BJPS

Brazilian Journal of
Pharmaceutical Sciences

http://dx.doi.org/10.1590/s2175-97902022e19877

Article

Perception of pharmacists regarding human resources, training, and development of a national hospital pharmacy: a preliminary report on Basel Statements

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The hospital pharmacy needs a constant process of evaluation and monitoring of its activities. In Brazil, several agencies establish tasks and duties for pharmacists, but little is known about the compliance and the perception of the professional regarding these policies. The present study aims to characterize the pharmacist's perception of Brazilian hospital pharmacy policies according to the Basel Statements. A search was performed for the contacts of all medium and high complexity hospitals in the country. Subsequently, a questionnaire elaborated following the Basel Statements was sent by e-mail to hospital pharmacists throughout the country. The domain analyzed was "Human Resources, Training, and Development". Statistical analyses were performed using SPSS 19.0. Pharmacists representing a total of 111 hospitals from all Brazilian regions answered the survey questionnaire and showed that more than half of the hospital pharmacists perceive themselves as not complying, whether in the service of local, national, or pharmaceutical education. Besides updating the professionals in relation to national policies, it is necessary that the representative bodies of the pharmaceutical class be more present in the elaboration and evaluation of the policies directed to human resources, seeking uniformity and the possibility of carrying out the activities required.

Keywords: Public Policy. Legislation. Hospital Pharmacy service.

BACKGROUND

The growing demand for more effective health services worldwide, seeking the rational use of medicines, cost reduction, minimization of problems related to the use of medicines, and the need for medication safety, high light the importance of a process of persistent evaluation, monitoring, and adequacy of hospital pharmacy activities (Magarinos-Torres,Osorio-de-Castro, Pepe 2007a). Several models of practices have been implemented around the world, and in some places the presence of policies and standards have helped to choose the model to be followed(Doloresco,Vermeulen,2009). In the United States for example, pharmacists follow the standard procedures developed by the American Society of Hospital Pharmacists - ASHP (ASHP,2013);while the United Kingdom follows the strategic plan for hospital pharmacy services of the public health system, released by the government(NHS, 2000; Audit Commission, 2001).

In Brazil, unlike the countries described above, there are three defined but not always harmonic models: pharmaceutical society, government, and class counsel. The Brazilian Society of Hospital Pharmacy (SBRAFH) has developed three editions of the Minimum Standards for Hospital Pharmacy and Health Services, with recommendations on infrastructure and organizational structure of the hospital pharmacy(SBRAFH, 1997; SBRAFH, 2007; SBRAFH, 2017). Professionals can also

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rely on the National Medicines Policy and Ordinance No. 4.283, which reorient and improve actions of pharmaceutical services within hospitals (Brasil, 2007; Brasil 2010). The Federal Pharmacy Council defines the duties of the hospital pharmacist, and the Regional Pharmacy Councils are responsible for overseeing the activities of the hospital pharmacies in each region(CFF, 2008; CFF,2013). However, if such monitoring is not carried out periodically, it can cause hospitals greater difficulty in achieving excellence.

The Basel Statements were created in 2008 by the International Pharmaceutical Federation (FIP), during the Global Conference on the Future of Hospital Pharmacy. Considered an official document able to be globally applicable and designed to provide guidance on the practice of hospital pharmacy in many countries of the world, they reflect the ideal standards of all activities that must be performed by the hospital pharmacy (Basel Statements, 2009; Vermeulen, Vulto, Zellmer, 2009). Since the launch of the declarations, attempts have been made to implement them around the world (Penm, Chaar, Moles, 2012; Poh *et al*., 2013; Penm *et al*., 2013; Penm, Chaar, Moles, 2014). The version was updated in 2015 and translated into 21 languages by the FIP itself, including Portuguese (FIP, 2015)

However in the Brazilian context, little is known about the adoption of FIP standards in hospital pharmacies, since there are no legal requirements that oblige these services to comply with these requirements. Thus, the present study aims to characterize the perception of pharmacists regarding the presence of national policies and standards of hospital pharmacy in the Brazilian scenario according to the current Basel Statements.

METHODS

This is a cross-sectional study, carried out through an Internet database and an online questionnaire, elaborated from the transformation of the updated Basel Statements and translated into Portuguese (FIP, 2015)into questions to be answered.

