

Pharmacists' Educational Training and Professional Activities at the Municipal Level of the Brazilian National Health System

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Brazilian pharmacists' education and training aims to prepare them for the various activities they will undertake during professional practice, especially in the national health system (SUS). By using an exploratory transversal study based on a validated questionnaire, we have characterized the educational and training background of pharmacists working in SUS municipal units in Ribeirão Preto, State of São Paulo (SP), Brazil, and the frequency with which these professionals carry out several activities. Pharmacists working in these municipal outpatient units (N=44) graduated between 1981 and 2014 (56.8% of them graduated from public state or federal institutions), are predominantly female (84%), and are aged 25–57 years; 34% of these pharmacists have a “Generalist” degree, and 90.9% attended postgraduate programs, mostly specialization (75%). All the pharmacists pointed out the need for continuing education. The frequency with which they carry out activities varies, but those involving direct contact with patients predominate. Consultations, therapeutic follow-up, case discussions, and health promotion activities take place only occasionally. We concluded that pharmacists who work in the municipality of Ribeirão Preto, SP, are very much involved with dispensing, but not with health education or pharmacotherapeutic follow-up, so investing in education and training in these areas is necessary.

Keywords: Pharmacist. Professional education. Postgraduate training. Public health.

INTRODUCTION

Pharmacy undergraduate and postgraduate education and training programs in Brazil have changed in the past years. To meet the requirements of the contemporary labor market, higher education institutions (HEIs) have introduced modifications to the curriculum of pharmacy undergraduate and postgraduate programs. Many of the curricular changes have been made to pharmacy education and training to provide the national health system (SUS,

abbreviation in Portuguese for Unified Health System) with pharmacists presenting a suitable professional profile.

Since its implementation in the beginning of 1832, pharmacy education has undergone numerous changes (Leite *et al.*, 2008; Barbério, 2005; Estefan, 1986) so that professionals are trained to meet the demands of the society. Resolution CNE/CES No. 2 issued in 2002 (CNE, abbreviation in Portuguese for National Education Council; CES, abbreviation in Portuguese for State Education Council) established the National Curricular Guidelines (DCN, abbreviation in Portuguese) for Pharmacy Undergraduate Programs. The DCN defined that the holder of a Degree in Pharmacy is a professional

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pharmacist with “generalist, humanistic, critical, and reflective training that is ready to act with scientific and intellectual rigor at all levels of healthcare” (Brasil, 2002).

The 1980s were an important period for the pharmacy profession: during this decade, several discussions about pharmacy education and training as well as pharmacists’ professional activities took place (Souza, Barros, 2003). Since the 1980s, the presence of pharmacists working in public health services has increased, which has helped to keep up with changes in national healthcare models, especially the implementation of SUS (Araújo, Freitas, 2006).

Regarding the activities carried out by pharmacists working in SUS, in 2002 the Ministry of Health implemented a set of actions known as Pharmaceutical Care in Basic Healthcare (ABS, abbreviation in Portuguese). This policy ensured that Pharmaceutical Care was inserted in the public health system (Mestriner, 2003) “to improve the access of SUS users to basic medications and to promote the rational use of prescription drugs” (Brasil, 2001).

Given the range of possibilities that future pharmacists can explore (Cruz, Oliveira e Silva, 2011), Resolution No. 6 issued on 19 October 2017 implemented a new version of the DCN (Brasil, 2017). This new version requires that pharmacists receive broader education that is mostly concerned with SUS, with a focus on the development of clinical practices geared toward patient care.

In this sense, training for Pharmaceutical Care requires that pharmacists master professional skills that will help them (i) to establish a therapeutic relationship with patients; (ii) to evaluate patients’ status, including pharmacosurveillance; and (iii) to plan healthcare delivery to users as well as their pharmacotherapeutic monitoring (Marriott *et al.*, 2008; Martín-Calero *et al.*, 2004).

Nevertheless, over the last decades, the political and educational transformations in the area of Health have not contemplated the importance of training in the area of Pharmaceutical Care satisfactorily. Therefore, investing in the education of pharmacists working with patient-centered Pharmaceutical Care is necessary (Dewulf *et al.*, 2009).

