Dentistry in Hospital Multiprofessional Residency Programs in Brazil

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Received: 08/20/2020. Approved: 09/12/2021.

ABSTRACT
The aim of the study was to evaluate the presence of dental surgeons (DS) in Hospital Multiprofessional Residency Programs (HMRPs) in Brazil. This is an exploratory, descriptive study, with a quantitative approach. Documentary analysis was performed of health HMRPs edicts, in effect during the year of 2019, linked to federal university hospitals in Brazil, collecting the macroregion variables, areas of concentration, and presence of a dentistry professional core. The analysis consisted of Spearman's correlation for the association of the Human Development Index, Gini index, oral health teams, population coverage, and dental courses with the presence of DSs in HMRPs. Of the 41 HMRPs, 5 (12%) are in the Midwest; 6 (15%) in the North; 12 (29%) in the Southeast; 14 (34%) in the Northeast, and 4 (10%) in the South. Of the 93 areas of concentration, 27 (29%) have a DS on the multiprofessional team. The Northeast (n=26, 27.9%) and Southeast (n=32, 34.4%) have the greatest diversity of areas of concentration, with the presence of a DS in 10 (38.4%) and 9 (28.1%), respectively, in each region. The most predominant area of concentration in the public notices is child and maternal-infant health (n=26, a 27.9%), and the DS is present in 7 (26.9%) of them. The DS is in many residency programs, although it is noticed the need to expand the number of vacancies offered.

Descriptors: Dentist. Hospital Residency. Multiprofessional Team.

1 INTRODUCTION
Since the creation of the Brazilian Unified Health System (SUS), there have been many challenges. Integrality of care and universal access are important principles, although there have been difficulties in the context of the need...
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for change in the fragmented model of curative, mechanistic healthcare. In this search for comprehensive care, healthcare teams have been formed by several health professional nuclei, aiming at multiprofessional teamwork in the perspective of interprofessionality and collaborative practices.

The presence of different professional areas in a multiprofessional team intends to share the learning and skills, besides facilitating decision-making about the care process, taking into account the interdependence of knowledge, seeking the production of healthcare, aiming at improving problem-solving capacity and integrality.

The Multiprofessional Residency in Healthcare proposed by the Ministry of Education in partnership with the Ministry of Health aims to train professionals with a collaborative profile in the healthcare system, with higher quality performance. Thus, there was an incentive to change the curricular and pedagogical models aimed at the formation of workers, sensitive to meet the demands of the population from a holistic point of view.

In tertiary care, Multiprofessional Residencies intend to break with the biologicist and mechanistic models of care in highly complex healthcare and provide more effective and comprehensive care practices, based on activities that involve the promotion, prevention, and recovery of individual well-being.

In this sense, hospital dentistry is one of the fields of study that is necessary for comprehensive care, because it is a practice focused on oral healthcare, which requires the implementation of preventive, educational, diagnostic, therapeutic, and palliative actions performed in the hospital environment, improving the overall health of hospitalized patients, contributing directly to their recovery.

Therefore, for an integral approach to the individual, oral health should not be dissociated from general health, because the diagnosis of oral changes, removal of infectious foci, prevention of bleeding, treatment of oral lesions, and other actions favor the prognosis and well-being of the patient.

In this perspective, the presence of dental surgeons (DS) in multiprofessional teams is essential, however, its insertion is still inadequate, and the DS is seen as necessary only in the Intensive Care Unit (ICU) environment to avoid, especially, ventilator-associated pneumonia (VAP).

Nevertheless, the elderly with special needs, cancer patients, cardiac patients, pregnant women, and children hospitalized in other sectors of the hospital may require the performance of the dental team because, during hospitalization, a compromised immune system, the need to use a variety of drugs, as well as physical weakness may favor the occurrence of oral changes, which can worsen the systemic health condition.

Thus, oral health is directly associated with general health, therefore the presence of a professional qualified in the area of hospital dentistry to provide adequate care enables a shorter hospital stay and fewer costs for the hospital, aside from favoring patients’ prognosis and adding to the knowledge and care strategies agreed upon by the multiprofessional team.

No study was observed that addressed the current situation of training of DSs in Hospital Multiprofessional Residency Programs (HMRPs) in Brazil. In this sense, the objective of this study was to evaluate the presence of dental surgeons in these programs.

