







## Original Research

# Analysis of the clinical practice of the pharmacist in a community pharmacy: A Cross-sectional Study from Brazil

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### Abstract

**Background:** The pharmaceutical profession has experienced renewals over time. In community pharmacies, pharmaceutical services contribute to the public health system in Brazil. The development of these tasks, in collaboration with professionals from the multidisciplinary team, demonstrates the involvement with the well-being, health and improvement of the patient's life. **Objectives:** This study aimed to identify the professional practice of pharmacists, their understandings and attitudes towards clinical practice in community pharmacies in northern Brazil. **Methods:** This is a cross-sectional descriptive study, based on a questionnaire carried out with pharmacists for seven months in the municipality of Belém, in the state of Pará. Data were expressed using descriptive statistics and the results were shown as a percentage. **Results:** 182 pharmacists participated. Females were predominant (80.2%) and the average age of participants was 34.2 years. 77.4% graduated from private institutions and 59.3% already have a specialization. 38.4% hold the position of technical director. 50.5% of respondents say that community pharmacies have a reserved place for service. The most used clinical services were pharmacotherapy review (89.5%), health education (60.9%), dispensing (34%), therapeutic monitoring (25.8%) and pharmacotherapeutic follow-up (4.9%). In the study, it was realized that community pharmacies should not be seen as a commercial place but rather as a health care facility. **Conclusions:** Therefore, these establishments must adapt at a structural and professional level, to meet an increasingly growing demand of a population in need of services offered with quality health care.

**Keywords:** Pharmaceutical care; Pharmaceutical services; Community pharmacies; Pharmaceutical

## INTRODUCTION

The pharmaceutical profession has experienced renewals over time. The professional has adopted the task of caring for people's health and promoting the consistent use of medicines.<sup>1</sup> This redefinition was imbued with the inclusion of new technologies, increased morbidity and mortality from medicines and the search for new occupations in the health systems.<sup>2</sup> In proportion that pharmacists expanded their duties, training standards and regulatory frameworks for professional practice were modified, thus being seen in Brazil.<sup>3,4</sup>

By establishing the clinical pharmacy as a responsibility of pharmacists in Brazil, the Ministry of Labor and Employment, through the Brazilian classification of occupations, admitted the clinical performance of the professional.<sup>5</sup> Law nº 13.021/2014 was an evolution for the contribution of clinical services in Brazilian pharmacies, by establishing the establishment of a service provision sector willing to provide pharmaceutical care, health support and individual and collective health guidance for the population. The Federal Pharmacy Council (FPC) of Brazil, through the resolution of FPC nº 585/2013 and 586/2013, made possible the legal support for the clinical exercise and the prescription of drug and non-medication therapies, respectively, by pharmacists.<sup>6-8</sup>

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In community pharmacies, Pharmaceutical Services (PS) contribute to the public health system in Brazil.<sup>9</sup> The development of these tasks, in collaboration with professionals from the multidisciplinary team, demonstrates the involvement with well-being, health and life improvement of the patient.<sup>1</sup> The provision of these services creates a need for skilled and qualified professionals who can perform this activity. In this way, economic and professional recognition, by the patient, as well as by the pharmacist himself, becomes indispensable, certifying that clinical services are a primordial conduct in the quality of life of patients.<sup>10</sup>

Despite immeasurable achievements, there are still obstacles to improving the pharmacist's satisfactory performance in community pharmacies, as well as adapting terms, concepts and working methods associated with the clinical activity of this professional.<sup>2</sup> Community pharmacies, due to their usefulness and geographical location, and the pharmacist,



due to their knowledge and flexibility, often denote the first chance for patients to access health care.<sup>3,10</sup> Thus, this study aimed to analyze the clinical performance of the pharmacist in community pharmacies in northern Brazil.

## METHODS

### Study design and configuration

The study aimed to analyze the clinical performance of pharmacists in community pharmacies in northern Brazil.<sup>11</sup> It was approved by the Research Ethics Committee of the Institute of Health Sciences of the Federal University of Pará, under number 4,768,577. This was a cross-sectional descriptive study carried out in the municipality of Belém, in the state of Pará, at latitude 01° 27' 21" S and longitude 48° 30' 16" W, from June to December 2021, with 182 pharmacists in charge by of the community pharmacies.

