Pharmaceutical assistance in local public health services in Santa Catarina (Brazil): characteristics of its organization

Ana Paula Veber[1,*], Eliana Diehl[2], Silvana Nair Leite[2], Elisete Navas Sanches Prospero[3]

[1]Faculty of Pharmacy, Center of Health Sciences, University of Vale do Itajaí,
[2]Department of Pharmaceutical Sciences, Center of Health Sciences, Federal University of Santa Catarina,
[3]Master's Degree in Health and Management of Work, Center of Health Sciences, University of Vale do Itajaí

This study outlines the diagnosis stage of 201 Municipal Pharmaceutical Assistance Plans sent to the Directorate of Pharmaceutical Assistance of the State Secretariat for Health of Santa Catarina (DIAF-SES/SC) between November 12, 2005 and July 6, 2006. Multiple Correspondence Analysis was used in conjunction with SPAD 3.5 software, followed by hypothesis testing. The variables "pharmacist presence" and "population" were those which most contributed to the formation of the three clusters of municipalities observed. The number of drugs contained in the Municipal Lists of Essential Drugs (REMUMEs) ranged from 15 to 413. A total of 67 towns had between 101 and 200 drugs- a range considered ideal in this study according to the 2006 National List of Essential Drugs. No tendency toward correlation between number of drugs listed in the REMUMES and municipality population size was found. Results confirmed the known disparity in Pharmaceutical Assistance among municipalities of different sizes and highlighted the need for structuring the activities of Pharmaceutical Assistance in the municipalities studied. There is also a need for greater commitment from all management spheres so that activities of Pharmaceutical Assistance at a local level ensure access to quality drugs and services, while fostering rational use.

Uniterms: Pharmaceutical assistance/services. Health management. Primary health care.

Este estudo retrata a etapa de diagnóstico de 201 Planos Municipais de Assistência Farmacêutica enviados entre 12 de novembro de 2005 a 06 de julho de 2006 à Diretoria de Assistência Farmacêutica da Secretaria de Estado da Saúde de Santa Catarina (DIAF-SES/SC). Utilizou-se a Análise de Correspondência Múltipla, através do programa SPAD 3.5 e posteriormente realizou-se teste de hipótese. As variáveis "presença de farmacêutico" e "população" foram as que mais contribuíram para a formação dos três agrupamentos de municípios evidenciados. O número de medicamentos constantes das Relações Municipais de Medicamentos Essenciais (REMUMEs) variou entre 15 e 413, sendo que 67 municípios possuem entre 101 e 200 medicamentos, considerado neste estudo como o intervalo ideal, de acordo com a Relação Nacional de Medicamentos Essenciais de 2006. Não se verificou tendência à correlação entre o número de medicamentos nas REMUMEs e a população do município. Os resultados confirmam a conhecida disparidade em relação à Assistência Farmacêutica entre municípios de diferentes portes e ressaltam a necessidade de estruturação das atividades de Assistência Farmacêutica nos municípios estudados. Há ainda a necessidade de maior comprometimento de todas as esferas de gestão para que as atividades de Assistência Farmacêutica no nível local garantam o acesso a medicamentos e serviços de qualidade, visando o uso racional.

Unitermos: Assistência farmacêutica/serviços. Gestão em saúde. Atenção primária à saúde.

*Correspondence: A. P. Veber. Universidade do Vale do Itajaí/CIMESC. Rua Uruguai, 458, Bloco 17 - 88302202 - Itajaí – SC, Brasil, Caixa Postal 360. E-mail: ana.veber@univali.br

