



Contents lists available at ScienceDirect

## Exploratory Research in Clinical and Social Pharmacy

journal homepage: [www.elsevier.com/locate/rcsop](http://www.elsevier.com/locate/rcsop)

## Role of community pharmacy and pharmacists in self-care in Brazil

Inajara Rotta<sup>a</sup>, Tácio Lima<sup>b</sup>, Fernanda S. Tonin<sup>c,d,\*</sup><sup>a</sup> Department of Pharmacy, Federal University of Paraná, Curitiba, Brazil<sup>b</sup> Department of Pharmaceutical Sciences, Federal Rural University of Rio de Janeiro, Seropedica, Brazil<sup>c</sup> Pharmaceutical Sciences Postgraduate Research Program, Federal University of Paraná, Curitiba, Brazil<sup>d</sup> H&TRC - Health & Technology Research Center, ESTeSL - Escola Superior de Tecnologia da Saúde, Instituto Politécnico de Lisboa, Lisbon, Portugal

## ARTICLE INFO

## Keywords:

Self care  
Community pharmacy services  
Pharmacist  
Nonprescription drugs

## ABSTRACT

Global healthcare systems, including the National Health System in Brazil – one of the largest public models in the world –, continue to evolve, as well as populations' health needs, currently shaped on individuals feeling a greater desire to manage their own health. Self-care practices are part of several public policies and clinical guidelines in Brazil including the National Policy on Complementary and Integrative Practices, the National AIDS Control Program, the National Policy for Women's Health, and the Guidelines for Care of People with Chronic Diseases. There are over 100,700 community pharmacies, in the country (89.2% privately owned) employing 234,300 pharmacists, representing an important delivery point for self-care, as they are the first point of access to care for most patients. Self-medication is a common practice in Brazil (prevalence rates of self-medication ranging from 16.1% to 35.0%), especially with non-prescription/over-the-counter medicinal products (65.0%). In fact, these products represent over 25% of volume marketed of medicines, summing revenues of USD 1.9 billion per year. Studies demonstrated a positive budget impact as important savings for the National Health System due to reductions of unnecessary medical appointments and loss of working days. In addition to minor ailments management, other self-care services provided by community pharmacies that are frequently sought by Brazilian citizens (20–25% of cases) are smoking cessation and weight management (costs per service ranging from around USD 5.00–12.00). However, pharmacy services are not yet as fully integrated in Brazil to the same extent as in other countries. Barriers such as standardization of processes (from services' design, implementation, and evaluation in practice), pharmacist remuneration for the provision of services and the amount to be charged for the service are still a matter of controversy. For more rapid and sustainable advances in these practices, communication among various stakeholders, professional practice and healthcare regulations, standardization of services and financing of self-care (both publicly and privately) are urgently needed. This paper provides an overview of some self-care services provided by community pharmacies in Brazil and call attention to the ongoing challenges to move the National Health system forward.

## 1. Introduction

In 1990, Brazil established a National Health System aiming at guaranteeing equal and comprehensive access to services and care for the population. Brazil is still the only country in Latin America to adopt this kind of universal health system which is currently one of the largest government-run public health system in the world. Since 2016, however, political, and economic crisis have led to the implementation of austerity policies including budget restriction to health.<sup>1,2</sup>

In addition to the responsibility of governments to provide health coverage, citizens care for themselves (self-care or self-management), through treatment, disease prevention, engaging in health education, and living by means

of healthy principles.<sup>3</sup> In this process, appropriate support by community pharmacists (both from public and private systems) plays a key role in optimizing individuals' clinical outcomes and may also improve economic efficiency (e.g., savings for health services).<sup>3</sup> The accessibility of community pharmacies coupled with pharmacists' inclusion in multidisciplinary teams and their expertise related to pharmacotherapy (e.g., medication review, treatment management, promotion of the rational use of medicines) make them and their services a critically component of self-care and behavioral shaping.<sup>3</sup>

The aim of this paper is to provide an overview of the self-management services provided by community pharmacies included in the Brazilian National Health System and highlight the current challenges to advance pharmacy in the country.

\* Corresponding author at: H&TRC - Health & Technology Research Center, ESTeSL - Escola Superior de Tecnologia da Saúde, Instituto Politécnico de Lisboa, Av. D. João II, lote 4.69.01, Parque das Nações, 1990-096 Lisbon, Portugal.

E-mail addresses: [inajara.rotta@ufpr.br](mailto:inajara.rotta@ufpr.br) (I. Rotta), [taciolima@ufrrj.br](mailto:taciolima@ufrrj.br) (T. Lima), [stumpf.tonin@ufpr.br](mailto:stumpf.tonin@ufpr.br) [fernanda.tonin@estesl.ipl.pt](mailto:fernanda.tonin@estesl.ipl.pt) (F.S. Tonin).

## 2. The Brazilian National Health System

Brazil is the fifth largest country in the world, occupying half the South America's landmass (8.5 million square kilometers of area) and ranks among the top 10 most populated regions (212.5 million people in 2020, which represents one-third of the Latin America population) with an annual growth rate of 0.7%. In 2020, life expectancy was of 75.9 years (72.5 and 79.7 years for males and females, respectively), infant mortality rate remained around 11.0 deaths per 1000 live births, and educational attainment was of 7.9 years. Gross domestic product (GDP) annual growth in 2021 reached 4.6%, with a rate per capita of US\$7507.2, setting Brazil as an upper-middle country.<sup>4,5</sup>

