

# Service availability and utilization and treatment gap for schizophrenic disorders: a survey in 50 low- and middle-income countries

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**Objective** To outline mental health service accessibility, estimate the treatment gap and describe service utilization for people with schizophrenic disorders in 50 low- and middle-income countries.

**Methods** The World Health Organization Assessment Instrument for Mental Health Systems was used to assess the accessibility of mental health services for schizophrenic disorders and their utilization. The treatment gap measurement was based on the number of cases treated per 100 000 persons with schizophrenic disorders, and it was compared with subregional estimates based on the *Global burden of disease 2004* update report. Multivariate analysis using backward step-wise regression was performed to assess predictors of accessibility, treatment gap and service utilization.

**Findings** The median annual rate of treatment for schizophrenic disorders in mental health services was 128 cases per 100 000 population. The median treatment gap was 69% and was higher in participating low-income countries (89%) than in lower-middle-income and upper-middle-income countries (69% and 63%, respectively). Of the people with schizophrenic disorders, 80% were treated in outpatient facilities. The availability of psychiatrists and nurses in mental health facilities was found to be a significant predictor of service accessibility and treatment gap.

**Conclusion** The treatment gap for schizophrenic disorders in the 50 low- and middle-income countries in this study is disconcertingly large and outpatient facilities bear the major burden of care. The significant predictors found suggest an avenue for improving care in these countries.

Abstracts in **عربي**, **中文**, **Français**, **Русский** and **Español** at the end of each article.

## Introduction

Schizophrenic disorders are chronic and severe mental conditions that affect 26 million people worldwide and result in moderate or severe disability in 60% of cases.<sup>1</sup> Due to their early onset and debilitating effects, schizophrenic disorders rank fifth among men and sixth among women as a leading cause of years lived with disability. Schizophrenic disorders also comprise roughly 1% of the global burden of disease (GBD), a fraction that is considered moderate to high. They also represent 1.3% of the disability-adjusted life years (DALYs) overall and 1.2%, 1.6% and 0.8% in upper-middle-income countries, lower-middle-income countries and low-income countries, respectively.<sup>2</sup>

Mental health services play a central role in the treatment of people with schizophrenic disorders, as they act both as direct providers of care and as supporters of primary care practitioners. Recent data indicate that in low- and middle-income countries, the treatment of people with schizophrenic disorders using first-generation antipsychotics and psychosocial interventions (family and psycho-educational), when delivered via a community-based service model, represents a cost-effective use of health resources.<sup>3,4</sup> Despite this, only a minority of people with schizophrenic disorders receive care from formal mental health services.<sup>5</sup>

Access to specialized services is a key measure in evaluating the capacity of health-care systems to reduce the untreated burden of schizophrenic disorders. This measure requires information on how many people with schizophrenic disorders

have access to care out of the total number of people in need of services. In addition to access, another key indicator is service utilization, which describes the services patients receive and the balance between outpatient and inpatient care. In an earlier report, Kohn et al.<sup>6</sup> described the treatment gap as the absolute difference between the true prevalence of a disorder and the treated proportion of individuals affected by the disorder. The World Health Organization's Assessment Instrument for Mental Health Systems (WHO-AIMS)<sup>7</sup> comprises information on mental health systems in low- and middle-income countries and thereby allows, for the first time, an in-depth analysis of the availability of mental health services in these countries and a framework for ascertaining the accessibility of service delivery.

The goal of this paper is to utilize the WHO-AIMS instrument to analyse the accessibility of mental health services for people with schizophrenic disorders in 50 low- and middle-income countries, to estimate the magnitude of the treatment gap and to describe health service utilization among people affected with schizophrenic disorders.

## Methods

### The instrument: WHO-AIMS

The WHO-AIMS instrument consists of 155 input and process indicators covering six domains:<sup>7-8</sup> (i) policy and legislative framework; (ii) mental health services; (iii) mental health in primary care; (iv) human resources; (v) public informa-

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tion and links with other sectors; and (vi) monitoring and research. This paper reports on selected indicators drawn from the second and fourth domains.

Country-based investigators collected data for the indicators from all available sources (e.g. national and local statistics and surveys specifically planned to collect WHO-AIMS data) using clear definitions and explicit instructions. Country, regional and WHO headquarters-based staff provided technical assistance and supervision.

### The sample

This paper, which focuses on mental health services for adults, draws on cross-sectional data from low- and middle-income countries or territories that completed a WHO-AIMS assessment between March 2005 and June 2010. Diagnostic data were available for only 50 of the 63 countries that completed this assessment. Thus, 13 countries were excluded because treated prevalence and treatment gap rates could not be calculated due to missing data and errors in

data collection (e.g. contacts with users were reported instead of the number of users). However, the Mann–Whitney U test showed no significant differences between these 13 countries and the 50 countries used in the analysis of the nine selected indicators for which sufficient data were available (Table 1). The final sample included 46 countries, two local regions (a province of China and a state of India) and two territories (Kosovo and the West Bank and Gaza Strip). For convenience, all of them will be referred to as countries throughout this paper.