For the study, all high and medium complexity Brazilian hospitals were selected from the National Registry of Health Establishments (CNES), via the CNES website(http://cnes2.datasus.gov.br/) from February to September 2016. The CNES is a single governmental database established by law, with mandatory registration of all Brazilian health units in the database. In addition, the data are validated by the Brazilian Ministry of Health. At the time of the search, there were 6385 large and medium-sized hospitals registered; of these, 687 did not contain their e-mail addresses available for consultation and 908 contained a record duplicated on the platform. Thus, the final sample size was 4790 large and medium hospitals, being 1359 (28.4 %) and 3428 (71.6 %) of high and medium complexity, respectively and only 3 (0.9 %) had no information available (Santos *et al*., 2018).

In Brazil, hospitals can be classified according to the level of complexity of the activities provided. Medium complexity hospitals are those with availability of specialized professionals and technological resources aimed at resolving major health issues of the population with professionals, and the use of technological resources. High complexity hospitals are those with high technology resources and high costs, aiming to provide qualified services to the population, integrating those services with the other levels of health assistance, such as primary care and medium complexity (Brasil, 2007). Low complexity hospitals are not well characterized and therefore were not included in the study.

A letter was sent via e-mail to the responsible hospital pharmacists, inviting them to participate in the research, in which a link was provided to the research instrument. Emails that returned with an error alert had their addresses re-analyzed to check for typographical or punctuation errors. When no error was detected, another institutional e-mail was searched for at the hospital's official e-mail address, if available. The research instrument was previously tested with students and professors of the pharmacy undergraduate course of the Federal University of São João del-Rei. Data collection took place from September 2016 through July 2017 via GoogleForms, and follow-up reminders were sent out every ten days, with a maximum of three reminders sent by email.

Pharmacists technically responsible for the hospital pharmacy were able to participate in the study after

consent. Pharmacists who did not respond to the survey after three attempts to contact them, as well as hospitals with receipt problems or contactless e-mail after a case-by-case search, were considered ineligible to participate in the study.

The socio-demographic variables age, years of work as a pharmacist, and years of legal responsibility in the hospital were analyzed with standard deviation or interquartiles: 25 – 75 %.The higher qualification data (graduation, master's degree, doctorate or residency/specialization), and also state are presented in Table I. The states were coded and grouped into regions, as defined by the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro Geografia e Estatistica – IBGE*), being North, Northeast, Midwest, Southeast and South(IBGE, 2018).

The main questionnaire was constructed from the transformation of the 65 BaselStatements2015 Portuguese version(FIP, 2015) into questions. For the evaluation related to the field "Human Resources, Training, and Development" of the hospital pharmacies, the answers of the questions from number 56 to 65 of the questionnaire were evaluated. The statements were transformed into questions that the participants had to answer "YES", "NO", "In implementation", or "Not applicable", according their perception of the issues regarding the workplace. There were no open questions related to the participants' feelings.

To evaluate the appropriateness of the affirmations, the answers were weighted (No = 0, Yes = 1, In implementation = 0.5). The results were divided between those that comply with the Basel Statements and those that do not comply, and those that did not respond. The "In implementation" responses were grouped together with the "No" answers. Statistical analysis was performed using SPSS 19.0 (IBM SPSS Statistics v.19).

RESULTS

Responses were obtained from 111 (5.4 %) pharmacists responsible for the hospital pharmacy in all regions of the country, with a mean age of 34.9 years, a median time of operation in the hospital pharmacy of five years, and nine years of training. The majority (64.0 %) have a graduate specialization as their maximum academic achievement. Nearly half of the hospitals are in the Southeast region (48.7 %), 56.8 % of which are classified as medium complexity. The median number of pharmacists present per hospital is 2 (1-6) and median number of beds of 64 (30 - 100) (Table I).

Table I - Characterization of pharmacists and hospitals included in the study

Variables	**Total (N=111)**
Age (years)	34,9[a]
Training time (years)	09 (5 - 13)[b]
Time of operation (years)	05 (2 - 8)[b]
Qualification level (%)	
University graduate	28 (25,2%)
Specialization	71 (64,0%)
Master degree	11 (9,9%)
Doctorate degree	01 (0,9%)
Hospital region (%)	
Northeast	07 (6,3%)
North	09 (8,1%)
South	36 (32,4%)
Midwest	05 (4,5%)
Southeast	54 (48,7%)
Level of hospital complexity	
High	31 (27.9%)
Medium Do not know	63 (56.8%) 17 (15.3%)
Number of pharmacists present	2 (1 – 6)[b]
Number of beds per hospital	64 (30 – 160)[b]

a Parametric data presented on average (Standard Deviation - SD)
b Non-parametric data presented in median (Interquartiles: 25 - 75%)

Less than half of pharmacists responsible for hospital pharmacies comply with the FIP human resources statements, whether in the area of education, training, or to monitor services. The professionals' lack of interest

in national policies can be evidenced mainly by the answers found in question 62, in which only 47 (42.3 %) pharmacists declared that in their hospitals they perceive that these policies are aimed at improving their work.

