INTRODUCTION

Population aging is one of the demographic changes expected to have an impact on the need for health services and, implicitly, the way they are organized to meet these needs. The aging phenomenon is rising rapidly, the estimates showing that between 2000 and 2050, the proportion of the population over 60 will double from 11% to 22%. According to the World Health Organization (WHO), by the year 2050, Europeans over 60 will be 34% [1]. These demographic changes will have an impact on the number of elderly people with mental health problems. If at present adults aged 30 to 44 diagnosed with a psychiatric disorder are twice as numerous as those aged over 65, it is estimated that over the next 30 years the increase will be 15% in the category 30-44 and over 100% in the 65+ category. In addition, the total number of those affected by dementia will double over the next 20 years reaching 65.7 million worldwide in 2030 and 115.4 million in 2050. In this context, it is advisable an analysis of human and institutional resources to better understand how the health system is currently addressing the mental health problems of the elderly and the possible adaptations of the system to better respond to future demands. The objective of this article is to describe the situation of institutional and human resources available to elderly people with mental health problems by determining the distribution of beds and physicians specialized in psychiatry, geriatrics and neurology at county level.

Keywords: institutional resources, human resources, mental health problems, elderly people, old age psychiatry

METHOD

In order to estimate the institutional resources, for the mental health care of the elderly, the beds located in psychiatric hospitals, neurology hospitals and in specialized departments (psychiatry, geriatrics or neurology) of the general hospitals were taken into account. For assessing the human resources available, we used - as a standard indicator - the number of specialists (psychiatry, neurology, geriatrics) to 10,000 inhabitants. For geriatrics and neurology, professionals were reported to the population aged over 65 and for psychiatry the number of specialists was reported in the total population. Data on the resident population for the year 2015 were taken from the National Institute of Statistics through the online TEMPO interrogation system and the number of available beds and the number of specialists were obtained from the National Public Health Institute on the basis of an official request No. 11880 / 26.07.2016. The data on the evolution of the vacant positions for the residency in the three

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INSTITUTIONAL AND HUMAN RESOURCES CURRENTLY AVAILABLE TO ELDERLY PEOPLE WITH MENTAL HEALTH PROBLEMS

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Contributions: All authors contributed equally to the elaboration of this paper.

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specialties analysed were obtained through the official website of the national residency competitions (rezidentiat.ms.ro). The administrative unit used is represented by the county and the data obtained are in the year 2015, both for the public health system and the private system.

**RESULTS AND DISCUSSIONS**

**Psychiatry specialization**

In hospitals and psychiatric wards, 16,300 beds (98.75%) in the public health system and 205 beds (1.25%) in the private system are recorded nationwide. On average there are 388 beds / county in the public system, with a maximum of 1398 beds in Bucharest and a minimum of 22 in Ialomita County. The distribution of beds is unequal, most of them in large cities, university centers of Romania (1398 in Bucharest, 1078 in Timis, 1133 in Iasi). The 205 beds in the private health system are concentrated in 5 counties, with 36.5% of them in Iasi County (see Figure 1).

In Romania the over-specialization in old age psychiatry exists only formally, de facto a single training program in which 22 participants were included being organized in Romania in 2002. In view of this, we included in the analysis all the psychiatrists and we reported the rates for both the general and the elderly population (65+ years). In the United States of America, in 2010, 1738 geriatric psychiatrists were trained (0.9: 10,000 people aged 75+) and in Australia the number was 191 in 2008 (0.69: 10,000 with age of 65+) [8].

Currently, at the national level there are 1851 psychiatrists practicing in public and private sectors in 41 counties and Bucharest. Most specialists are working in Bucharest (374), Iasi (149) and Timis (139). The counties at the opposite pole are Ialomita (7), Covasna (9) and Călărași (10). The ratio of specialists in psychiatry to the total population is an average number of 1:1871 inhabitants, with a minimum of 1:571 inhabitants and a maximum of 1:12147 inhabitants.

**Geriatrics specialization**

The total number of beds in the geriatric departments is 971 (95.01%) in the public health system and 51 (4.99%) in the private system. They are located in 18 hospitals located in 16 different counties. On average there are 23 beds/county in the public system, with a maximum of 359 beds in Bucharest. The distribution of beds is uneven, most of them in Bucharest (359) and Ilfov (334). In these two regions almost 70% of the total number of geriatric beds is concentrated. In addition, in 26 counties there is not even one single bed and all 51 private beds are in Ilfov County (see figure 2).

At national level there are 189 geriatric specialists working in 27 counties. In 11 of these there is only one geriatric available at the county level. Approximately half of the specialists are in the Bucharest-Ilfov area (98 geriatricians), followed by Iasi County with 15% (30
geriatricians). If we take into account the number of inhabitants older than 65 years distributed to a specialist, for the counties where there are specialists in geriatry, we have on average 1:46,936 inhabitants (minimum 1:2,122 inhabitants and maximum 1:138,243 inhabitants). For comparison, in the United States, this rate was in 2010 1:5,955 inhabitants older than 65 years [9].

