

ORIGINAL ARTICLE

**DRUG-RELATED PROBLEMS: AN OBSERVATIONAL STUDY AT AN
INTEGRATED HEALTH CENTER****AUTORES: DANTE FERREIRA OLIVEIRA¹; VICTOR CAVALARO¹; CARLOS ROCHA OLIVEIRA^{1,A}**¹Anhembi Morumbi University, School of Health Science, São Paulo-SP, Brazil.²Institute of Osmology and Essential Oils, Minas Gerais, Brazil.**ABSTRACT**

Failure in drug therapy can cause damage to the patient's health, becoming a real public health problem. The aim of this study was to evaluate a prevalence of DRP in patients of the Integrated Health Center of the University Anhembi Morumbi, São Paulo, Brazil. Medical records of twenty-eight patients were assessed using the Dáder Method from March to September 2019. Gender, age, weight, height, lifestyle and drug therapy were used to profile these patients. The highest concentration of patients aged 54 to 78 years old and the gender profile was 85.2% female and 14.8% male. The proportional ratio was verified when evaluating the profiles of the patients with some report of DRP being, 78.6% female and 21.4% male. The greatest number of prescriptions were observed in neurology and rheumatology, being 50.0% prescriptions of neurology and 32.0% of rheumatology. The specialties with more prescriptions with any identified DRP, with 21.4% were neurology and rheumatology. The DRP1 was the most recurrent in the prescriptions evaluated, followed by DRP5 and DRP6, followed by general practitioner. Further studies are needed to assist in the development of new instruments for the classification and prevention of risks related to medicines, especially in places where there is no pharmacotherapeutic segment, an important practice in reducing medication errors.

Keywords: Drug-related problems; Prescriptions; Dáder; Pharmacist; Pharmacotherapeutic segment.

INTRODUCTION

Drug therapy when misdirected, acting on the patient or drug use generates a major public health problem, negatively affecting the treatment and costs involved in health sector management. Drug-related problems (DRP), related to events directly interfering with drug therapy outcomes, associated in turn with hospitalizations until symptoms develop^{1,2}. Thus the DMP, first defined by Strand et al, in 1990³ and incorporated through the first Granada Consensus (1998) defined 6 categories of DRPs based on the need for medication, efficacy and safety⁴⁻⁶.

Errors during drug prescribing, dispensing, administration, and storage General drug-related issues, duplication, and misuse or misuse of medications that also impact adherence to pharmacotherapy can lead to serious patient outcomes, helping to increase their health problems, ie morbidity and mortality. In the adult-elderly population, due to the increasing number of chronic diseases, polypharmacy exposes these patients to negative health outcomes, as well as increasing health risks^{2,3,7-10}.

Thus, an observational study evaluating prescriptions in patients attended by the integrated health center of the university Anhembi Morumbi was conducted in order to

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observe and identify age groups and drug-related problems of that specific population, as well as the origins and most prescriptive medical specificities.

MATERIALS AND METHODS

From March to September 2019, an exploratory observational study was conducted in the city of São Paulo, State of SP, Brazil with the population attending at the Integrated Health Center (IHC) from Anhembi Morumbi University (AMU). During this period, a pharmacist and students from AMU performed pharmaceutical care in order to evaluate the history and therapy employed of 28 patients. Gender, age, weight, height, lifestyle and drug therapy were used to profile these patients. Regarding drug therapy, the last name information of the drugs, dosage and method of use were analyzed. The protocol study were approved by the local Ethics Committee (3.218.183)

The Dáder method⁴ and the DRP assessment followed the classification of the Second Granada Consensus (2002), Table 1, were used in the organizational and evaluative process of patient information. Thus, following an analysis focusing on the process of drug use, the DRP rich patients were exposed to were evaluated. At this time the results of therapy were not evaluated nor were pharmaceutical interventions performed regarding the therapeutic processes.

Table 1 – Drug-Related Problem Classification (DRP)⁵

DRP	Necessity
1	The patient has a health problem by not using a medication that uses.
2	The patient has a health problem from using a medicine that does not need
3	The patient presents a health problem due to non-quantitative ineffectiveness of the medication.
4	The patient presents a health problem due to a quantitative ineffectiveness of the medication.
5	The patient has a health problem due to non-quantitative drug insecurity.
6	The patient presents a health problem due to a quantitative insecurity of a drug.

Source: de Consenso, C. Tercer Consenso de Granada sobre problemas relacionados con medicamentos (PRM) y resultados negativos asociados con la medicación (RNM). Ars Pharm. Internet 48, 5–7 (2007).

In assessing the risk of DRP, we sought to base on the parameters of the existence of therapeutic duplication, according to the Anatomical Therapeutic-Clinical classification (ATC) according to the World Health Organization (WHO, 1996); existence of underdose or overdose; Drug interactions were also evaluated the medical specialties that most prescribed drugs with some DRP and the prevalence between the sexes and thus the data related to the study of drug use and risk of RRP were analyzed by descriptive statistics.

RESULTS AND DISCUSSION

Twenty-eight patient medical records were analyzed aged between 6 to 85 years old. The highest concentration of patients aged 54 to 78 years old can be verified, according to the constant normal distribution in the study **Figure 1**.

