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# Characteristics and trends in the expansion of private dental schools in Brazil

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**Objective:** This article describes and analyses the characteristics of the expansion of private dental education in Brazil from 1996 to December 2018 and its relationships with public policies and the country's labour and education market in dentistry. **Method:** The study used an exploratory and descriptive quantitative approach involving standardised data-collection techniques from open-access secondary databases. **Result:** From 1996 to 2018 there was an overall increase of 315% in dental schools (582% in the private sector and 49% in the public sector). Brazil had 374 dental schools in December 2018, 307 of which were private and 67 of which were public. The 374 schools offered 47,192 admission places, 89% of which were private. In five states, dental education is 100% private, while in another 19 states the private supply exceeds 70% of the total. In the other three states this offer is between 40% and 67%. From 1996 to 2016, the private sector's share of dental school graduates was 66%. Women represented 73% of Brazilian dental-school graduates in 2016. **Conclusion:** Privatisation of dental education in Brazil raises challenges for the development of policies, planning, organisation of care, and structuring of the training process for dentists, as well as the dynamics of the labour market in the health system.

***Key words:*** *Privatisation, professional training, human resources in health, dentists*

## INTRODUCTION

Privatisation and commodification of the higher education system is a global trend. Although these tendencies assume specific characteristics according to a country's economic, cultural and social conditions, they bear a close relationship to global phenomena, such as economic transformations and the globalisation of capital, the development of new communication and information technologies and the emergence of an international knowledge network[1,2].

In Brazil, the privatisation of higher education began in the 1960s and 1970s, starting with the Law of Guidelines and Bases of National Education (*Lei de Diretrizes e Bases da Educação Nacional- LDB*) in 1961 and the Educational Reform of 1968. The law, by acknowledging organisation of the educational system in non-university structures, essentially favoured the creation of standalone colleges or schools, while the Educational Reform established a complementary relationship between public and private sectors on important aspects, such as the institutional organisation of teaching establishments, admissions policies, the schools' major fields and the faculty's work systems and degree requirements[3].

The 1990s witnessed a second phase in the privatisation of Brazil's educational system, with significant growth in the number of private admissions places and in new schools, covering all areas of knowledge. The changes were driven mainly by three new pieces of legislation: the Law of Guidelines and Bases of National Education (LDB) of 1996; the legal framework established by the Ministry of Education in early 1997 for regulation of the Law on Basic Guidelines; and the 1988 National Constitution. The LDB granted institutions scientific and teaching autonomy in relation to the course load required to be undertaken to complete the curriculum and for creating or eliminating schools and admissions places. In addition, Decree no. 2.306 of 1997, which regulated the federal educational system, essentially began to introduce market rules into the higher education system by

allowing flexibility in the schools' modalities, admissions formats and the creation of new types of Institutions of Higher Education (IES in Portuguese), such as specialised universities and university centres[4,5]. According to Sampaio[3], the decree can be considered a 'watershed' in the history of Brazil's higher education, to the extent that it acknowledged and legalised education as a profitable activity.

As for training in the health field, the changes in flexibility of curricula and the recommendations from the National Plan for Education[6] involved development of regulatory measures through the drafting of specific National Curricular Guidelines for the health professions[7]. The guidelines established inter-sector links between the Ministries of Education and Health by defining the academic and professional profiles and the competencies, skills and course contents for the 14 health professions to adjust to the labour processes inherent to the change in the healthcare model underway in the country.

In dentistry, these trends converged with the inclusion of oral health teams in the Family Health Policy in 2001 and the launch of the National Oral Health Policy in 2004.

Haddad *et al.*[8] called attention to the inclusion of oral health teams in Brazil's Family Health Strategy, which introduced important changes to the labour market in dentistry. Self-employed dental practice changed with the growth in job positions in the public health system and greater interest by dentists in these new labour market opportunities [9].

According to Vieira *et al.*[10], the combination of educational policies and health policies meant not only greater demand for dentists in the public sector, but also greater interest among undergraduate students in dentistry careers, providing an additional incentive for the expansion of Brazil's dental education market. This expansion was marked by an increase in dental schools and admissions places, as well as a growing trend towards the acquisition and incorporation of, and merging with, private higher-education institutions[11]. Sguissardi[12] calls attention to the intense focus and participation of corporate groups in higher education in the national and international financial capital market, giving rise to corporate conglomerates and resulting in the formation of oligopolies.

