

Outpatient Physiotherapy Production in the Capitals and Units of the Federation Of Brazil, 2019-2023: Descriptive Study

Produção Fisioterapêutica Ambulatorial nas Capitais e Unidades da Federação do Brasil, 2019-2023: Estudo Descritivo
Producción Fisioterapéutica Ambulatoria en las Capitales y Unidades de la Federación de Brasil, 2019-2023: Estudio Descriptivo

RESUMO

Objetivo: Analisar o percentual de produção de fisioterapia ambulatorial entre os anos de 2019 a 2023 nas unidades federativas e capitais dos estados do Brasil. **Métodos:** Trata-se de um estudo observacional que analisou a porcentagem de produção de fisioterapia ambulatorial entre os anos de 2019 a 2023, nas 27 unidades federativas e capitais dos estados do Brasil. **Resultados:** A produção ambulatorial de fisioterapia brasileira teve um decréscimo nos primeiros anos da pandemia, em 2020 e 2021. Em comparação a 2019, 26 Unidades Federativas e 25 capitais sofreram uma queda da produção em 2020, com apenas Pará, Belém e Fortaleza não enfrentando uma redução. A maioria das unidades federativas e capitais conseguiram recuperar entre 2022 e 2023, e mantiveram sua produção maior do que os valores pré-pandêmicos. **Conclusão:** A fisioterapia ambulatorial pública foi submetida a diversos limitadores que reduziram a sua produção no período avaliado.

DESCRITORES: Atenção secundária à saúde; Serviços de fisioterapia; Análise de dados secundários; Disparidades em assistência à saúde; Sistema de informações em saúde.

ABSTRACT

Objective: To analyze the percentage of outpatient physiotherapy production between 2019 and 2023 in the federative units and state capitals of Brazil. **Methods:** This is an observational study that analyzed the percentage of outpatient physiotherapy production between 2019 and 2023 in the 27 federative units and state capitals of Brazil. **Results:** Brazilian outpatient physiotherapy production decreased in the first years of the pandemic, in 2020 and 2021. Compared to 2019, 26 federative units and 25 capitals suffered a drop in production in 2020, with only Pará, Belém, and Fortaleza not facing a reduction. Most federative units and capitals managed to recover between 2022 and 2023, and maintained their production higher than pre-pandemic values. **Conclusion:** Public outpatient physiotherapy was subject to several limitations that reduced its production in the period evaluated.

DESCRIPTORS: Secondary health care; Physiotherapy services; Secondary data analysis; Health care disparities; Health information systems

RESUMEN

Objetivo: Analizar el porcentual de la producción de fisioterapia ambulatoria entre 2019 y 2023 en las unidades federativas y capitales de estados de Brasil. **Métodos:** Se trata de un estudio observacional que analizó el porcentual de la producción de fisioterapia ambulatoria entre 2019 y 2023, en las 27 unidades federativas y capitales de estados de Brasil. **Resultados:** La producción brasileña de fisioterapia ambulatoria disminuyó en los primeros años de la pandemia, en 2020 y 2021. En comparación con 2019, 26 Unidades Federativas y 25 capitales sufrieron una caída en la producción en 2020, y solo Pará, Belém y Fortaleza no enfrentaron reducción. La mayoría de las unidades federativas y capitales lograron recuperarse entre 2022 y 2023, y mantuvieron su producción superior a los valores pre-pandemia. **Conclusión:** La fisioterapia ambulatoria pública estuvo sujeta a diversas limitaciones que redujeron su producción en el período evaluado.

