

Research Article

Handwriting Medication Prescribing Errors: Input of the Pharmacist in Their Detection in the District of Bamako

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Abstract: Handwriting medication prescribing errors are underestimated in Mali. They are sometimes harmful to patients and can even threaten their lives. We carried out a prospective cross-sectional study in Bamako which purpose was to evaluate the prevalence and type of prescribing errors. Of the 1537 handwritten prescriptions, 827 (53.8%) contained at least one errors. The identification of the prescriber was missing in 37% (n=569). The weight was missing in 99%; and the height was missing in 88%. The dose of the prescribed medicine was missing in 25.7% and the pharmaceutical form was missing in 55.1%. 65% of the prescriptions were not legible.

Keywords: Handwriting, Medication, Prescribing errors.

INTRODUCTION

Detecting medication errors needs collaboration between various organizations [1]. A prescription error is an error in prescribing, dispensing or administering of a drug, irrespective of whether such errors lead to adverse consequences or not [2]

Medication errors are common in general practice and in hospitals. The prescription errors and prescribing faults due to erroneous medical decisions result in harm to patients. Any step in the prescribing process can generate errors. Slips, lapses, or mistakes are sources of errors, as in unintended omissions in the transcription of drugs. The common errors include faults in dose selection, omitted transcription, and poor handwriting [3].

Prescribing errors are prevalent in primary care that affects 37% of 9385 prescriptions in the USA, and 1 in 8 patients in the UK. A study in elderly patients admitted to hospital in Netherlands evaluated medication omission errors and reported that adverse consequences in 21% of 100 patients. Human error in

healthcare may be considered in the context of individuals or health systems. Personal factors like forgetfulness, inattention, carelessness, poor motivation, negligence and recklessness are important [4]. The incidence of prescribing error in the USA is about 80 per 100,000 consultations [5].

Very few studies have been conducted on medication errors in Mali; so the purpose of this study was to determine the frequency and types of medication prescribing errors in outpatients.

MATERIALS AND METHODS

It was a cross-sectional study conducted in the "private pharmacy Mandé" of Bamako during ten months (from February 2010 to November 2010). "Private Pharmacy Mandé" is a major pharmacy located near the center of Bamako. It is referral for many patients. Before initiating this study, we gained the agreement of the pharmacy staff members. Informed consent was obtained from peoples who attended the pharmacy with a prescription form. The study included all the Handwriting prescriptions from health personnel during the study period. Prescriptions excluded from the

study were those written on a sheet of paper for self medication purpose. The sample size was calculated using the formula $N = P.Q. (\epsilon\alpha/e)^2$

- A prevalence rate (P) of 20% for prescription error in a previous study [12]; $Q=1-P$
- The confidence or risk level = 95%; $\epsilon\alpha=1,96$
- The level of precision=2%
- It was determined that a minimum sample size of 1537 prescription was necessary.

Statistical analyses were carried out using SPSS version 12.0

RESULTS

- A total of 1537 handwritten prescriptions were included in our study, among them, 827 (53.8%) contained at least one errors.

- The age of the patient was missing in 70% of the prescriptions; the sex was missing in 27%.
- The surname was missing in 7%, while the first name was missing in 17%.
- The weight was missing in 99%; and the height was missing in 88% (Table 1).
- The stamp of the prescriber was missing in 69.2% and his phone number was missing in 38.5%, while the signature was missing in only 1% (Table 2).
- The dose of the prescribed medicine was missing in 25.7% and the pharmaceutical form was missing in 55.1% (Table III).
- 65% of the prescriptions were not legible

Table 1: Patients' identifications missing in prescriptions

Identification missing	N	%
Age	1076	70
Sex	415	27
Surname	108	7
First name	261	17
Weight	1522	99
Height	1353	88

Table 2: Prescriber's identifications missing

Identification missing	N	%
Surname	1153	75
First name	1383	90
Stamp	1064	69.2
Signature	15	1

Table 3: Informations missing about the prescribed medicine

Identification missing	N	%
Pharmaceutical form	847	55.1
Dose	395	25.7
Posology	26	1.7
Route of administration	15	1.0
Duration of the treatment	692	45.0
Date of prescription	62	4.0

DISCUSSION

Of the 1537 prescriptions, 827 (53.8%) contained at least one error. This rate is higher than the one found by Kay (43.8%) [4]. Benjamin in his study found that 82% of the prescriptions contained at least one error; this rate is greater than ours [6]. In the provision of the Malian Doctors' code of conduct as well the one of France [7, 8], "A prescription must be legible, dated and it must contain: the name, address, and qualification of the prescriber; the first name, surname, age, sex, height and weight of the patient, the pharmaceutical form of the medicine, the dosage, the posology, the route of administration and the duration of the treatment. The signature and the stamp of the

prescriber or the prescribing center must lie just below the last line of prescription".

