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Prescription Habits: Study of 350 Medical Prescriptions in the Ophthalmology Department at The Teaching Hospital of Bouaké (Cote D'ivoire)

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Abstract

Introduction

Medical prescription is a medico-legal act governed by well-defined rules. The aim of this study was to contribute to improving the quality of care through the analysis of medical prescriptions.

Materials and Methods

A cross-sectional study analyzing 350 medical prescriptions from patients seen in consultation at the ophthalmology department at theTeaching Hospital of Bouake between June 1 and July 31, 2019. Data analysis was performed using Epi Info software version 7.0.

Results

The patient was identified by name in 99.71% of the cases. Gender was determined through the use of a title (e.g., Mr., Mrs.) in 99.14% of patients. Age and weight were not indicated on 99.43% and 99.14% of prescriptions, respectively. In 51.14% of cases, the physician's registration number with the Medical Council was missing from the stamp. The prescriber's phone number was included in 56.86% of cases. Prescriptions were signed by the prescribers in 99.43% of cases. Each prescription contained an average of 2.07 ± 1.03 lines of medication. Anti-infectives accounted for 30.39% of the drugs prescribed, followed by vitamin complexes in 15.88% of cases. The pharmaceutical form, dosage, route of administration, frequency, quantity of official packaging, and duration of treatment were specified on all prescriptions.

Conclusion

The quality of medical prescription writing contributes to improving the overall quality of healthcare by facilitating the proper execution of prescribed treatments.

Keywords: Medical prescription – Ophthalmology – Côte d'Ivoire – Teaching Hospital Bouaké

Introduction

A drug is defined as any substance or composition presented as having curative or preventive properties with regard to human or animal diseases. It is also any substance or composition that may be administered to humans or animals with the aim of establishing a medical diagnosis, restoring, correcting, or modifying their physiological functions [1].

Medical prescription refers to the set of therapeutic recommendations, written on a prescription or given orally, established for a patient to promote recovery. It is a major medical act subject to regulatory and legal obligations, including the requirement to ensure that the patient fully understands the prescription [2]. It plays a vital role in patient care. In fact, the selection of appropriate drugs for a patient, under the principle of rational use, relies on a logical and rigorous approach to pharmacotherapy [3]. Thus, in medical law, the prescription represents a roadmap for the patient regarding curative and preventive measures [4].

A prescription is a written document from a physician, intended for a patient or their caregiver. It summarizes the recommendations following the clinical examination and the interpretation of laboratory tests. These recommendations may be dietary, hygienic, related to physiotherapy, or medicinal. The dosage, route of administration, quantities to be dispensed, and duration of treatment must be clearly stated [5].

The prescriber's involvement in writing a prescription carries moral, professional, and legal responsibility. For this reason, the law classifies medications into categories or "lists," with specific rules for prescribing and dispensing that must be followed by both prescribers and pharmacists [6].

In Europe, France ranks first in terms of drug prescriptions: nearly 90% of consultations end with a prescription. In the Netherlands, about one in two consultations (43.2%) ends with a prescription [7].

A study by Fourgon B et al. showed that the main documentation-related anomalies were the absence of mandatory identifiers for the patient, the prescribing physician, and the healthcare facility. Analysis of the prescription content showed that 95% met all necessary requirements for drug prescription [8].

In Tunisia, Ahmed B et al. (2004) found that 25% of prescriptions were completely illegible, and good-quality writing was found in only 14% of cases [9]. Another study on the typology of drug prescriptions revealed 209 pharmaceutical products, 56% of which belonged to the anti-infective and anti-inflammatory analgesic classes [10].

In Mali, a study by Issiaka I at the Institute of Tropical Ophthalmology of Africa (ITOA) showed that the most prescribed drug classes were antibiotics, anti-inflammatories, antiseptics, and anti-glaucoma agents. The average number of drugs per prescription was 2.02 [11].

In Bamako, Mali, Diaby M found that 79% of prescriptions included the name of the issuing center and sometimes the complete address of the prescriber [12].

In Côte d'Ivoire, few studies have examined prescription habits. Limited research in Abidjan revealed prescription errors in 41.4% of pediatric cases and 8.6% of adult cases [13,14]. To provide updated data—specifically in the ophthalmology department of the Teaching Hospital of Bouaké (TH)—this study was conducted. The aim was to contribute to improving the quality of medical prescriptions and ensuring high-quality patient care in the ophthalmology department of the TH of Bouaké.

