

# Specialty in psychiatry: Mexico 2016

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Artículo original

## ABSTRACT

### Introduction

In 2011 we had 3823 psychiatrists in Mexico, with an estimated rate of 3.4 per 100 000 inhabitants. In order to achieve the global targets of mental health attention, it is important to update this information.

### Objective

To estimate the total number of psychiatrists in Mexico in 2016; determine their geographic distribution and compare the results with the ones obtained in 2011.

### Method

Longitudinal and comparative study. Diverse sources of information were consulted in order to update the number of psychiatrists in 2016 and to know their sociodemographic characteristics that were compared with the ones obtained in 2011.

### Results

4 393 psychiatrists practiced their specialty in Mexico in 2016. With a population of 119 530 753 inhabitants, we obtained a rate of 3.68 psychiatrists per 100 000 inhabitants. There's a poor distribution of these specialists in the country. Around 60% of all psychiatrists practice in the three major cities of Mexico.

### Discussion and conclusion

The national rate of psychiatrists increase in comparison with the one we found in 2011, it remains lower than the one recommended by the World Health Organization (WHO). Geographic distribution of the psychiatrists is inequitable because of centralization and economic factors.

**Key words:** Mexico, psychiatrists, distribution, board certification.

## RESUMEN

### Introducción

En el año de 2011 había en México 3823 psiquiatras, con una tasa estimada de 3.4 por cada 100 mil habitantes. Es necesario mantener actualizada esta información para alcanzar los objetivos globales de atención a la salud mental.

### Objetivo

Estimar el número total de psiquiatras en México en 2016; determinar su distribución geográfica y comparar los resultados con los obtenidos en el año 2011.

### Método

Estudio comparativo y longitudinal. Se consultaron diversas fuentes para actualizar el número de psiquiatras en 2016 y conocer sus características sociodemográficas. Se compararon estas características con las encontradas en 2011.

### Resultados

Un total de 4393 psiquiatras ejercen su especialidad en México en 2016. Sobre una población de 119 530 753 habitantes, se obtuvo una tasa de 3.68 psiquiatras por cada 100 000 habitantes. Existe una pobre distribución de estos especialistas en el país. Alrededor del 60% de todos los psiquiatras ejercen en las tres mayores ciudades de México.

### Discusión y conclusión

La tasa nacional de psiquiatras se incrementó en comparación con la obtenida en 2011, sigue siendo inferior a la recomendada por la Organización Mundial de la Salud (OMS). La distribución geográfica de los psiquiatras es inequitativa debido a la centralización y a factores económicos.

**Palabras clave:** México, psiquiatras, distribución, certificación.

Translation of the original version published in spanish in:  
Salud Mental 2016, Vol. 39 Issue No. 2.

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Received first version: February 18, 2016. Accepted: February 29, 2016.

## INTRODUCTION

In the year 2011 we took on the task of estimating the number of psychiatrists in the country with the goal of providing indicators that help in understanding and resolving the problems that occur during a satisfactory attention to mental health in Mexico. Additionally, we learned the geographic distribution and created with that a reliable point of reference in order to carry out a comparison with other member countries of the World Health Organization (WHO), and beginning with that a search for common goals.<sup>1</sup>

An adequate health system responds in a balanced form to the requirements and expectations of the population. In order to be sustainable, it requires an adequate direction and a coherent investment in the diverse blocks that make up the system of health, as well as provide the services for adequate attention to the community.

Part of the indispensable needed to reach the objectives rests in human resources. In accordance with the WHO, the countries that make up this organism are in different stages of development with respect to the distinct characteristics of their workforce, but they share common problems such as how to improve systems of education, training, distribution and recruitment, to increase productivity and the quality of attention.<sup>2</sup>

About Mexico, Zurn et al. indicated that in the Mexican health system there are at least five types of imbalance: geographical, gender, in the relationships of professional and specialists, public and private services, and institutional and services imbalance.\*

With this goal in mind, the article "Los especialistas en Psiquiatría en México: Su Distribución y Ejercicio Profesional", was published in 2012 by the journal SALUD MENTAL.<sup>1</sup>