Similar to other countries, Brazil currently has an epidemiological scenario with a predominance of chronic noncommunicable diseases including hypertension, diabetes mellitus and cancer, which account for over 80% of total deaths every year.<sup>6</sup> Apart from the high rate of life lost due to the coronavirus (COVID-19) pandemic (around 695,000 deaths between 2020 and 2022), the leading causes of mortality in the country are cardiovascular diseases that sum approximately 30% of cases, neoplasms (20%) and respiratory diseases (12%).<sup>6,7</sup>

The Brazilian National Health System is a complex yet relatively recent network of complementary and competitive service providers and purchasers, financed by both public and private funds, aiming at promoting high-quality healthcare coverage to all citizens. The Unified Health System (Sistema Único de Saúde [SUS]) was created in 1990 through the Federal Constitution and the Law 8080/1990 grounded on the principles of universality (i.e., health is a right of all and duty of the State), equity (i.e., access to, and use of, health services between social groups for equal needs, regardless of ability to pay) and comprehensiveness for healthcare (i.e., offers a broad spectrum of health services).<sup>8,9</sup>

SUS is the largest government-run public health system in the world (the State has a social welfare role, being responsible for the governance, funding, and provision of health services), by number of beneficiaries/users (virtually 100% of the Brazilian population), land area coverage, and affiliated network/number of treatment centers (over 50,000 clinics). Additionally, significant improvements on SUS performance in the past years were achieved as demonstrated by the Universal Health Coverage index (i.e., accounts for service coverage across population health needs and how much these services could contribute to improve health) that increased from 59.1% in 2010 to around 65.0% in 2019. Moreover, the system is entirely free of charge at the point of service for any person - including foreigners.<sup>9,10</sup> Nonetheless, although public healthcare providers dominate the system, a significant presence of private providers exist (mainly for people able to purchase private insurance, i.e., around 25% of the population), being responsible for approximately 55% of the total health expenditures of the country - which contrast to other low-income countries where public health expenditures are usually higher than in the private sector.<sup>11</sup>

The public subsystem includes two sectors: i) universal and comprehensive healthcare to the Brazilian population and ii) restricted access to government employees (civilians, military), free of charge and financed by public funds. The private subsystem (voluntary) is also comprised by two sectors: i) private health insurance with different forms of health plans and varying tax subsidies and ii) private for-profit and non-profit in which services are financed in various forms with public or out-of-pocket costs.<sup>9,10</sup> According to the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística [IBGE]), 71.5% of the population rely on public health services, mainly those provided by basic healthcare units.<sup>12</sup> Moreover, a significant proportion of the population covered by the private subsystem also uses public health services, especially immunization programs, complex medical procedures (e.g., cancer care and organ transplants) or high-cost treatments (e.g., rare diseases).<sup>10,11</sup> Financing the SUS comes from tax revenues and social contributions from the federal, state, and municipal budgets.<sup>8</sup>

The central management of SUS is the responsibility of the Ministry of Health (i.e., formulate, define, audit, control and evaluate the set of health

policies and services, and coordinate national actions), while the execution occur mainly in a decentralized system, with the municipal components being the main health care provider (i.e., by means of actions for health promotion and disease prevention, and expansion of coverage of more complex levels of care [e.g., specialists; hospitals]). The state level is responsible for the regional organization of health services with more complex levels of care as financial and technical cooperation with municipalities. Social participation is ensured by health councils and health conferences (composed of 50% community members, 25% providers, 25% health system managers), linked to each level of government, with the role of approving the policies and guidelines aimed at ensuring the supply of actions and health services.<sup>9,10</sup> A summary of the Brazilian health system organization and services is depicted in Fig. 1.

## 3. Pharmacy services in the Brazilian National Health System

According to the Brazilian Federal Law 13,021/2014, 'pharmacy' is a setting designed to provide pharmaceutical services, healthcare, and individual and collective sanitary guidance on medicines. The 'community pharmacy' refers to a setting outside a hospital or ambulatory care that serve the general population.<sup>13,14</sup> In 2020, Brazil had 100,720 registered community pharmacies (89.2% private owned) for a total of 234,301 qualified pharmacists.<sup>15</sup> According to the organization of the network of care in SUS (as depicted in Fig. 1), public community pharmacies are considered as 'support facilities' that provide services for all point-of-care, both in primary healthcare (isolated as basic health units or as part of a multi-professional health center in family health units) and in secondary healthcare (isolated location dispensing specific medicines).<sup>16</sup>

The financing and supply/delivery of medicines in this environment is regulated by different laws/rules in the country, being overall divided into: (i) 'basic component', which includes essential medicines for treating major conditions in primary health care; (ii) 'strategic component' which provides medicines for endemic diseases such as hepatitis, leprosy, tuberculosis, malaria, and other conditions such as acquired immunodeficiency syndrome/ human immunodeficiency virus (AIDS/HIV), tobacco control, and coagulopathies; and iii) 'specialized component', which covers the high-cost and high-complexity medicines for managing chronic and degenerative diseases, including rare diseases.<sup>17,18</sup> In contrast, private community pharmacies supply/delivery medicines in an out-of-pocket model which is regulated by specific legislation within SUS (e.g., depending on available/market drugs and need for prescription).<sup>13</sup> These pharmacies also supply a limited list of essential medicines through the 'Farmácia Popular do Brasil' Program (e.g., medicines for hypertension, diabetes, and asthma are dispensed free of charge, while some drugs for dyslipidemia, rhinitis, osteoporosis, glaucoma, and contraception are dispensed through a copayment model for any patient with a prescription). The government reimburses these pharmacies covering until 90% of the medicine price with patient's paying the remaining costs of the medicine.<sup>17-19</sup>

## 4. Self-care initiatives in the Brazilian National Health system

Over the past years, the expansion of the SUS has allowed it to rapidly address the changing in health needs of the Brazilian population and improve health-related outcomes and individuals' quality of life.<sup>8</sup> Nonetheless, the system is still challenged with increasing rates of chronic diseases and associated clinical and economic burdens alongside with budget restrains that represent major barriers to the optimal and timely provision of health care.<sup>20</sup>