INTRODUCTION

Access to drugs is an important factor to consolidate provision of integral health care to the population. However, access to the product is not always a guarantee of better health status: adverse effects, irrational use and bad quality of the drugs dispensed, directly impact users and health services. In Brazil, the Unified Health System (*Sistema Único de Saúde – SUS,* universal public system) includes access to drugs for the whole population under the Pharmaceutical Assistance Policy (*Política de Assistência Farmacêutica* – AF*)* AF is defined as the set of actions aimed at health promotion, protection and recovery for individuals and the public at large by considering drugs an essential ingredient and fostering their access and rational use. The AF set involves research, development and the production of drugs and ingredients, as well as their selection, schedule, acquisition, distribution, delivery, guarantee of quality for the products and services, follow-up and assessment of their utilization in a bid to obtain concrete results and improve the population's quality of life (Brasil, 2004). Among the key activities that comprise Pharmaceutical Assistance, some authors have defined selection – definition, based on technical and scientific criteria, of the drugs utilized at certain health care services, so as to provide therapeutic and economic gains (Marin *et al.*, 2003) – as a backbone of Pharmaceutical Assistance in that they serve as the basis for the execution of further steps (Marin *et al.*, 2003; Brasil, 2006 a).

The performance of actions related to Pharmaceutical Assistance is essential in order to guarantee access to qualified pharmaceutical services. Specific guidelines such as the National Drugs Policy (Brasil, 1998) and the National Pharmaceutical Assistance Policy (Brasil, 2004), as well as broader policies such as the Health Agreement (Brasil, 2006 b) have represented important references for improving the organization of access to drugs in the country.

Since coming into force, the process that decentralized the management and execution of health activities broadening the SUS System interface with the social, political and administrative reality of the country by considering its regional specificities (Brasil, 2006 b), an agreement has been reached assigning the responsibilities of planning, funding and execution of the actions of Pharmaceutical Assistance among the three government spheres (municipalities, states and national government). Within this context, the municipalities take over the running of many of the actions of Pharmaceutical Assistance and therefore the different structures in place to carry out these actions need to be characterized.

Research assessments and analysis of Pharmaceutical Assistance in several regions of the country were conducted by the Health Ministry and the Pan-American Health Organization (Brazil, 2005) and by Cosendey *et al.* (2000). A study by Vieira (2008) revealed that the lack of drugs was associated to funding and acquisition problems as well as to very elementary problems in the organization of the services involved such as storage, stock control and validity dates, problems found in about 90% of the Brazilian municipalities examined. Other studies have analyzed Pharmaceutical Assistance based on WHO indicators (Naves, Silver, 2005; Santos, Nitrini, 2004; Emmerick, Luiza, Pepe, 2009). These studies evidenced the need for improving the structure and the execution of Pharmaceutical Assistance activities in the assessed scenarios.

Regarding Pharmaceutical Assistance planning, no studies were found analyzing the process of its construction and implementation. The aim of the current descriptive study was to identify the Pharmaceutical Assistance in municipalities of Santa Catarina from Municipal Plans of Pharmaceutical Assistance, by considering the activities directly related to Pharmaceutical Assistance in the health primary care service as indicators.

METHODOLOGY

A total of 201 Municipal Plans of Pharmaceutical Assistance (PMAFs) were studied and sent to the Directorate of Pharmaceutical Assistance of the State Secretariat for Health of Santa Catarina (DIAF-SES/SC) from November 12, 2005 to July 6, 2006. The deliberation of the Bipartite Inter Managerial Commission/SC no. 60/2005 (Santa Catarina, 2005) instructed the municipalities to raise a document to be delivered to DIAF-SES/SC. The Plans had to serve as instruments to systematize a situational diagnosis and to define targets and actions to be undertaken within a set period of time. The current case concerns plans of municipal managements of public health for the services of pharmaceutical assistance, and consequent access to drugs under these services.

Based on the script for the Devising of Municipal Plans of Pharmaceutical Assistance (developed by the Directorate of Pharmaceutical Assistance of the State Secretariat for Health of Santa Catarina), information was gathered regarding the diagnosis stage of the Plans and then compiled in an Excel® table.