In 2011, there were a total of 3823 psychiatric specialists in the country. Considering the total number of psychiatrists in Mexico for an estimated 2010 population of 112 336 538, according to the census of the National Institute of Statistics and Geography (INEGI), there were 3.4 psychiatrists for every 100 000 inhabitants. Of the total number, there were 1.8 male psychiatrists for each female psychiatrist. It was discovered that every state in the Mexican Republic had at least seven specialists. Approximately half of them practiced their specialty in Mexico City at the rate of 18.8 psychiatrists/100 000 inhabitants. Because of this, five years later our objective was to develop a new study that would reveal a longitudinal perspective and which, in an up-to-date manner, would estimate the total number of psychiatrists in the country, the number of certified doctors by the Mexican Council of Psychiatry (CMP), and of the members of the Mexican Psychiatry Association (APM) a society that

brings together the largest number of psychiatrists in Mexico. The study reveals the distribution in a state by state estimate of the rate for each 100 000 inhabitants and carries out a comparison with the number of psychiatrists for each 100 000 inhabitants in the various member countries of the WHO. At the same time, it was possible to carry out an indirect evaluation of the status of psychiatry in Mexico in 2016.

## METHOD

A descriptive, comparative and longitudinal study was completed by way of consulting the records of the General Direction of Professions of the Secretary of Public Education. Included in the study were the psychiatrists registered with the APM and the CMP, the institutes and hospitals with positions to practice or carry out a specialty in psychiatry [the National Institute of Psychiatry Ramon de la Fuente Muniz (INPRFM), the psychiatric hospital Fray Bernardino Alvarez (HPFBA), the Mexican Institute of Social Security (IMSS), the Institute of Health and Social Security for State Workers (ISSSTE), The Mexican Oil Industry (PEMEX), the Secretary of Health and Assistance (SSA)], private organizations of assistance to mental illness, and directories of the pharmaceutical industry.

The study excluded those who had relocated to another country, as well as those that participated in the 2011 study and had died.

A comparison was completed between the results obtained from the article published in 2011 and those obtained in this study.

## Procedure

Once the protocol was approved by the Committee on Research and Ethics of the School of Medicine of the UNAM, the names, as well as the genders and locations of the psychiatric specialists were obtained from the sources consulted.

Because the registers of the various locations, institutions and organizations could have the same person in different states of the country, contact was established via *email* or telephone to determine exactly that person's actual location and eliminate the name of each specialist that was duplicated in our database.

Through this method an up-to-date and precise database was created for each of the specialists distributed throughout the country. The database was rechecked, corrected and validated. The ratio of psychiatrists for every 100 000 inhabitants was determined nationally, as well as for each state with census information from the National Institute of Population and Housing INEGI 2015.<sup>3</sup> The federal entities in which the number of psychiatric specialists was below the world average recommended by the WHO were determined.<sup>4</sup>

\* Zurn P, Dal Poz M, Stilwell B, Adams O. Imbalances in the health workforce: Briefing paper. Ginebra: World Health Organization; Reporte no publicado; 2002.

**Table 1.** Characteristics of the total of psychiatrists 2011-2016

	2011	2016
Total of psychiatrists	3823	4393
Ratio men-women	1.8:1	1.89:1
Certified once in CMP	1969	2248
Currently certified in CMP	776	852
Members of APM	1646	2145

CMP = Consejo Mexicano de Psiquiatría (Mexican Council of Psychiatry).  
APM = Asociación Psiquiátrica Mexicana (Mexican Psychiatric Association).

Afterwards, a comparison was completed with the ratios obtained in Mexico, with the average of those obtained in other countries based on the classification established by the WHO in which countries are divided into four groups: Countries rich in resources, countries with medium-high resources, countries with medium-low resources and countries with scarce resources.<sup>4</sup> The number of psychiatrists by gender was obtained and the percentage of psychiatrists who are certified, recertified, and active with the CMP, as well as the members of the AMP, was calculated.

This study was guided at all times in concordance with the Helsinki Declaration and its amendments, always respecting the principles of being beneficial instead of the contrary, autonomous and fair.