Materials and Methods

This was a prospective, cross-sectional, descriptive, and analytical study of medical prescriptions issued to patients who were seen in consultation at the ophthalmology department of the TH of Bouaké. The study included patients who received a medical prescription at the end of their consultation between June 1 and July 31, 2019—a two-month period. An accidental (convenience) sampling method was used, systematically recruiting all patients seen during the study period.

Inclusion criteria consisted of all individuals possessing a medical prescription issued by physicians (residents, interns, academic or non-academic doctors) practicing in the ophthalmology department of the TH of Bouaké. Patients who declined participation were excluded.

The final sample size was 350 prescriptions.

The variables studied were:

- **Patient identification elements**: full name, gender, age, weight;
- **Prescriber identification**: name, qualifications, department, medical registration number, P.O. box, phone number, handwritten signature, and stamp;
- **Legibility of the prescription, origin, and date of issue**;
- **Details of the prescribed medications**, including pharmaceutical form, dosage, route of administration, frequency, treatment duration, and number of boxes.

Data was collected using an anonymous survey form specifically designed for the study.

Data analysis was performed using EPI INFO 7 software. Word processing and spreadsheets were handled using Microsoft Office 2007 (Word and Excel).

Qualitative variables were presented as proportions, and quantitative variables as means with minimum and maximum values.

Ethical Considerations: In accordance with the 2013 Helsinki Declaration, all participants were informed about the objectives of the study and their right to refuse or withdraw at any time without penalty. Participation was voluntary, following verbal informed consent. Confidentiality was rigorously maintained by assigning anonymous numbers to each survey form. The study was conducted with the approval of the Medical and Scientific Directorate of the TH of Bouaké.

Results

Patient identification (n=350)

Table I: Patient identification details

Patient identification	Number	Frequency (%)
Last name	349	99.71
First name(s)	347	99.14
Gender (title: Mr/	347	99.14
Age	02	0.57
Weight	03	0.86

Prescriber identification (n=350)

Table II: Prescriber identification details

Prescriber identification	Number	Frequency (%)
Stamp on prescription Last name and first name(s) and Qualification	349	99.71
Handwritten signature	348	99.43
Registration number with the Medical Council	171	48.86
telephone number (mobile)	199	56.86
post office box	05	1.43

For data relating to the contents of the prescription, the date of prescription and the originating department were specified on all prescriptions.

