Analysis of drug prescriptions in primary health care in a city in the Centro-potiguar

Análise das prescrições de medicamentos na atenção primária à saúde de um município Centro-potiguar

Análisis de prescripción de medicamentos en atención primaria de salud en una ciudad del Centro-potiguar

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Abstract

Introduction: The non-compliance of drug prescriptions with regulations that control this process is a reality of the health care process. **Objectives:** Thus, this study aimed to analyze medical and dental prescriptions of the primary health system in the city of Angicos-Rio Grande do Norte, in accordance with the current law. **Methods:** Accordingly, a cross-sectional descriptive-exploratory study was conducted. Second copies of prescriptions and special control prescriptions prepared by all physicians and dentists working in primary health care in this municipality, from January to June 2018, were analyzed. Information included the patient's name, age and sex. route of administration, dosage/concentration, duration of treatment, drug nomenclature, and stamp and signature of the prescriber. **Results:** A total of 3,725 prescriptions were analyzed, in which 566 (15.19%) were not in compliance with the law, where most problematic were user identification (68.02%), date of prescription (34.1%). drug nomenclature (DCB/DCI) (18.02%), duration of treatment (13.96%) and dosage (10.6%). **Conclusions:** These results point to the need for permanent education and inspection strategies regarding compliance with the law to be developed more assiduously.

Keywords: Pharmaceutical services; Drug prescriptions; Primary health care.

Resumo

Introdução: A não conformidade de prescrições de medicamentos com normativas que regulamentam esse processo é uma realidade do processo de cuidado em saúde. **Objetivo:** Este estudo teve como objetivo analisar prescrições médicas e odontológicas do sistema primário de saúde do município de Angicos, Rio Grande do Norte de acordo com a legislação em vigor. **Métodos:** Desenvolveu-se estudo transversal de caráter descritivo-exploratório. Constituíram objeto de análise segundas vias de prescrições e receituário de controle especial elaborados por todos os médicos e odontólogos lotados na atenção primária desse município, no período de janeiro a junho de 2018. Verificaram-se itens como presença de nome do paciente, idade, sexo, via de administração, dosagem/concentração, duração do tratamento, nomenclatura do medicamento, carimbo e assinatura do prescritor. **Resultados:** Analisaram-se 3.725 prescrições, em que 566 (15,19%) estavam não conformes com a legislação, sendo mais problemáticos os itens identificação do usuário (68,02%), data da prescrição (34,10%), nomenclatura do medicamento por denominação comum brasileira/internacional (18,02%), duração do tratamento (13,96%) e posologia (10,60%). **Conclusões:** Esses resultados apontam para a necessidade de que estratégias de educação permanente e fiscalização quanto ao cumprimento da legislação sejam desenvolvidas de forma mais assídua.

Palavras-chave: Assistência farmacêutica; Prescrições de medicamentos; Atenção primária à saúde.

Resumen

Introducción: El incumplimiento de la prescripción de medicamentos con la normativa que regula este proceso es una realidad del proceso asistencial. **Objetivo:** Así, este estudio tuvo como objetivo analizar las prescripciones médicas y odontológicas del sistema primario de salud de la ciudad de Angicos-RN, de acuerdo con la legislación vigente. **Métodos:** Por tanto, se desarrolló un estudio descriptivo-exploratorio transversal. Se analizaron segundas copias de prescripciones y prescripciones especiales de control elaboradas por todos los médicos y odontólogos que laboran en la atención primaria de este municipio, de enero a junio de 2018. Se verificaron ítems como la presencia del nombre del paciente, edad, sexo, administración, dosis/concentración, duración del tratamiento, nomenclatura del fármaco, sello y firma del prescriptor. **Resultados:** Se analizaron un total de 3.725 prescripciones, de las cuales 566 (15,19%) no cumplieron con la legislación, siendo más problemáticos los ítems identificación de usuario (68,02%), fecha de prescripción (34,1%), nomenclatura de medicamentos. DCB / DCI (18,02%), duración del tratamiento (13,96%) y posología (10,6%). **Conclusiones:** Estos resultados apuntan a la necesidad de que se desarrollen con mayor asiduidad estrategias de educación continua y de inspección sobre el cumplimiento de la legislación.

Palabras clave: Servicios farmacéuticos; Prescripciones de medicamentos; Atención primaria de salud.