### Data collection

Pharmacists regularly enrolled in the Regional Pharmacy Council and who carry out their activities in community pharmacy, met the insertion rules and were admitted to the study over seven months. Professionals without registration and who work in manipulation and hospital were excluded. The purpose and specifics of the questionnaire were presented to each individual and written permission was obtained. A questionnaire consisting of 24 open and closed questions was used, relevant to: socio-demographic characteristics, professional performance and function, infrastructure and information on services and clinical procedures in community pharmacies. The interviewer was qualified to perform the questionnaire clearly and objectively.<sup>2</sup>

To investigate aspects related to professional performance, variables relevant to the pharmacy were examined, such as the presence of a reserved place for welcoming users and the presence of informative items, as well as aspects inherent to pharmacists: sex, color/race, marital status, education, income, function, hours worked, perception of the work environment, activities, services, pharmaceutical procedure and main problems related to identified and/ or resolved medications.<sup>2</sup>

### Statistical analysis

The data obtained were organized in a database in Microsoft Excel® software for descriptive statistics and the results were categorized and presented in percentage tables.

## RESULTS

### Sociodemographic characteristics

A total of 182 pharmacists were involved in the study and the female gender was predominant with 80.2%. The mean age was 34.2 years (range, 23-56 years). The brown color was the most frequent (56%). Professionals were single (51%). They graduated from private institutions (77.4%) and have a lato sensu specialization (59.3%). Their income is between two and three Brazilian minimum wages (46.7%) (Table 1).

Table 1. Socio-demographic characteristics. Belém - PA, 2021

Characteristics	Pharmacists (n=182)
<b>Sex</b>	
Male	19,8% (36)
Female	80,2% (146)
Age years	34,2 (23-56)
<b>Color/race</b>	
White	34,6% (63)
Black	4,9% (9)
Brown	56% (102)
Yellow	4,3% (8)
<b>Marital status</b>	
Single	51% (93)
Married	29,1% (53)
Divorced	5,4% (10)
Others	14,2% (26)
<b>Education</b>	
Private institutions	77,4% (141)
Public institutions	22,5% (41)
Graduation	35,1% (64)
Specialization	59,3% (108)
Master's degree	4,9% (9)
Doctorate degree	0,5% (1)
<b>Income</b>	
1 to 3 minimum wages	40,1% (73)
3 to 5 minimum wages	46,7% (85)
Above 5 minimum wages	13,1% (24)

### Professional activity and function

Professionals carry out their activities in community pharmacies performing the position of technical director (38.4%), for 40 hours of work per week (50%). Only 3.9% of professionals own pharmaceutical establishments. Most of them, 57.1% believe that the work environment is good. As for the structure and resources of the establishments, 50.5% of the interviewees say that community pharmacies have a reserved place and/or an office for the reception of patients. They have computers with internet connection and use the Pharmaceutical Specialization Dictionary (PSD) as a source of research on medicines (Table 2).

### Consultation, services and clinical procedures of the pharmacist

Only 48.9% of pharmacists performed consultations and 54.3% prescribed some drug or non-drug therapy. The most used clinical services were: pharmacotherapy review (89.5%), health education (60.9%); dispensing (34%), therapeutic monitoring (25.8%) and pharmacotherapeutic monitoring (4.9%). The professionals highlighted that the referral of pharmaceutical interventions to the prescribing professionals took place by formal letter (76.3%) and only 18.1% were accepted. The most



Activity/Function	Pharmacists (n=182)
<b>Occupation</b>	
Technical director	38,4% (70)
Deputy Director	36,8% (67)
Manager	24,7% (45)
<b>working hours/week</b>	
20h/week	6,5% (12)
30h/week	15,3% (28)
40h/week	50% (91)
60h/week	16,4% (30)
Over 60h/week	11,5% (21)
<b>Workplace</b>	
Great	28% (51)
Well	57% (104)
Regular	12% (22)
Bad	2,7% (5)
<b>Structure and Information in the Service</b>	
Space reserved for pharmaceutical consultation	50,5% (92)
Computer and internet access	100% (182)
Drug information	100% (182)

common drug-related problems (DRP) were: incorrect dose (40.1%), drug interaction (25.2%), illegible prescription (23%), wrong administration (11.5%). Only 54.3% of professionals say they catalog and file all information arising from their clinical activities. Patients return for a new analysis in 84.6% of services and 87.3% of professionals agree that administrative activities influence patient care and/or care (Table 3).