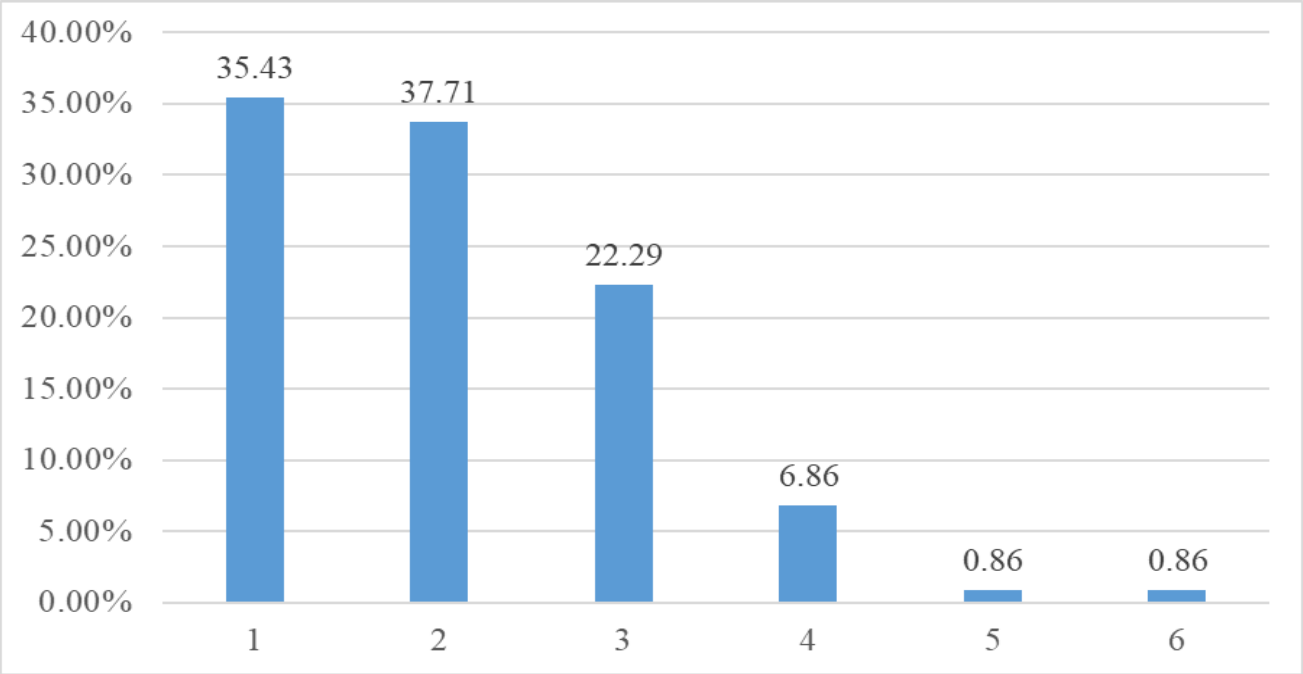

Figure: Breakdown of prescriptions by number of lines of medication prescribed

The average number of lines prescribed on the prescriptions was 2.07 +/- 1.03, with extremes of 1 and 6 lines.

Table III: Legibility of prescriptions according to patients (n=350)

Legibility (as judged by the patient)	Number	Frequency (%)
Read very easily	321	91.71
Read fairly easily	17	4.86
Read with difficulty	12	3.43
Total	350	100

Data relating to the contents of the prescription

Therapeutic classes prescribed (n=724)

Table IV: Breakdown of medicines by therapeutic class

Classes thérapeutiques	Number	Frequency (%)
Antibiotics/antiseptics	220	30.39
Antiallergics	108	14.92
Antibiotics + corticoids	79	10.91
NSAIDs	40	5.52
Corticoids	03	0.41
Antiglaucoma	24	3.31
Artificial tears	21	2.90
Analgesics	27	3.73
Vitamins + trace elements	115	15.88
Others	87	12.01
Total	724	100

Other details on the medicines prescribed

For all medicines prescribed, the galenic form, the dosage of the active ingredient, the route of administration, the frequency of administration and the duration of treatment were indicated.

Discussion

Patient Identification: Name, First Name, Age, Gender, and Weight

The patient's name and first name were indicated on 99.71% and 99.13% of prescriptions, respectively. Our results are comparable to those of Sondo B, who found that names appeared on 96% of prescriptions in his study [15]. The high frequency of these identifiers can be explained by the patient being introduced at the beginning of each consultation, as well as the presence of a designated space for these fields on most pre-formatted prescription sheets. Including the patient's name and first name helps prevent prescription mix-ups. These are therefore critical legal details, and their omission can have serious consequences.

In our study, the patient's age appeared on only 2 prescriptions (0.57%). This is lower than in the studies by Diaby M and Sondo B, who found the age listed on 9.3% and 22.7% of prescriptions, respectively [13,15]. This low rate may be due to the use of pre-printed prescription forms that do not include a space for age, as well as a possible lack of awareness among some prescribers about its importance. While an adult's age may sometimes be omitted, it is crucial for children to prevent improper medication dispensing that could compromise

care quality. Additionally, while dosage is often adjusted for age—particularly with eye drops, which typically have a standard dosage across age groups—it remains important to indicate age in cases where dosage varies, such as with certain mydriatic agents. Similarly, for inflammatory or infectious ocular conditions like uveitis and endophthalmitis, oral medications (antibiotics and corticosteroids) may be prescribed, where dosages are age-dependent.

Gender was indicated in 99.14% of cases, significantly higher than the 0.7% reported by Adama S [16]. This difference is explained by our classification based on honorifics (Mr. for male, Mrs. or Miss for female).

Patient weight was recorded on only 3 prescriptions (0.86%). This is lower than the 16% reported by Raineri F et al. [17]. This can be attributed to prescribers typically including weight only when necessary, especially for systemic treatments. In many ophthalmology cases—such as with eye drops or ointments—dosage is not weight-dependent. However, in situations requiring systemic medications (e.g., corticosteroids, antibiotics, vitamins, analgesics), including the patient's weight is vital for ensuring appropriate care.

