

Dentistry in Brazil

EDUARDO YUGO SUZUKI, YOSHIYASU YOSHIKAWA and TOSHIO DEGUCHI

Department of Orthodontics, Matsumoto Dental College

(Chief : Prof. T. Deguchi)

Summary

The purpose of this article is to introduce Brazil from a dental point of view. Some aspects of Brazilian cultural life and economics that influence oral health and esthetics are presented. The Brazilian dental educational system, tuition fees and ranking of dental schools are compared and contrasted with those in Japan.

In Brazil, there are 92 dental schools while in Japan there are 29. Dental schools in Brazil are classified according to their administration into national public schools, state public schools, and private schools. The University of Sao Paulo (U. S. P.) which is the most well recognized and largest university in South America, has three dental schools. The dental school of the Sao Paulo has the largest campus and a population of 715 students.

Japanese descendants have a great influence over U. S. P. life. About 30% to 50% of the enrollment in prestigious courses such medicine, dentistry and engineering is filled by students of Japanese descent.

The incidence of dental caries and periodontal disease are still extremely prevalent in Brazil, as in other developing countries, contrary to what has been observed in developed countries. Recent data issued by the Brazilian National Oral Health Survey (1994) observed a DMFT of 4.8 among 12-year-olds. In Japan, the National Dental Disease Survey conducted by the Ministry of Public Welfare (1993) revealed a DMFT of 3.64 for the same age group. Socioeconomic differences are seen as the principal cause of the discrepancy.

Introduction

The first images that come mind when Japanese are asked to think of Brazil are soccer, Carnival, the Amazon River, and Ayrton Senna. There are many other aspects of Brazilian culture that are still unknown to Japanese, especially in scientific areas and dentistry. The aim of this presentation is to introduce Brazilian dentistry, with a comparison between Brazil and Japan to highlight the contrasts.

Scientific production

Ranking of Brazil in the Scientific World

Brazilian scientific production is not comparable to that in developed countries like Japan. A retrospective examination of the research appearing during for the last 22 years (Science Citation Index from 1974 to 1996), for instance, shows that 66 Brazilian papers about orthodontics were published in internationally indexed journals (Fig. 1). In the same period, 239 papers were presented by Japanese researchers. The main cause of the difference cited is the deficiency of financial support. Indeed, some of these research efforts were conducted abroad with non-Brazilian financial support^{1,2)}.

There are about five major dental magazines that are released monthly or on a tri-monthly basis in Brazil. The foremost magazine, *Revista da U. S. P.*, which is published from University of Sao Paulo, covers all fields of dentistry. In the orthodontics field the pre-eminent journal is the *S. P. O.* (Sociedade Paulista de Ortodontia) from Sao Paulo State. However, very little research is conducted in orthodontic fields.

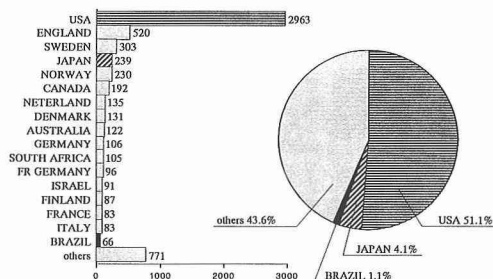


Fig. 1: Ranking by Country: Volume index of scientific journal articles (1974-1996)

Socioeconomic Difference

Socioeconomics and Dentistry

As a developing country, Brazil is faced with many economic and structural problems. Some of the largest cities in Brazil, like Sao Paulo and Rio, for instance, have soaring crime statistics, due mainly to the socioeconomic difference between the rich and the poor found in these cities. It is not unusual to find slums spread in many parts of these larger cities in which rich and poor live side by side.

