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NATIONAL HEALTH SYSTEMS OF BRAZIL AND FRANCE: A COMPARATIVE ANALYSIS

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ABSTRACT

Traditionally, healthcare systems can be classified into three ideal models: free-market, compulsory social insurance, and publicly funded. Varying from country to country, has made it difficult to categorize a country strictly into one of these three models. Comparing is understood as the act of seeking similarities, differences or relationships between something that can be described to seek a general understanding. The objective was to compare the national healthcare systems of France and Brazil through a descriptive study. As a result, it was understood both healthcare systems were structured as universal access and comprehensive care attention. They have the same operational design: hierarchized by the level of health care, politically and administratively decentralized, where health is perceived as a citizens' right, based on solidarity. Brazil began the twentieth century with a model closer to the Bismarckian and, in the 1980s, broke completely with this model, starting a universal and free healthcare system. Today, Brazil is seeking to merge both public and private health services, approaching the Bismarckian model again. The French healthcare system tries to achieve the principles of "Beveridgian" universalism by the "Bismarckian" model. Regarding the facilities for health services, both countries have similarities, such as hospitals, health centers, emergency rooms, GP's offices, etc. To conclude, both health systems are constantly changing to meet new needs and to obtain sufficient financial resources to provide a quality service to their population.

KEYWORDS: Health Care Research, Health Care Facilities, Health Professionals, Healthcare Financing, Brazil, France.

INTRODUCTION

The definitions, concepts, and categories used to define or analyze Healthcare Systems vary according to values, principles, and conceptions about what health is and the State responsibility in the health of the population.[1,2] Health Systems services are a combination of resources, organization, financing, and management that results in health care services for the population.[3]

Traditionally, healthcare systems can be classified into three ideal models: permissive or free-market, compulsory social insurance, and publicly funded.[1] More recently, varying from country to country, the role of the State and its power of intervention, the shaping of the public-private mix of service providers, and whether or not the user is free of charge, among other variables, has made it difficult to categorize a country strictly into one of these three models.

Comparing is understood as the act of seeking similarities, differences or relationships between something that can be described to seek a general understanding.[4] The comparative research can contribute to improved health services and generates new public policies, new work processes, and other benefits.

In this regard, WHO has been doing and publishing reports and studies comparing the health services in countries for decades, such as statistical surveys on life expectancy, child and adult mortality, maternal mortality, etc. For example: The Global Health Observatory (http://www.who.int/gho/countries/en/), showing the current status reports and priorities on health issues, describes the standards to be used in health research as the data collection and analysis; the Global Health Estimate (http://www.who.int/gho/publications/mdgs-sdgs/en/), which systematized the global disease burden

from 2000 to 2015 by country, region and global total; the annual World Health Statistics publication compiles indicators and assesses the progress of the health-related Millennium Goals (https://www.who.int/gho/publications/world_health_statistics/en/); the Health Equity Monitor (https://www.who.int/gho/health_equity/en/), which measures the inequity of maternal, reproductive, newborn and child health interventions.[5]

So, the objective was to compare the national healthcare systems of France and Brazil through a descriptive study. Both systems were structured as public, with universal access and comprehensive attention. They have the same operational design: hierarchized by the level of health care, politically and administratively decentralized, where health is perceived as a citizens' right, based on solidarity.

MATERIALS AND METHODS

This is a comparative descriptive research which sought to update knowledge by describing the characteristics, properties or relationships existing between both healthcare systems under study. The data used in this study were collected from Federal governments and Public health organizations websites in both countries. For Brazil, the research was based on official data from the Ministry of Health, available at DATASUS - Department of Informatics of the Unified Health System is responsible for providing SUS with information and informatics support and technology. For France, the data were collected from the websites of the Ministry of Solidarity and Health, *L'Assurance Maladie* (AMELI), *Institut National d'Hygiène* (INSERM), *Santé Publique France* and other health-related websites such as the European Observatory on Health Systems and Policies. General data from both countries were collected directly from the WHO and the World Bank websites. To the literature was used several scientific articles that deal with the theme of healthcare systems in Brazil and France.

RESULTS AND DISCUSSION

Brazil and France: some demographic and health statistics

Brazil and France have structured social security programs to ensure health care, social security, and welfare. Both share the principles of equity in coverage and solidarity in financing.[6] Specifically, regarding the healthcare system, both countries are struggling to find a strategy to control the supply and demand for services because of rising maintenance costs.