For some variables of the script, categories were established for clustering the municipalities: a) population of the municipality (up to 9,999 inhabitants; from 10,000 to 49,999 inhabitants; from 50,000 inhabitants and greater), b) number of pharmacists on duty for the activities

of Pharmaceutical Assistance (two or more pharmacists; one pharmacist; no pharmacist; not informed), c) number of drugs in the Municipal List of Essential Drugs (REMUME) (101 to 200 drugs; 51 to 100 drugs; more than 200 drugs; 1 to 50 drugs; not informed) and d) presence of pharmacist upon the delivery (present; absent; not informed). Regarding all of these variables, with the exception of population, the first category was considered the ideal one for the municipality, as described in the specific literature (Marin *et al.,* 2006; Brasil, 2005). With regard to the variable "number of drugs in the REMUME", the ideal number of drugs was established according to the National List of Essential Drugs (RENAME) 2006 (Brasil, 2007 a), by excluding those drugs with restricted use and those for hospital use.

These variables were adopted for the Analysis of Multiple Correspondence (factor 1) in the statistics software SPAD - *Système Portable pour l' Analyse des Données* 3.5. In the Analysis of Multiple Correspondence, a series of category variables is considered for each individual, represented by a dot whose location defines the relationship between the category variables in a geometric model by forming clouds of dots according to the similarities among the characteristics analyzed (Le-Roux, Rouanet, 2004).

After the Analysis of Multiple Correspondence, from which the clusters were obtained, a second stage of analysis took place. This entailed use of the Chi-square test to verify the existence of an association between the clusters of municipalities evidenced in the multi-variate analysis and the following variables: presence of the pharmacist in the municipal service, presence of the Pharmacy and Therapy Commission, performance of studies for the selection of drugs, presence of the pharmacist upon the delivery of drugs. The data were stored in tables then averages and frequencies were calculated. For the statistics analysis, the Epi-info, 6.0 version software was used. Regarding the hypothesis tests, the municipalities with "not informed" category were excluded from the analysis. In all tests, a level of 5% was established for rejection level of the null hypothesis.

The current study was approved by the Committee of Ethics in Research with Human Beings of the Federal University of Santa Catarina according to Opinion no. 184/2006 approved on June 26, 2006.

RESULTS

Out of the total 293 municipalities from Santa Catarina, 201 municipalities sent the PMAFs to the DIAF/SES/SC by the set date established in this study. Some of the plans did not contain all of the required data, partially limiting their analysis. Table I summarizes the distribution

TABLE I - Distribution of municipalities according to the variables related to Pharmaceutical Assistance - Municipal Plans of Pharmaceutical Assistance, Santa Catarina, 2006

Variable	Categories	Symbol	Municipalities	
			n	%
Population	Up to 9,999 inhabitants	pop1	129	64.2
	From 10,000 to 49,999	pop2	55	27.4
	From 50,000 and above	pop3	17	8.4
Number of pharmacists involved in activities of Pharmaceutical Assistance	2 or more pharmacists	far1	15	7.5
	1 pharmacist	far2	90	44.8
	No pharmacist	far3	87	43.3
	Not informed	far4	9	4.4
Pharmacist upon the delivery of drugs	Present	dis1	70	34.8
	Absent	dis2	105	52.2
	Not informed	dis3	26	13.0
Number of drugs in the REMUME	101 to 200 drugs	rem1	67	33.3
	51 to 100 drugs	rem2	71	35.3
	More than 200 drugs	rem3	16	8.0
	1 to 50 drugs	rem4	12	6.0
	Not informed	rem5	35	17.4
Total municipalities			201	100.0

of the variables in the studied municipalities by evidencing that most of the municipalities had up to 10,000 inhabitants, one or no pharmacist present, and absence of this professional during the drugs delivery activity. Most of the municipalities had a REMUME containing from 51 to 200 drugs.

In Figure 1, the location of each category variable is displayed, as defined in the Analysis of Multiple Correspondence. The variables "presence of pharmacist" and "population" were clearly those that contributed most to the formation of clusters, while the variable "number of drugs in the REMUME" contributed in a less significant way because its categories occupied a position closer to one another and to the crossing of the axis. Overall, a relative coherence is notable in the characterization of the studied municipalities whereby those with a higher population had a higher number of pharmacists involved in activities of Pharmaceutical Assistance, while those of lesser population had no pharmacists available upon drugs delivery or for other activities of Pharmaceutical Assistance.

