

## Expansion of dental education in Brazil: impacts on professional training and the distribution of dentists

Vitor Gabriel da Silva<sup>1</sup>

 00009-0009-0027-6932

Helena Pereira Rodrigues da Silva<sup>1</sup>

 0000-0002-3257-4442

Gabrielito Rauter Menezes<sup>1</sup>

 0000-0001-7649-5132

Eduardo Dickie de Castilhos<sup>1</sup>

 0000-0002-7072-6558

<sup>1</sup>Faculdade de Odontologia, Universidade Federal de Pelotas (UFPel), Pelotas, Rio Grande do Sul, Brasil.

Correspondence:

Vitor Gabriel da Silva

E-mail: viitorgabriell2016@gmail.com

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**Abstract** The rapid expansion of Dentistry programs in Brazil has raised concerns about job market saturation and the quality of professional training. This study analyzed the distribution of dental education institutions and their respective vacancies, correlating this data with socioeconomic and demographic indicators. The methodology involved data collection from the e-MEC system, the Federal Council of Dentistry (CFO), and the Brazilian Institute of Geography and Statistics (IBGE). The results reveal a predominance of private institutions, which offer a significantly higher number of vacancies compared to public ones, in addition to striking regional inequalities in the distribution of these programs. The increasing commodification of higher education has direct implications for the quality of training and the concentration of dentists, highlighting the need for public policies to regulate this growth and ensure a balance between professional training and the needs of the population.

**Descriptors:** Education, Dental. Professional Training. Demography. Employment.

### Expansión de la enseñanza odontológica en Brasil: impactos en la formación profesional y en la distribución de cirujanos dentistas

**Resumen** La rápida expansión de las facultades de Odontología en Brasil ha generado preocupación respecto a la saturación del mercado laboral y la calidad de la formación profesional. Este estudio analizó la distribución de las instituciones de enseñanza odontológica y sus respectivas vacantes, correlacionando estos datos con indicadores socioeconómicos y demográficos. La metodología involucró la recolección de datos en el sistema e-MEC, en el Consejo Federal de Odontología (CFO) y en el Instituto Brasileño de Geografía y Estadística (IBGE). Los resultados evidencian el predominio de instituciones privadas, con una oferta significativamente mayor de vacantes en comparación con las públicas, además de marcadas desigualdades regionales en la distribución de estas carreras. La creciente mercantilización de la educación superior tiene implicaciones directas sobre la calidad de la formación y sobre la concentración de los cirujanos-dentistas, lo que evidencia la necesidad de políticas públicas que regulen este crecimiento y aseguren el equilibrio entre la formación profesional y las demandas de la población.

**Descriptorios:** Educación en Odontología. Capacitación Profesional. Demografía. Empleo.

### Expansão do ensino odontológico no Brasil: impactos na formação profissional e na distribuição de cirurgiões-dentistas

**Resumo** A expansão acelerada dos cursos de Odontologia no Brasil tem gerado preocupações quanto à saturação do mercado de trabalho e à qualidade da formação profissional. Este estudo analisou a distribuição das instituições de ensino odontológico e suas respectivas vagas, correlacionando esses dados com indicadores socioeconômicos e demográficos. A metodologia envolveu a coleta de dados no sistema e-MEC, no Conselho Federal de Odontologia (CFO) e no Instituto Brasileiro de Geografia e Estatística (IBGE). Os resultados evidenciam a predominância de instituições privadas, com oferta significativamente maior de vagas em comparação às públicas, além de marcantes desigualdades regionais na distribuição desses cursos. A crescente mercantilização do ensino superior tem implicações diretas sobre a qualidade da formação e sobre a concentração dos cirurgiões-dentistas, evidenciando a necessidade de políticas públicas que regulem esse crescimento e assegurem o equilíbrio entre a formação profissional e as demandas da população.

**Descritores:** Educação em Odontologia. Capacitação Profissional. Demografia. Emprego.

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## INTRODUCTION

Traditionally known as the “country of football,” Brazil has gained increasing recognition in another field: Dentistry. Currently, the country leads the global ranking in the number of registered dentists, as highlighted by Morita et al. (2020)<sup>1</sup>. This phenomenon results from the rapid expansion of Dentistry programs over recent decades, which has sparked debates regarding a possible saturation of the labor market. The growing number of trained professionals and their territorial distribution have generated imbalances between the supply of dental services and the actual demand of the population.

