The dispensation of drugs in the primary health care of the Single Health System

Dispensação de medicamentos na atenção primária do Sistema Único de Saúde

La dispensación de medicamentos en la atención primaria del Sistema Único de Salud

Objective: to analyze the dispensation of drugs in the primary health care of the Single Health System in a city in the State of São Paulo. Methodology: a document analysis was carried out in the reports of how the movement of drugs took place in the 19 Primary Health Care Units in the city of Araçatuba-SP, head office of the Regional Health Department II-SP, for 12 months. The medications were classified according with the Anatomical Therapeutic Chemical system and with their pharmacological action. The total number of drugs dispensed and the remaining amount of the main types of drugs were analyzed. Results: 60,479,959 medications were dispensed, among which 53.10% were antibiotics, 15.42% antihypertensives, 5.09% antidepressants, 4.81% hypoglycemic, 3.16% anxiolytic, 2.82% vitamin and mineral complexes, 2.17% antipsychotics, 1.99% analgesics, among others (11.45%). 8,778,863 drugs were still available, among which the most numerous were hypertensive, antidepressants, and anxiolytics. Antibiotics represented the lowest percentage of available units, with approximately 2%. Hypoglycemic drugs were the ones that showed that highest diversity of unavailable medications. Conclusion: the main types of medications dispensed were antibiotics, antihypertensives, antidepressants, and hypoglycemic drugs. Drug dispensation was satisfactory, considering that even medications that did not have a positive residual supply were replaced by drugs with similar pharmacological properties.

ABSTRACT

Objective: to analyze the dispensation of medications on the attention primary of the Unified Health System in a city in the State of São Paulo. Methodology: a document analysis was carried out in the reports of how the movement of medications took place in the 19 Unidades Básicas de Saúde of the city of Araçatuba-SP, seat of the Regional Department of Health II-SP, during 12 months. The medications were sorted according to the classification Anatomical Therapeutic Chemical and pharmaceutical action. Analyzed was the total of dispensed medications and the remaining amount of the main types of medications. Results: 60,479,959 medications were dispensed, among which 53.10% were antibiotics, 15.42% antihypertensives, 5.09% antidepressants, 4.81% hypoglycemics, 3.16% anxiolytics, 2.82% vitamins and mineral complexes, 2.17% antipsychotics, 1.99% analgesics, among others (11.45%). 8,778,863 medications were still available, with the most numerous being hypertensives, antidepressants, and anxiolytics. Antibiotics represented the lowest percentage of available units, with approximately 2%. Hypoglycemic drugs were the ones that showed that highest diversity of unavailable medications. Conclusion: the main types of medications dispensed were antibiotics, antihypertensives, antidepressants, and hypoglycemic drugs. Drug dispensation was satisfactory, considering that even medications that did not have a positive residual supply were replaced by drugs with similar pharmacological properties.

Descriptors: Primary Health Care. Unified Health System. Pharmaceutical Services. Prescription Drugs. Good Dispensing Practices.
INTRODUCTION

The Brazilian Federal Constitution establishes that health is a right of all citizens and must be guaranteed by the State, through social and economic policies that promote universal and equal access to actions to promote, protect, and recover health. Among the actions developed to provide integral therapeutic care to the population, the importance of pharmaceutical assistance as an essential part of the set of strategies included in the field of action of the Single Health System (SUS). Pharmaceutical assistance can be understood as a dynamic and multidisciplinary process that aims to offer quality medication to the health systems, programs, and services, enabling access to health care in an efficient and timely manner.

In the last few decades, there has been a trend in pharmaceutical practice, according to which the profession has been abandoning a model focused only in the production and provision of medications and starting to assume the role of provider of services, information, and assistance to the users of health services. From this context, the National Policy of Pharmaceutical assistance, which is part of the National Health Policy, involves a set of actions targeted at research, development, production, selection, programming, acquiring, distributing, dispensing, and evaluating the quality of products and services, to contribute in an impactful way towards the improvement of the quality of life of the population, in both an individual and a collective way.

The constant evolution and the improvement of the Primary Health Care (PHC) has had important reflexes on pharmaceutical assistance, as it aims to improve populational coverage and increase understanding about the rational use of medications. However, literature shows that, even considering these efforts, there is still an important gap between reality and the idealized standards of pharmaceutical assistance.