In this scenario, self-care or self-management (i.e., the potential of individuals to care for themselves) as well as involving individuals in decisions affecting their health, may have a beneficial role particularly for increasing rates of primary care consultations and ensuing health system pressures.<sup>20,21</sup> According to the World Health Organization (WHO), self-care broadly includes health promotion, disease prevention and control (hygiene general and personal, dietary interventions, dietary supplements, lifestyle modifications), self-medication (including nonprescription or

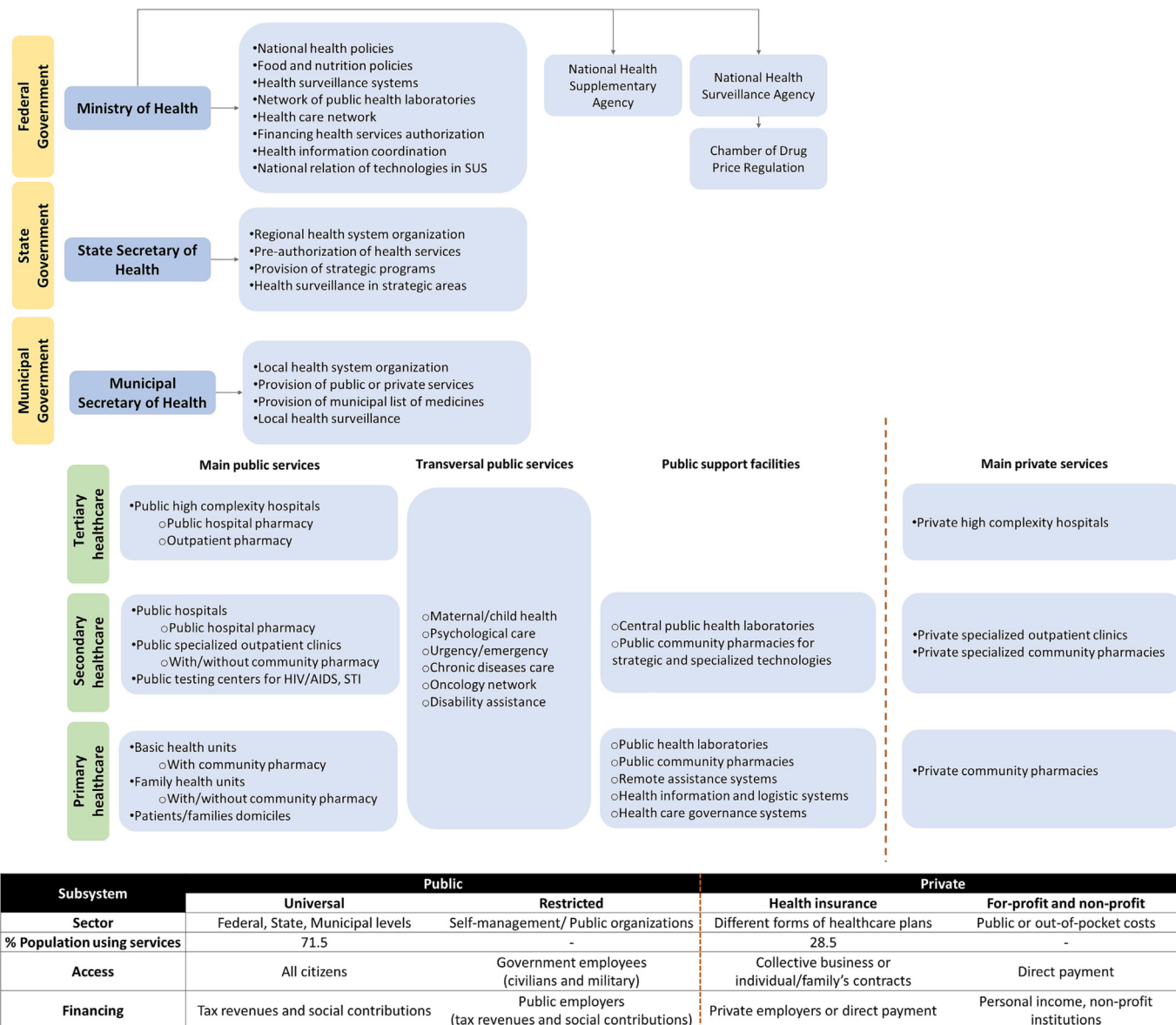


Fig. 1. Brazilian health system organization.

over-the-counter [OTC] products, complementary or alternative medicines), giving care to dependent people.<sup>20,22,23</sup> Self-care interventions, in turn, are defined as tools aiming at supporting self-care, such as evidence-based information and high-quality health technologies (drugs, devices, diagnostics, or digital interventions) that can be provided fully or partially outside formal health services and be used with or without a health worker.<sup>3,22</sup> Overall, self-care practices have been described as a continuum ranging from ‘pure self-care’ to ‘abdicated responsibility’, depending on the severity of the disease and the need for professional attention.<sup>20,24</sup> The success or otherwise of this people-centered approach relies on several factors including individuals’ sociodemographic (age, sex, education, income), health condition, environment and lifestyle, support network, and adequacy and availability/access to resources and services, requiring, thus, a holistic yet tailored care of each person.<sup>3,22,25</sup>