Activities, services and procedures	% (n=182)
<b>Clinical Activities</b>	
Query	48,9% (89)
Prescription	54,3% (102)
<b>Clinical Services</b>	
Pharmacotherapeutic follow-up	4,9% (9)
Dispensing	34% (62)
Health education	60,9% (111)
Therapeutic monitoring	25,8% (47)
Pharmacotherapy review	89,5% (163)
<b>Drug-Related Problems (DRP)</b>	
Route of administration	11,5% (21)
Dose	40,1% (73)
Drug interactions	25,2% (46)
Inconsistency in prescriptions and/or illegible prescription	23% (42)

## DISCUSSION

Community pharmacies are understood as health establishments with the provision of PS.<sup>12</sup> This movement, little by little, has transformed society's understanding of medicine as an elementary health input, and not as a simple product whose sole purpose is to generate profit.<sup>10-12</sup> The existence of the pharmacist in community pharmacies was seen as a right of the population, with the pharmacy playing the role of a health establishment with the transmission of basic principles of health care and promotion of the rational use of medicines (RUM).<sup>13</sup> But only in 2014, with the consent of Law nº 13.021, which provides for the exercise and supervision of pharmaceutical activities, is that the SF were finally considered as attributions of responsibility of the pharmacist. The development of these tasks can certify the user's right to comprehensive care advocated in Law 8080/1990, the organic Law of the Unified Health System. Borges et al.<sup>17</sup> from a public health perspective, explain that pharmacies are considerable spaces for seeking assistance and possible admission of patients into the health system, and pharmacists are essential professionals in this process.

Currently, the field of health enjoys a high female interest and, through the feminization process, there has been an increase in women in the younger age groups.<sup>10-14</sup> Pharmacists who claim to be black or brown, in our study, corresponded to 60,9%. This increase in the black portion of the population has been appreciated in practically all Brazilian states, either due to greater miscegenation or greater assimilation of people with the black or brown race/color.<sup>15-18</sup>

A considerable part of pharmacists graduated from private institutions. This is due to the financing policies of higher education promoted by the federal government and the remarkable offer of private courses in the country.<sup>16</sup> A total of 59.3% attended postgraduate studies, which shows the attention of the respondents in educating themselves to respond to the demands of the professional market, with higher remuneration and professional qualifications. The lato sensu specialization courses acquired a higher percentage, which can be justified by the immense number of courses presented and by the difficulty of proposing stricto sensu professionalizing courses. In addition, the search for this lato sensu postgraduate option is due to the program content of these courses being focused on professional performance.<sup>16,17</sup> In this sense, some defense studies in Brazil have advanced in the number of studies in higher education institutions and consequently improved the population's level of schooling in recent decades, but it still needs to overcome quality education.<sup>5,9,12</sup>

Regarding salaries, pharmacists are concentrated in the range of R\$ 1,100.00 to R\$ 5,500.00. This is justified due to the current panorama of the pharmaceutical labor market in Brazil. With the numerous undergraduate courses authorized to operate, the demand for professionals becomes greater than the demand.<sup>15-17</sup> According to Carvalho et al.<sup>18</sup> one of the aspects that can explain the low remuneration is the current panorama of the pharmaceutical labor market in Brazil. The supply of pharmacists is great than the demand, due to the large number



of Pharmacy undergraduate courses with authorization to operate (492 courses). We highlight that 45.7% of them are concentrated in the Southeast Region.

The technical commitment is a responsibility exercised by pharmaceutical institutions before the Regional Council of Pharmacy of the jurisdiction and the Brazilian sanitary inspection companies. The pharmaceutical technical director is the main person responsible for the operation of the company or establishment, having the duty to control and manage all technical-scientific activities. In the questionnaire, 75.2% of professional's work as directors, technicians in charge and/or substitutes. It was also observed that 24.7% are managers. In Brazil, it is customary for professionals in the pharmaceutical industry to handle various functions within community pharmacies. Such perception, for the most part, leads him to induce a new professional highlight, performing a benefit for the profession and generating benefits for the pharmacy due to the expertise gained over time.<sup>11-15</sup>