To ensure the delivery of integral healthcare, public policies that demand training in Pharmaceutical Care have transformed pharmacy practice (Barros Neto, Borges,

2019). However, some studies have pointed out the lack of or the presence of only a small percentage of pharmacists performing clinical practice (Teixeira, Teles, Moreira, 2017; Araújo *et al.*, 2017). Since the creation of SUS and the introduction of a National Policy for Medications, Pharmaceutical Care has been firmly constructed in the area of supply and logistics rather than in the context of social care practices and clinical Pharmaceutical Care involving direct contact between pharmacists and health system users (Bermudez *et al.*, 2018).

When it comes to the undergraduate education of pharmacists that will work in SUS, some authors have pointed out (i) deficiencies and little innovation in strategies that bring pharmacy education and health services together and (ii) the need to restructure HEIs and higher education programs for more effective participation of pharmacists in Pharmaceutical Care (Nicoletti, Ito, 2017; Monteguti, Diehl, 2016). Other authors have highlighted the importance of the teaching-learning process as a tool to be used in social scenarios and ABS within the scope of SUS (Guedes, Rangel, Mosegui, 2018; Storpirtis, Nicoletti, Aguiar, 2016). Some authors have also indicated that postgraduate programs aim to train pharmacists for better practice in public or private health systems, thereby establishing a new model of practice in these services (Barros Neto, Borges, 2019; Carmo, 2018).

Although the theme is relevant, information about the characteristics of pharmacists and their educational and training background in terms of their professional practice within the SUS healthcare units is scarce. Thus, this study aims to characterize the educational background of pharmacists working at the SUS municipal level and the frequency with which these professionals carry out the different activities pertinent to their attributions.

METHODS

Study Design

This is a predominantly quantitative, exploratory, transversal, descriptive, and analytical study based on a structured questionnaire (form and content). The study

is targeted at pharmacists working in various healthcare units of the municipal health department of Ribeirão Preto (SMS-RP, abbreviation in Portuguese), State of São Paulo.

Participants

A survey of the number of pharmacists and their assigned workplaces within the several SMS-RP sectors and healthcare units showed that 44 of the 56 SMS-RP pharmacists were engaged in Pharmaceutical Care in primary or secondary healthcare units. All these 44 pharmacists agreed to participate in the study.

Ethical issues

The study project was submitted to the appreciation of the Research Ethics Committee of Centro de Saúde Escola da Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo (Community Healthcare Clinic of the Ribeirão Preto Medical School, University of São Paulo) and was approved according to report CAAE 62187516.7.0000.5414. Before being submitted to the Committee, the project was officially authorized by municipal health authorities from the SMS-RP. All the participants agreed to participate in the study and signed a free informed consent.

Instrument

The questionnaire was constructed by following the recommendations for the design and validation of this type of instrument (Artino *et al.*, 2014). The questionnaire contained items concerning demographic data (gender, age, and workplace) and educational background (nature of the HEI from which the participant graduated, type of degree, graduation year, postgraduate education, and continuing professional education activities), and it relied on a structured objective scale to evaluate the frequency with which the participants carried out professional activities. The scale was totally based on what was included in the data collection instrument that was applied by Brazilian Health authorities to a sample of pharmacists at the start and at the end of the implementation of the

official project about “Pharmaceutical Care in Basic Healthcare” (Brasil, 2015). The instrument comprised 30 independent items that were distributed into different domains. The answers to the various items of this frequency scale were given in scales of the *Likert* type (Artino *et al.*, 2014; Jamieson, 2004), which contained five points ranging from 1 (“*I carry out this activity once or twice a year, or less*”) to 5 (“*I carry out this activity three or more times a week*”).

Instrument validation

The preliminary version of the questionnaire was independently evaluated by five pharmacists (herein designated ‘judges’) with teaching experience in higher education programs and who had professional experience in pharmacy education and Pharmaceutical Care. This first stage aimed to validate instrument face, content, and semantics. The “judges” expressed their opinions about the pertinence and clarity of each written item in a standardized manner, and they had the opportunity to suggest modifications to ensure that the questions were as clear as possible.