Of the 50 countries included in the sample, 15 were missing one of three data items: patients treated in outpatient facilities, community-based psychiatric inpatient units and mental hospitals. For these countries, we imputed the missing data item with the regional median value, weighted by population. Limited sample size precluded the inclusion of income group classification in this estimation. In total, we imputed nine data points for outpatients (Belize, Dominica, Georgia, Jamaica, Myanmar,

Paraguay, Saint Lucia, Suriname and Tunisia) and six for inpatients in general hospital wards (Armenia, the Dominican Republic, Ecuador, Ethiopia, India (Gujarat) and the Maldives). On average, nine regional values were available to derive imputed values. However, in the case of Ethiopia, only four values were available, and in the cases of India (Gujarat) and the Maldives, only five. For this reason, imputations for these countries may be considered less reliable than for the rest.

Of the 50 countries, 11 were low-income, 30 were lower-middle-income and 9 were upper-middle-income countries according to World Bank criteria.<sup>9</sup> The selected countries represented the following percentages of the populations of low- and middle-income countries situated in the six WHO regions: 11% in the European region; 13% in the Western Pacific region; 16% in the African region; 18% in the Region of the Americas; 26% in the South-East Asia region, and 57% in the Eastern Mediterranean region.

Table 1. Spearman's correlation coefficients for associations between treatment gap, treated prevalence and facility utilization rates and preselected predictors obtained from the World Health Organization's Assessment Instrument for Mental Health Systems

Predictor	Treatment gap <sup>a</sup>	Treated prevalence <sup>b</sup>	Facility utilization rate <sup>c</sup>		
			Outpatient	Inpatient	
				Mental hospital	General hospital psychiatric unit
Prevalence of schizophrenic disorders	−0.41***	0.52****	0.50****	0.57****	0.14
Population	0.25*	−0.25*	−0.23	−0.17	−0.13
Gross national income (by Atlas method)	−0.58****	0.59****	0.54****	0.57****	0.14
Expenditure on mental hospitals as fraction of health expenditure	−0.01	−0.21	−0.05	−0.18	−0.25
Affordability of antipsychotic medications	−0.09	0.10	0.02	0.08	0.22
Integration of mental hospitals with outpatient facilities	−0.07	−0.03	−0.04	−0.18	0.42***
Provision for follow-up care in community	0.12	−0.11	−0.12	−0.06	−0.04
Percentage of outpatient facilities with mental health mobile teams	0.001	−0.001	−0.01	−0.03	0.03
Beds <sup>d</sup> in community psychiatric inpatient units	−0.25*	0.24*	−0.01	−0.05	0.96****
Beds <sup>d</sup> in community residential facilities	0.11	−0.10	−0.16	0.09	−0.05
Beds <sup>d</sup> in mental hospitals	−0.38***	0.36***	0.11	0.10	0.95****
Percentage change in beds in mental hospitals, past 5 years	−0.17	0.15	0.11	−0.08	0.38***
Psychiatric beds (per capita) located in or near largest city	−0.02	−0.02	−0.10	−0.15	0.36**
Psychiatrists <sup>e</sup>	−0.65****	0.72****	0.70****	0.63****	0.10
Nurses <sup>e</sup> in mental health facilities	−0.78****	0.81****	0.72****	0.82****	0.15

\* $P < 0.1$ , \*\* $P < 0.05$ , \*\*\* $P < 0.01$ , \*\*\*\* $P < 0.001$ .

<sup>a</sup> Represented by the proportion of individuals affected by schizophrenic disorders who fail to receive treatment.

<sup>b</sup> Calculated as the number of people per 100 000 who were treated annually for schizophrenic disorders in all mental health facilities.

<sup>c</sup> Calculated as the number of people treated annually for schizophrenic disorders in each type of mental health facility divided by the total number of patients with schizophrenic disorders treated annually in all mental health facilities.

<sup>d</sup> For gross national income, data were available for only 48 countries. In all other instances, data were available for all 50 countries.

<sup>e</sup> Per 100 000 population.

Note: Variables that yielded statistically significant correlations ( $P < 0.05$ ) were included in multivariate backward regression models.

## Treated prevalence and service utilization

Treated prevalence refers to the proportion of people with mental disorders served by mental health systems. The number of people per 100 000 population who received care for schizophrenic disorders in the various types of mental health facilities (outpatient facilities, community-based psychiatric inpatient units and mental hospitals) over the previous year can serve as a proxy for treated prevalence in specialized services. Population figures were based on United Nations 2004 estimates.<sup>10</sup> The service utilization rate for each type of mental health facility (i.e. outpatient facility, psychiatric unit in a general hospital or mental hospital) was calculated as the number of people treated annually for schizophrenic disorders divided by the total number of patients with schizophrenic disorders treated on the whole in mental health facilities. While WHO-AIMS also provides information on patients treated in day treatment facilities and admitted to community residential facilities, these data were not incorporated, as diagnosis was not requested. However, overall the rates of utilization of these two types of facilities are modest compared with the rates of utilization of the facilities included in our estimates, and the absence of this information is unlikely to have substantially affected our estimates.

