>33%</b>	<b>45%</b>	<b>20%</b>	<b>42%</b>	<b>38%</b>

TABLE 4.3.1 Involvement of user and family associations in national mental health governance by WHO region

Income Group	Users Associations			Family Associations		
	Never or Rarely	Not Routinely	Routinely	Never or Rarely	Not Routinely	Routinely
<b>Low</b> n = 17	24%	24%	53%	30%	50%	20%
<b>Lower-Middle</b> n = 26	31%	35%	35%	29%	42%	29%
<b>Upper-Middle</b> n = 23	13%	52%	35%	17%	48%	35%
<b>High</b> n = 36	19%	25%	56%	12%	33%	55%
<b>World</b> n = 102	<b>22%</b>	<b>33%</b>	<b>45%</b>	<b>20%</b>	<b>41%</b>	<b>39%</b>

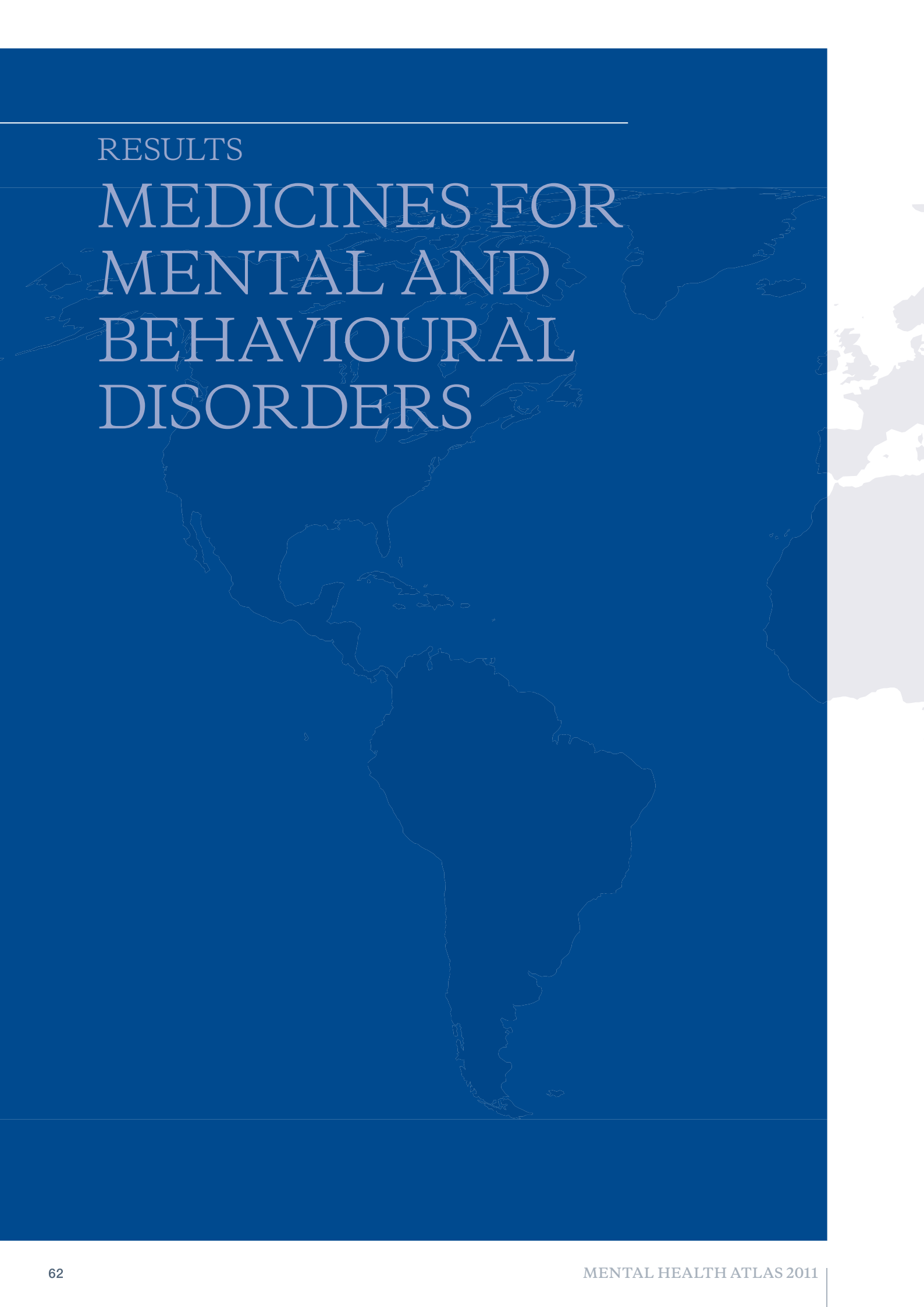
TABLE 4.3.2 Involvement of user and family associations in national mental health governance by World Bank income group



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RESULTS

# MEDICINES FOR MENTAL AND BEHAVIOURAL DISORDERS



## 5.1 COUNTRY-LEVEL EXPENDITURES FOR MEDICINES

### DEFINITION

- Medicines for mental and behavioural disorders are drugs utilized to treat mental, neurological and substance abuse disorders. These drugs typically act on the central nervous system, thereby affecting brain function and altering an individual's perception, mood or cognition.

### BACKGROUND

- Respondents were asked to provide information on the total country-level expenditures on medicines for mental and behavioural disorders in the past year. Countries were also requested to provide this figure broken down by the following Anatomical Therapeutic Chemical (ATC) groups: medicines used to treat bipolar disorders (N03AG01 and N05AN), medicines used in psychotic disorders (N05A, excluding N05AN), medicines used in general anxiety disorders (N05B and N05C), and medicines used in mood disorders (N06A). Price data were provided by the ministries of health of the responding countries and reflects the total

procurement price paid by the country at the national level. It does not represent the price paid by service users buying the medicines in the public/private sector.

- Findings are based on the number of countries reporting valid data for each item.

### SALIENT FINDINGS

- Of the 49 countries reporting data, the estimated median expenditure on medicines for mental and behavioural disorders is US\$ 6.81 per person per year. However, the actual figure is liable to be lower than this, as respondents were disproportionately from high income countries.
- For each drug classification, there is a clear gradient in the level of expenditures across income groups, with lower income countries spending substantially less than higher income countries. While EUR has the highest level of expenditures across drug classifications, AFR has the lowest levels.
- Median expenditures on medicines for mental and behavioural disorders in upper-middle and high income countries is approximately 340 times greater than median expenditures in low and lower-middle income countries (Graph 5.1.1).

