PHARMACEUTICAL CARE WORLDWIDE

Pharmaceutical Care in Community Pharmacies: Practice and Research in Brazil

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razil has a population of about 170 Dmillion people, distributed in 26 states and 1 federal district.¹ Medication can be accessed through 3 types of pharmacies: private community pharmacies (pharmacies), pharmacies of the government primary-care network, and pharmacies of the governmental program Farmácia Popular do Brasil (People's Pharmacy of Brazil). The ownership and opening of private pharmacies follow federal laws and regulations, while pharmacy services and taxes on products may vary from state to state. Any citizen may be the owner of a pharmacy as long as a legally responsible pharmacist is contracted to be in the pharmacy during all operation hours. State pharmacy councils inspect this activity. There are no rules concerning the location of the pharmacy in relation to population density or the number of already existing pharmacies.²

Recently, the number of private pharmacies has grown slightly. In 2002, there were 54 789 pharmacies; this grew to 62 454 in 2004, with 22.1% owned by pharmacists.³ The southern region has the largest proportion of pharmacist owners (34.7%); the state of Paraná has the highest rate of pharmacist owners in **OBJECTIVE:** To discuss the provision of pharmaceutical services and pharmaceutical care in Brazil.

FINDINGS: Professional training and pharmaceutical services are undergoing a period of restructuring in Brazil, including the adoption of incentives for pharmaceutical care. Some important national measures include the rational use of medications, evidence-based medicine, and pharmacovigilance. A new and more generalist pharmacy curriculum is being implemented and tailored for the Brazilian Public Health System; recently, the Brazilian government has provided resources for pharmaceutical care research.

DISCUSSION: A proposal for national consensus in Brazilian pharmaceutical care was published in 2002. The components of this proposal include drug dispensing, counseling, health education, symptoms advice, and pharmacotherapy follow-up. Pharmacy practice is currently focused on drug dispensing and logistic aspects of drug distribution. Professionals are satisfied with patients' confidence in being counseled by pharmacists and reveal interest in extending their role in patient care. Most pharmacy customers were originally unaware of the term "pharmaceutical care"; however, following an explanation, they showed an interest in this service. Furthermore, over 50% stated that they would pay for this service. Despite these initiatives, numerous barriers to the development of pharmaceutical care remain, the main ones being the commercial objective of most pharmacies that sell medications and the insufficient training of professionals. Although government-owned pharmacies also distribute medications, they do not meet all of the needs of the population and lack sufficient pharmacies.

CONCLUSIONS: Several actions are required to stimulate the implementation and development of pharmaceutical care and services in Brazil. Recent research incentives in pharmaceutical care and reorientation of pharmacy education will contribute to this development.

KEY WORDS: Brazil, community pharmacy services, pharmaceutical care.

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the country (41.6%). On the other hand, the northern region has the smallest proportion of pharmacist owners (7.4%) and the state of Piauí (northeast region) has the smallest rate of pharmacist owners in the country (3.1%). The Federal Council of Pharmacy (Conselho Federal de Farmácia) classifies these establishments into 3 categories: pharmacies focused on selling industrialized medications (57 241), compounding pharmacies (4322), and homeopathic pharmacies (891). None of the pharmacies receive government incentives, and they generate revenue by marking up the product prices. The government controls the medication

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prices in the country and establishes the maximum prices at which pharmacies can sell their merchandise. The gross profit margin of a pharmacy is around 27%.⁴

There is about one pharmacy for every 2700 persons, although pharmacies are more concentrated in the more developed regions. Private pharmacies have a global turnover of \$4.5 billion (US\$) annually; 4.4% of these pharmacies are chain pharmacies and are responsible for 26% of total sales. The southeastern region is responsible for the largest sales in Brazilian pharmacies, and 19% of all national pharmacy sales⁵ are made in the state of São Paulo.The distribution of this revenue in relation to the population and the number of pharmacies and pharmacists is shown in Table 1.^{3,5}

In addition to the private pharmacies that sell medications, a government network of primary healthcare settings includes pharmacies that distribute free medication to people according to a formulary.⁶ As a complement to these services, a new network of pharmacies named Programa Farmácia Popular do Brasil that sells medications (from a list of about 100 drugs) with subsidized prices was created and supported by the government in 2004. In these pharmacies, the drugs are about 30–90% cheaper than in private pharmacies. To date, there are approximately 270 such pharmacies in medium-sized and large cities. Thus, some drugs are distributed for free to the population and some are sold with subsidized prices, but the vast majority are sold through private pharmacies.⁷

The total number of pharmacists in Brazil is 104 098, which represents approximately 1 pharmacist for every 1700 inhabitants.⁸ No data on where these pharmacists work (private pharmacies vs primary-care network) are available. Studies carried out in the southern region found an average of 1.4 pharmacists and 3.5 counter salespeople per private pharmacy.^{9,10} These figures do not reflect the national average. A typical pharmacy in Brazil is open about 68 hours per week.