In relation to sector policies with incentives and financing, beginning in the 2000s, the private higher-education market was driven by the National Plan for Education (PNE) of 2001–2010, the main goal of which was a 30% increase in the availability of higher education for the Brazilian population 18–24 years of age. This market also became more active with the creation of government student loan programmes, such as the Student Loan Fund (FIES) and the University for All Program (PROUNI), created by Law 10.260 of 12 July 2001 and Law 11.096 of 13 January 2005, respectively, and the Program for Stimulus to Restructuring and Strengthening Institutions of Higher Education (PROIES), created by Law 12.688 of 18 July 2012.

Given the expansion of the private sector in dental education, the current study aimed to describe and analyse the characteristics of this trend in Brazil from 20 December 1996, when the LDB was enacted, until 31 December 2018.

## METHODOLOGY

The study adopted an exploratory approach, involving various standardised data-collection and search techniques, all of which are available in open-access secondary databases, for the collection of information up to 31 December 2018.

To describe the institutions of higher education that offer dental courses in Brazil and to identify the trends in the private dental education market, we collected and organised data from the System for Regulation of Higher Education of the Ministry of Education (e-MEC) and the Censuses on Higher Education conducted by the National Institute for Educational Studies and Research 'Anísio Teixeira' (INEP), through the System of Indicators on Undergraduate Health Studies (SIGRAS) developed by the Institute of Social Medicine, Rio de Janeiro State University (IMS/UERJ), Work Station of the Observatory-Network on Human Resources in Health[13]. The data collected were used to build a database with the following variables: name and corporate taxpayer identification number (CNPJ) of the company owning the course; name and code of the institution of higher learning; corporate legal status; administrative category; type of academic organisation; municipality (county), state and major geographic region of the institution of higher education; and the authorised number of admissions places. The SIGRAS database yielded data up to 2016 (the last year available) on the number of admissions places, enrolment and graduates per year, and the number of unfilled places. For the websites of the institutions of higher education that provided this information, we identified the monthly tuition fees for the second semester of 2018 for subsequent calculation of mean monthly tuition.

## RESULTS

In order to organise the data systematically, we opted to present the results according to the following nine analytical categories: number of schools and admissions places; proportion of admissions places in private dental schools; future admissions places;

distribution of private institutions of higher education according to corporate status and type of academic organisation; monthly tuition fees; predominant corporate groups in dental education; number of dentistry graduates; number of dental school graduates according to gender; and unfilled admissions places.

## Number of schools and admissions places

In 31 December 2018, there were 374 active dental schools in Brazil, of which 307 were private and 67 public (*Figure 1*). These 374 schools offered 47,192 admissions places, of which 42,075 were private and 5,117 were public.

From 20 December 1996 to 31 December 2018, Brazil experienced a growth of 315% in the number of dental schools. Analysis according to administrative category showed increases of 582% in the private sector and 49% in the public sector.

In 1997, right after the promulgation of the LDB, the number of private dental schools ($n = 57$) was slightly higher than the number of public schools ($n = 46$). By 2003, the number of private schools ($n = 106$) was double that of public schools ($n = 53$), and by December 2018, 89% of the schools and 82% of the admissions places were private.

In five states (Acre, Amapá, Rondônia, Roraima and Mato Grosso), 100% of dental schools and admissions places were provided by the private sector. In nine more states and in the Federal District (Brasilia), the proportion of private schools exceeded 80%: Bahia (90%), Maranhão (90%), Espírito Santo (89%), Pará (88%), Federal District (88%), Santa Catarina (87%), Minas Gerais (87%), Rio Grande do Sul (86%), Tocantins (83%) and Rio de Janeiro (83%). In the states of Pernambuco, Ceará, Alagoas, Amazonas, São Paulo, Goiás, Paraná, Rio Grande do Norte and Piauí, the proportion of private schools ranged from 70% to 80%. The proportion of private schools was 67% in both Mato Grosso do Sul and Paraíba, and in Sergipe it was 50%.

Seven private schools located in five states offered dentistry courses alone, totalling 520 admissions places. These institutions of higher education are located as follows: two in Manaus (Amazonas), one in Fortaleza (Ceará), one in Petrolina and one in Recife (both in Pernambuco), one in Montes Claros (Minas Gerais) and one in São Paulo (São Paulo).