In the next stage, the modified questionnaire was subjected to the evaluation of 14 pharmacists with experience in Pharmaceutical Care in the public sector, but who would not participate in the study. These pharmacists were invited to answer the new version of the questionnaire and to verify the pertinence and suitability of each written item in terms of clarity, intelligibility, absence of ambiguity, and coherence with the proposed objectives.

These two stages allowed the final version of the questionnaire to meet the requirements of face, content, and semantic validity (Silva *et al.*, 2012). In particular, semantic validity aims to prevent the same question from being interpreted in different ways. Semantic validity is important to ensure that the language used in the questionnaire is as close as possible to the language of the target audience, thereby facilitating understanding of the questions and avoiding that participants misunderstand the questions or become bored (Cunha, 2008).

After the questionnaire was applied, internal consistency was analyzed by using the answers to the

items of the scale related to the frequency with which the participants carried out professional activities. Initially, Cronbach's Alpha coefficient (Ponterotto, Ruckdeschel, 2007) was calculated by using data from all the answers; then, each item was excluded to evaluate whether this exclusion caused significant variation in the previously obtained coefficient. Concerning professional activities, Cronbach's Alpha coefficient was 0.7985 and varied little – between 0.7804 and 0.8111 – when it was repeatedly recalculated by excluding each of its various items at a time, which indicated that the instrument had good internal consistency.

Application procedure

After the participants were fully informed about the study objectives and methods and had signed the informed consent, they received the printed questionnaire and were asked to return it within 30 days. All the participants complied with all the procedures.

Data analysis

The data regarding the objective answers to the questionnaire were quantitatively analyzed in terms of frequency and are expressed as percentage. For the sake of presentation, the activities described in the study instrument (Brasil, 2015) were allocated into groups according to their nature, as depicted in Chart 1. The subgroups, defined by the public or private nature of the HEI attended by the participant and the type of degree (“Specialist” or “Generalist”), were as follows: “Low-frequency”, for answers related to frequencies 1, 2, and 3 of the scale, and “High-frequency”, for answers related to frequencies 4 and 5 of the scale.

CHART 1 - Activities described in the main study instrument, allocated by the authors into five random groups.

ACTIVITIES	GROUPS
MANAGEMENT	Stock control Inventory of medications Request for medications Notice of Irregularity

CHART 1 - Activities described in the main study instrument, allocated by the authors into five random groups.

ACTIVITIES	GROUPS
DELIVERY OF INDIVIDUAL CARE TO USERS	Delivering medications Dispensing medications and offering guidance Offering guidance about availability of medications Informing about prescription validity Verifying medical appointments Answering general questions
DELIVERY OF INDIVIDUAL CARE IN PRIVATE	Answering questions about medications Offering guidance about specific treatments (gynecologic, antiretroviral, etc.) Self-monitoring of capillary blood glucose Pharmacotherapeutic monitoring with registration in the patients' medical chart
OTHER ACTIVITIES WITH PATIENTS	Offering guidance to groups of patients House calls
TEAM MEETINGS	Unit management group Family Health Strategies (ESF, abbreviation in Portuguese) or Community Agents (EACS, abbreviation in Portuguese) Local Health Committee Discussion of users' clinical cases with other health professionals
OTHERS	Training of other professionals Promoting the rational use of medications by the community

Source: chart designed by the authors

Statistical analysis

Cronbach's Alpha coefficient values were calculated with the software *SAS*, version 9.4 (*SAS Institute Inc USA*). Subgroups were defined according to the type of degree and the nature of the HEI in which the degree was obtained and were compared with respect to the frequency of professional activities

by using the Fisher's exact test. Calculations were performed with the software *GraphPad Prism*, version 5, 2007 (*GraphPad Software, Inc., U.S.A.*). Differences in proportions associated with *p* values lower than 0.05 were considered as statistically significant.

RESULTS

Participants' demographic and educational characterization

Table I lists the demographic and educational characterization data of the 44 pharmacists that participated in the study. Female participants predominated (84%). The participants' age varied from 25 to 57 years, with median of 43 years.