Currently, a new and more generalist pharmacy curriculum is being implemented in Brazil. Its approach is tailored for the Brazilian Public Health System. Previous reg-

Table 1. Percentage of the Population, Distribution of Community Pharmacies and Pharmacists, and Revenues by Regions in Brazil ^{3,5}						
Region	% Population ^a	% Community Pharmacies	% Pharmacists	% Revenue ^b		
North	7.6	4.8	3.6	<1		
Northeast	28.1	18.5	14.9	11		
Southeast	42.6	50.7	49.6	62		
South	14.8	18.5	23.5	20		
Central-West ^c	6.8	7.5	8.3	7		
^a Total population according to demographic census in 2000 is 169 799 170 inhabi- tants. ^b Approximate proportion of total income in country.						

ulations were based on educating students about pharmaceutics and professional specialties, such as industrial pharmacist, to carry out activities in the laboratory or in the pharmaceutical or food industry.¹¹ The new guidelines take into consideration the area of pharmaceutical care, in line with the Brazilian Health System's more humanistic and more direct approach to patient care.

The profession of technicians is not regulated in Brazil and there are no specific laws concerning their training. In general, those working as technicians have little or no specific training for their position and usually act as counter salespeople.¹²

The Brazilian Health System

The process of reformulating the Brazilian Health System began in 1990 and was called the Unified National Health System (SUS; Sistema Único de Saúde), which states that every citizen, regardless of social and economic condition, has the right to access to all levels of health care, including medications.¹³⁻¹⁵ Medications are provided by the public system on the basis of a national or municipal list of essential drugs. This system brings together a set of health actions and services provided by public federal, state, and municipal entities and institutions. These are complemented by the private sector, including private hospitals and clinics. In fact, the majority (about 80%) of the population depends completely on public health services, since few can pay directly for health services or health insurance companies. The same occurs with medications.

National epidemiologic data from 2003 show that cardiovascular diseases are the primary cause of death in Brazil (31.5%), followed by respiratory conditions (11.2%) and cancer (15.5%). Infections and parasitic diseases together represent 5.3% of the total cause of death. Cardiovascular and endocrine/metabolic diseases were responsible for more than 1.5 million of hospital admissions in 2006.¹⁶

The prevalence of diabetes mellitus in the population is 7.6%; hypertension prevalence is between 22.3% and

43.9%.^{17,18} Due to the importance of these 2 conditions, the Brazilian government has created a specific primary care program and medication distribution called Hiperdia. There are more than 4 million patients registered in this national program.

The SUS funding comes from the budgets of 3 government areas. In 2000, these expenditures were estimated to be around 3% of the gross national product. The federal government contributed 60% of this amount, the states 18.5%, and the municipalities 21.5% (Table 2).¹⁵ In 1999, total federal drug expense was 6.8% of the total health expenditure; in 2000, it was 5.8%.¹⁹ The forecast for 2006 is for 11.2% of the

total federal health expenditure to be spent on drugs, with 65% of the drug expenditure being spent on 300 000 Brazilians who have diseases that require very costly treatments. The size of these federal drug expenditures represents approximately 10% of the national pharmaceutical market, providing the government with a strong motivation for regulating the market of certain classes of drugs such as antiretrovirals.20 Antiretroviral drugs are offered without charge through federal funding for 135 000 HIV/AIDS patients. With this social policy, Brazil has reduced the mortality rate among AIDS victims by around 50% and hospitalizations by approximately 80%. Table 2 presents the type of funding and the manner in which drugs are purchased by the government. These medications are made available free of charge to the users either by means of a network of pharmacies integrated into health clinics or regional pharmacies or directly by the teams of the Family Health Program.

Almost 50% of the total annual health expenditures go to private Brazilian hospitals and clinics. This expenditure is supported by the federal government and is complemented by health insurance companies and those who pay directly for health services. Approximately 40 million Brazilians (about 20% of the total population) have access to private health insurance. Private health insurance is paid in 3 different ways: through total payment by employers, partial payment by employers, or direct payment by employees. In contrast to other countries, private health insurance does not fund drugs, but offers these products at reduced prices through a network of associated private pharmacies.21

Drug Sales and Consumption

In October 2003, the Brazilian government created a regulatory mechanism for adjusting retail drug prices every 12 months. The adjustments are limited to a price limit determined by the sector's own index and other sectors. Wholesalers are responsible for supplying 98% of drugs to Brazilian private pharmacies. According to the Brazilian Association of Wholesale Pharmacy, 88% of industry sales are from wholesalers to the private pharmacy.

The per capita consumption of medicines is approximately US \$51 per year. It is estimated that 40% of the Brazilian population cannot purchase drugs at pharmacies; consequently, their only alternative is obtaining the products from the SUS.^{20,22} Despite expenditures that are growing every year, the number of units sold by the industry has remained relatively constant.²³ The profile of the consumer who uses the pharmacies in Brazil is quite heterogeneous. Expenses for drugs represent 75% of a family's monthly health budget for families earning up to US \$178 per month. In families with a monthly income of between US \$890 and US \$1340, these expenses correspond to 40%.12

Drugs are classified as prescription drugs and over-thecounter drugs by the National Health Surveillance Agency (ANVISA).24 Supermarkets cannot sell medicines, but the control of prescription drug sales is considered insufficient. Except for narcotic and psychotropic drugs, it is very easy to obtain prescription drugs in a Brazilian pharmacy without presenting a medical prescription. The sale of prescription and nonprescription drugs by Internet or mail is very low in Brazil, and narcotic and psychotropic drug sales are not allowed through the Internet.