## Proportion of admissions places in private dental schools

The highest proportion of admissions places in private dental schools in Brazil was found in Southeast Brazil (42%), followed by Northeast Brazil (28%), South Brazil (12%), North Brazil (10%) and Central-West Brazil (8%). In relation to the country overall, the highest proportions of private admissions places were in the states of São Paulo (20%), Minas Gerais (14%), Bahia (9%), Rio de Janeiro (6%) and Paraná (5%). Together, these five states had 54% of the country's private admissions places in dentistry.

In the state of São Paulo, one institution of higher education has a single dentistry course that offers 2,050 admissions places per year, accounting for 25% of all the private places in that state.

As shown in *Figure 2*, in six states (Rio de Janeiro, Minas Gerais, Espírito Santo, Rio Grande do Sul, Mato Grosso and Santa Catarina), up to 25% of the private admissions places are located in the capital cities. Santa Catarina is the only state in Brazil for which the state capital (Florianópolis) has no private admissions places in dentistry. In seven states (Bahia, Ceará, Paraíba, Goiás, Rondônia, Tocantins and

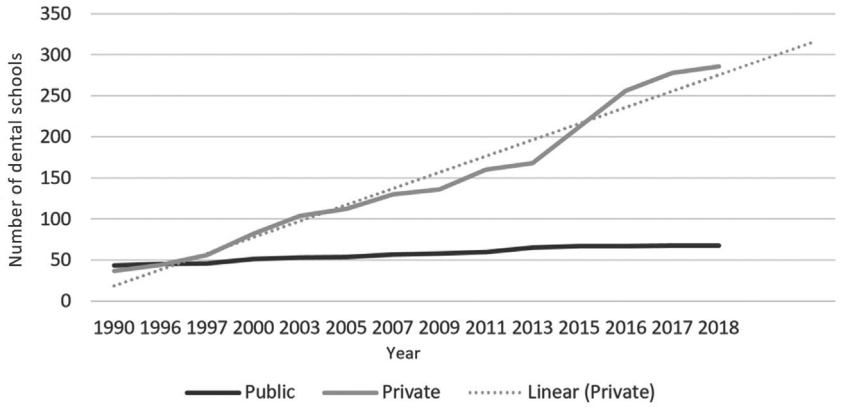


*Figure 1.* Trend in the number of dental schools in activity in Brazil, 1990–2018. Prepared by the authors with data from the System for Regulation of Higher Education of the Ministry of Education (e-MEC).

Paraná), 25%–50% of private admissions places are located in the capital cities. In five states (Mato Grosso do Sul, Maranhão, Pernambuco, Rio Grande do Norte and São Paulo), 51%–75% of private admissions places are in the state capitals. In nine states, 76%–100% of the private admissions places for dental education are located in the state capitals. In six of these states (Acre, Amapá, Amazonas, Roraima, Alagoas and Sergipe), and in the Federal District (Brasília), 100% of the private admissions places for dental education are located in the state capitals. In the states of Pará and Piauí, 92% and 88%, respectively, of the private admissions places for dental education are located in the state capitals.

### Future admissions places in dentistry

In 31 December 2018, we identified 83 private schools that had already been accredited by the Ministry of Education but in which the course activities had still not begun. These schools are located in 23 states and the Federal District, and will provide 11,764 new admissions places, 39% of which will be offered in 14 state capitals (Aracajú, Belo Horizonte, Boa Vista, Cuiabá, Curitiba, Fortaleza, Maceió, Mossoró, Porto Velho, Recife, Rio de Janeiro, Salvador, São Luís and São Paulo) in addition to the Federal District (2% of the total).

### Distribution of dental schools according to corporate status and type of academic organisation

The largest category of institutions of higher education in the supply of dental education was the '*faculdades*' (standalone colleges), representing 47% of the total, followed by the universities (32%) and the university centre (21%).

Regarding the corporate format, the largest share of dental schools belonged to the *sociedades empresárias limitadas* (limited liability companies), which owned 36% of all the private institutions of higher education. The second leading group was the *associações privadas* (private associations) (27%), followed by the *sociedades simples limitadas* (ordinary limited partnerships) (13%), the *fundações privadas* (private foundations) (12%) and the *sociedades anônimas fechadas* (private limited liability companies) (11%). The institutions of higher education with the fewest dental schools were the *empresas individuais de responsabilidade limitada de natureza empresária* (individual limited liability companies) and the *sociedades simples puras* (ordinary partnerships) (1% each), as shown in *Table 1*.