Recognizing the current role of pharmaceutical assistance as an essential part of the integral health care of the population, it is important to carry out researches that continuously evaluate the dispensation of medications by health services, making it possible to understand its positive aspects and necessary adaptations. These actions have much scientific and social relevance, since, through the systematic assessment and monitoring of drug dispensation, it is possible to improve the understanding about the main health problems of the population, aiding in the administration of material, human, and financial resources in the field of health. Thus, the objective of this study was to analyze the dispensation of drugs in the primary health care of the Single Health System in a large-sized city in the State of São Paulo.

METHODOLOGY

This is a quantitative and evaluative cross-sectional study, carried out through an analysis of the reports of drug movement within the pharmacies of the Primary Health Care Units of a large-sized city in the State of São Paulo.

The research was carried out from April 2018 to April 2019, in the 19 Primary Health Care Units of the city of Araçatuba, home to the head office of the Regional Health Department II-SP. Its estimated population is 197,016 people, with a territorial dimension of 1,167.126 km², 97.6% of children from 6 to 14 years old are in school, and the human development index is 0.788. The research was conducted in this time frame because a partnership, lasting for this period of time, was established with the city administration, in order to aid in the monitoring and improve the understanding about the quality of drug dispensation by the public health services.

Through the drug movement reports, which had data about the initial supply, entry, consumption, and final supply, the following information was analyzed: the total number of medications dispensed and the most common types; the total final supply and what types of medication comprise it; the final supply, considering each medication class; and which medications did not have a positive supply at the end of the period of the study.

The medications found in the reports were recorded and grouped according to the Anatomical Therapeutic Chemical system and with their pharmacological action. The dispensation of the drug was found to be satisfactory when, at the end of the period studied, there was at least one unit of the medication in the pharmacy of the Primary Health Care Unit.

Descriptive statistic techniques were employed, and data was presented in the form of tables and graphs. The analysis was carried out using the Epi Info software, version 7.2.

The research respected all ethical precepts prescribed by Resolution No. 466/12 from the National Council of Health and was approved by the Ethics Committee for Researches Human Beings from the Dentistry College of Araçatuba - FOA/UNESP (CAAE n° 02372318.6.00005420).

RESULTS

As table 1 shows, according to the classification from the Anatomical Therapeutic Chemical, the main drugs dispensed were anti-infection systemic drugs, followed by medications that act on the nervous and cardiovascular system, on the gastrointestinal tract, and on the metabolism.

Table 2 shows the proportion of drugs dispensed to the population during the period of the study, according to their pharmacological action. In total, 60,479,959 drugs were dispensed to the population, including: antibiotics, antihypertensive, antidepressants, hypoglycemic, anxiolytics, vitamin and mineral complexes, antipsychotics, and analgesics.

Table 3 shows the final supply and the proportion of medications available in the drug dispenser of the Primary Health Care Units at the end of the period of...
the study, according to their pharmacological action. There were still 8,778,863 medications available. The most common among them were antihypertensive, antidepressant, and anxiolytic medications.

Image 1 shows the proportion of the drugs dispensed to the population and available in the pharmacies of the Primary Health Care Units, at the end of the period of the study, considering the main types identified. Antibiotics represented the lowest percentage of available units, with approximately 2%, while anxiolytics, antidepressants, and antipsychotics represented more than one third of the total number of medications still available to the population.

Table 4 shows the relation of the medications which did not present a positive final supply at the end of the period of the study, according to their pharmacological action. It was found that, among the drugs dispensed the most, hypoglycemic drugs were the ones that showed that highest diversity of unavailable medications.

Table 1 - Absolute and relative distribution of the drugs dispensed, according to the Anatomical Therapeutic Chemical classification. Araçatuba, São Paulo - 2018 - 2019

| Anatomical Therapeutic Chemical classification | n   | %   |
|-----------------------------------------------|-----|-----|
| A - Gastrointestinal tract and metabolism     | 5,999,857 | 9.92 |
| B - Blood and hematopoietic organs            | 53,959  | 0.09 |
| C - Cardiovascular system                      | 7,889,778 | 13.05|
| D - Dermatologic drugs                         | 3,245   | 0.01 |
| G - Genital-urinary system and sexual hormones | 10,108   | 0.02 |
| H - Systemic hormonal drugs, except sexual hormones and insulins | 770,588   | 1.27 |
| J - Anti-infectious systemic drugs             | 34,057,946 | 56.31|
| L - Antineoplastic and Immunomodulator agents  | 894,906  | 1.48 |
| M - Musculoskeletal system                     | 22,764   | 0.04 |
| N - Nervous system                             | 9,679,024 | 16.00|
| P - Antiparasite, insecticides, and repellents | 3,745    | 0.01 |
| R - Respiratory tract                          | 47,250   | 0.08 |
| S - Organs of the senses                       | 2,044    | 0.00 |
| V - Various                                    | 981,610  | 1.62 |
| Total                                         | 60,479,959 | 100.00|