## Treatment gap

The treatment gap is the absolute difference between the true prevalence of a disorder and the proportion of affected individuals who are treated for the disorder. It is represented, in other words, by the proportion of individuals affected by schizophrenic disorders who fail to receive treatment. For each country, the treated prevalence of schizophrenic disorders (cases treated per 100 000 population) across all mental health facilities was compared with subregional prevalence estimates for schizophrenic disorders based on GDP data.<sup>2</sup> In the GDP database, WHO Member States are grouped within each WHO region according to five mortality strata (denoted A to E), and this results in 14 subregions. Subregional estimates of the community prevalence of schizophrenic disorders range from a low of 270 per 100 000 in African subregion D to a high of 510 per 100 000 in European subregion B.

The median treated prevalence for all subregions from which country data were derived was 430 per 100 000.

## Statistical analysis

Initial descriptive analysis showed that the data were highly skewed in a positive direction. Accordingly, reported rates are median rates. For the multivariate analysis of predictors of access, treatment gap and service utilization, 52 WHO-AIMS indicators pertaining to organization, financing, resources and mental health service delivery were identified as possible predictors. However, complete data from all 50 countries was only available for 13 indicators, so only these indicators were used in the analysis. Spearman's correlations were calculated to examine the relationship between each predictor (Table 1) and the five outcome variables (treated prevalence, treatment gap, rate of treatment in outpatient facilities, rate of inpatient treatment in mental hospitals and rate of inpatient treatment in psychiatric units in general hospitals). Given the degree of heterogeneity and variation in outcome scores, outlier analysis was not conducted. Backward step-wise regression analysis was used to determine the best-fitting predictive models for each of the outcomes. To be entered in the model, the independent variable could not be co-linear with the outcome measure nor part of the definition, and its correlation had to be significant at the  $P < 0.05$  level based on the results of the Spearman's correlations with the dependent variable. Variables whose correlation was significant at the  $P < 0.10$  level were kept in the model.

## Results

### Treated prevalence

Table 2 (available at: <http://www.who.int/bulletin/volumes/90/1/12-089284>) presents treated prevalence, service utilization rates and treatment gap for all countries in the sample. Treated prevalence in all specialized services was 128 per 100 000 population, with large variations by country income level: rates in upper-middle-income and lower-middle-income countries (126 and 157 per 100 000, respectively) were approximately four times higher than in lower-income countries (36 per 100 000).

As shown in Table 1, treated prevalence was significantly associated with the estimated prevalence of schizophrenic disorders ( $r = 0.52$ ), gross national income; availability of mental hospital beds (i.e. beds per 100 000 population); number of psychiatrists per 100 000 population and number of nurses in mental health facilities per 100 000 population. The best-fitting regression model explaining treated prevalence (Table 3) was the level of human resources – i.e. psychiatrists and nurses in mental health facilities – available to treat individuals with schizophrenic disorders.

### Treatment gap

The median value for treatment coverage was 31%. This suggests that roughly two thirds (69%) of the people with schizophrenic disorders were not receiving treatment. The treatment gap for schizophrenic disorders was larger in lower-income countries (89%) than in lower-middle-income (69%) and upper-middle-income countries (63%). The size of the treatment gap showed a significant negative association with the prevalence of schizophrenic disorders in the general population; gross national income; the availability of mental hospital beds; the number of psychiatrists per 100 000 population and the number of nurses in mental health facilities per 100 000 population. The best-fitting model accounting for the magnitude of the treatment gap included the numbers of psychiatrists and nurses in mental health facilities per 100 000 population.

### Service utilization

Approximately 80% of patients with schizophrenic disorders were treated in outpatient facilities (Table 4). In terms of rates of schizophrenic disorders per 100 000 population, utilization rates for outpatient services were three times higher in upper-middle-income and lower-middle-income countries than in low-income countries. In upper-middle-income countries the rate of inpatient treatment in mental hospitals was six times higher than in low-income countries, and the rate of inpatient treatment in psychiatric wards in general hospitals was nine times higher.