### Monthly tuition fees

The monthly tuition fees were available on the websites of 81% of the dental schools, as of December 2018. The national average for Brazil was Brazilian Real (BRL) 2,135.18 (approximately U$560.00 per month). In two of Brazil's five major geographical regions, the Central-West Region and the South Region, the mean monthly tuition fee exceeded the national mean: BRL 2,331.50 (or U$610.00) *versus* BRL 2,154.87 (or U$565.00) respectively. The mean monthly tuition fees in the Northeast and North Regions were BRL 1,921.44 (U$505.00) and BRL 1,894.22 (U$495.00), respectively. Mean tuition was lowest in the Southeast Region, the region with the largest proportion of private dental schools (BRL 1,690.75, or U$445.00).

Among the public dental schools, 11 municipal schools were not tuition-free. Six of these are foundations and five are classified as '*autarquias*' (self-governed agencies). All 11 are located in the states of São Paulo (six), Goiás (two), Santa Catarina (one), Tocantins (one) and Paraná (one), and provide 1,000 admissions places per year. The mean monthly tuition fee

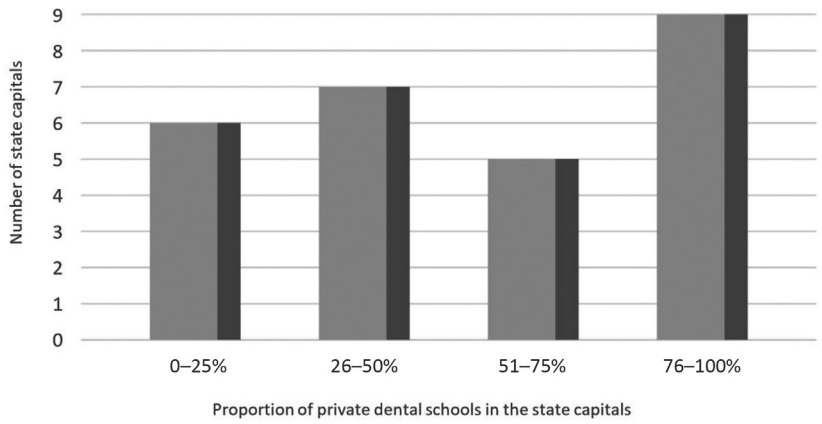


*Figure 2.* Percentage distribution of states in quartiles, according to the proportion of private places in dental schools in the state capitals. Brazil, 2018. Prepared by the authors with data from the System for Regulation of Higher Education of the Ministry of Education (e-MEC).

**Table 1** Number of institutions of higher education with dental schools according to corporate format and type of academic organisation (Brazil 2018)

| Corporate format | Number of institutions of higher education | Universities | Colleges | University centres |
|---|---|---|---|---|
| Private association | 82 | 45 | 18 | 19 |
| Individual limited liability company | 2 | 0 | 2 | 0 |
| Private foundation | 36 | 22 | 7 | 7 |
| Private limited liability company | 35 | 10 | 19 | 6 |
| Limited liability company | 111 | 9 | 74 | 28 |
| Ordinary limited partnership | 39 | 11 | 22 | 6 |
| Ordinary partnership | 2 | 0 | 2 | 0 |
| Total | 307 | 97 | 144 | 66 |

Source: Prepared by the authors based on data from the System for Regulation of Higher Education of the Ministry of Education (e-MEC).

for these 11 schools was BRL 1,774.00 (U$465.00), the highest being BRL 4,046.85 (U$1,060.00) at Blumenau, Santa Catarina state, and the lowest being BRL 1,490.00 (U$390.00) at São Caetano do Sul, São Paulo state.

### Predominant corporate groups in dental education

We found a predominance of eight corporate groups with three or more dental schools each. Combined, these eight groups own 23% of all the private dental schools and provide 28% of the private admissions places in Brazil, as shown in *Table 2*.

The corporate group with the largest number of dental schools already accredited by the Ministry of Education, but without having launched their course activities, was Ser Educacional S.A., with 17 future schools and 4,200 future admissions places. The second leading corporate group in this regard was Kroton Educacional S.A., which will provide six more schools and 820 more places. Combined, these two corporate groups own 27% of the private dental schools and 12% of the new admissions places already authorised by the Ministry of Education.

