Regional and Macro-regional Dependency Index: A contribution to the SUS regionalization process

Índice de Dependência Regional e Macrorregional: uma contribuição ao processo de regionalização do SUS

Daniele Marie Guerra[1], Marília Cristina Prado Louvison[1], Arthur Chioro[2], Ana Luiza D'Ávila Viana[3]

DOI: 10.1590/0103-11042023138051

ABSTRACT The study addresses the interdependency between health regions and macro-regions in Brazil in 2019, concerning both medium and high complexity hospitalizations. The analysis of the flows established was carried out using the Regional and Macro-regional Dependency Index, based on secondary data provided by the Hospital Information System of the Unified Health System (SUS). The results show that a significant number of health regions and macro-regions absorb medium-complexity hospitalizations in their territories, varying according to specialties. In high-complexity hospitalizations, most health regions are highly dependent, assistance concentrated in 15% of these. Among health macro-regions, the scenario is significantly heterogeneous: highly dependent on the North, Northeast and Midwest Regions, and highly resolutive in the South Region. Analyses show that the population size of health regions and macro-regions is inversely related to the regional and macro-regional dependency. The improvement of regionalization requires an organized health care network, one that takes into account territorial inequalities and diversities, interdependency and autonomy among the territories and actors involved, and inter-federative coordination, so as to provide care that is both comprehensive and equitable.

KEYWORDS Unified Health System. Regionalization of health. Comprehensive health care. Health governance.

RESUMO *O estudo aborda a interdependência das regiões e macrorregiões de saúde no Brasil nas internações de média e alta complexidade, no ano de 2019. Foi realizada a análise dos fluxos estabelecidos, utilizando o Índice de Dependência Regional e Macrorregional, a partir de dados secundários do Sistema Único de Saúde (SUS) obtidos no Sistema de Informação Hospitalar. Os resultados demonstram que grande parte das regiões e macrorregiões de saúde absorvem em seus territórios as internações de média complexidade, com variações entre as especialidades. Nas internações de alta complexidade, a maioria das regiões de saúde apresenta grande dependência, sendo que a assistência está concentrada em 15% delas. Entre as macrorregiões de saúde, o cenário é significativamente heterogêneo, com dependência expressiva nas regiões Norte, Nordeste e Centro-Oeste, e alta resolutividade na região Sul. Em todas as análises, o porte populacional das regiões e macrorregiões de saúde apresenta relação inversa à dependência regional e macrorregional. O aprimoramento da regionalização pressupõe a organização de uma rede de atenção à saúde que considere as desigualdades e as diversidades territoriais, a interdependência e a autonomia entre os territórios e os atores implicados, e a coordenação entre as unidades federativas, de modo a garantir cuidado integral e equânime.*

PALAVRAS-CHAVE *Sistema Único de Saúde. Regionalização da saúde. Assistência integral à saúde. Governança em saúde.*

[1] Universidade de São Paulo (USP), Faculdade de Saúde Pública (FSP) – São Paulo (SP), Brasil. *mdaniguerra18@gmail.com*

[2] Universidade Federal de São Paulo (Unifesp) – São Paulo (SP), Brasil.

[3] Universidade Federal da Bahia (UFBA) – Salvador (BA), Brasil.

Introduction

The Federal Constitution passed in 1988 turned health into a universal and fundamental right, defining health actions and services as part of a system organized in a structure that should be both decentralized and regionalized, counting on the involvement and co-responsibility of all government levels in the Unified Health System (Sistema Único de Saúde – SUS)[1].

In Brazilian federative tripartite model, the management complexity of public policies, remarkably in the health area, requires the coordination of both the interdependency and the autonomy of all three federative sectors, so as to grant relevance to collective actions when building-up conditions that may provide cooperation and reduce competition among the government spheres[2-5].

The early 20 years after the SUS was created actually did accomplish progresses assigned to the decentralization of health assistance, when new bases for the federal pact were established, the federal sphere transferring responsibilities and resources to states and municipalities. With financial resources, the process was fast and brought many advancements related with the management capacity, the participation of the civil society in the SUS management, the creation of inter-managers collegiates, besides changes in financing criteria and in models and practices related to the health care[4,6,7].

However, the decentralization advancement did accentuate the fragmentation and the isolation of both actions and health services, leading to systemic inefficiency and troubles concerning the care integrality. In this sense, problems may be remarked that involved inequality among municipalities concerning population aspects, besides technical, political and financial conditions. Furthermore, the strong presence of states in the assistance, and the paucity of instruments and mechanisms for the federative coordination to support them when organizing care networks did accentuate the competition among federative sectors[8-11].

In this scenario, the regionalization gained prominence, considering the need to build a system based on cooperation and solidarity in inter-federative relationship, so as to organize regional networks that could accomplish health care that should be both integral and timely. In Brazil, the integrality of health assistance requires an integrated system of actions and services that require multiple dimensions and governance arrangements, considering the interdependency of all actors and organizations involved that, in isolation, are not able to solve the health problems of a population[12].

The regionalization process involves a political pact that results from the articulation of different actors on the sanitary responsibility and the management of the system and services for facing the health problems of the population in one specific territory. This is a process aimed at the best availability of health services and actions that may inhibit the access inequality in the integral assistance, and that depends on the inter-relationship of different social actors, power distribution, besides capacity for providing health attention and financing in the territory[13-15].

