

A Study on Determination of Prescription Writing Errors in out Patient Department of Medicine in a Teaching Hospital

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ABSTRACT

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Introduction: Prescription is an order for medication issued by a properly licensed medical practitioner to the pharmacist. The prescription should be clearly written, free from writing errors, and fulfil the legal requirements. The prescription writing errors leads to the medication errors, which in turn leads to failure of therapeutic goals. **Objective:** A nine month prospective study was carried out to determine the prescription writing errors at a Teaching Hospital. **Results:** A total of 290 prescriptions were randomly collected from out patients visiting the study site, and analyzed. Among them 635 errors of omission related to prescribers and 184 errors of omission related to the drugs with an average of 2.18 and 0.63 errors per prescription respectively. The errors of omission related to prescribers were due to failure to mention signature of prescriber 27(9.31%) followed by diagnosis 27(9.31%), prescribers name 261(90%), patients weight 290(100%) and 30(10.34%) were due to illegible hand writing. The errors of omission related to drugs were due to failure to mention frequency 13(4.4%) followed by quantity to supply 18(6.20%), dosage form 23(7.93%), strength 41(14.13%) and duration/no of doses 89(30.68%). An 82 errors of commission were due to wrong strength 12(4.13%) followed by wrong drug name 19(6.55%), wrong dosage form 23 (7.93%) and drug-drug interactions 28(9.65%). **Conclusion:** The study results indicate that errors in prescription writing were significant at the study site, which highlights the need of conducting the educational programs to improve the prescription writing skills of the prescribers.

Keywords: Prescription, errors, omission, commission.

INTRODUCTION

Prescription is an order for medication issued by a physician, dentist, or other properly licensed medical practitioner to the pharmacist. The prescription order is a part of professional relationship between the prescriber, pharmacist and patient.¹

A prescription is in effect three types of document in one, in that it is a clinical document, a legal document and an invoice. Law may require some of the information on the prescription and some of the information is required to ensure that, the patient receives the correct medicine.² Hence, the components of a prescription should be clearly written, free from writing errors, nonofficial abbreviations, and fulfil the legal requirements of a prescription.³ The Correct prescription writing habits could have a great influence on the fate of drug therapy as well as the health of patients.⁴

The National Coordinating Council for Medication Error reporting and prevention reported that, 15% of the medication errors occurred because of illegible handwriting, problems with leading and trailing zeroes, misinterpreted abbreviations, and incomplete medication orders.⁵ The prescription writing errors are the commonest form of avoidable medication errors; it is the most important target for improvement.³

An error is something incorrectly done through ignorance or inadvertence; a mistake, e.g. in calculation, judgment, speech, writing, action etc or a failure to complete a planned action as intended, or the use of an incorrect plan of action to achieve a given aim.⁶

Errors in prescription writing may be classified into two main types, errors of omission and errors of commission. Errors of omission are defined as missing of essential information in the prescriptions. Errors of omission includes absence or incomplete specification of dosage form, strength, dose or dosage regimen, quantity or duration of drug to be supplied, prescriptions that are illegible and prescriptions that violate legal requirements. Errors of commission involve wrongly written information in the prescriptions. Errors of commission includes wrong strength, wrong dosage form, drug-drug interactions and wrong drug name.⁷

Prescriptions containing writing errors communicate incompletely or inadequately to the pharmacist and may have various detrimental consequences. Some errors will require the pharmacist simply to use additional professional judgment in the interpretation and execution of the prescription. The errors of omission may cause the pharmacist, physician, and patient to waste time while the pharmacist calls the physician to complete the prescription. Unfulfilled legal requirements prevent the prescriptions from being executed or may transfer liability to the pharmacist if the prescription is dispensed.⁸ Whereas errors of commission should be promptly detected and corrected, otherwise patients health could be threatened or at least the proposed treatment program would be put in danger.⁴

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The above fact indicates that, the prescription writing errors leads to the medication errors. This in turn leads to the failure of therapeutic goals. Most of the prescription writing errors are avoidable errors. The pharmacist can play an important role in this regard. Hence, the study was undertaken with an objective to find out the medication errors due to the prescription writing such as errors of omission and errors of commission which will helps to develop and implement the required strategies to overcome prescription writing errors in future at study site.