Kroton Educacional S.A., which owns several schools with brand names such as Anhanguera, Unopar and Pitágoras, ranks first among all the corporations in Brazil in higher education, regarding total enrolment, corporate profit and market share[14]. Ser Educacional S.A. ranks sixth in this list[15].

**Table 2** Distribution of corporate groups with dental schools according to number of schools, admissions places, states and cities (Brazil, 2018)

| Corporate group | Schools | Places | States | Cities |
|---|---|---|---|---|
| Kroton Educacional S.A. | 26 | 3,912 | 12 | 26 |
| Ser Educacional S.A. | 12 | 2,906 | 8 | 12 |
| Associação Salgado de Oliveira de Educação e Cultura - Universo. | 8 | 2,400 | 5 | 8 |
| Unidades de Ensino Superior da Bahia Ltda -Unirb | 7 | 751 | 4 | 7 |
| Cruzeiro do Sul Educacional S.A. | 6 | 910 | 3 | 4 |
| Adtalem Educacional do Brasil S.A. | 4 | 360 | 4 | 4 |
| NRE Participações S.A. | 4 | 500 | 2 | 4 |
| Laureate International Universities | 3 | 860 | 3 | 3 |

Source: Prepared by the authors based on data from the System for Regulation of Higher Education of the Ministry of Education (e-MEC).

### Number of dentistry graduates

From 1991 to 2016 there was an increase of 2,773% in the number of dental school graduates (public and private dental schools combined). Comparison of the data according to administrative category shows clearly that this burgeoning trend in dental school graduates was driven by the private sector, which was responsible for 66% of the dental students who graduated between 1996 and 2016, as shown in *Figure 3*.

### Number of dental school graduates according to gender

The data on total dentistry graduates from public and private schools confirm the trend towards feminisation of the profession since the 1990s (*Figure 4*). In 2016, 73% of Brazilian dental school graduates were women.

### Unfilled admissions places

Regarding the supply of admissions places and the number of incoming dental students in the private sector from 1996 to 2016, we identified a total of 57,913 unfilled places, representing 18% of the total supply of admission places during the same period. In 2016, there was an 85% increase in unfilled places compared with 2015. The trend is shown in *Figure 5*.

## DISCUSSION

In Brazil, expansion of the private sector into dental education is not an isolated phenomenon. Various

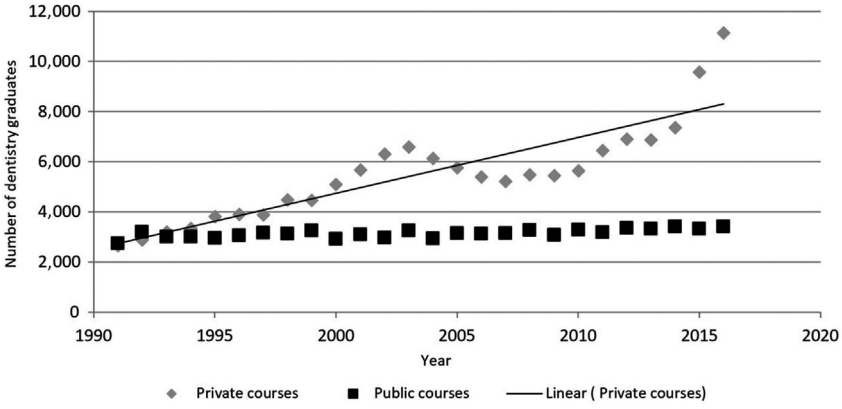


*Figure 3.* Growth in number of dentistry graduates per year in private schools, Brazil, 1990–2016. Prepared by the authors based on data from the System of Indicators on Undergraduate Health Studies (SIGRAS).

