



PREVALENCE OF DRUG PRESCRIPTIONS ERRORS IN A DRUGSTORE IN BRASILÂNDIA, MATO GROSSO DO SUL, BRAZIL

Wilian Fernandes Dos Santos¹, Erli De Souza Bento¹ and Saulo Euclides Silva-Filho^{2*}

¹Integrated Faculties of Três Lagoas, FITL, Três Lagoas, Mato Grosso do Sul, Brazil.

²College of Health Sciences, Federal University of Grande Dourados, UFGD, Dourados, Mato Grosso do Sul, Brazil.

***Corresponding Author: Dr. Saulo Euclides Silva-Filho**

College of Health Sciences, Federal University of Grande Dourados, UFGD, Dourados, Mato Grosso do Sul, Brazil.

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ABSTRACT

The drug prescription is a document, and the prescribing professional has the function of elaborate a coherent prescription, that correctly transmits the information to all professionals who use this document. Drug prescriptions incorrectly formulated can lead to dispensing errors and guidance inefficiencies in the correct use of medications, which may impair the success of pharmacotherapy applied to the treatment of diseases. In this study, 75 drug prescriptions obtained from a commercial pharmacy in the city of Brasilândia, Mato Grosso do Sul, were analyzed. The results showed that 132 errors were detected in the prescriptions. The following variables were analyzed: drug prescriptions readability, prescriber identification, patient identification, drug dose, posology, and presence of abbreviations. This incidence of errors may reflect the patient's medical treatment, making it impossible to achieve success in pharmacological treatment. Additionally, the pharmacist works directly in the dispensation of prescribed drugs, an intervention and awareness work by the pharmacist directed to the prescribing professionals could help in the minimization of errors for an attempt to solve problems related to the errors of drug prescriptions.

KEYWORDS: Drug Prescriptions, Prescribers, Pharmacotherapy, Pharmacy.

INTRODUCTION

The medicines rational use has been presented as a relevant thematic among health professionals, health managers and the community. The correctly followed pharmacotherapy is essential for the treatment, prevention and possible cure of diseases.^[1] A correct and well-elaborated pharmacological treatment involves, besides the access to the medicines, the guarantee of the use of these medicines in a correct way, besides avoiding the use of unnecessary medications.^[2] Incorrect pharmacological therapy can cause harm to the patient, such as adverse reactions, intoxications, drug interactions and even lack of therapeutic effect, leading to major health problems for the population.^[3] To give an idea of the impact of medicines misuse, a study showed that 3% to 9% of all hospitalizations are related to medication problems and 50% of hospitalizations could be prevented with an adequate and rational pharmacotherapy.^[4]

When talking about optimized pharmacological treatment, we must emphasize the importance of prescription, from the moment in which the prescribing professional will determine the medicines to be used in the therapy until the moment of the dispensation in the

pharmacy or drugstore, as well as the correct use of the medicines by the patient.^[5]

Drug prescription is a document and the prescriber has the task of drawing up a coherent prescription that fully transmits the information to all professionals that use this document.^[6] Drug prescriptions are not only restricted to the medical class, but are also performed by dentists, pharmacists and other health professionals in several countries.^[7] However, the choice of pharmacological therapy is subject to several influences, such as the knowledge of the pathophysiological process of the disease, the socioeconomic conditions of the patient, the patient's access to medications, among other factors.^[8,9]

It is established that prescriptions play a key role in preventing self-medication and misuse of medications, but errors may be due to erroneous, illegible or incomplete prescriptions, causing serious harm to the patient.^[2] The risk of medication errors increases as pharmacists and other professionals cannot read the prescriptions correctly. Therefore, unreadable prescriptions or drug interactions and unnecessary medications constitute an important health problem for the patient.^[10]

When we talk about errors in drug prescriptions, we notice that some of them happen more frequently, with highlight the main mistakes of drug prescription: illegible prescriptions, lack of information, absence of the prescriber's identification, nonuse of the active principle drugs name, absence of administration route, absence of dose form and concentration, and absence of treatment time.^[11] Some errors facilitate the occurrence of serious situations to the patient, including death, such as the exchange of medications or dosage, as a consequence of readability in the prescription. Therefore, it is necessary that the prescription of drugs be carefully carried out, obeying the established requirements for its elaboration, containing all the necessary information so that it is possible to guarantee the absence of errors.^[12]

As this topic is so important and influential in the area of health, the objective of this study was to identify the most prevalent errors in drug prescriptions obtained at a drugstore in the central region of the city of Brasília,

Mato Grosso do Sul, Brazil. In addition, this work can contribute to evaluate the need for a pharmaceutical intervention that could be performed to minimize the problem.