The World Health Organization (WHO) does not establish a universal parameter for the ideal distribution of oral health professionals, as this dynamic is strongly influenced by local factors such as socioeconomic conditions, cultural characteristics, and the epidemiological profile of the populations served<sup>2</sup>. In Brazil, however, the Ministry of Health recommends, through national guidelines, the presence of one oral health team for every three to four thousand inhabitants, although this proportion may vary according to regional specificities<sup>3</sup>.

Despite this recommendation, Brazil largely exceeds this ratio, revealing a scenario of professional oversupply. This mismatch is further aggravated by the fact that the training of new dentists does not always align with the population's health needs but often responds to commercial interests<sup>4</sup>. Such a trend raises legitimate concerns regarding the quality and adequacy of dental education in the country.

The practice of Dentistry in Brazil is regulated and restricted to professionals who graduate from institutions recognized by the Ministry of Education (MEC), which also establishes the National Curricular Guidelines (NCG)<sup>5</sup> and the minimum quality standards for Dentistry programs. Over recent decades, however, the Brazilian educational system has undergone profound transformations. The 1968 university reform and the enactment of the National Education Guidelines and Framework Law (Lei de Diretrizes e Bases da Educação Nacional – LDB)<sup>6</sup> in 1996 were legal milestones that fostered the privatization of higher education, directly affecting Dentistry programs.

Since 2007, a consolidation movement of private institutions by large corporate groups, particularly within the education sector, has been observed, with significant impacts on the quality of professional training. As noted by Chaves (2010)<sup>7</sup>, the commodification of higher education has prioritized financial goals over academic excellence and the critical, socially committed training of professionals.

This scenario raises fundamental questions about the future of Dentistry in Brazil and highlights the urgent need for public policies capable of regulating the growth in the number of programs, ensuring the quality of education, and promoting a more equitable distribution of professionals in accordance with the real oral health needs of the population.

In this context, the objective of this study is to identify the current situation of dental education in Brazil by mapping and characterizing higher education institutions and the number of available vacancies in Dentistry programs, as well as correlating these data with local demographic profiles.

## METHOD

Data related to Dentistry programs were collected from the e-MEC system<sup>8</sup>, a platform maintained by the Brazilian Ministry of Education responsible for monitoring regulatory processes in higher education in Brazil. The procedure began with the selection of the states of interest, followed by the extraction of detailed information on all Dentistry programs currently in operation. The collected data included: name of the higher education institution, municipality of location, type of academic organization, administrative category, year of program establishment, and number of annually offered vacancies. These data were initially organized in a spreadsheet to allow for preliminary exploratory analysis and subsequently systematized into a table categorized by federal unit.

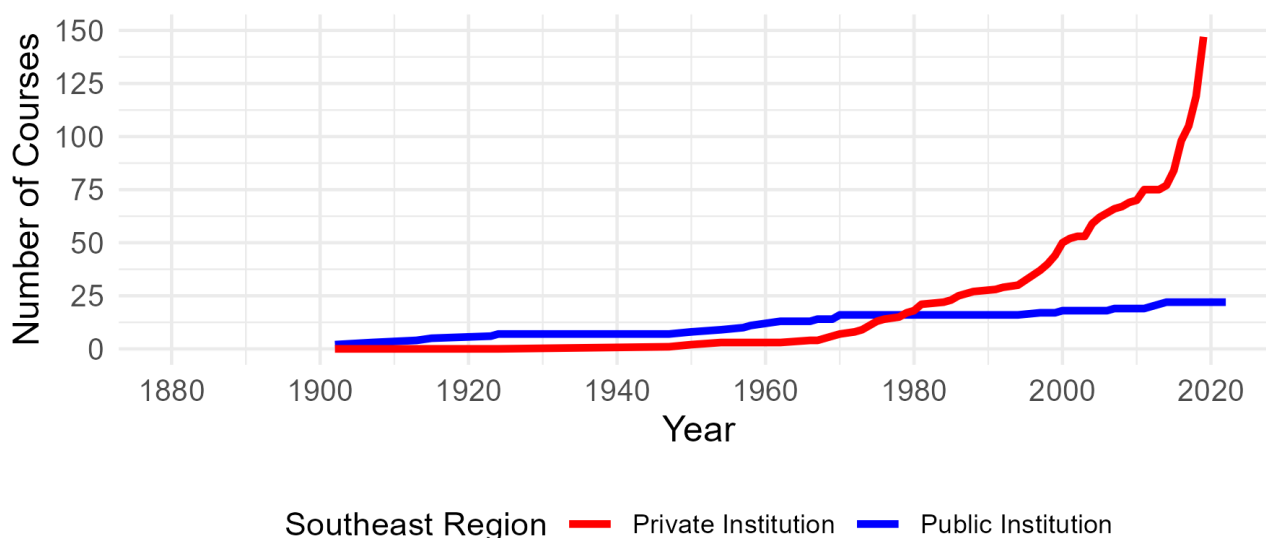
In parallel, demographic and socioeconomic data were collected based on the 2022 Demographic Census conducted by the Brazilian Institute of Geography and Statistics (IBGE)<sup>9</sup>. The selected variables included total population (disaggregated by sex), literacy rate, state-level Gross Domestic Product (GDP) for the year 2021, the Human Development Index (HDI) for 2021, monthly nominal household per capita income (2023), and the number of municipalities per state. Additionally, data on the number of actively registered dentists in each federal unit were obtained from publicly available records provided by the Brazilian Federal Council of Dentistry (CFO)<sup>10</sup>.