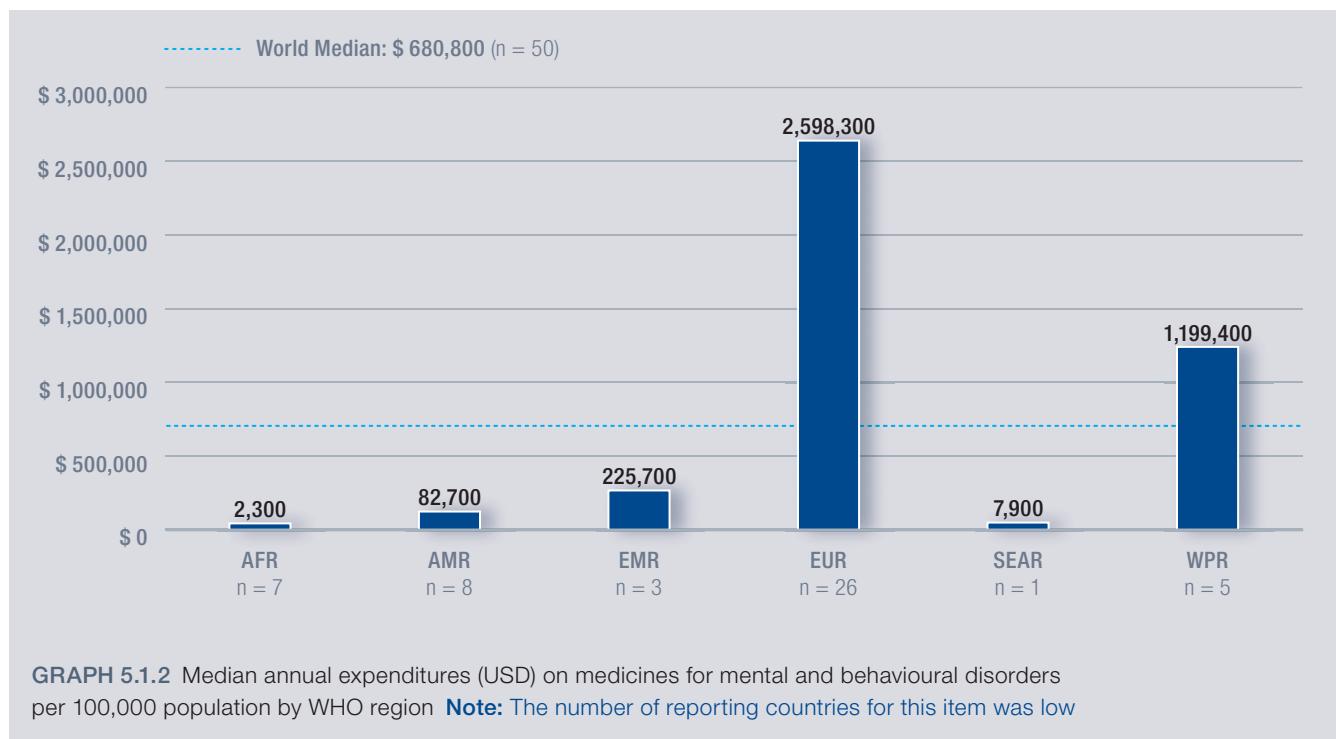


**GRAPH 5.1.1** Median annual expenditures (USD) on medicines for mental and behavioural disorders per 100,000 population by World Bank income group

**Note:** The number of reporting countries for this item was low, particularly among the low and middle income countries.

# MEDICINES

## 5.1 COUNTRY-LEVEL EXPENDITURES FOR MEDICINES



- By region (Graph 5.1.2), EUR and WPR are substantially above median level expenditures, with other regions falling far below this mark.
- A similar pattern of expenditures across income groups and regions is observed when medicines are broken down by drug classification; for each drug classification, there is a clear gradient in the level of expenditures on medicines across income groups (Table 5.1.1) and regions (Table 5.1.2). EUR and EMR spend more than other geographic regions (with antidepressants being an important exception).

### LIMITATIONS

- The number of responding countries for all items was very low, particularly when analysed by WHO region and World Bank income group. Thus, results should be interpreted with caution.
- Data were not adjusted for inflation and purchasing parity. Given that medicine market volumes may differ, that data provided from the countries may be based on different years, that countries have diverse inflation rates, and that the retail buying power of a currency may vary depending on the wealth of the respective countries, results should be interpreted with caution.

	Mood Stabilizers	Antipsychotics	Anxiolytics	Antidepressants
<b>Low</b> n = 2 – 3	\$ 320	\$ 400	\$ 320	\$ 200
<b>Lower-Middle</b> n = 6 – 8	\$ 2,720	\$ 11,480	\$ 4,500	\$ 10,140
<b>Upper-Middle</b> n = 5 – 8	\$ 3,480	\$ 16,350	\$ 5,740	\$ 15,120
<b>High</b> n = 23 – 25	\$ 71,420	\$ 1,099,800	\$ 315,560	\$ 796,880
<b>World</b> n = 37 – 43	<b>\$ 41,870</b>	<b>\$ 247,920</b>	<b>\$ 94,880</b>	<b>\$ 310,110</b>

**TABLE 5.1.1** Median expenditures (USD) on medicines for mental and behavioural disorders per 100,000 population by World Bank income group

	Mood Stabilizers	Antipsychotics	Anxiolytics	Antidepressants
<b>AFR</b> n = 3 – 4	\$ 320	\$ 790	\$ 1,090	\$ 210
<b>AMR</b> n = 4 – 7	\$ 1,700	\$ 5,850	\$ 2,680	\$ 8,350
<b>EMR</b> n = 3 – 4	\$ 137,180	\$ 68,820	\$ 42,040	\$ 22,710
<b>EUR</b> n = 24 – 25	\$ 63,150	\$ 1,074,080	\$ 315,560	\$ 795,560
<b>SEAR</b> n = 0	–	–	–	–
<b>WPR</b> n = 4 – 5	\$ 5,920	\$ 17,100	\$ 20,280	\$ 209,510
<b>World</b> n = 41 – 44	<b>\$ 36,140</b>	<b>\$ 219,640</b>	<b>\$ 81,640</b>	<b>\$ 258,120</b>

**TABLE 5.1.2** Median expenditures (USD) on medicines for mental and behavioural disorders per 100,000 population by WHO region

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RESULTS

# INFORMATION SYSTEMS





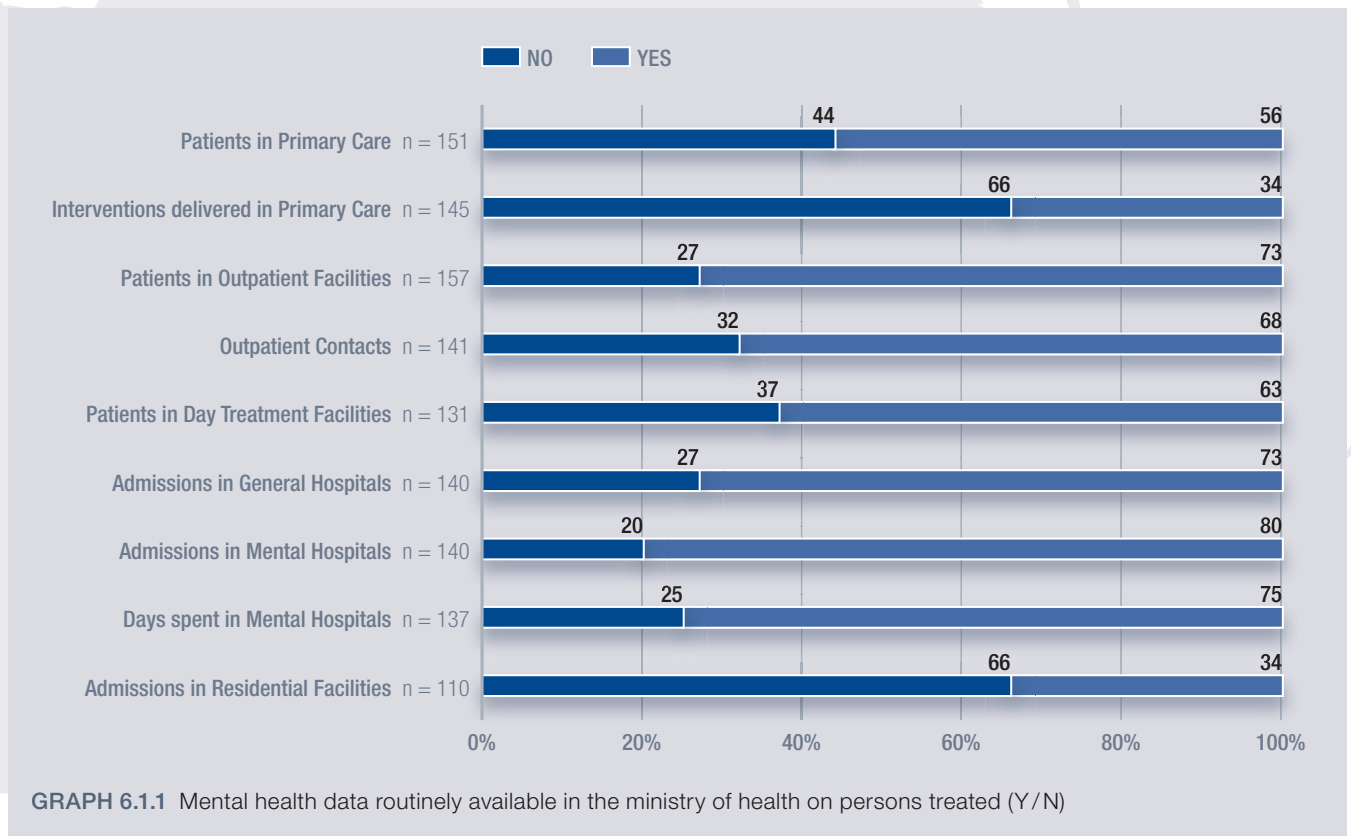
## AVAILABILITY OF DATA

### BACKGROUND

- Respondents were asked whether or not (Y/N) data are routinely available in the ministry of health on numbers of admissions, contacts, days spent and interventions delivered at different types of mental health facilities, including mental hospitals, general hospitals, primary health care facilities, outpatient facilities and community residential facilities.
- Findings are based on the number of countries reporting valid data for each item.

