Journal of Applied Pharmaceutical Science Vol. 3 (05), pp. 075-079, May, 2013
Available online at http://www.japsonline.com
DOI: 10.7324/JAPS.2013.3514
ISSN 2231-3354

Study of completeness of prescriptions in paediatrics emergency section of a tertiary hospital in Lagos, Nigeria

AINA Bolajoko Ajoke[1*] and EGBEHOR Udeme Christiana[2]
[1]Department of Clinical Pharmacy and Biopharmacy, Faculty of Pharmacy, University of Lagos, College of Medicine Campus, Idi Araba, Lagos, NIGERIA
[2]TURTLEBAY Pharmacy Ltd. 79, Etagbor Road, Calabar, NIGERIA.

ARTICLE INFO

Article history:
Received on: 11/04/2013
Revised on: 03/05/2013
Accepted on: 15/05/2013
Available online: 30/05/2013

Key words:
Completeness, Prescription, Paediatrics, LUTH.

ABSTRACT

A prescription is the prescriber's written and signed formula instructing the pharmacist to supply the required drugs for a specific patient. It should be written legibly, accurately and completely in order to minimize errors in the dispensing and administration of medications. This study was to determine the level of occurrence of the essential elements in drug prescriptions in paediatric emergency section in LUTH. A total of 1158 prescriptions were studied and analysed for the essential elements. Also questionnaires were distributed to prescribers in the children emergency Unit of LUTH. Patient's name was found to be the most occuring element (100%) while patient's address was the least occuring element (11.5%). The other elements occurences were between 75 to 98% in the prescriptions studied. A similar trend was observed among the prescriber responses to rating of importance of basic elements in a prescription. The patient's body weight was not included in the prescriptions studied. This is probably due to the fact that it is missing from the standard prescription form. Some of the prescriptions studied were deficient in some of the basic elements. It is being recommended that patient body weight should be included as an element in the standard prescription form for paediatric patients.

INTRODUCTION

After any clinical diagnosis; the practitioner, can often select from a variety of therapeutic approaches which includes medication, surgery, psychiatric treatment, radiation, physical therapy, health education, counseling, further consultation, and no therapy. Of these options, drug therapy (medication) is by far the one most commonly chosen. In most cases this requires the writing of a prescription (Katzung, 2004). Errors in the use of medicines can occur through any of the health care team members and includes: errors associated with the prescriber, the pharmacist dispensing the medicine and the nurses administering the drug to the patient. Medication errors can occur during taking of medication history, prescribing, transcribing, dispensing, using i.e administration and monitoring, the majority of which are errors in prescribing. It has been estimated that 1-2% of patient in the United States of America are harmed by medication errors in prescribing (Dean et al, 2002). Several types of prescribing errors are particularly common. These include errors involving omission of needed information; poor writing (i.e. illegible writing) perhaps leading to errors of drug dose, interactions and prescription of drugs that are inappropriate for the specific situtation. It was found that physician prescribing errors mainly consisted of errors of omission and errors of commission, while a few errors involved drug interaction and drug allergies. Prescription that was missing in essential piece of information is considered to have errors of omission. The most commonly identified errors of omission are as follows (Lesar et al, 1990).

- Incomplete specification of dosage form or strength or specification of an unavailable dosage form or strength
- Failure to specify the quantity to be dispensed or duration of therapy
- Failure to write the prescription legibly
- Failure to provide all legally required information especially when prescribing controlled substances.

Children's doses may be calculated from adult doses by using age, body-weight, or body surface area, or by a combination of these factors.

* *Corresponding Author*
Postal Address: 17 Albert Street, Palmgrove, Lagos NIGERIA.
+234 8023091623

It is advisable to state the age and weight of the child for all prescriptions (including non-prescription drugs) for children. A prescription is the prescriber's written and signed formula instructing the pharmacist to supply the required drugs for a specific patient (De Vries, 1995). It is considered to be a medicolegal document that should be written legibly, accurately and completely (De Vries,1995). Good quality prescriptions are extremely important for minimizing errors in the dispensing and administration of medications. Incomplete information could lead to poor outcome of drug therapy especially in children who are more susceptible to medication errors. Elements in a complete prescription should include (Meyer, 2000; ACP, 2007). Name, address, age and weight(at the extremes of age) of the patient; Drug name (generic); Drug strength; Dosage form; Route of administration; Quantity to be dispensed; Directions for use; Number of refills and dosage frequency; Prescriber's name and signature; Prescriber's phone number and address; Date of prescription. A complete prescription is one that contains all these basic elements. Prescription auditing involves checking that all these elements are present. The importance of these basic elements of a complete prescription cannot be overemphasized. They are extremely very useful and important for minimizing errors in the dispensing and administration of medications for instance; in pediatrics which can generally be categorized as neotates, infants and children; this special group of patient are highly fragile and susceptible to adverse drug reactions, which could result from incomplete prescription writing. Factors placing pediatrics patient at increased risk for ADRs and toxicity include inefficient renal filtration, relative enzyme deficiencies, differing target organ sensitivity, and inadequate detoxifying systems causing delayed excretion. Physicians should therefore adhere to the guidelines for prescription writing for the benefit of the patient (Meyer, 2000). To this end therefore, this study was initiated to assess the level of compliance on the part of prescribers to the guidelines to complete prescription writing, which is extremely important in regard to rational prescribing as a component of the drug use process.