DESCRIPTORES: Atención secundaria de salud; Servicios de fisioterapia; Análisis de datos secundarios; Disparidades en la atención sanitaria; Sistema de información de salud

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INTRODUCTION

The emergence of COVID-19 from Wuhan, China, to the global stage in early 2020 severely impacted healthcare systems around the world, resulting in the establishment of a Health Emergency of International Concern by the World Health Organization. ⁽¹⁾ Health services in multiple countries have seen their capacities decrease during this public health crisis ⁽²⁾, arising from various factors associated with the disruption of demand and supply of services due to the overload of systems and protection policies adopted. ⁽³⁾ Internationally, the pandemic resulted in a significant decrease in outpatient care, although heterogeneous according to the type of service. ⁽⁴⁾

Brazil also faced the impacts of COVID-19 on the health system, resulting in the establishment of a Public Health Emergency of National Importance in February 2020, which lasted until April 2022. ^(5,6) Until 2021, the pandemic caused a drop in outpatient care services in the country, resulting in a reduction in the performance of: surgical procedures; clinical procedures; health promotion and prevention actions, procedures for diagnostic purposes; organ, tissue and cell trans-

plants; medications; orthoses, prostheses, special materials and complementary health care actions. ⁽⁷⁾

In this context, during the pandemic, physiotherapy has reaffirmed its need in the fight against COVID-19, since its action helps in early recovery and rehabilitation and reduces additional costs for hospitals. ⁽⁸⁾ It is estimated that the impact of the pandemic on outpatient physiotherapy production in Brazil followed the same disruption found in other health services, however, these responses were not evident.

Given this scarcity of literature associated with physiotherapy services offered by the SUS, the objective of this study was to analyze the percentage of outpatient physiotherapy production between 2019 and 2023 in the federative units and state capitals of Brazil.

METHODS

Outline

This is a descriptive study that analyzed the percentage of outpatient physiotherapy production between 2019 and 2023, in the 27 federative units and state capitals of Brazil.

Context

The SIA/SUS was established by Ordinance GM/MS No. 896 of June 29, 1990, and is the local manager's operationalization system to process information regarding outpatient production of Primary and Specialized Care carried out by SUS providers. Outpatient production is directed to the SUS Information Technology Department (DATASUS) and posted on the TABNET instrument, an online health information tabulator. Outpatient production is considered the set of health notifications from the three levels of management that involve the provision of health promotion and prevention actions; diagnostic procedures; clinical procedures; surgical procedures; transplants; medications; implantation of orthoses, prostheses and special materials; and complementary health care actions. Physiotherapy falls under clinical care.

Variables

The study variables were: 1) number of outpatient physiotherapy production in the states from 2019 to 2023 and 2) number of outpatient physiotherapy production in the capitals from 2019 to 2023.

Data sources and measurement

The data were accessed and extract-

ed in September 2024 from the SUS Information Technology Department platform (available at: <http://sia.datasus.gov.br/>), in the search tab of the

Outpatient Information System and were selected by municipality location and by Federative Units. Figure 1 shows the data collection steps.]

Bias control

Standardized data collection and data checking procedures were adopted to control bias in the Outpatient Information System. Two researchers were responsible for collecting and performing the calculations, while two researchers checked the information.

Statistical methods

Two tables were extracted from the Outpatient Information System and converted to Microsoft Excel® format for data tabulation, according to the research based on the state capitals of Brazil and the Federative Units.

The federative units and capitals were compared with each other, comparing the percentage of outpatient physiotherapy production in the pre-pandemic year of 2019 with the subsequent pandemic years of 2020, 2021, 2022, and 2023. These data were subsequently compared between the pandemic years with the pre-pandemic year of 2019 and this difference in percentage was extracted for a geographic representation.

To demonstrate the annual progression of the percentage of production, eight georeferencing maps of the Brazilian territory were created using the QGIS software version 3.34.11-Prizren for the Windows operating system. The cartographic base was made available by the Brazilian Institute of Geography and Statistics as a shapefile: Brazil – Federation Units 2022 SHP (available at: <https://portaldemapas.ibge.gov.br/portal.php#mapa223826>). The maps were created by demarcating the data obtained by the Outpatient Information System.