Although states actually do count on experiences that are previous to the *SUS*, regionalization in the country was only given a centralized structure in 2001, with the Health Care Operational Standard (Norma Operacional da Assistência à Saúde – Noas) 2001/2002, which proposed the adequacy of functional health systems based on sanitation territories, centralizing the offer, disregarding the health need[16,17].

Since the Health Pact, the regionalization stressed the importance of granting access, resoluteness and quality to health actions and services, and widened the definition of health regions, considering diversities and realities of each region in the country. It proposed as well the definition of responsibilities and commitments among health managers, under a pact that assigned the Collegiates of Regional Management as permanent spaces of solidary and cooperative co-management

among the federal entities[18]. Later on, new guidelines have been formulated, establishing rules for the Health Attention Network (Rede de Atenção à Saúde – RAS), characterized by the horizontal relationship of the attention points of a health system, the primary health attention system in charge of a communication and care coordination center, so as to provide the systemic integration of health actions and services, providing continuous attention, integration and good quality[19]. In universal systems centered on the primary health attention, it is fundamental for medium and high complexity attention to be organized as an attention network, so as to grant the system integrality and the equanimous access to health services.

Aiming at the system integrality, the Decree Nr. 7.508/2011 guides the constitution of regional networks and defines health regions as privileged spaces meant to integrate health services, driven by a regional and integrated planning process and by the definition of responsibilities of the federate entities, and formally established under the Organizational Contract of Public Action (Contrato Organizativo de Ação Pública – Coap). It defines as well the Regional Inter-managerial Commissions (Comissões Intergestores Regionais), formerly named Collegiates of Regional Management (Colegiados de Gestão Regional) as formal co-management jurisdiction in the regional space[20,21].

More recently, Tripartite Deliberations Nr. 23/2017 and Nr. 37/3018, translated into Consolidation Resolution CIT Nr. 1 (Resolução de Consolidação – CIT No. 1), as of March 30, 2021, bring details on the Integrated Regional Planning (Planejamento Regional Integrado – PRI) process, based on the identification of health needs and the needs of the assistance network across an enlarged regional space, defined considering one or more health regions, named health macro-regions, Throughout this enlarged territory, sanitary priorities must be established, health attention points and sanitary responsibilities of federate entities must be organized, and tripartite financing must be made available. Furthermore, Deliberations propose a Governance Executive Committee for the Health Attention Network (RAS) to be established, with technical and operational responsibilities, aimed at monitoring, following-up, evaluating and proposing solutions aimed at the proper operation of that Network, considering the participation of the different actors involved in both the operation and the results – there included service renderers – and the social control, offering subsides for the Bipartite and Regional Inter-managers Commissions (Comissões Intergestores Bipartites e Regionais)[22-24].

The SUS was created in a country with heterogeneous conditions as to both the extension and the diversity of socio-economic territories, with regional, cultural and political inequalities, and diverse as to epidemiological needs, services rendering e human resources availability. The Constitution passed in 1988 defines each federative entity as responsible for organizing its own SUS system in a shared structure, so as to grant universality, integrality and equity in the health area[13].

To be organized, RAS requires systemic integration arrangements, providing continuous, integral and good quality attention. Therefore, some services must be concentrated, and other services are to be disperse, so as to enable specialized assistance to be efficiently and sustainably organized in regional networks[9]. In this sense, indicators must be constructed that demonstrate care gaps and both regional and macro-regional auto-sufficiency that allow for integrated and equanimous planning that may fulfil the needs of Brazilian territories.

The present study is meant to analyze the interdependency of health regions and macro-regions throughout Brazilian regions, searching for the assistance integrality, the look directed to the sufficiency of each territory, using the Index of Regional and Macro-regional Dependency (*Índice de Dependência Regional e Macrorregional – IDR/IDMR*) in medium and high complexity hospitalizations, during 2019.

Material and methods

The Dependency Index – DI) (*Índice de Dependência – ID*) was created by the World Health Organization, connected with the Project on Development of Health Systems and Services, aimed at carrying out studies on influence areas[25], translated as the "percentage of services rendered to the population in each system, or unit, relative to the total services provided"[26(33)]. In short, the DI is used to evaluate the participation of different population groups in the health system and help services to offer sizing concerning the health needs, especially when regional development plans are elaborated[26]. In more recent investigations, the DI has been used to analyze the interdependency of the health regions on the State of São Paulo[27,28]. In this study, we try to measure both the sufficiency and the relation among health regions and macro-regions, measures identified as Regional Dependency Index (*Índice de Dependência Regional – IDR*) and Macro-regional Dependency Index (*Índice de Dependência Macrorregional – IDMR)*. In this sense, both IDR and IDMR were calculated, respectively, as a percentage of medium and high complexity hospitalizations in the attention provided to the resident population in all Brazilian 450 health regions and 116 health macro-regions provided out of their own territories considering the total number of hospitalizations carried out for that same population during 2019 (there are today 456 regions and 117 macro-regions). The IDR and the IDMR analysis considered complexity level, specialty (pediatric clinic, obstetrician clinic, medical clinic surgical clinic) and population dimension. Data were plotted into maps for better space visualization. IDR and IDMR values were grouped in ranks: under 20%, from 20.01% to 40.00%, from 40.01% to 60.00%, from 60.01 to 80.00% and more than 80.00%. The maps present all regions and macro-regions analyzed, but the analyses considered BR regions, according to *table 1*. Data were provided by the Hospital Information System (Sistema de Informações Hospitalares – SIH/SUS)[29].