### SALIENT FINDINGS

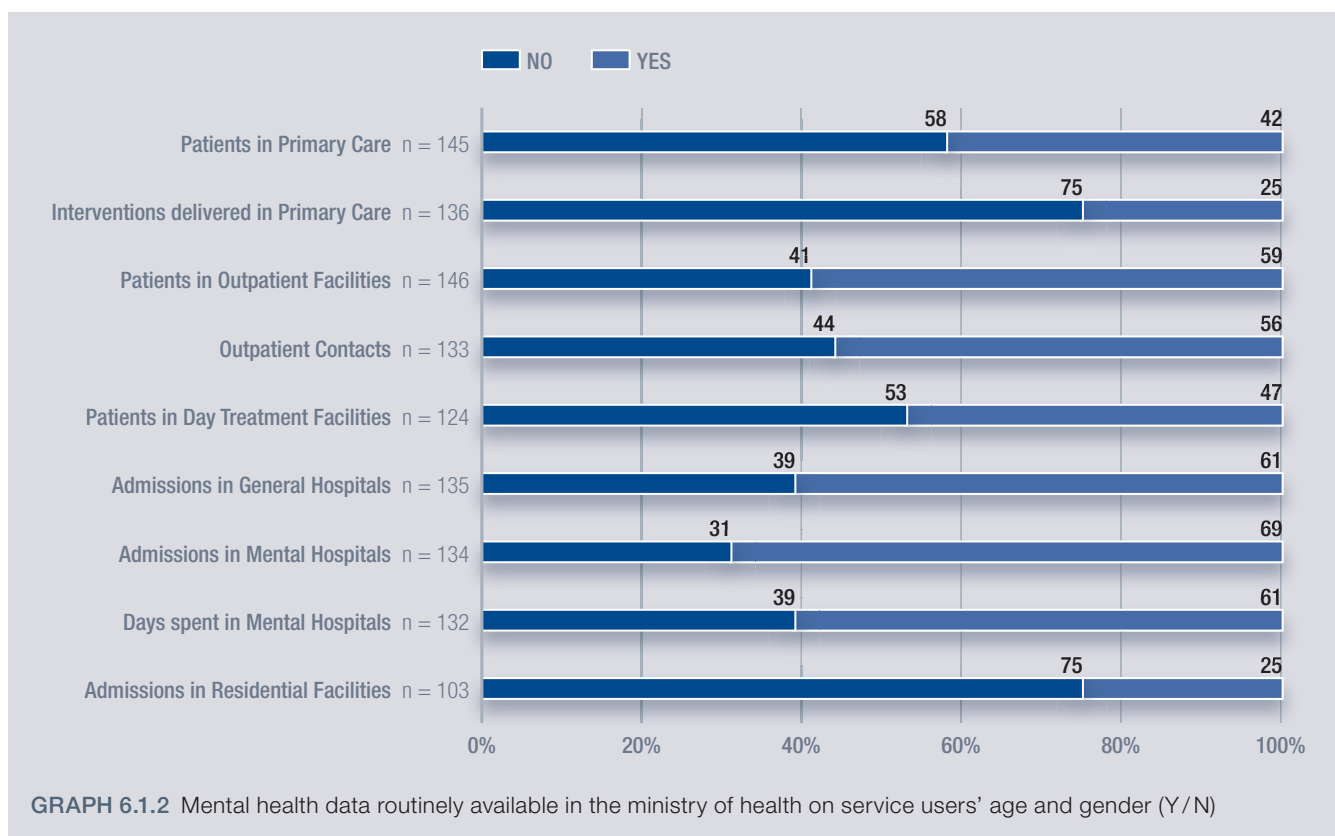
- Most countries collect mental health data on persons treated in mental hospitals, general hospitals, outpatient facilities and day treatment facilities (Graph 6.1.1). Fewer countries collect data from primary care facilities and community residential facilities.

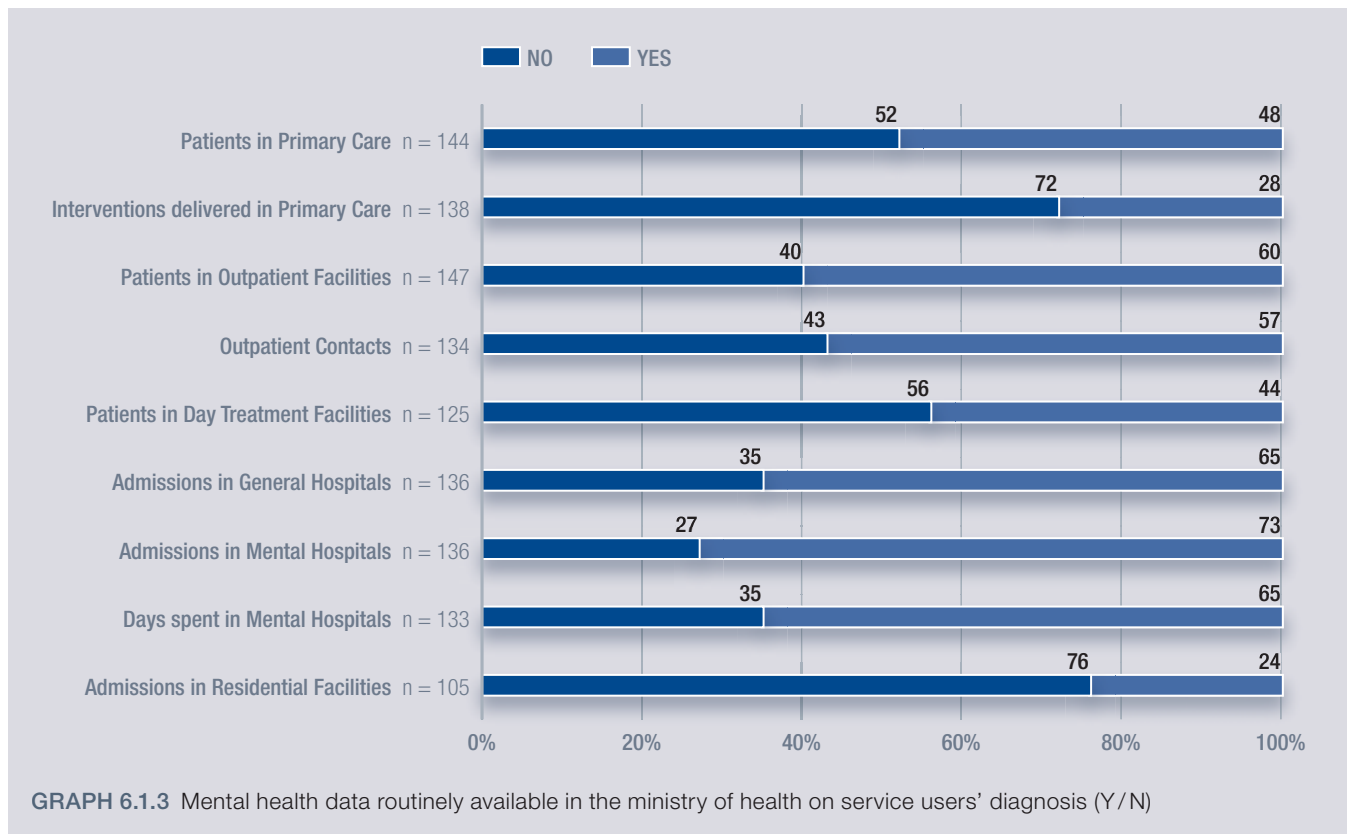


# INFORMATION SYSTEMS

## AVAILABILITY OF DATA

- Data on service users' age and gender are more frequently available from mental hospitals, general hospitals, outpatient facilities and day treatment facilities than primary care facilities and community residential facilities (Graph 6.1.2). Across all nine indicators, fewer countries collect information on service users' age and gender than on numbers of persons treated.
- As with information collection on age and gender, a majority of countries collect diagnostic information at mental hospitals, general hospitals and outpatient facilities, but not at residential, day treatment or primary health care facilities (Graph 6.1.3). In general, a slightly greater number of countries routinely collect information on diagnosis than on age and gender.