There are few data available regarding morbidity and mortality associated with pharmacotherapy in Brazil. In a pilot study carried out in the emergency department of a hospital in Porto Alegre that involved 48 patients, 18 (37.5%) presented a drug-related problem identified as be-

Programs	Funding		Acquisition			Resources (\$US millions)	
	Federal	State	Municipal	Federal	State	Municipal	Year of 2002
Ambulatory chemotherapy	х	х	х		х	х	233.7
Antiretroviral	х			х			101.9
Diabetes (insulin)	х			х			18.1
Local diseases	х			х			3.2
Exceptional drugs	х				х	х	96.7
Medications for FHP	х			х			14.7
Hanseniasis (leprosy)	х	х		х			0.64
Blood derivatives	х			х			36.7
Hypertension/diabetes	х			х			9.8
Incentive to PC	х	х	х	х	х	х	34.0
Women's health	х			х			4.9
Mental health	х	х			х	х	4.3
Tuberculosis	х			х			2.4
TOTAL							561.0

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amily Health Program; PC = Primary Care.

ing the cause of the visit. The majority (66.6%) were related to ineffective therapy.²⁵ In hypertensive patients, data showed that two-thirds of patients are aware of their status and more than 50% are on antihypertensive medication, but only one-third had their blood pressure under control.²⁶ Compliance with pharmacologic treatment is also a problem in Brazil and patients who usually miss scheduled appointments present lower medication compliance and lower blood pressure control.²⁷ Based on data from the National Network of Poison Control Centers, pharmaceutical products are the most important cause of toxicity in Brazil. This primarily affects children under 5 years of age in accidents caused by inappropriate use of medicines.²⁸

Pharmacy Services Provided

Community pharmacies are authorized to provide services through federal, state, or municipal health regulations. Monitoring of these services is the responsibility of the health inspection organizations in the cities. The Federal Council of Pharmacy serves as the inspection and regulatory agent of good pharmacy practices in the country.²⁹

The main service provided by these pharmacies is drug dispensing, which includes counseling of patients.³⁰ On dispensing, pharmacists can substitute a corresponding generic drug for the medication prescribed.^{31,32} However, the quality of the dispensing service may be considered substandard because pharmacists are frequently absent from the pharmacy and the level of training given to technicians is low.

Some pharmacies collaborate in a different manner with the national pharmacovigilance system by carrying out active notification of adverse reactions. These pharmacies are called notifiers and are registered by ANVISA after training provided to the pharmacists. Brazil has been a full member of the World Health Organization International Drug Monitoring Program since 2001.³³

There are no national statistics on the proportion of pharmacies that provide cognitive services. In surveys carried out in the south and north of Brazil, various activities were found (Table 3).^{9,10,34} These services include the mon-

itoring of clinical parameters (eg, blood pressure, glucose levels, cholesterol, body temperature), the administration of medications (eg, parenteral, inhalation), simple bandaging, and ear piercing. With the exception of the administration of injectables, the remaining services lack clear national regulation. Some states, however, have specific legislation on blood pressure monitoring, inhalation, and simple bandaging in pharmacies.³⁵ Recently, Brazilian pharmacies were legally authorized to carry out repackaging of pharmaceuticals.³⁶ Studies have systematically pointed to failures in the provision of services by public and private community pharmacies, as well as in the training of the pharmacists in relation to clinical activities.

A study conducted in the state of Santa Catarina noted that pharmacies did not have adequate facilities to provide pharmacist care. The standard of adequate facilities used in this study followed the good practice principles of the Federal Council of Pharmacy. Only 11.4% had a private consultation area and less than 20% had good quality tertiary drug information sources.¹⁰ Other findings suggest that the knowledge and attitudes that pharmacists have on regulatory aspects of how they should operate, dispensing norms and generic medication, and use of drugs in pregnant women are unsatisfactory.^{37,38}

One study carried out in public health pharmacies in Brasília found that the average dispensing time was 53.9 seconds (95% CI 40 to 96); 56.2% of the patients could not read their prescription and only 18.7% showed that they had a good understanding of the prescription.³⁹ Some of the causes of these situations were patient lack of knowledge in the management of common illness (uncomplicated rhinosinusitis, cough, respiratory infection); pharmacy staff objectives that were essentially commercial, including the payment of commissions for salespeople; and a lack of authority from pharmacists with regard to salespeople.^{10,40-42} These practices occur despite the norms of Good Dispensing Practices, as edited by the Federal Council of Pharmacy.²⁹

Teaching and Research

Pharmacy education in Brazil has undergone significant changes in recent years due to the strong regulation of a minimum curriculum and the deregulation of universities.^{11,43} This has produced an indiscriminate and unnecessary proliferation in new pharmacy schools. In 1998 there were 90 pharmacy schools in Brazil; in 2003 there were 160; and in 2006 there were more than 290. These schools will probably be responsible for 10 000 new pharmacists arriving in the work force in 2006. The change in legislation concerning pharmacy courses has also contributed to this growth.