The participants graduated between 1981 and 2014, mainly between 2003 and 2014. Most of them graduated from public HEIs (56.8%). Among the participants, 34% and 63.6% had a "Generalist" degree and a "Specialist" degree, respectively. Most of the participants (90.9%) reported having attended a postgraduate program, mainly specialization (75%). Finally, 68.2% of the participants stated that they attended continuing education activities for professional improvement. All the participants pointed out the need for further continuing or permanent educational programs to improve professional performance.

TABLE I - Demographic and educational characterization data of pharmacists working in primary and secondary healthcare units of the Municipal Health Department of Ribeirão Preto, SP

CHARACTERIZATION VARIABLES	NUMBER AND PERCENTAGE OF PHARMACISTS N=44 (100.0%)
Gender	
Male	7 (16.0)
Female	37 (84.0)
Age range (years)	
25 to 35	13 (29.5)
36 to 46	15 (34.1)
47 to 57	16 (36.4)

TABLE I - Demographic and educational characterization data of pharmacists working in primary and secondary healthcare units of the Municipal Health Department of Ribeirão Preto, SP

CHARACTERIZATION VARIABLES	NUMBER AND PERCENTAGE OF PHARMACISTS N=44 (100.0%)
Nature of Higher Education Institution	
Public (Government)	25 (56.8)
Private	19 (43.2)
Graduation year	
1981 to 1991	11 (25.0)
1992 to 2002	13 (29.5)
2003 to 2014	20 (45.5)
Type of Degree	
Specialist	28 (63.6)
Generalist	15 (34.1)
Other	1 (2.3)
Postgraduate education	
Specialization	33 (75.0)
Feels the need for continuing education	44 (100.0)

Source: designed by the authors

Frequency with which participants carry out professional activities

Table II shows the distribution of the participants according to two classes of frequency with which they carry out professional activities. Activities related to the delivery of individual care that do not require privacy clearly predominated, including delivering medications, dispensing medications, and offering guidance about the availability of medications. Such activities were carried out by over 95% of the participants. Activities that require delivery of individual care in private were usually carried out by a smaller number of participants. Self-monitoring of capillary blood sugar and answering questions about the use of medications were more frequently carried out by 65% of the participants. Pharmacotherapeutic monitoring with registration in the patient's medical chart was more frequently carried out by a smaller proportion of the participants, less than 15%.

Other activities were carried out more frequently only by a small number of participants. Such activities included working with groups of patients, participating in healthcare unit team meetings, meeting with the community, and promoting the rational use of medications.

As for management activities, like stock control, inventory of medications, and request for medications, they were carried out at a lower frequency by most of the participants. Notice of irregularities was noteworthy: this activity had low frequency among over 90% of the participants.

Figure 1 compares the frequency with which the activities were carried out by the participants, irrespective of the nature of the activity. Activities related to the delivery of individual care that do not require privacy; for example, delivering and dispensing medications, predominated. In contrast, activities related to Pharmaceutical Care and other relevant professional activities, like house calls and offering guidance to groups of patients, occurred with low frequency.

TABLE II - Frequency with which the participating pharmacists (N=44) carry out their professional activities

ACTIVITY MANAGEMENT	LOW-FREQUENCY	HIGH-FREQUENCY	NO ANSWER
Stock control	26 (59.0)	17 (38.6)	1 (2.3)
Inventory of medications	42 (95.4)	2 (4.5)	0
Request for medications	37 (84.1)	6 (13.6)	1 (2.3)
Notice of Irregularity	40 (90.9)	3 (6.8)	1 (2.3)
DELIVERY OF INDIVIDUAL CARE TO USERS			
Delivering medications	1 (2.3)	43 (97.7)	0
Dispensing medications and offering guidance	2 (4.5)	42 (95.4)	0
Offering guidance about availability of medications	1 (2.3)	43 (97.7)	0
Informing about prescription validity	1 (2.3)	43 (97.7)	0
Verifying medical appointments	7 (15.9)	37 (84.1)	0
Answering general questions	1 (2.3)	43 (97.7)	0
DELIVERY OF INDIVIDUAL CARE IN PRIVACY			
Answering questions about medications	15 (34.1)	29 (65.9)	0
Offering guidance about specific treatments (gynecologic, antiretroviral, etc.)	32 (72.7)	8 (18.2)	4 (9.1)
Self-monitoring of capillary blood glucose	13 (29.5)	30 (68.2)	1 (2.3)
Pharmacotherapeutic monitoring with registration in the patients' medical chart	38 (86.3)	6 (13.6)	0
OTHER ACTIVITIES WITH PATIENTS			
Offering guidance to groups of patients	37 (84.1)	1 (2.3)	6 (1.6)
House calls	34 (77.3)	1 (2.3)	9 (20.5)