The age of the patient was missing in 70% of the prescriptions, the sex was missing in 27%. Comparing our results to those of Diaby and Sondo [9, 10], they were higher, since these authors found that the age was missing in respectively 9.3% and 22.7% of prescriptions. If the age can be sometimes omitted in adults, in children it is necessary in order to cope with the required doses.

The surname was missing in 7%, while the first name was missing in 17%.

Fourgon in his study found that the surname and the first name were mentioned in 31% of the prescriptions, so in 69% they were missing; this rate is higher than ours. [11]. In the study of Sondo, the surname and the first name were missing in 27% [10]. The presence of the name and the surname on the prescription avoid confusing the prescription of a specific patient with those of others. But sometimes it can be omitted deliberately in order to respect the patient confidentiality, for instance in case of AIDS.

The weight was missing in 99%; and the height was missing in 88%. Our results can be compared to those of: Raneiri who found that the weight was missing in 84% [12]; while in the study of Fourgon, the height was missing in 99, 7%.

The identification of the prescriber was missing in 37% (n=569). In 53% (n=968) the identification did exist; of these, 45% were general practitioners, 26% were specialists, 29% were nurses. In his study in Sweden, Anders found 131 (22.9%) general practitioners [13].

Our result is lower than the one of Sanogo who found that the identification of the prescriber was missing in 57% [14].

The identification of the prescriber is very important; because it helps to know if the prescriber is qualified to deliver prescription.

In our study, only 30.8% of the prescriptions contained the stamp of the prescriber, so it was missing in 69.2% and the phone number of the prescriber was missing in 38.5%, while the signature was missing in only 1%. Sanogo in his study found that the signature of the prescriber was missing in 1.9% [14].

The phone number allows both the pharmacist and the patient to reach the prescriber in case of error or necessity.

The date of prescription was missing in 4%; our result can be compared to the one of Sondo who found 1.4% of prescriptions where the date was missing [10].

The different data missing on the prescriptions can be related to the ignorance of the rules of prescription by many practitioners.

The dose was missing in 25.7% and the pharmaceutical form was missing in 55.1% of prescriptions. This rate is higher than the one of Raneiri who found 3% of prescription where the pharmaceutical form of the medicine was missing [12].

The posology was missing in 1.7%. This rate is higher than the one of Konaté who found 78.3% of prescription where posology was missing [15].

The route of administration was missing in 80.8% and the duration of treatment was missing in 74%.

Many prescriber do not read the instructions form of medicines before prescribing them; so they fail to master the rules of prescription.

65% of the prescriptions were not legible; this rate is higher than the one of Fourgon; because in his study, 53.4% of the prescriptions were not legible (n=821). Sondo found 23.7% of prescriptions which were not legible [10]; this rate is lower than ours.

Lorraine in his study on Suitability and readability of consumer medical information (CMI) accompanying prescription medication samples found that no CMI was present in 39 (46.9%) samples. In 19 (22.9%), CMI was contained in a package insert and in 25 (30.2%) it was printed on the medication package. Average reading difficulty of CMI was at the 10th grade level (range = 6–15) using the Fry formula, and text point size was small (mean 9.9 ± 2.2 on package inserts and 9.4 ± 2.6 when printed on packages) [16].

The prescription must be clearly legible in order to avoid any mistake both by the patient and the pharmacist. The legal responsibility of the medical staff can be involved in case of injury. The Court of Appeal of Angers in France sentenced a Doctor because his prescription was not readable [17].

CONCLUSION

Handwriting medication prescribing errors are relatively frequent; some are mild; but in some instances these errors can be harmful. Prescribers should be careful when writing a prescription lest they can face lawsuit.

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