Table 2 - Absolute and relative distribution of drugs dispensed, according to their pharmacological effects. Araçatuba, São Paulo - 2018 - 2019

| Drugs                          | n   | %   |
|--------------------------------|-----|-----|
| Analgesic                      | 1,202,191 | 1.99 |
| Anxiolytic                     | 1,913,312 | 3.16 |
| Antibiotics                    | 32,113,029 | 53.09|
| Antidepressants                | 3,078,823 | 5.09 |
| Antihypertensive               | 9,326,344 | 15.42|
| Antipsychotic                  | 1,313,885 | 2.17 |
| Mineral and vitamin complex    | 1,705,276 | 2.82 |
| Hypoglycemic drug              | 2,907,510 | 4.81 |
| Others                         | 6,919,589 | 11.45|
| Total                          | 60,479,959 | 100.00|

Table 3 - Absolute and relative distribution of the total final supply of the drugs. Araçatuba, São Paulo - 2018 - 2019

| Drugs                          | n   | %   |
|--------------------------------|-----|-----|
| Analgesic                      | 162,414 | 1.85 |
| Anxiolytic                     | 1,159,557 | 13.21|
| Antibiotics                    | 638,323  | 7.27 |
| Antidepressants                | 1,510,648 | 17.21|
| Antihypertensive               | 1,790,332 | 20.39|
| Antipsychotic                  | 668,643  | 7.62 |
| Mineral and vitamin complex    | 322,039  | 3.67 |
| Hypoglycemic drug              | 400,733  | 4.56 |
| Others                         | 2,126,174 | 24.22|
| Total                          | 8,778,863 | 100.00|
Figure 1 - Proportion of medications dispensed and of the final supply, according to pharmacological action. Araçatuba, São Paulo, 2018 - 2019

Table 4 List of medications whose supply was entirely empty, according with pharmacological effect. Araçatuba, São Paulo, 2018 - 2019

| Drugs                                      | Pharmacological effect       |
|--------------------------------------------|------------------------------|
| Dipyrone sodium 300mg + scopolamine 6.5mcg + hyoscyamine 104mcg | Analgesic                    |
| Fentanyl 50mcg/ml                          |                              |
| Misoprostol 25mg                           |                              |
| Flunitrazepam 2mg                          | Anxiolytic                   |
| Lorax 2mg                                  |                              |
| Clarithromycin 500mg                       | Antibiotics                  |
| Isoniazid 75mg+rifampicinina 150mg         |                              |
| Levofloxacin 500mg                         |                              |
| Nortriptyline 50mg                         | Antidepressants              |
| Fluvoxamine maleate 100mg                 |                              |
| Carvedilol 25mg                            | Antihypertensive             |
| Diltiazem 60mg                             |                              |
| Diltiazem 180mg                            |                              |
| Phylloquinone 2mg/0.2ml                    | Complexo vitamínico          |
| Exenatide 250mcg/ml                        | Hypoglycemic drug            |
| Insulin aspart 30% + protamine 70%         |                              |
| Januvia 100 mg                             |                              |
| Liraglutide 6mg/ml                         |                              |
| Metformin 500mg                            |                              |

DISCUSSION

In this study, it was found that a high variety of drugs were dispensed to the population during the period of the study, among which stand out the antibiotics, antihypertensives, antidepressants, hypoglycemic drugs, anxiolytics, mineral and vitamin complexes, antipsychotics, and analgesics. Among them, hypoglycemic drugs were the ones with the highest diversity of unavailable medications. However, they were replaced by others, with similar pharmacological effects, with no prejudice for the population.

The analysis and periodical monitoring of drug dispensation are paramount measures to evaluate the impact of strategies and policies of public health.\(^{(11)}\) In this regard, studies about the access and quality of the pharmacy health care services in the SUS become even more relevant, considering that the dispensation of public health services may be the only way in which low-income populations can access medications\(^{(12,13)}\).