Variables positively and significantly correlated with rate of treatment in outpatient facilities included the estimated prevalence of schizophrenic disorders; gross national income; the

Table 3. Summary statistics from backward step-wise regressions used to determine the best-fitting predictive model for each of the outcomes

Outcome/predictor	Standardized $\beta$	Student's $t$	$P$
<b>Treatment gap<sup>a</sup></b>			
Psychiatrists <sup>b</sup>	-0.242	-2.151	0.037
Nurses <sup>b</sup> in mental health facilities	-0.573	-4.978	<0.001
Beds in mental hospitals <sup>b</sup>	-0.153	-1.694	0.097
<b>Overall treated prevalence<sup>c</sup></b>			
Psychiatrists <sup>b</sup>	0.343	3.412	0.001
Nurses <sup>b</sup> in mental health facilities	0.587	5.839	<0.001
<b>Outpatient facility utilization rate<sup>d</sup></b>			
Psychiatrists <sup>b</sup>	0.401	3.401	0.001
Nurses <sup>b</sup> in mental health facilities	0.465	3.947	<0.001
<b>Utilization rate for inpatient care in a mental hospital<sup>e</sup></b>			
Psychiatrists <sup>b</sup>	0.176	1.649	0.106
Nurses <sup>b</sup> in mental health facilities	0.703	6.579	<0.001
<b>Utilization rate for inpatient care in a general hospital psychiatric unit<sup>f</sup></b>			
Proportion of mental hospitals organizationally integrated with outpatient mental health facilities	0.416	3.174	0.003

<sup>a</sup> Represented by the proportion of individuals affected by schizophrenic disorders who failed to receive treatment.

<sup>b</sup> Per 100 000 population.

<sup>c</sup> Calculated as the number of people per 100 000 population who were treated annually for schizophrenic disorders in all types of mental health facilities.

<sup>d</sup> Calculated as the number of people treated annually for schizophrenic disorders in outpatient facilities divided by the total number of patients with schizophrenic disorders treated annually in all mental health facilities.

<sup>e</sup> Calculated as the number of people treated annually for schizophrenic disorders as inpatients in mental hospitals divided by the total number of patients with schizophrenic disorders treated annually in all mental health facilities.

<sup>f</sup> Calculated as the number of people treated annually for schizophrenic disorders as inpatients in the psychiatric wards of general hospitals divided by the total number of patients with schizophrenic disorders treated annually in all mental health facilities.

number of psychiatrists per 100 000 population, and the number of nurses in mental health facilities per 100 000 population. Similarly, variables showing a significant positive correlation with the rate of inpatient treatment in mental hospitals were the estimated prevalence of schizophrenic disorders; gross national income; the number of psychiatrists per 100 000 population, and the number of nurses in mental health facilities per 100 000 population.

The rate of inpatient treatment in psychiatric units within general hospitals was positively and significantly correlated with the percentage of mental hospitals organizationally integrated with outpatient mental health facilities, the number of beds in community-based psychiatric inpatient units and mental hospitals per 100 000 population, the percentage reduction in beds in mental hospitals during the previous five years, and the ratio of psychiatric beds located near large cities.

The best-fitting model explaining the outpatient treatment rate was the number of psychiatrists per 100 000 population and of nurses in mental health facilities per 100 000 population. For the rate of inpatient treatment in mental hospitals, only the number of nurses remained significant. Lastly, for the rate of inpatient treatment in psychiatric wards within general hospitals, the best-fitting model included only one predictor: organizational integrations of mental hospitals with outpatient mental health facilities.

## Discussion

The findings suggest that people with schizophrenic disorders in low- and middle-income countries have limited access to specialized mental health services. The median treated prevalence rate of 128 per 100 000 population per year is far lower than the figures suggested by community epidemiological

studies (330 per 100 000 in Saha et al.<sup>11</sup>; 408 per 100 000 in the GBD, 2004 update).<sup>2</sup>

About two thirds of the people with schizophrenic disorders in low- and middle-income countries do not have access to specialized mental health care. The resulting treatment gap (69%) is much larger than the gap (32%) found by Kohn et al.,<sup>6</sup> perhaps because different data sources were used in the two studies. Our study used data collected systematically by WHO-AIMS from mental health care providers in each country, whereas the earlier study used several community-based epidemiological surveys of individuals aged 15 and older that had been published since 1980 or provided by investigators or agencies. The differences between the two studies in the estimated population prevalence of schizophrenic disorders (from GBD estimates in this study and from epidemiological studies and reviews in the previous one) contribute only partially to the different results. We chose the GBD data because they provided subregional prevalence estimates. However, even if we applied the estimates produced by Saha et al., the treatment gap would remain substantially higher (62% in the whole sample and 86% in low-income countries) than in the report by Kohn et al. These differences can perhaps be partially explained by the fact that the sample of countries in the two studies was not the same: the Kohn et al. analysis included prevalence surveys from high-income countries, where the treatment gap is lower. In fact, differences between the two estimates of the treatment gap are reduced in a high-income country such as Italy.<sup>12</sup> When Lora's study in Italy was updated with the GBD 2004 prevalence estimates and was performed following the methods we used in this study (mental health service data collection and GBD estimates), the treatment gap in Italy (33%) was similar to the gap found by Kohn et al.<sup>6</sup>