All datasets were analyzed in an integrated manner, aiming to correlate the presence and distribution of higher education institutions offering Dentistry programs with the socioeconomic and demographic indicators of the studied regions. This approach allowed for a contextualized understanding of how structural factors influence the educational supply and the concentration of dental professionals, contributing to a more robust analysis of the current landscape of dental education in Brazil.

## RESULTS

The analyzed data indicate that the supply of Dentistry programs in Brazil has undergone a substantial expansion since the early 2000s, driven primarily by the rapid growth of the private sector. While public institutions exhibited limited growth, with signs of stagnation in some regions since the 1990s, the private sector experienced significant expansion, resulting in a higher education landscape characterized by marked disparities in the distribution and structure of dental education.

The regional distribution of Dentistry programs reveals an uneven pattern of expansion. The Southeast region concentrates the largest number of programs, reflecting its historical educational development and its attractiveness to private investment. In 2022, a total of 173 programs offered by private institutions and only 22 programs offered by public institutions were identified in the region, highlighting the strong predominance of the private sector (Figure 1).



**Figure 1.** Evolution in the number of public and private institutions in the Southeast region.

In the Northeast region, expansion was also notable, particularly after 2015. The number of programs offered by private institutions increased from 44 in 2015 to 137 in 2022, whereas the number of programs offered by public institutions remained stable at 20 since 2012 (Figure 2).

In the Central-West and Southern regions, a similar pattern is observed: a more recent expansion of private education and stagnation of the public sector. In the Central-West region, for example, the number of programs offered by private institutions increased from 9 in 2006 to 52 in 2022, whereas public programs showed only a modest increase, from 3 to 5 over the same period (Figures 3 and 4).

The Northern region of the country presents one of the most critical scenarios in terms of inequality in educational provision. Since 2001, only three public institutions have been operating in the region, and the expansion of dental education has occurred exclusively through the private sector, which increased from 6 programs in 2000 to 42 programs in 2022 (Figure 5).