Antibiotics were the main drugs dispensed to the population, representing more than half the drugs found in the reports of the pharmacies in the Primary Health Care Unit. The high rates of antibiotic...
dispensation, as well as the prolonged use and inadequate prescription, added to the pressure of the pharmaceutical industry to disseminate their use, made bacteria resistance a worldwide concern and serious public health problem.\(^{(14)}\) The growth of bacteria resistance has generated a negative impact on the resources destined to health, and even in developed countries there has been an increase in the rates of mortality caused by resistant infectious bacteria.\(^{(15,16)}\)

It should be highlighted that the prescription of medications by a trained professional is paramount to diminish microbe resistance, reducing possible adverse effects caused by drug interaction. However, the inadequate use of antimicrobial drugs is not only due to the absence of prescriptions made by health professionals, since, according to the World Health Organization (WHO), in nearly 50% of cases, the use of these medications is unnecessary.\(^{(18)}\) Therefore, the importance of the access of the population to health professionals becomes clear, as well as the implementation of actions of health education and inspection, aiming to improve the rational use of medications.

Another group of medications that presented a considerable rate of dispensation was the that of psychoactive drugs, which act upon the central nervous system. Depression is the main cause of incapacity, which is one of the greatest reasons for the disease to have such a toll around the world, considerably affecting the quality of life of both patients and their relatives.\(^{(17)}\) Although there are variations, according with the characteristics of the population studied, studies have shown that the worldwide prevalence of depression and depressive symptoms has increased in the last few decades.\(^{(17,18)}\)

In this study, antidepressants, anxiolytics, and antipsychotics, grouped, presented more than 10% of the drugs dispensed. These are psychiatric medications and have been widely used throughout the world. As a result, the resources employed to obtain and manage these medications are a challenge for public health, showing the need to improve the procedures of acquisition and dispensation of these drugs.\(^{(19)}\)

The profile of drug dispensation has also been influenced by aspects related to the advance of health science technologies, which have contributed for an important transformation in the quality of life and for the life expectancy of the population in many countries, coupled with an expressive increase in the number of chronic noncommunicable diseases.\(^{(20)}\) During the studied period, it was found that antihypertensive and hypoglycemic drugs were more than one fifth of the medications dispensed. These medications are continuously used and are essential to control and treat systemic arterial hypertension and diabetes mellitus.\(^{(21)}\)

In Brazil, the Ministry of Health, considering the great impact of these diseases in the population, developed the National Program for Hypertension and Diabetes Mellitus (Hiperdia), aiming to promote the reorganization of pharmacy assistance, to monitor the users of health services, and systematically provide these medications, free of charge. However, studies have shown that there are still significant challenges in the pharmacological assistance to these maladies.\(^{(21,22)}\) Among them, it is necessary to raise the awareness of people with chronic diseases and improve the assessment process, aiming to improve the adherence to the pharmacological treatments prescribed; to deal with the difficulties that originate in the decentralization in small-sized cities; and to improve the actions and collective programs of the multiprofessional family health strategy teams.\(^{(20,22,23)}\)

Studies report that analgesic drugs are among the most used by the population. However, the results of this study showed that analgesics represented less than 2% of the main types of drugs dispensed.\(^{(24,25)}\) In this context, a fundamental issue when discussing the rational use of medications is the practice of self-medication, an increasingly common phenomenon, influenced by socioeducational and cultural characteristics, in addition to a strong dissemination in the media, which encourages the use of medications to the relief of self-perceived discomfort and symptoms, without the guidance and prescription of a trained professional.\(^{(26)}\)

It can also be suggested that the infrequent dispensation of analgesics in the Primary Health Care Units, when compared to the other medications, may be related to their low cost and to how easy it is to access the analgesics that are used the most to relieve weak pain. This leads to an increase in the availability of these products in the homes of patients.

The findings of this study cannot be generalized for all locations of the country, since infectious diseases take place at different rates in the different regions of Brazil. The different regions also have different population profiles, which can influence the rate of individuals with chronic diseases, such as diabetes and hypertension. This can be seen as a limitation of this study, despite its important results regarding aspects that must be considered in the evaluation and development of strategies targeted at the pharmaceutical assistance.

The findings of this study reiterate the importance of continuous, systematic, and periodic studies that monitor the dispensation of medications, as part of a permanent process of evaluation of the National Policy of Medications and the National Policy of Pharmaceutical Assistance. These actions can contribute for the technical-administrative organization of the control of drug dispensation, subsidizing the maintenance of the levels needed to attend to the demand, avoiding the superposition of stocks or the lack of supply in the system.

**CONCLUSION**

The main types of medications dispensed were antibiotics, antihypertensives, antidepressants, and hypoglycemic drugs. Drug dispensation was satisfactory, considering that even medications that did not have a positive residual supply were replaced by drugs with similar pharmacological properties.

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Corresponding author:
Fernando Yamamoto Chiba
E-mail: fernando.chiba@unesp.br