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# COMPARISON OF DATA BETWEEN ATLAS 2005 AND ATLAS 2011



A comparison of Atlas 2005 and Atlas 2011 was made to track changes in mental health system resources over time. However, several caveats should be stated at the outset. First, data on mental health resources have not been systematically collected in many countries but have improved considerably over time. As such, data changes from Atlas 2005 to 2011 may reflect improvements in data reliability rather than true improvements to the actual resource base. For example, between 2005 and 2011 over 80 LAMICs completed a WHO-AIMS assessment. The methodology of data collection involved in WHO-AIMS was more labour intensive and involved several rounds of review. In many cases, data reported in the 2005 Atlas were found to be inaccurate as a result of the iterative WHO-AIMS review process. Availability of WHO-AIMS data for cross-checking has improved the quality of the data for those countries which have completed this assessment. Additionally, in an effort to bring harmonization between the WHO-AIMS instrument and the Atlas survey, there was an attempt to standardize the indicators. As a result, the indicators for the 2011 Atlas are more similar to the WHO-AIMS instrument than the 2005 Atlas indicators. As a consequence differences found between 2005 and 2011 may reflect adjustments in the operationalization of the indicators rather than true differences in the resource base.

In examining changes between 2005 and 2011 data, it is also important to account for population growth between these time periods, particularly for indicators using rates per 100,000. Using UN Population Prospects data (10), the median growth rate for the Member States included in analyses was 7% over this period, which is in line with the average global growth rate of 1.2% a year. However, the rate of growth was not even across income levels or across regions. The most rapid growth occurred in low income countries (17%) in comparison to a range of 4% to 7% among the other groups. In terms of WHO regions, the greatest growths in population occurred in AFR (18%) and EMR (15%). Thus, changes in rates of mental health resources may reflect a failure to match resources with population growth rates, rather than an actual decline in terms of the absolute number of resources (e.g. the number of psychiatrists in the country). Similarly, a number of countries changed their World Bank income group category between 2005 and 2011. Given the difficulty of countries changing groups, all analyses were conducted according to income group classification based on the 2005 data. Finally, analyses were restricted to only those countries that provided data in 2005 and 2011 for each of the indicators and were restricted to those indicators that were operationalized in a similar manner between the two assessments.

# COMPARISON OF DATA BETWEEN ATLAS 2005 AND ATLAS 2011

## GOVERNANCE

### MENTAL HEALTH POLICY

Overall, there was a slight decrease in the number of countries with a mental health policy. In comparing the 173 countries that reported data in both 2005 and 2011, 64% reported having a policy in 2005 and 62% in 2011. Although a slightly smaller percentage of countries reported a mental health policy in 2011, the population coverage was actually greater (68% in 2005 and 88% in 2011). This means that the countries reporting an approved mental policy in 2011 were more populous than those reporting in 2005.

To explore possible reasons for this slight decrease, all countries that reported a policy in 2005 but not in 2011 were contacted to explain why they were no longer reporting an approved policy. The vast majority of these countries indicated that the data provided in 2005 was a draft policy that was never officially approved and has since remained in draft form. On the other hand, 21 countries reported adding a policy between 2005 and 2011. In terms of regional differences, there were increases in policy coverage in EUR, SEAR, and WPR and decreases in AFR, AMR, and EMR. In looking at the results by income group, high income countries showed the same rate of policy coverage in 2005 and 2011, whereas other income groups showed a slight decrease. Again, these differences may reflect a more accurate assessment of the situation, as many of these countries completed a WHO-AIMS assessment between 2005 and 2011.

### MENTAL HEALTH PLAN

Overall, there were slightly more countries reporting a plan in 2011 than in 2005 (71% versus 70%). In terms of population coverage, in 2005 it was 91% and in 2011 it was 95%. This means that the countries reporting an approved mental health plan were more populous in 2011 than 2005. However, it appears that most of this change occurred in EUR where 87% of the countries reported a plan in 2011, in contrast to only 54% in 2005. Except for EUR and SEAR, fewer countries reported a plan in 2011 than 2005. In terms of income level, there was a slight decrease in the presence of a mental health plan in all income categories with the exception of high income countries, where there was a substantial increase in the number of countries reporting a mental health plan.