Of the participating pharmacists, only 28 (25.2 %) answered that their hospitals maintain human resource information systems that contain basic data for planning, training, evaluation, and support to the work team. Another 73 (65.8 %) have in their hospital pharmacy support team, training programs which are not nationally formalized, harmonized, or accredited within a defined scope of practice.

Almost half of the participants, 53 (47.7 %) responded that the planning of the hospital pharmacy staff does not describe strategies for human resources, education, training, recruitment and retention, skills development, among other important factors for standardization of services. Additionally only 23 (20.7 %) pharmacists believe that inter-professional education and team-based care are included in the curriculum of other courses for to her health professionals such as doctors and nurses (Table II). The answers showed that these professionals still feel a lack of human resources policies and need more inter-professional practice.

Table II - Evaluation of human resources, training and development of hospital pharmacies (N = 111)

Statemetns	Comply	Do not comply N (%)	Non-respondents N (%)
56. "At the national level, are competencies defined, established and regularly assessed?"	47 (42,3%)	45 (40,5%)	19 (17,1%)
57. "At the national level, hospital pharmacists are working together with health authorities to bring together stakeholders to collaboratively develop evidence-based human resource plans for the hospital pharmacy to support responsible use of medicines, including in rural and remote areas? "	33 (29,7%)	60 (54,0%)	18 (16,2%)
58. "Do hospital pharmacists work with strategic partners to ensure that education, training, competency, size and workforce are appropriate to the scope, coverage, and responsibilities of the service at all levels of pharmaceutical service delivery?"	53 (47,7%)	49 (44,1%)	09 (8,1%)
59. "Hospital pharmacy staffing planning describes strategies for human resource education and training, recruitment and retention, skills development, compensation, career planning, diversity-sensitive policies, equitable distribution and deployment, management and training, as well as the roles and responsibilities of stakeholders for implementation? "	46 (41,4%)	53 (47,7%)	12 (10,8%)
60. "Does your hospital maintain information systems in human resources that contain basic data for planning, training, evaluation, and staff support? Is the data compared at the national level to improve staff planning? "	23 (20,7%)	73 (65,8%)	15 (13,5%)
61."Are the training programs of the pharmacy support staff nationally formalized, harmonized and accredited within a defined scope of practice?"	53 (47,7%)	47 (42,3%)	11 (9,9%)

(continues on the next page...)

Table II - Evaluation of human resources, training and development of hospital pharmacies (N = 111)

Statemetns	Comply	Do not comply N (%)	Non-respondents N (%)
62. "Are hospital human resources policies based on ethical principles of equity and human rights, and are they compatible with regulations and guidelines of work and standards of hospital pharmaceutical practice?"	38 (34,2%)	64 (57,6%)	09 (8,1%)
63. "In your hospital, do you use the nationally accepted competencies to assess individual training needs and human resources performance?"	38 (34,2%)	64 (57,6%)	09 (8,1%)
64. "To promote interprofessional education and team-based care, is the role of hospital pharmacists, including collaborative prescribing, included in the curriculum of other health professionals, and the roles of other health professionals included in the pharmacy curriculum?"	23 (20,7%)	66 (59,4%)	22 (19,8%)
65. "Are postgraduate courses with clinical focus developed to prepare hospital pharmacists for collaborative prescription of medication, including instructions on legal and professional responsibilities?"	49 (44,1%)	47 (42,3%)	15 (13,5%)

DISCUSSION

Knowing the country's policy scenario and its applications are essential for proper planning and possible improvements(Mello, 1991). In the present study, it was verified that more than half of the hospital pharmacists perceive themselves as non compliant with the Human Resources, Training, and Development domain established by the FIP, whether in the service of local, national, or pharmaceutical education.

Part of these results can be explained by the lack of knowledge of these professionals regarding the FIP and also regarding the Basel Statements. According to the code of ethics of the pharmaceutical profession in Brazil, it is the duty of the pharmacist(CFF,2004), to keep updated with technical and scientific knowledge to continuously improve the performance of their professional activity, a fact not observed in the present study. On the other hand, there is a lack of actions by the FIP itself to publicize its actions and declarations in the country, since the Federal Council of Pharmacy has been affiliated to the FIP since 2001, but the International Congress of the FIP has taken place in Brazil only once, in 2006(Brandão, 2004).