These results do not account for differences in socioeconomic status and its effects on treatment gap or for regional inequities within a country. The gap is wider among those who have less (i.e. the poor, ethnic minorities, migrants) and need more (i.e. those among whom disorder rates are higher). For them accessibility is an issue and they require special programmes to bridge the disparities. Moreover, those who

Table 4. Median utilization rates<sup>a</sup> for different types of facilities, by World Bank country income classification

Country classification/facility type	Facility utilization rate <sup>a</sup>	Percentage of total utilization
<b>Low-income (n = 11)</b>		
Outpatient facility	34.2	74
Mental hospital	4.0	10
General hospital	1.1	1
<b>Lower-middle-income (n = 30)</b>		
Outpatient facility	104.3	82
Mental hospital	9.0	10
General hospital	3.9	5
<b>Upper-middle-income (n = 9)</b>		
Outpatient facility	101.6	70
Mental hospital	23.7	19
General hospital	9.2	4
<b>All (n = 50)</b>		
Outpatient facility	102	79
Mental hospital	9	10
General hospital	4	3

<sup>a</sup> Calculated as the number of people treated annually for schizophrenic disorders in each type of mental health facility divided by the total number of patients with schizophrenic disorders treated annually in all mental health facilities.

Note: The total percentage does not take into account that individuals may have received treatment at more than one type of treatment facility.

seek services are not always adequately treated or treated at all. We did not assess treatment adequacy. Hence, our data could be greatly overestimating the number of people who received appropriate treatment.

It is important to understand not only service accessibility, but also where people are receiving care. One of this study's main findings is that the majority of people with schizophrenic disorders are treated in outpatient facilities, even in the most basic mental health systems of many low-income countries. Outpatient care effectively increases coverage within a mental health system. Inpatient mental health facilities, whether in general hospitals or mental hospitals, only modestly contribute to overall service accessibility.<sup>13</sup>

Our data clearly show that specialized mental health services alone are unable to cope with the burden of schizophrenic disorders in low- and middle-income countries. From a public health perspective, primary care services should fill this gap by delivering effective packages of care in collaboration with specialized services. WHO has recently launched the WHO Mental Health Global Action Programme and made a case for an integrated approach that emphasizes the role of the primary care sector in scaling up care.<sup>4</sup>

In terms of predictors of service utilization, the level of available human resources, in terms of psychiatrists and nurses in mental health facilities, appears to positively predict treatment prevalence and rate of outpatient care and negatively predicts the overall treatment gap. These results confirm the need to scale up the workforce in low- and middle-income countries.<sup>14</sup>

Our findings with respect to the rate of inpatients treated in general hospitals support the fact that the higher the availability of psychiatric beds in community medical facilities, the higher the rate of treatment in the psychiatric units of general hospitals. Unfortunately, the rate of utilization of general hospitals remains low in low- and middle-income countries.

### Study limitations

This study has limitations which stem primarily from the scarcity of reliable databases in low- and middle-income countries. The reliability and validity of the information reported by these countries are therefore questionable and our estimate of treated prevalence may be biased and either too low or too high. On the one hand, WHO-AIMS does not request that data from day-treatment facilities and community residential facilities be broken down

by diagnosis. For this reason, patients with schizophrenic disorders who were attended in these facilities were not counted, and this could have resulted in an underestimation of treated prevalence. However, results from the WHO-AIMS show that in low- and middle-income countries these types of facilities are rare and contribute only 1% of the overall treated prevalence.<sup>13</sup> In addition, a few country-based investigators had difficulty obtaining information from private mental health facilities and nongovernmental organizations (NGOs) involved in mental health care. However, in low- and middle-income countries access to private mental health facilities is primarily limited to the wealthy; few NGOs treat people with serious mental disorders. Thus, the additional coverage provided by the private sector and NGOs would be small. On the other hand, the fact that some patients could have been treated in more than one setting (e.g. in both a community-based inpatient unit and an outpatient clinic within the same year) and been counted more than once could have resulted in an overestimation of treated prevalence.

The diagnoses provided in the WHO-AIMS, which are based on administrative data, may be of poor quality. For example, the huge rates of treated prevalence for schizophrenic disorders found in Latvia and the Ukraine, possibly resulting from misdiagnosis, made us cap the treated prevalence estimates for those countries at 100%. However, grouping of diagnoses from the *International classification of diseases, tenth revision* into large diagnostic classes, as has been done in the WHO-AIMS, may increase their validity. This is because differentiating *between* classes of disorders (e.g. schizophrenic disorders versus affective disorders) is perhaps easier than differentiating within *classes* of disorders (e.g. schizophrenic disorders versus schizoaffective disorders).

Lastly, the countries included cannot be assumed to be representative of their regional areas. The sample of 50 countries is not large enough and our data represent a median of 17% of the population of each country's respective region. Moreover, since 30 out of the 50 countries included in this report are in the lower-middle-income category, the overall findings are largely reflective of countries in this income group.