### MENTAL HEALTH LEGISLATION

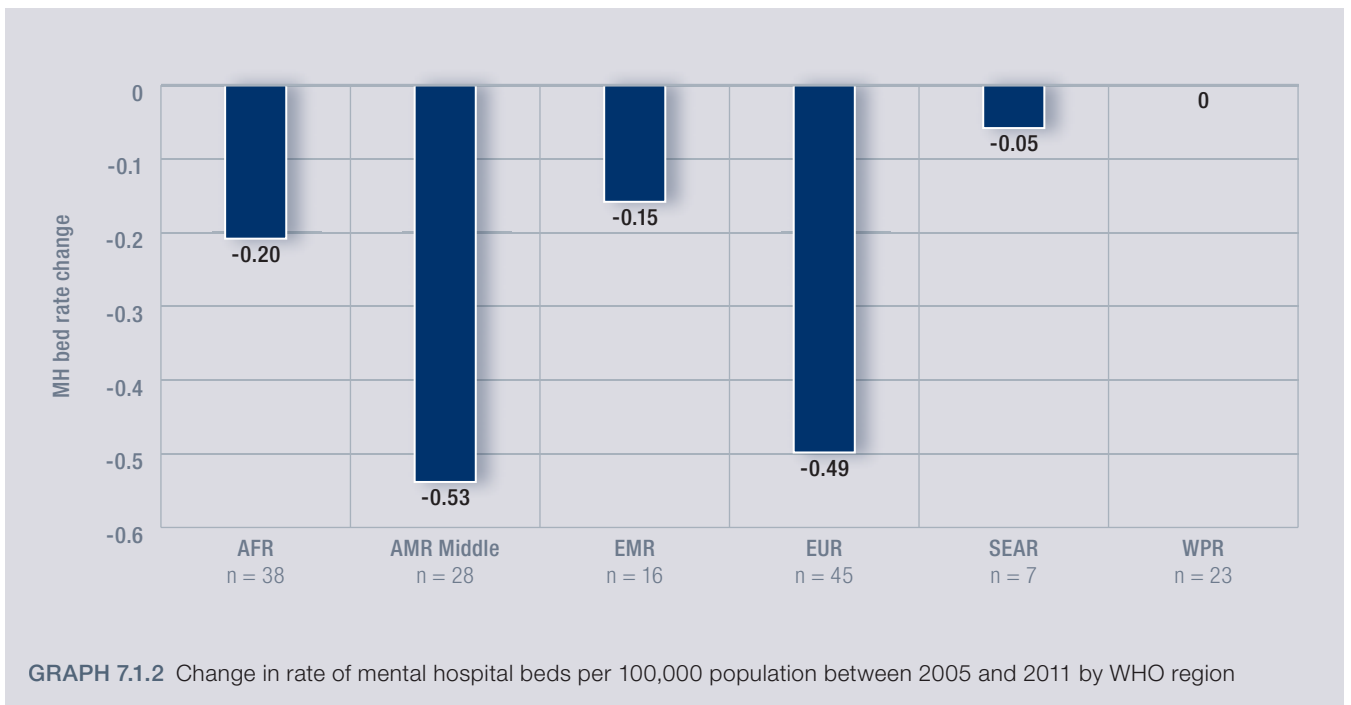
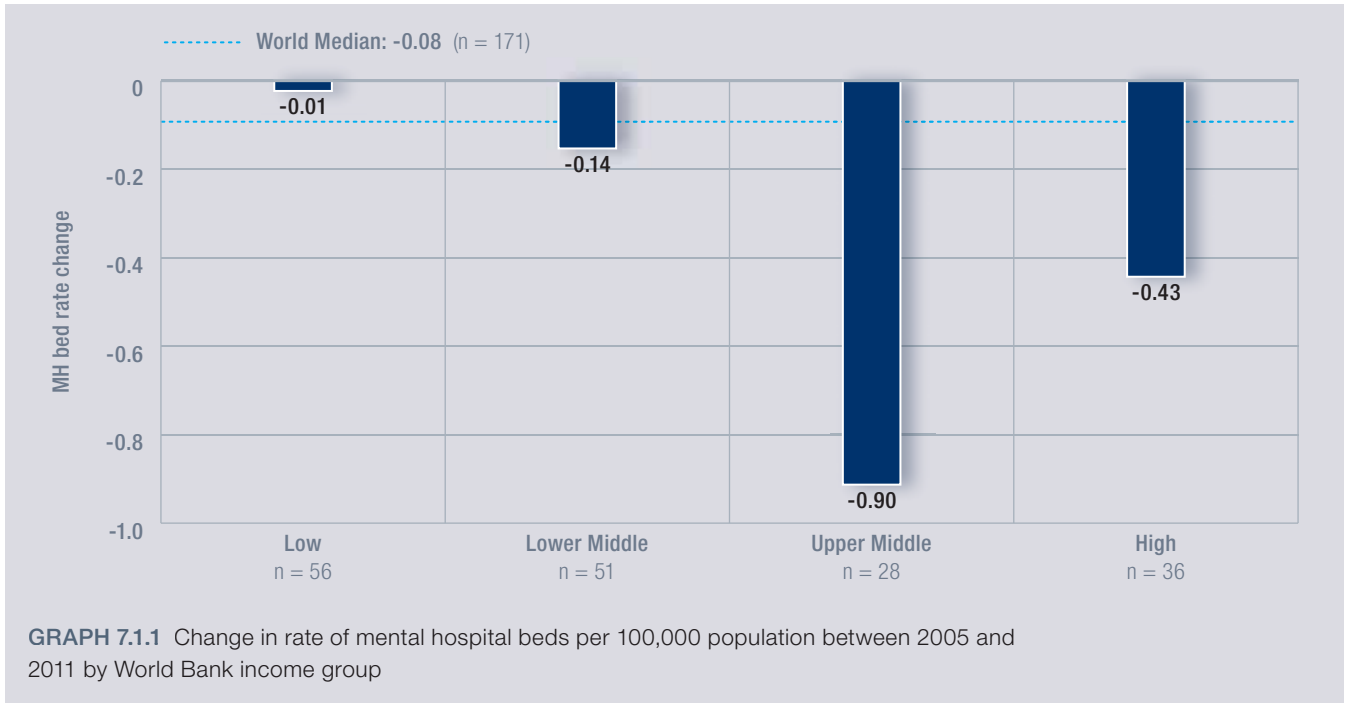
In terms of laws on mental health, of 163 countries that provided data for this item in both 2005 and 2011, there was an increase in the number of countries reporting a law pertaining to mental health (from 75% to 93%). In terms of population coverage, 83% of the population lived in a country where there was a mental health law in 2005, in comparison to 94% in 2011. Increases were found across all WHO regions and income groups. However, it should be noted that the question was worded slightly differently between the two assessments; in 2005 countries were asked whether there is a law in the field of mental health, whereas in 2011 countries were asked whether there is dedicated mental health legislation and/or a law relating to mental health in other areas of legislation. Thus, this increase may reflect a difference in how these indicators were operationalized.

## PSYCHIATRIC BEDS

Change scores were calculated to examine change in the rate of mental hospital and general hospital beds. Globally, the median decrease was -0.11 mental hospital beds per 100,000 population, indicating that the majority of countries decreased in their rate of mental hospital beds over this period. The greatest decrease was seen in upper-middle income countries followed by high income countries, while the lowest rate of decline was found among low income countries (Graph 7.1.1). However, it should be noted that low income countries had lower rates of beds in 2005, and as such one would expect a more modest decrease from 2005 to 2011.

In looking at the change in mental hospital beds by region, AMR and EUR showed the greatest decreases (Graph 7.1.2). In WPR, the median rate of change was zero, indicating that in the majority of the countries there was either no change or an increase in the rate of beds. In all other regions, more countries decreased than increased.

Change scores were also calculated for the rate of general hospital beds reserved for psychiatric patients. In contrast to mental hospital beds, which showed a decrease at all income levels and regions, the world median change in rate of general hospital beds was zero. This means that approximately half the countries increased or stayed the same, while approximately half the countries decreased or stayed the same. Only in low income countries was the median rate negative (-0.13), indicating that more than half of low income countries saw a decrease in their rate of general hospital beds reserved for psychiatric patients. Again, it is likely that these countries failed to open more beds to accommodate population growth, rather than a reduction in the absolute number of beds.



# COMPARISON OF DATA BETWEEN ATLAS 2005 AND ATLAS 2011

## HUMAN RESOURCES

Unfortunately, a comparison between human resource levels is complicated by differences in definitions of core mental health staff in the older and newer Atlas versions. For example, in 2005 the rate of psychiatric nurses was requested. In 2011, this measure was defined as the rate of nurses working in mental health. This change was made because in many LAMICs there are a number of nurses working in mental health facilities that do not have formal training to the same extent as psychiatric nurses. As such, in 2005 there may have been an underestimation of the availability of nurses for mental health. Likewise, the definition of social workers differed between the two assessments. Furthermore, while psychologists were defined in a similar manner in both Atlases, large and in many instances, implausible differences in rates for many countries between 2005 and 2011 suggests that countries may have difficulty providing accurate figures for this category of professionals.