Studies have also shown that the incidence of caries differs for the lower and higher socioeconomic strata^{1,3)}. A survey by the Brazilian National Oral Health Survey (1986) revealed that the DMFT differed for 12-year-olds from families with low (7.0) and with high (5.9) income^{1,4)}. The lower socioeconomic group has no access to regular dental care or, worse, no dental care whatsoever. The dental public services offer its services primarily on a pain relief basis^{1,2,3)}. It is not uncommon for the same tooth brush to be shared by all the members of a low income family. On the other hand, the higher socioeconomic group receive regular dental care through private systems. In addition, sugar and sugar-containing products are freely available at a very low price in Brazil^{1,2)}.

Orthodontics and Socioeconomic Differences

In Brazil there are many orthodontics practitioners; in Sao Paulo State alone there are about 920 specialties⁶⁾. Accordingly, the volume of orthodontic treatment is very high and adolescents can be seen in the Sao Paulo area wearing orthodontic appliances. However, the average Brazilian cannot afford orthodontic treatment⁴⁾.

There is no special governmental preventive orthodontics program for the lower socioeconomic class. Moreover, missing teeth, generally the first permanent molars, are observed at high frequency among poor children^{1,4)}. Poverty seems to result in more children with untreated caries lesions of the teeth²⁾. Analysis of cost-benefit determines the chosen treatment for these children: extraction.

It is desirable that implementation of preventive programs and the use of local resources provide affordable orthodontic treatment for all Brazilians⁶⁾.

Brazilian Dental Practice

Dental Public Service

The dental program offered by governmental authorities, providing public dental care free-of-charge, is only available for children. On the other hand, it has been very difficult to implement any permanent preventive dental programs due to the frequent political changes.

Brazil has one of the highest rates of dental caries and periodontal disease in the world^{1,4)}. A recent report by the Brazilian National Oral Health Survey (1994) cited a DMFT of 4.8 among 12-year-olds⁵⁾, as in contrasted with that of 3.64 for the same group age in Japan, cited by the National Dental Disease Survey conducted by the Ministry of Health and Welfare (1993)⁷⁾.

One of the solutions presented to tackle these dental health care problems by each successive new government was to establish new dental colleges. At present, there are 92 dental colleges spread throughout the country, and yet tooth caries is still a great problem in Brazil^{2,4)}.

Dental Practice

Most Brazilian dentists run their practices in small offices that average in size from 9 to 25 square meters with only one chair⁸⁾, and it is rare to find practices with two or more chairs in the office. Even so, there are a large variety of practices that differ in clientele and infra-structural investment. In recent years, dentists with different specialties are combining their practices to reduce their operating costs and for safety reasons.

Practices located in low socioeconomic neighborhoods usually have relatively simple equipment and work on lower price basis. In Sao Paulo City, young dentists are employed in these practices on either a fixed salary or on a percentage basis that may vary from 30% to 50% of the office income.

In contrast, practices located closer to higher socioeconomic areas use more sophisticated equipment and more highly paid staff.

There is no pattern as to the number of staff members at Brazilian practices. In general, there is one secretary who organizes the files and schedules appointments, one person who assists the dentist during treatment and takes care of all the instruments and equipment, and finally a person who is responsible for cleaning of the facility.

Dental Educational System

Dental Colleges and Universities in Brazil

The 92 dental schools in Brazil are classed national public schools, state public schools, or private schools. At most schools, five years of study is needed for completion of the requirements for a degree in dentistry. At the dental school of U. S. P., there is an option for a night school, the first one in Brazil. The requirements for graduation span a six-year duration, including classes on Saturday.

Figure 2 below summarizes the educational requirements to become a dentist in Brazil and Japan^{9,10}.

Higher education in Brazil begins after completion of 12 years of schooling: five years of elementary school, four years of junior high school, and three years of high school.

Expensive in Brazil

Cost of dentistry study in Brazil

The fees payable at university schools of dentistry and dental colleges include tuition fees, fees for the use of facilities and equipment, and other expenses. Table 1 shows, for Japan and Brazil, the average cost for the first year of study at national and at public and private dental colleges⁹. There is an entrance examination for colleges and universities that is offered at the end of each year.