In Brazil, self-care practices, following the definition of the WHO, are part of several public policies and clinical guidelines developed by the Ministry of Health (e.g., including recommendations to health workers on how to deliver self-care interventions and promote self-care) as the National Policy on Complementary and Integrative Practices, the National sexually transmitted diseases(STD)/AIDS Control Program, the National Policy for Integral Attention to Women’s Health, and the Guidelines for Care of People

with Chronic Diseases.<sup>26–28</sup> All these documents broadly highlight the importance of healthcare workers (yet without specifying the role of each professional category) for advising on the delivery and promotion of self-care interventions to the community. Although not formally mentioned in these documents, community pharmacies are recognized as an important piece of the conceptual framework of self-care interventions in the country, as they are the first point of access to care for most patients.<sup>19</sup> Pharmacists are in a key position to triaging and assisting patients (education, counseling) in the proper use of medicines and management of minor ailments, minimizing the risks of self-medication, and increasing health-related outcomes.<sup>29,30</sup>

### 5. Pharmacist-led services in Brazil

In Brazil, the Federal Law 5991/1973 (Pharmaceutical Trade Law) regulates prescribing rights, pharmaceutical trade, pharmacist activities, and the types of establishments authorized to market medicines and health-related products<sup>31</sup>; yet, professionals’ activities were restricted to pharmaceutical dispensing. In 2014, the ‘Pharmacy Law’ (Federal Law 13,021/2014) further defined pharmacies as ‘service delivery centers’, and finally enabled the provision of other pharmacist-led activities such

as vaccination, functional foods and Cannabis products dispensing, and therapy monitoring. The increased role and autonomy of pharmacists is also a reflect from changes in the academic education emphasizing patients' care (resolutions CNE/CES 2/2002 and 6/2017), multi-professional residences (Law 11,129/2005), and the implementation of Qualifar-SUS, a program aiming at including and consolidating clinical pharmacy services in the national health system (Ordinance 1214/2012).<sup>32,33</sup> Unfortunately, none of these regulations specifically link self-care to pharmacy. The National Curriculum Guidelines for the Undergraduate Pharmacy Course, (Resolution CNE/CES 6/2017), defines 'health care' as one of the axes of professional qualification, requiring students to develop skills and knowledge to identify health needs both at an individual/family and community levels, as well as to plan, execute and monitor health actions. This reinforces the attention that is being increasingly given to self-care themes during the training of pharmacists in the Brazilian educational institutions.<sup>34</sup>

This scenario was also conducive for private community pharmacies rapidly implementing clinical services (including screenings, health education, management of minor illness, medication reconciliation, or medication review); conversely, few public community pharmacies initiated and still maintain these services in the past years.<sup>19,35</sup> According to some systematic reviews, medication therapy management, therapeutic drug monitoring and medication review are the most commonly evaluated clinical pharmacy services in Brazil, all of them aiming at leading to appropriate use of medicines. Nonetheless, there is still high heterogeneity of the benefits or otherwise of these services (with some studies advocating the role of the pharmacist, while others reveal no significant benefits), especially given the lack of standardized process for interventions' design/definition, implementation, and follow-up in the country.<sup>32,33,36</sup>

## 6. Self-care in community pharmacy in Brazil

Self-medication is a common practice in Brazil, as demonstrated in a population-based study including over 40,000 individuals, where its prevalence rate was of 16.1% (95% CI, 15.0 to 17.5), with most medications (around 65%) classified as OTC. A meta-analysis of high-methodological quality cross-sectional studies showed an even higher rate of self-medication; 35.0% (95% CI, 29.0 to 40.0;  $I^2 = 83.9\%$ ) (15-day recall period),<sup>37</sup> with predisposing variables including female gender, geographic location (individuals living in the North and Northeast regions of Brazil, i.e., worse economic and social development) and presence of chronic diseases.<sup>24,38,39</sup>

According to a survey conducted with pharmacists working in private chain pharmacies associated with the Brazilian Association of Pharmacy and Drugstore Networks (ABRAFARMA), out of every three visits by individuals to the pharmacy, one refers to requests for medication indication, with a median of ten visits of this nature per day (estimated 190 million visits per year in the country).<sup>14,40</sup> In fact, between January to September 2021, medicines accounted for 68% of the sales volume in the 8705 associated pharmacies of ABRAFARMA, with total revenues of R\$ 33.9 billion (approximately USD 6.7 billion); which was 17.8% higher than the figures of the same period of the previous year. Non-prescription drugs accounted for around 23.8% of these products, reaching R\$ 9.6 billion (around USD 1.9 billion).<sup>41</sup> This finding is corroborated by the result obtained in a national review covering a 20-year timeframe, where OTCs accounted for 29.3% of sales in the Brazilian pharmaceutical market.<sup>42</sup>

Self-treating certain conditions such as minor ailments (defined as a medical condition that will resolve on its own and can be reasonably self-diagnosed and managed e.g., strains and sprains, acute diarrhea, constipation, common cold) with non-pharmacological measures or non-prescription products/OTCs that are prescribed/counseled by the pharmacist can produce rational, safe, and effective outcomes.<sup>20,22</sup> Some studies show a positive budget impact of OTC medications on the Brazilian National Health System of R\$ 364 million (around USD 71.6 million), being considered as a saving generator by avoiding unnecessary consultations and loss of working days; every R\$ 1.00 spent on an OTC may result in saving up to R\$ 7.00 (USD 0.20 vs. USD 1.40).<sup>42-44</sup> Some proposed models for

minor ailments service provision led by the pharmacist in Brazil already exist (see an adapted model in Fig. 2)<sup>45</sup>; yet no standard process has been published or is widely used in private community pharmacies. Moreover, a recent scoping review stated that the terms used to designate minor ailment management pharmaceutical services in Brazil are very heterogeneous, with studies referring to terminologies such as 'indication of drugs', 'self-medication', 'responsible self-care', 'OTC counseling', 'recommendation of non-prescription medicines'. This may impair the comparisons between the performance of these services and their implementation in practice.<sup>33</sup>

