# Brazilian Academy of Neurology (2006 – 2016)

Academia Brasileira de Neurologia (2006 – 2016)

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#### **ABSTRACT**

Brazil is a heterogeneous country with continental dimensions. The different characteristics of cultural, socioeconomic, and demographic status of the population drive different strategies for neurological care. This knowledge helps the understanding of the current scenario with the consequent possibility of preparing for future challenges. We used data from annual internal forms of the Brazilian Academy of Neurology (BAN) since 2006 and the survey for all BAN members (3,240) in 2016. The geographic distribution of BAN members in Brazil follows the demographic concentration of the population. Participation of members from big cities was the most prevalent, 18.7% of participants were young neurologists, and 36.7% of neurologists had more than of 20 years of neurological practice. The improvement of knowledge of neurological practice in Brazil will be useful for BAN leadership in planning future actions. The BAN must make an effort to aggregate a greater number of neurologists, offering updating support contributing to health policies to disseminate neurological care in Brazil.

Keywords: Brazilian Academy of Neurology; censuses; neurology; demographic data

#### **RESUMO**

O Brasil é um país heterogêneo com dimensões continentais. As diferentes características culturais, do padrão socioeconômico e demográfico da população direcionam diferentes estratégias de atenção neurológica. Este conhecimento ajuda a entender o cenário atual para consequente preparação para os desafios futuros. Utilizamos informações dos relatórios anuais de Academia Brasileira de Neurologia (ABN) desde 2006, além de dados de uma pesquisa para os membros da ABNr ealizada em 2016. A distribuição geográfica dos membros da ABN no Brasil segue a concentração demográfica da população. A participação na pesquisa dos membros das grandes cidades foi a mais prevalente. 18,7% eram neurologistas jovens e 36,7% tinham mais de 20 anos de prática neurológica. O aperfeiçoamento do conhecimento da prática neurológica no Brasil será útil para a liderança da ABN planejar ações futuras. A ABN deve se esforçar para agregar um maior número de neurologistas, oferecendo constante atualização e apoio profissional contribuindo para políticas de saúde para disseminar o conceito de doenças neurológicas no Brasil.

Palavras-chave: Academia Brasileira de Neurologia; censos; neurologia; dados demográficos.

Brazil is a heterogeneous country with continental dimensions. The different characteristics of the cultural, socioeconomic, and demographic status of the population drive different strategies for primary and advanced health care, especially in neurology, which presents a big challenge<sup>1,2</sup>. The needs of Brazilian neurologists are diverse, heterogeneous, and dynamic<sup>3</sup>. The understanding of detailed neurological practice in general, and from each segment of the country, is very important. This knowledge helps the understanding of the current scenario with the consequent possibility of preparing for future challenges<sup>2,4</sup>.

The Brazilian Academy of Neurology (BAN) has been working on the common interests of neurologists in Brazil

since 1962. Each year the BAN collects information on associated members. However, these data have been published in annual forms, exclusively for BAN leadership. Traditionally, these surveys just tracked membership demographics, and characteristics, such as age, gender, subspecialty, and main location of work.

However, the details of neurological practice have not been considered. The first all-member census was designed last year, looking to complete essential information about the neurological practices of BAN members. This paper presents the collected data of the last ten years from BAN, as well as the results of the first consensus of associated neurologists.

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### **METHODS**

# BAN data between 2006-2016.

All graphs and tables were plotted using information (number of members, number of members per state, number of participants per congress, and percentage of representatives per region) from the annual internal forms of BAN since 2006 (Figures 1, 2, and 3).

# BAN member census (2016)

Population – The survey was sent by e-mail to all BAN members (3,240).

Instruments – The 2016 BAN census had the goal of identifying, in detail, years of practice, practice constituency, location of work, practice characteristics, practice settings, and satisfaction with different BAN actions. A questionnaire with 12 questions investigated these characteristics.

Data collection – The survey was sent by e-mail using the SurveyMonkey\* platform in February 2016.

#### **RESULTS**

#### BAN data between 2006-2016

There has been a consistent growth of BAN members over the last ten years (Figure 1).

As speculated, the geographic distribution of BAN members in Brazil follows the demographic concentration of the population (Figure 2).

Brazilian Neurological Congresses occur every two years and they are among the biggest neurological congresses of the world.

The scenario (2016) of elected representatives in BAN shows that there is a higher prevalence of elected members from the south and southeast regions (Figure 3).

# BAN member census (2016)

The response rate was 20.10% (652/3,240). Participation of members from big cities was most prevalent, and there were representatives from all BAN categories and all States.

Almost 20% of neurologists were young, and 36.7% of neurologists had more than of 20 years of neurological practice.

This survey showed that 48.6% of BAN members work in a private clinic/hospital; 27.3% work in the public system; and 3.1% do not work in a neurological practice. Regarding academic activities, 6.9% of members work exclusively at a university, 12.7% work part time and 1.5% are volunteers.