Based on the results o the Analysis of Multiple Correspondence, three clusters of municipalities were identified as evidenced in Figure 2. Cluster A, located to the left of the figure and containing 98 municipalities, comprises small municipalities with a population mean of

5,636 inhabitants and, in general, no pharmacist involved in the activities of Pharmaceutical Assistance (87.8% of the municipalities). Cluster B, shown in the lower right portion with a mean of 14,157 inhabitants, had predominantly only one pharmacist. In cluster C, located in the right upper quadrant, shows the largest municipalities with an average of 166,573 inhabitants and between 2 and 15 pharmacists (mean of 5 professionals) performing in Pharmaceutical Assistance.

Table II presents some characteristics of the outlined clusters through the hypothesis test. In spite of the fact that 96.9% of the municipalities of cluster A stated that there was no pharmacist available for the delivery of drugs, 35.7% reported that they acquired drugs for treating mental health. This particular group of drugs t requires the presence of the technical professional in charge of their registration under the state supply schedule devised to control these medicines.

The number of drugs listed in the REMUMEs of the 103 municipalities that informed this in their lists, ranged from 15 to 413, with an average of 114, while no significant differences were noted among the three clusters of municipalities. It is important to highlight that the category considered ideal for meeting the priority requirements of users' health care needs (101 to 200 drugs) refers only to 67 municipalities (40.4%). Moreover, finding the associa-
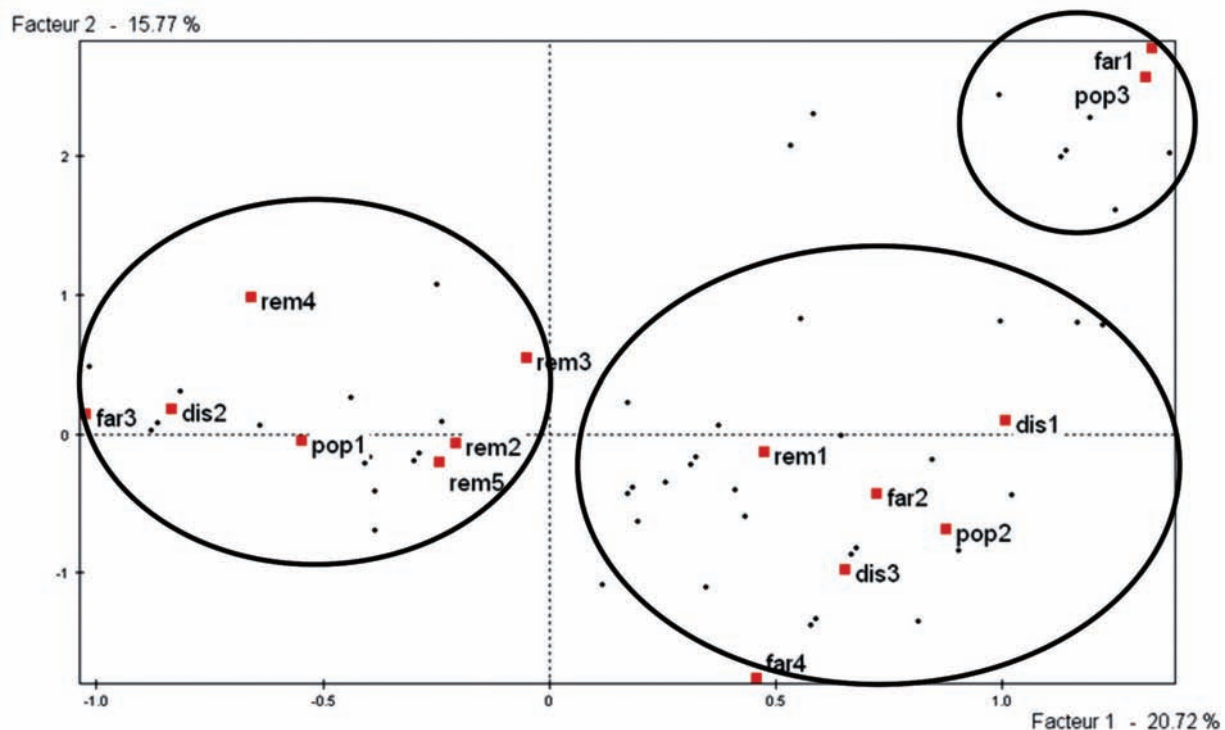