Table 3. Sen Brazilia	vices Provided by an Community Pha	Pharmacists i armacies	n
Type of Service	de França ¹⁰ (%) (n = 258)	Correr ⁹ (%) (n = 35)	Gomes ³⁴ (%) (n = 114)
Drug dispensing	98.2	100	100
Blood pressure measurement	88.2	84.0	43.8
Capillary glucose test	9.2	48.0	2.6
Cholesterol/triglyceride test	1.8	n.e.	1.7
Nebulization	7.5	8.0	0
Administration of injectables	85.1	88.0	19.3
Compounding	8.8	16.0	0

Furthermore, the average time required for completing a Bachelor's degree in the Pharmaceutical Sciences course is being reduced from an average of 10 to 8 semesters.

The postgraduate degree in pharmacy began in 1970 at the School of Pharmacy of the Federal University of Rio Grande do Sul, which offered a Master's degree in drug analysis, synthesis, and control. Currently, there are 29 postgraduate education programs in Brazil: 16 Master's/ Doctorate programs, 10 Master's programs, and 3 professional postgraduate courses. Most of the courses cover pharmaceutical sciences, particularly pharmaceutical industry; 5 are exclusively for clinical or toxicological analyses. Only 4 programs have some focus on pharmaceutical care. The strong concentration of courses on technological aspects limits the number of Master's and doctoral theses in the area of pharmaceutical care. In the CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) database (capes.gov.br), 2 doctoral and 20 Master's degree theses were written between 1997 and 2003 on a topic related to pharmaceutical practice. At the same time, 30 Master's degree and 3 doctoral degree theses were published that analyzed the quality of pharmaceutical services.

Conversely, several specialization courses (lato sensu) were begun in an attempt to meet the national demand in pharmacy practice. The courses are provided mainly by the universities, the objective being to train students to become experts in different pharmacy areas. Three of these specifically concentrate on pharmaceutical care, 6 on pharmacology, 1 on dispensing pharmacy, 6 on clinical and hospital pharmacy, and 2 on pharmaceutical services.

Recently, the Brazilian government has provided resources for pharmaceutical care research. The projects approved are generally focused on the need to meet the demands of the Brazilian Health System by assisting in the rational use of medications. These projects are regulated by the National Council for Research and Scientific and Technological Development and provide the opportunity to integrate the Brazilian universities with the pharmaceutical professionals who work in the area of pharmacy practice. It seems that the creation of partnerships among researchers through networks is essential for stimulating the harmonious development of pharmaceutical care in a country of such huge dimensions as Brazil. This plan was developed by the Department of Pharmaceutical Services of the Health Ministry but has not yet been implemented.

Pharmaceutical Care in Brazil

A proposal of national consensus in pharmaceutical care has been published since 2002 and it has been confirmed by the national policy of pharmaceutical services of the Department of Health. It defines pharmaceutical care as "a model of pharmacist practice developed in the context of pharmaceutical services and covers attitudes, ethical values, behaviors, skills, commitments, and co-responsibilities in the prevention of disease, promotion and recuperation of health in an integrated way with the health team." The consensus proposes the "direct interaction of the pharmacist with the user with the purpose of reaching a rational pharmacotherapy and obtaining defined and measurable outcomes that improve the quality of life. This interaction should also involve the concepts of its subjects, while respecting their bio-psycho-social differences under the perspective of integrating health actions."^{44,45}

The components of this practice include drug dispensing, counseling, health education, advising on the use of nonprescription pharmaceuticals, and pharmacotherapy monitoring. To date, Brazil does not have national quality standards for providing cognitive services, and there are no systems of certification or payment of pharmacists for the practice of pharmaceutical care. These services, when given, are supported by the pharmacy's profit margin.

Some studies have reported on and analyzed pharmacists' services, focusing on the public sector, primary health clinics, or hospitals.46,47 Few data are available regarding the perceptions of the public concerning pharmacies and pharmaceutical care and few studies in Brazil have evaluated the impact of pharmaceutical care on clinical, economic, or humanistic outcomes in community pharmacies. A randomized, controlled, double-blind trial was carried out in the Cardiology Service of Hospital de Clínicas in Porto Alegre with 71 patients with uncontrolled hypertension who received pharmaceutical care, adapting the Dáder method, for 6 months.⁴⁶ The results did not show a statistically significant difference in the improvement of the systolic and diastolic levels of blood pressure but indicated that pharmaceutical care was responsible for a trend towards a better control of blood pressure.