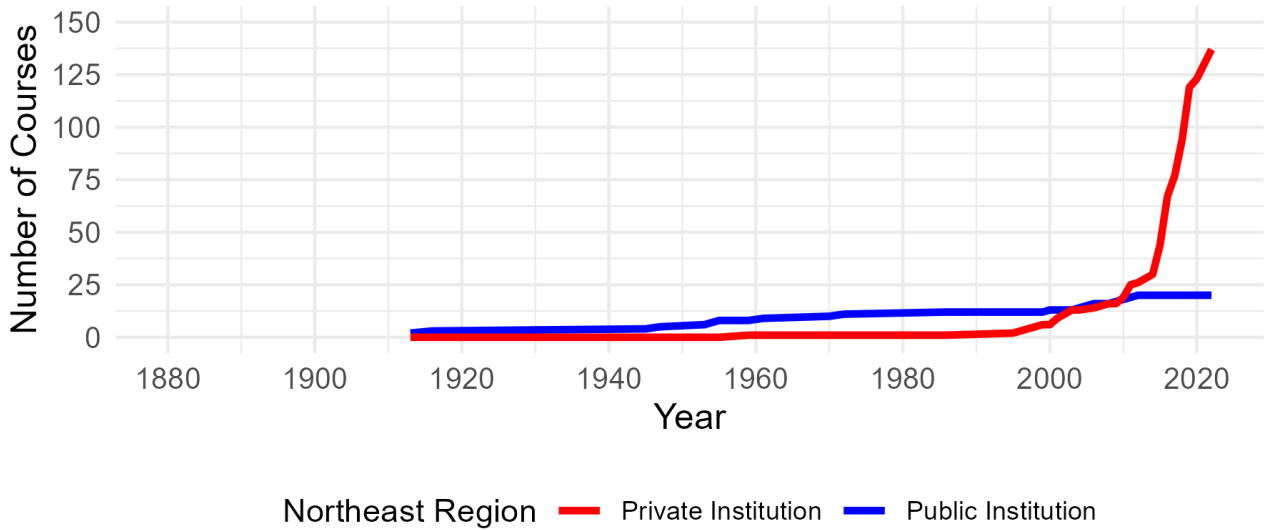


Figure 2. Evolution in the number of public and private institutions in the Northeast region.

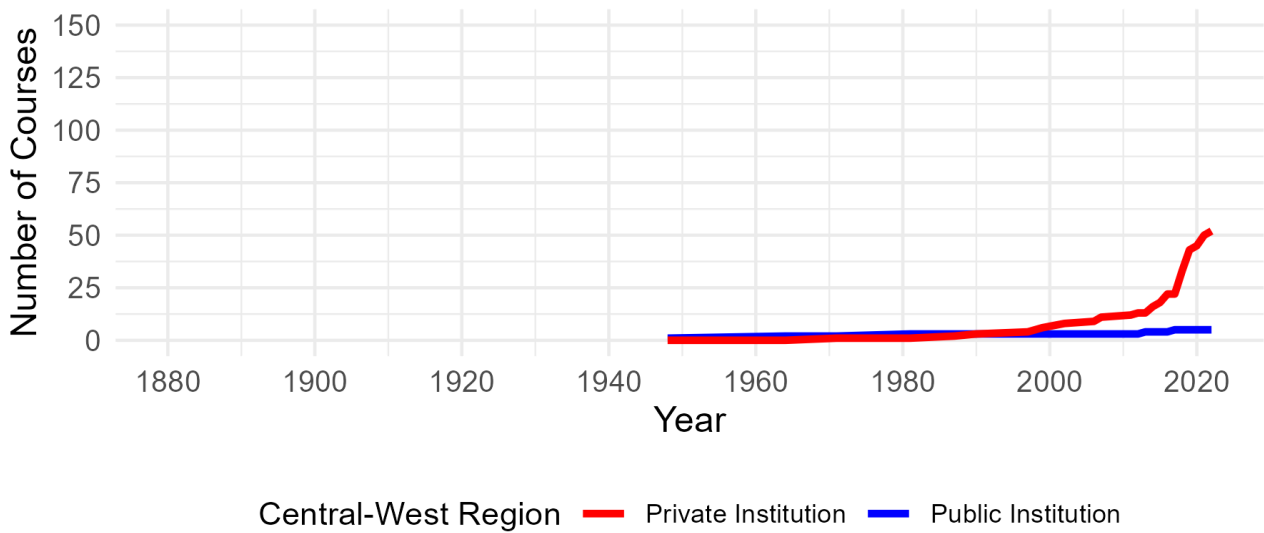


Figure 3. Evolution in the number of public and private institutions in the Central-West region.

