Regionalization in the Brazilian Healthcare System, SUS:  
a critical review

Abstract  This article is a review of the literature on the regionalization of healthcare, published in Brazilian journals indexed in the SciELO system. Objective: to review the output and the use of the data to support managers in making decisions on the healthcare system, and analyze academic output on the theme. Method: An online search of the SciELO database for articles using ‘regionalization’ and ‘health/healthcare’ as the keywords, and all indices as the 'scope of the study'. We found a total of 102 references, and after analyzing the abstracts selected 70 articles that effectively discuss regionalization of health/healthcare in Brazil. We also found four articles in non-health related journals. Analysis: the institutional criteria (journal, theme area, date of publication, scope and number of authors), and the analytical criteria created by author - Type 1 - “Exploratory Studies” (26), “Evaluation Studies” (6), “Comparison Studies” (3); and “Reports of Experience” (5), Type 2 - “Theoretical-Analytical” papers (20) and “Historical-Conceptual Reviews” (4), and Type 3 - “Editorials (3) and “Book Reviews” (3). Findings: regionalization has become more important in journals published since 2010. Most of the articles fall in the Type 1 category.

Key words  Regionalization, Health/Healthcare planning, Networks, SUS
Introduction

From a political-administrative, population, geopolitical and geo-economic point of view, splitting a given geography into areas using demographic criteria and parameters is known as “regionalization”. In other words, the aim is to define “regions” that differ from each other, while still bearing a relationship to the greater geography they are a part of. This fulfills the goal of creating an organizational and ordering system that enables more efficient, and effective administrative measures.

Within the Brazilian healthcare system, the terminology and concept of “regionalization” used by the Ministry of Health follows the 1988 constitution - CF/88 and Law 8080/90, assigning regionalization a core role, alongside decentralization, in structuring healthcare services in the country.

As a SUS guideline, regionalization is an expression of shared responsibility by the public, and especially health administrators to reduce the long-lasting chronic inequalities that have plagued this nation forever, and promote social equality.

As the structural axis of the Health Agreement (‘Pacto pela Saúde’), regionalization guides decentralization of the Health Agreement actions and services, and the planning and organization of the healthcare network, and inter-state and inter-management agreements. The Regionalization Master Plan (RMP; ‘Plano Diretor de Regionalização’, PDR), the Integrated and Agreed Program for Healthcare (‘Programação Pactuada e Integrada da Atenção à Saúde’, NOAS) and the Investment Master Plan (IMP; ‘Plano Diretor de Investimento’, PDI) are the main regionalization planning tools.

Also important were the Basic Operating Standards (BOS; ‘Normas Operacionais Básicas’, NOB) for structuring city healthcare sub-systems, and the Operational Healthcare Standards (OHS; ‘Normas Operacionais da Assistência à Saúde’, NOAS), joint care with the Regional Management Collegiate (RMC; ‘Colegiado Gestor Regional’, CGR), created by the Pact for Health for the co-management of regional spaces.

These guiding instruments and planning levels have sought to increase service capillarity and strengthen the process end-to-end, while at the same time empowering local manager and consolidating relationships at the federal level, under the democratic concept of an agreement.

Comprehensive healthcare for the population, one of the underlying principles of SUS, is not easy for cities to achieve on their own. Therefore, the imperative of rationality and the need to share physical, financial and human resources to satisfactorily prevent and remedy health issues have become strategically essential.

It is reasonable to assume that there have been efforts to implement healthcare regionalization, with varying degrees of success. Some simultaneously and/or aligned in time with decentralization and the concept of a network. One would expect that a theme such as in a country as large and varied as Brazil, and given the history of SUS, regionalization would elicit interest, not only in practice but as a theory in academic production. Likewise, it would be reasonable to assume that there is an interesting and consistent body of academic literature on healthcare, published and disseminated in indexed periodicals and journals.

