

COVID-19 pandemic impact on prosthetic treatments in the Brazilian Public Health System

Brazil has one of the largest public health systems in the world, which covers almost 75% of the Brazilian population (Pucca et al., 2015). In dentistry, only Primary Health Care had almost 30,000 dentists. More complex procedures were offered in recent years, such as removable partial denture and denture (Chisini et al., 2019; Pucca et al., 2015). In February 2020, the first case of COVID-19 (*coronavirus disease 2019*) was confirmed in Brazil with extremely accelerated growth in cases in the following months (WHO, 2020). Therefore, the World Health Organization (WHO) recommended the dentists to perform mainly emergency and urgent care and reduce the elective dental procedures (WHO, 2020). In this scenario, we aimed to describe the impact of the new coronavirus pandemic on the number of prosthetic treatments performed in the Brazilian Public Health System (SUS).

We perform a retrospective longitudinal ecological study using data from the Ambulatory Information System (SIA-SUS), which contain dentistry procedures registered from 99.9% ($n = 5,564$) of whole 5,570 municipalities. The number of prosthetic procedures was monthly collected, and the rate by 100,000 inhabitants was calculated. We pooled the annual rate of procedures from 2016 to 2019. Also, we pooled the rate of March to July 2019 and 2020 to compare the changes in rates in pandemic to the respective period of 2019.

Considering the period of March to July, the Brazilian Public Health Services performed 272,930 dental prostheses in 2019 and 88,585 in 2020. A reduction rate of 66.7% was observed in Brazil (Table 1, Figure 1). The Southeast region was the one that presented the highest reduction (81.7%) followed by the South (64.7%). North of Brazil presented a lower reduction rate (21.2%).

The findings showed that the COVID-19 pandemic impacted negatively on the prosthetic treatments carried out in SUS. Similarly to North America and Italy (Arduino et al., 2020; Wu et al., 2020), the impact of COVID-19 in Brazilian dentists' working patterns noted a significant drop in the number of patients attended in both the public and private dental clinics, with a higher reduction observed in the public system (Moraes et al., 2020). Noteworthy, some dentists were relocated to strategic fields to combat COVID-19. Indeed, a recent study showed that the number of mouth biopsies underwent significant reductions in the year 2020 compared with the year 2019 in all Brazilian regions (da Cunha et al., 2020). This impact has affected other strategic areas of oral health, such as preventive procedures and educational activities, which is likely to dramatically increase the need for restorative procedures and prostheses. This reduction in preventive and elective procedures could cause an overload in the system in the following years.

The COVID-19 pandemic has affected the rate of prosthetic dental procedures carried out in the Brazilian Public Health System. This reduction is of concern since the elevate prevalence of edentulism in Brazil, normally linked to more vulnerable and marginalized people, which could worsen oral health conditions, impairing the oral health-related quality of life and increasing the already disparities observed in Brazilian populacional.

KEYWORDS

coronavirus infections, COVID-19, pandemic, prosthesis, public health system

TABLE 1 Number of prosthetic and average monthly prosthetic rate (per 100,000 inhabitants) of March to July, by Brazilian regions ($n = 5,564$)

Brazilian regions	March to July 2019		March to July 2020		Rate change (%)
	n.	Rate (CI 95%)	n.	Rate (CI 95%)	
North	11.216	65.5 (64.2–66.7)	9.338	51.6 (50.3–52.9)	–21.2
Northeast	112.914	257.9 (246.4–269.6)	48.920	99.6 (99.4–99.7)	–61.4
Southeast	86.291	785.9 (774.9–796.6)	35.214	144.2 (135.0–153.6)	–81.7
South	44.316	426.9 (413.8–439.9)	26.073	150.6 (141.3–160.3)	–64.7
Midwest	18.193	116.6 (108.3–125.4)	13.068	83.8 (82.8–84.8)	–28.1
Brazil	272.930	431.5 (418.4–444.7)	88.585	143.9 (134.8–153.5)	–66.7

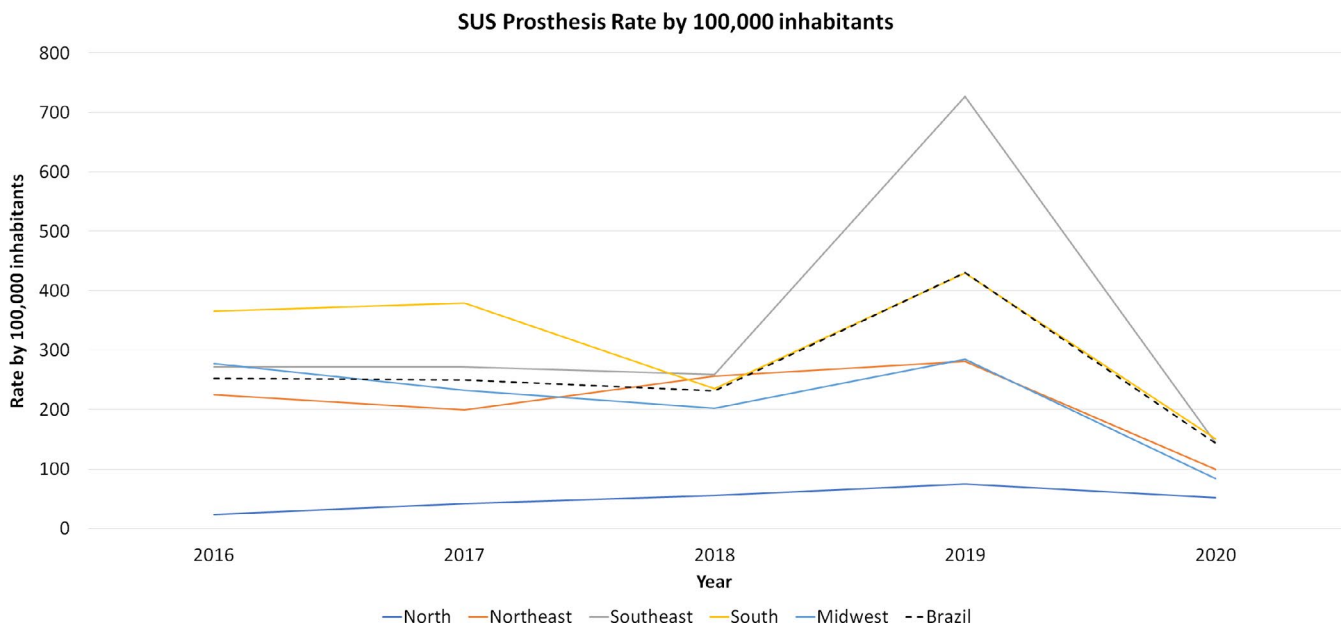


FIGURE 1 Prosthesis rate mean performed in the Brazilian Public Health System (SUS) by 100,000 inhabitants according to Brazilian regions ($n = 5,564$)

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CONFLICT OF INTEREST






None.

AUTHOR CONTRIBUTIONS

Luiz Alexandre Chisini: Conceptualization; Data curation; Formal analysis; Methodology; Writing-original draft. **Leticia Sartori:** Conceptualization; Formal analysis; Writing-original draft. **Francine dos Santos Costa:** Conceptualization; Formal analysis; Methodology; Writing-original draft. **Luana Salvi:** Data curation. **Flavio Fernando Demarco:** Conceptualization; Data curation; Formal analysis; Methodology; Project administration; Supervision; Writing-review & editing.

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