Table 1: Demographic and Health Statistical Data - Brazil and France, 2018.

Demographic and health statistics	Brazil	World ranking position*	France	World ranking position *
Population estimated	212 393 000	5°	65 481 700	22°
Population over 65 years	9,52%	6°	5,99%	10°
Birth rate per 1000 inhabitants	13,4	132°	11,6	153°
Number of children per woman	1,69	159°	1,97	120°
Average life expectancy	76,1	81°	83	10°
Infant mortality rate / 1000 live births	12,4	106°	2,7	180°
Mortality rate per 1000 inhabitants	6,4	128°	9,1	55°
HDI (Human Development Index) (2017)	0,759	79°	0,901	24°

**The world ranking consists of 201 countries*. Source: 7, 8, 9, 10. Made by the author.

Brazil is the 5th largest country in the world in extension and the 5th most populous. France is the 48th in extension and the 22nd in the population.[7] Above, Table 1 shows some demographic and health indicators for the two countries.

Despite differences in territorial extension and population, they have indicators that are close (eg, birth rate) and completely different (eg, infant mortality rate). Special attention is drawn to the lower number of children by women, the lower overall mortality rate and the aging of the Brazilian population. The population over the age of sixty is growing worldwide. It is estimated that by 2050 people over the age of 60 will outnumber young people up to 14 years old worldwide, but in Brazil, this transition is expected to occur until 2030, 20 years before.[7]

Brazilian Public Healthcare System (Unified Health System)

The Brazilian Public Healthcare System (SUS, in Portuguese) is part of social security and is guided by the doctrinal principles of universality in access to free health services, comprehensiveness in health actions and services and equity in care. Health is seen as a citizen's right and the state must meet these needs.[11,12] The health care services are offered by public healthcare centers, public hospitals, profit or non-profit hospitals. The three spheres of government - federal, state and municipal - finance the Unified Health System (SUS), generating the revenue necessary to cover expenses with actions and public health services.

The organization of health services respects criteria of regionalization and hierarchy, which allows a greater knowledge of the health problems of the population from

the delimited area, favoring actions of epidemiological surveillance, vector control, health education, as well as outpatient and hospital care actions in all complexity levels. It is decentralized regarding the distribution of responsibilities for health actions and services among the various levels of government - municipal, state and federal. Citizen participation is part of the process through the Health Councils. The private health sector complements when there is insufficient service in the public sector.[12]

From a total of 1 310 588 deaths in 2018, the main causes were: Circulatory system diseases (27% - heart ischemia accounted for 32% and cerebrovascular diseases for 28% of these), cancer (17%) and respiratory diseases (11%).[13]

French Healthcare System (Assurance Maladie)
In France, the health system is part of the Social Security System and has the coexistence of the private sector provision. The French national health system is structured according to its doctrinal principles of equal access, quality of care and solidarity.[14] The health care services are offered by private physicians, public hospitals, profit or non-profit hospitals. The funding is made by equal contributions from employers and employees on the payroll. The state, guided by social solidarity, is responsible for financing the insurance for unemployed workers. This combination of formal employers/employees co-financing and public funding for the unemployed provides health care for the population.[15]

The users have a free choice of health professionals and facilities; however, a general practitioner should be referred to. The physicians have the autonomy to set up private offices, and the payment of consultations is made directly by the user, with partial reimbursement of these expenses by *Assurance Maladie*. A consultation with a general practitioner costs 25 euros (usually), which is paid directly to the professional. The *Assurance Maladie* covers 17 euros of this total and the rest is up to the user to payout ("Out-of-pocket"). Most of the users also buy private insurance (mutual insurance associations) that will cover this "Out-of-pocket". In general, the *Assurance Maladie* covers 77.8% of the value, mutual insurance associations 13.2% and 7.5% goes to out-of-pocket. If you consult with your referred GP, the *Assurance Maladie* covers 70% and mutual insurance covers 30%, leaving no charges to the user.[14,16]

According to INSEE (2019), in 2016, from all the 579 230 deaths, the main causes were: Cancer (28%), circulatory system diseases (24% - heart ischemia accounted for 23% and cerebrovascular diseases for 18% of these) and respiratory diseases (4%).[17,18]

Historical Background
To understand a health system in a country one needs to know the history of this system. The needs and desires of the population contribute (and sometimes force) the elaboration of public policies, as much as the budget that the State has available for this purpose. Epidemics were often responsible for the primary elaboration of what would later be a national health system. Regardless of the classification or nomenclature is given to this system, the historical context was responsible for its planning and creation, either because of social pressure or the need to combat certain diseases that threatened the population.