The focus of this article is the output of scientific knowledge on regionalization of Healthcare in Brazilian journals indexed in the SciELO system. The aim of this article was to review this academic output, using the results as subsidies to guide managers making decisions, providing them with fact-based subsidies, and to analyze academic publications on healthcare regionalization.

Methodology

We searched the online Scientific Electronic Library Online - SciELO, which indexes a wide array of important journals and periodicals.

Justification for using this particular database includes: a) SciELO traditionally indexes the main Brazilian scientific journals that address regionalization in health, enabling a systematic review; b) In addition to the stated objective of this article, we also wanted to provide scientific researchers and publishers with subsidies for debates on Brazilian scientific production on the theme of healthcare regionalization; c) Articles published in periodicals and journals included in databases such as SciELO are the primary means of dissemination, disclosure and debate of academic output in general, not least as the database includes research reports as well as adapted and parameterized theses and dissertations, providing a measure of consistency that readers find agreeable; d) The articles can provoke reflection, serving as potentially useful suggestions and recommendations for managers and other players involved in preparing, formulating and imple-
menting public policies, and for students of the theme in general.

We point out that the author opted not to include in this analysis articles written by Brazilian scientists and published in international journals, and is aware that this constitutes a limitation. However, this is mitigated by the fact that the academic output investigated herein fulfills the stated goals of the article, limiting itself to domestic experiences and not intending in any way to provide a comparison with international experiences and realities.

We set the cut-off period in the SciELO search at 2 June 2016, and used 'regionalization' and 'health/healthcare' as the keywords. The scope was set as 'all indices'. This resulted in 102 articles whose abstracts were subjected to a preliminary analysis.

This enabled discarding duplicates - articles with both 'regionalization' and 'health/healthcare', as well as those articles that did not actually discuss healthcare regionalization in Brazil, such as articles on geography and demographics, for instance.

This process resulted in 70 references. We then reviewed and analyzed them within the context of the goals for this article. The analysis also delivered stratification criteria - Journal, Year of Publication, Author and Geographic Coverage.

The objectives and scope of each article were also used as stratification criteria, resulting in three major types: Type I) Practical, meaning those articles defined as exploratory, evaluations, comparisons and reports of experiences; Type II) Theoretical, articles considered theoretical-analytical, and historical-concept reviews; Type III) Literature, meaning articles that review books and publications.

Meanwhile, the articles were analyzed to produce a review that, based on the guiding concepts, will help make decisions regarding the possibilities and vicissitudes of healthcare management regionalization in Brazil.

**Results and discussion**

Analysis of these articles yielded data that can provoke interesting reflections. Starting with Chart 1, which shows the distribution of the articles selected by journal, the number of articles published, the area of publication and the category of the article.

Of the 70 articles, only one was published in Humanieis⁶, while four were published in Management⁶-¹³. One the one hand, this shows an interest in the connection between regionalization and planning beyond the frontiers of public health, while on the other, the 65 articles published in the area of public health show that slowly, over the course of the past 10 years, regionalization has consolidated itself as an area of concern for authors. This is clear when we look at Graphic 1 in its entirety, and the chronological distribution of the 70 articles selected by year of publication.

When we look at “type of article” we find that 57.14% are Type 1 (26 Exploratory Studies; 6 Evaluations; 5 Reports of Experience and 3 Comparison Studies).

In terms of the increase in the number of articles over time, shown in Graphic 1, 2008 marked the start of a more consistent number of publications on this topic, but it was not until 2010 that the number actually started to increase. Between 2010 and 2016, nine journals contained more than one article meeting our selection criteria.

We also point out that in 2015, a single edition of the journal ‘Saúde em Debate’ had three articles on regionalization¹⁴-¹⁶, and a special theme number had four articles¹⁷-²⁰, showing the importance and contributing to leverage and feedback interest on the theme. That same year, ‘Saúde & Sociedade’ published a thematic number with eight articles on this theme²¹-²⁸.

In 2016, while this article was being written, our search found three articles. As the search covered only the first five months of this year, it is reasonable to assume that the number of articles on regionalization is actually larger, and close to the average number we have seen since 2010.