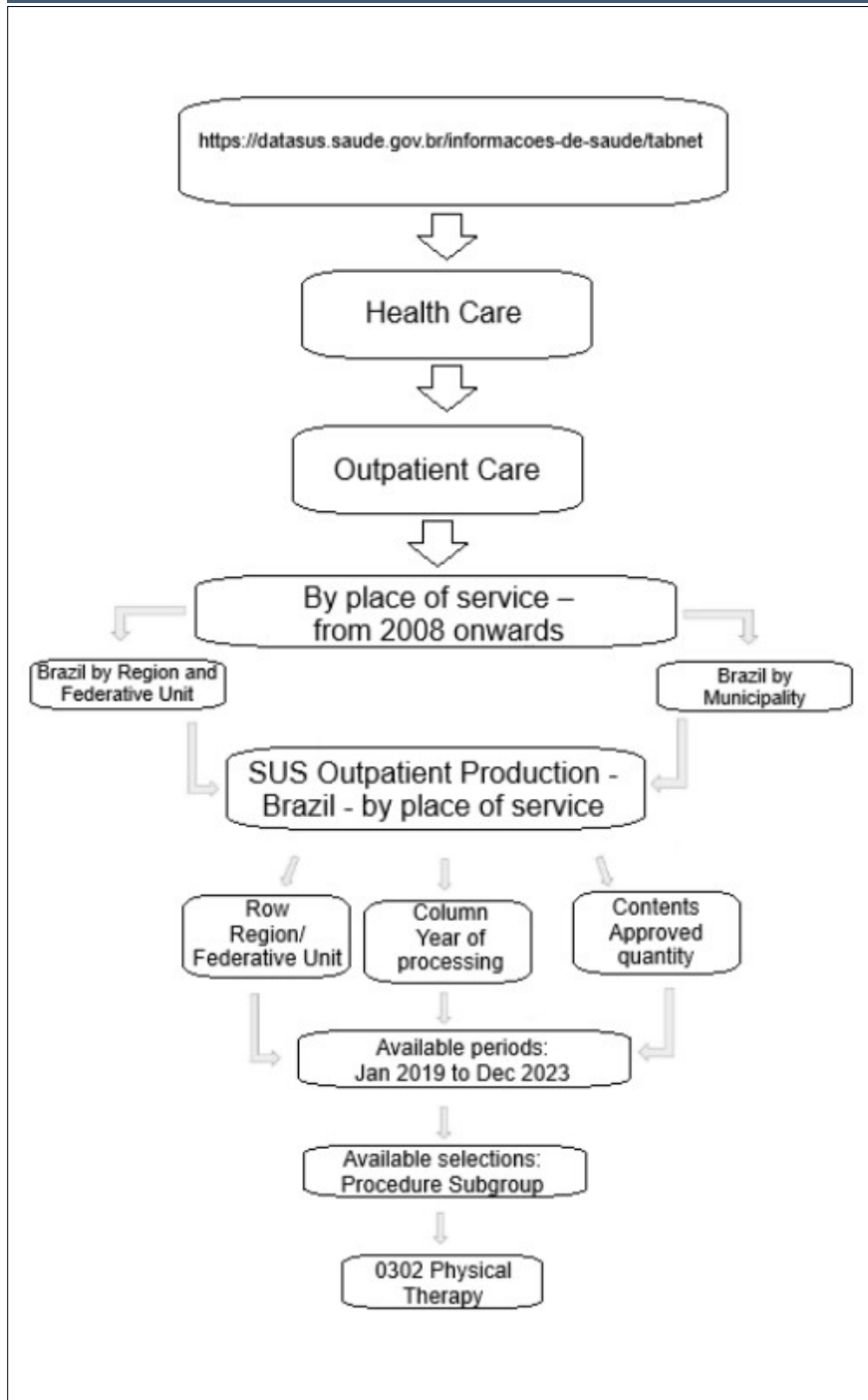
Data access and cleaning methods

All data were collected and exported from the platforms by two previously trained researchers. Two researchers performed the information check.

Data pairing

There was no need to pair the data,

Figure 1 – Data access steps



Source: the authors.

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as a single platform was used for data collection.

Ethical aspects

The study was conducted using publicly accessible secondary data, ensuring the anonymity and confidentiality of personal information of SUS users.