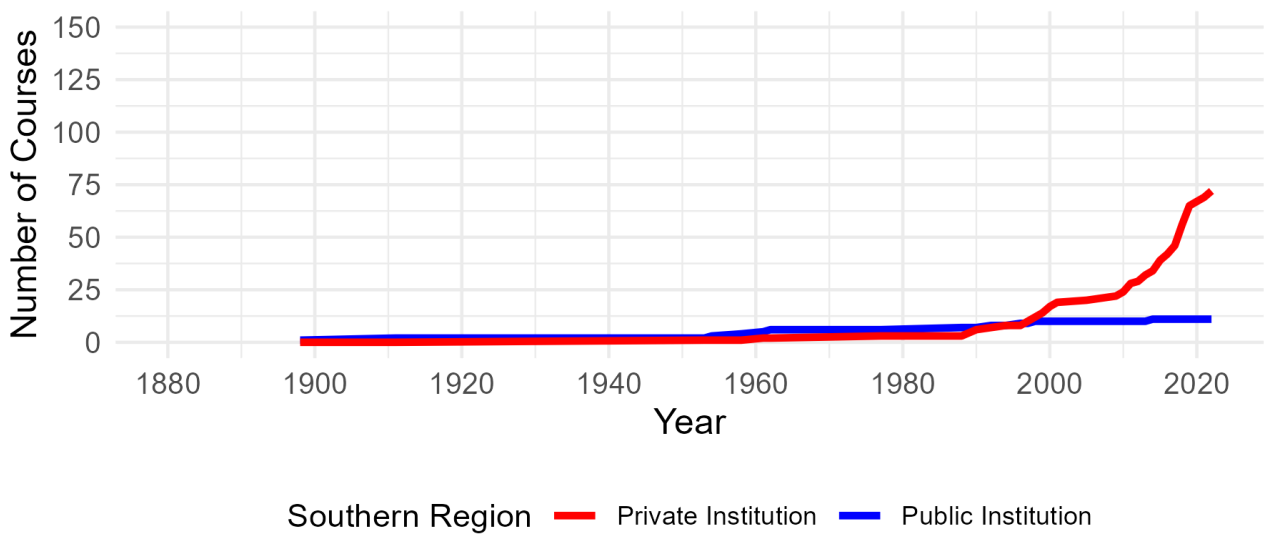
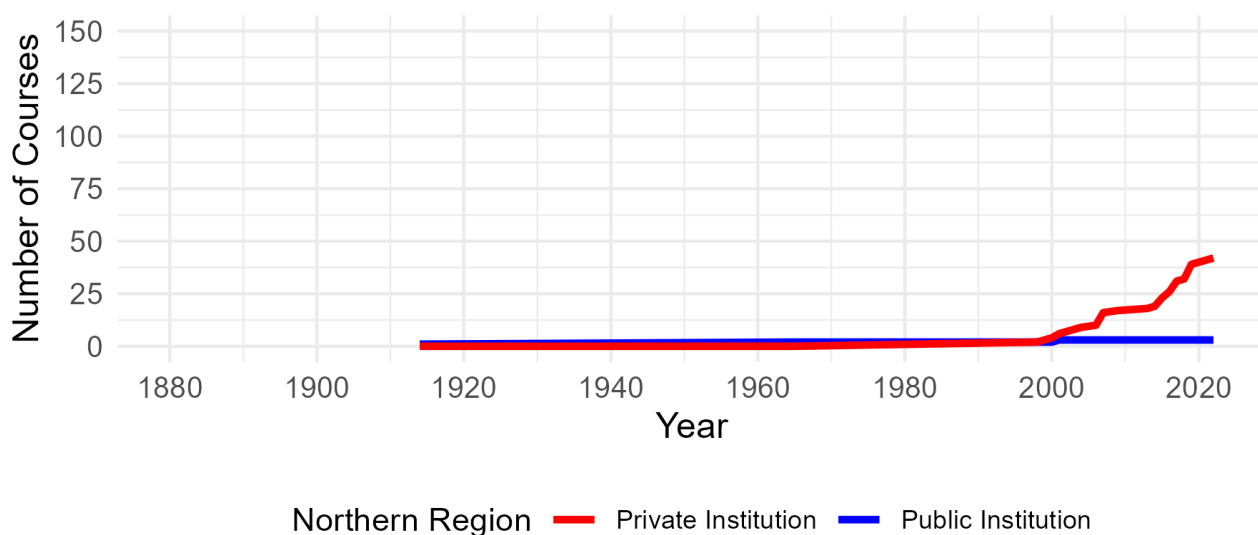


Figure 4. Evolution in the number of public and private institutions in the Southern region.