In a prospective study conducted in a University Pharmacy in Belo Horizonte, Nascimento⁴⁸ observed clinical outcomes of 97 patients receiving pharmacotherapy monitoring for a period of 11.6 months (SD 7.1). The most common diseases were hypertension, dyslipidemia, and diabetes. There were 380 drug-related problems (DRP) identified, of which 53.2% were related to drug effectiveness. The resolution index of the service, obtained by dividing the number of DRPs with a positive outcome by the total number of DRPs identified in patients, was 66.8% (SD 35.4). Other important studies evaluating intermediate outcomes in a single group (before/after) with a small number of participants have not provided consistent evidence about the practice models for the country or systems of payment for services.^{49,50}

The main demand of customers of the private pharmacies is for medication dispensing, with particular interest in price. In the public sector, the demand is mainly focused on medication distribution. In recent years, with the in-

creasing presence of the pharmacist in private pharmacies, the demand for counseling (mainly for nonprescription drugs) has grown. In a study carried out in Belo Horizonte of 241 interviewed pharmacy customers, 88.1% had never heard of the term "pharmaceutical care." However, after the term was clarified, 67.2% showed interest in the service. Regarding their willingness to pay for such a service, 39.9% said that they would pay depending on the price, and 10.1% stated that they would pay for the service.⁵¹

In the public sector, pharmacists showed dissatisfaction with the bureaucratic aspects of their jobs and with the sole focus on the logistic aspect of drug distribution. Some emergent elements were considered to contribute to changes in this system: voluntarism, professional valorization, integration in the health team, perception of the patient as the focus of the work, and necessity of complementary professional formation.⁵² In private pharmacies, the professionals were satisfied with the confidence of patients with pharmacist counseling. However, they felt that it was difficult to communicate and work with physicians.¹⁰

On the other hand, results of a study with 74 pharmacists and 28 pharmacy owners and/or managers in Curitiba city confirmed that the implementation of pharmaceutical care faces barriers that include the link of the professional with the pharmacy and the rejection of the service by pharmacy managers and owners due to the high content of daily work and lack of time to dedicate to the service. The need to stimulate the professional role was identified, mainly among students and recently graduated professionals. This may represent the first step toward the success of pharmaceutical care and acceptance by entrepreneurs as the population starts to recognize the importance of the work provided by the pharmacist.⁵³

Future Plans

A new era began with the restructuring of pharmaceutical services at the federal government level. The perspectives include an increase in investments in the area of production and development of pharmaceuticals and an increase in the population's access to drugs, as well as the increase in the number of pharmacists in the primary care network. On the other hand, a new edition to the National List of Essential Drugs was published and tries to serve as an instrument to guide the investment policies in research, development, and production of pharmaceuticals, as well as to provide support for the rational use of drugs.

Courses for training mentors in teaching the rational use of medication are being provided. Prescribers, clinical pharmacology professors, and pharmacists who participate together in such courses may strengthen the use of evidencebased medicine. These courses are funded by the federal government and reach numerous hospitals, ambulatory services, and university professors. Thus, a group of change agents who adopt the evidence-based medicine in their professional practice and teaching activities are being trained.

The curricular reform, when concluded, could result in a professional who is more focused on pharmaceutical care. However, for this to occur, it will be necessary to put mechanisms in place for controlling the quality. This reform is currently in its initial phases and the universities are now implementing their new curricula. Finally, some positive action has been realized by the Health Ministry to develop pharmaceutical care in Brazil, including recent events such as the first International Seminar for Implementation of Pharmaceutical Care in the Public Health System and the first International Symposium of Clinical Pharmacy that occurred in 2006.

Considering the epidemiologic data in which the greatest morbidity and mortality are related to chronic illnesses and the main cause of poisonings is inadequate medicine use, the Brazilian scene is favorable to the growth and implantation of pharmaceutical care. Pharmaceutical care may be an opportunity to improve medication adherence and therapeutic outcomes, especially in patients with chronic illness and those using nonprescription drugs. Moreover, a change in practice philosophy can improve the quality of pharmacy practice in Brazil and the role of private and public pharmacies in the Brazilian National Health System.

Pharmaceutical care in Brazil is a challenge for the pharmacy profession but should be viewed as an opportunity for pharmacists to have a more important role in the healthcare team and Brazilian Public Health System. The future of pharmacy in Brazil may be improved by the consolidation of SUS principles and national health policies. It is possible to affirm that the components of pharmaceutical care consensus in Brazil address this question. Many see the key points of the pharmacy agenda in Brazil today as: the necessity of developing research groups, with governmental support, focused on the development and validation of adequate practice models for the Brazilian health system and pharmacies; the update of national legislation in relation to the role of private pharmacies in the health system and provision of cognitive services; and the consolidation of new curricula for pharmacy graduates who are more focused on patient and pharmaceutical care. An approach to these 3 points will contribute to the development of pharmaceutical care and to rational medication use in Brazil.