Most professionals carry out their activities for 40 hours per week. The Federal Senate Bill 513/2015 defends that the workload of pharmacists should be reduced to 30 hours a week without loss of salary, which favors professionals. The argument for reducing the working day is due to the physical or psychological stress that leads to the exercise of certain professions. Among the workers who show the most fatigue are health professionals who, on a daily basis, are responsible for the life and well-being of the population.<sup>18</sup> Similar results were found in other studies that identified this same trend in Brazilian regions.<sup>4-6</sup>

The largest number of professionals (57%) assumed that the environment in which they operate is considered good. However, only 50% reported that they have an office and/or space reserved for care. However, 100% of the professionals declared that they had access to information, such as the internet and PSD. It is believed that the vulnerable infrastructure and the scarcity of material resources, in addition to hampering the evolution and quality of actions and/or services performed by pharmacists, produce dissatisfaction in professionals, limiting the ability to expand the range of actions from the perspective of reorganization of health care practices and services.<sup>19</sup>

It becomes a challenge, for the performance of the pharmacist in direct care to the patient, family and community, to contain morbidity and mortality related to the drug. Numerous countries in Europe, Oceania and the Americas have positively instigated the clinical performance of the pharmacist as a method for achieving the best results with treatments and other health technologies. The study was able to observe that 48.9% of pharmacists carry out consultations within community pharmacies and 54.3% carry out pharmaceutical prescriptions. In this sense, studies show that an advance in Brazil in recent years about the implementation of procedures that favor the clinical activities of the pharmacist.<sup>13,16,17</sup>

Among the clinical services, dispensing, health education, therapeutic monitoring and pharmacotherapy review were the only ones performed by a pharmacist. It was observed in studies that the performance of these services, with the

insertion of offices and the prescription of drugs and/or non-pharmacological therapies, more than 60% of the patients had improvements in adherence to the treatment; 62% had new relevant laboratory tests and 37% had changes made in their therapy.<sup>16-19</sup> This confirms that, far from wanting to replace the medical consultation, the pharmacist works seeking the development of the RUM process and the health care of patients. generally speaking, with the patient being better assisted by the entire health team.<sup>20</sup>

The activities performed by pharmacists with the most expressive frequency rates are dispensing, control and registration of medicines, training of assistants and management. These results demonstrate the linkage of pharmaceutical activities to administrative areas and not to technical, professional or clinical areas.<sup>11,12,15</sup> Dispensing continues to be the pharmacist's main attribution.<sup>12-15</sup> In a survey that analyzed the activities of American pharmacists, he found that 16% of the pharmacist's time was devoted to management activities, to the detriment of the clinical approach to patients.<sup>16,17</sup>

DRPs are reasons that embitter patient safety, expanding the frequency of hospitalizations, urgent care, morbidity and mortality.<sup>21</sup> In our study, incorrect dose, drug interaction, illegible prescription and wrong administration were responsible for 99.8% of DRP, being similar to other studies. The clinical pharmacist should inform the prescriber about the risks to the patient composed by the current pharmacotherapy, as this professional acts in the prevention and reduction of medication errors, adverse reactions, drug interactions and incompatibilities, in addition, he acts in the promotion of correct use. and rational use of medications, thus favoring increased safety and quality of patient care.<sup>12-14</sup>

Despite the advances described in the exercise of financial practice, some limitations were declared, since this research was carried out by the spontaneous adhesion of professionals, which can characterize a weakness and a bias in relation to the sample. In addition, this study was not disseminated to other areas of the pharmaceutical profession such as compounding, hospital and outpatient pharmacy. However, the sample size and the scope of the research are the main arguments to consider.

## CONCLUSION

The data provide a better understanding of the pharmacist's clinical practice in community pharmacies, since numerous professional and technical characteristics were described concerning health establishments. Therefore, these organizations must adapt at a structural and professional level, to meet an increasingly growing demand of a population in need of services offered with quality health care. Thus, these results can help us to carry out measures to encourage pharmaceutical services, professionals and service users in Brazil.

## DECLARATION OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest to



disclose.

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## AUTHOR ROLES

The study was conceptualized by LWPS, MFRS and MPMS. CMO contributed to methodology, investigation, data curation, formal analysis of quantitative and qualitative data, validation, visualization, writing of the original draft, review and editing.

CAS contributed to methodology, investigation, formal analysis of qualitative data, visualization, writing of the original draft, review and editing. RBCM, LWPS, MPMS and CMO contributed to the validation, visualization, revision and editing of the manuscript. LWPS contributed, methodology, supervision, validation, visualization, review and editing.

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