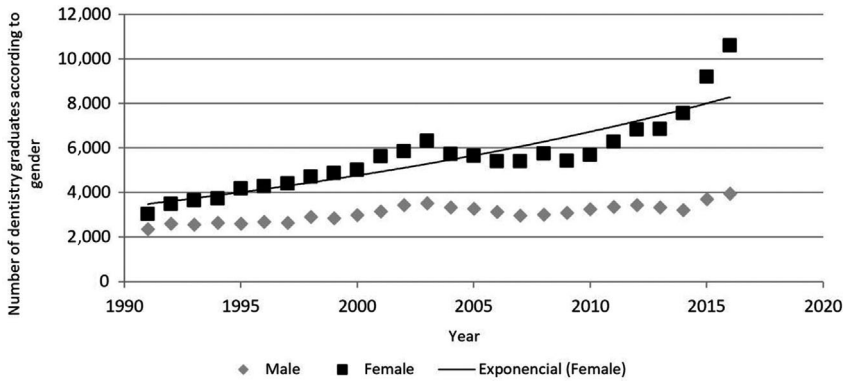


*Figure 4.* Trend in number of female dental school graduates according to year, Brazil 1990–2016. Prepared by the authors based on data from the System of Indicators on Undergraduate Health Studies (SIGRAS).

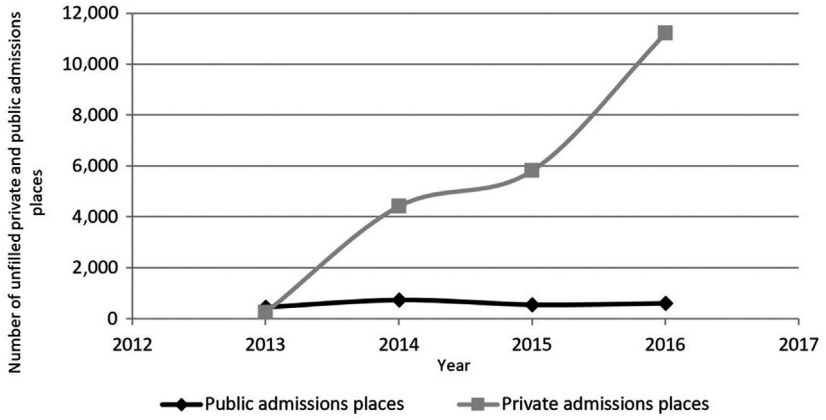


*Figure 5.* Unfilled private and public admissions places in dental schools, Brazil 2013–2016. Source: Prepared by the authors based on data from System of Indicators on Undergraduate Health Studies (SIGRAS).

studies have documented growth of the private sector's share of training in the health professions in all five major geographical regions of Brazil, with the highest concentration being in the South and Southeast Regions[1,2].

Relating specifically to dentistry, the current study showed increases of 582% and 738% in the number of private dental schools and admissions places, respectively, from 1996 to December 2018. This considerable expansion in the total number of schools and admissions places occurred in all five major geographical regions of the country. The private sector's share in the number of schools ranged from 80% in the Northeast Region to 88% in the North Region,

while the private share of admissions places ranged from 85% in the South Region to 92% in the North Region, showing that privatisation has been a nationwide characteristic of dental education in Brazil.

Despite growth in the number of schools and admissions places, the distribution of this supply within and between regions of Brazil is still unequal, being concentrated in areas with more favourable economic, human development, and health indicators, which may explain the high concentration of private dental education in the state capitals. The Northeast and Southeast Regions of Brazil have the highest proportion of the country's total private admissions places (34% each), while the Central-West Region has the lowest (only 9%).

According to the World Dental Federation (FDI)[16], the existence of regional disparities in the provision of dental education is a challenge, especially for countries with low and medium socio–economic development indices.

Considering the high monthly tuition fees, the inequalities in the supply of dental education can be even more severe in states where there are no public dental schools, such as Acre, Amapá, Rondôniaand Roraima in the North Region and Mato Grosso in the Central-West Region. Dental students in these states are thus left with the options of applying for scholarships, taking out student loans or studying in other states (which involves higher living expenses).

Undergraduate studies in dentistry always involve some expenditure for students' families, even if the student is enrolled in a free public school. Although the necessary equipment is provided by the schools, the clinical learning process requires individuals to purchase instruments and materials every semester, according to the course content. The high financial outlay by families, inherent to the training process in dentistry, may at least partly explain the number of unfilled admissions places[17]. At any rate, the number of places authorised by the Ministry of Education has outstripped demand, which appears to be a protective mechanism by these institutions of higher education against dropout rates, or even a future reserve strategy in case the institutional rules are altered for accreditation of schools and authorisation of admissions places[18].

