ORIGINAL ARTICLE

Errors in Prescription Writing by Consultants

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ABSTRACT:

Objective: To identify the errors in the prescriptions of consultant (CPx) from different parts of Karachi.

Materials and Methods: A descriptive study was conducted in the department of Pharmacology at Bahria University Medical & Dental College, Karachi, from 21st April to 23rd June 2015. A total of 100 prescriptions were collected randomly after verbal consent from four consultants from four districts of Karachi. All prescriptions were analyzed for identifying errors in Superscription, Inscription, Subscription, Transcription, Signature and Refill information. Verbal consent of the respective consultants was taken few days prior to collection of prescriptions. Patient's consent was taken at the time of obtaining the prescription.

Results: A total of 562 errors were identified in 100 prescriptions of consultants.303 errors in superscription, 103 in inscription, 100 in subscription, 6 in transcription, and 50 in refill information

Conclusion: Errors in prescription writing are found to be common in the prescriptions of consultants. Measures should be taken to refresh the prescription writing skills of consultants through Continuous Medical Education Sessions (CMEs) and workshops.

Keywords: Errors, Prescription, Superscription, Inscription, Subscription, Transcription, Refill information, Consultants, Karachi

INTRODUCTION:

Medical consultant is an individual who has specialized expertise in a certain field of medicine and is able and willing to share it with others, therefore his medical practice is oriented to a specific medical specialty.[1]They are the trusted adults to whom patients turn for advice and support.[2]

A prescription (Rx) is defined as document that states the plan of care for an individual patient to be carried out by a qualified practitioner. The errors of prescription are the commonest form of avoidable medication errors and are considered to be the most important target for improvement. They occur in consultant clinic set-up as well as in hospitals. Although they are rarely fatal they can affect patients' safety and quality of healthcare. A prescribing error is defined as an unintentional significant reduction in the probability of treatment being timely and effective or increase in the risk of harm when compared with generally accepted practice.[3] At an average a medical practitioner signs 13,000 prescription items per year of which approximately 5000 are written during consultations and 8000 are repeats. [4,5,6] In order to cope with this trend much effort has been directed towards rationalizing prescribing, which means patients should receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community.[7, 8, 9,10]

A prescription is composed of four main parts: (1) Superscription: consisting of the word recipe, take, or its sign, Rx (2) Inscription: the main part of the prescription, containing the names and amounts of the drugs ordered (3) Subscription: directions for mixing the ingredients and of the form (pill, powder, solution, etc.) in which the drug is to be made (4) Signature: directions to the patient regarding the dose and times of taking the remedy preceded by the word signa, designate, or its abbreviation,S.or Sig.[11]As prescription is a legal document, which can be used in the court of law, therefore a pharmacist will be unable to understand whether the prescription is genuine or from a quack unless it has signature or designation written on it. Patient's information, like name, age and gender etc. on the other hand is required at the beginning of the prescription for proper identification of a patient. It is also essential for follow-up of particular patient or to get in touch with the patient in case of prescribing or dispensing errors. It also avoids the misuse of blank prescription pads. Similarly date will validate the prescription and avoid unnecessary refilling of the prescription. The Pharmacist cannot identify an old prescription brought for refill if the prescribing date is not available. Superscription, a sign of practice, makes any written piece of paper a prescription by law. Inscription is the most important part as illegible handwriting and too many confusing similar generic and brand names can cause difficulties to the pharmacist to dispense the drug and thereby may increase chances of errors during dispensing by the pharmacist. Subscription , is also important for dispensing of correct and proper medication to the patient. Patient needs to know the quantity of tablets /capsule / liquid and number of times the medicine needs to be taken. Oral instructions to patients are most of the times forgotten. Written instructions will also enable the pharmacist to counsel the patient.[12]The points highlighted above are not

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something new but are components of standards mentioned in guidelines set for prescription writing. With this background present study was designed to identify errors in prescription writing of consultant (CPx) from different parts of Karachi.

MATERIALS AND METHODS:

This descriptive study after approval from the ethical review committee of Bahria University Medical & Dental College, Karachi was conducted as a part of main project "Prescribing patterns - drug interactions" from 21st April to 23rd June 2015. The project was carried out by visiting the clinic of four different consultants in four different parts of Karachi. A total of 100 hand written prescriptions were collected. Normal bias in working was avoided by keeping the prescribing doctor uninformed about the day of collection of prescriptions. However verbal informed consent was taken from the practitioners after explaining them the objective of the study prior to the start. They were also assured that their names and address of clinic will be kept confidential. All information related to patients was kept confidential. Analysis of the omission was carried out in superscription for the information omitted on patient age, gender, address, date and symbol Rx, in inscription information omitted on drug name, confused drug name, dose and strength, in subscription about information omitted in directions for use to patient and in transcription for directions to pharmacist, refill information and prescriber's information. Each prescription was checked three times by two analysts, for superscription, inscription, subscription and transcription errors and also for refill information along with prescriber's information. Results are expressed as percentage (%). CPx means consultant's prescription.