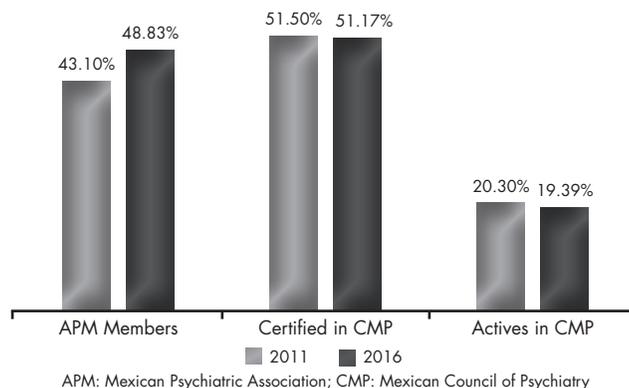
## RESULTS

According to all of the sources researched and systematically refined, there are a total of 4393 medical specialists in psychiatry in the Mexican Republic during the year 2016 (table 1).

Considering the total number of psychiatrists in Mexico, for a population estimated to be 119530753 inhabitants according to the INEGI census of 2015, a ratio of 3.68 psychiatrists was obtained for every 100000 inhabitants (table 1). At any rate, the distribution is not homogeneous. A total of 60.33% of psychiatric specialists are concentrated in Mexico City, Jalisco and Nuevo Leon (2651 psychiatrists). The median of the total of the ratios by states is 2.89 with a standard deviation of 3.55 (min 0.55- max 20.73).

In Mexico, the Mexican Council of Psychiatry certifies those specialists in child and adolescent psychiatry who meet the knowledge requirements, experience and formation after completing a full specialty program directed and accredited by an institution of higher education, as well as a national and foreign health institution.

In Mexico in 2016, there were a total of 2248 psychiatrists registered in the CMP (51.17% of the total number of psychiatrists in the country). Of that number only 852 (19.39% of the total) have their certification up to date, while 2145 psychiatrists (48.82% of the total number in the country), are registered with the APM, not having information

**Graph 1.** Mexican psychiatrists members of APM currently certified in CMP.

with regard to the exact number of current and active members (table 1, graph 1).

### Distribution by gender

Of the total number of psychiatrists counted 65.4% are male and 34.6% are female; that is to say, we have 1.89 male psychiatrists for each female psychiatrist (table 1).

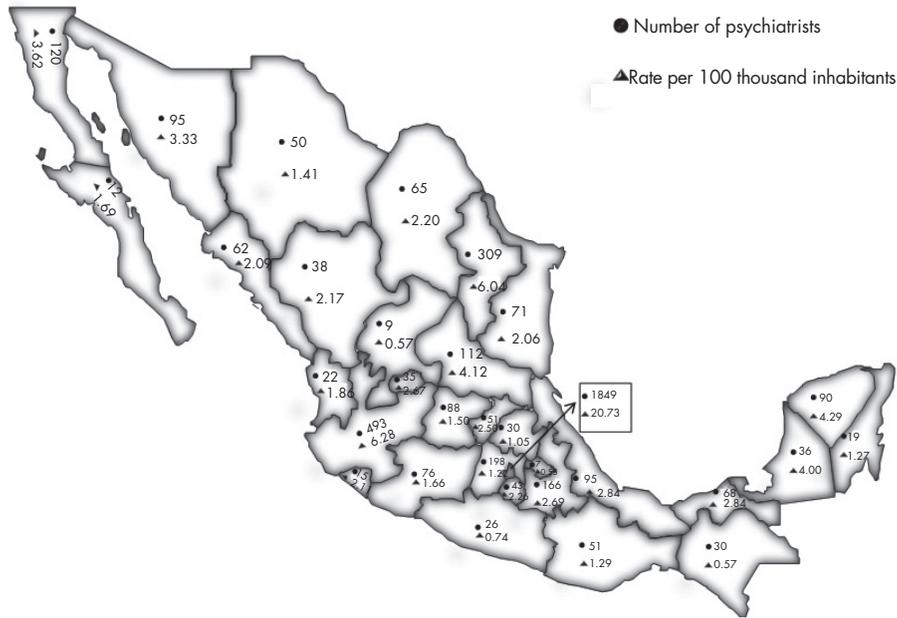
### Geographic distribution

The distribution shows that every state in the Mexican Republic has a certain number of psychiatrists. Of the total number of specialists, 42.09% practice in Mexico City, 11.22% in the state of Jalisco and 7.03% in Nuevo Leon. The three states with the largest number of psychiatrists make up 60.34% of the total number of psychiatrists in Mexico; the 39.66% remaining were found to be distributed in the 29 federal entities and concentrated mainly in urban areas. The states with the least number of psychiatrists are Tlaxcala, Zacatecas, Baja California Sur, Colima and Querétaro, which together make up 1.5% (62 specialists of the total number in the country).

