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PRESCRIBERS ADHERENCE TO THE BASIC STANDARD OF PRESCRIPTION ORDER WRITING AT JIMMA TOWN PRIVATE CLINICS, JIMMA, ETHIOPIA

[*1]Abrham Wondimu, [2]Hailemeskel Mekonnen, [1]Fantahun Molla, [1]Naod Gebre-Samuel, [1]Subas Chandra Dinda, [1]Admassu Assen, [1]Solomon Abrha, [1]Zewdu Yilma, [1]Ebisa Tadese

[1]Department of Pharmacy, College of Health Sciences, Mekelle University, P.O.Box 1871, Mekelle, Ethiopia.

[2]Department of Pharmacology, School of Medicine, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia.

Abstract

Incomplete and illegible prescriptions adversely affect the health care system in general and the patients in particular. The objective of this study is to assess the prescribers adherence to the basic standard of prescription order writing in Jimma town private clinics. A retrospective study was conducted by using prescriptions from private clinics found in Jimma town; which were received by and documented in Red-Cross Pharmacy and Jimma University Model Drug Store from September 15 to February 15, 2006. A total of 384 prescriptions were selected and analyzed for the essential elements of prescriptions. Of the 384 prescriptions analyzed, name of the patient, age and sex were specified in 99.48%, 52.08%, and 55.99% of prescriptions, respectively. In 1.82%, 14.32% and 80.47% of the prescriptions, address, card number and date were specified, respectively. The prescriber was properly identified both by name and signature in 21.09% of the prescriptions. The hand writing of the prescribers was legible to read in 80.47% of the prescriptions. Out of the 799 prescribed drugs, dosage form, strength, route of administration and dose were indicted for 35.29%, 59.37%, 53.44% and 58.20% of the drugs, respectively. Frequency and duration of treatment and/or total dose to be supplied were included for 88.74% and 93.24% of the prescribed drugs, respectively. The result of the present study showed low adherence of prescribers to the basic standard of prescription writing, therefore, appropriate measures should be taken to reduce the non-adherence pattern.

Keywords: Prescription, Prescriber, Basic standards, Adherence, Private clinic, Jimma.

Introduction

A prescription is a written, verbal, or electronic order from a prescriber to a dispenser for particular medication for a specific patient. It is a link between the prescriber, the dispenser and patients. Properly written prescription is a basis for giving appropriate information, instruction and warning to the patients. It ensures adherence to therapy and protects the patients from unnecessary harm related to therapy[1].

Author for Correspondence:
Abrham Wondimu,
Department of Pharmacy,
College of Health Sciences, Mekelle University,
Mekelle, Ethiopia.
E-mail: leabrham@gmail.com

Although the prescription format may vary slightly from one country to another, most countries agree on the core elements that should be included in the prescription order[2–4]. These are: prescriber's name, address, telephone number and signature; patient's name, address, age and weight (important at the extremes of age); prescription date; drug name (preferably generic), formulation, strength, dose, frequency of administration, quantity prescribed, reason for prescribing and instructions for use[2–4]. In Ethiopia, all of these requirements are recommended and are available in local regulations[5].

Non-compliance with prescription writing requirements involves mainly errors of omission, which include absence or incomplete specification of dosage form or strength, dose or dosage regimen, quantity or duration of drug to be supplied as well as prescriptions that are illegible due to poor writing. Prescription deficiencies formed a large proportion of errors identified in prescription screening[6]. This is mainly due to the attitude of some prescribers who are always in a hurry and hence unwilling to spend a little more time in writing clear and complete prescriptions. However, the extra time spent on the prescription will help to ensure that the patient receives the treatment that is intended by the prescriber. Additionally, the prescriber will be well compensated for the extra time taken by not having to answer enquiries from the pharmacist[7].

There have been many studies on the prescribers' adherence to basic principle of standard order-writing in various countries but only a few studies have been conducted in Ethiopia, all of them were investigating the quality of prescription in governmental health institutions. In general, these studies have found inappropriate prescription writing by the prescribers and they have recommended proper auditing and drug prescribing policies, quality assurance monitoring and continuous medical education. In Ethiopia, however, there is no study conducted in private health sectors in this regard. Therefore; the objective of the present study is to assess the prescribers' adherence to the basic standard of prescription order writing at Jimma town private clinics.