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References

- Brazilian Institute of Geographic and Statistics. Brazil in synthesis. www.ibge.gov.br/Brazil_em_sintese/default.htm (accessed 2005 Oct 19).
- Brasil. Lei nº 5.991, de 17 de dezembro de 1973. Dispõe sobre o controle sanitário do comércio de drogas, medicamentos, insumos farmacêuticos e correlatos, e dá outras providencias. Diário Oficial da União, Dec 21, 1973, 13049.
- Conselho Federal de Farmácia. Relatório da comissão de fiscalização. Totalização dos dados do Brasil/2004. Brasília: CFF, 2005, 10 p.
- 4. Brasil, Câmara de Regulação do Mercado de Medicamentos. Resolução nº2 de 14 de março de 2005. Estabelece o preço máximo de venda ao consumidor de medicamentos industrializados. Diário Oficial da União, Mar 02, 2005.
- Organização Pan-Americana da Saúde, Organização Mundial da Saúde, Ministério da Saúde. Avaliação da Assistência Farmacêutica no Brasil: Estrutura, Processo e Resultados. Brasília: OPAS/Ministério da Saúde, 2005, 259 p.
- Brasil. Ministério da Saúde. Portaria nº. 1.587 de 3 de setembro de 2002. Aprova a revisão da Relação Nacional de Medicamentos Essenciais. Diário Oficial da União, Sept 05, 2002.
- Brasil, Ministério da Saúde. Farmácia Popular do Brasil. http://dtr2002.saude.gov.br/farmaciapopular (accessed 2005 Dec 15).
- Conselho Federal de Farmácia. Estatísticas Sobre Farmacêuticos—Outubro de 2006. www.cff.org.br/cff/mostraPagina.asp?codServico = 14 (accessed 2007 May 10).
- Correr CJ, Rossignoli PS, Souza RAP, Pontarolo R. Profile of pharmacists and structure and process indicators of Curitiba-PR (Brazil) pharmacies. Seguim Farmacoter 2004;2:37-45.
- de França F^o JB. Pharmacist's profile and structure and process indicators in community pharmacies in Santa Catarina State (Monografia [Especialização em Atenção Farmacêutica]). Curitiba: Universidade Federal do Paraná, 2005.
- Brasil. Ministério da Educação. Resolução nº. CNE/CES 2, de 19 de fevereiro de 2002. Institui as Diretrizes Curriculares Nacionais do Curso de Graduação em Farmácia. Diário Oficial da União, Mar 04, 2002.
- Pan-American Health Organization (PAHO). Health System Profile of Brazil. Brasília: OPAS, 2005, 115 p.
- 13. Brasil. Lei n. 8.080, de 19 de setembro 1990. Dispõe sobre as condições para a promoção, proteção e recuperação da saúde, a organização e o funcionamento dos serviços correspondentes e dá outras providências Diário Oficial da União, Sept 20, 1990.
- 14. Brasil. Lei n. 8.142, de 28 de dezembro de 1990. Dispõe sobre a participação da comunidade na gestão do Sistema Único de Saúde (SUS) e sobre as transferências intergovernamentais de recursos financeiros na área da saúde e dá outras providências. Diário Oficial da União, Dec 30, 1990.
- Brasil. Conselho Nacional de secretários de saúde. Para entender a gestão do SUS. Brasília: CONASS, 2003, 248 p.
- Ministério da Saúde. Informações de Saúde. www.datasus.gov.br (accessed 2007 Apr 04).
- Sociedade Brasileira de Diabetes. Data about diabetes mellitus in Brazil. www.diabetes.org.br/imprensa/estatisticas/index.php (accessed 2007 Apr 04).
- Neder MM, Borges AAN. Systemic hypertension in Brazil: how much have we improved our knowledge? Rev Bras Hipertens 2006;13:126-33.
- Luiza VL. Acceso a medicamentos: conceptos, polémica y indicadores. Presented at: Tercer Seminário Internacional "Acceso a medicamentos: Derecho Fundamental–Papel del Estado, Porto Alegre, Brasil, 2002.
- Marin N. Assistencia farmacêutica para gerentes municipais. Rio de Janeiro: OPAS/OMS, 2003, 373 p.
- Calegari L. Análise Setorial—a indústria farmacêutica—panorama setorial. São Paulo: A Gazeta Mercantil, 2000, 204 p.
- Brasil. Ministério Da Saúde. Política Nacional de Medicamentos. Brasília: Ministério da Saúde, 1999, 40 p.
- Agência Nacional de Vigilância Sanitária. Regulação econômica do mercado farmacêutico. www.anvisa.gov.br (accessed 2005 Oct 10).