**Figure 5.** Evolution in the number of public and private institutions in the Northern region.

The comparative analysis between the public and private sectors reveals pronounced disparities. At the time of data collection, Dentistry programs were offered by 61 public institutions in Brazil, compared to 478 private institutions, representing a nearly eightfold difference. This inequality becomes even more pronounced when considering the number of annual vacancies authorized by the Ministry of Education (MEC): 4,843 vacancies in public institutions versus 68,488 vacancies in the private sector, corresponding to a difference of more than fourteenfold.

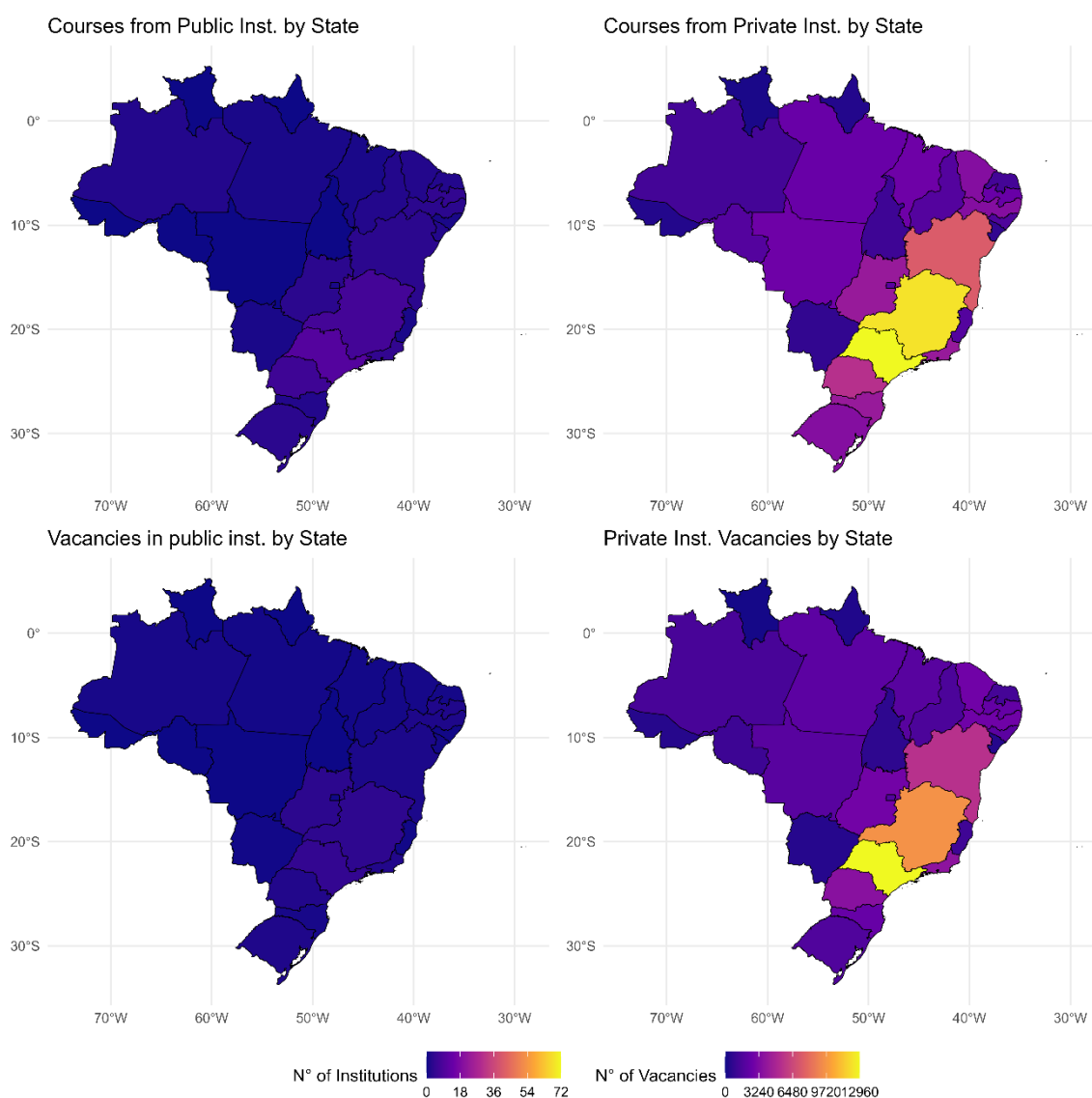
From a geographic perspective, the distribution of vacancies also reveals a strong regional concentration. The Southeast region accounts for 36.1% of the vacancies offered by the private sector, consolidating its position as the leading region in terms of educational supply. In aggregate terms, the national distribution of Dentistry programs follows the following descending order: Southeast > Northeast > South > Central-West > North. This pattern is observed in both the public and private sectors.