Prescriber Identification: Name, Order Number, Postal Address, and Phone Number

The prescriber's name and first name were absent on only 1 prescription (0.29%). This is much lower than the rates reported by Adama S, who found names and first names missing on 41.1% and 58.9% of prescriptions, respectively [16]. Such omissions are likely due to missing stamps at the time of prescription. In our study, 99.71% of prescribers used their official stamp on the prescriptions, which is similar to the 98.1% reported by Sanogo M [18].

Among the 350 prescriptions analyzed, the medical license number (registration with the Ivorian Medical Association) appeared on only 179 (51.14%). This relatively low rate is partly due to the older regulation where registration was recommended rather than mandatory, meaning many doctors practiced without being officially registered. This has recently changed, with mandatory registration now required before public sector employment.

The prescriber's postal address appeared on only 1.43% of prescriptions, while a phone number was present on 56.86% of cases. Adama Sanou reported 61.5% of prescriptions included a phone number [16]. The low rate of postal addresses is likely due to the increasing use of digital communication methods such as mobile phones and email. Nevertheless, including at least one form of contact is essential—particularly if a pharmacist needs to clarify or substitute a medication, or if the patient experiences side effects and needs to contact their physician.

Legibility of the Prescriber's Signature

The prescriber's signature was identifiable on 99.43% of prescriptions, a rate comparable to the 98.1% reported by Sanogo M [18]. The near-universal presence of signatures confirms the authenticity of the prescription and assigns accountability to the prescriber. All prescriptions in our study were dated (100%). This aligns closely with Sondo B's finding of 98.6% [15]. Pre-printed prescription forms often include a space for the date, reducing the likelihood of omission. Including the date is important for documenting the timeline of

care in ophthalmology.

According to the Ivorian Code of Medical Ethics, a physician or dental surgeon is allowed to include on their prescription sheet any details that facilitate patient contact, such as a phone number, address, officially recognized qualifications, and any titles/functions approved by the Republic of Côte d'Ivoire [19].

Number of Medications and Legibility of Prescriptions

The majority of prescriptions contained only one medication (35.43%), followed by two medications (33.71%). This is understandable, as most ophthalmology cases—excluding surgeries and complications—require only one or two drugs. Additionally, many patients are simply renewing their eyeglass prescriptions, for which minimal treatment is needed.

In our study, 91.71% of prescriptions were very legible. This contrasts with a much lower rate of 26% reported in Burkina Faso [20]. Our high legibility rate may be attributed to adherence to prescribing guidelines, which emphasize that prescriptions should be understandable to patients, caregivers, and insurers. Clear prescriptions help prevent dispensing errors. Due to the risk of mistakes with handwritten prescriptions, many recommendations now favor computerized prescribing.

Details on Treatment

Our results showed that antibiotics/antiseptics (30.39%), vitamins-amino acids-trace elements (15.88%), and antiallergics (14.92%) were the most frequently prescribed drug classes. The high rate of antibiotic use is likely due to the high prevalence of infections in our setting, such as bacterial conjunctivitis.

Neuroprotective agents were also frequently prescribed, reflecting the high incidence of optic neuropathies like glaucoma in our hospital practice. The use of multiple boxes for antibiotics (23.76%), vitamins (19.14%), and antiallergics (15.40%) can be explained by the need to address chronic or recurrent infections and allergies. The use of several boxes of vitamins is also common in chronic diseases like glaucoma where neuroprotective therapy is required.

As for pharmaceutical form, dosage, route of administration, dosing schedule, and duration of treatment, these were all specified on every prescription in the study. This greatly exceeds the rates reported by Adama S—44.99% for pharmaceutical form, 19.2% for route of administration, and 26% for treatment duration [16]. These differences may be attributed to the routine use of eye drops and the prescribers' strong familiarity with pharmacological characteristics, along with the fact that most prescriptions were issued by qualified professionals.

Conclusion

Knowledge of proper prescribing practices, and adherence to rules of prescription and dispensing, are essential to improving healthcare delivery. The quality of prescription writing also facilitates accurate execution and helps reduce healthcare costs for the population. In summary, the physician must always remember that the prescription is the document that "speaks" to the patient in the doctor's absence.

The high quality of prescription writing observed in this study may have been influenced by physi-

cians' awareness of the study itself, potentially altering their usual prescribing habits. A complementary or similar study conducted in a pharmacy setting would provide a more objective assessment.

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