Table 1. Number of health regions and health macro-regions, according to Region BR, 2019

Region BR	Health Regions	Health Macro Regions
Midwest	39	15
North	45	14
Northeast	133	33
Southeast	165	36
South	68	18
Total	450	116

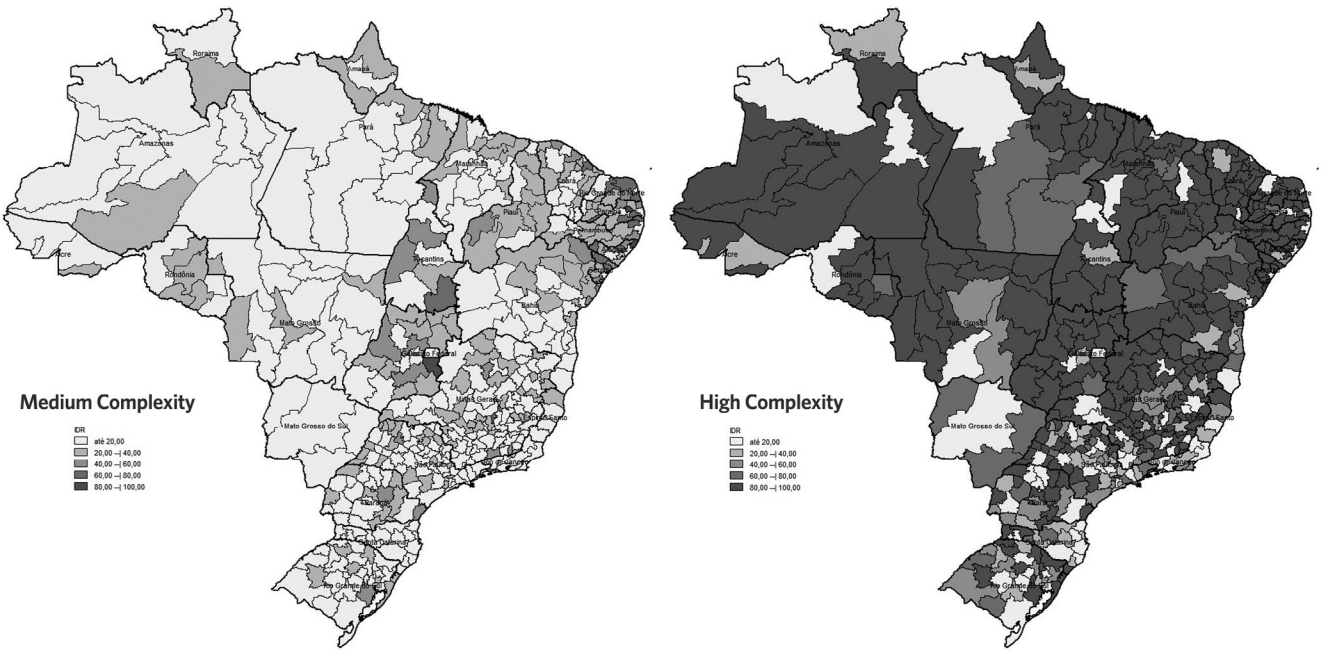
Source: By the authors, based on the Sistema de Informação Hospitalar (SIH/SUS)[29].

Outcomes and discussion

When analyzing medium complexity hospitalizations, most part of the health regions presented IDR under 20%; in 32% of the health regions, IDR varied from 20% to 40%; and in just 43 health regions (10%), the IDR observed was above 60%. Considering the entire Brazilian territory, important differences were remarked. In the Northeast Region, only 40% of the health regions presented IDR under 20% in medium complexity hospitalization, while in the other health regions the percentage of IDR under 20% varied from 61%, in the Midwest Region, to 75% in the South Region (*figure 1*). This scenario directly reflects the

regional inequalities in Brazil, proving that although regional policies actually did advance over recent years, territorial equity remains an important challenge to be faced if the SUS integrality is to become a reality[30,31].

Figure 1. Index of Regional Dependency (IDR) in medium and high complexity hospitalization. Health regions in Brazil, 2019



Source: By the authors, based on the Sistema de Informação Hospitalar (SIH/SUS)[29].

As to medium complexity hospitalization, the surgical clinical specialty presented the higher percentage of health dependent regions – just 42% presented IDR under 20%. As to obstetric, medical and pediatric clinics, the IDR surpassed 20% in more than 70% of the health regions. In 2019, medium complexity hospitalizations represented about 92% of total hospitalizations in the SUS – mostly carried out in the health region of the residents, proving the importance of the regional space for the organization and the governance of the health assistance structure.