Methodology

A retrospective study was conducted by using prescriptions from private clinics found in Jimma town; which were received by and documented in Red-Cross Pharmacy and Jimma University Model Drug Store from September 15 to February 15, 2006. Jimma is located 347 km away from Addis Ababa, the capital city of Ethiopia, in southwest direction. In the town a number of private and public owned health care institutions are available.

The sample size of the prescription was determined by using the following formula[8].

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where, n= sample size required
p=estimate of the prevalence rate
d=margin of sampling error tolerated
z=the standard normal value at confidence interval of 95%=1.96

Since there is no estimate prevalence rate on prescribers on prescribers' adherence to the basic standard of prescription order writing in private clinics, 50% is taken to get maximum sample size, with 95% confidence interval of and 5% margin of error. The sample is:

$$n = \frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2} = 384$$

Therefore; 384 prescriptions were selected by systematic random sampling method.

A structured checklist was prepared and used to collect information about prescribers' adherence to the basic standard of prescription order writing. Adherence is degree to which the prescriber had met the obligation of including all the elements of a prescription in the prescription order. The prescription was judged 'illegible' if the handwriting is unreadable at least for two data collectors.

Results

Of the 384 prescriptions analyzed, 99.48%, 52.08% and 55.99% stated the patients name, age and sex, respectively. Only 1.82% of the prescriptions indicated the patients address and 14.32% were with the card number. It was also found that 80.21% of the prescriptions were dated and 80.47% were legible to read (Table No. 01).

Table No. 01: Frequency and percentage distribution of patents identification data, date, and legibility of prescription from private clinics found in Jimma town, February, 2006

Variable	Frequency	Percentage
Patients name	382	99.48
Age	200	52.08
Sex	215	55.99
Adreess	7	1.82
Card number	55	14.32
Date	308	80.21
Legibility	309	80.47

Fig. No. 01 shows that the prescriber was properly identified both by name and signature in only 21.09% of the prescriptions. 2.08% of the prescriptions contained only the prescribers name and 46.36% only the signature. 30.47% of the prescriptions are neither signed nor did they contain the name of the prescriber.

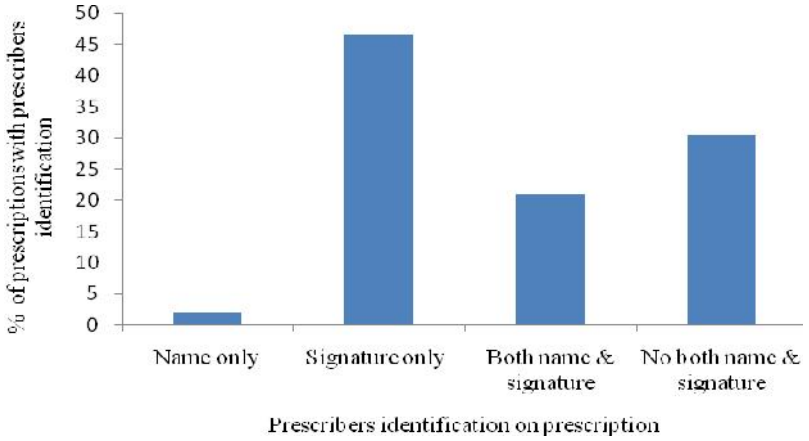

Fig. No. 01: Record of the prescribers' identification on the prescription orders from private clinics in Jimma town, February, 2006.

As it is shown in Table No. 02, from the total 799 prescribed drugs; the drug name was not specified for 1.25% of drugs, but were merely written as "analgesic", "antiacid" and "antipain". The dosage form was specified only for 35.29% of the prescribed drugs; most of these drugs were available in multiple dosage forms. Strength, dose and route of administration were specified for 59.57%, 58.20% and 53.44% of the prescribed drugs, respectively. Of the prescribed drugs, 709 drugs (88.74%) had frequency written on the prescription order. Duration of treatment and/or total quantity of drug to be issued was included for 93.24% of the drugs prescribed.

Table No. 02: Record of information of drugs prescribed in private clinics in Jimma town, February, 2006

Variables	Frequency	Percentage
Name of drug	789	98.75
Dosage form	282	35.29
Strength	476	59.57
Route of administration	427	53.44
Dose	465	58.20
Frequency	709	88.74
Duration of treatment and/or total quantity of drug to be issued	745	93.24

Discussion

According to the study conducted, the rate of non-adherence of the prescribers to the standard prescription order writing ranges from 98.18% of the prescriptions without address to 0.52% of the prescriptions without name of the patients.