## Conclusion

Service availability, service utilization and treatment gap constitute key indicators for evaluating the capacity of mental health systems to respond to the needs of people with schizophrenic disorders. Improvement of mental health systems,

particularly service accessibility, could be monitored through these indicators. Due to uncertainty in community prevalence estimates, the treatment gap analysis is an approximation of the need for care; however, such measurements are necessary to monitor coverage at the mental health system level. From

this perspective, these indicators may become important in conducting advocacy, and the information they provide could raise awareness among governments and stakeholders aiming to plan and deliver better mental health care.<sup>15</sup> ■

**Competing interests:** None declared.

## الملخص

توافر الخدمة واستخدامها، والفجوة في علاج اضطرابات انفصام الشخصية: مسح في 50 من البلدان منخفضة الدخل ومتوسطة الدخل الشخصية في خدمات الصحة النفسية 128 حالة لكل 100000 نسمة. وكان متوسط فجوة العلاج 69٪، وكان المتوسط أعلى في البلدان المشاركة منخفضة الدخل (89٪) مقارنة بالمتوسط في البلدان ذات الشريحة الدنيا من الدخل المتوسط والبلدان ذات الشريحة العليا من الدخل المتوسط (69٪ و63٪ على التوالي). وقد حصل 80٪ من الأشخاص الذين يعانون من اضطرابات انفصام الشخصية على العلاج في مرافق العيادات الخارجية. وتم التوصل إلى أن توافر الأطباء النفسيين والمرضى في مرافق الصحة النفسية يمثل عامل تنبؤ كبير حول مدى توافر الخدمات وفجوة العلاج. الاستنتاج تعتبر فجوة علاج اضطرابات انفصام الشخصية في 50 من البلدان منخفضة الدخل والبلدان متوسطة الدخل في هذه الدراسة كبيرة بشكل مقلق وتحتمل مرافق العيادات الخارجية العبء الأكبر في تقديم الرعاية. وتشير عوامل التنبؤ التي تم التوصل إليها إلى وسيلة لتحسين الرعاية في هذه البلدان.

الغرض تحديد مدى توافر خدمات الصحة النفسية وتقييم فجوة العلاج ووصف استخدام الخدمة من قبل الأشخاص الذين يعانون من اضطرابات انفصام الشخصية في 50 من البلدان منخفضة الدخل ومتوسطة الدخل.

الطرق تم استخدام الوسائل التي وضعتها منظمة الصحة العالمية لتقييم نظم الصحة النفسية في تقييم مدى توافر خدمات الصحة النفسية لاضطرابات انفصام الشخصية ومدى استخدام هذه الخدمات. واستند قياس فجوة العلاج على عدد الحالات التي تم علاجها لكل 100000 شخص يعانون من اضطرابات انفصام الشخصية، وتم مقارنتها بالتقديرات دون الإقليمية استنادًا إلى تحديث تقرير عبء المرض العالمي لعام 2004. وتم إجراء تحليل متعدد المتغيرات باستخدام التدرجي العكسي لتقييم العوامل التي تنبئ بالتوافر وفجوة العلاج واستخدام الخدمة. النتائج كان متوسط المعدل السنوي لعلاج اضطرابات انفصام

## 摘要

### 精神分裂症服务可用性和利用率与治疗缺口：一项在50个中低收入国家开展的调查

**目的** 概括在50个中低收入国家中，精神健康服务的可用性，估计治疗缺口并说明精神分裂症患者的服务利用率。

**方法** 世界卫生组织精神健康卫生的评估工具用于评估精神分裂症的心理健康服务的可用性及其利用率。治疗缺口测量以每100000名精神分裂症患者中治疗的病例数为基础，与以《2004年全球疾病负担》更新报告为基础的次级区域中的估算进行比较。执行采用逆向逐步回归的多因素分析以评估可用性的预测因素、治疗缺口以及服务利用率。

**结果** 在精神健康服务中精神分裂症的年治疗率中位数为每

100000人中有128例。治疗缺口中位数是69%，参与调查的低收入国家（89%）比中低收入国家和中高收入国家（分别是69%和63%）高。在这些精神分裂症患者中，80%是通过门诊机构进行治疗。研究发现精神健康机构可以提供的精神科医生和护士是服务可用性和治疗缺口的一个重要预测因素。

**结论** 本研究所涉及的50个低收入和中等收入国家的精神分裂症的治疗缺口之巨大令人担忧，门诊机构承担了主要的护理负担。研究发现的重要预测因素为这些国家提供改善护理手段的建议。

## Résumé

### Disponibilité et utilisation du service et écart de traitement des troubles schizophréniques: une étude dans 50 pays à revenu faible et moyen

**Objectif** Passer en revue l'accessibilité aux services de santé mentale, estimer l'écart de traitement et décrire l'utilisation du service des personnes souffrant de troubles schizophréniques dans 50 pays à revenu faible et moyen.