When it comes to high complexity hospitalization (8% of total hospitalizations), the scenario in the health regions is totally inversed. Most health regions (62%) presented IDR above 80%, many reaching 100% dependency. In some 24% of the health regions, the IDR was between 40% and 80%, and in no more than 15% of the health regions (67) this dependency remains under 20%. Those are the health regions located in large technologic and university health centers, where high complexity assistance is concentrated – mostly in health regions in the South and Southeast regions, besides health regions located in all capital cities over the country (*figure 1*).

Regions with high socioeconomic development and high services availability include the Metropolitan Regions and other areas of great economic dynamism, and reflect the force of the private sector, with unequal growth and significantly concentrated in the Southeast and South Regions[32].

The percentage of health regions with IDR higher than 60% proved variations as to high

complexity hospitalization – between 66%, in surgical clinic hospitalization, and 73%, in pediatric clinic.

Apparently, the population dimension in health regions is directly related to the dependency on medium complexity hospitalizations in the health regions, and inversely related to the IDR, which goes down as the population size increases in those regions. As to medium complexity hospitalizations, the IDR in health regions with less than 100,000 inhabitants is five times higher than the IDR in health regions with more than one million inhabitants, and eight times higher when it comes to high complexity hospitalizations (*table 2*).

Table 2. Index of Regional Dependency (IDR), in hospitalizations of medium and high complexity, according to population size. Health Regions of Brazil, 2019.

Population Size	Medium Complexity	High Complexity
Until 100.000 inhabitants	26,17	99,26
Between 100.000 and 299.999 inhabitants	20,85	77,70
Between 300.000 and 499.999 inhabitants	16,54	47,77
Between 500.000 and 1 million inhabitants	15,47	37,33
More than 1 million inhabitants	4,69	11,87

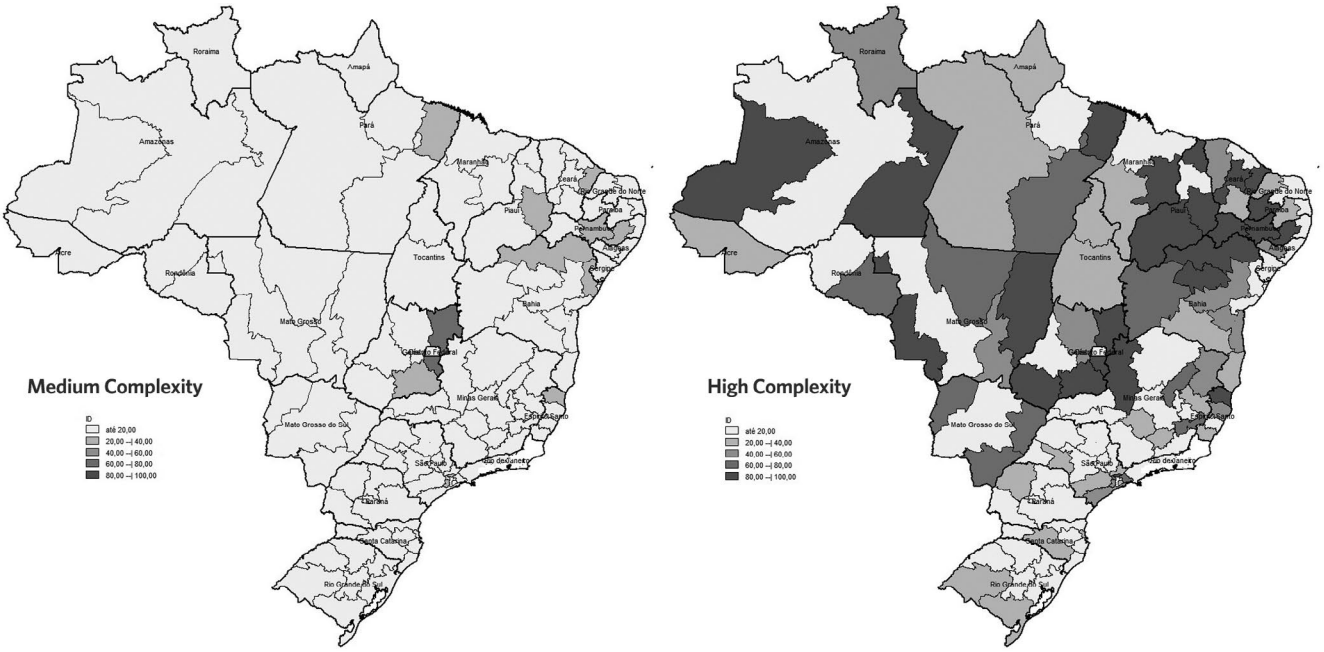
Source: By the authors, based on the Sistema de Informação Hospitalar (SIH/SUS); IBGE (Estimativas TCU, 2019)[29,33].

However, one must keep in mind that some health regions might be more dependent when it comes to services offered, and because their location is based on geographic, cultural, economic, social and political characteristics, they can be justified considering the dynamic of the territory. In this sense, the urgency to establish institutionalized pacts should not be ignored, as well as an investment plan, so as to grant integral access for the population.

Concerning medium complexity hospitalizations, when analyses come to IDMR in the country's macro-regions, a more homogeneous scenery is revealed: 92% of them present IDMR under 20% – just one macro-region surpassed 60%.