METHOD

Location of Study and study population

The peadiatric emergency section of the Lagos University Teaching Hospital (LUTH) was selected as the location of study. Study population included prescriptions and prescribers of the peadiatric emergency unit.

Study Procedure

A total of 1158 prescriptions (January to June 2007) that were available during the period of study were analysed for the essential elements which should be included in a complete prescription order. Twenty pretested questionnaires were distributed to prescribers to find out how important they think each element is, in being included in a prescription and what are the problems of incomplete prescription.

RESULTS AND DISCUSSION

The response rate among prescribers was 75% as 15 out of the 20 questionnaires distributed were retrieved.

Patient's name was found to be the most occuring element (100%) while patient's address was the least occuring element (11.5%). The other elements occurences were between 75 to 98% in the prescriptions studied (Figure 1).

The patient's body weight, prescriber's address and phone number were not included in the prescriptions studied probably due to the fact that the space for these are not provided in the standard prescription form.

Majority of the prescribers (above 70%) agreed that virtually all the basic elements are important except prescriber's telephone number (13.33%) and prescriber's address (46.67).

From the results obtained, it was discovered that out of 1158 prescriptions, about 95% contained prescriber's name which is not too different from the response to the questionnaires where 93% of the prescribers agreed that the name of the prescriber is important to be on a prescription. About 47% of the respondents felt that prescriber's address was important but this was not indicated in any of the prescriptions. The reason could be that since the prescription paper has LUTH address where the prescriber is working then there is no need for address again. Also, 98.2% of the prescriptions contained prescriber's signature, again, this is in line with all of the respondents that strongly believed that this element is basic. Furthermore, only 13.33% of the respondents agreed that telephone number of the prescriber was important but this is not one of the elements on the standard LUTH prescription form probably for security reason.

Andersen and Beurling (1997) from Copenhagen University Hospital reported that among the most frequent errors of omission in prescriptions was inadequate identification of the physician. These deficiencies indicate how things are made difficult for the dispensing pharmacist to contact the prescriber in case of any clarification. Also, 92.1% of the prescriptions contained the Dispenser's signature, though this is not listed among the important elements in a prescription but it is an element in the standard prescription of the study location

Another important element is the Date of issuance of the prescription, and this is seen in about 92.5% of the prescriptions, and which all of the respondents confirmed is important, as proper documentation and easy referencing becomes practically impossible if the date is absent. All the prescriptions contained patient's name. This high percentage shows that the prescribers are very much aware of the importance of this element; this is not surprising at all, since all the respondents also believed strongly that the patient's name should be included, for proper patient identification, to ensure a complete prescription. About 73% of the respondents agreed that it was important for patient's body weight to be included in a prescription but unfortunately this was not found in the prescriptions analyzed; the reason is not far-fetched, as it was discovered that this element is not included as part of the elements in a standard prescription, in the location of study.