In addition to the management of minor ailments, other services that can be provided by Brazilian private community pharmacies related to lifestyle modifications and self-care include smoking cessation and weight management (sought by around 25% and 20% of the population, respectively).<sup>40,46,47</sup> Although no standard procedures are nationally adopted for these services, overall clinical counseling led by the pharmacist can represent a key factor for changing individuals' habits.<sup>40,46,47</sup>

The smoking cessation service usually consists of a behavioral counseling program, nicotine replacement therapy and pharmaceutical follow-up for 12 months aiming at helping smokers to reduce or withdraw addiction. In the first contact, the pharmacist, grounded on patient' motivational stage, evaluates whether he is ready or willing to quit smoking. An action plan, appropriate therapy, and a date for smoking cessation ("D-day") are defined with the patient. Follow-up includes meetings that occur weekly, up to monthly or bimonthly, depending on the stage of treatment and the need of each patient, aiming the maintenance of abstinence for 6 months and then for 12 months.<sup>25,48</sup> A recent study assessing the implementation and effectiveness of smoking cessation pharmaceutical services offered in primary health care in a central region of Brazil ( $n = 170$  individuals and  $n = 1591$  group approaches) showed that cessation occurred in around 40% of cases (RR 1.21; 95% CI [1.19-1.23];  $p < 0.001$ ). Although suggestive, the expansion and qualification of this service relies on further standardized procedures at a national level and the need for well-designed studies to support its feasibility and cost-effectiveness in different settings and environments.<sup>49</sup>

Similarly, the weight management service encourages patients to lose weight in a healthy process. During the first consultation, the pharmacist evaluates patient' anthropometric measurements and defines the therapeutic goals. A care plan including specific behavioral advice, recommendations on diet and physical activity, and use of medicines, supplements, or medicinal plants is developed together with the patient. Follow-up visits are scheduled during 12 months.<sup>50</sup> Although data on the implementation range and performance of this service at a national level is scarce, a report mentioned that it was one of the most requested intervention in Brazilian community pharmacies in 2021.<sup>40</sup>

Besides these three key areas of self-care services in pharmacies in Brazil (self-medication/minor ailments, smoking cessation and weight management), community pharmacies embedded in public healthcare units may also offer interventions related to substance use disorders (e.g., drug and alcohol dependence management), complementary and integrative practices (e.g., medicinal plants and phytotherapy), counseling on risk factors related to self-injuries/harms and recommendations for pregnant and lactating women (e.g., medication use, vitamins and supplements, contraception advice); these services are funded by the national government.<sup>51</sup>

Furthermore, due to the development of improvement of technology in the past years, the offer of apps that may facilitate self-care and patients' autonomy, including advices on physical exercises, relaxation techniques, healthy eating, and health planning, as well as self-tests, are being proposed as add-on intervention for community pharmacies.<sup>46,52</sup> In 2022, for instance, AIDS/HIV and COVID-19 self-tests were launched by Clinicarx (a Brazilian health technology company operating at the interface between health care and pharmaceutical retail for the provision of pharmaceutical services [private set]), aiming at guiding patients on the performance of these tests, its interpretation and following procedures if needed. These services are usually paid by the patient/client.<sup>46</sup>