In high complexity hospitalizations, just 41% of the health macro-regions present IDMR lower than 20%, and this index surpassed 60% in some 30% of the health macro-regions. The South Region stands out with 72% of its health macro-regions presenting IDMR under 20%, while in the North Region no more than 21% of the macro-regions reach that percentage range. An even more complex scenario is found in both the Midwest and the Northeast Regions, where 67% and 39% of the dependency in health macro-regions surpassed 60%, respectively (*figure 2*).

Figure 2. Index of Macro-regional Dependency (IDMR) in medium and high complexity hospitalizations. Health Macro-regions in Brazil, 2019



Source: By the authors, based on the Sistema de Informação Hospitalar (SIH/SUS)[29].

The concentration of outpatient and hospital complexity in territories where capital cities are located, mainly in the North, Northeast and Midwest regions, leads to high dependency degree, which may impact power relations, as well as regional governance arrangements in the SUS[34,35].

In the North Region, it must also be considered that some states, such as Roraima, Amapá and Acre, constitute one single macro-region, and its dependency rate surpasses 30% in high complexity hospitalizations. Besides, the interstates relationship is not always a contiguous one, as patients' displacements face huge territorial barriers, often depending on river and air transportation. In this sense, the use of health services is easier using transportation alternatives that, most usually, are connected with technological poles of the country[36].

As it was observed concerning medium and high complexity hospitalizations, the population size of the health regions also seems to influence the IDMR, once the bigger the population, the smaller the IDMR observed. In high complexity hospitalizations in macro-regions with less than 500,000 inhabitants, the IDMR is 40 times higher than in macro-regions with more than four million inhabitants (*table 3*).

Table 3. Index of Macro-regional Dependency (IDR), in hospitalizations of medium and high complexity, according to population size. Health Regions of Brazil, 2019

Population Size	Medium Complexity	High Complexity
Until 500.000 inhabitants	11,31	85,59
Between 500.000 and 1 million inhabitants	9,74	40,03
Between 1 million and 2 million inhabitants	9,18	27,11
Between 2 million and 4 million inhabitants	4,61	18,01
More than 4 million inhabitants	1,54	2,40

Source: By the authors, based on the Sistema de Informação Hospitalar (SIH/SUS); IBGE (Estimativas TCU, 2019)[29,33].

It must be taken into account that geographic and political characteristics, as well as the RAS configuration, are decisive factors for the configuration of the macro-regional territory, and understanding its dynamic becomes essential for providing both the access and the displacement of patients to reach the health services so as to ensure integral attention.

The establishment of macro-regions in Brazil is quite recent, an undergoes changes over time. In general, this configuration was based on different criteria established in the states by Tripartite Inter-managerial Commissions. Today, some states are still organized as one single macro-region, such as Rio de Janeiro, Sergipe, Roraima, Amapá and Acre.

In very dependent territories, the timely access and continuity of the health care require institutional pacts involving municipalities, regions and macro-regions, besides investment in installed capacity and regulatory and governance structures, so as to ensure integrality of the health attention. It must also be remarked that in either regional and/or macro-regional territories, the dependency may well be concentrated in one or more municipalities and/or health regions; and also in some specialties, procedures or even hospitalization that involve Intensive Therapy Units (ITU), when dependency may reach even higher levels. Furthermore, the low dependency may well reflect access barriers from or health region to another, which may be geographic, financial or involving access regulation, among other reasons.

When providing health actions and services to the population, the organization of the territory may well be articulated with the complexity of the urban network. The determinant factors for the use of the health system are related with the health offer and needs, as well as the organization of the health system, and involve patterns of users flow over the territories for the access of an integral network[36]. Space scales defined in sanitary territories involve technical-political agreements that are not always institutionalized and convergent, and government abilities that are unequal among the actors involved[36]. The need for negotiation and agreements among government levels is stressed not just by the number of entities involved, but also by precarious institutional conditions of both the municipalities and the states that are equally responsible for providing health attention[13].

Pendular displacements – those between municipalities in regions where users are obliged to periodically move from the location where they live to work or study – are part of the survival strategy of a contingent of Brazilian population and are not limited to large urban agglomerations. The investigation of flows not directly destined to health assistance services may add to considerations that might contribute to identify territories that are more coherent with the social and economic logic of the region, leading to the constitution of territories with larger municipal integration for the management of health actions and services[36,37].

Regionalization is a complex process in Brazil, a country with continental dimensions and large population, with inequalities and regional peculiarities. This process involves a number of agents – governmental and non-governmental, public and private – in charge of leading processes and rendering health attention yet submitted to the regional planning negotiated in Inter-managers Commissions so as to integrate attention networks. Quite often, those agents exceed the limits of the health regions, and even of states[13,21]. This regionalization supposes the existence of institutional mechanisms that discourage predatory competition and do promote the planning, the integration, the management and the financing of a network of health actions and services. Such mechanisms involve a governance system and changes in the power distribution, in the assistance model and in the financing[5,13,15,38,39].

In the health area, governance is expressed in dependency relationships, interaction and agreements established among the agents that are related with each other in financing issues and in the provision of both inputs and services, those actors as protagonists with greater influence and performance capacity for leading and organizing the health system[14]. In this sense, the implementation of solidary inter-governmental relationships in the SUS requires measures that may deepen the control and rule power practices; and the creation of regional pacts requires those in power to be integrated, as they often act in asymmetric positions and under potentially conflicting interests in the federative context[40].