METHODOLOGY

A nine month prospective study was carried out with the prior permission from the department of medicine, Basaveshwar Teaching and general Hospital Gulbarga and after obtaining institutional ethical clearance, to determine the prescription writing errors at teaching and general hospital. A total of 290 prescriptions were randomly collected from out- patients visiting the department of medicine and willing to Participate in the study. The prescriptions of In-patients from department of medicine were excluded from the study site. The prescription writing errors such as errors of omission related to prescriber (Patients name, Age, O/P Number, Date, Prescribers name, Prescribers signature, Clinic/department, Weight, Diagnosis and illegible prescriptions); errors of omission related to drugs (Route of administration, Dose, Frequency, Strength, Dosage form, Duration/number of doses, Quantity to supply) and Errors of commission(Wrong strength, Wrong dosage form, Drug-drug interactions, Wrong drug name) were documented in a suitably designed documentation form.

From the data collected the percentage (%) of various errors related to the errors of omission and errors of commission were calculated and analyzed.

RESULTS

Prescription writing errors: A total of 290 prescriptions were collected and analyzed, out of which 901 prescription writing errors were noted with an average of 3.11 errors per prescription, among them there were 815 errors of omission and 82 errors of commission.

Errors of omission: Among 819 errors of omission, 635 errors of omission related to prescriber (2.18 errors per prescription) were reported (Table No.1) and were due to failure to mention weight 290(100%) followed by prescribers name 261(90%), signature of prescriber 27(9.31%), diagnosis 27(9.31%), and 30(10.34%) are due to illegible hand writing (Table No.2) and 184 errors of omission related to drugs (0.63errors per prescription) were reported and were due to failure to mention duration/no of doses 89(30.68%), strength 41(14.13%), dosage form 23 (7.93%), quantity to supply 18(6.20%) and frequency 13(4.4%) (Table No.3).

Errors of commission: A total of 82 errors of commission were reported with average of 0.28 errors per prescription (Table No.1). These commission errors were due to drug-drug interactions 28 (9.65%) followed by wrong dosage form 23 (7.93%), wrong drug name 19 (6.55%) and wrong strength 12 (4.13%) (Table No. 4).

Table 1: Prescription writing errors

Type of error	Total Errors (n=901)	Errors per prescription
Errors of omission	819	2.81
a) Related to prescriber	635	2.18
b) Related to drugs	184	0.63
Error of commission	82	0.28

Table 2: Errors of omission related to the prescriber

Type of errors	Number of Errors (n=635)	Percentage(%) of errors
Patients name not mentioned	0	0
Age not mentioned	0	0
o/p number not mentioned	0	0
Date not mentioned	0	0
Prescribers name not mentioned	261	90
Prescribers signature not mentioned	27	9.31
Clinic/department not mentioned	0	0
Weight not mentioned	290	100
Diagnosis not mentioned	27	9.31
Illegible	30	10.34

Table 3: Errors of omission related to the drugs

Type of errors	Number of errors (n=184)	Percentage(%) of errors
Route not mentioned	0	0
Dose not mentioned	0	0
Frequency not mentioned	13	4.40
Strength not mentioned	41	14.13
Dosage form not mentioned	23	7.93
Duration/number of doses not mentioned	89	30.68
Quantity to supply not mentioned	18	6.20

Table 4: Errors of commission

Type of errors	Number of errors (n=82)	Percentage (%) of errors
Wrong strength	12	4.13
Wrong dosage form	23	7.93
Drug-drug interactions	28	9.65
Wrong drug name	19	6.55

DISCUSSION

The study revealed that there was an average of 3.11 errors per prescription. All the prescription (100%) was having one or other prescription writing errors. There is no single prescription without errors. Where as a study conducted by Kuan Mun Ni et al⁹ reported 96.7% and Al Khaja KA et al¹⁰ reported 90.5% of prescription writing errors.