METHODOLOGY

This is a descriptive, exploratory, quantitative and qualitative study, through the analysis of 75 drug prescriptions retained in a private drugstore located in the central region of the city of Brasília, state of Mato Grosso do Sul, Brazil. Prescriptions were collected between the months of May to July 2017.

Copies of the drug prescriptions have been collected and listed. The evaluation was based on an adaptation of the methodology used by Lima et al. (2016)^[13], through the verification of 6 variables in the prescriptions: prescriptions readability, prescriber identification, patient identification, drug dose, drug posology and abbreviations presence (Table 1).

Table 1: Variables and criteria used for the evaluation of drug prescriptions.

Variable	Evaluation criteria
Prescriptions legibility	Good legibility: normally handles without problems for understanding the writing; Illegible: impossible to understand written medication or 50% of other words, numbers, symbols and abbreviations; Poorly legibility: more time to read, and there was no certainty of full comprehension of all words, numbers, symbols, and abbreviations.
Prescriber identification	Complete: prescription signed, containing prescriber name, register number, clinic or residence address and telephone number readable; Incomplete: all other prescriber identifications that did not meet full prescription specifications; Absent: absence of prescriber identification.
Patient identification	Complete: containing complete and legible name and address of patient; Incomplete: absence or illegibility of surnames or address; Absent: absence or illegible names or address.
Drug dose	Absent: illegible or absent doses of prescribed drugs; Incomplete: illegibility or absence of the dose of at least one drug in prescription with more than one prescribed drugs; Complete: complete and legible doses in prescription.
Drug posology	Absent: absent or illegible posology in all prescribed drugs; Incomplete: absent or illegible posology of at least one drug in prescription with more than one prescribed drugs; Complete: complete and legible posology in all prescribed drugs.
Abbreviations	Present: occurrence of abbreviations in the pharmaceutical form, administration route or amount and doses interval; Absent: absence of abbreviations.

Adapted from Lima et al. (2016).^[13]

The prescriptions were collected and analyzed and all variables were presented in numbers and proportions (%).

RESULTS AND DISCUSSION

We analyzed 75 drug prescriptions over a period of 90 days in the drugstore. Were identified 132 errors. Regarding legibility, the prescriptions have been

classified as good legibility, poorly legibility and illegible. In our study we verified that of the 75 prescriptions analyzed, 29 were classified as legible, 28 were classified as poorly legibility and 18 were classified as illegible. The data are shown in table 2.

Table 2: Legibility of 75 drug prescriptions collected at a drugstore in Brasília, Mato Grosso do Sul, Brazil.

Characteristic	Classification	Number	%
Legibility	Legible	29	38.66
	Poorly legible	28	37.33
	Illegible	18	24
Total		75	100

In a study conducted by Guzzatto and Bueno (2007)^[14], 3,701 prescriptions were analyzed in a pharmacy of a Basic Health Unit (UBS) in the city of Porto Alegre, Rio Grande do Sul, Brazil, of these prescriptions, 18% presented some type of error, of readability found in 93.8% of the erroneous prescriptions. Another study showed that 68.33% of the 120 prescriptions analyzed in a 30 - day interval were not legible or were illegible in a private drugstore in the city of São José do Rio Preto, São Paulo, Brazil.^[13]

In our study, the percentage of poorly legible or illegible prescriptions was 61.33% of the 75 prescriptions analyzed. Although the prevalence of illegible or poorly legible prescriptions in our study is lower than in the studies cited, it is still considered a high number since the illegibility of prescriptions may be responsible for several problems related to the use of medications, such as adverse or fatal reactions. Additionally, unreadable drug prescription classified as a lack of medical ethics.^[15]

In our work, 38.66% of the prescriptions analyzed were classified as legible, because there were no problems or excessive time spent to understand what was written.