The current Brazilian health system (Unified Health System - SUS) was created from the 1988 Federal Constitution but, since 1923, Brazil had the Retirement and Pension Funds (CAPs), similar to the French "cashiers", which were funds that provided the services for funeral homes, physicians and some medicines for workers and their families.[19] In the 1930s, the first Institutes of Retirement and Pension (IAPs) emerged, partially funded by the government, as a social policy and directed to urban workers by professional category (seafarers, traders, bankers) who contributed to Social Security. The institutes absorbed most of the old CAP's.[20,21]

From 1938 to 1945 the sanitary actions provided by the government were expanded throughout Brazil. In 1960 the range of health services from the Retirement and Pension Institutes was standardized for all insured persons, and agricultural workers were insured by the Rural Worker Assistance Fund (Funrural) in 1963.[20,21]

The military dictatorship took over the government in 1964 and, in 1966, created the National Institute of Social Welfare (INPS) uniting all Institutes of Welfare, establishing agreements and contracts with physicians and hospitals, paying them for the services rendered[19,21] consolidating organized social protection in form of insurance. The social security benefits, pensions, and medical assistance were restricted to formal workers.[21,22]

In 1977, INPS becomes the National Institute of Social Welfare Medical Assistance (INAMPS), which articulated health actions and a set of social protection policies.[20] For those who did not have a formal job, there was health care as charity and philanthropy way. However, actions aimed the collective health were universal and provided by the Ministry of Health.[21] The military dictatorship ended in March 1985, by the establishment of the "New Republic". In 1986, the VIII National Health Conference was the inspiration for the creation of a universal access healthcare system.[20,22]

The creation of the Unified Health System (SUS), formalized in 1990, established the principles of universality, equity, and comprehensiveness - a wide range of services covering all dimensions of health (prevention, cure, and rehabilitation). It is up to the State to provide services and products directly or through the

hiring of private actors, but completely free of charge. Covering over 200 million people, SUS can be considered the largest universal health system in the world. The establishment of this system represented a radical break with what was a low institutionality and based on philanthropic or private providers and insurers, and access to health services restricted to certain groups. SUS administration, provision, and financing are decentralized, with shared responsibility between the Union (State), the 26 states (federal states) and more than 5 570 municipalities.[6]

France, in 1930, by law, created social insurers, marking the beginning of social protection - a compulsory protection scheme for wage earners in industry and commerce, in case of sickness, maternity, disability, aging, and death. Even before World War II, two-thirds of the French benefited from social coverage in the event of illness, and the choice of a mutualist and the philanthropic insurer was essentially free.[15,23,24]

The French Social Security System, which includes the health system, was established after the end of World War II in 1945. In the early years, the priority was given to the reconstruction of social security, focusing initially on workers and their families. Influenced by the welfare states in various countries of Europe and the idea of social democracy, a network of Social Security Funds (or "cashiers") was created with management boards (employees' and employers' representatives).[6,23] These Social Security Funds ensured coverage of care expenses and the financing involved the payment of a contribution.[15,23]

The principle of expanding the coverage to the entire population was born in 1945, but was put into practice in stages, being extended to agricultural workers in 1961, self-employed and/or non-agricultural workers in 1966 and, in 1974 the establishment of a personal insurance system for all those who were not in any of the categories covered so far. In the 1980s, protection confronted the rise in the unemployed who were deprived of the rights to health services.[15,25]

In the early 1990s, laws eased the conditions for access to health services. In 1996, institutions and powers were reorganized, a fact that was perceived as a nationalization of the health system by the growing role of the State in reinforcing the role of Parliament in defining health and financial objectives and the establishment of regional hospitalization agencies. In financing, part of the salary contributions was replaced by income contribution (tax). In 1999 a law created universal coverage (*Couverture Maladie Universelle* - CMU), effective from 2000, on the condition that the person must have a regular residence in France. This reform changed the occupational health insurance system to a universal health system. There are 3 moments in this process: the universality of health services covered by the residence criterion; the replacement of salary contributions by a tax on financing; and, Parliament's intervention in orienting and setting spending objectives.[15,25]