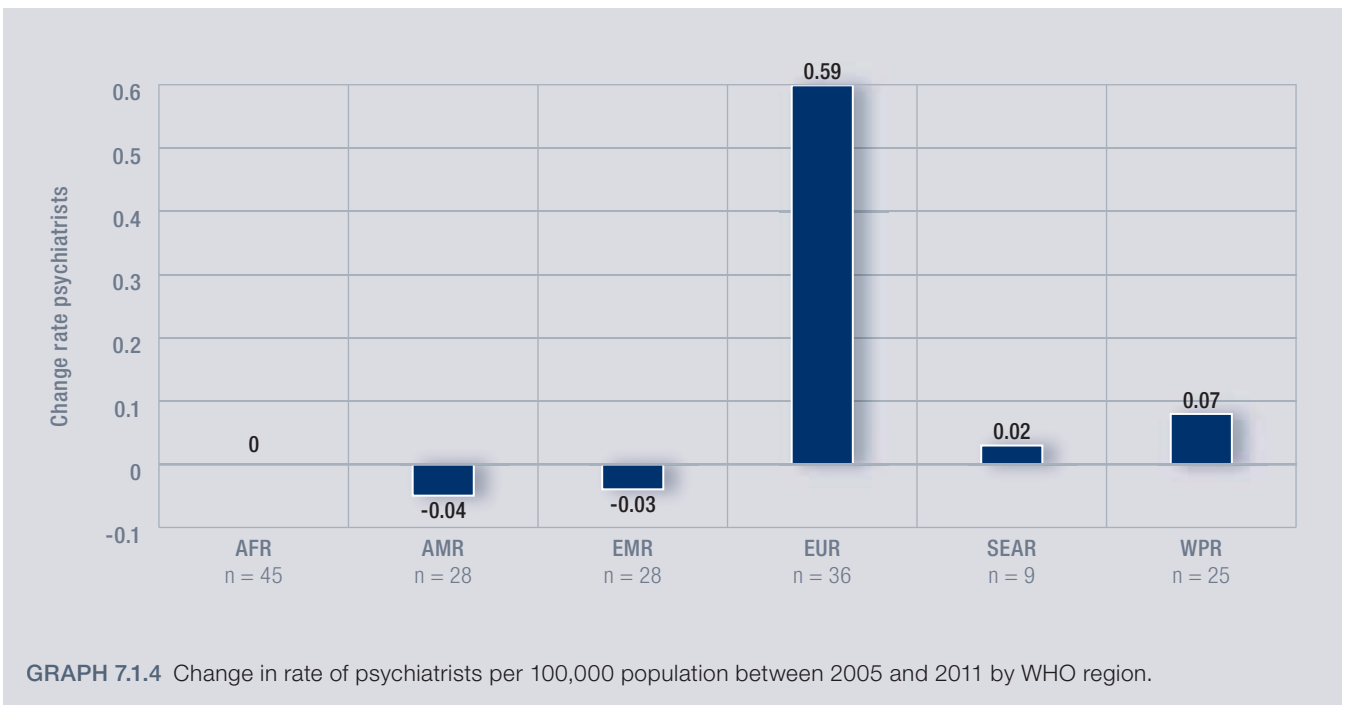
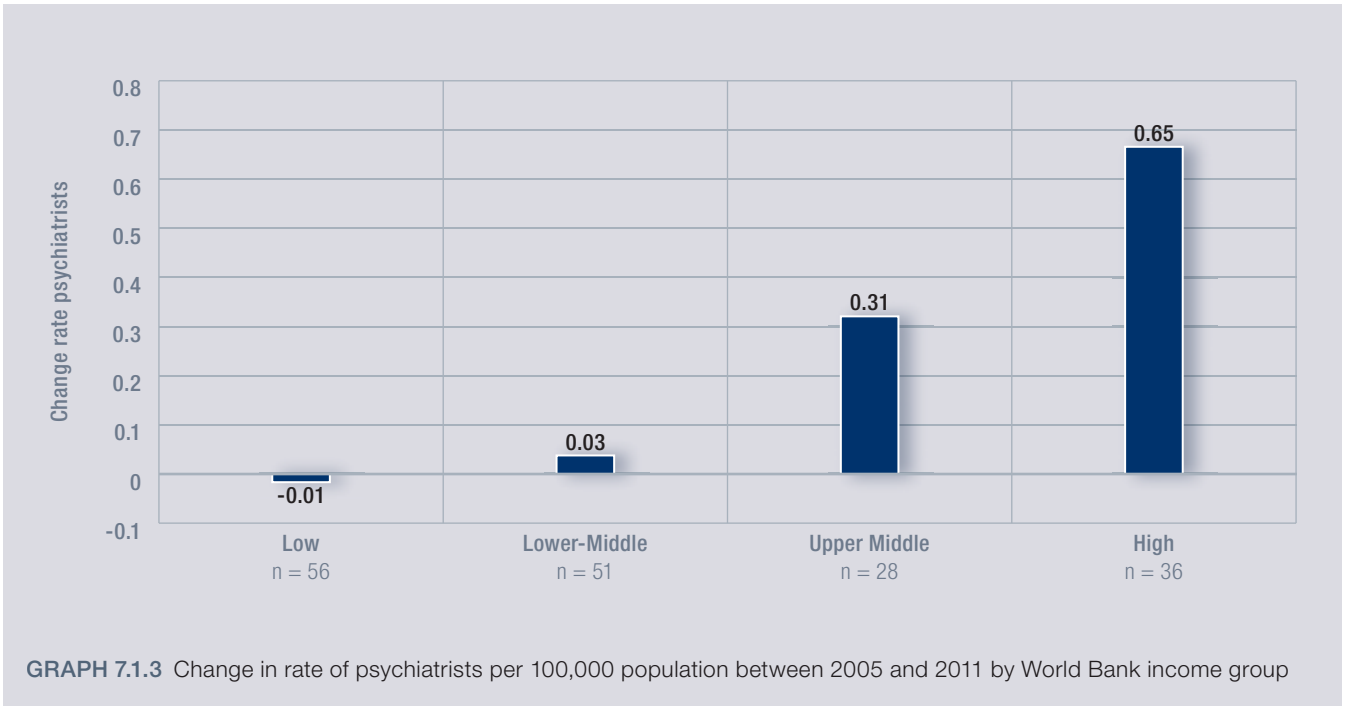
The rate of psychiatrists, however, was comparable between the two assessments, and change scores were calculated for each country; the rate of psychiatrists for 2005 was subtracted from the rate for 2011 to assess whether the rate increased or decreased over this time period. Between 2005 and 2011, the increase in psychiatrists was greatest in high income countries, with a median change rate of 0.65 psychiatrists per 100,000 population (Graph 7.1.3). This would mean that, in a country with a population of 10 million people, there would be an increase of 65 additional psychiatrists over this period. An increase was also observed in the two middle income groups. In contrast, there was a modest decrease (median change rate: -0.005 per 100,000 population) in low income countries.

At the regional level, the greatest change in the rate of psychiatrists occurred in EUR countries, where the median change was an increase in 0.59 psychiatrists per 100,000 population (Graph 7.1.4). There were also modest increases in SEAR and WPR. In contrast, in EMR and AMR more countries showed a decrease in the rate of psychiatrists than an increase. Lastly, in AFR approximately half of countries showed an increase and half a decrease, resulting in a median rate of change of approximately zero.

## SUMMARY

- Differences in resource levels between 2005 and 2011 data are small and may be due to changes in the methodology and indicators rather than a true change in the resource base, particularly in terms of the existence of a national mental health policy, plan and legislation.
- Overall there is some evidence of a small gain in mental health human resources between Atlas 2005 and 2011. However, these gains are largely in middle and high income countries.
- A clear trend was found for a decrease in the rate of mental hospital beds. In all income groups and five of six WHO regions, more countries decreased in rate of mental hospital beds than increased. The decrease was most pronounced in the upper-middle income and high income groups and in EUR and AMR as compared to other regions.