RESULTS

The aggregate total of the federative units and capitals, presented in Tables 1 and 2, demonstrated a drop in outpatient physiotherapy production from 2019 to 2020 (Federative Units = -34.99%; Capitals = -30.09%), with values below the values of 2019 persisting until 2021 (Federative Units = -18.46; Capitals = -9.51%), and recovering only in 2022 (Federative Units = 4.10%; Capitals = 1.29%). In 2020, 26 Federative Units (Figure 2) and 25 capitals (Figure 3) suffered a drop in production compared to 2019, with only Pará, Belém and Fortaleza not facing a decrease.

In 2021, the states of Amapá, Alagoas and Santa Catarina recovered. In 2022, Amazonas, Tocantins, Maranhão, Ceará, Pernambuco, Bahia, Minas Gerais, Rio de Janeiro and Mato Grosso also showed recovery. In 2023, Acre, Rio Grande do Norte, Paraíba, Sergipe, Espírito Santo and the Federal District recovered.

In 2021, the capitals Macapá, Teresina, Recife, Maceió and Aracaju recovered. In 2022, São Luís, Vitória, Rio de Janeiro, Florianópolis and Cuiabá recovered. Only in 2023 did the capitals Rio Branco, Manaus, Palmas and Brasília recover.

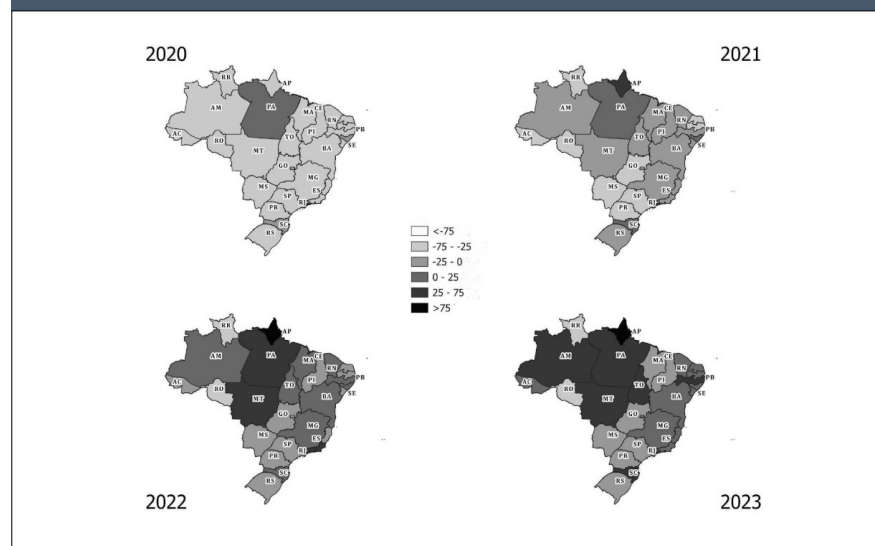
By the end of 2023, 18 federative units and 15 capitals had recovered outpatient production above their values established in 2019. The federative units that did not recover were: Rondônia, Roraima, Maranhão, Piauí, São Paulo, Paraná, Rio Grande do Sul, Mato Grosso do Sul and Goiás. The capitals that did not recover were: Por-

to Velho, Boa Vista, Teresina, Natal, João Pessoa, Salvador, Belo Horizonte, São Paulo, Curitiba, Porto Alegre, Campo Grande and Goiânia. Roraima recovered in 2022, but declined in 2023, below its 2019 value. Teresina recovered in 2021 and maintained an increase in 2022, but declined in 2023.

The comparative percentages of the federation units (Figure 2, Table 1)