FIGURE 1 - Cluster of category variables defined in the Analysis of Multiple Correspondence – Municipal Plans of Pharmaceutical Assistance, Santa Catarina, 2006.
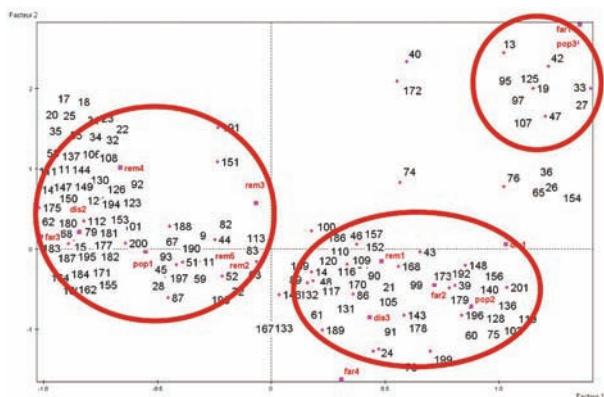
FIGURE 2 - Cluster of municipalities (n=201) according to the variables: population, number of pharmacists, presence of a pharmacist upon the delivery, and the number of drugs in the REMUME – Municipal Plans of Pharmaceutical Assistance, Santa Catarina, 2006.

tion (p=0.02) between the presence of the pharmacist in the activities of Pharmaceutical Assistance and the category "101 to 200 drugs in the REMUME" is important..

Out of the 16 municipalities that listed more than 200 drugs in their Municipal Lists, two of these had more than one pharmacist performing in the Pharmaceutical Assistance whereas only one had more than 100,000 inhabitants.

Considering all of the studied municipalities, only around 8.0% of these declared the existence of the Pharmacy and Therapy Commission (CFT). However, 39.3% indicated in their Plans, the conducting of studies for the selection of drugs although the majority did not specify the methodologies used in these studies. No association was found between the number of drugs in the REMUME and the presence of CFT (p=0.25) or the performance of studies for the selection of drugs (p=0.34), but the association between the absence of CFT and non-performance on studies for the selection of drugs was evident (p=0.001).

DISCUSSION

The issue of access to drugs as a right of Brazilian citizens, widely aired in recent years, has brought to light the construction of pharmaceutical assistance services as a public policy involving organization and availability of services and products. The volume of demand and the financial resources mobilized to achieve this, plus the complexity of interests and conflicts involved (Leite *et al.*, 2009) across all level of management, have occupied the public agenda in Brazil.

The results of the current study reveal the disparity in organization of Pharmaceutical Assistance among mu-

TABLE II - Characteristics of the clusters of municipalities formed on Analysis of Multiple Correspondence – Municipal Plans of Pharmaceutical Assistance, Santa Catarina, 2006

		No	Yes	Not Informed*	TOTAL	% no	χ^2	P
Presence of Pharmacist	Cluster A	86	11	1	98	87.7		
	Cluster B	1	82	8	91	1.1	148.66	0.00
	Cluster C	0	12	0	12	0.0		
	TOTAL	87	105	9	201			
Presence of Pharmacy and Therapy Commission	Cluster A	70	4	24	98	71.4		
	Cluster B	58	9	24	91	63.7	5.36	0.07
	Cluster C	9	3	0	12	75.0		
	TOTAL	137	16	48	201			
Performance of Selection Studies	Cluster A	50	35	13	98	51.0		
	Cluster B	31	41	19	91	34.1	5.17	0.07
	Cluster C	7	3	2	12	58.3		
	TOTAL	88	79	34	201			
Pharmacist upon delivery	Cluster A	95	1	2	98	96.9		
	Cluster B	8	61	22	91	8.8	134.74	0.00
	Cluster C	2	8	2	12	16.6		
	TOTAL	105	70	26				