Regarding the average number of vacancies per institution, private programs tend to offer a significantly higher number compared to public programs (Table 1). However, the Southeast region shows a tendency towards greater balance in this respect, with more similar proportions between the two sectors.

**Table 1.** Distribution of the average number of vacancies per public and private institution across Brazilian regions. Brazil, 2025.

Region	Average Number of Vacancies per Public Institution	Average Number of Vacancies per Private Institution
North	78,6	142,6
Northeast	66,95	148,9
Central-West	140	130,6
Southeast	81,7	158
South	70	106,6

These results reveal a scenario of strong concentration of vacancies in the private sector, combined with regional imbalances in the distribution of Dentistry programs. Such a configuration may directly affect the quality of professional training and the availability of dental services, reinforcing pre-existing inequalities in access to oral health care across the country (Figure 6).



**Figure 6.** Comparative maps of the density of programs and vacancies in public and private institutions by state in Brazil.

## DISCUSSION

Dentistry is a regulated profession in Brazil under Federal Law No. 5,081/1966, which establishes graduation from institutions recognized by the Ministry of Education (MEC) as a prerequisite for professional practice. This body is responsible for defining guidelines for dental education, while the National Council of Education (CNE) holds the authority to formulate the National Curricular Guidelines (NCG), which were updated in 2021 with the aim of ensuring minimum quality standards in professional training<sup>11</sup>.

However, the accelerated and weakly regulated expansion of higher education institutions (HEIs) in the field of Dentistry has generated intense academic and professional debate. A study conducted by the Brazilian Association of Dental Education (ABENO) indicates that the excessive growth in the number of programs, an issue of concern since 1983, has contributed to labor market saturation and to a decline in the quality of education, with potential risks to patient safety and to the effectiveness of services provided to the population. Previous studies had already warned, for several years, about the expressive increase in the number of dental schools and available vacancies<sup>1,4</sup>, and this situation appears to have further worsened, as confirmed by the temporal analysis presented in this study.

This phenomenon is embedded in the broader context of the commodification of higher education, which has been widely discussed in the Brazilian educational literature<sup>12,13</sup>. The flexibilization of regulatory policies and the creation of public financing mechanisms for the private sector, such as the University for All Program (ProUni) and the Student Financing Fund (FIES), have favored the rapid proliferation of programs offered by private educational conglomerates,

whose primary motivation is financial return rather than alignment with regional demand or educational quality<sup>14</sup>. In contrast, the public sector has exhibited limited growth, constrained by budgetary restrictions and by a funding model that hampers the establishment of new programs in fields requiring complex and high-cost infrastructure, such as teaching clinics and specialized laboratories<sup>1</sup>.

The expansion of dental education has also revealed significant regional disparities. The Southeast region leads in the number of institutions, influenced by higher purchasing power and the concentrated presence of large educational groups. The Northeast region experienced substantial growth after 2015, strongly associated with student financing policies, albeit without adequate territorial planning to align the expansion of educational supply with the concrete needs for dental care services. The Central-West and Southern regions display a similar pattern, characterized by a delayed expansion of the private sector and stability in the public sector, with programs concentrated in more dynamic urban centers. The most critical situation, however, is observed in the Northern region, where growth occurred exclusively within the private sector, from 6 to 42 institutions between 2000 and 2022, predominantly located in state capitals and medium-sized urban centers, leaving vast inland areas underserved.

The unregulated expansion of higher education institutions (HEIs) raises serious concerns regarding the quality of professional training. Studies have pointed to structural deficiencies in many private institutions, including the absence of fully operational teaching clinics, limited availability of internship and clinical training settings, and weaknesses in academic evaluation and supervision processes<sup>15</sup>. Market saturation, in turn, has resulted in reduced employment opportunities, precarious working conditions, and the devaluation of the profession. In response to this scenario, the Brazilian Federal Council of Dentistry (CFO) filed a public civil action in 2022 seeking the suspension of the authorization of new Dentistry programs, a measure defended by its president, Juliano do Vale, as essential for the professional sustainability of the field<sup>11</sup>.