If we look at who is writing these articles, Graphic 2 shows that 73% of the articles published have between one and three authors, however many have four or more authors (19), possibly reflecting the effort of research teams working in this area.

Looking at the geography of these articles, we find about an equal number with local-regional (34 or 48.57% of the total of 70) and nation-wide (33, 47.1%) scope. The three remaining articles (4.29%) are international, and compare government and private measures related to healthcare regionalization in the state of Espírito Santo¹⁸, and comparing regionalization in Brazil with similar processes in countries such as Spain²⁰ and Angola²⁸.

We reiterate that, in working with analytical categories defined to classify articles and thus achieve the objective of this effort, the author has
no intention to a) describe or discuss the individual articles or rank them, b) create or detect consensus and/or dissention between the articles, and more importantly, c) declare that all possibility of review and reflection on the articles regarding regionalization in health/healthcare have been exhausted.

The intention is rather to find quantifiable elements such as those we have presented (distribution by journal, year of publication and number of authors) to support and complement a categorical and analytical organization that is the essence of academic debates at the heart of the articles in the database selected, presenting a set of systematic data and reflections we hope will contribute to the decisions made by managers, and to the analysis of academic output on regionalization in health/healthcare.

With this in mind, we will address the three analytical categories mentioned - the three types of categories and their sub-divisions or sub-categories. These articles also tend to discuss varied aspects and approaches to regionalization in health/healthcare.

### Type 1 - “Practical” Articles

Selected articles in this category fulfilled the characteristics of exploratory studies, evaluations, comparative studies and reports of experiences. As a rule, these were the output of empirical, experimental, and conceptual studies, as well as reviews, working with primary and/or secondary sources of data.

An analysis of the 26 articles classified as “exploratory studies” shows that they primarily address issues closely tied to strategy, policies and actions related to regionalization, linked to local-regional realities, specifically the unique realities of a micro-region within a state, or a set of cities in different states.

Of those, only three addressed issues we might call 'national', or issues involving regionalization of health/healthcare as something explored across the entire nation, while not necessarily being considered purely theoretical articles.

Only one of the 26 articles was considered “international” - a study comparing regionalization in Brazil with the experience in Angola.18
This seems to indicate that the potential wealth in studies comparing regionalization in different countries with different realities has yet to be fully explored.

One article in this category stands out for having the largest number of authors (11), along with an article that will be mentioned under “reports of experiences” further in this doc-
ment. This one in particular had 11 authors, suggesting a rather robust research team.

Of the 6 “evaluation studies”, only one was ‘national’ in scope, looking at the role of state managers in regionalization of healthcare in SUS. All others addressed ‘local-regional’ issues. Half of all ‘evaluation studies’ discussed regionalization from the point of view of hospital care, likely consisting of presentations of work performed by a team working on a line of research consistent with the reality in Pernambuco. Two other articles discuss the reality of the state of SP, and within the municipalities that make up metropolitan Sao Paulo respectively, and comprehensive care for chronic diseases.

The three articles classified as “comparative studies” were based on primary and secondary sources, and present an interesting diversity. The first one focuses on regionalization and decentralization in Spain, causing important reflections for a comparison and contrast with the reality in Brazil. The second compared five cities in the state of Sao Paulo, while the third compared health/healthcare regionalization actions and strategies in public and private health in the state of Espirito Santo. It is worth mentioning that the first and second articles are part of a theme-based number.

The five articles under “reports of experience” are based totally on secondary sources and are local-regional in scope. One of them in particular, is the oldest article our search found in the SciELO database with health/healthcare regionalization as the theme, and discusses the reality in the state of Bahia.

Based on this article, one can conjecture that it would be interesting to prepare a historical overview showing how regionalization has evolved over time in a given location, stressing the hurdles of this path. This would be an exhaustive task, likely only possible for a team of researchers with suitable resources to enrich the work with fieldwork.

This category also included the article with the largest number of authors (11), together with the article already mentioned under “exploratory studies”. Unlike the other article, this one is authored by eleven city health secretaries who report their experience, not comprising the outcome of the effort of a group of researchers.