* Not included in hypothesis test

nicipalities in Santa Catarina. On the one hand, there are municipalities with larger populations, a higher number of pharmacists working in Pharmaceutical Assistance, and better structural conditions for provision of adequate pharmaceutical assistance. On the other hand, there are smaller municipalities performing Pharmaceutical Assistance activities in a less structured way and without the presence of a responsible pharmacist. Studies carried out by the Ministry of Health and the Pan-American Health Organization assessing the structure and process of Pharmaceutical Assistance in Brazil confirmed the broad variability among the services, both in managerial aspects as well as physical infrastructure for storing drugs (Brasil, 2006 b).

In this study, the selection of drugs has also proved to be an aspect of great variability among the municipalities. The low number of municipalities that presented established Pharmacy and Therapy Commissions evidences the need for investment in the process of drugs selection. The current study shows that half of the municipalities that included their REMUMEs in the Plans, had a quantity of drugs that was lower than the number deemed ideal for meeting the priority health care needs of users. This leads to deficiencies in care and may also give rise to a higher demand for access to drugs through other means such as supply through administrative or legal demands, a phenomenon that has been observed in municipalities in Santa Catarina (Leite *et al.*, 2009). Messeder, Osório-de-Castro and Luiza (2005) included among the factors responsible for legal suits, the lack of access to drugs in the basic health care system. According to Marques and Dallari (2007), the public administration is responsible for implementing policies and organizing services that guarantee Pharmaceutical Assistance to users in an integral and universal fashion. On the other hand, the absence of studies and defined processes for the selection of drugs may result in the inclusion of a large number of specific pharmaceutical drugs that are not necessarily in keeping with the reality of the service, incurring frequent overlaps of therapeutic indications which are often inefficient as far as cost is concerned and which, in the majority of situations reach levels above all commercial demands for the products and, therefore, do not provide improvements in the care to the users of the service.

The lack of pharmaceutical professionals engaged in activities of Pharmaceutical Assistance in almost half of the studied municipalities was a factor characterizing its scant organization in the municipalities of Santa Catarina. *A priori*, one cannot expect an improvement in the quality of the rendered care within these municipalities without the presence of professionals that can base this evolution both on the managerial structure of the activities and direct contact with the users of the drugs who are the beneficiaries of the whole process. The performance of prepared professionals may positively impact pharmaceutical policy, regarding the use of drugs and in the achievement of results for pharmacological therapy, as well as in other aspects of health care (OMS, 1993). Nevertheless, no connection was found in this study among the presence of the pharmacist in municipal pharmaceutical assistance, the performance of studies for the selection of drugs, and the existence of a Pharmacy and Therapy Commission. In any event, the municipalities that claim to have undertaken these studies do not specify how this was done. It is therefore evident that even where professionals are engaged in this field, the qualification of these services has been found to fall short..

The current reality regarding the management decentralization of the Pharmaceutical Assistance service since the publication of the Administrative Rule 3237/2007 (Brasil, 2007 b), whereby the municipalities were thereafter responsible for the handling the resources, defines more explicitly the need for qualifications and professional training in this activity. It is imperative that the municipalities have the means to select, acquire, schedule and distribute the drugs properly subject to the risk of not meeting the minimum needs of the enrolled population and consequently aggravating users' legal demands and harming the Constitutional principle of the right to health services.

Although there have been political advancements in the re-organization of the Pharmaceutical Assistance system at all management levels such as funding increase in recent years, decentralization, establishment of municipal plans in some states and municipalities and initiatives for professional qualification – the data from this study indicate that there is still a gulf between what is recommended and what is performed in the municipalities. Greater commitment is needed from all managerial spheres so that the activities of Pharmaceutical Assistance at a local level guarantee access to drugs and to quality services fostering their rational use. Finally, the planning process may contribute greatly to the definition of priorities and implementation of changes that can pave the way for improvements in the health care process.

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