- 24. Agência Nacional de Vigilância Sanitária. Resolução RDC nº 138, de 29 de maio de 2003. Dispõe sobre o enquadramento na categoria de venda de medicamentos. Diário Oficial da União, Jan 06, 2004.
- Dallagnol RSA, Albring DV, Castro MS, Heineck I. Drug-related problems in the emergency department of an academical hospital in southern Brazil. Pilot Study. Acta Farm Bonaerense 2004;23:540-5.
- Piccini RX, Victora CG. How well is hypertension managed in the community? A population-based survey in a Brazilian city. Cad Saude Publica 1997;13:595-600.
- Coelho EB, Moyses Neto M, Palhares R, Cardoso MC, Geleilete TJ, Nobre F. Relationship between regular attendance to ambulatory appointments and blood pressure control among hypertensive patients. Arq Bras Cardiol 2005;85:157-61.
- Bortoletto ME, Bochner R. Drug impact on human poisoning in Brazil. Cad Saude Publica 1999;15:859-69.
- Conselho Federal de Farmácia. Resolução n. 357 de 20 de abril de 2001. Aprova o regulamento técnico das Boas Práticas de Farmácia. Diário Oficial da União, Apr 21, 2001.
- 30. Agência Nacional de Vigilância Sanitária. Resolução n.173 de 08 de julho de 2003. Dispõe sobre requisitos exigidos para a dispensação de produtos de interesse à saúde em farmácias e drogarias. Diário Oficial da União, Jul 26, 2003.
- 31. Agência Nacional de Vigilância Sanitária. Resolução n°328, de 22 de julho de 1999. Dispõe sobre requisitos exigidos para dispensação de produtos de interesse à saúde em farmácias e drogarias. Diário Oficial da União, Jul 26, 1999.
- 32. Conselho Federal de Farmácia. Resolução n. 349/2000. Estabelece a competência do farmacêutico em proceder a intercambialidade ou substituição genérica de medicamentos. Diário Oficial da União, Jan 20, 2000.
- Agência Nacional de Vigilância Sanitária. Projeto Farmácias Notificadoras. www.anvisa.gov.br/farmacovigilancia/farmacias_notificadoras.htm (accessed 2005 Nov 10).
- 34. Gomes JS, Kahwage S, Queiros JB, Diogo LM, Correr CJ, Soler O. Perfil do profissional farmacêutico atuante em farmácia comercial de Belém: avaliação de indicadores para a prática da atenção farmacêutica (Monografia [Especialização em Atenção Farmacêutica]). Belém: Centro de Estudos Superiores do Pará, 2005.
- 35. Paraná. Resolução n°54 de 03 de junho de 1996. Norma técnica que regula atividades sob autorização especial em farmácias. Curitiba: Secretário de Estado de Saúde, 1996, 20 p.
- Brasil. Presidência da República. Decreto nº 5.348 de 19 de Janeiro de 2005. Diário Oficial da União, Jan 20, 2005.
- Silva LR, Vieira EM. Pharmacists' knowledge of sanitary legislation and professional regulations. Rev Saude Publica 2004;38:429-37.
- Baldon JP, Correr CJ, Melchiors AC, Rossignoli PS, Fernández-Llimós F, Pontarolo R. Community pharmacists' attitudes and knowledge on dispensing drugs to pregnant women. Pharmacy Practice 2006;4:37-42.
- Naves JO, Silver LD. Evaluation of pharmaceutical assistance in public primary care in Brasilia, Brazil. Rev Saude Publica 2005;39:223-30.
- 40. Bareta GMS. Pharmaceutical care in community pharmacies of the city of Campina Grande do Sul. Visao Academica 2003;4:105-12.
- Cadore LP, da Silva Marc C, Berti C, Peukert C, Machado AR. Pharmacy distribution of advice, symptomatic treatment and antimicrobial drugs to patients with cough. Braz J Infect Dis 1999;3:180-3.
- Volpato DE, de Souza BV, Dalla Rosa LG, Melo LH, Daudt CA, Deboni L. Use of antibiotics without medical prescription. Braz J Infect Dis 2005; 9:288-91.
- Brasil. Conselho Federal de Educação. Resolução 04/69. Ministério da Educação, 1999.
- Brasil. Conselho Nacional de Saúde. Resolução n. 338, de 06 de maio de 2004. Aprova a política nacional de assistência farmacêutica. Diário Oficial da União, May 20, 2004.
- Pan-American Health Organization (PAHO). Brazilian Consensus for Pharmaceutical Care. www.opas.org.br/medicamentos (accessed 2004 Oct 16).
- 46. de Castro MS, Fuchs FD, Santos MC, et al. Pharmaceutical care program for patients with uncontrolled hypertension. Report of a double-

blind clinical trial with ambulatory blood pressure monitoring. Am J Hypertens 2006;19:528-33.

- 47. Oliveira MA, Esher AF, Santos EM, Cosendey MA, Luiza VL, Bermudez JA. Evaluating pharmaceutical services for people living with HIV/AIDS in the city of Rio de Janeiro. Cad Saude Publica 2002;18: 1429-39.
- Nascimento YA. Quality assessment of a pharmaceutical care service in Belo Horizonte (Dissertação [Mestrado em ciências farmacêuticas]). Belo Horizonte: Universidade Federal de Minas Gerais, 2004.
- Lyra Junior D, Amaral RT, Abriata JP, Pelá IR. Satisfaction as an outcome of a pharmaceutical care program for elderly in Ribeirão Preto— São Paulo (Brazil). Seguim Farmacoter 2004;3:30-42.
- Pinheiro MMC. Pharmaceutical care to patients with type 2 diabetes (Monografia [Especialização em atenção farmacêutica]). Curitiba: Universidade Federal do Paraná, 2005.
- Pires CF, Costa MM, Angonesi D, Borges FP. Request of pharmaceutical care service in a private owned community pharmacy. Pharmacy Practice 2006;4:34-7.
- 52. Araujo ALA, Freitas O. Conceptions of the pharmaceutical professional about the pharmaceutical assistance in basic health care units: difficulties and elements for change. Braz J Pharm Sc 2006;42:137-46.
- Oliveira AB, Oyakawa CN, Miguel MD, Zanin SMW, Montrucchio DP. Obstacles of the pharmaceutical care in Brazil. Braz J Pharm Sc 2005; 41:409-13.