2 METHOD

An analytical, quantitative, cross-sectional study was conducted through document analysis using national secondary and public data. Data were analyzed based on residency programs that
were in force during the year 2019. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline for observational studies was used for planning the survey and reporting the results obtained. Since it is secondary data, the study does not require an Ethics Committee review.

The data were collected from the list of HMRPs of the Ministry of Education, in partnership with the Ministry of Health, approved by the National Commission for Multiprofessional Residency in 2008, linked to the University Hospitals of each state in Brazil and that came into force in 2010. From these programs, the uniprofessional residency programs were excluded. For this step, we used as a source the list of the National Commission for Multiprofessional Residency (http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=2303-residencia_programassite&Itemid=30192).

Public universities whose federal hospitals did not have HMRPs (n=4) and single-professional areas of concentration attached to federal university hospitals (n=3) were excluded.

Next, research for public hospitals attached to federal universities in each state of the country was conducted at http://portal.mec.gov.br/hospitais-universitarios?id=13808. Finally, an online search was performed for the HMRPs edicts in the country that were valid in 2019. The keywords used in this search were: 2019’s public notices; multiprofessional residency; the name of the hospitals, and their respective city and state.

The following variables were collected: Human Development Index (HDI), Gini index, coverage and oral health teams, dentistry courses per region, areas of concentration of the HMRPs, and presence of a dentistry nucleus21-23.

The areas of concentration were grouped into: elderly health; child health/maternal/infant/perinatal/neonatology; adult and pediatric oncology; women's health; transplantation and organ donation; special needs patients (SNP); hospital health/high complexity/continuous care/multiprofessional healthcare; cardiovascular/cardiopulmonary health; neurology ICU/critical patient/intensive care; functional health/physical health/neurorehabilitation; trauma/emergency and emergency; clinical medicine; surgical/adult health; chronic-degenerative diseases; and renal health.

The data were analyzed by descriptive statistics and Spearman's correlation test to analyze the correlation between the following variables: the presence of dentists in the HMRPs, HDI, Gini index, population coverage and oral health teams, and the number of dental schools per region, considering p<0.05.

3 RESULTS

Most residency programs attached to federal hospitals in Brazil (n=14, 34%) were in the Northeast and 12 (29%) in the Southeast region, with the lowest percentages found in the North (n=6, 15%), Midwest (n=5, 12%), and South (n=4, 10%) regions.

These HMRPs are characterized by areas of concentration (AC), in which professionals should work and specialize. The ACs in the country are distributed as shown in figure 1.

From a total of 93 Areas of Concentration present in the HMRPs all over the country, only 27 (29%) have a DS in the multiprofessional team. The Northeast and Southeast regions have the greatest diversity of areas of concentration (n=26, 27.9%, and n=32, 34.4%, respectively); however, a DS is present in less than half (n=10, 38.4%) of the Northeast and 9 (28.1%) of the Southeast (table 1).

The largest AC of the HRMP corresponds to child health/maternal-infant health (n=26, 27.9%), with a DS present in 7 (26.9%); then,
intensive care/critical patient AC (n=13, 13.9%), with the DS present in 5 (38.4%); oncology (n=10, 10.8%), with a DS present in 5 (50%); elderly health (n=9, 9.6%), with a DS present in only one (11.1%); hospital health (n=9, 9.6%), with a DS present in 2 (22.2%).

Figure 1. Distribution of relative frequencies in relation to the areas of concentration of the Multiprofessional Residency Programs in hospital healthcare by Brazilian region

Table 1. Distribution of absolute and relative frequencies in relation to the presence of a dentist in areas of concentration of HMRPs per Brazilian region

<table>
<thead>
<tr>
<th>Regions</th>
<th>Areas of concentration</th>
<th>Presence of a dental surgeon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>North</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Mid-West</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Northeast</td>
<td>26</td>
<td>10</td>
</tr>
<tr>
<td>Southeast</td>
<td>32</td>
<td>9</td>
</tr>
<tr>
<td>South</td>
<td>18</td>
<td>5</td>
</tr>
</tbody>
</table>
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Table 2. Distribution of absolute and relative frequencies in relation to the presence of a DS in the areas of concentration of HMRPs in Brazil