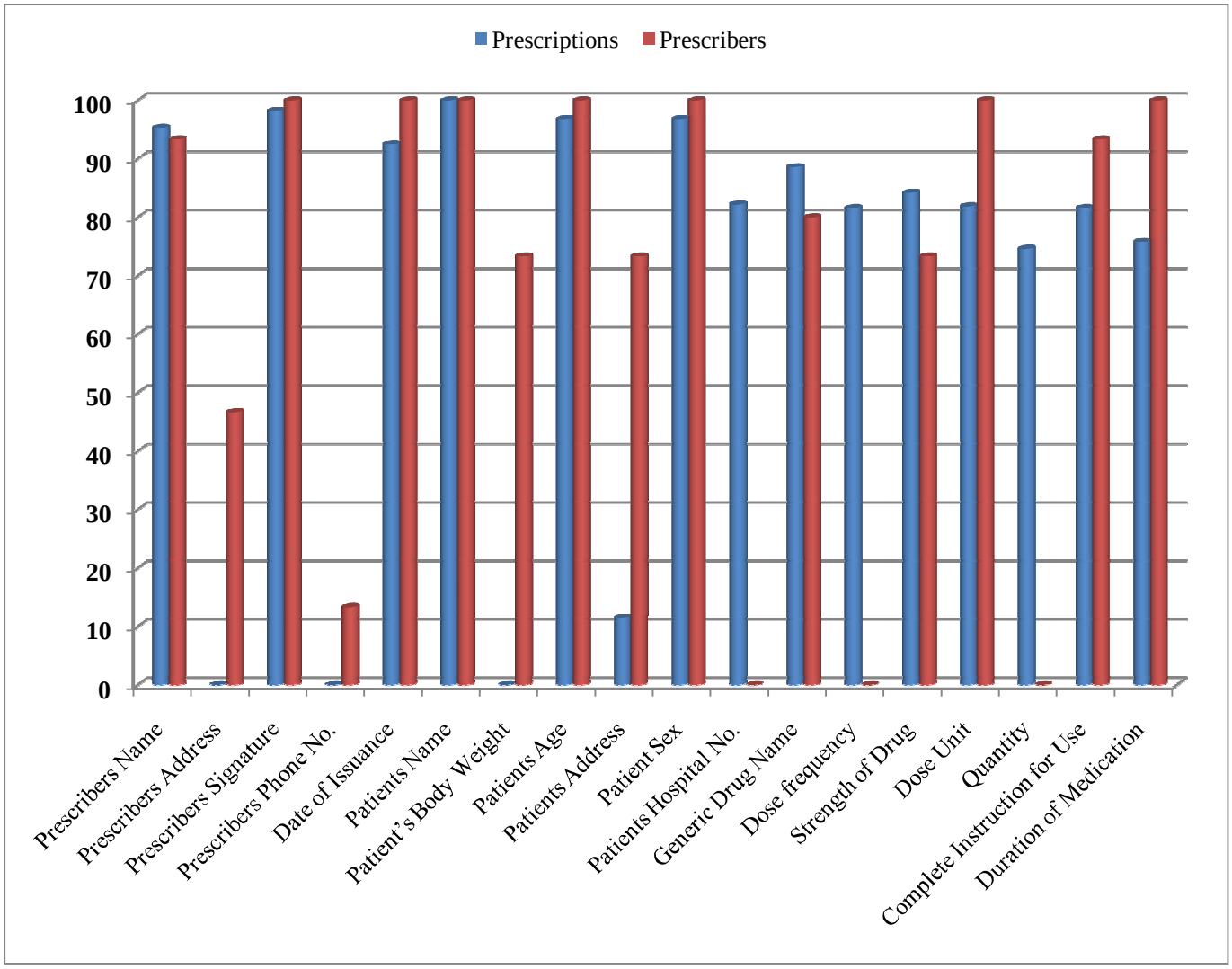

Fig. 1: Percentage responses of essential elements from prescriptions and prescribers.

Inclusion of weights is recommended for patients at the extremes of age (WHO/DAP/94.11; Katzung, 2004; BNF 2007) because of the implication it has on drug pharmacokinetics and pharmacodynamics.

The patient's age and sex were each contained in 96.85% of the prescriptions written and coincidentally all the respondents are of the opinion that the Patient's Age and Sex should be included, possibly for proper dosing. The absence of age in prescriptions could pose problems for the dispenser; this is because the calculation of the accurate dose, based on the age, or body weight, becomes difficult. A similar omission of age was observed in a study in another tertiary hospital in Nigeria (Oshokoya and Ojo, 2007).

Interestingly, the Patient's address was contained in only about 11.5% of the prescriptions, this percentage is very low. Surprisingly, when asked, 73.33% of the prescribers were of the view that it is important to include the patient's address but this was not reflected in the prescriptions. The address of the patient is among the elements that should be included in the prescription according to WHO (WHO/DAP/94.11), Omission of patient address from prescriptions is a serious deficiency when problems in the prescription are discovered and the patient needs to be contacted to correct the problem. This is even more serious when the name of the patient is also omitted. All of the respondents strongly believed that the patient's signature was absolutely unimportant. This could possibly be due to the fact that it is unnecessary or could waste time and in any case it is neither among the listed important elements nor the elements in the standard prescription at the study site. Hospital number was reflected in about 82.2% thus reflecting the importance of these elements but this is not as good as what was observed (97.5%) in the study by Oshikoya and Ojo (2007). The issue of using either the Generic or Brand names of drugs when prescribing has been a controversial one. 88.6% of the prescriptions contained the generic name of the drugs, this is better than another study where only 19.1% were written in generic name (Oshikoya and Ojo, 2007). Among the respondents, 80% of them agreed that drugs should be prescribed in generics possibly to afford opportunity for different generic drugs, with the same active constituent, to be prescribed. This is also confirmed by the fact that only 40% of the