In Table 3 can be observed 5 variables: prescriber identification, patient identification, dose, posology and abbreviations. We can observe that of 75 prescriptions analyzed, 62 presented the complete prescriber identification, 11 incomplete prescriber identification and 2 did not presented prescriber identification; with respect to the patient identification, 58 presented the complete patient identification and 17 incomplete patient identification; with respect the dose, 67 they presented the dose description completely, 5 incompletely and 3 were absent in this variable; in the analysis of the posology, 72 presented the complete posology description and 3 of incomplete form; already with respect to the use of abbreviations in the drug prescription, 45 prescriptions contained abbreviations and 30 did not contain abbreviation.

Table 3: Characteristic of 75 drug prescriptions collected at a drugstore in Brasília, Mato Grosso do Sul, Brazil.

Characteristic	Classification	N	%
Prescriber identification	Complete	62	82.66
	Incomplete	11	14.66
	Absent	2	2.66
Patient identification	Complete	58	77.33
	Incomplete	17	22.66
	Absent	0	0
Dose	Complete	67	89.3
	Incomplete	5	6.66
	Absent	3	4
Posology	Complete	72	96
	Incomplete	3	4
	Absent	0	0
Abbreviations	Present	45	60
	Absent	30	40
Total		75	100

Regarding the prescriber identification, 82.66% of the prescriptions were classified as complete in this variable, 14.66% incomplete and 2.66% presented absence of prescriber identification. Works done in the cities of Montes Claros, Minas Gerais, Brazil, and São José do Rio Preto, São Paulo, Brazil, found similar results in the classification of prescriber identification in drug prescriptions.^[13,16] Regarding the variable "patient identification", 77.33% of the prescriptions were complete, 22.66% incomplete and there were no prescriptions classified as absent in this variable. The

results of our study diverged from the results obtained in the Minas Gerais^[16] and São Paulo^[13] research.

Regarding posology, 96% presented complete posology, 4% incomplete and there were no prescriptions classified as absent in this variable. These results are different from other studies conducted in Brazil.^[13,16,17] In our study, the results were encouraging in this regard, since no drug prescription had posology absence and the majority of the prescriptions analyzed presented complete posology. The absence posology in the prescriptions can lead to improper use of medications, such as insufficient or high

doses, which can lead to inefficiency of treatment or toxicity, which can lead to aggravations to the patient's health and even death.^[18]

Errors and medications problems can occur from the prescription and dispensing, of to the drug administration. Therefore, adequate and correct prescription has great importance in the prevention of errors related to medication and ambiguous, illegible or incomplete prescriptions, use of abbreviations and presence of erasures are factors that increase the risk of errors.^[19]

Abbreviations, acronyms and symbols are used in order to simplify and expedite the prescription process, but this can lead to misinterpretations by professionals unfamiliar with the expression, or because there are several meanings for a single abbreviation.^[20] According to Lyra-Junior et al. (2004)^[21] abbreviations should not be used to abbreviate pharmaceutical forms, administration routes, amounts or intervals time between doses. The use of abbreviations can generate a false interpretation of the prescription, causing problems in the pharmacotherapy.

In our study, 60% of the prescriptions analyzed showed the use of abbreviations, a greater number in the use of abbreviations (84.17%) in drug prescriptions was observed by Lima et al. (2016)^[13] in the city of São José do Rio Preto, SP, Brazil. In addition, other studies have also demonstrated the high prevalence of abbreviations in drug prescriptions.^[18,19]

CONCLUSION

In this study, we were able to observe the main errors in drug prescriptions collected in the city of Brasilândia, Mato Grosso do Sul, Brazil. This study may contribute to the identification of the main prescription errors in this municipality, indicating that intervention and awareness measures are necessary for prescribers to ensure patient safety and rational medication use.

DECLARATION OF CONFLICTING OF INTEREST

The authors declare that there is no conflict of interests regarding the publication of this paper.

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