**Méthodes** L'instrument d'évaluation des systèmes de santé mentale de l'Organisation mondiale de la Santé a été utilisé pour étudier l'accessibilité et l'utilisation des services de santé mentale pour les troubles schizophréniques. La mesure de l'écart de traitement reposait sur le nombre de cas traités pour 100 000 personnes présentant des troubles schizophréniques, et elle a été comparée aux estimations sous-régionales selon le rapport mis à jour *Global burden of disease 2004* (*Étude sur la charge mondiale de morbidité 2004*). Une analyse

multivariée utilisant la régression pas à pas descendante a été effectuée afin d'évaluer les prédicteurs d'accessibilité, l'écart de traitement et l'utilisation du service.

**Résultats** Le taux annuel médian de traitement des troubles schizophréniques dans les services de santé mentale était de 128 cas pour 100 000 habitants. L'écart de traitement médian était de 69%. Il était plus élevé dans les pays à revenu faible participant à l'étude (89%) que dans les pays à revenu moyen de la tranche inférieure et dans les pays à revenu moyen de la tranche supérieure (69% et 63%, respectivement). 80% des personnes souffrant de troubles schizophréniques ont été traitées dans des services de consultation externe. La disponibilité de psychiatres et d'infirmières dans les établissements de santé mentale

était un prédicteur de l'accessibilité du service et de l'écart de traitement. **Conclusion** Dans cette étude, l'écart de traitement des troubles schizophréniques dans les pays à revenu faible et moyen est étonnamment important, et les services de consultation externe

assurent la plus grande partie des soins. Les prédicteurs significatifs identifiés suggèrent une direction à suivre pour améliorer les soins dans ces pays.

## Резюме

### Доступность и использование службы охраны психического здоровья, а также пробелы в лечении шизофренических нарушений: исследование в 50 странах с низким и средним уровнем дохода

**Цель** Определить доступность службы охраны психического здоровья, оценить пробелы в лечении и описать использование службы людьми, страдающими шизофреническими нарушениями в 50 странах с низким и средним уровнем дохода.

**Методы** Для оценки доступности и использования службы охраны психического здоровья был применен инструмент оценки систем охраны психического здоровья Всемирной Организации Здравоохранения. Измерение пробелов в лечении было основано на количестве случаев проводимого лечения на 100 000 пациентов, страдающих шизофреническими нарушениями, которое затем было сравнено с расчетными данными для субрегионов, полученными на основе обновленной версии доклада *Global burden of disease 2004*. Был проведен комплексный анализ с использованием обратной пошаговой регрессии с целью оценки прогностических факторов доступности службы и ее использования, а также пробелов в лечении.

**Результаты** Средний годовой коэффициент лечения шизофренических нарушений с помощью службы охраны

психического здоровья составил 128 случаев на 100 000 человек населения. Средний уровень пробелов в лечении составил 69% и был выше в странах-участницах с низким уровнем дохода (89%), по сравнению со странами с уровнем дохода ниже среднего и выше среднего (69% и 63%, соответственно). 80% людей, страдающих шизофреническими нарушениями, проходили лечение амбулаторно. Было выявлено, что наличие психиатров и медицинских сестер в психиатрических больницах является значительным прогностическим фактором для определения доступности службы охраны психического здоровья и пробелов в лечении.

**Вывод** По результатам данного исследования однозначно выявлен значительный пробел в лечении шизофренических нарушений в 50 странах с низким и средним уровнем дохода, и амбулаторные учреждения несут на себе основную нагрузку по лечению пациентов. Выявленные значительные прогностические факторы указывают пути улучшения лечения в данных странах.

## Resumen

### Disponibilidad y utilización de los servicios y desigualdad en el tratamiento de trastornos esquizofrénicos: encuesta realizada en 50 países de ingresos bajos y medios

**Objetivo** Esbozar la accesibilidad a los servicios de salud mental, evaluar la desigualdad en el tratamiento y describir la utilización de servicios para personas con trastornos esquizofrénicos en 50 países de ingresos bajos y medios.

**Métodos** Se empleó el Instrumento de Evaluación para Sistemas de Salud Mental de la Organización Mundial de la Salud con el fin de valorar la accesibilidad a los servicios de salud mental para trastornos esquizofrénicos y su utilización. La medición de la desigualdad en el tratamiento se basó en el número de casos tratados por cada 100 000 personas con trastornos esquizofrénicos y se comparó con las estimaciones subregionales basadas en el informe de actualización *Global burden of disease 2004*. Se realizó un análisis multivariable empleando la eliminación regresiva para evaluar los predictores de accesibilidad, la desigualdad en el tratamiento y la utilización de servicios.

**Resultados** La tasa media anual de tratamiento de trastornos

esquizofrénicos en los servicios de salud mental fue de 128 casos por cada 100 000 habitantes. La desigualdad media en el tratamiento fue del 69% y resultó superior en los países participantes de ingresos bajos (89%) que en los países de ingresos medios-bajos y en los países de ingresos medios-altos (69% y 63%, respectivamente). El 80% de las personas con trastornos esquizofrénicos recibieron tratamiento en instalaciones ambulatorias. La disponibilidad de psiquiatras y enfermeros en las instalaciones de salud mental se determinó como un predictor significativo de la accesibilidad a los servicios y de la desigualdad en el tratamiento.