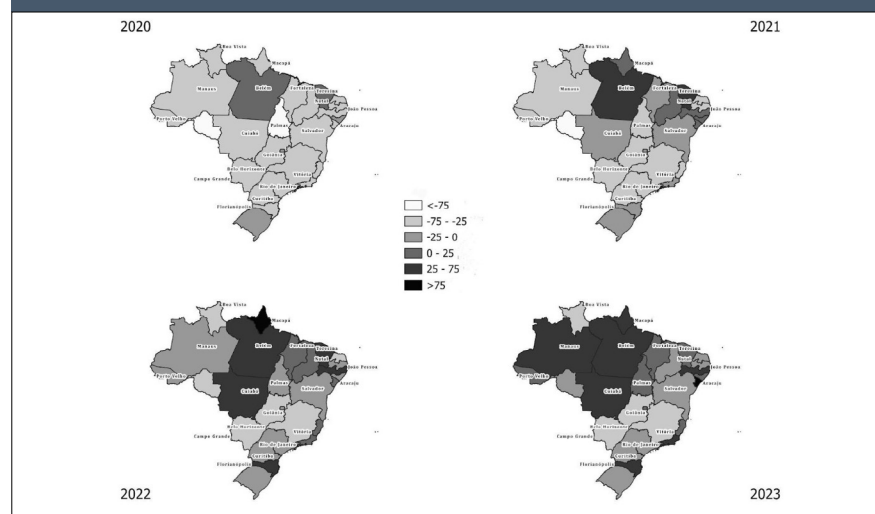
and capitals (Figure 3, Table 2) from 2020 to 2023 in relation to 2019 can be observed in six different categories (1- increased more than 75% in relation to 2019; 2- increased between 25 and 75%; 3- increased from 0.1 to 25%; 4- reduced from 0.1% to 25%; 5- reduced from 25 to 75%; 6- reduced below 75%).

Figure 2 – Percentage of outpatient production in the Federative Units of Brazil from 2020 to 2023 compared to 2019. Collected in 2024



Source: the authors.

Figure 3 - Percentage of outpatient production in Brazilian capitals from 2020 to 2023 compared to 2019. Collected in 2024.



Source: the authors.

Table 1 – Percentage of Production Quantity Compared to 2019 by Federative Unit

Federative unit	2020	2021	2022	2023
Rondônia	-65,66%	-59,17%	-39,66%	-25,17%
Acre	-64,12%	-46,58%	-14,79%	14,95%
Amazonas	-55,13%	-11,73%	21,1%	35,35%
Roraima	-53,98%	-43,72%	-29,43%	-31,62%
Pará	1,3%	21,72%	28,37%	29,55%
Amapá	-33,11%	42,01%	131,46%	94,23%
Tocantins	-50,63%	-24,35%	23,21%	31,14%
Maranhão	-33,81%	-8,99%	11,13%	-0,68%
Piauí	-49,9%	-23,21%	-5,16%	-9,3%
Ceará	-35,9%	-13,62%	14,53%	16,47%
Rio Grande do Norte	-45,63%	-33,75%	-19,63%	1,84%
Paraíba	-61,89%	-26,29%	-5,45%	9,37%
Pernambuco	-50,54%	-15,71%	20,5%	27,02%
Alagoas	-22,24%	1,01%	4,41%	18,42%
Sergipe	-48,00%	-13,13%	-10,05%	9,73%
Bahia	-34,64%	-16,44%	7,52%	13,27%
Minas Gerais	-39,23%	-15,88%	0,54%	7,92%
Espírito Santo	-45,08%	-17,69%	-10,77%	2,78%
Rio de Janeiro	-27,11%	-23,54%	34,18%	11,7%
São Paulo	-43,73%	-31,11%	-15,74%	-8,91%
Paraná	-38,88%	-31,5%	-15,38%	-9,88%
Santa Catarina	-23,86%	0,8%	13,86%	32,54%
Rio Grande do Sul	-26,29%	-22,15%	-11,59%	-6,96%
Mato Grosso do Sul	-53,42%	-32,61%	-12,09%	-0,47%
Mato Grosso	-39,75%	-7,75%	27,54%	34,31%
Goiás	-40,47%	-33,82%	-15,48%	-18,15%
Distrito Federal	-23,86%	-15,95%	-10,01%	6,93%
National total	-34,99%	-18,46%	4,1%	6,53%
Overall mean	-40,95%	-18,63%	4,56%	10,61%
Variance	2,23%	4,07%	9,95%	6,01%
Standard deviation	14,92%	20,18%	31,55%	24,52%