INTRODUCTION

The World Health Organization (WHO) instituted, in 2017, the Third Global Patient Safety Challenge, Medication Without Harm, whose goal is to reduce medication errors by 50% by 2023.[1] Accordingly, studies in primary health care have found medication-related safety incidents to be the most prevalent[2-4] and the drug prescription stage to be the most susceptible to medication errors.[5-7]

In addition, it is estimated that more than 50% of drugs are prescribed, dispensed and used in an inappropriate way and that about 40% of users treated in primary health care do not need medication, but 80% of these leave doctor visits with a drug prescription.[8-10]

The prescription is a document for written communication between health professionals and between them and the user,[11] so the problem begins with inadequate communication between the pharmacy professional who dispenses the medication and the prescriber who prescribes it. In this process, communication failure is the main cause of errors,[2-4] and this directly impacts the patient's health, since they are the user of the prescribed drugs.

In Brazil, to minimize medication errors, Law No. 5,991/73, Ordinance No. 344/98, Law No. 9,787/99 and Resolution No. 20/11,12-15 were approved to keep health professionals up to date and trained to provide adequate multidisciplinary service to users of the health care system.

Despite the legislation, inspection of compliance occurs sporadically, which creates room for prescription errors to continue to occur. However, it is the prescriber's ethical responsibility to write the prescription properly, with clarification and availability in the face of possible undesirable effects.[16]

Accordingly, the aim of this study was to analyze the medical and dental prescriptions of primary health care in the city of Angicos (RN), to assess their compliance with Law No. 5.991/73, Law No. 9.787/99, Ordinance No. 344/98 and Resolution No. 20/11.

METHODS

We conducted a cross-sectional, descriptive-exploratory study, with a quantitative approach, within the scope of primary health care in a municipality located in the central part of the state of Rio Grande do Norte, namely Angicos, whose population, according to the last census (2010), was 11,549 inhabitants, with an estimated 11,695 inhabitants for 2021.[17]

In the context of primary care, at the time of data collection and analysis, this municipality had five basic health units/family health strategies (UBS/ESF), four in urban areas and one in rural area, in addition to one pharmaceutical supply center (CAF), which also centralized the drug dispensing process at this level of care via its central pharmacy.

Accordingly, second copies of prescriptions and all special control prescriptions prepared in the period from January to June 2018 by doctors and dentists assigned to the five UBS/ESF, filed at the central pharmacy, were evaluated. Data collection was carried out by a pharmacy student after previous training.

The items required by Law No. 5,991/73, Law No. 5,787/99, Ordinance No. 344/98 and Resolution No. 20/11[12-15] were considered to identify the compliance of the investigated prescriptions. Thus, the compliance of the prescriptions was evaluated through the items presence of name, age and sex of the patient, stamp/signature and professional category of the prescriber, date of prescription, route of administration, concentration, duration of treatment, name of prescribed drugs according to Brazilian/international common nomenclature (DCB/DCI), conformity between drug categorization and respective type of prescription, conformity between quantity of medication and respective type of prescription, conformity between quantity of dosage unit and respective type of prescription, identification of the recipient, name/stamp/signature of pharmacist and dispensing date.

Prescriptions containing more than one drug were considered non-compliant for each of the items, route of administration, concentration and duration of treatment, if not specified. Those that did not have, at the same time, stamp and signature of the prescriber were also considered non-compliant.

Additionally, the compliance of prescriptions with the list of essential medicines was verified, which was based on the Municipal List of Essential Medicines (REMUME 2017),[18] the most current version at the time of data collection and analysis.

There was no criterion to assess readability given the short period of time for data collection and analysis, and consequently, there was a limitation to assemble a team to verify parameters that make a prescription illegible, as this item can be considered subjective when analyzed by a single researcher.

Statistical data were processed with the help of Microsoft Office Excel version 365, and the information obtained as percentages was tabulated for better understanding.

Data collection was carried out after approval by the Ethics Committee of the Hospital Universitário Onofre Lopes (CEP/HUOL), under protocol number 83029518.0.0000.5292.

RESULTS

A total of 3725 prescriptions were analyzed, of which 566 (15.2%) were non-compliant. Most of the prescriptions analyzed were prepared by physicians (92.0%), and in 0.1% it was not possible to identify the type of prescriber because their stamp and signature were not included. Among the non-compliant prescriptions, 92.8% were prepared by physicians (Table 1).

Table 1. Distribution of prescriptions according to type of prescriber.