TABLE II - Frequency with which the participating pharmacists (N=44) carry out their professional activities

ACTIVITY MANAGEMENT	LOW-FREQUENCY	HIGH-FREQUENCY	NO ANSWER
TEAM MEETINGS			
Unit management group	36 (81.8)	3 (6.8)	5 (11.4)
Family Health Strategies (ESF, abbreviation in Portuguese) or Community Agents (EACS, abbreviation in Portuguese)	35 (79.5)	1 (2.3)	8 (18.2)
Local Health Committee	35 (79.5)	0	9 (20.5)
Discussion of clinical cases of users with other health professionals	23 (52.3)	20 (45.5)	1 (2.3)
OTHERS			
Training of other professionals	34 (77.3)	4 (9.1)	6 (13.6)
Promoting the rational use of medications by the community	38 (86.3)	1 (2.3)	5 (11.4)

Source: designed by the authors

Frequency of Activities

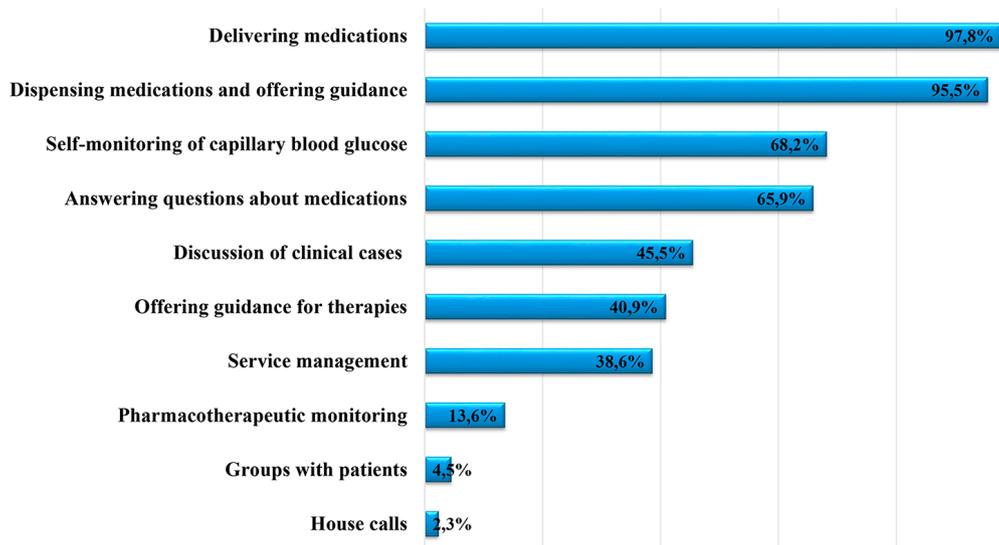


FIGURE 1 - Percentage of pharmacists working at primary and secondary healthcare units of the Municipal Health Department of Ribeirão Preto, SP, who reported carrying out the described professional activity at least once a week

Differences between nature of Higher Education Institutions and types of degree.

There were no statistically significant differences regarding the frequency with which the participants

carried out professional activities when the subgroups of pharmacists defined by the type of degree – “Specialist” or “Generalist” – or the nature of the HEI – “Public” or “Private” – were compared.

DISCUSSION

This study investigated the main demographic characteristics, including age, time elapsed since graduation, and educational background (especially undergraduate education), of pharmacists working in healthcare units of SMS-RP and the frequency with which these professionals carry out activities in the context of Pharmaceutical Care at the municipal level of the Brazilian SUS.