The French security system is decentralized from a local and institutional point of view and is divided into three main schemes: a) General Scheme; b) Agricultural workers; and c) Financing funds, divided into national and local independent bodies. For medical coverage there are three insurers that provide comprehensive medical coverage: i) *Protection Universelle Maladie* - PUMA: intended for legal residents who are not initially affiliated with any of the existing schemes; ii) *Couverture Maladie Universelle Complémentaire* - CMU-C: who cannot afford the remains to be paid and whose income is below a certain threshold; and (iii) *Aide à l'Acquisition d'une Complémentaire Santé* - ACS: Complementary insurance. There is also *Aide Médicale de l'État* - AME, which assumes the costs of health services for undocumented migrants.[6,15,25]

Below, Frame 1 summarizes the historical context which reflected in the creation of the healthcare systems in Brazil and France. The table seeks to show that the process of building these systems was similar even though they followed different paths.

Frame 1: Evolution of the Health Care Systems historical context in Brazil and France.

Date	Brazil	Date	France
1923	Social Security Funds (CAPs)		
1930	Retirement and Pension Institutes (IAPs)	1930	Social Security Funds (Cashiers)
1938-1945	Health actions in all Brazil		
1960	Standardization of health services	1961	Social Security coverage to agricultural workers
1963	Social Security Coverage to agricultural workers		
1966	National Institute of Social Security - Social security coverage to Employed	1966	Social security coverage to Self Employed and / or Non- agricultural workers
1977	National Institute of Social Welfare Medical Assistance - Social security coverage for all workers	1974	Social security coverage for all workers
		1980	Social Security coverage to unemployed
1986	VIII National Health Conference – SUS proposition	1986	Parliament has a sanitary and financial role
1988-1990	Federal Constitution and SUS / Universal Coverage	1999-2000	Universal Coverage (CMU)
2016	NBFR- Constitutional amendment 95/2016	2004	Douste-Blazy Reform

Sources : 6, 20, 21, 25.

In Frame 1 it is clear that both healthcare systems started through social contributions, based on the Bismarckian model by compulsory social insurance. Over time and influenced by the international scenario both health systems were approaching the Beveridge model seeking universal access, the provision and financing of health care services by the State. Brazil began its universal healthcare system from 1988 by the Federal Constitution, defining health as a duty of the State and a citizen right. In France, the universality was implemented in the 2000s, through the law that gives the right to health care services to all residents and social protection.

One can say there is a difficulty to categorize both national healthcare systems in a single model because they need the ability to adapt to social and economic changes. New global financial crises lead to think again about the role of the State concerning the population's health in the face of new technologies and high costs to be efficient and effective in their management. They seek to spend as little as possible on their actions through the best-known process, aiming at the best possible results, which are reflected in the quality of the care and health actions.

Organizational Structure and Human Resource Management

The Unified Health System (SUS) encompasses all health services: from blood pressure assessment to organ transplantation. The health care is comprehensive from pregnancy and throughout life, aiming at prevention and health promotion. The management of health actions and services is solidary and participatory among the three entities of the Federation: The Union, the States, and the municipalities. The network that makes up the SUS is broad and includes actions as well as health services. SUS has primary, medium, and high complexities, urgency and emergency services, hospital care, epidemiological, sanitary and environmental surveillance actions and services, and pharmaceutical assistance.[26]

As a management structure, the SUS is composed of the Ministry of Health, being the national manager and responsible for planning, standardizing, supervising, monitoring and evaluating policies and actions, and using instruments for SUS control, in articulation with the National Council of Health. Integrate its structure: Oswaldo Cruz Foundation - FIOCRUZ, National Health Foundation, National Health Surveillance Agency, National Agency for Supplementary Health, Brazilian Company of Hemoderivatives and Technology, National Cancer Institute, National Institute of Traumatology and Orthopedics and federal hospitals. It formulates the national health policies but does not perform the actions, for this, it counts on the partnership of the states, municipalities, NGOs, foundations, companies, etc.[26]

The State Health Secretariats (one for each of the 26 states) formulate their state's health policies and actions and support the municipalities. They coordinate and plan the SUS' strategy and are responsible for the organization of health care in its territory. The Municipal Health Secretariats (SMS) plan, organize, control, evaluate and execute health actions and services. The municipality prepares health policies, coordinates and plans the SUS at the municipal level, by federal laws. It can establish partnerships with other municipalities to ensure the comprehensive care of its population, of its population, integrating an "inter-municipal health consortium".[26]