The regionalization process may well positively interfere in the process of granting universal health , as it allows for services to be widely planned and organized, according to the needs of each territory, establishing a rational and equitable integration of both actions and services, according to the offer and the needs found in one specific socio-sanitary context, optimizing both human and technological resources in the complex regional health system, catalyzing both policies and responsibilities to be shared among the actors[41].

Final considerations

The pursuit for care integrality requires better organization of health actions and services in the territory, focused on primary attention and on a new structure of the health system, so as to enable health attention provision to be continuous, equanimous, as close as possible to the places of residence, and timely.

More than just providing a measure, the Index of Regional or Macro-regional Dependency is meant to enlarge the look on the organization of a health system aimed at the health needs of the population, its determinant and conditioning elements, and at the complexity of the health services continuity. This Index contributes for mapping the offer and the use of health services, adding to the reorganization of the assistance, besides the improvement of institutional tools required for the effective regionalization in Brazil, considering the complexity of inter-federative autonomy and interdependence in the provision of health attention.

In the health regions, the surgical clinic specialty presented higher dependence indices in medium complexity hospitalizations, more remarkably in the Northeast region. In principle, the organization in macro-regions would grant sufficiency for medium complexity all over the country. On the other hand, high complexity hospitalizations face high dependency in both health regions and macro-regions, remarkably in pediatric and surgical clinics. The concentration of high complexity procedures in both South and Southeast regions reinforces the challenge of regional inequalities when facing care gaps.

As expected, the dependency is inversely proportional to the population size in health regions and macro-regions, in both medium and high complexity hospitalizations, thus reinforcing the importance of a programming and a continuous assistance pact in the territories, so as to establish timely access to health all over the country. In this sense, the importance must be remarked of a more attentive look at less populated regions and/or macro-regions dispersed over large territories, such as the North Region of the country, which demands specific strategies for the organization of assistance if it is to face the health problems. A more comprehensive analysis, based on interstate flows and relations in the health assistance, may also contribute with the construction of inter-federative pacts that may be more sensitive as to the local reality.

The diversity of networks design, based on grievance or specialty, directs to more detailed mappings of theme flows that may guide the best planning of health actions and network governance mechanisms all over the country. Going deeper in analyses from the angle of each state might be valuable for future studies, subsidized by the present analysis. Even those health regions and macro-regions that present low dependency may present inequalities as to the access when comparing their municipalities. Quite often, those inequalities are induced by the centralized assistance in municipalities that perform as regional and macro-regional poles, which stresses the need to establish institutionalized pacts that would result from ascendent and continuous planning involving all federate entities, besides regulatory arrangements that must be effective and caring, integrated to an elective and/or urgent transport system, so as to grant integral and equanimous access.

The dynamics expressed in interdependency relations in the health assistance remarks the relevance of shaping widened territories when planning and organizing a network on integral care, yet preserving the configuration of territories already consolidated as health regions which absorb great part of both ambulatorial and hospitalization assistance for their population. Those territories are organized in a co-management process in the Regional Intermanagers Commissions as regular regional governance spaces, inclusive, and in most cases, are already institutionalized in the country. In this sense, due importance must be assigned to arrangements of assistance governance that might incorporate the diversity of actors involved in the organization of the health care, acknowledging the country's characteristics and peculiarities. Such arrangements must support SUS's deliberative instances, overcoming the inter-federative competition, often original from political parties, mainly in scenarios of insufficient resources, aiming at the development of a collaborative and sustainable culture in the integral health attention.

Despite the limitations, mainly as to the SIH, the use of secondary data provided by information systems on the SUS production reveals rich details, and the systematization of those information is crucial for the knowledge production and to move ahead on the analytic capacity to organize them into a system.

Regionalization is fundamental for SUS to be consolidated, as municipalities, health regions, health macro-regions and even some states are not self-sufficient to ensure the integrality of health care. Considering so many heterogeneities and inequalities in Brazilian territory, identifying each need is crucial to guide both the investment planning and policies that might produces more equity in fundings allocation, in the offer distribution and in the institutional mechanisms required for that health attention that is really universal, integral and equanimous, with wide social participation, so as to turn into reality the principles included in Brazilian Constitution.

Gratefulness

Special thanks to Professor Dr. Eurivaldo Sampaio de Almeida.

Collaborators

Guerra DM (0000-0002-3207-2389)* contributed with the conception, data analysis and interpretation, script, critical review and final review of the text. Louvison MCP (0000-0003-1630-3463)* contributed with the proposal for structuring the text, the structure of the methodological matrix, data analysis and interpretation, complementation of the bibliography research and final review of the text. Chioro A (0000-0001-7184-2342)* contributed with the script, content review and final review of the text. Viana ALD (0000-0003-4498-899X)* contributed with the final review of the text. ■

References

1. Brasil. Constituição da República Federativa do Brasil de 1988. Diário Oficial da União. Brasília, DF: Senado Federal; 1988.