According to the answers, nationally most pharmacists perceive noncompliance with definition, establishment, and evaluation of competencies, in addition to activities in conjunction with sanitary authorities aimed at promoting the rational use of medicines in the territory, and finally the training of the team is neither harmonized nor accredited. With respect to the competencies, the SBRAFH, through the Minimum Standards determines the competencies, however, the body does not have the autonomy to evaluate or control their compliance, this function being under the responsibility of both the surveillance and the Federal Pharmacy Council (CFF,2018).On the other hand, surveillance has a controlling role, with police power in the country, a fact that is perceived in the study since it does not act in order to promote public health actions. Finally, the Federal Pharmacy Council does not recognize the technical courses, and consequently these professionals are not accredited or legislated by the Regional Pharmacy Councils, according to Law 3820/1960 (Brasil, 1960). Thus, there is no basic curriculum for pharmacy technicians, therefore it is not possible to have a harmonic training plan, since each training site has its teaching plan, without following standards.

As a consequence of the above, pharmacists perceive, for the most part, the non-compatibility between the policies that govern hospital human resources and the ethics, fairness, and regulations of the work guidelines. The professionals of the area, even working in a place considered unhealthy and stressful, feel the need to broaden the discussions and create prevention and control educational programs regarding their health and quality of life in the workplace, giving conditions, orientation, and training so that they can carry out their activities without causing themselves any harm(Santos Junior, 2006; Santana *et al*., 2014). Consequently, maintaining information systems or establishing partnerships focused on human resources aimed at training, skills, career plan, evaluation and support at both the local and national level are deficient, as observed in the present study. It is evident to know that policies should act as a guide to direct the planning and the elaboration of strategies, whose purpose is a plan of action, programs, and projects for their effective implementation. The importance of establishing policies is due to the aid in resolving concrete actions, executing, monitoring and evaluating, creating space for debates, and discussions pertinent to the area(Brasil, 2006).

In Brazil there are at least three bodies dictating rules to hospital pharmacists, and it is perceived that there are a lot of rules but a lack of aid for the execution and clear and adequate supervision, thus the activities are not standardized, hindering the team from working together. The Basel Statements were prepared with the intention of being used worldwide, as references for standardization of hospital pharmacy activities (Basel Statements, 2009). Within the theme of Human Resources, Training, and Development, it is possible to see that Brazil has great difficulty in adapting and working according to the standard. And according to the perception of professionals, the rules received here should be clearer and more harmonious, so that they can be followed in a more coherent and equal way across the country, also adapting to international standards.

Finally, the policies focused on inter-professional teaching in undergraduate and postgraduate clinical approaches are also deficient. Studies by Magarinos-Torres, Osorio-de-Castro and Pepe(2007b) and Freitas *et al*.(2016) corroborate the findings of the present study, showing that clinical training is insufficient during the undergraduate course and the difficulty of interacting with other professional categories are factors that possibly negatively affect clinical responsibilities of pharmacists. Another factor presented by the authors is the fact that pharmacists perform long administrative, logistic, and bureaucratic tasks, leaving no time for clinical activities with multi-professional characteristics.

The main limitations of this study were the small response rates that may have been caused by errors in e-mail registration or out-of-date registration at CNES, difficulties in delivering e-mails to the responsible pharmacist, the concern that the message could be a virus, and habit of excluding messages from unknown senders. Another limitation is the possible absence of pharmacists from hospitals, since Santos and colleagues (2018) found that more than half (50.9 %) of Brazilian hospitals do not have a hospital pharmacist registered with CNES as a team member. On the other hand, this study provided an important evaluation of the pharmacist's need for policies for hospital pharmacy through the Basel Statements.

CONCLUSION

The study shows that the constant process of improving the activities of the hospital pharmacy requires that Brazilian pharmacists seek to be more updated, both in respect to existing representative bodies and their official documents. In addition, these same structures that seek to assist the professional need to be more present, not only in the inspection but also work together in the elaboration and evaluation of policies directed to human resources, seeking uniformity and the possibility of carrying out the required activities, both nationally and internationally. It is also necessary for the country to have a more inter-professional practice during training and specialization of the pharmacist, for a more harmonic and effective interaction with other professional categories in the hospital environment.

ACKNOWLEDGEMENTS

To FIP - Hospital Pharmacy Section. Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES)

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Received for publication on 02nd September 2019
Accepted for publication on 09th August 2020