SUS consists of low, medium and high complexity. The low complexity, or Primary Health Care, is composed of Family Health Units (USFs) and Basic Health Units (UBSs). They provide vaccinations, rapid tests, medicines delivery, injections, as well as medical, dental and nursing care, characteristic of primary care. The UBSs are responsible for the health of children, women, adults and the elderly, as well as dentistry, examination requests, and medicines. The professional team consists of pediatricians, obstetrician-gynecologist and general practitioners. In some UBSs, there are nutritionists, psychologists, and home care. The general practitioner arranges appointments for elective procedures and more specific examinations with specialists in the public network or in private clinics who provide health services to the municipalities. The estimated UBS' population coverage is 74,35% of the Brazilian population. The USF provides care and accompanies patients with chronic diseases, such as diabetes and hypertension. The team consists of a general practitioner, general nurse, nursing assistant or technician, and community health agents. The Units may also contain dentists, dental assistants and/or oral health technicians. USFs are responsible for promoting health prevention through community health agents. There are 298 610 USF's teams.[26,27,28]

Medium complexity or Secondary Attention is triggered for specialist consultations, complementary exams and hospital admissions that don't need a high-tech level. The 24h Emergency Care Units are responsible for providing care of medium complexity in cases of accidents' victims, heart problems, urgencies, etc. The user may remain under observation for up to 24 hours or be relocated to the referral hospital.[26]

The High complexity or Tertiary Care is responsible for the treatment that requires the use of high-cost technological resources such as surgery, cancer treatment, dialysis procedures, chemotherapy, radiotherapy, and hemotherapy. For all emergencies that require hospitalization, surgeries, maternity or more elaborate imaging tests, urgency and emergency services. Brazil also has the Mobile Emergency Care Service (SAMU) placed in 2005, which aims to provide rapid relief to the victim after an emergency. SAMU addresses situations of clinical, surgical, traumatic, obstetric, pediatric, psychiatric care among others. SAMU serves anywhere and the teams are made up of physicians, nurses, nursing assistants, and first aid drivers.[26]

In Brazil, the private health services sector is made up of 759 health insurance operators (some are clinics, hospitals, medical and dental offices, examination and imaging laboratories) with about 17 800 different health insurance, composed by a variation in the range of health services coverage, reaching about 47 000 000 Brazilians (25% of the population), 24 799 687 in exclusively dental insurance.[29] The sector is regulated by the National Supplementary Health Agency (ANS) through a set of Government measures and actions: the creation of rules, control, and supervision of the sector operated by companies to ensure the public interest. It is linked to the Ministry of Health and responsible for the health insurance sector (or private insurance). This sector of health services had been thought of as a way to complement the health system at the SUS' beginning, nowadays it acts in a supplementary way. The choice of health insurance is free and dependent on purchasing power. Even if people have health private insurance, they are not excluded from SUS's free services. SUS users have complete coverage to use all health services: promotion, prevention or recovery.[11]

The French National Healthcare System provides the user's freedom choice by a general practitioner, specialists, health facility, etc. both in the public and private sectors. The goal of the healthcare system is to prevent, cure and globally monitor users in their needs. The management of health actions and services is carried out at national, regional and local levels for the coordination of all actors involved.[24]

The Parliament has control of the National Health System, its resources and its priority public health policies. The Ministry of solidarity and health is the central administration and comprises four directorates: Directorate General of Health (*Direction générale de la santé*); Directorate General of the Care Organization (*Direction générale de l'organisation des soins*); Social Security Directorate (*Direction de la securité sociale*); and the General Directorate of Social Policy (*Directorate General of Social Cohesion*).[15] The State intervenes directly in the health financing, medical facilities, in setting service tariffs, in managing health costs and in organizing the service provision. The ministry is responsible for the management and implementation of health policies. The ministry has the support of Health Agencies, which are public operators and partners, such as the High Authority of Health (HAS). It is still responsible for overseeing care facilities and health insurance organizations and for monitoring and training health professionals.[24,30]

The Regional level has the responsibility to manage the health and social-medical system through the Regional Health Agencies (ARS) which coordinates the prevention, follow-up care and manages the resources to enable equal access to all and continuous care with quality and safety. The agencies adapt national policies to their needs and characteristics. At the local or municipal level, the establishments and professionals are organized under ARS supervision. Primary care is offered by general practitioners (first resource) who make referrals to specialists (second resource) or a health facility (third resource). It is made up of the following structures: Municipal or outpatient structure where self-employed and salaried professionals work individually in their office, or a coordinated group in a nursing home or health center. The health care professionals are general practitioners and specialists, dentists, pharmacists, midwives, nurses, physiotherapists, pediatricians, etc.[24,30]