<table>
<thead>
<tr>
<th>Areas of concentration</th>
<th>Brazil</th>
<th>Presence of a dental surgeon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elderly Health</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Hospital health</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Cardiovascular health</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Child/maternal health</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>Critical patient/intensive care</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Oncology</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Clinical and surgical medicine/adult health</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Nephro/renal health</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Women’s health</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Organ donation and transplantation</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Trauma/Emergency medicine</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Special Needs Patients</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Functional and physical health/neurorehabilitation</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Chronic-degenerative diseases</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 3. Spearman's correlations between residency programs and the Human Development Index, Gini index, population coverage, oral healthcare teams, dental schools per region, and the presence of a dentist in Hospital Multiprofessional Residency Programs

<table>
<thead>
<tr>
<th>Variables</th>
<th>Residency Programs Spearman Correlation</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDI</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Gini Index</td>
<td>-0.300</td>
<td>0.624</td>
</tr>
<tr>
<td>Dentistry Courses</td>
<td>0.900</td>
<td>0.037</td>
</tr>
<tr>
<td>Population Coverage</td>
<td>0.100</td>
<td>0.873</td>
</tr>
<tr>
<td>Oral healthcare teams</td>
<td>0.400</td>
<td>0.505</td>
</tr>
</tbody>
</table>

4 DISCUSSION
The oral health component is present in most multiprofessional teams of the Family Health Strategy, in primary care, as well as in most Family Health residency programs, because the presence of a DS in this scenario is already seen as essential for the integrality of care in the perspective of health promotion, prevention, and recovery.

Regarding tertiary care, is seen a scarcity of this professional in hospital multiprofessional teams, and this lack of vacancies for dentistry in residency programs in high-complexity care may be associated with the immediacy in hospitals, which often fragments the subject. In addition to the knowledge about systemic repercussions associated with poor oral health conditions, it is necessary that the DS included in multiprofessional teams expand their skills, abilities and attitudes, in order to improve the promotion of resoluteness, comfort and quality of life of the patients.

The largest concentration of DSs in HMRPs is found in the Southeast region, where...
there is a greater supply of dentistry courses. In areas of concentration such as oncology, intensive care, and maternal/child health, in which there is already an important insertion of the dentistry professional to contribute to the multiprofessional teamwork based on collaborative practices aiming at the integrality of care, there are programs without the presence of the dental professional in the multiprofessional health team.

Regarding ACs in Oncology, a DS is present in 50% of the programs, however, it is still a low amount, since it is known that cancer treatment usually leads to certain oral complications, such as mucositis, gingival bleeding, xerostomia, candidiasis, loss of taste, trismus, among others, besides causing systemic side effects (leukopenia, anemia, and thrombocytopenia). Therefore, the dental surgeon should participate in all teams of the referred areas of concentration, in order to minimize oral sequelae resulting from the treatment28.

The largest offer of vacancies in residency programs occurred in the areas of concentration focused on child and maternal-infant health. However, even though it is known that it is fundamental for the mother and baby's health to be followed by the DS during prenatal care of women who present with cardiovascular diseases, systemic arterial hypertension, type 2 diabetes mellitus, obesity, depression, and schizophrenia, and, although the dentist is noted in this area with an important role in the management of therapies and in educational and preventive measures, a DS is absent in more than half of these programs29,30.

However, despite the small number of vacancies offered to DSs in this area of concentration, their participation in this axis is still one of the largest, when compared to other areas. This can be explained by the history of public policies in Brazil, which, for a long time, kept the focus of oral health care restricted to children and infants31.

In the intensive care area of concentration, despite the considerable existing knowledge in the literature about the benefits of the presence of the dentist in ICUs diagnosing systemic diseases with oral repercussions, treating infectious foci, preventing colonization of pathogenic dental biofilm, and avoiding the worsening of the clinical picture of hospitalized patients, the offer of vacancies for dentists in this concentration area occurred in less than half of the patients. 32.

In the health of the elderly, negligence in dentistry is present from public policies, lacking resources to meet the demand, besides the delay in seeking care associated with the few dental services offered for this portion of the population. Thus, the main service offered by dentistry is the exodontia of the dental elements31.

