

Research Article

Audit of prescription notes from a tertiary health centre, AIMS, BG Nagar, India: a cross-sectional study

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ABSTRACT

Background: Prescription is a written order from physician to pharmacist which contains name of the drug, its dose and its method of dispensing and advice over consuming it. The frequencies of drug prescription errors are high. Prescription error contributes significantly towards adverse drug events. The present study was undertaken to understand the current prescription writing practices and to detect the common errors in them at a tertiary health care centre situated in BG Nagar, Mandya, Karnataka, India.

Methods: A cross sectional study was conducted in Adichunchanagiri Institute of medical Sciences, BG Nagar, Mandya, India during April- May 2015. 187 prescriptions were analyzed. Important information regarding the patient, doctor, drug and the general description of the prescription were obtained.

Results: All the prescriptions were on the hospital pad. A significant number of the prescriptions were written in illegible (11%) or barely legible (20%) handwriting. The name, age and sex of the patient were not mentioned in majority of the prescriptions. All the prescriptions (100%) failed to demonstrate the presence of address, height and weight of the patient. Brand name of the drugs was mentioned in all the prescriptions with only 8% of them having the generic name. The quantity, dose and medicinal form were found missing in 1.7%, 29.5%, and 2.2% of the prescriptions.

Conclusions: The findings of our study show that there is a need for improvement in the quality of prescriptions written by the doctors. The adoption of a computer aided prescribing system would go a long way in achieving this objective.

Keywords: Prescription, Adverse drug event, Prescription error, Computer aided prescription

INTRODUCTION

Prescription is a written order from the physician to pharmacist which contains name of the drug, its dose and its method of dispensing and advice over consuming it.¹ Every country has its own standards for the minimum information required for a prescription, and its own laws and regulations to define which drugs require a

prescription and who is entitled to write it. In many countries the validity of a prescription has no time limit, but in some countries pharmacists do not give out drugs on prescriptions older than three to six months. In India there is no time limit for its validity but one prescription is valid for one purchase of and dispensing of one set of drugs prescribed for the patients. The importance of the prescription is exaggerated by the fact that it becomes a

medico legal document once it is signed by the prescribing authority, and thus must be written completely and legibly.²

A prescription error has been described as “a failure in the prescription writing process that results in a wrong instruction about one or more of the normal features of a prescription (Aronson, 2009). The essential components of a prescription include the identity of the recipient, the identity of the drug, the formulation, dose, route, timing, frequency, and duration of the administration (deVries TPGM, 1994). Legibility or readability of the prescription is also an important component that may affect its quality and subsequently impact negatively on the patient Hartel et al , 2011.

The number of drugs prescribed has been shown to have its relevance when discussing the quality of prescriptions as it may impact negatively on health and economic outcomes (Rambhade et al , 2012). Prescribing by brands or generics is also another yardstick by which the quality of prescriptions is measured because of availability and cost issues (Flegel, 2012). Studies from Europe, North and Central Africa have shown that issues with prescriptions remain a significant problem (Silverio and Leite, 2010, Yousif et al, 2006, Makonnen et al, 2002). Some of the reasons that have been identified include poor undergraduate and postgraduate medical training in clinical pharmacology and therapeutics, the ever increasing number of drugs, work-related factors and lack of regular audit and feedback (Heaton et al , 2008, Ross et al 2013, Bertels et al 2013). Prescription errors have also been identified as a cause of adverse drug reactions with potential of huge health and economic consequences.

METHODS

A cross sectional study was conducted at a tertiary level hospital located in BG nagar, Mandya, India during May 2015. Every third prescription given to the pharmacy was collected to avoid bias. This exercise was carried during the working days for a period of ten days. The data was entered into a pre tested proforma. The questionnaire in the pro forma had four parts. Important information regarding the patient, doctor, drug and the general description of the prescription were obtained in these four sections separately. Patient information that was sought included the name, age, sex, height, weight and address. The prescriptions were further checked for the following details of the prescribing authority: name, seal, qualification, designation, complete address, phone number, signature and registration number of the doctor. The drug name, dose, frequency and route of administration, instructions and advice to patient, follow up requirements about the drug were also tabulated. The overall clarity, readability, use of prescription pad, presence of date was included in a separate section of the data sheet.

The prescription was considered “unreadable” if none of the two investigators at the medical store appointed for data collection and the pharmacist could not read one or more drug name or dose. The anonymity of the patients and the doctors were strictly maintained. The ethical approval was obtained from the Institutional Ethical Committee of the teaching hospital. The WHO guideline for prescription writing has been taken as standard while making an assessment of the results.²

RESULTS

Table 1: Analysis of patients and prescriber/doctor information on the prescription.

Patient	Yes	No
Name	182	5
Age	11	176
Sex	11	176
Address	0	187
Weight	0	187
Height	0	187

Table 2: Analysis of prescriber/ doctor information on the prescription.

Prescriber/ doctor	Yes	No
Name	0	187
Qualification	0	187
Designation	0	187
Address	0	187
Telephone number	0	187
Signature	182	5
Registration number	4	183

Table 3: Analysis of drug information on the prescription.