It is important to note that this phenomenon is not exclusive to Brazil. Cartes-Velásquez (2013)<sup>16</sup> documented a similar case in Chile, where enrollments in Dentistry programs increased from 1,447 to 12,325 over a 15-year period, without a corresponding expansion in institutional scientific output or in the population's access to dental care services. In Brazil, despite the inclusion of the Unified Health System (Sistema Único de Saúde – SUS) as a structuring axis of the revised National Curricular Guidelines issued in 2021, structural inequalities in access to oral health services persist, influenced by geographic, economic, and social factors<sup>17</sup>. Indicators such as the DMFT index (Decayed, Missing, and Filled Teeth) clearly reflect these disparities, demonstrating that the numerical expansion of Dentistry programs has not translated into universal access to dental care. This context corroborates Cartes-Velásquez's (2013)<sup>16</sup> critique regarding the existence of "two types of people: those who are healthy and have access to dental care, and those who are ill and lack access."

The comparison between public and private institutions reveals marked structural discrepancies. While some private institutions offer more than 250 annual vacancies, many public universities, despite superior infrastructure and more highly qualified faculty, maintain more conservative admission limits. This asymmetry calls into question the capacity of the private sector to ensure the minimum infrastructure and adequate clinical training settings required, particularly given the high costs involved in dental education.

Another relevant issue is that not all vacancies authorized by the Ministry of Education are effectively filled. Between 1995 and 2015, the percentage of unfilled vacancies in Dentistry programs in Brazil reached 17.5%, corresponding to approximately 61,500 unoccupied positions, with particularly high rates observed between 2001 and 2011 during the period of program expansion<sup>18</sup>. However, the reduction in tuition fees in recent years may have reversed this trend, giving rise to the opposite risk: overcrowded classes, with consequent negative effects on educational quality.

In light of this scenario, it is imperative that the Ministry of Education reassess the criteria for authorizing new programs and vacancies, taking into account: (1) the existence of qualified minimum infrastructure; (2) regional population demand; (3) guiding parameters established by the World Health Organization (WHO); and (4) the effective absorptive capacity of the national dental labor market. Such a strategic approach would enable a better balance between quantitative expansion and quality assurance, ensuring professional training aligned with the oral health needs of the Brazilian population.

## CONCLUSIONS

The expansion of dental education in Brazil has posed significant challenges to the regulation of professional training

and to the territorial distribution of dentists nationwide. The data analyzed reveal a substantial increase in the number of Dentistry programs, with a marked predominance of the private sector, whose supply of vacancies has proven disproportionate to the actual needs of the labor market and the population.

This expansion, largely driven by the commodification of higher education, raises concerns regarding the quality of academic training, particularly considering insufficient infrastructure and limited availability of clinical training settings in many institutions. The proliferation of programs, often disconnected from national guidelines and regional demands, compromises the critical and practical training of future dental professionals.

In addition, regional inequalities in the supply of programs and in the distribution of professionals highlight the absence of an articulated educational policy that is sensitive to local specificities. While certain regions experience an oversupply of trained professionals, others continue to lack minimum oral health coverage, thereby reinforcing historical disparities in access to services.

In view of this scenario, it is imperative that the State assume a more active role in regulating the establishment of new programs and in defining rigorous criteria for the authorization of vacancies, considering the available physical and pedagogical infrastructure, the absorptive capacity of the labor market, and public health demand indicators. Emphasizing the central role of the Unified Health System (Sistema Único de Saúde – SUS) and strengthening public higher education institutions should form the foundation of a strategy oriented toward quality and equity.

Finally, it is essential to foster coordination among the Ministry of Education (MEC), the Brazilian Federal Council of Dentistry (CFO), universities, and other regulatory bodies to balance the supply of professionals and promote a more sustainable educational system committed to the concrete needs of the Brazilian population. Only through coordinated public policies and consistent investments will it be possible to ensure that the expansion of dental education effectively contributes to improved oral health outcomes and to the reduction of inequalities in the country.

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