The hospitals are divided into 3 categories: Public; private for-profit and non-profit, clinics and collective interest private institutions (private hospitals, cancer treatment or dialysis centers, etc.). Public hospitals are also responsible for vocational education, scientific and medical research. There is also Emergency Medicine, through SAMU (*Service d´Aide Médicale Urgente*) and SMUR (*Services mobiles d´urgence et de réanimation*).[24,30]

The social-medical establishments are responsible for the care of the vulnerable, precarious, excluded, elderly and disabled. They may perform outpatient surgeries, telemedicine, home hospitalization, temporary care, and home nursing care. In addition, specialized structures accommodate certain patients or residents adequately: Neurovascular units, centralized specialized pain consultations, integrated and specialized centers for the obese, centers for rare diseases; memory and research resource centers and consultations (CM2R); cognitive-behavioral units (UCC) and the Houses for Autonomy and Integration for Alzheimer's (MAIA). There are the poles of activity and care adapted (PASA) and the reinforced shelter units (UHR) which favor the articulation, information and follow-up between the structures[24,30]

So, to illustrate the facilities and the professional teams, Tables 2 and 3 show the quantitative basic facilities and health professionals from both healthcare systems. The health professionals listed do not match all categories of health professionals in both countries. The fact is that both have multidisciplinary teams in the provision of health services and distinct structures designed to offer these services.

Tables 2 and 3, showed below, do not reflect the full installed capacity and facilities of health care services in both countries. Brazil has a continental size and large municipalities. Therefore, the country has large hospitals that serve several municipalities at the same time. One may be wrong if to compare the number of hospitals, once the physical structure may vary by region and population. However, it can be said that most parts of the health facilities are in urban cities since Brazil has about 84% of its population in urban areas.[32,33]

Table 2: Health Facilities in Brazil – 2018.

Facilities	SUS	For-profit	Non-Profit	Total
High Complexity				
Hospitals	594	930	611	2 135
Ambulatories	3 310	5 241	1 112	9 909
Medium Complexity				
Hospitals	3 394	3 006	1 848	8 248
Ambulatories	47 140	193 214	6 043	247 731
Low Complexity				
Health Center / Basic Health Unit	37 216	190	107	37513
Medical Office	950	165 399	998	167 338
Health Center	8 852	28	44	8 924
Indigenous Health Care	893	-	-	893

Source: 31.

Table 3: Health Facilities in France – 2017.

Facilities	FNH	For-Profit	Non-Profit	Total
Third Resource				
Hospitals	1364	1 002	680	3 046
Second Resource				
Cancer-Fighting Centers			21	21
Follow-up care and rehabilitation		350	371	721
Short-term or multidisciplinary care facilities		498	143	541
Long-term care		7	19	26
Mental Illness Institutions		145		
First Resource				
Health Homes		910	-	910
Medical Office		36 500	-	36 500
Nurse Office		48 700	-	48 700
Midwife Office		3 811	-	3 811

Source: 34, 35, 36, 37, 38.

Table 4: Comparison of the Number of Health Professionals Per 1000 Inhabitants and Vinculation to the National Healthcare System Percentage - Brazil and France, 2018.

Indicator by 1000/inhabitants	Brazil	SUS	France	FNH
Physicians	2,2	62.7%	3,4	70.3%
Nurses	2,5	49.1%	10,0	35.4%
Dentists and Dental Surgeons	1,5	42%	0,6	85%
Pediatricians	0,1	74.2%	0,08	79.6%
Pharmacists	1,0	16%	1,1	7%
Nursing Technicians	5,9	37%	6,0	58%

Source: 31, 34, 35, 36, 39, 40, 41, 42, 43, 44.