The participants' demographic data show that women predominate (84%); and that the participants are aged between 25 and 57 years (median: 43 years). Our findings resembled other authors' findings. For example, a study conducted at Psychosocial Care Centers (CAPS, abbreviation in Portuguese) in the city of São Paulo showed that 87.5% of the pharmacists are female, and that the professionals are aged between 35 and 40 years (Zanella, Aguiar, Storpirtis, 2015). Another study conducted in the city of Umuarama, State of Paraná (PR), Brazil, pointed out that female pharmacists are the majority (72.1%), and that the professionals are aged between 21 and 53 years (Paduan *et al.*, 2005).

Today, the presence of female professionals in the Health professions seems to have been consolidated worldwide, including Brazil. This trend has become more noticeable over the last decades (Wermelinger *et al.*, 2010). According to Guedes (2010, p. 58), one of the reasons for this phenomenon has been "the intense cultural transformation of the 1970s, which drove women to universities". Over half of the students attending Brazilian pharmacy undergraduate programs and other undergraduate programs in the area of Health are female, which has consequently increased the number of women working as pharmacists (Carvalho *et al.*, 2017).

As for the participants' educational background and the nature of the HEIs they attended, 56.8% of the participants graduated from public institutions, between 1981 and 2014. Data provided by the Federal Council of Pharmacy (CFF, 2018) show that there are 637 pharmacy undergraduate programs in Brazil. According to data of the Ministry of Education, most Brazilian HEIs are private, and 90.1% of the 594 HEIs offering pharmacy undergraduate programs are private (Brasil, 2020). The

fact that most pharmacists working in the Brazilian public health system graduated from public HEIs suggests that their public undergraduate education in pharmacy motivated them to work in the public sector. In fact, pharmacists graduating from public institutions, in general, are more exposed to public health services during their undergraduate studies, whereas pharmacists graduating from private institutions are more exposed to the private sector. It could also be speculated that public institutions probably offer better pharmacy education, so pharmacists graduating from such institutions tend to be more successful in civil service admission tests. Additionally, the distinct sociodemographic profile of pharmacists graduating from public and private institutions imply that they hold different views of the profession and the labor market, among other points. We must also bear in mind that public HEIs in the region of Ribeirão Preto – SP are more closely related to public health services and more engaged in the public health sector and Pharmaceutical Care (Araújo, Freitas, 2006). Nevertheless, our findings must be confirmed in future studies, and the factors that determine why pharmacists search for work positions in the public service must be investigated in greater detail.

In this study, we found that 63.6% of the participants have a "Specialist" degree. This means that their pharmacy education, according to previous views on curriculum planning, was organized into cycles, and that the last cycle provided them with the specific abilities and competences for them to work in the industry, in the field of clinical analyses, and in the area of food. This percentage can be explained by the presence of the minimum curriculum from 1962 until the beginning of the 2000s (Leite *et al.*, 2008). Only a smaller part of the participants, 34%, have the "Generalist" degree, implemented by the DCN for pharmacy undergraduate courses in 2002 (Brasil, 2002); these are most likely participants that graduated more recently.

Interestingly, the subgroups of pharmacists defined by the nature of institutions from which they graduated (public vs private) and the type of degree ("Generalist" vs "Specialist") did not differ significantly in terms of the frequency with which the participants carry out professional activities. Even though there are no data about

the quality with which pharmacists conduct activities, these findings suggest that even important differences in pharmacy undergraduate programs do not impact the future professional activities. If this statement is true, the most probable explanation for our findings is that most participants (90.9%) attended some sort of postgraduate program, mainly specialization courses (75%).

Our findings differ from the findings of another study showing that 55.1% of the pharmacists attended a pharmacy postgraduate program at the specialization, Masters, or Doctorate levels in Brazil (Serafin, Correia Júnior, Vargas, 2015). This difference could be explained by the characteristics of the city of Ribeirão Preto, where numerous postgraduate courses and programs are available at the campus of the University of São Paulo and in other private HEIs. In addition, it is noteworthy that various incentives, including financial incentives, are given by SMS-RP to professionals that attend courses and specialization programs.

Over two thirds of the participants of this study reported attending courses and activities for professional improvement. All the participants pointed out that educational activities and training in the modality "Continuing or Permanent Education" are necessary to improve their professional performance. These data highlight the importance of this type of education for their professional activities and may also have contributed to the lack of difference between subgroups of pharmacists defined by the nature of HEIs and the type of degree, discussed previously.