Of the 32 states in the Mexican Republic, Mexico City has the greatest number of psychiatrists, with 20.73 for every 100000 inhabitants. Jalisco is in second place with a ratio of 6.28 psychiatrists for every 100000 inhabitants, and in third place is Nuevo León with a rate of 6.04 for every 100000 inhabitants (figure 1). The lowest state ratio is Tlaxcala, with 0.55 psychiatrists for every 100000 inhabitants, followed by Zacatecas and Chiapas, both with 0.57 psychiatrists for every 100000 inhabitants (table 2, graph 2).

### Comparison of the years 2011 and 2016

The important variables that are compared are shown on table 1 and graphs 1 and 2.



**Figure 1.** Distribution of the psychiatrists in en Mexico.

## DISCUSSION AND CONCLUSION

In the world, mental disorders constitute a serious public health problem. Mental illness represents 13% of the overall rate of health problems. At least 10% of adults reveal some type of mental disorder and 25% of them develop some related problem during their lifetime. One of the primary causes of death in persons between the ages of 15 and 35 years is suicide. The probability of a premature death among individuals with serious depression and schizophrenia is 40% to 60% greater than the general population.<sup>4</sup>

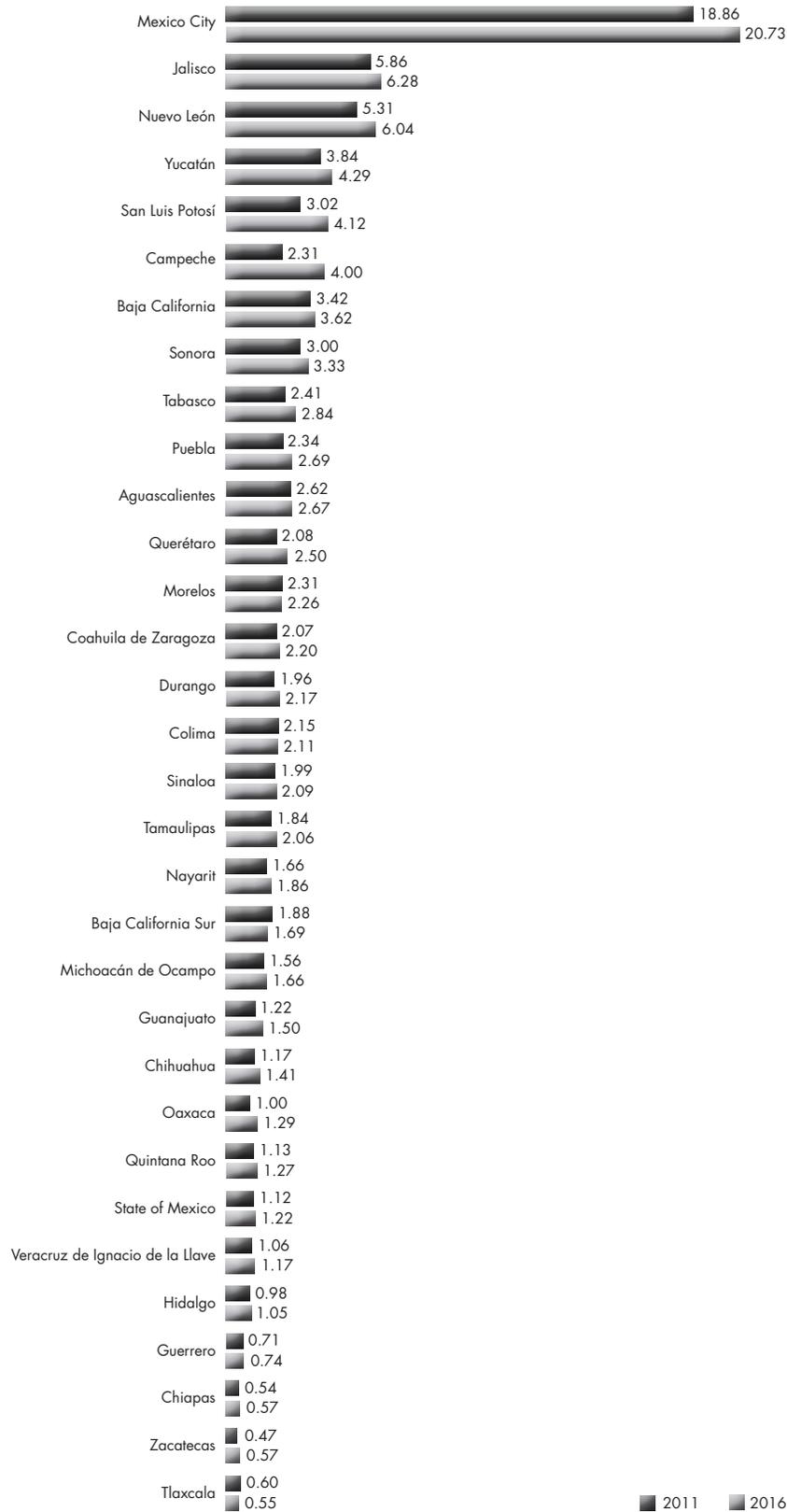
In Mexico, in accordance with the National Survey of Psychiatric Epidemiology<sup>5</sup> 28.6% of the population has presented some psychiatric disorder at some point in their life, but only one of every 5 of them received treatment. These phenomena can be attributed, in part to the stigma and other problems of structural imbalance that impede access to treatment.<sup>5</sup>