2. Abrucio FL. Os laços federativos brasileiros: avanços, obstáculos e dilemas no processo de coordenação intergovernamental. [tese]. São Paulo: Faculdade de Filosofia, Letras e Ciências Humanas; 2000. 282 p.

3. Abrucio FL. Para além da descentralização: os desafios da coordenação federativa no Brasil. In: Fleury S, organizadora. Democracia, descentralização e desenvolvimento: Brasil e Espanha. Rio de Janeiro: FGV Editora; 2006. p. 77-125.

4. Dourado DA, Elias PEM. Regionalização e dinâmica política do federalismo sanitário brasileiro. São Paulo: Revista de Saúde Pública. 2011; 45(1):204-211.

5. Menicucci TMG, Marques AMF, Oliveira BR, et al. Regionalização da atenção à saúde em contexto federativo e suas implicações para a equidade de acesso e a integralidade da atenção. Relatório Final. Belo Horizonte: Fundação João Pinheiro; 2008.

6. Costa NRA. Descentralização do sistema público no Brasil: balanço e perspectiva. In Negri B, Giovanni G. Brasil: radiografia da saúde. Campinas: UNICAMP; 2001. p. 307-321.

7. Fleury S, Ouverney AM. Política de Saúde: uma política social. In: Giovanella L, Escorel S, Lobato LVC, et al., organizadores. Políticas e sistema de saúde no Brasil. Rio de Janeiro: Fiocruz; 2012.

8. Guimarães L, Giovanella L. Entre a cooperação e a competição: percursos da descentralização no Brasil. Rev. Rev. Panam. Salud pública. 2004; 16(4):283-288.

9. Mendes EV. Os grandes dilemas do SUS. Salvador: Casa da Qualidade; 2001. (Tomo II).

10. Souza RR. A Regionalização no Contexto Atual das Políticas de Saúde. Ciênc. saúde coletiva. 2001; 6(2):451-455.

11. Levcovitz E, Lima LD, Machado CV. Política de saúde nos anos 90: relações intergovernamentais e o papel das Normas Operacionais Básicas. Ciênc. saúde coletiva. 2001; 6(2):269-291.

*Orcid (Open Researcher and Contributor ID).

12. Hartz ZMA, Contandriopoulos AP. Integralidade da atenção e integração de serviços de saúde: desafios para avaliar a implantação de um "sistema sem muros". Cad. Saúde Pública. 2004; 20(2):331-336.

13. Viana ALD, Lima LD, organizadoras. Regionalização e relações interfederativas na política de saúde do Brasil. Rio de Janeiro: Contracapa; 2011.

14. Lima LD, Albuquerque MV, Scatena JHG. Quem governa e como se governam as regiões e redes de atenção à saúde no Brasil? Contribuições para o estudo da governança regional na saúde. Novos Caminhos, n. 8. Pesquisa Política, Planejamento e Gestão das Regiões e Redes de Atenção à Saúde no Brasil. [acesso em 2023 jan 1]. Disponível em: https://www.resbr.net.br/wp-content/uploads/2016/02/Novos-Caminhos-8.pdf.

15. Lima DL, Viana ALD, Machado CV, et al. Regionalização e acesso à saúde nos estados brasileiros: dinâmica e condicionantes históricos e político institucionais. Ciênc. saúde coletiva. 2012; 17(11):1903-1914.

16. Brasil. Ministério da Saúde, Secretaria de Assistência à Saúde. Portaria MS/GM nº 373 de 28 de fevereiro de 2002. Norma Operacional da Assistência à Saúde: NOAS-SUS. Diário Oficial da União. 29 Fev 2002.

17. Brasil. Ministério da Saúde, Secretaria de Assistência à Saúde. Portaria MS/GM nº 95, de 26 de janeiro de 2001. Regionalização da Assistência à Saúde: aprofundando a descentralização com equidade no acesso: Norma Operacional da Assistência à Saúde: NOASSUS 01/01. Diário Oficial da União. 27 Jan 2001.

18. Brasil. Ministério da Saúde. Pactos pela Vida, em Defesa do SUS e de Gestão – Diretrizes Operacionais. Série Pactos pela Saúde. Brasília, DF: Secretaria Executiva; Departamento de Apoio à Descentralização; 2006.

19. Brasil. Ministério da Saúde, Gabinete do Ministro. Portaria nº 4279, de 30 de dezembro de 2010. Estabelece diretrizes para a organização da Rede de Atenção à Saúde no âmbito do Sistema Único de Saúde. Diário Oficial da União. 31 Dez 2010.

20. Brasil. Decreto nº 7508, de 26 de junho de 2011. Regulamenta a Lei nº 8.080, de 19 de setembro de 1990, para dispor sobre a organização do Sistema Único de Saúde - SUS, o planejamento da saúde, a assistência à saúde e a articulação interfederativa, e dá outras providências. Diário Oficial da União. 27 Jun 2011.

21. Albuquerque MV. O enfoque regional na política de saúde brasileira (2001-2011): diretrizes nacionais e o processo de regionalização nos estados brasileiros. [tese]. São Paulo: Faculdade de Medicina, Universidade de São Paulo; 2013. 289 p.