Prescriber	Total prescriptions	(%)	No. of non-compliant prescriptions	(%)
Physician	3427	92.0	525	92.8
Dentist	294	7.9	37	6.5
Not identified	4	0.1	4	0.7
TOTAL	3725	100	566	100

Thus, regarding the ratios of total prescriptions and total non-compliant prescriptions between physicians and dentists, 11.7 (~12) and 14.2 (~14) were found, respectively. That is, physicians made out 12 times more prescriptions and 14 times more non-compliant prescriptions. That said, considering that these ratios are similar, it appears that the level of non-compliance between prescriptions prepared by doctors and dentists are also similar.

Among the prescriptions evaluated, none governed by Ordinance No. 344/98 prepared by a dentist were identified. The entire prescription prepared by this professional contained over-the-counter medications and antibiotics.

The evaluation of the items of the prescriptions according to the legislation in force[12-15] are presented in Table 2.

Table 2. Distribution of non-compliant prescriptions according to items evaluated.

Item	Non-compliant prescriptions	(%)
Law No. 5.991/73		
Identification of user	385 (41.3)	68.02
Date of prescription	193	34.10
Duration of treatment	79	13.96
Dosage	60	10.60
Administration route	19	3.40
Concentration	13	2.30
Stamp and signature of prescriber	13	2.30
Information allowing locating prescriber	10	1.80
Name of medication		1.60
Law No. 9.787/99		
Nomenclature of medication per DCB/DCI	102	18.02

Table 2. Continuation.

Item	Non-compliant prescriptions	(%)
RDC No. 20/11		
Age of user	0	0
Sex of user	0	0
Stamp and signature of pharmacist	0	0
Ordinance No. 344/98		
Identification of person receiving medication	21	3.70
Type of prescription and amount of dosage unit	6	1.06
Stamp and signature of pharmacist	1	0.20
Accounting in specific books	1	0.20
Type of prescription and amount of medication	0	0
Type of prescription and categorization of medication	0	0

DCB/DCI: Brazilian common nomenclature/international common nomenclature.

In all, 933 nonconformities were identified in the prescriptions, resulting in an average of 4 nonconformities/prescription. The most prevalent items regarding non-compliance were user identification (68.02%), date of prescription (34.10%), drug nomenclature by DCB/DCI (18.02%), duration of treatment (13.96 %) and dosage (10.60%), the first two being the most prevalent in the special control prescription.

As for the prescriptions subject to Ordinance No. 344/98, 442 prescriptions were found not to comply with this rule. Of this total, 3.70% did not show the identification of the person who received the drug, 1.06% did not comply with the type of prescription and quantity of dosage unit and 0.20% did not have the stamp and signature of the pharmacist attesting to filling the prescription, consequently indicating no bookkeeping registered in a specific book, only via HORUS. All drugs present in the analyzed prescriptions were included in REMUME 2017.[18]

DISCUSSION

There was a prevalence of prescriptions written by physicians (92%), which has been verified by several authors, such as in UBS in Teresina (PI) (60.8%),[19] in UBS in Porto Alegre (RS) (99.7%)[20] and in basic pharmacy in Pontal do Araguaia (MT) (98.8%).

This can be explained by the fact that users seek more medical care from physicians than other primary care professionals. According to the latest survey carried out via DATASUS, 4,186 (69.8%) visits to doctors and 1,814 (30.2%) to other professionals in the health center were registered in Rio Grande do Norte.[22] However, the ratios for total prescriptions[12] and total non-compliant prescriptions[14] were the same between physicians and dentists, which suggests that the number of prescriptions prepared did not affect the number of non-compliant prescriptions.

A worrisome fact was the presence of four (0.1%) prescriptions filled without any type of identification of who prescribed it, which points to weaknesses in the dispensing process. This information is essential for contacting the prescriber in case of doubts, both from the user and the pharmacist.[23]

The highest prevalence of non-compliance was related to lack of user identification (68.02%). What makes this finding alarming is the fact that the prescription can only be filled with the mandatory

presence of this information, [12] and therefore, this alerts to the occurrence of dispensing/distribution even with this non-compliance. In addition, the presence of this information prevents the medication being sent to third parties, leading to its inappropriate use, and provides an opportunity for dialogue with the user.

Missing user identification in Angicos was 358 times higher than that found in UBS in Ouro Preto (MG) (0.19%),[24] 28.3 times higher than that identified in a health center in Lajeado (RS) (2.40%)[25] and 6.8 times more than that observed in UBS in Teresina (10.00%).[19] This discrepancy can be explained by the different methods used in each study, despite the objective of analyzing the same element.