In 2014 in Mexico there were 227 thousand doctors that were actively practicing, of this number, 30.9% had a specialty.<sup>6</sup> Taking into account this information with the information obtained in this study, it has been calculated that

**Table 2.** Number of inhabitants, number of psychiatrists and rates per state

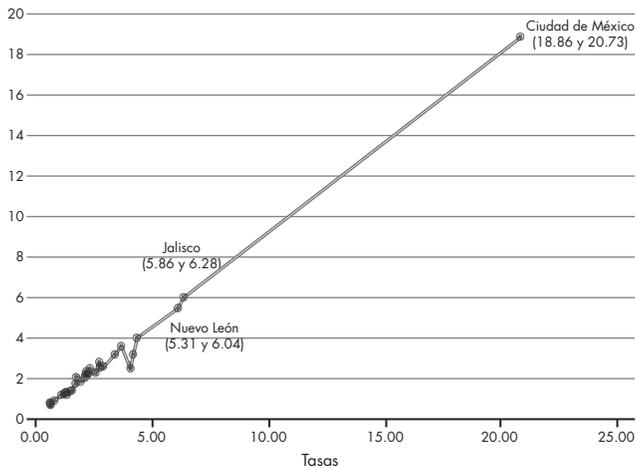
State	Population (inhabitants)	Number of psychiatrists	Rate per 100 thousand inhabitants	State	Population (inhabitants)	Number of psychiatrists	Rate per 100 thousand inhabitants
Aguascalientes	1,312,544	35	2.67	Nayarit	1,181,050	22	1.86
Baja California	3,315,766	120	3.62	Nuevo León	5,119,504	309	6.04
Baja California Sur	712,029	12	1.69	Oaxaca	3,967,889	51	1.29
Campeche	899,931	36	4.00	Puebla	6,168,883	166	2.69
Coahuila	2,954,915	65	2.20	Querétaro	2,038,372	51	2.50
Colima	711,235	15	2.11	Quintana Roo	1,501,562	19	1.27
Chiapas	5,217,908	30	0.57	San Luis Potosí	2,717,820	112	4.12
Chihuahua	3,556,574	50	1.41	Sinaloa	2,966,321	62	2.09
Mexico City	8,918,653	1,849	20.73	Sonora	2,850,330	95	3.33
Durango	1,754,754	38	2.17	Tabasco	2,395,272	68	2.84
Guanajuato	58,53,677	88	1.50	Tamaulipas	3,441,698	71	2.06
Guerrero	3,533,251	26	0.74	Tlaxcala	1,272,847	7	0.55
Hidalgo	2,858,359	30	1.05	Veracruz	8,112,50	95	1.17
Jalisco	7,844,830	493	6.28	Yucatán	2,097,175	90	4.29
State of Mexico	16,187,608	198	1.22	Zacatecas	1,579,209	9	0.57
Michoacán	4,584,471	76	1.66				
Morelos	1,903,811	43	2.26	<b>Total</b>	<b>119,530,753</b>	<b>4,393</b>	<b>3.68</b>

Psychiatrists in Mexico 2016



Graph 2. Rates per 100 thousand inhabitants, 2011 vs. 2016.