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# PARTICIPATING COUNTRIES AND CONTRIBUTORS



WHO Member States	WHO region	World Bank income level	Contributors
Afghanistan	EMRO	Low	Alia Ibrahimzai; Bashir A. Sarwari
Albania	EURO	Upper-Middle	Anastas Suli
Algeria	AFRO	Upper-Middle	Nacera Madji
Andorra	EURO	High	Joan Obiols
Angola	AFRO	Lower-Middle	Albino Cunene de Carvalho
Antigua and Barbuda	AMRO / PAHO	Upper-Middle	Rhonda Sealey-Thomas
Argentina	AMRO / PAHO	Upper-Middle	Yago Di Nella
Armenia	EURO	Lower-Middle	Armen Soghoyan; Samvel Torosyan
Australia	WPRO	High	Robyn Milthorpe
Austria	EURO	High	Heinz Katschnig
Azerbaijan	EURO	Upper-Middle	Geray Geraybeyli
Bahrain	EMRO	High	Sharifa Bucheeri; Mariam Al-Jalahma; Adel Al-Owfi; Manal Madan; Tawfeeq Naseeb; Seham Al-Rashed; Basima Al-Olaiwat; Sameer Allawi; Adel Sarhan
Bangladesh	SEARO	Low	Golam Rabbani
Barbados	AMRO / PAHO	High	Heather Payne-Drakes
Belarus	EURO	Upper-Middle	Ivan Ryzhko
Belgium	EURO	High	Pol Gerits
Belize	AMRO / PAHO	Lower-Middle	Claudina Elington Cayetano
Benin	AFRO	Low	Josiane Irma Arlette Ezin Hougbe
Bhutan	SEARO	Lower-Middle	Tandin Chogyel
Bolivia	AMRO / PAHO	Lower-Middle	Luis Fernando Camacho Rivera
Bosnia and Herzegovina	EURO	Upper-Middle	Goran Čerkez; Irena Jokić; Biljana Lakić; Milan Latinović; Draženka Malićbegović; Mirha Ošijan; Zlata Paprić; Alma Gusinac Škopo
Botswana	AFRO	Upper-Middle	Patrick Zibochwa
Brazil	AMRO / PAHO	Upper Middle	Pedro Gabriel Delgado
Brunei Darussalam	WPRO	High	Abang Bennet Bin Abang Taha
Bulgaria	EURO	Upper-Middle	Hristo Hinkov
Burkina Faso	AFRO	Low	Arouna Ouedraogo
Burundi	AFRO	Low	Nicodème Mbonimpa
Cambodia	WPRO	Low	Sophal Chhit
Cameroon	AFRO	Lower-Middle	Félicien Ntone-Enyime
Canada	AMRO / PAHO	High	Gilles Fortin; Kate Dickson
Cape Verde	AFRO	Lower-Middle	Manuel Rodrigues Boal; Francisca Alvarenga
Central African Republic	AFRO	Low	André Tabo
Chad	AFRO	Low	Egip Bolsane
Chile	AMRO / PAHO	Upper-Middle	Alfredo Pemjean
China	WPRO	Lower-Middle	Ma Hong; Jun Yan
Comoros	AFRO	Low	Abdou Ousseini
Congo	AFRO	Lower-Middle	Mathurin Domingui
Cook Islands	WPRO		Rangiau Fariu
Croatia	EURO	High	Neven Henigsberg; Danica Kramaric
Cuba	AMRO / PAHO	Upper-Middle	Carmen Borrego Calzadilla

# PARTICIPATING COUNTRIES AND CONTRIBUTORS

WHO Member States	WHO region	World Bank income level	Contributors
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Czech Republic	EURO	High	Lucie Bankovska Motlova; Eva Dragomirecka; Ladislav Csemy; Cyril Höschl
Democratic Republic of the Congo	AFRO	Low	Muteba Mushidi
Denmark	EURO	High	Marianne Jespersen
Dominica	AMRO/PAHO	Upper-Middle	Griffin Benjamin
Dominican Republic (the)	AMRO/PAHO	Upper-Middle	Jose Mieses Michel
Ecuador	AMRO/PAHO	Lower-Middle	Enrique Aguilar Zambrano
Egypt	EMRO	Lower-Middle	Aref Khoweiled; Nasser Loza
El Salvador	AMRO/PAHO	Lower-Middle	Claudia Beatriz Barahona Navarrete
Eritrea	AFRO	Low	Goitom Mebrahtu
Estonia	EURO	High	Airi Värnik
Ethiopia	AFRO	Low	Melkamu Agedew Endeshaw
Fiji	WPRO	Upper-Middle	Shisram Narayan
Finland	EURO	High	Maria Vuorilehto; Juha Moring
France	EURO	High	Laurence Lavy; Emmanuelle Bauchet
Gabon	AFRO	Upper-Middle	Frederic Mbungu Mabilia
Gambia(the)	AFRO	Low	Wally Faye
Georgia	EURO	Lower-Middle	Manana Sharashidze; Nino Mahkashvili; Georgi Gelishvili
Germany	EURO	High	Thomas Stracke
Ghana	AFRO	Low	Akwasi Osei; Anna Puklo-Dzadey
Greece	EURO	High	Stelios Stylianidis
Grenada	AMRO/PAHO	Upper-Middle	Doris Keens-Douglas
Guatemala	AMRO/PAHO	Lower-Middle	Rigoberto Rivera
Guinea	AFRO	Low	Mariama Barry
Guinea-Bissau	AFRO	Low	Tito Martinho Lima; Domingos Jandy
Guyana	AMRO/PAHO	Lower-Middle	Sonia Chehil
Haiti	AMRO/PAHO	Low	Jocelyne Pierre Loius
Honduras	AMRO/PAHO	Lower-Middle	Francisca Acosta
Hungary	EURO	High	Péter Cserhádi; Tamás Kurimay; Sára Marton; Éva Müller; István Bitter; Miklós Gresz; Lajos Porkoláb; Péter Cserhádi
Iceland	EURO	High	Páll Matthiasson
India	SEARO	Lower-Middle	Shalini Prasad
Indonesia	SEARO	Lower-Middle	Irmansyah
Iran (Islamic Republic of)	EMRO	Upper-Middle	Mohammad Bagher Saberi Zafarghandi
Iraq	EMRO	Lower-Middle	Emad Abdulrazaq Abdulghani
Ireland	EURO	High	Dora Hennessy; John Scannell
Israel	EURO	High	Gadi Lubin
Italy	EURO	High	Teresa Di Fiandra
Jamaica	AMRO/PAHO	Upper-Middle	Maureen Irons Morgan
Japan	WPRO	High	Hiroto Ito; Yusuke Fukuda
Jordan	EMRO	Lower-Middle	Nabhan Abdulla Abu-Isaieh
Kazakhstan	EURO	Upper-Middle	Nicholas Negai; Kuanysh Nurgaziyev
Kenya	AFRO	Low	David Musau Kiima

WHO Member States	WHO region	World Bank income level	Contributors
Kiribati	WPRO	Lower-Middle	Koorio Tetabea
Kuwait	EMRO	High	Haya Al-Mutairi
Kyrgyzstan	EURO	Low	Tamilla Kadyrova
Lao People's Democratic Republic (the)	WPRO	Low	Sisouk Vongphrachanh
Latvia	EURO	High	Maris Taube
Lebanon	EMRO	Upper-Middle	Antoine Saad
Lesotho	AFRO	Lower-Middle	Mathaabe Ranthimo
Liberia	AFRO	Low	Jessie Ebba Duncan
Lithuania	EURO	Upper-Middle	Ona Davidoniene
Luxembourg	EURO	High	Dorothee Knauf-Hübel
Madagascar	AFRO	Low	Luc Emmanuel Rakotomanana; Ratsifandrihamanana
Malawi	AFRO	Low	McEvans Phiri
Malaysia	WPRO	Upper-Middle	Nurashikin BT Ibrahim
Maldives	SEARO	Lower-Middle	Aminath Zeeniya
Mali	AFRO	Low	Nazoum JP Diarra; Baba Koumare
Malta	EURO	High	Ray Xerri
Marshall Islands (the)	WPRO	Lower-Middle	Marita Edwin
Mauritania	AFRO	Low	Ahmed Ould Hamady
Mauritius	AFRO	Upper-Middle	Mridula Naga
Mexico	AMRO / PAHO	Upper-Middle	Carlos Campillo Serrano
Micronesia (Federated States of)	WPRO	Lower-Middle	Imaculada J. Gonzaga
Monaco	EURO	High	Anne Negre
Mongolia	WPRO	Lower-Middle	Gombodorj Tsetsegdary; Elena Kazantseva
Montenegro	EURO	Upper-Middle	Zorica Barac-Otasevic
Morocco	EMRO	Lower-Middle	Fatima Asouab
Mozambique	AFRO	Low	Maria Lídia Filipe Chauque Gouveia; Palmira Santos; Eugénia Teodo
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Namibia	AFRO	Upper-Middle	Albertina Barandonga
Nauru	WPRO		Sunia Soakai; Alani Tangitau
Nepal	SEARO	Low	Surendra Sherchan
Netherlands (the)	EURO	High	Ionela Petrea; Frans Clabbers; Frank van Hoof; Susan van Dijk; Aafje Knispel; Jasper Nuijen; Daniëlle Volker
New Zealand	WPRO	High	David Chaplow; Barbara Phillips
Nicaragua	AMRO / PAHO	Lower-Middle	Wendy Idiaquez Mendoza
Niger (the)	AFRO	Low	Douma Maïga Djibo
Nigeria	AFRO	Lower-Middle	Sherifat A. Abari; Victor Makanjuola Malau Mangai Toma
Niue	WPRO		Keti Fereti
Norway	EURO	High	Freja Ulvestad Kärki
Oman	EMRO	High	Hashim Hameed Zainy
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Palau	WPRO	Upper-Middle	Sylvia Wally