In high-complexity care is no different, since the offer of a vacancy for DSs in only one residency program, among the nine existing ones, demonstrates that the understanding that hospitalized elderly patients have a compromised immune system, motor weakness, a complexity of systemic diseases, without the proper monitoring of a specialized dental professional, can cause serious worsening in the patients’ clinical conditions33.

In relation to the ACs of renal health and cardiovascular health, the DS is also not expressively present, but dental care for these groups of patients is essential, since the reduction or loss of renal function causes complications such as xerostomia, halitosis, uremic stomatitis, bone lesions, and greater formation of dental calculus. In relation to patients with heart disease, the formation of infectious foci may cause several negative impacts on oral and systemic health34,35.
Therefore, there must be a greater commitment from the Odontology Councils System, in order to contribute to the debate on the role of the DS in multiprofessional healthcare teams, aiming at the integrality and the resoluteness of health issues\textsuperscript{36,37}.

In addition, the syllabus/curricular component in Hospital Dentistry should be offered in the educational projects, so that aspects related to hospital care and oral healthcare are discussed, reflected, experienced, aiming at the development of competencies, skills, and attitudes. Furthermore, it is a space for dialogical construction with other professional nuclei, in the perspective of collaborative health practices, teamwork, knowledge and recognition of the work of other professions, seeking to reach the profile of a generalist graduate, as pointed out by the National Curriculum Guidelines.

Likewise, the qualification of the dental surgeon in the hospital environment should be more strongly disseminated and encouraged, so that the number of professionals working and qualified in this area in the country increases\textsuperscript{37,38}.

Therefore, this area within dentistry will continue to grow so that the DSs can break with the historical culture regarding the isolated and fragmented way of acting and become co-responsible for the integral health of the hospitalized individual\textsuperscript{39}. In this perspective, the acknowledgment of the DS as a member of the multiprofessional team and their presence recognized as fundamental is a challenge to be overcome.

Therefore, in a committed, responsible and competent way, professionals can compose the teams, placing themselves in them and recognizing the role played by other professionals, contributing to the construction of therapeutic plans and common objectives of a team that aims to meet the demands of the hospitalized patient.

It is important to recognize the limitations of this study. Data collection refers to the year 2019, from edicts published in researched electronic sites, not guaranteeing that, in previous years, vacancies were not offered or that, in the professional technical staff of hospitals, there are no DSs, which may interfere with the interpretation of the data.

5 CONCLUSION

The supply of vacancies for DSs in HMRPs in Brazil still needs to be expanded, even in the most developed regions and with a greater number of professionals and courses in dentistry.

RESUMO

A Odontologia em Programas de Residência Multiprofissional hospitalares no Brasil

O objetivo do presente estudo foi avaliar a presença do cirurgião-dentista (CD) em Programas de Residência Multiprofissional hospitalares (PRMH) do Brasil. Trata-se de um estudo de caráter exploratório, descritivo, com abordagem quantitativa. Foi realizada análise documental de editais de PRMH em saúde, vigentes no ano de 2019, vinculados a hospitais de universidade federais do Brasil, coletando as variáveis macrorregião, áreas de concentração e presença do núcleo profissional Odontologia. A análise constou de correlação de Spearman para associação do índice de desenvolvimento humano, índice de Gini, equipes de saúde bucal, cobertura populacional e cursos de Odontologia e a presença de CDs nos PRMH. Dos 41 PRMH, 5 (12%) encontram-se no Centro-Oeste; 6 (15%) no Norte; 12 (29%) no Sudeste; 14 (34%) no Nordeste, e 4 (10%) no Sul. Das 93 áreas de concentração, 27 (29%) possuem o CD na equipe multiprofissional. As regiões Nordeste (n=26, 27,9%) e Sudeste (n=32,34,4%) apresentam a maior diversidade de áreas de concentração, sendo a presença do CD de 10 (38,4%) e 9 (28,1%), respectivamente, em cada região. A área de concentração mais predominante nos
editais é saúde da criança e materno-infantil (n=26, 27.9%), estando o CD presente em 7 (26.9%) delas. O CD encontra-se em muitos programas de residência, embora se perceba a necessidade de ampliação do número de vagas ofertadas.

**Descriptors:** Odontólogo. Residência Hospitalar. Equipe Multiprofissional.

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