

State of endocrinology and diabetology in Brazil

Daniel Giannella-Neto

Laboratory for Clinical and Experimental Gastroenterology – LIM 07, University of São Paulo School of Medicine, São Paulo, Brazil

ABSTRACT

Brazil is a large, populous country in South America, which has one of the biggest concentrations of people with diabetes. This article reviews the current status of diabetes care, medical education and training, and diabetes/endocrine research in Brazil. It highlights achievements in public health and research, which can be emulated by other countries. In Endocrine/Diabetes fields, a more realistic and responsible policies in terms of medical traineeship, patient education, and mainly scientific production would be mandatory to raise Brazil to a global competitive level.

Key words: Diabetes, education, endocrinology, epidemiology, research

DIABETES

Diabetes, as the most important medical condition of Endocrinology, has impelled many initiatives to be organized by the federal government and professional associations. According to Brazilian National Data Survey, diabetes is the fifth cause most frequent for hospitalization and is one of the 10 major causes of mortality in this country.^[1,2] Diabetes prevention programs are being promoted in different regions of Brazil. Government policies have contributed positively in improving the quality of life of diabetic population. For example, distribution to the entire population of oral antidiabetics and antihypertensive agents as well as human insulin is paid for by the government.

As observed in other developing countries, prevalence of type 2 diabetes mellitus in Brazil has increased rapidly and is expected to increase even further. Surveys showed a prevalence ranging from 6.7% to 9.2% in 1988 and from 9.0% to 10.2% in 2008 in general population.

It represents a mean increase of 21.4% in the last 20 years.^[3] These figures are more astonishing in older population being 21.7% in age group between 60 and 69 years.^[4] Chiefly among the younger age groups, increasing rates of overweight, obesity associated with lifestyle changes, and population aging are the main contributing factors to the increasing prevalence of type 2 diabetes. The observed changes in food consumption, with special emphasis on low consumption of fibre-rich foods and heavy consumption of free sugars, with or without saturated fatty acids, industrialized foods and beverages, constitute an important risk factor for developing diabetes in Brazil, mainly in the low-income social classes, independently of body mass index.^[5]

In Brazil, a study in Japanese–Brazilian community in Bauru (State of São Paulo) showed a higher intake of calories from lipids in relation to the dietary habits of Japan's population.^[6] In this population survey, the prevalence of type 2 diabetes, impaired glucose tolerance and impaired fasting glucose has risen dramatically in recent years, demonstrating the impact of environmental conditions interacting with a probable susceptibility gene on the risk of developing changes in glucose metabolism.^[6]

EDUCATION

Regarding medical education, there are no special programs on Diabetes in Brazil, as it is taught as a subspecialty of Clinical

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Corresponding Author: Prof. Daniel Giannella-Neto, Laboratory for Clinical and Experimental Gastroenterology – LIM07, University of São Paulo School of Medicine, Av. Dr. Arnaldo, 455 – Room 4387, 01246-903 São Paulo, Brazil. E-mail: dgiannella@limo7.fm.usp.br

Endocrinology. Residence programs in Endocrinology at University hospitals consist of an internship of 2 years at Internal Medicine and further 2 years at Endocrinology Service. After this training period, medical doctors appear for Medical Board Examinations. Certifications are issued by Brazilian Society of Endocrinology and Metabolism together with Brazilian Medical Association.

All endocrinologists are encouraged to join Brazilian Society of Diabetes, which comprises health care providers from all over Brazil and abroad in great numbers: 3380 medical doctors, 205 nurses, 154 dietitians, 44 pharmacists, 40 psychologists, and 57 from other professional fields. The Society is actively engaged in providing continuing medical education through regional and national scientific meetings and workshops. Many guidelines regarding many aspects of diabetes management have been published and are easily available to all the Society members.

RESEARCH

Research in Endocrinology is fostered by a number of organizations, which were created mostly during the 1950s, specifically for directly promoting and funding research and development in all science fields. Among them, the National Research Council (CNPq) and the National Agency for Financing Studies and Researches (FINEP), nowadays as part of the Ministry of Science and Technology, are the most active. Following the pioneering (and highly successful) example of São Paulo Research Foundation (FAPESP), almost all federal states have their own public foundations for supporting research and development in general. Usually these foundations are financially supported by state funds as settled in the constitutions of each federal state.

Brazilian scientific production exhibited a 4-fold increase in the last 2 decades because of investment in research and development activities, and changes in the policies of the main funding agencies mentioned above. Most of this production is concentrated in public universities and research institutes located in the richest part of the country. Among all areas of knowledge, the most productive are Health and Biological Sciences. During the 1998–2002 period these areas presented heterogeneous growth ranging from 4.5% (Pharmacology) to 191% (Psychiatry), with a median growth rate of 47.2%. The 20 most productive centers, during the 1998–2003 period, produced 78.7% of the scientific articles in these areas and are strongly concentrated in the Southern part of the country, mainly in São Paulo State.^[7] On the other hand, Pubmed search on clinical articles about diabetes from authors affiliated to Brazilian institutions resulted in a mean of 7.7 articles per year in the last 10 years. In comparison, for India, the

same approach unveiled a mean of 33.9 articles per year. When compared with USA the difference is the greatest, as USA has produced a mean of 6223 articles per year in the last 10 years.^[8]

CONCLUSION

Capes Foundation, a public organization within the Brazilian Ministry of Higher Education, released a ranking that puts Brazil among the 25 countries with the greatest scientific productivity.^[9] This means Brazilian scientific production has grown significantly over time. This is due to the large proportion of the 10,000 PhDs released per year orbiting around academia and contributing to scientific production. However, in Endocrine/Diabetes fields, a more realistic and responsible policies in terms of medical traineeship, patient education, and mainly scientific production would be mandatory to raise Brazil to a global competitive level.

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