Table 2 – Percentage of Production Quantity Compared to 2019 by Capital

Capital	2020	2021	2022	2023
Porto Velho	-82,57%	-90,25%	-69,77%	-0,73%
Rio Branco	-63,39%	-42,43%	-6,88%	9,17%
Manaus	-61,79%	-33,65%	-0,35%	27,1%
Boa Vista	-62,7%	-51,94%	-40,23%	-46,05%
Belém	23,74%	43,9%	42,38%	49,77%
Macapá	-44,51%	13,33%	95,84%	64,51%

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Palmas	-76,1%	-67,51%	-10,59%	16,76%
São Luís	-40,35%	-7,15%	22,87%	18,09%
Teresina	-54,97%	3,76%	18,2%	-7,63%
Fortaleza	2,27%	28,93%	33,27%	20,55%
Natal	-33,44%	-34,58%	-25,92%	-20,63%
João Pessoa	-67,1%	-33,81%	-19,99%	-13,41%
Recife	-38,03%	6,29%	35,35%	48,13%
Maceió	-14,98%	9,48%	-3,09%	9,89%
Aracaju	-42,75%	6,08%	12,43%	112,37%
Salvador	-30,5%	-19,86%	-9,79%	-13,42%
Belo Horizonte	-55,29%	-37,96%	-40,4%	-48,88%
Vitória	-55,82%	-25,37%	14,97%	24,3%
Rio de Janeiro	-38,72%	-20,76%	8,84%	53,00%
São Paulo	-53,35%	-40,56%	-23,63%	-18,9%
Curitiba	-60,29%	-43,17%	-11,63%	-4,97%
Florianópolis	-57,99%	-20,21%	38,51%	73,9%
Porto Alegre	-23,18%	-21,22%	-19,83%	-12,58%
Campo Grande	-71,21%	-71,88%	-50,37%	-41,42%
Cuiabá	-65,17%	-20,89%	32,72%	65,02%
Goiânia	-67,47%	-56,98%	-47,95%	-45,81%
Brasília	-23,86%	-15,95%	-10,01%	6,93%
National total	-30,09%	-9,51%	1,29%	8,73%
Overall mean	-46,65%	-23,87%	-1,3%	12,04%
Variance	5,91%	9,56%	12,55%	16,33%
Standard deviation	24,31%	30,92%	35,43%	40,41%

In terms of the percentage of production compared to 2019, by the end of 2023: one federative unit (Amapá) and one capital (Aracaju) had a recovery above 75%; six federative units (Amazonas, Pará, Tocantins, Pernambuco and Mato Grosso) and seven capitals (Macapá, Manaus, Belém Recife, Rio de Janeiro, Cuiabá and Florianópolis) had a recovery between 25 and 75%; 10 federative units (Acre, Ceará, Rio Grande do Norte, Paraíba, Alagoas, Sergipe, Bahia, Minas Gerais, Espírito Santo and Rio de Janeiro) plus the Federal District and seven capitals (Rio Branco, Palmas, São Luís, Fortaleza, Maceió, Vitória and Brasília) had a recovery between 0 and 25%; seven federative units (Maranhão, Piauí, São Paulo,

Paraná, Rio Grande do Sul, Mato Grosso do Sul and Goiás) and eight capitals (Porto Velho, Teresina, Natal, João Pessoa, Salvador, São Paulo, Curitiba and Porto Alegre) had a decline between 0 and -25%. Two federative units (Rondônia and Roraima) and four capitals (Boa Vista, Belo Horizonte, Campo Grande and Goiânia) had a decline between -25 and -75%.

DISCUSSION

Outpatient physiotherapy production in Brazil decreased in the early years of the pandemic, in 2020 and 2021, but most states and capitals managed to recover between 2022 and 2023, and maintained their pro-

duction higher than pre-pandemic values. Until 2023, nine states and 12 capitals had not recovered. Regarding regional performance, a greater proportion of states in the North, Northeast and Southeast regions had recovered until 2023 (more than half of the states in the region), and only the capitals of the North and Northeast regions had a proportion above half.