In the context of the services constituting Pharmaceutical Care, management activities such as stock control, inventory of medications, and request for medications are frequently carried out by a considerable part of the participants. Remarkably, notice of medication irregularities is carried out with low frequency. In theory, this could be attributed to reduced prevalence of irregularities or to this type of activity being neglected. Anyway, further studies should be conducted to confirm and to clarify this finding.

The participants rarely go on house calls or participate in health activities with distinct groups of health system users. This suggests that the participants' routine work is geared toward medication management

and assisting spontaneous patient demand rather than patient-centered care and education in Health. Particularities of pharmacy education could account for the low frequency with which the participants carry out the latter activities regardless of the time elapsed since their graduation. Another reason for this finding could be that the implemented curricular modifications have not effectively affected the pharmacist's professional practice. Alternatively, the low frequency with which health promotion activities are carried out could be attributed to the way the activities are organized in the health units, which could favor direct delivery of care for health issues while leaving health promotion activities and disease prevention aside. If this is the case, other health professionals (physicians, nurses, dentists, etc.) might also carry out health promotion activities with low frequency. Only further and more comprehensive studies including all health professionals and work organization in healthcare units will allow their participation in health promotion activities to be properly evaluated.

Among the activities related to delivering care to individual patients and users and to delivering care in conditions that require privacy, up to 95% of the participants claimed that they carry out these activities frequently (Table II), which contrasts with findings published elsewhere reporting that 21.3% of pharmacists carry out activities of clinical nature (Araújo *et al.*, 2017). Different definitions for the activities may explain these contrasting findings.

On the other hand, a very small number of participants (about 13%) carry out pharmacotherapeutic monitoring with registration in the patient's medical chart. In Brazil, this activity is still offered to only a small number of patients (Pereira *et al.*, 2018) even though it has proven effective for the user and the pharmacist within the context of teamwork. In fact, this activity not only favors patient's adherence to pharmacotherapy (Obreli-Neto *et al.*, 2011), but also prevents the prescription of wrong medications and avoids adverse effects, which in turn improves the quality of prescriptions and promotes actions related to patient safety (Souza, Da Silva, 2018; Viana, Arantes, Ribeiro, 2017).

Taken together, our results about the frequency of various activities raise awareness of the fact that technical-administrative and management activities are more deeply rooted in the routine professional practice of pharmacists working in the public sector. Changing the paradigm of the pharmacist's professional practice requires more involvement in educational activities (particularly education in community health) and clinical care activities (geared toward clinical practice and Pharmaceutical Care). However, this change is associated with greater difficulty in carrying out new activities due to lack of training, especially in the case of pharmacists that graduated long ago. Therefore, substantial investment in continuing education is mandatory to motivate and to prepare pharmacists to carry out these activities.

This study has several limitations that must be acknowledged. It was carried out in a single city, which may not be representative of the national health scenario. The number of participants was relatively small, and the data were essentially perceptual and self-declaratory. Nevertheless, several strengths may be apparent: practically all the pharmacists working in the municipal healthcare units in the city of Ribeirão Preto participated in the study, which employed a carefully constructed and validated instrument based on the SUS regulatory document for Pharmaceutical Care (Brasil, 2015). Results are also internally consistent, and most of them agree with the results of other Brazilian studies. Thus, our findings may contribute to organizing professional practice in Pharmacy in the healthcare units and to highlighting the importance of offering continuing education within the public health service.

CONCLUSION

Pharmacists working in the primary or secondary health care units of the Brazilian SUS in the city of Ribeirão Preto, SP, are predominantly female. The pharmacists graduated from both public and private HEIs, and most of them had postgraduate training, particularly at the specialization level. Regardless of their education, the pharmacists are engaged in delivering and dispensing medications to health system users, but they rarely carry out pharmacotherapeutic monitoring with registration in the patient's chart or other healthcare activities, like

offering guidance to groups of patients and promoting health education about the rational use of medications. Although gaps in pharmacists' undergraduate education may be filled by postgraduate training and continuing professional education, investing in educational activities that can broaden the scope of pharmacist practice is crucial, so that these professionals can carry out more specific activities in their field while also being able to participate in health promotion activities.

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