Other factors that contribute to the number of unfilled admissions places may involve shortage of scholarships and insufficient access to government programmes to expand access to higher education, such as FIES and PROUNI, both of which are targeted to students who cannot afford undergraduate training in private colleges and universities.

According to Corrêa[19], financial aid programmes, such as FIES, allow institutions of higher education to access an important source of funding in the form of subsidised and risk-free 'working capital' because the federal government transfers, or even advances, the full monthly tuition fees to the corporate groups, regardless of payback on loans or withdrawal or dropout of students from the school. By signing a contract, students (consumers) are able to obtain cost-free undergraduate training, thus deferring financial commitment until after graduation. This strengthens the position of the major corporate groups in education, increasing their profitability and continuing their expansionist trend, either by acquiring smaller colleges or through mergers, leading to increased prevalence in the dental education market.

Another key characteristic of dental education in Brazil is the profession's feminisation. When analysed according to gender, the data on dental school graduates showed a predominance of women (mean = 64%) throughout the period studied. This predominance is confirmed by the Federal Board of Dentistry[20] concerning the number of actively registered dentists. Although there are no specific studies on how this distribution impacts the professional practice of dentists, the study by Scheffer and Cassenote[21], on graduates of medical schools, may be a hint that women tend to organise their professional practice according to their family lives, with impact on the working day, location (e.g., retention in specific territories) and even choice of specialisation.

The institutions of higher education with the largest market share are limited liability companies, the most common corporate shareholding format in Brazil. They are formed by two or more partners with joint responsibility for the company's equity capital, as regulated by the Brazilian Civil Code.

Regarding the type of academic organisation offering dental courses, nearly 70% are *faculdades* (colleges) and university centres, types of academic organisation modalities in Brazil that invest less in research, community programms and knowledge exchange with other health fields. Wright and Parkes[22], studying private schools in Australia, showed that the concern with demographic and epidemiological changes and higher incidence of chronic diseases requires evidence-based clinical practice with continuing research.

## FINAL REMARKS

Given recent trends in dental education in Brazil driven by the sector's privatisation, we consider it critical to examine and reflect on the challenges of developing policies, planning, organisation of patient care and dentists' training.

The growth in the number of dental schools and admissions places and the increase in the number of dentists have implications for shaping the labour

market in dentistry, but they alone do not guarantee a more equitable distribution of dentists within and between regions or a solution to the population's oral health problems. According to Guíñez *et al.*[23], in Chile, as well as in Latin America in general, the increased number of dental surgeons may be related to the increase in private courses in the country since 1997. However, the authors report that the increased number of dental professionals did not result in improvement of the oral conditions of the population; this was because of inequalities in the regional distribution of professionals and a deficit of dentists in the public system. The imbalances between supply and demand may condition the bargaining power of different actors in the labour market and thus affect dental practice and dentists' earnings.

According to McPake *et al.*[24], the relationship between the labour market's dynamics and the influence on the professional training process have generally received little attention, resulting in insufficient mechanisms to regulate such relations.

The Federal Council of Dentistry (CFO), in early 2019, requested the Ministry of Education to suspend the authorisation to open new courses in Brazil[25]. This request reflected concern about the working conditions of the profession in the medium and long term, given the indiscriminate growth of undergraduate dentistry courses in the country as, according to the CFO data, there was one dental surgeon in the country for 645 inhabitants, while the World Health Organization's (WHO) recommendation for this indicator was one professional for every 1,200 inhabitants. Although a few authors support and use this indicator [26,27], WHO and the Pan American Health Organization (PAHO) never made this type of recommendation, rather recognising that 'the decision on the directions to be taken regarding health care coverage . . .is determined by the government of each country'[28]. This statement is clearly supported by authors such as Narvai[29] who understands that coverage indicators and targets, such as the number of dentists per capita, depend on cultural, socio–economic and epidemiological factors that differ within and outside regions and countries.

Therefore, more studies will be needed, both on the expansion of dental schools in Brazil, as well as on the number of places for admission and the current situation regarding graduates, especially considering the flow and dynamics of the labour market in dentistry. The effect of development of the public and private health systems, resulting from the recent past with job growth within the scope of the National Policy on Oral Health must also be considered[30]. The growing feminisation of the profession and the characteristics of the work processes, such as a 40-hour working week for oral health teams, are challenges for the planning for extended coverage of and population access to quality health services.

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## Conflict of interest

The authors have no conflicts of interest.

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