The patients name, address and card number are useful to assure that the correct medications goes to the correct patient and also for identification and record keeping purpose. The address of the patients can also used for the assessment of the outbreak of an epidemic disease in a certain particular places. In the present study 99.48% of the prescriptions were with patients name but only 1.82% and 14.32% of the prescriptions were with address and card number, respectively. Use of not standardized prescription papers, even not having space for writing important information may be a possible reason for this poor adherence; for example, 18.5% of the prescriptions not provide space for address.

Age and sex of the patients have direct roll on the selection of a certain drug dosage form and the route of administration. There are drugs which require particular precaution during dispensing depending on age and sex of the patients; for example, chloramphenicol for neonates and vitamin A for pregnant mothers are contraindicated. Furthermore, age is also a very important component of the prescription to cross-check prescribed dose to the patents. However, in this study age and sex were included only in 52.08% and 55.99% of the prescriptions. The result is comparable with study done in Tikur Ambessa Hospital in Ethiopia[9], where age and sex recorded in 44.8% and 43.6% of the prescriptions. Though the figure obtained in this study is better than that of the study in health institutions in Wollo, Ethiopia[10] and Gonder teaching hospital[11] where only 6.5% and 1.08%, and 36.6% and 16.8% of the prescriptions were containing age and sex respectively, still the result of the current study was not satisfactory. Similar study done in Baharain[12] revealed that age and sex were not specified in only 3.5% and 0.5% of the prescriptions, respectively.

The date is an important piece of the prescription that can assist the dispenser in recognizing potential problems. For instance, when an opoid is prescribed for pain due to an injury and the prescription is presented to a dispenser two weeks after issuance the drug may no longer be indicated. Compliance behavior also can be estimated using the date when the prescription is processed. As to our study 19.79 % of the prescriptions were not dated. Similar studies done in America[13], Malaysia[14], and Ethiopia[11] showed that 18%, 17.1% and 10.8% of the prescription were not dated, respectively.

Now a days, since there are so many drugs name look alike and sound alike (for example chlorpromazine and chlorpromide, ranitidine and rimantidine, timol and atenolol, and quinine and guanidine), errors during dispensing can occur. The problem is more in illegible prescriptions. Not only are patients placed at risk by illegible prescriptions but time and resource are also wasted in deciphering the intended meaning from clues on the prescription or attempting to locate an unknown prescriber whose signature and name is illegible to get clarification of the order. Though the legibility assessment is quite subjective and depends on the data collector's familiarity with the handwriting of the prescriber, considering that most prescription from private clinics goes to any arbitrary drug retail outlets, the analysis of the prescription towards legibility is assessed. Of the 384 prescriptions assessed 19.79% of the prescriptions were with illegible handwriting, which made the prescription papers difficult to read. Comparable results were obtained in study in America[13] where 15% of the orders had illegible handwriting. Study in Malaysia[14] showed that 7.1% prescriptions were illegible. Previous study from Ethiopia, in health institutions in Wollo[10] revealed that 31.71% of the analyzed prescriptions were with illegible handwriting.

Of the analyzed 384 prescriptions only 13 (3.39%) prescriptions contains all necessary information for the prescribed drugs. The rest didn't have at least one of the drug information. Strength and dosage form were specified for 59.57% and 35.29% of the prescribed drugs, respectively. According to other similar study in Ethiopia[10] 40.21% and 38.87% of the prescribed drugs were indicated with their strength and dosage form. As a drug can be available in various strength and dosage form missing of this information can lead into bad consequences.

Most of the preparations prescribed with no indication of the dose to be used were external preparations and oral rehydration salts. Including these preparations 41.8% of the total drugs prescribed were without dose. The prescribers probably assumed that the pharmacy staff would give the appropriate instructions for the patients.

However, it should be emphasized that all the preparations should be prescribed with specific dose as the prescription has limited information for the pharmacy staff to judge the prescribers intension. Study conducted in Malaysia[14] showed that 8.7% of the drugs were prescribed without dose.

The study also showed that frequency of dosing and duration of treatment and/or total dose to be dispenser were indicated for 88.74% and 93.24% of the prescribed drugs, respectively. As most of the solutions, suspensions and topical preparations dispensed are usually packed in excess and cannot be finished in the intended treatment period it is very important to specify the duration of treatment for these dosage forms.

Conclusions

The result of the study showed that most of the patients and drug information were not specified in the prescription order so it is possible to conclude there is a low adherence of the prescribers to the basic standard of prescription order writing in Jimma town private clinics. Therefore, appropriate measures should be taken to reduce the non-adherence pattern.

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