22. Brasil. Comissão Intergestores Tripartite. Resolução nº 37, de 22 de março de 2019. Dispõe sobre o processo de Planejamento Regional Integrado e a organização de macrorregiões de saúde. Diário Oficial da União. 22 Mar 2017. [acesso em 2023 jan 1]. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/cit/2018/res0037_26_03_2018.html.

23. Brasil. Comissão Intergestores Tripartite. Resolução nº 23, de 17 de agosto de 2017. Estabelece diretrizes para os processos de Regionalização, Planejamento Regional Integrado, elaborado de forma ascendente, e Governança das Redes de Atenção à Saúde no âmbito do SUS. Diário Oficial da União. 18 Ago 2017. [acesso em 2023 jan 1]. Disponível em: https://bvsms.saude.gov.br/bvs/saudelegis/cit/2017/res0023_18_08_2017.html.

24. Brasil. Ministério da Saúde. Resolução de Consolidação CIT Nº 1, DE 30 de Março de 2021.Consolida as Resoluções da Comissão Intergestores Tripartite (CIT) do Sistema Único de Saúde (SUS). Diário Oficial da União. 2 Abr 2021.

25. Organização Mundial da Saúde. Delineamentos metodológicos para realização de análises funcionais da rede de serviços de saúde. Organização e Gestão de Sistemas de Saúde. Washington: OMS; 1998. (Série 3).

26. Rezende CAP, Peixoto MPB, organizadores. Metodologia para análises Funcionais da Gestão de Sistemas e Redes de Serviços de Saúde no Brasil. Série Técnica de Desenvolvimento de Sistemas e Serviços

de Saúde (7). Brasília, DF: Organização Panamericana da Saúde; 2003. p. 33.

27. Guerra DM. Descentralização e regionalização da assistência no Estado de São Paulo: uma análise do índice de dependência. [tese]. São Paulo: Faculdade de Saúde Pública, Universidade de São Paulo; 2015. 209 p.

28. Guerra DM. Integração Regional e Extrarregional da saúde no Estado de São Paulo. In: Ibañez N, Tardelli R, Viana ALD'A, et al. Gestão regional e redes: estratégias para a saúde em São Paulo. Barueri: Editora Manole; 2020.

29. Brasil. Ministério da Saúde, Departamento de Informática do SUS. Sistema de Informações Hospitalares. Brasília, DF: Ministério da Saúde; 2019. [acesso em 2022 fevereiro 19]. Disponível em: https://datasus.saude.gov.br/acesso-a-informacao/producao-hospitalar-sih-sus/.

30. Albuquerque MV, Viana ALD, Lima LD, et al. Desigualdades regionais na saúde: mudanças observadas no Brasil de 2000 a 2016. Ciênc. saúde coletiva. 2017; 22(4):1055-1064.

31. Louvison MCP. Regionalização dos sistemas de saúde como respostas às desigualdades territoriais: um debate necessário. Cad. Saúde Pública. 2019; 35(2):e001160.

32. Viana ALD, Bousquat A, Pereira APCM, et al. Tipologia das regiões de saúde: condicionantes estruturais para a regionalização no Brasil. Saúde e Sociedade. 2015; 24(2).

33. Instituto Brasileiro de Geografia e Estatística. Estimativas da População; 2019. [acesso em 2022 fevereiro 15]. Disponível em: https://www.ibge.gov.br/estatisticas/sociais/populacao/9103-estimativas-de-populacao.html.

34. Lima LD, Scatena JHG, Albuquerque MV, et al. Arranjos de governança da assistência especializada nas regiões de saúde do Brasil. Rev. Bras. Saúde Mater. Infant. 2017; 17(1):107-119.

35. Lima LD, Albuquerque MV, Scatena JHG, et al. Arranjos regionais de governança do Sistema Único de Saúde: diversidade de prestadores e desigualdade espacial na provisão de serviços. Cad. Saúde Pública. 2019; (35):1-17.

36. Xavier DR, Oliveira RAD, Barcellos C, et al. As Regiões de Saúde no Brasil segundo internações: método para apoio na regionalização de saúde. Cad. Saúde Pública. 2019; 35(2):e00076118

37. Mendes Á, Louvison MCP, Ianni AMZ, et al. O processo de construção regional da saúde no Estado de São Paulo: subsídios para análise. Saúde Soc. 2015; 24(2):423-437.

38. Viana ALD. Novas perspectivas para a regionalização da saúde. São Paulo em Perspectiva. 2008; 22(1):92-106.

39. Mello GA, Demarzo M, Viana ALD. O conceito de regionalização do Sistema Único de Saúde e seu tempo histórico. Hist. Ciênc. Saúde. 2019; 26(4):1139-1150.

40. Machado JA. Pacto de gestão na saúde: até onde esperar uma 'regionalização solidária e cooperativa'? In: Hochman G, Faria CAP, organizadores. Federalismo e Políticas Públicas no Brasil. Rio de Janeiro: Editora FIOCRUZ; 2013. p. 279-300.

41. Lima LD, Queiroz LFN, Machado CV, et al. Descentralização e regionalização: dinâmica e condicionantes da implantação do Pacto pela Saúde no Brasil. Ciênc. saúde coletiva. 2012; 17(7):2881-2892.

Received on 07/31/2022
Approved on 05/22/2023
Conflict of interests: non-existent
Financial support: non-existent