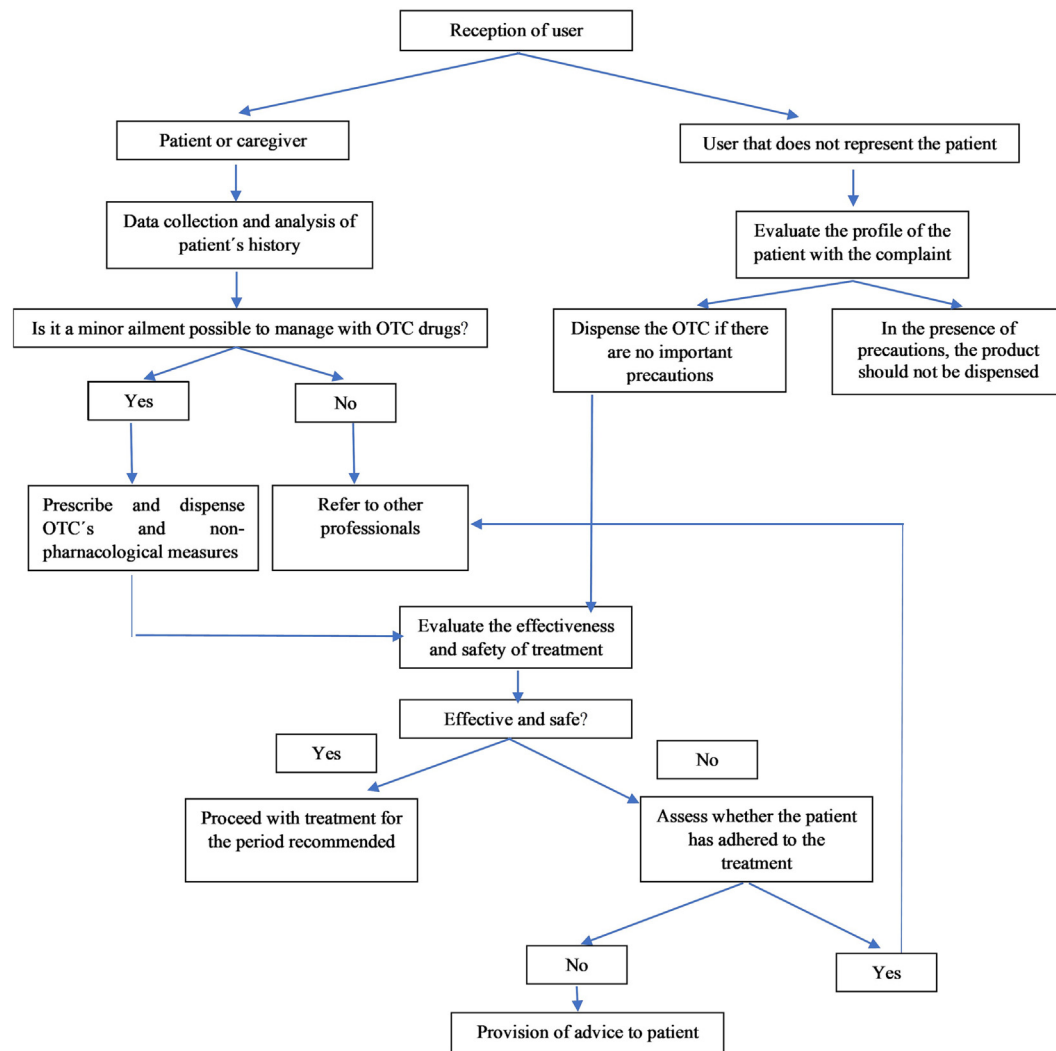


Fig. 2. Overall process of pharmacist-led service for the management of minor ailments in Brazil.

Nonetheless, the estimation of costs and reimbursement of services provided in pharmacies is still a matter of controversy, given the range of methods used to identify, measure, and evaluate the clinical and economic benefits. A national survey ( $n = 2090$ ) performed in 2018 demonstrated that the average price that Brazilians are willing to pay for smoking cessation service was of around R\$ 34.00 (USD 6.70), while for the weight management service it was R\$ 30.00 (USD 5.90).<sup>47</sup> These costs are similar to those currently charged by most of private pharmacies associated with ABRAFARMA for these services (of R\$ 30.00 and R\$ 40.00, respectively). Integrated medication consultation (teleinterconsultation) focused on weight management, in which the patient is attended by the pharmacist at the pharmacy alongside with physician at a distance (video call) cost on average R\$ 60.00 (USD 11.80).<sup>46,48,50</sup>

## 7. Challenges associated with self-care pharmacist-led interventions in Brazil

In recent years, important advances in the Brazilian National Health care System both in terms of professional and healthcare legislation, and expansion of services and pharmaceutical procedures significantly improved clinical, humanistic and economic outcomes within patients, families and the community. However, pharmacy services including those related to self-care are not yet consolidated to the same extent as in other countries.

Barriers such as confrontations with the Council of Medicine regarding overlapping professionals' competencies and responsibilities, standardization of interventions (from design to practice, including standardized terminologies and use of guidelines and checklists for better structuring interventions), measurement of fidelity, the remuneration of pharmacist for the provision of services and the amount to be charged for the service are still to be solved.<sup>19,33,35</sup>

The definition of all pharmacist-led services' prices should be standardized in the country (similarly to what is fairly performed for self-care interventions of smoking cessation and weight management) considering direct costs related to the time spent by the pharmacist and consumed materials. Currently, most pharmacists in Brazil are hired on an hourly basis, usually without additional payment for clinical services. To improve this remuneration system and help expand sustainable practices, payments for pharmaceutical services and procedures in both public system and private health plans should be specified. Other challenges in this field include improving the training of pharmacists, standardizing clinical procedures, and highlighting the perception of pharmacists' value to the society regarding self-care.<sup>9,19,36</sup>