Translation of the original version published in spanish in:  
Salud Mental 2016, Vol. 39 Issue No. 2.



**Graph 3.** Rate dispersion (2011-2016).

the psychiatrists represent the 1.93% of the total number of doctors and 6.2% of the total number specialists.

According to the World Atlas of Mental Health, published by the WHO in 2014,<sup>4</sup> the worldwide number of psychiatrists was distributed according to a country's income. The WHO categorized four divisions to the countries distributing them in the following way: Countries with low income, countries with medium-low income, countries with medium-high income, and countries with high income. The Atlas shows that countries with low incomes have 0.05 to 0.1 psychiatrists for every 100 000 inhabitants (examples of countries are part of this group are: Afghanistan, Haiti, Somalia, Nepal, Kenya);<sup>7</sup> countries with medium-low incomes have 0.38 to 0.4 psychiatrists for every 100 000 inhabitants (examples of countries who make up these groups are: Guatemala, El Salvador, Bolivia, Cameroon, Philippines);<sup>8</sup> countries with medium-high incomes have 1.2 to 1.39 psychiatrists for every 100 000 inhabitants (examples of countries that make up this group are: Argentina, Brazil, Colombia, Mexico, Venezuela, Turkey and Tunisia);<sup>9</sup> and countries with high incomes have between 6.6 to 7.47 psychiatrists for every 100 000 inhabitants (examples of countries that make up this group are: Germany, Canada, Chile, United States, France, Finland, Japan, and Uruguay).<sup>10</sup>

As can be observed in the results, Mexico has a national rate of 3.68 psychiatrists for every 100 000 inhabitants. Even though according to the WHO, it is located in the category of countries with medium-high income,<sup>11</sup> with its rate of psychiatrists being superior to countries with rates of 1.2 to 1.39 psychiatrists for every 100 000 inhabitants.

The interpretation of these results should be approached with caution, because at the outset one could conclude that Mexico is getting closer to numbers of psychiatrists that come from countries with high incomes and have rates with ranges between 6.6 to 7.47 psychiatrists for every 100 000 inhabitants. However, the distribution of said spe-

cialists in psychiatry is not homogeneous, something that happens in other countries in the same way. It is to say that psychiatrists are located principally in the large cities and are in short supply in smaller communities. Mexico City is an example, because with a rate of 20.73 psychiatrists for every 100 000 inhabitants shows that the concentration of specialists can be influenced by economic factors, which result in a low interest in establishing a practice in an area with a smaller population or little academic influence resulting in scarce opportunities for work. In the Mexican Republic the states of Mexico City, Jalisco and Nuevo Leon, make up only 18% of the total population, more than 60% of the psychiatrists of the country and their rates are the highest in the country. Excluding these three states from the calculation of rates there are 1.78 psychiatrists for every 100 000 inhabitants, which places Mexico in greater congruence with the category in which the WHO places the country (graph 3).

On the other hand, nine states in the Mexican Republic (Tlaxcala, Zacatecas, Chiapas, Guerrero, Hidalgo, Veracruz, State de Mexico, Quintana Roo and Oaxaca), where one third of the total population live (44 of almost 120 million inhabitants), reveal a rate of barely 0.94 psychiatrists for every 100 000 inhabitants which is 20 times less than the rate in Mexico City. In addition, states like Tlaxcala, Zacatecas and Chiapas have 46 psychiatrists between the three states, for a population of 8 million inhabitants, which generates a rate of 0.57 psychiatrists for every 100 000 inhabitants, placing these regions of the country in ranges revealed in countries with low-medium incomes.<sup>8</sup>

Certification among medical professionals is important in order to form a regular and homogenized acquisition of knowledge and competence. In the present study, the number of certified psychiatrists was identified. It was observed that 2248 psychiatrists were at some point in time certified (51.17%), but only 852 psychiatrists were found to be certified at the time this study was performed (19.39%). It was noted that there had not been an increase in the percentage during a five-year period, since in the year 2011, 20.3% had an up to date certification. It appears that not all doctors that graduate as residents become certified, and those that have been certified do not tend to seek recertification. This explains why during the past 5 years the percentage of certified psychiatrists has dropped 1 percentage point in the total number of psychiatrists who are certified. This is relevant information that forces us to think about the advancement regarding training and update of psychiatrists in Mexico.