The public colleges and universities are the most difficult to enter, due mainly to both their high prestige and the no tuition fees are required.

Cost of living in Brazil

As a rough guide to the cost of living in Brazil, some prices of consumer products and services are compared to those in Japan in Table 2. Japan is known to be one of the most high prices countries in the world.

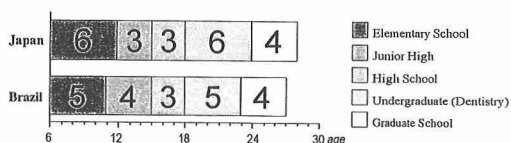


Fig. 2: Dental Educational System.

Table 1: Average First Year Dental Education Costs (as of April 1995)

	Brazil	Japan
National	no fee required	717,600
Public	no fee required	757,000
Private	1,050,000	4,709,865

(unit: yen)

Sources: Ministry of Health (Brazil)⁴⁾
Ministry of Education, Science, Sport and Culture
(Monbusho)⁹⁾

Table 2: Comparisons of prices in Brazil and in Japan

	Brazil	Japan
Coca-Cola (350 ml can)	50	110
Beer (350 ml can)	70	220
Milk (one liter)	120	210
Big Mac (set)	450	600
Phone call (public phone, 3 min.)	5	30
Rice (10 kg)	800	3,837
Meat (100 gm)	50	150
Movie theater admission	700	1,808
Gasoline (one liter)	90	127
Postage (domestic)	23	80
Hair Cut (Saloon)	1000	4500
Taxi Fare (equivalent distance)	150	530
Total	3,508	12,202

(Unit: yen)

Source: "Commodity Prices Report" of the Economic Planning Agency

The minimum salary in Brazil is about 11,500 yen per month. This value is used as reference standard by many industries and companies. However, it is clearly not enough to cover even the basic necessities of life for a family of six for one month.

University of Sao Paulo-U. S. P.

Reputation of U. S. P.

The University of Sao Paulo (U. S. P.) is the most well known and largest university in South America. The campus is located in Sao Paulo, the most important state in Brazil. There are three faculties of dentistry that are under the aegis of U. S. P., located in Bauru, Ribeirao Preto and Sao Paulo City, also known as Cidade Universitaria. The last is the largest campus of the three.

Dental school of U. S. P. (Campus at Sao Paulo City)

The dental school of U. S. P. at the Sao Paulo campus has a student body of 715. There are 415 students who attend a five year course and 300 students who attend the six-year night program course. The dental school of U. S. P. was the first in Brazil to offer a night-course program.

The night program includes Saturday classes. Some private schools of dentistry have since added a similar night course program.

Dental School of U. S. P. and the Community

The dental school of U. S. P. offers public dental care free-of-charge to the community surrounding its campus. The main purpose of this system is to offer treatment for lower social economic classes.

The treatment is given by the fourth and fifth year students at the clinic of the school after an extended period of laboratory practice. All cases are supervised by research clinicians.

U. S. P. and Brazilians of Japanese Descent

Japanese descendants have had and continue to have a great influence over U. S. P. life. The enrollment in prestigious courses such as medicine, dentistry and engineering is about 30% to 50% filled by students of Japanese descent. There are also several researchers and professors of Japanese ancestry in many scientific fields. In addition, in the campus of U. S. P. there is the Japanese House of Culture and a Japanese garden. In no other country have Japanese descendants had such influence throughout campus.

Four Japanese descendants have held the chairman position at the faculty of dentistry at U. S. P., and a Nikkei occupied the director position of the dental school for four years.

Japanese Descendants and the Outdoor Program

In Brazil there is an association of medical and dental students who volunteer to provide free-of-charge treatment to the poor community of Sao Paulo State. Dental students conduct dental treatment in poor neighborhoods, in classrooms of local public schools that serve as improvised dental offices. Portable equipment and improvised dental chairs are used. Lectures about preventive dental care, prevention of AIDS and other sexual diseases, hygiene and birth control are also presented by the students. This outdoor program is carried out during the students' vacations.