Despite the difference in size and population, Brazil and France bring similarities in the number of pediatricians, pharmacists, and nursing technicians. Brazil has more than twice as many dentists compared to France. France has more physicians and four times more nurses per 1000 inhabitants. A curiosity is that in Brazil midwives are not recognized as professionals, although there are valued traditional midwives, mainly in the Amazon region, in the indigenous and quilombolas[1] communities and, in France, the profession is regulated by adding more than 20 thousand midwives.[45]

Financing

To understand SUS funding, we need to understand the Brazilian geographical and political context. Brazil is a Federation composed of the Union, 26 states, the Federal District and 5 570 municipalities. The 1988 Federal Constitution determines the entities' joint action, with joint responsibilities regarding access to health services, in a universal, equal and comprehensive way. The SUS is funded by these three managers: Union, states and municipalities, forming cooperative federalism, in which all federated entities must promote, protect and restore health. There is autonomy in the management of the healthcare system in each “government sphere” within its territory, constituting the Brazilian sanitary federalism. This amount should finance animal and human vaccines,

simple and specialized consultations, blood and imaging tests, transplant surgeries, supplies of materials and medicines to the population, sanitary surveillance at ports, airports and establishments that handle market food, among other activities of public interest[46,47]

For the health financing, investment percentages were set by law in 2012, in which municipalities and Federal District must annually apply at least 15% of the taxes collection on actions and public health services; states 12% and, Union the amount invested should correspond to the amount committed in the previous financial year, plus the percentage of Gross Domestic Product (GDP) from preceding year. However, the Brazilian economic policy adopted in 2015 has influenced public revenue and health financing in the three spheres of government.[47]

From 2017, the Constitutional Amendment 95/2016 - New Brazilian Fiscal Regime - was set a ceiling for government spending until 2037. The main objective was to stabilize the growth of primary spending to contain the increase in public debt. The consequence is that resources to health will no longer be linked to the minimum established by law, with restrictive effects on the healthcare financial availability.[48] The vast majority of Brazilian municipalities depend on transfers from the Union to provide health services. The economic crisis and a political and institutional rupture after impeachment in 2016 marked an adverse scenario for social rights established by the 1988 Federal Constitution and menaces the Unified Health System.[49]

The participation in SUS financing, in 2017, was 43% from the Federal government, 26% from the states and 31% from the municipalities (that spent about plus 25% over the minimum set at 15% by the law). This shows that the Union has reduced health investment, leaving a greater burden on municipalities for health services and actions [46, 50]. The solution found for the economic crisis through an austerity regime and fiscal adjustments for the next 20 years, with significant cuts in public spending will bring serious limitations to guarantee social rights and the SUS.[49]

The financing of the French national healthcare system (FNH) comes from the Social Insurance (*L'Assurance Sociale*), with an important role of the State that shares the management with the Health Insurance (*L'Assurance Maladie*).[15,25,51] Funding is made through contributions from employers and taxpayers income-based, and others as specific such as tobacco and alcohol and the pharmaceutical industry taxes. The complementary health insurance reimburses copayments made by users for health services and the purchase of medicines that are not completely covered by the health system.[52,53]

Social Security finances most of the services and health goods, by 2018 it reached 78% of health expenses. The complementary insurance finances about 14% of expenditures, the State 1.5% on average, and the rest is paid directly by households.[54] The State finances the prevention, training, medical research and health services for the vulnerable through CMU-C and AME.[15,16,25]

Table 5: Brazil and France Health Expenditure, 2016.

Health Expenditure	Brazil	France
Domestic general government health expenditure (% of current health expenditure)	33,22	82,89
Domestic private health expenditure (% of current health expenditure)	66,69	17,10
Domestic general government health expenditure per capita, PPP (current international $)	590,54	3 964,31
Current health expenditure per capita (current US$)	1 015,93	4 263,36

Source: 55, 56.

Table 5 compares what each government invests in health on a percentage of GPD. In this case, there is a gap between Brazil and France. The Brazilian GDP in 2016 was PPP$ 3 161 trillion (current international $) and the French GDP was PPP$ 2 811 trillion.[55,56] This shows that much of Brazil's health expenditure is spent on private health services. However, because health in Brazil is a federally guaranteed right, all tax-paying citizens are entitled to reimbursement of health expenses (consultations, exams, hospitals, insurances – no refunds for medicines). This is called a health tax waiver (tax expense) and is a practice that has been growing over the last years, reaching the level of US$ 9 482 billion in 2018. Both citizens and companies have part of reduced income tax payments without a maximum discount ceiling, creating the possibility of unbridled growth in tax exemptions.[57,58]

In another study on public health spending from 2000 to 2014, Brazil was the country with the lowest public health spending, unlike other countries with universal and public healthcare systems. This means a reduction in the State's role as provider and financier of public health actions and services and, after the implementation of the 'New Brazilian Fiscal Regime', public health spending is expected to decline further. As well as the excessive

government incentives for the pro-profit health services which contribute to the reduction of public spending and, hinders the implementation of SUS as a universal health system, as provided for in the 1988 Constitution.[59]

On the one hand, the lack of funding implies the quality and quantity of public health services. Although SUS benefits millions of people in Brazil, there had always been a discussion about central problems for the proper SUS financing.