The main areas of interest were general neurology (60.3%), dementia (40.8%), headache (40.1%), stroke (35.4%), epilepsy (34.8%), movement disorders (25.4%), electroencephalography (17.1%), and pain (13.9%).

The members strongly approved of the BAN activities: the medical journal (Arquivos de Neuro-Psiquiatria), the regular publication for members (ABNews), the RIMA system, educational efforts, and on-line courses. The worst scores were in professional defense and a few scientific committees.

## **DISCUSSION**

Today, the BAN has almost 4,000 members with 86% of them being neurologists. It is important to clarify that only some of the Brazilian neurologists are members of BAN. In Brazil, a neurologist can work after final, recognized, residency without a BAN certification. However, the importance of a BAN title has been increasing. Nowadays, more hospitals are asking for BAN certification, which may explain the growth of membership.

There is an interesting distribution of BAN neurologists per 100,000 population. The south, southeast, and central Brazilian territories have a higher density of BAN

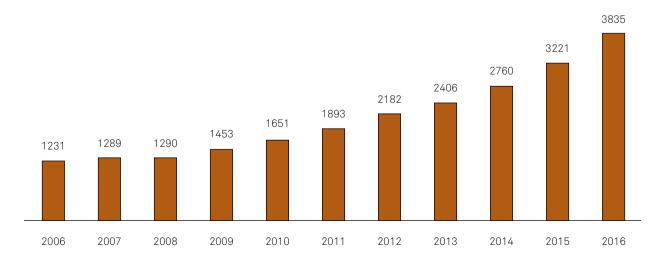
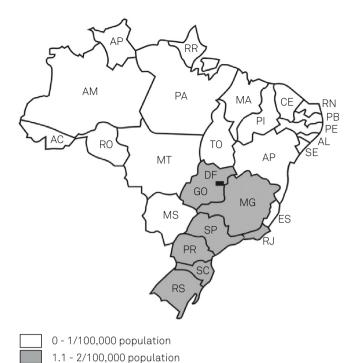


Figure 1. Brazilian Academy of Neurology membership by year.



2.1 - 3/100,000 population

**Figure 2.** Number of neurologists (members of Brazilian Academy of Neurology) per 100,000 population in 2016.



**Figure 3.** Percentage of leadership per numbers of BAN members by Brazilian regions.

neurologists. This may be explained by the greater prevalence of big cites in these regions, as well as by a greater prevalence of training centers. Indeed, most parts of Brazil have less than one BAN neurologist per 100,000 inhabitants. Direct work must be done to stimulate young neurologists to develop neurology in

all regions of Brazil. However, problems such as small hospitals without an infrastructure, or neurosurgery, must be overcome.

The BAN congress occurs every two years and it increases progressively. This is the result of hard work by the BAN leadership, local neurological representatives and the whole membership that demonstrate focus on continuing education. The percentage of elected leadership was similar in all regions when the number of members with voting rights in each one was considered. This finding showed a balance of representation of each Brazilian region.

Particularly, the improvement of knowledge of neurological practice in Brazil will be useful to the BAN leadership in planning future actions. Unfortunately, the response rate to the survey was very low. In the American Academy of Neurology report published in 2010, the response rate was about 45%. Indeed, better strategies to increase the participation of BAN members must be considered in future surveys<sup>2</sup>.

The greater involvement of neurologists from the biggest cities may be explained by the higher concentration of these specialists in advanced technology and university centers<sup>5,6</sup>.

A large part of the membership in bigger centers has a subspecialty, which reflects the better work conditions of these hospitals when compared to public service<sup>7,8</sup>. Easier access to complementary diagnostic and therapeutic options are the advantages of private services<sup>8</sup>. Almost 7% of BAN members are exclusively at a university. Low salaries and difficulty getting grants for research may be responsible for this finding.

The BAN neurologists in different subspecialties are organized in scientific departments, which is similar to other neurology associations. This reflects the dynamic state-of-the-art in neurology with influence on scientific knowledge, industry investments, personal characteristics, and the needs of the population.

The BAN encourages several scientific and didactic activities through the different scientific departments. Books, manuals of conduct, consensus and guidelines, and courses are examples of updates available to the members. Many BAN neurologists from distant parts from Brazil have difficulty attending meetings and appreciate these complementary activities. The scientific departments also coordinate many campaigns to disseminate knowledge about prevention, diagnosis and treatment of different neurological diseases.

Unfortunately, only a small percentage of all neurologists in Brazil are associated with the BAN. This results in an underestimation of needs and uncontrolled neurological practice in Brazil. The response rate to the survey was very low. Future surveys, with better methodology, will avoid the lack of interest.

The BAN must make an effort to draw in a greater number of neurologists, offering constant updating and professional support. The BAN needs to work with government agencies, contributing to health policies to further disseminate the concept of neurological diseases in Brazil.

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