Among 819 errors of omission, 635 errors of omission related to prescriber (2.18 errors per prescription) were reported, these were due to failure to mention age(100%) followed by prescribers name (90%), signature of prescriber (9.31%), diagnosis (9.31%) and 10.34% were due to illegible hand writing and 184 errors of omission related to drugs (0.63 errors per prescription) were reported and are due to failure to mention duration/no of doses (30.68%), strength (14.13%), dosage form (7.93%), quantity to supply (6.20%) and frequency (4.4%).

A total of 82 errors of commission were reported with an average of 0.28 errors per prescription. These commission errors were due to drug-drug interactions (9.65%) followed by wrong dosage form (7.93%), wrong drug name (6.55%) and wrong strength(4.13%).

Where as a study conducted by Al Khaja KA et al¹⁰ reported that there were 54.1% of prescriptions with omission errors, length of therapy was not specified in 27.7%, and in 12.8% the dosage form was not stated. In 43.5% of prescriptions with errors of commission, dosing frequency (20.8%) and dose/strength (17.7%)-related errors were most common. Errors of integration such as potential drug-drug interaction comprised 2.4% of all prescribing

Similar study conducted by Mugoyela V et al¹¹ reported that, all prescriptions had at least one or more errors which involved omission of either the patients age (2.9%), name (1.6%), weight (93.8%), route of administration (94%), dose (5.4%), frequency (3.2%), dosage form (24.8%) and duration of treatment (14.1%). Errors of commission accounted for 3.1% of all prescribed medicines.

A study conducted by Kuan Mun Ni et al⁹ reported 397 Errors of omission related to prescriber and were due to failure to mention age (32.7%) followed by date (17.1%), clinic or department (16.4%), registration number (0.5%), prescriber's name (1.8%), prescriber's signature (0.3%) and illegible hand writing (7.1%) and 862 errors of omission were due to failure to mention route of administration (80%), strength (56.3%), dosage form (36.4%), duration or number of doses (8.8%), dose (8.7%), quantity to supply (5.8%), frequency (5.3%) and drug name (0.2%).

Our study reveals that the prescription writing errors at the study site were slightly more (100%) when compare to study conducted by Al Khaja et al¹⁰ (90.5%), and Kuan Mun Ni et al⁹ (96.7%).

In this study the major errors of omission were due to failure to mention weight (100%) where as the study conducted by Al Khaja et al¹⁰, Mugoyela V et al¹¹ and Kuan Mun Ni et al⁹ same were to mention the duration (27.7%), weight (93.8%) and route of administration (80%) respectively. and also the major errors of commission in our study were due to drug-drug interactions (9.65%). where as the study conducted by Al Khaja et al¹⁰ same was due to not mentioning the dosing frequency (20.8%).

The absence of patients age would not normally prevent the dispensing of the prescription, it could be resolved by the dispenser by clarifying with the patient or by staff involved but it becomes crucial in case of prescriptions with psychotropic or by dangerous drugs.

In the prescription failure to mention strength and dosage forms may pose some problems as many drugs are available in various strengths and dosage forms. The legibility of the prescription is subjective and it depends on the assessor's familiarity with the handwriting of the prescriber. However it should be emphasized that the prescription could be easily read by anyone involved in the dispensing, since the prescriptions could be filled by any pharmacy outside the hospital.

The errors of commission represent greater threat to the patients health than the errors of omission; hence they should be identified and corrected.

The commission error such as wrong dosage form and wrong strength may lead to serious consequences as the same drug is available in various dosage forms and also in various strengths.

For example amoxicillin is available in various dosage forms like dispersible tablets, capsules, dry syrup etc and in various strengths like 125mg, 250mg and 500mg etc this may lead to therapeutic failure due to over use or under use of the prescribed drugs.

The drug-drug interactions may lead to serious complications and hence they should be systematically analyzed and properly managed. The majority of the prescription errors reported in the study were commonest forms of avoidable medication errors and it should be important target for the improvement

CONCLUSION

The study results indicated that the prescription writing errors are significant at study site which highlights the need of conducting the educational programs to improve the prescription writing skills of the prescribers. This will help to reduce the medication errors due to prescription writing errors.

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