respondents believed that the use of brand name of drugs is important in a prescription. Using generic names in prescriptions gives flexibility to the dispensing pharmacist and may be of economic benefit to the patient. Generic prescribing was mandated by National Drug Policy (NDP). The concept of essential drug advocated for use of generic drug names in the list of essential drugs while it promoted generic drugs for procurement and prescription (Adenika, 1992; DeJoncheere, 2002; FMOH, 2005; WHO, 1977; WHO, 2004). The strength of medication was contained in 84.2% of the prescription, while 73.33% of respondents were of the opinion that it was important, most likely, to avoid over dosing and hence, toxicity in the body, and poor therapeutic outcome. The Dose and Dose frequency were found in 81.9% and 81.6% of the prescriptions respectively, this percentage frequency can be said to be well above average, and it can be deduced that care was taken to avoid over dosing and drug resistance, especially in antibiotic therapy. It is not surprising therefore, that 100% of the respondents agreed that it was important for the dose to be included in prescriptions. Furthermore, 75.8% of the prescriptions contained the Duration of medication, and when asked, all the respondents agreed that it is important. Quantity to be dispensed was reflected in about 74.6% of the prescriptions hence indicating the importance of this element though none of the respondents agreed that it is important to include quantity to be dispensed in a prescription probably because the pharmacist can calculate the quantity from the dose, dose frequency and duration. About 93.33% of the respondents hold the view that complete instruction for patient use, was important, possibly for complete medication information, for maximum therapeutic outcome. The importance of a complete prescription cannot be over emphasized, all the prescribers agreed that this statement holds true and when asked why they think a complete prescription is important, all the prescribers believed that it is important for proper dosing and for patient's identification, 53.33% thought it was for complete prescriber's identification; 86.67% indicated that it was for complete medication information' while 40% felt it was to observe hospital protocol. In an attempt to sample the opinion of prescribers, regarding the dangers of an incomplete prescription to the patient, all the prescribers agreed that it was indeed harmful to the patient, implying that incomplete prescription writing, indeed, is a problem that could pose a danger to the patient. A number of reasons were suggested on why incomplete prescriptions could be harmful to the patient: 80% of the prescribers agreed that it could lead to wrong identification of the patient; 66.67% agreed that it could result in wrong identification of the prescriber; 73.33% agreed that it could result in incorrect dosing, due to wrong age or body weight; and also lead to lack of patient adherence due to absence of direction for use. All the prescribers agreed that an incomplete prescription could lead to poor outcome of drug therapy. In an attempt to find out if the prescribers had ever written an incomplete prescription in the past, 80% agreed that they had; while 20% refuted this claim. This high percentage is a clear indication that most of the prescribers, write incomplete prescriptions, and this is indeed alarming. 80% of the prescribers that agreed that they have filled out an incomplete prescription in the past claimed to do so sometimes. A basic step towards the solving the problem of incomplete prescription writing is an analysis of the causes of this problem. According to 8.67% of the prescribers, incomplete prescription writing is due to an oversight on the part of the prescriber; 40% claimed that distraction from the environment, could be a major reason; while 80% believe that patient pressure or workload on the prescriber and eagerness to attend to the next patient, are the likely causes of incomplete prescription writing. It is generally believed that every problem has a solution, therefore, the problem of incomplete prescriptions, is not an exception. This is believed to be true by all the prescribers, and according to all of them, paying detailed attention and exercising more patience when writing prescriptions are very crucial solutions to the problem. Furthermore, 93.33% believed that when there is reduction in the workload of the prescribers, they tend to concentrate more, hence, making this a likely solution.

Interestingly, 66.67% believe that electronic (computerized) prescribing is a way forward, in the way of solution to the problem.

This is in view of the fact that the computer has been programmed to process patient and medication data, and also to alert the user to potential errors, thereby reducing the occurrence of incomplete prescriptions. In addition, 6.67% of the prescribers suggested that training and educating the prescribers on the importance of including the basic elements in a prescription, and the dangers of an incomplete prescription is a possible solution. Finally, from the analysis of the level of importance of the basic elements based on the professional level or the position of the prescribers, from the questionnaires distributed, it was discovered that, about 67% of the House Officers were certain that the Patient's body weight, is important in a prescription, while all the Junior Registrars and Senior Registrars equally believe that it is important. This is also the same for Patient's Address and other elements. This higher percentage (100%) from the Senior and Junior Registrars could be attributed to the fact that they have more experience in prescribing than the House Officers.

CONCLUSION

Some of the prescriptions studied were deficient in some of the basic elements. The patient's name was the most occurring element in the prescription while patient's address was the least occurring element in the prescriptions. Patient body weight should be included as an element in the standard prescription form for paediatric patients. Space for prescriber's phone number should be provided in the standard prescription form.

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How to cite this article:

AINA Bolajoko Ajoke and EGBEHOR Udeme Christiana., Study of completeness of prescriptions in paediatrics emergency section of a tertiary hospital in Lagos, Nigeria. J App Pharm Sci, 2013; 3 (05): 075-079.