Type 2 - “Theoretical” articles

The articles in this category are made up of analyses and assessments of theoretical-methodological and conceptual trends in health/healthcare regionalization.

The four articles in the ‘historical-conceptual review’ category are national in scope, even though the article by Mello et al. describe how regionalization evolved in the state of Sao Paulo, going on to broader reflections from there. This interesting sub-category of articles may be more explored as entire numbers focused on regionalization are published. Only the article by Mello & Viana was not part of a theme-based number.

Of the 20 ‘theoretical-analytical’ articles, 11 were published in 6 theme-based numbers, all since 2010. The journal ‘Ciência & Saúde Coletiva’ stands out for having published half of the ‘theoretical-analytical’ articles, with a number of theme-based number, directly and indirectly involving regionalization of health/healthcare in Brazil.

Type 3 - “Literary” articles

Articles categorized as “literature” are editorials and book reviews, therefore are not content derived from practical-empirical studies, nor do they explore theoretical questions.

Of the three ‘book reviews’, we point out that two reviewed the same book but were published in different journals (‘Cadernos de Saúde Pública’ and ‘História, Ciência e Saúde – Manguinhos’). Three articles fit the sub-category of ‘editorials’, with a considerable gap in time between the oldest (published in 1986) and the two most recent ones, published in 2013 and 2015.

We also call attention to the editorial by Aquilas Mendes & Marília Louvison in the dossier published in the ‘Revista Saúde e Sociedade’ on the regionalization of health, aptly entitled ‘The debate on regionalization in turbulent times at SUS: It is precisely at this turbulent time in Brazilian healthcare, plus the structural crisis in capitalism in its phase of financial dominance, that to us it seems essential for deepen the debate on regionalization as a priority practice to contribute to advancing the development of SUS. More and more researchers and experts in Policy, Planning and...
Management show the need for a more in-depth design of SUS, bearing in mind that some of the arrangements have exhausted themselves, and the need to respond to challenges that have emerged in recent times. This is a welcome discussion within the political and institutional arrangement of our healthcare system.

Final considerations

The literature on health/healthcare regionalization was originally described in the database that we used for this article, in connection with discussions on decentralization, triggered by the structuring and normalizing legislation governing SUS. In the 2000s, the literature tended to verse more on local-regional experiences, rather than on a broader strategic view based on macro-national and even international reality. However, since 2010 this tendency seems to be slowly changing, as shown in Graphic 1, due to the efforts of research groups that have been publishing in theme numbers and other journals since 2010.

Complicity, convincing, seduction, stimulus, induction and articulation of the three spheres of government administration to consolidate the regionalization of health/healthcare within the reality of Brazil, based on the affirmation and solidification of republican and democratic institutions, inspired by the last four mandates of the legitimately elected presidents, cannot fail to take into consideration the concept of a ‘network’.

Polysemic, when applied to health/healthcare the word focuses on the ambivalent notion of using crosslinked actions and strategies, and dispersed and diverse policies, to focus the efforts of the government via federal accountability of managers to ensure comprehensive healthcare to the population, which is the principle underlying the unified healthcare system or SUS.

Finally, one must consider that this article was drafted at a time of profound changes in federal government policies, with a climate of uncertainty prevailing most institutions, however the notions of regionalization, decentralization, municipalization, federalism, universality, agreement, comprehensiveness, universality, fairness, network and others connected to SUS and to health/healthcare as a social and political right shall remain, both in terms of public management as well as academic output.

Of the 70 articles analyzed, a little more than 10% (9) looked at regionalization in health/healthcare specifically within the context of a network. Of the nine, two were book review and four were ‘theoretical’ articles. For organization, planning, execution and for the assessment of territorial measures, regardless of the dimension scaled, regionalization - understood as networking - also offers multiple dimensions for analysis and challenge and, as far as possible, should be tackled more and more energetically by authors, researchers and research groups.
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