For the item not according to the prescription date (34.1%), this also surpassed the results of studies carried out in a basic pharmacy in Pontal do Araguaia (0.8%),[21] in UBS in Ouro Preto (0.19%),[24] in primary health care in Caicó (RN) (0.0 and 1.6%, respectively),[26,27] in UBS in Ijuí (RS) (0.8%))[28] and in a public utility institution in Vale do Aço (MG) (8.6%).[29]

Angicos uses the HORUS system, through which pharmacy assistants and pharmacists are able use the dispensing history to verify the last time the medication for continuous use was delivered to a given user. This reduces the risk of it being distributed/dispensed before the date set in the system, but it does not cancel out the non-compliance with the legislation nor does it solve the problem, as there are medications for non-continuous use, in addition to the need to check the expiration date of the prescription, to reduce the tendency to self-medicate.

As for the non-compliance error that does not conform to the drug nomenclature by DCB/DCI (18.02%), within the scope of the Unified Health System (SUS) it is mandatory to prescribe drugs considering this item. [12] In addition, the WHO recommends a goal of 100% of drugs prescribed by the generic name[30] to facilitate education, information, access and promotion of their appropriate use.[31]

These data corroborate systematic reviews of evaluation of drug prescription indicators in primary health care, in which it was found that all analyzed studies contained non-prescription drugs by DCB/DCI.[32,33] In addition, they surpass results found in primary health care in Caicó (14.6 and 5.7%, respectively)[26,27] and in a community pharmacy in Sobral (CE) (4.82%).

As for the non-compliant items duration of treatment (13.96%) and dosage (10.60%), their absence or incomplete presentation can compromise the effectiveness and safety of pharmacological therapy, as it can lead the user to use the drug wrongly.

Studies evaluating the level of knowledge of users about drug prescriptions in primary healthcare in Piripiri (PI)[35] and Ribeirão Preto (SP)[36] found weaknesses regarding the name of the drug/duration of treatment and dosage, respectively, revealing the risks to which users are exposed by ineffectively understanding their prescriptions.

These data are similar to those found in UBS in Teresina (16.10%),[19] in UBS in Ouro Preto (17.42%)[24] and in UBS in Ijuí (16.10%),[28] in this case, for the duration of treatment . On the other hand, data on treatment duration are superior to those found in primary care in Caicó (97.1 and 40.8%, respectively),[26,27] which can be explained by the fact that these two studies were restricted to specific therapeutic groups (psychopharmaceuticals and antibiotics, respectively).

The non-compliance of prescriptions with Ordinance No. 344/98 was also found in a community pharmacy in Sobral,[34] where 0.3% of the analyzed prescriptions did not show user information, and in a basic pharmacy in Pontal do Araguaia,[21] where it was found that in 6.0% of the prescriptions analyzed, there was no identification of the recipient, in 0.4% a discrepancy between the quantity of dosage unit and the respective type of prescription and in 100% no record of the person responsible for dispensing.

In Angicos, 442 (79.5%) non-compliant prescriptions were special control prescriptions, which is worrisome because, according to current law, non-compliance with its requirements will constitute a health

infraction, and the offender will be subject to penalties.[14] The prescriber's knowledge of what is prescribed and the recognition of the value of the pharmacist's presence, a link between users and the health team,[37] are essential factors to avoid non-compliance in prescriptions.

The non-compliance of the prescriptions analyzed in this study with the law in force, in addition to surpassing results found in other studies of analysis of drug prescriptions in primary health care,[19,21,24-29,34] contradicts international recommendations for prescription of safe and effective medications[30,31,38]

CONCLUSION

Altogether, 566 (15.2%) prescriptions analyzed were not in compliance with the law in question, with the most problematic errors being user identification (68.02%), prescription date (34.10%), drug name by DCB/DCI (18.02%), treatment duration (13.96%) and dosage (10.60%).

The results of this study point to the need for regular education and inspection of compliance with the law in question by drug prescribers to be developed more assiduously, in addition to the need to reorient the process of professional training, through safer practices for preparing prescriptions. of medicines.

In view of the above, managers and health professionals have subsidies so that effective strategies to improve the quality of drug prescriptions, prioritizing their most problematic aspects, are applied in the context of primary health care in the municipality under study, to contribute to the effectiveness of pharmacological therapy and patient safety.

AUTHORS CONTRIBUTIONS

CAJ: conceptualization, formal analysis, research, methodology, project management, visualization, writing – first draft. AMB: conceptualization, data curation, formal analysis, methodology, project management, validation, visualization, writing – review and editing.

CONFLICTS OF INTERESTS

None to declare.

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