Combined with the previous information, a look at the percentage of professionals affiliated with their medical specialty in societies like the APM, reveal that 48.8% are affiliated, and that number increases 5% in 5 years. However, the information is not totally precise since it does not contain information that discriminates between active, up-to-date affiliates versus affiliates who are not currently part of the association. This occurs because once an individual

is affiliated, it is not necessary to renew or revalidate said affiliation in order to remain on the record.

According to worldwide figures, the interest exhibited by doctors to study a specialty in psychiatry is placed between 3 to 4.5%.<sup>12,13</sup>

In answering this question, the World Psychiatric Association (AMP) includes combating the deficit of specialists in this area, a phenomena called "the crisis of recruitment" as a part of its action program. The measures that were implemented include: a) begin a collaborative program with a network of centers of excellence a one-year internship program for psychiatrists from low income countries that promise to apply what they learn in these centers when they return to their home country. b) Organize leadership and professional development workshops. c) Help out in the participation of students of psychiatry in conferences of the AMP and other scientific meetings. d) Stimulate the participation of young people in the scientific sections of the AMP.<sup>13</sup>

In the study titled "Why Medical Students choose Psychiatry as a Specialty" published 2014, it states that a population of 9135 students coming from 46 medical schools from 20 countries, 4.5% considered the study of psychiatry. Some of the factors that are associated with this preference include: female gender, personal and/or family experience with mental illness and interest in psychiatry before studying medicine and maintaining that interest during the period of study.<sup>14</sup>

In our country, the number of opportunities available to carry out a psychiatric specialty has not increased since 2007, when there were 150 places available.<sup>15</sup> During the year 2015, 144 places were offered, 6 places less than those available 8 years before.<sup>16</sup> With respect to the percentage of interest, in 2009 the National Exam of Medical Residencies was applied to a total of 45 513 doctors and 141 positions were offered to study psychiatry. Of the total number of doctors who took the exam 898 chose psychiatry as their first option, which represents 1.97% of the total number of applicants.<sup>17</sup> In 2012, 41 338 doctors took the exam (a lower number than in the year 2009), 134 study positions were offered for psychiatry out of the total number of doctors that took the exam, 982 show psychiatry as their first option, which represents 2.37% of the total number of candidates.<sup>18</sup>

There are 4393 psychiatrists in Mexico with a ratio for a population of almost 120 million with 3.68 for every 100 000 inhabitants.

The state with the most psychiatrists is Mexico City with the rate of 20.73 for every 100 000 inhabitants, followed by Jalisco and Nuevo Leon with rates of 6.28 and 6.04 psychiatrists for every 100 000 inhabitants, respectively. These rates are similar to those observed in countries with high resources.

The state with the least number of psychiatrists is Tlaxcala with 0.55 psychiatrists for every 100 000 inhabitants,

followed by Chiapas and Zacatecas with rates of 0.57 psychiatrists for every 100 000 inhabitants for each state; said rates are similar to those observed in countries with low/moderate resources.

These differences are directly revealed in the inequality of the geographic distribution of psychiatrists where a clear centralization is observed. Indirectly, it shows us the inequality in the assignment of resources for the formation of specialists, as well as the hiring and work opportunities in the professional environment.

Only one of every 5 psychiatrists in Mexico has up to date certification by the CMP and said relationship has not changed in 5 years.

Approximately half of the psychiatrists in the country are affiliated with the APM.

In the present investigation, we objectively observed that it is necessary to encourage the study of psychiatry among the doctors that begin their specialty. Compared with the 2012 publication,<sup>1</sup> the number of psychiatrists has increased but not the number of study positions available in the last 8 years. Considering that a high percentage of the Mexican population will consult a doctor for a mental health problem including alcoholism and addictions, we need to strengthen mental health interventions at all levels of attention; this must require an increment in the federal and state government's budgets in the area of mental health.

## Funding

None.

## Conflicts of interests

The authors declare that there are no conflicts of interest.

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