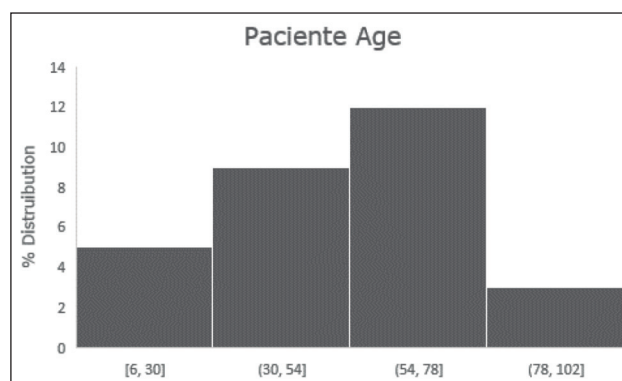


Figure 1 - Graphical analysis of the normal distribution of the age profile of the patients analyzed.

Within this normal distribution age profile, it was also verified the gender profile being 85.2% female and 14.8% male, this proportionality ratio was also verified when evaluating the profiles of the patients with some report of DRP being, 78.6% female and 21.4% male, shown according to **Figure 2**.

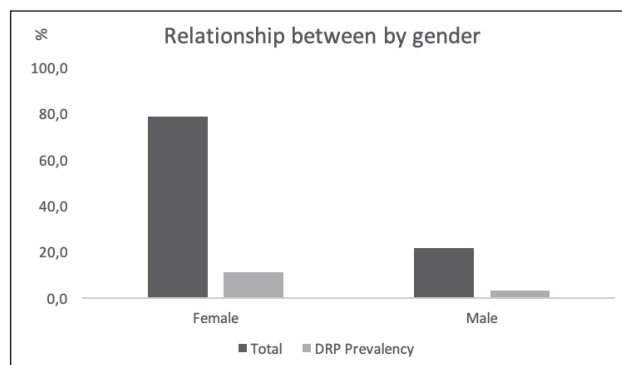


Figure 2 – Evaluation of the prevalence profile of DRP distributed by gender of the evaluated patients.

The specialties evaluated were rheumatology, neurology, endocrinology and general practice. Of these, the most prescribed drugs were neurology and rheumatology, being 50.0% prescriptions of neurology and 32.0% of rheumatology. The specialties where there were more prescriptions with any identified DRP, with 21.4% for neurology and rheumatology, as shown in **Figure 3**. By better evaluating the graphical analysis it is possible to verify that all prescriptions found in the general practice had some evidenced DRP

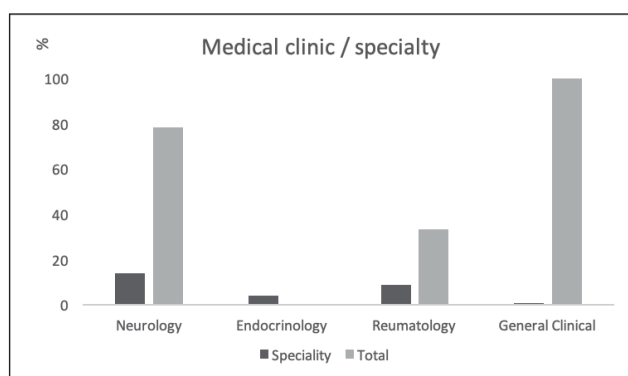


Figure 3 - Comparative prescriptions for specificity versus identified DRP; it can be seen that the highest indices are of neurology and endocrinology, and in relation to the percentage of validated prescriptions the general practitioner presented 100% in relation to their prescriptions.

At the end, it was possible to identify the highest DRP indices by medical specialty (**Figure 4**), indicating DRP1 as the most recurrent in the prescriptions evaluated, followed by DRP5 and DRP6. It was also possible to verify that neurology and rheumatology together had the highest DRP followed by general practitioner.

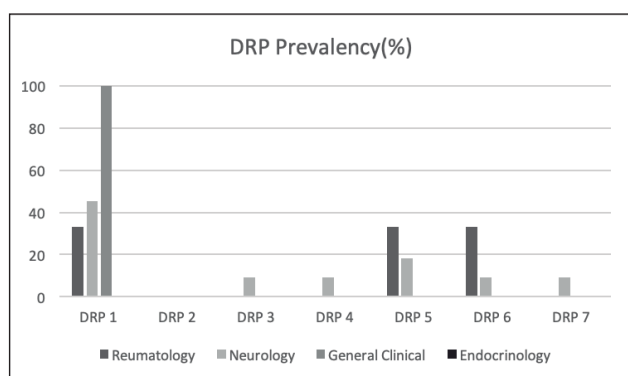


Figure 4 - Graphical analysis of DRP distribution by medical specialty.

DISCUSSION

Life expectancy has increased considerably in recent decades. At least in part, we can attribute these achievements to the evolution of medicines available to the population. The data analyzed showed that the risks of drug problems in patients evaluated at the IHC-AMU, there was a high rate of DRP 1 for general practice, neurology and rheumatology and DRP 5 and 6 for neurology and rheumatology. Thus, it may be suggested to develop an assessment of prescribing processes with the pharmacist's integration, through pharmaceutical interventions or other appropriate tooling, increasing the chance of results positive therapies and benefits for patients.

The involvement of a clinical pharmacist¹¹⁻¹³ in the team can increase the quality of service provided, no interference with multi-professional skills. However, the participation of pharmacists in clinical activities is still infrequent in Brazil and the small participation in educational health promotion activities indicates little integration of pharmacists with the health team¹⁴.

Further studies in this field are needed in order to achieve greater external validity and the development of new risk classification and risk prevention instruments drug-related problems in places where no pharmacotherapeutic segment.

CONCLUSIONS

Modern drugs avoid most causes of premature death, as well as relieving symptoms and controlling disease, however, they do not always produce positive results for the patient. Further studies are needed to assist in the development of new instruments for the classification and prevention of risks related to medicines, especially in places where there is no pharmacotherapeutic segment, an important practice in reducing medication errors.

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