## Funding

None.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## References

- Doniec K, Dall'Alba R, King L. Austerity threatens universal health coverage in Brazil. *Lancet* 2016;388(10047):867–868. [https://doi.org/10.1016/S0140-6736\(16\)31428-3](https://doi.org/10.1016/S0140-6736(16)31428-3).
- Massuda A, Hone T, Leles FAG, de Castro MC, Atun R. The Brazilian health system at crossroads: progress, crisis and resilience. *BMJ Glob Health* 2018;3(4):e000829. <https://doi.org/10.1136/bmjgh-2018-000829>.
- International Pharmaceutical Federation. Joint Statement of Policy by the International Pharmaceutical Federation (FIP) and the Global Self-Care Federation (GSCF) on Responsible and Effective Self-care. (accessed 17 January 2023) <https://www.fip.org/files/content/publications/2019/FIP-GSCF-Responsible-and-effective-self-care.pdf>, 2019.
- World Health Organization (WHO). Countries: Brazil. (accessed 17 January 2023) <http://whoint/countries/bra/en/>, 2023.
- World Bank. Brazil. Data from the International Bank for Reconstruction and Development and the International Development Association (IBRD/IDA). (accessed 20 January 2023) <https://dataworldbank.org/country/brazil>, 2020.
- Malta DC, Duncan BB, Schmidt MI, et al. Trends in mortality due to non-communicable diseases in the Brazilian adult population: national and subnational estimates and projections for 2030. *Popul Health Metrics* 2020;18(suppl 1):16. <https://doi.org/10.1186/s12963-020-00216-1>.
- G. B. D. Causes of Death Collaborators. Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: A systematic analysis for the global burden of disease study 2017. *Lancet* 2018;392(10159):1736–1788. [https://doi.org/10.1016/S0140-6736\(18\)32203-7](https://doi.org/10.1016/S0140-6736(18)32203-7).
- Castro MC, Massuda A, Almeida G, et al. Brazil's unified health system: the first 30 years and prospects for the future. *Lancet* 2019;394(10195):345–356. [https://doi.org/10.1016/S0140-6736\(19\)31243-7](https://doi.org/10.1016/S0140-6736(19)31243-7).
- Paim J, Travassos C, Almeida C, Bahia L, Macinko J. The Brazilian health system: history, advances, and challenges. *Lancet* 2011;377(9779):1778–1797. [https://doi.org/10.1016/S0140-6736\(11\)60054-8](https://doi.org/10.1016/S0140-6736(11)60054-8).
- Marques R, Piola S, Roa A. *Sistema de saúde no Brasil: organização e financiamento*. Rio de Janeiro: ABRÉS – Brasília, Ministério da Saúde, Departamento de Economia da Saúde, Investimentos e Desenvolvimento/OPAS/OMS. 2016:260.
- Organisation for Economic Co-operation and Development (OECD). *Health care needs and the health care system in Brazil*. 2021. <https://doi.org/10.1787/146d0dea-en>.
- Instituto Brasileiro de Geografia e Estatística (IBGE). *Pesquisa nacional de saúde: 2019: informações sobre domicílios, acesso e utilização dos serviços de saúde: Brasil, grandes regiões e unidades da federação Rio de Janeiro*. IBGE, Coordenação de Trabalho e Rendimento. 2020.
- Brasil - Ministério da Saúde. *Lei n° 13.021, de 8 de agosto de 2014. Dispõe sobre o exercício e a fiscalização das atividades farmacêuticas*. Brasília: Ministério da Saúde. 2014.
- Correr CJ, Pontarolo R, Ribeiro A. A farmácia comunitária no Brasil. In: *Correr CJ, Otuki MF, eds. A prática farmacêutica na farmácia comunitária*. Artmed: Porto Alegre; 2013.
- Conselho Federal de Farmácia (CFF). *Dados 2020–2021*. (accessed 25 January 2023) <https://www.cff.org.br/paginaphp?id=801&titulo=Boletins>, 2022.
- Brasil - Ministério da Saúde. Portaria n° 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 (SUS). Brasília, Ministério da Saúde, 2010.
- Brasil - Ministério da Saúde. *Secretaria de Ciência, Tecnologia, Inovação e Insumos Estratégicos em Saúde. Departamento de Assistência Farmacêutica e Insumos Estratégicos. Programa Farmácia Popular*. Brasília: Ministério da Saúde. 2022.
- Brasil - Ministério da Saúde. *Secretaria de Ciência, Tecnologia, Inovação e Insumos Estratégicos em Saúde. Departamento de Assistência Farmacêutica e Insumos Estratégicos. Relação Nacional de Medicamentos Essenciais Renome 2022*. Brasília. Ministério da Saúde. 2022.
- Melo AC, Trindade GM, Freitas AR, Resende KA, Palhano TJ. Community pharmacies and pharmacists in Brazil: a missed opportunity. *Pharm Pract (Granada)* 2021;19(2):2467. <https://doi.org/10.18549/PharmPract.2021.2.2467>.
- Bell J, Dziekan G, Pollack C, Mahachai V. Self-Care in the Twenty First Century: a vital role for the pharmacist. *Adv Ther* 2016;33(10):1691–1703. <https://doi.org/10.1007/s12325-016-0395-5>.
- Bodenheimer T, Lorig K, Holman H, Grumbach K. Patient self-management of chronic disease in primary care. *JAMA* 2002;288(19):2469–2475. <https://doi.org/10.1001/jama.288.19.2469>.
- World Health Organization (WHO). *WHO Guideline on Self-Care Interventions for Health and Well-Being, 2022 Revision*. Geneva: World Health Organization. 2022. <https://www.who.int/publications/i/item/9789240052192> [accessed 9 January 2023].
- Paudyal V, Sun S, Hussain R, Abutaleb MH, Hedima EW. Complementary and alternative medicines use in COVID-19: a global perspective on practice, policy and research. *Res Soc Adm Pharm* 2022;18(3):2524–2528. <https://doi.org/10.1016/j.sapharm.2021.05.004>.
- Rutter P. Role of community pharmacists in patients' self-care and self-medication. *Integr Pharm Res Pract* 2015;4:57–65. <https://doi.org/10.2147/IPRP.S70403>.
- Bordin D, Fadel CB, Santos CBD, Garbin CAS, Moimaz SAS, Saliba NA. Determinants of oral self-care in the Brazilian adult population: a national cross-sectional study. *Braz Oral Res* 2017;31:e115. <https://doi.org/10.1590/1807-3107bor-2017.vol31.0115>.