**Conclusión** La desigualdad en el tratamiento para trastornos esquizofrénicos en los 50 países de ingresos bajos y medios incluidos en este estudio es desconcertantemente elevada y las instalaciones ambulatorias asumen la principal carga del cuidado. Los predictores significativos hallados sugieren una posibilidad de mejora del cuidado en estos países.

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Table 2. **Descriptive statistics describing service utilization and level of treatment for each country, organized by World Bank income classifications**

Income classification/ country	Population	Estimated prevalence	Treated prevalence <sup>a</sup>	Facility utilization rate <sup>b</sup> (%)			Treatment gap <sup>c</sup> (%)
				Outpatient	Inpatient		
					Mental hospital	General hospital psychiatric unit	
<b>Low-income</b>							
Afghanistan	23 627 000	338	15	53	10	37	95
Bangladesh	153 122 000	343	9	78	5	17	97
Burundi	7 603 000	329	16	74	26	0	95
Eritrea	4 631 000	329	13	49	51	0	96
Ethiopia	72 746 000	272	35	97	3	0	89
Kyrgyzstan	5 282 000	513	263	73	22	5	49
Mongolia	2 517 000	444	166	58	22	21	63
Myanmar	48 345 000	343	167	98	2	0	51
Nepal	27 222 000	343	36	94	3	3	90
Nigeria	27 386 609	329	178	96	4	0	35
Uzbekistan	26 320 000	495	339	69	30	1	31
<b>Lower-middle-income</b>							
Albania	3 099 000	513	233	79	12	9	55
Armenia	3 068 000	513	487	80	18	2	5
Azerbaijan	8 538 000	495	245	84	16	0	50
Belize	288 000	427	131	77	16	7	69
Bolivia (Plurinational State of)	9 524 000	384	152	93	7	0	60
China (Hunan)	66 977 000	444	262	90	9	1	41
Congo	2 854 600	329	25	72	0	28	92
Djibouti	805 000	338	84	66	0	34	75
Ecuador	13 203 000	384	12	21	70	10	97
Egypt	75 718 000	338	84	70	27	4	75
El Salvador	6 037 000	384	108	89	11	0	75
Georgia	4 100 000	513	222	100	0	0	57
Guatemala	12 397 000	384	138	96	4	0	64
Guyana	764 000	427	119	45	12	42	72
Honduras	7 032 000	427	147	94	6	0	66
India (Gujarat)	51 000 000	343	24	81	12	6	93
Iran (Islamic Republic of)	69 982 000	424	84	65	26	9	80
Iraq	27 564 000	338	182	93	5	2	46
Kosovo	1 900 000	513	188	82	0	18	63
Maldives	288 000	343	108	99	0	1	68
Morocco	30 152 000	338	234	83	9	8	31
Nicaragua	5 386 000	427	25	70	28	1	94
Pakistan	176 952 000	338	13	25	24	51	96
Paraguay	5 793 000	427	130	78	21	1	70
Philippines	85 496 000	444	82	85	8	8	82
Sri Lanka	19 462 000	486	302	83	3	14	38
Sudan	39 545 000	338	23	77	1	22	93
Timor-Leste	927 000	343	210	100	0	0	39
Tunisia	9 790 000	424	89	59	24	17	79
West Bank and Gaza Strip	3 636 000	338	122	90	10	0	64
<b>Upper-middle-income</b>							
Chile	16 127 000	427	188	84	7	9	56
Costa Rica	4 396 000	427	157	73	22	4	63
Dominica	71 286	427	421	24	0	76	1
Dominican Republic	9 674 000	427	79	92	6	1	82
Jamaica	2 696 000	427	52	27	55	18	88

Income classification/ country	Population	Estimated prevalence	Treated prevalence <sup>a</sup>	Facility utilization rate <sup>b</sup> (%)			Treatment gap <sup>c</sup> (%)
				Outpatient	Inpatient		
					Mental hospital	General hospital psychiatric unit	
Latvia	2 337 000	482	1069	70	29	1	0
Panama	3 232 000	427	51	68	14	18	88
Saint Lucia	169 000	427	275	37	62	1	36
Suriname	510 000	427	125	81	19	0	71

<sup>a</sup> Calculated as the number of people per 100 000 population who were treated annually for schizophrenic disorders in all types of mental health facilities.

<sup>b</sup> Calculated as the number of people treated annually for schizophrenic disorders in each type of mental health facility divided by the total number of patients with schizophrenic disorders treated annually in all mental health facilities.

<sup>c</sup> Defined as the proportion of individuals with schizophrenic disorders who failed to receive treatment.