In February 2018, the French government established its priority list, ranging from health education reform to hospital funding review, through a renewal of human resources policy and a review of the territorial organization of the healthcare system. The hospitals are responsible for about 40% of health care expenses. France remains the third OECD country (http://www.oecd.org/els/health-systems/health-data.htm) with the longest average stay (10 days, compared to 7.8 in other countries). The rate of outpatient surgery remains lower than in neighboring countries. In 2018 hospitals totaled about 1.6 billion euros deficit. Reports have shown that about 25% of health expenditure is related to unnecessary or redundant acts and the healthcare system restructuring is being discussed.[37,60]

Another point that needs to be highlighted is the gratuity of the Brazilian health system. The user does not need money to consult with any kind of physician or any other health procedure like surgeries, cancer or HIV/AIDS treatment, vaccines, etc. and, there is no daily limit for hospitalizations. In France, even if you have private insurance, for the most of the appointments and exams there is a fee to be paid, which will be reimbursed by FNH later but, this refund, the most of times, is partial and not integral of the expenses, leading to out-of-pocket payment. This influences the demand for services and penalizes low-income people.

Therefore, for a better comparison among countries with regard to spending and its financing, the following factors could be employed: the level of national and personal income; demographic and epidemiological profiles; differences in system coverage, quantity, diversity and quality of services offered and; differences in the mechanisms of financing, organization and provision of health services. Gerdtham's research (2000), on the organization and provision of health services by comparing data from 22 OECD countries, highlights the importance of factors linked to the institutional characteristics of each country's healthcare system. In this sense, the evidence showed that the results are related to the characteristics of the countries and the conclusion states that: i) the higher the public participation, the lower the total expenditure; ii) hospital-centric systems tend to spend more; iii) countries where primary care is a filter for other levels of care tend to have a lower level of spending; and iv) the form of payment of general practitioners by capitation (a fixed amount per patient) induces a lower provision and therefore a lower expense than in systems with payment for service or act.[61]

CONCLUSION

Through this descriptive study, it is clear that even universal access healthcare systems have such distinct characteristics that it is no longer possible to categorize them as a single model. The attempt to curb public health spending is reflected in several public policies that change over the years on the international scene. Sometimes these policies seek to reduce the equity of access to the healthcare system; sometimes they seek to contain spending on health care services.

So, comparing both healthcare systems suggests that there are similarities between them in terms of structure and management: both have three levels of care - primary, secondary and tertiary; they are regionalized and decentralized; they have funding based on solidarity; they have specific public policies directed to specific groups, etc. They also share the same problems as an aging population and increasing spending on new technologies.

Brazil began the twentieth century with a model closer to the Bismarckian and, in the 1980s, broke completely with this model, starting a universal and free healthcare system. Today, Brazil is seeking to merge both public and private health services, approaching the Bismarckian model again. The French healthcare system tries to achieve the principles of “Beveridgian” universalism by the “Bismarckian” model.

Regarding the facilities for health services, both countries have similarities, such as hospitals, health centers, emergency rooms, doctor's offices, etc. The difference is that in Brazil there are public free medical offices that belong to the SUS. In Brazil, there are also private offices of professionals and health insurance medical offices. So, there are three different types of medical care: free, private health insurance, and out-of-pocket; this applies to medical appointments (GP or specialists), exams, hospital admissions, and emergencies. In France, has a large part of private medical offices, with self-employed professionals receiving a payment from the user that will be reimbursed by FNH posteriorly. Both in Brazil and France, it is encouraged to consult with the general practitioner before being referenced to other instances of the System (referral and counter-referral process).

The percentage of GDP spent on health services may not be the best way to understand a country's health financing because each country has a different GDP, leading to the belief that a higher percentage of spending means a better healthcare system, restricting them to economic criteria when the performance also need contemplate quality and effectiveness. To conclude, both

health systems are constantly changing to meet new needs and to obtain sufficient financial resources to provide a quality service to their population.

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