- Brasil - Ministério da Saúde. *Departamento de Ações Programáticas Estratégicas. Política nacional de atenção integral à saúde da mulher: princípios e diretrizes*. Brasília: Ministério da Saúde. 2004.
- Brasil - Ministério da Saúde. *Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Diretrizes para o cuidado das pessoas com doenças crônicas nas redes de atenção à saúde e nas linhas de cuidado prioritárias*. Brasília: Ministério da Saúde. 2013.
- Brasil - Ministério da Saúde. *Secretaria de Políticas de Saúde. Coordenação Nacional de DST e Aids. Política Nacional de DST/aids: princípios e diretrizes*. Brasília: Ministério da Saúde. 1999.
- Dineen-Griffin S, Benrimoj SI, Williams KA, Garcia-Cardenas V. Co-design and feasibility of a pharmacist-led minor ailment service. *BMC Health Serv Res* 2021;21(1):80. <https://doi.org/10.1186/s12913-021-06076-1>.
- Ambizas EM, Bastianelli KM, Ferreri SP, et al. Evolution of self-care education. *Am J Pharm Educ* 2014;78(2):28. <https://doi.org/10.5688/ajpe78228>.
- Brasil - Ministério da Saúde. *Lei 5991 de 17 de dezembro de 1973. Dispõe sobre o Controle Sanitário do Comércio de Drogas, Medicamentos, Insumos Farmacêuticos e Correlatos, e dá outras Providências*. Brasília: Ministério da Saúde. 1973.
- Nassur PL, Forgerini M, Mastroianni PC, Lucchetta RC. Clinical pharmacy services in Brazil, particularly cardiometabolic diseases: a systematic scoping review and meta-analyses. *Pharm Pract (Granada)* 2020;18(4):2131. <https://doi.org/10.18549/PharmPract.2020.4.2131>.
- Garabeli AA, Benetoli A, Halila GC, et al. Mapping community pharmacy services in Brazil: a scoping review. *Braz J Pharm Sci* 2022;58(e20851). <https://doi.org/10.1590/s2175-97902022e20851>.
- Brasil - Ministério da Educação - Câmara de Educação Superior. *Resolução n. 6, de 19 de outubro de 2017. Institui as Diretrizes Curriculares Nacionais do Curso de Graduação em Farmácia e dá outras providências*. Brasília: Diário Oficial da União. 2017.
- de Souza MRF, de Sena MPM, Oliveira CM, Sales CA, de Melo RBC, de Sena LWP. Analysis of the clinical practice of the pharmacist in a community pharmacy: a cross-sectional study from Brazil. *Pharm Pract (Granada)* 2022;20(2):2658. <https://doi.org/10.18549/PharmPract.2022.2.2658>.
- Rotta I, Salgado TM, Silva ML, Correr CJ, Fernandez-Llimos F. Effectiveness of clinical pharmacy services: an overview of systematic reviews (2000–2010). *Int J Clin Pharm* 2015;37(5):687–697. <https://doi.org/10.1007/s11096-015-0137-9>.
- Domingues PH, Galvao TF, Andrade KR, Sa PT, Silva MT, Pereira MG. Prevalence of self-medication in the adult population of Brazil: a systematic review. *Rev Saude Publica* 2015;49:36. <https://doi.org/10.1590/s0034-8910.2015049005709>.
- Arrais PS, Fernandes ME, Pizzol TD, et al. Prevalence of self-medication in Brazil and associated factors. *Rev Saude Publica* 2016;50(suppl 2):13s. <https://doi.org/10.1590/S1518-8787.2016050006117>.
- Pons EDS, Knauth DR, Vigo A, P.R. Group, Mengue SS. Predisposing factors to the practice of self-medication in Brazil: results from the National Survey on access, use and promotion of rational use of medicines (PNAUM). *PLoS One* 2017;12(12):e0189098. <https://doi.org/10.1371/journal.pone.0189098>.
- Clinicarx. Pesquisa de varejo farmacêutico 2021, Veja tendências para 2022. (accessed 02 February 2023) <https://materiaisclinicarxcombr/varejo-farmacutico-2021>, 2021.
- F. Reis. Grande varejo farmacêutico tem maior avanço percentual em uma década. *Pharmacombr* <https://panoramafarmacauticoccombr/grande-varejo-farmacautico-registra-recorde-de-empregos/> 2021 [accessed 25 January 2023].
- Rodrigues AC. The use of over-the-counter medicines and cost savings generated for health systems: a review. *J Bras Econ Saude* 2017;9(1):128–136. <https://doi.org/10.2147/IPRP.S108047>.
- Ferreira CN, Santana CF, Rufino CS. The value of otc medicines in Brazilian public health system (SUS). *Value Health* 2015;3:A87–A88. <https://doi.org/10.1016/j.jval.2015.03.512>.
- Secoli SR, Marquesini EA, Fabretti SC, Corona LP, Romano-Lieber NS. Self-medication practice trend among the Brazilian elderly between 2006 and 2010. *SABE Study Rev Bras Epidemiol* 2019;e180007. <https://doi.org/10.1590/1980-549720180007.supl.2>.
- Galato D, Galafasi LM, Alno GM, Trauthman SC. Responsible self-medication: review of the process of pharmaceutical attendances. *Braz J Pharm Sci* 2009;45(4):625–633. <https://doi.org/10.1590/S1984-82502009000400004>.
- Clinicarx. *Serviços de Saúde – Autocuidado*. (accessed 25 January 2023) <https://saudeclinicarxcombr/servicos-de-saude/>, 2023.
- Instituto de Pesquisa e Pós-Graduação para o Mercado Farmacêutico (ICTQ). Os serviços farmacêuticos com maior adesão e o preço que os brasileiros estão dispostos a pagar por eles. (accessed 17 January 2023) <https://ictqcombr/pesquisa-do-ictq/816-pesquisa-os-servicos-farmacuticos-com-maior-adesao-e-o-preco-que-os-brasileiros-estao-dispostos-a-pagar-por-eles-2018>, 2018.
- Clinicarx. *Serviços de Saúde – Parar de Fumar*. (accessed 25 January 2023) <https://sauclinicarxcombr/servicos-clinicos/tratamento-parar-de-fumar>, 2023.
- Labrone EVMEP, Ahouagi AEO, Braga DG, et al. Assessment of Pharmaceutical Services for Smoking Cessation: an effectiveness-implementation hybrid study. *Int J Environ Res Public Health* 2022;19. <https://doi.org/10.3390/ijerph191912305>.
- Clinicarx. *Serviços de Saúde – Controle do Peso*. (accessed 25 January 2023) <https://saudeclinicarxcombr/servicos-de-saude/>, 2023.
- Barros D, Silva D, Leite S. Clinical pharmaceutical services in Brazil's primary health care. *Trab Educ Saude* 2020;18(1). <https://doi.org/10.1590/s2175-97902022e19029>.
- Clinicarx. E-book: Precificação de serviços farmacêuticos. (accessed 25 January 2023) <https://materiaisclinicarxcombr/precificacao>, 2021.