Atención Farmacéutica en Farmacias de Comunidad: Práctica e Investigación en Brasil

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EXTRACTO

OBJETIVO: Discutir cómo se proveen los servicios farmacéuticos y la atención farmacéutica en Brasil.

HALLAZGOS: El adiestramiento profesional y los servicios farmacéuticos están pasando por un período de reestructuración donde los cambios incluyen la adopción de incentivos por proveer atención farmacéutica. Algunas medidas nacionales importantes incluyen el uso racional de medicamentos, medicina basada en evidencia, y farmacovigilancia. Un currículo de farmacia nuevo, y más generalista, está siendo implementado y ajustado para el Sistema de Salud Pública de Brasil y, más recientemente, el gobierno de Brasil ha designado recursos para investigación en el área de atención farmacéutica.

DISCUSIÓN: En el año 2002 se publicó una propuesta para un consenso nacional en atención farmacéutica. Los componentes de la propuesta incluyó la dispensación de fármacos, consejería, educación sanitaria, consejos sobre los síntomas, y seguimiento a la farmacoterapia. La práctica de farmacia al presente se enfoca en la dispensación de fármacos y los aspectos logísticos de la distribución de medicamentos. Los profesionales están satisfechos con la confianza de los pacientes en la consejería de los farmacéuticos y demuestran interés en extender el papel de este profesional en el cuidado al paciente. La mayoría de los clientes de farmacia desconocían el término "atención farmacéutica," pero luego de escuchar una explicación demostraron interés en este servicio; más aun, sobre el 50% expresó estar dispuesto a pagar por este servicio. A pesar de estas iniciativas, existen numerosas barreras para el desarrollo de atención farmacéutica, siendo la principal el objetivo comercial de la mayoría de las farmacias que venden medicamentos y el adiestramiento insuficiente de los profesionales. Las farmacias propiedad del gobierno también distribuyen medicamentos, pero no cumplen con todas las necesidades de la población y carecen de suficientes farmacéuticos.

CONCLUSIONES: Se requieren varias acciones para estimular la implementación y desarrollo de atención y servicios farmacéuticos. Incentivos recientes en investigación en atención farmacéutica y la reorientación en la educación de farmacia contribuirán a este desarrollo.

Traducido por Giselle Rivera

Les Soins Pharmaceutiques dans les Pharmacies Communautaires: Pratiques et Travaux de Recherche au Brésil

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RÉSUMÉ

OBJECTIF: Faire le point sur les prestations de services pharmaceutiques et les soins pharmaceutiques au Brésil.

RÉSULTATS: Les formations professionnelles et les services pharmaceutiques sont dans une période de restructuration où les changements incluent un usage rationnel des médicaments, une médecine basée sur les preuves ou Evidence-Based Medecine (EBM), et une pharmacovigilance. Un nouvel et plus généraliste programme de pharmacie est en cours d'implantation et a été spécialement conçu pour le système de santé publique brésilien. De plus, le gouvernement brésilien a fourni des ressources pour des travaux de recherche en soins pharmaceutiques.

DISCUSSION: Une proposition pour un consensus national sur les soins pharmaceutiques a été publiée en 2002. Les composants de cette proposition incluent une dispense de médicaments, des consultations, une éducation sanitaire, des conseils sur les symptômes, et un suivi de pharmacothérapie. La pratique de la pharmacie est actuellement concentrée sur la dispense de médicaments et les aspects logistiques de la distribution de médicaments. Les professionnels sont satisfaits de la confiance des patients dans les orientations des pharmaciens et font état d'un intérêt dans l'extension de ce rôle professionnel dans les soins du patient. La plupart des clients en pharmacie n'étaient pas conscient du terme soins pharmaceutiques. Cependant, à la suite d'explications, ils ont montré un intérêt dans ce service. De plus, plus de 50% ont déclaré qu'ils seraient prêts à payer pour ce service. En dépit de ces initiatives, de nombreux obstacles aux développements des soins pharmaceutiques persistent, le principal étant l'objectif commercial de la plupart des pharmacies qui vendent des médicaments et la formation insuffisante des professionnels. Aussi, les pharmacies gouvernementales dispensent également des médicaments, cependant, elles ne satisfont pas aux besoins de la population et font état d'un manque de pharmaciens.

CONCLUSIONS: Plusieurs actions sont requises pour stimuler l'implantation et le développement des soins pharmaceutiques et des services. De récents encouragements dans les travaux de recherche des soins pharmaceutiques et dans la réorientation de la formation de pharmacie vont contribuer à ce développement.

Traduit par Thierry Youmbi