In terms of limitations, the study being observational with secondary data limits the conclusions that can be derived from the results. The findings of this study corroborate the macro-level events of the reduction in the production of health services associated with the COVID-19 pandemic.⁽⁹⁾ The degree to which a

health system was affected depended on several factors, such as service resilience (how resilient the system is when subjected to stress) and the demographics of the population served. The pandemic stressed health services worldwide, including in Brazil, due to factors such as interruption of essential services and overload of these, as well as reduced well-being of health professionals themselves.⁽¹⁰⁾

The resilience of a health service depends on its ability, during a stressful event, to provide its functions: public, financial, administrative, technological, the actions of the service itself, and the maintenance of workers, in a way that is engaged with the community and that allows collaboration with other sectors relevant to its function.⁽¹¹⁾ In the COVID-19 scenario, a survey of resilience in health service provision in ten countries with different socioeconomic factors found the following common factors for reduced care: fear of contagion, reduced ability to pay for the service, suspension of care to accommodate COVID-19 patients, redirection of professionals to COVID-19 care and barriers imposed by the lockdown.⁽¹²⁾

Specifically in Brazil, the SUS had its weaknesses highlighted by the pandemic, which demonstrated the problem with political friction for a unified response to face COVID-19, underfunding of services, lack of access to equipment and technologies, geographical heterogeneity of the workforce, inequity and coordination of the care network and the surveillance network.^(13,14) The constitutional principle of the SUS of decentralization of the management of the health system associated with political divergences between managers of municipalities, federation units and the federal government contributed to disparities in health care during the pandemic.⁽¹⁵⁾ Concomitant with the heterogeneity of care

in the Brazilian health system, the conditions of economic inequality themselves favored worse outcomes when facing COVID-19, which leads to a greater overload of services.⁽¹⁶⁻¹⁸⁾ This greater demand on the system was evident not only in emergency care, but also in the provision of non-emergency care, such as organ transplant services and oncological care services.⁽¹⁹⁻²²⁾

Another factor that may have contributed to the reduction in services is the temporary or permanent departure of professionals due to COVID-19 circumstances. Within the context of the pandemic, there was an increase in unmanageable workload, adverse working conditions, fears of death and morbidity. The lack of representation in the management of the response to the pandemic were factors that contributed to the departure of health professionals from the area.^(23,24) In physiotherapy, around 87% of World Physiotherapy Organization members reported disruptions to service due to COVID-19, with this disruption being characterised by lockdown restrictions, lack of physiotherapy in the public service, redeployment of physiotherapists to assist the COVID-19 response, lack of information associated with COVID-19 and occupational health procedures.⁽²⁵⁾

Outpatient production has seen declines in several areas due to the pandemic, including access to doctors, elective procedures and orthopedic health.⁽²⁶⁻³⁰⁾ In the United States of America, the drop in in-person outpatient production was associated with mitigation and virus contamination prevention strategies, which in response led to an increase in telehealth services.⁽³⁰⁾ In Brazil, the outpatient action of Specialized Rehabilitation Centers has seen a reduction in the production of services in conjunction with an increase in the absence of professionals and an insufficient structure for telerehabil-

itation.⁽³¹⁾

One of the adaptations made to mitigate the decline and meet health needs was the adoption of the telecare modality. The Federal Council of Physiotherapy and Occupational Therapy published Resolution No. 516, of March 20th, 2020, for non-face-to-face care in the modalities, teleconsultation, teleconsulting and telemonitoring.⁽³²⁾

Several countries, including Brazil, have had to adapt in innovative ways to the pandemic scenario by providing care remotely.⁽³³⁾ Telecare services have effectiveness that depends on the area of care, and during the pandemic, outcomes were able to achieve levels of functionality comparable to in-person care.⁽³⁴⁾ As a healthcare facilitator, there are barriers to use associated with access to technology and the use of that technology, which can cause variation in the quality of sessions.⁽³⁰⁾

CONCLUSION

The findings of this research are in line with the problems faced by several health systems during the COVID-19 pandemic. Public outpatient physiotherapy, like other areas of the SUS, was subject to several difficulties that reduced its production. More studies associated with this topic are needed to better represent the national situation, enabling a better understanding of the effect of the pandemic on outpatient physiotherapy services.

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