# PARTICIPATING COUNTRIES AND CONTRIBUTORS

WHO Member States	WHO region	World Bank income level	Contributors
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Papua New Guinea	WPRO	Lower-Middle	Umadevi Ambihaipahar
Paraguay	AMRO/PAHO	Lower-Middle	Mirta Mendoza
Peru	AMRO/PAHO	Upper-Middle	Manuel Escalante Palomino
Philippines (the)	WPRO	Lower-Middle	Minerva O. Vinluan
Poland	EURO	High	Boguslaw Habrat
Portugal	EURO	High	Miguel Xavier; J.M. Caldas de Almeida; Miguel Xavier
Qatar	EMRO	High	Suhaila A. Ghuloum
Republic of Korea (the)	WPRO	High	Yeong-Shin Min; Wi Hwan; Tae-Yeon Hwang
Republic of Moldova	EURO	Lower-Middle	Mihai Hotineanu; Larisa Boderscova
Romania	EURO	Upper-Middle	Bogdana Tudorache; Ileana Botezat Antonescu and Raluca Nica
Russian Federation (the)	EURO	Upper-Middle	Natalya Kuvinova; Zurab I. Kekelidze
Rwanda	AFRO	Low	Yvonne Kayiteshonga; Claire Nancy
Saint Kitts and Nevis	AMRO/PAHO	Upper-Middle	Sharon Halliday
Saint Lucia	AMRO/PAHO	Upper-Middle	Jennifer Joseph
Saint Vincent and the Grenadines	AMRO/PAHO	Upper-Middle	Amrie Morris Patterson
Samoa	WPRO	Lower-Middle	Palanitina Tupumatagi Toelupe; Sosefina Talauta-Tualualelei; LaToya Lee
San Marino	EURO	High	Sebastiano Bastianelli
Sao Tome and Principe	AFRO	Lower-Middle	Eduardo Neto; Marta Posser da Costa
Saudi Arabia	EMRO	High	Abdulhameed Abdullah Al-Habeeb; Naseem Akhtar Qureshi
Senegal	AFRO	Lower-Middle	Idrissa Ba
Serbia	EURO	Upper-Middle	Aleksandra Milicevic, Melita Vujnovic
Seychelles	AFRO	Upper-Middle	Daniella Malulu
Sierra Leone	AFRO	Low	Donald A Bash-Taqi
Singapore	WPRO	High	Ho Han Kwee; Benjamin Tan
Slovakia	EURO	High	Ivan Doci; Marketa Paulusova
Slovenia	EURO	High	Mojca Zvezdana Dernovsek; Nadja Cobal
Solomon Islands	WPRO	Low	William Same
Somalia	EMRO	Low	Abdirahman Ali Awale, Asha Kheikh Abdulahi, Abdirashid Ali Awale, Mohamed Ali Awale, Mustafa Abdirahman Ali Awale, Omar Abdirahman Ali Awale, Hussein Hassan Gurey, Hassan Muse Hussein, Said Ali Salad, Abdirizak Mohamud Yussuf, Fatima Mohamud Yusuf
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Spain	EURO	High	Manuel Gómez-Beneyto
Sri Lanka	SEARO	Lower-Middle	Prasanth de Silva, Jayan Mendis, Lakshmi C Somatunga
Sudan (the)	EMRO	Lower-Middle	Zeinat Balla; M.A. Sanhori
Suriname	AMRO/PAHO	Upper-Middle	Virginia Asin-Oostburg; Herman Jintie
Swaziland	AFRO	Lower-Middle	Samuel Vusi Magagula
Sweden	EURO	High	Karl-Otto Svärd
Switzerland	EURO	High	Regula Ricka-Heidelberger

WHO Member States	WHO region	World Bank income level	Contributors
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Tajikistan	EURO	Low	Khurshed Kunguratov
Thailand	SEARO	Lower-Middle	Amporn Benjaponpitak
The former Yugoslav Replibc of Macedonia	EURO	Upper-Middle	Antoni Novotni
Timor-Leste	SEARO	Lower-Middle	Teofilio J.K. Tilman
Togo	AFRO	Low	Eric Kodjo Grunitzky; Kolou Valentin Charles Dassa
Tonga	WPRO	Lower-Middle	Mele Lupe Fohe
Trinidad and Tobago	AMRO / PAHO	High	Rohit Doon
Tunisia	EMRO	Lower-Middle	Samira Miled
Turkey	EURO	Upper-Middle	Bilal Aytac; Akfer Karaoglanoglu; Suheyla Ünal
Uganda	AFRO	Low	Sheila Ndyanabangi; Fred Kigozi; Joshua Ssebunnya
Ukraine	EURO	Lower-Middle	Igor A. Martsenkovsky
United Arab Emirates (the)	EMRO	High	Saleha Bin Thiban
United Kingdom of Great Britain and Northern Ireland (the)	EURO	High	Susannah Howard; Geoff Huggins; Barbara Kyei; Stephen Waring
United Republic of Tanzania (the)	AFRO	Low	Joseph Kessy Mbatia
United States of America (the)	AMRO / PAHO	High	Alyson Rose-Wood; Wilfred Aflague; Zorica Barac-Otasevic; Craig Shapiro
Uruguay	AMRO / PAHO	Upper-Middle	Denisse Dogmanas; Mariana Villar
Uzbekistan	EURO	Lower-Middle	Grigoriy Kharabara
Vanuatu	WPRO	Lower-Middle	Jerry Iaruel
Viet Nam	WPRO	Lower-Middle	La Duc Cuong
Yemen	EMRO	Lower-Middle	Mohamed Abdulhabib Al-khulaidi
Zambia	AFRO	Low	John Mayeya; Wamunyima Lubinda
Zimbabwe	AFRO	Low	Gerald Gwinji, Dorcas Shirley Sithole

#### Associate Members, Areas and Territories<sup>1</sup>


Anguilla	Bonnie Richardson-Lake
British Virgin Islands	Tracia Smith
Guam	Wilfred Aflague; Bobbie Benavente
Hong Kong, Special Administrative Region, China	Florence Lo, SF Hung
Macao, Special Administrative Region, China	Chi Veng Ho; Stanley Leong
Montserrat	Gwendolyn White-Ryan
New Caledonia	Jean-Paul Grangeon
Tokelau	Lameka Sale
West Bank and Gaza Strip	Hazem Ashour

<sup>1</sup> Associate Members, Areas, and Territories were not included in the WHO regional and World Bank income group analyses. However, short descriptive profiles for each of these countries as well as all participating WHO Member States will be published on the WHO Mental Health and Substance Abuse website by the end of 2011.

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WHO's Project Atlas is aimed at collecting, compiling, and disseminating information on global mental health resources. Atlas 2011 represents updated information from 184 WHO Member States on available resources for treatment and prevention of neuropsychiatric disorders globally, by WHO region, and by income group. Mental Health Atlas 2011 shows that mental health resources within most countries remain inadequate. Moreover, resources across regions and different income levels are substantially uneven, and in many countries resources for mental health are extremely scarce. In comparing Atlas 2005 and 2011 there is some evidence of a small gain in mental health human resources. However, these gains are largely in high and middle income countries and not in low income countries. Results from Mental Health Atlas 2011 reinforce the urgent need to scale up resources for mental health care within countries.

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