	Yes	No
Brand name	170	
Generic name	15	
Dose	132	55
Frequency	93	94
Medicinal form	183	4
Quantity	184	3
Duration	15	132
Instruction for the patients	1	186
Advise for follow –up	0	187

Total of 187 prescriptions were analysed. Important information regarding the patient, doctor, drug and the general description of the prescription were obtained. All the prescriptions were on the hospital pad. Date of consultation was written only on 21 prescriptions. Case file number was present on 36 prescriptions only. A significant number of the prescriptions were written in

illegible (11%) handwriting or were barely legible (20%) Prescribing department was found in none of the prescription.

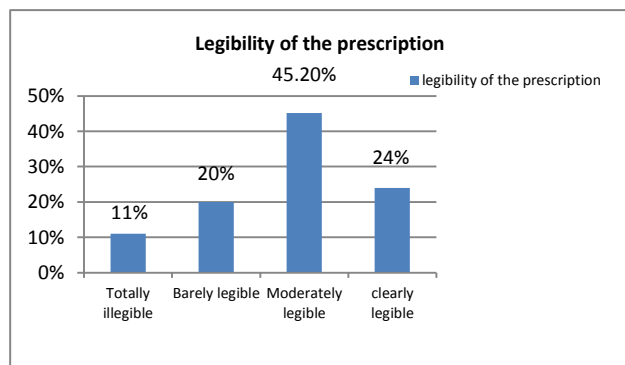


Figure 1: Analysis of the legibility of the prescription.

DISCUSSION

We found all the prescription to be on the prescription pad of the hospital. This was because of the fact that the medical store of the hospital only accepts order for dispensing drugs on the prescription pad of the hospital. The date of issuing the prescription was missing in 88.8% Table 1 of the prescriptions which was much higher than the outpatient prescription of a central hospital of Saudi Arabia, where this important piece of information was missing in 64.3% of them.³ A survey from an Italian hospital also did not reveal a healthy trend, as 56.1% of their prescription for antibiotics lacked the date.⁴

Illegible handwriting in the prescription may be source of fatal consequences⁵ and a leading cause of medication error.⁶ This problem was encountered in 31% of the prescriptions in our study which was comparatively higher as suggested by studies in US (10%)⁷ and UK (15%).⁸ Heavy workload is one of the common reasons offered by the doctors for poor handwriting.⁹ Educational interventions were found effective to address the problem.^{7,9}

The presence of name of the patient in 97.3% of the prescriptions corresponds to the findings of Irshaid et al who also found 94.6% of their prescriptions complete with name.³ However age and sex of the patient was mentioned only in 5.8% (Table 1) of the prescription. This was very much lower compared to 77.2% and 51.3% in the above said study. The absence of address and weight of the patient in all the prescription was an indication of poor prescription writing trend. The results were similar to the findings of Irshaid et al. Patient's address is important in a way that it tells us about region from where he/she comes. It is also important to decide when patient to be called for follow up or whether he can be called from distance. Weight of the patient assumes significance because of the fact that it determines the actual quantity of the drug per dose. A pharmacist may

not dispense the drug in correct amount if the weight of the patient is missing.

There were large numbers of deficiencies in the information regarding the prescriber. None of the prescription had name, qualification, designation and telephone number of the doctor. The lacunae in dispensing these information were a violation of WHO guidelines on prescription writing.² Doctor's complete address is important part of prescription especially for family, so that in case of emergency he can be contacted. Not having mentioned qualification of the prescriber raises question about his/her authority to prescribe medicine. In India, it is important to mention the registration number in each prescription. The lack of the display of registration number is considered a serious negligence on the part of the doctor. Signature of the prescriber was absent in 2.7% of the prescription from our study. This was much lower than the study from Saudi Arabia where the deficient was 18.1%.⁴ our study showed none of the prescription had doctor's name while the study from Saudi Arabia revealed 16.7% of prescriptions deficient in the prescriber name. Anderson and Beurling¹⁰ from Copenhagen University Hospital reported that among the most frequent errors of omission in prescriptions was inadequate identification of the physician.

Only 8% of the drugs prescribed had generic name. Most certainly, this practice gives an advantage to the pharmacist to dispense the cheapest drug or the one which is available. Y.M.Irshaid et al¹⁰ found that only 15% of the prescriptions mentioned the generic name. Anuja A Pandey et al¹¹ found only 7.4% of paediatric outpatient prescriptions from Pune had clearly mentioned generic name while use of brand name was a universal practice. The dose of the drug was missing in about 29.5% of prescriptions. A large scale study from Texas, US also found drug dosage to be the most inconsistent element in prescription¹² in both control and study group. Frequency of administration was missing in 50.3% of the prescription. Quantity of medicine and medicinal form was missing in 1.7% and 2.2% of the prescription. Such lacunae may lead to inappropriate dispensing of the drug by pharmacists. Y.M. Irshaid et al⁴ revealed that 94% of the prescriptions overviewed by them had not mentioned the quantity of the drug, while 90.7% had only partial instructions for the patient. Our study showed that none of the prescription carried instruction to the patient while there was no advice for follow up in any of them.

CONCLUSION

There are widespread errors in prescription writing by the doctors. The lack of doctor's qualification, patient's weight, correct and calculated dose were the most critical areas in terms of prescription completeness. Educational intervention programs and computer aided prescription order entry can substantially contribute in the lowering of such errors. Since some of these errors lead to serious

consequences, long term and effective remedy is needed. A short course on prescription writing before the medical student enters the clinical field and strict monitoring by the administrative authorities may also help alleviate the problem

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