Conclusions

The prevalence of caries and periodontal disease in developing countries like Brazil is still high, contrary to what has been observed in developed countries. Socioeconomic differences are blamed as the principal cause. Recent reports by the Brazilian National Oral Health Survey (1994) cited a DMFT of 4.8 among 12-year-olds⁵⁾, compared to that in Japan of 3.64 cited (National Dental Disease Survey conducted by the Ministry of Health and Welfare, 1993)⁷⁾.

There are a variety of dental practices in Brazil that differ in their location and infra-structural investment. However, most Brazilians dentists run their practices in small offices that average in size from 9 to 25 square meters with only one chair. There is no pattern for the number of staff. Usually one person assists the dentist during treatment and one secretary organizes the files.

In Brazil, there are 92 dental schools that are classified according to their administration as national or, state public schools or private schools. At most schools, a five-year course of study is needed to obtain a degree of dentistry. Some dental schools offer an option for night courses that are held over six years.

The dental school of University of Sao Paulo (U. S. P) is the most well known and largest university in South America. The dental school at its Sao Paulo campus is the largest one with a total student population of 715 students. The dental school offers public dental care free-of-charge conducted by the fourth- and fifth-year students to the lower social classes in the community surrounding its campus. The main purpose of this program is to make dental treatment available to the lower socioeconomic classes.

Japanese descendants have great influence over U. S. P. life. The enrollment in prestigious courses such as medicine, dentistry and engineering is about 30% to 50% filled by students of Japanese descent. In addition, a Nikkei occupied the director position of the dental school of U. S. P.

It is desirable that implementation of preventive programs and the use of local resources provide affordable orthodontic treatment for all Brazilians.

Acknowledgments : The authors gratefully acknowledges the sug gestions and advise provided by the staff of the Department of Orthodontics, Matsumoto Dental College.

Special thanks to Dr. Y. Kawahara, Dr. S. Uematsu and Dr. A. Sakatoku for their faithful assistance and to Mr. H. Pine for reviewing the English of this paper.

In Brazil, special thanks to Dr. H. Tiba, Dr. E. Midorikawa , Dr. R. Ide and Dr. P. Nobaru for providing important data.

This study was partly supported by grants from Nagano prefecture.

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抄録：ブラジルの歯科事情

鈴木エドアルド優吾, 吉川仁育, 出口敏雄 (松本歯大・歯科矯正)

本報告の目的は、ブラジルについて、歯科的見地から紹介するものである。ブラジルの文化や経済状態など、口腔保健面に影響すると思われる生活の側面についても言及した。

歯科大学のシステムや、授業料等の種々の歯科事情について、日本とブラジルを比較した。歯学部の数では日本では29であるのに対し、ブラジルでは92で、ブラジルの歯学部は国立、州立、私立の3つに分類される。サンパウロ大学 (U. S. P.) は南アメリカにおいて名門かつ最大規模の州立大学で、サンパウロ州内に3つの歯学部をもつ。そのうちの一つ、サンパウロ市内にあるサンパウロ大学歯学部は、敷地も広く715名の学生が在籍する。

なお、U. S. P. の学生のうち、日系人の占める割合は多く、特に医学部、歯学部、工学部などの競争率の高い学部では日系人は全体の30～50%を占める。ブラジルは現在、いろいろな面で開発途上にあるが、歯科の現状についてみても、いまだに齲蝕、歯周病発症率は非常に高い。「ブラジル国民の口腔衛生に関する調査」で、1994年における12歳児の DMF 歯数は4.8本であった。これに対し、日本においては厚生省「歯科疾患実態調査」で1993年における12歳児の DMF 歯数は3.64本である。このように社会経済的な状況が歯科事情に影響するものと考えられる。