Neurology specialization

For neurology, the number of specialized beds is 5,486 (98.95%) in the public health system and 58 (1.15%) in the private system. On average there are 131 beds / county in the public system, with a maximum of 951 beds in Bucharest and a minimum of 25 in Ilfov County. The distribution of beds is also unequal in the case of Neurology specialization, most of them in large cities, university centers of Romania (951 in Bucharest, 262 in Cluj, 193 in Iasi) (see Figure 3). In the private health system there are 58 national beds concentrated in six counties, and about half of them in Buzau (15 beds) and Caraş Severin (15 beds).

A total of 1,293 neurologists are practicing at national level both in the public and private sectors. Most specialists are found in Bucharest (277), Cluj (99) and Timiş (84). The counties with the lowest representation of neurologists are Calarasi (2), Ialomita (6), Bistrita (7) and Tulcea (7). The report of specialists in neurology in the elderly population is an average number of 1:5082 inhabitants, with a minimum of 1:0331 inhabitants and a maximum of 1:28383 inhabitants.

If we report the number of specialists per 10,000 inhabitants older than 65 years, the county average is 0,4 geriatrics (min=0, max=4,6), 3,2 neurologists (min=0,3, max=9,6) and 45,9 psychiatrists (min=4,5, max=106,7). Taking into account the total number of population, for neurology and psychiatry, the average county rate per 10,000 inhabitants is 7,85 (min=0,8, max=17,5) psychiatrists and 0,53 (min=0,07, max = 1,4) neurologists (see Table 1).

Thus, we have noticed that the variation regarding the availability of institutional and human resources at geographic level is large enough and we have tried to identify possible explanations regarding this variation. We have tested the hypothesis by which the counties where the access to the specialized human resource is easier (more specifically, the districts where there is an University of Medicine and Pharmacy (UMF)) will have a higher level of available human resources. The difference between the districts where UMF exists and those in which there is no UMF is significant for psychiatry and neurology, both for the total population and the elderly population. For geriatrics, this difference is not significant, however, given the small number of specialists at national level and their concentration in Bucharest and Iasi, this result is explained.

To consider not only the actual human resources, but also the future one, we have identified the number of residents available for each of the three specialties analyzed for the period 2014-2016 (see Table 2). In the three years involved in the analysis, for geriatrics, neurology and psychiatry, it has been open for competition a total of 631 places for the residency exam (an average of...
Table 2 - The evolution of residency exam places for psychiatry, geriatrics and neurology

<table>
<thead>
<tr>
<th>Specialty</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Geriatrics (GER)</td>
<td>18</td>
<td>0,68</td>
<td>22</td>
</tr>
<tr>
<td>Neurology (NEU)</td>
<td>79</td>
<td>2,96</td>
<td>77</td>
</tr>
<tr>
<td>Psychiatry (PSI)</td>
<td>119</td>
<td>4,46</td>
<td>113</td>
</tr>
<tr>
<td>GER+NEU+PSI</td>
<td>216</td>
<td>8,10</td>
<td>212</td>
</tr>
<tr>
<td>The total number of residency exam places</td>
<td>2666</td>
<td>100,00</td>
<td>2788</td>
</tr>
</tbody>
</table>

7.48% of the total number of residents in 2014-2016). In a more careful analysis, we notice that although for geriatrics the number of places is increasing, for neurology they are kept relatively constant and for psychiatry, from year to year, the number of available places is decreasing, as well as the cumulative percentage of these specialties, by reference to the total number of available residency exam posts. This downward trend of the specialized human resources for the care of the elderly people with mental health problems is not exceptional. An editorial that analyses the labor force situation in old age psychiatry at international level shows a decrease in the number of graduates of advanced geriatric psychiatric training programs in Australia and New Zealand from 11 per year between 2002-2005 at 6 per year in 2006 -2009 [8]. Another study draws attention to resident geriatric places in the United States, which decreased from 327 in 2002 to 237 in 2010 [9].

CONCLUSIONS

In Romania, the specialized services for the elderly are insufficient and unequally distributed, most of the existing institutional resources (like the number of beds in the specialized departments) being concentrated in Bucharest. Regarding the available human resources, it is obvious the under-representation of geriatrics, compared to the other professional categories discussed, namely psychiatrists and neurologists, even in the case of the areas with the highest density for each professional category included in the comparative analysis. Compared to the international rates, a Romanian geriatric corresponds - on average - to a population of eight times greater than that of an American geriatric. Moreover, the residency exam places for the medical specialities included in the analysis seem to be decreasing - taken as a whole.

Considering that in Romania there are no strictly specialized institutional and human resources for care of the mental health problems of the elderly, it is necesseary a more careful analysis of the entire health system in order to identify more effective management options for these patients at the moment, but also possible solutions for a future in which there is a growing demand for this population subgroup. Such an analysis should take into account the services provided by the general practitioners and palliative care services. A recent study identifies patients with dementia as being one of the most frequently discharged diagnostic within residential palliative services (12,15%) and the most intensively resource-consuming diagnostic categories, being responsible for 29,61% of the total number of hospitalization days [10]. At a practical level, resuming the training program in old age psychiatry dedicated to psychiatrists, geriatricians and neurologists represents a way to increase the level of specific expertise in the system and to facilitate the development of new services for the older people with mental health problems.

REFERENCES