RESULTS:

A total of 562 errors were identified in 100 prescriptions of consultants. 303 errors in superscription, 103 in inscription, 100 in subscription, 6 in transcription, and 50 in refill information.The highest omission error in superscription was in patient age, address and symbol of treatment 100% (Table 1A). The highest omission error in Inscription was in generic drug name 100% (Table 1B). The highest omission error in subscription was related to instruction to the pharmacist which was found 100% (Table 1C). Instruction to the patient were absent in 6% (Table 1D), while the refill information was not found in 50% (Table 1E). The cumulative results are shown in Table 2.

Table: 1
Errors in parts of prescription
N=100

A) Errors at the level of Superscription:

	Patient Name	Patient Age	Patient Address	Date	Symbol Rx
CPx with errors	02	100	100	01	100
CPx without errors	98	00	00	99	00

B) Errors at the level of Inscription:

	Drug name	Confused drug name	Dosage strength	Dosage form
CPx with errors	100	02	01	00
CPx without errors	00	98	99	100

C) Errors at the level of Subscription:

	Instructions to Pharmacist
CPx with errors	100
CPx without errors	00

D) Errors at the level of Transcription:

	Instructions to Patient
CPx with errors	06
CPx without errors	94

E) Errors at the level of prescriber's signature & Refill information:

	Prescriber's signature	Refill information
CPx with errors	00	50
CPx without errors	100	50

Table: 2
Cumulative results
N= 100

Parameters checked	CPx
Patient Name	02
Patient Age	100
Patient Address	100
Date	01
Symbol Rx	100
Drug Name	100
Confused Drug Name	02
Dosage Strength	01
Dosage Form	00
Instructions To Pharmacist	100
Instructions To Patient	06
Prescriber's Signature	00
Refill Information	50
Total	562

DISCUSSION:

Prescription writing is one of the most important and basic skills that a doctor needs. It has been documented that more than 1 in 20 prescriptions have some sort of error.[13] It is quite clear that Physicians do take their prescribing very seriously but there could be problems, may be some sort of distraction, which ends up in many fold errors. [14]Medication errors are common in consulting clinics and in hospitals. Both errors in the act of writing (prescription errors) and prescribing faults due to erroneous medical decisions can result in harm to patients. Prescription errors account for 70% of medication errors that could potentially result in adverse effects.[15] One hundred prescriptions from Karachi that were examined were found to have a total of 351drugs. The average number of medications per prescription was found to be 3.5, which is termed in the literature as polypharmacy. This finding is comparable to that of 3.97/prescription and 3.4.[16,17] It is much higher than reported for Rawalpindi/Islamabad (2.97)[17], South Africa (2.6) and Bangladesh (1.44).[18] Thus our study reflects a greater trend of polypharmacy. Prescribing a number of drugs at one time when problem can be dealt with less number of drugs or may be with monotherapy in some cases, has already been described as an impending danger for drug interactions. A study has documented that more than 8% of older adults were at risk for a major drug interaction in 2005 and 2006 who took at least five prescription medications, but this number increased to about 15% , 5 years later.[19] Similar findings have been documented by other studies.[20 21]Literature suggests that frequency of error increases with an increasing number of drugs. [22] This probably reflects the fact that most of the time symptomatic treatment was prescribed instead of actually treating the main disease. It is also a possibility that the prescriptions had errors because they were probably written in haste in order to see more patients in less time in our settings. The result is very similar to study by Weetman, which suggests that around 9% of UK hospital outpatient prescriptions contain errors. The reason can be challenging times for prescribers, available drug treatments increasing in number and complexity, heavier workloads, and greater expectations.[21]

The highest omission error in superscription was in patient address, age and symbol of treatment100% each. The first two of these have great impact on medication and follow up.[22]Age is very important in terms of dose and dosage form. Our results are much higher than 52.4% of Indonesian study [23]and study by Marwaha which showed most common type of superscription error of omission as age (72.44%) followed by gender (32.66%) which is again an important piece of information for dosage recommendation of certain drugs. The names can be taken into account for gender specification but it is unreliable as many names might not give a clue to the patient's gender.[24]

The highest omission error in inscription was prescribing drugs by brand names 100% and confusion in drug name which is found in 2% of prescriptions. This can lead to dispensing errors which may be lethal in some cases as the wrong drug will be used by the patient. One of the reasons for this error is, prescription by brand name rather than the generic name.[25] Similar observations were seen in a study from Karachi where consultants prescribed only 12.26% of the drugs by their generic names.[26] Same range and pattern is reported in earlier studies of Hyderabad (12.06%) [27] and Nawabshah (12.9%) [28] but lesser than reported from Rawalpindi/ Islamabad (23.61%).[17]In Bangladesh 78%[18]of the drugs are prescribed by their generic names while only 7% are prescribed in Nepal.[16] In our study the number is 100%. These figures indicate that although prescribing of drugs by their generic names is widely variable but it is not seen among consultants of our city and is found to be zero percent. The reason for prescribing drugs mostly by brand names may be the availability of some brand name drugs at the same price as those by generic name[29], non-availability of generic equivalents for some newly introduced drugs[18], also the doctors' perception that brand name drugs are more reliable and more so incentives by pharmaceutical industry to physicians is also an important factor in our settings for prescribing drugs by brand names.

The highest omission error in subscription was related to duration of treatment 100% which is much higher than the previously reported studies 26%. [30] Healthcare leaders have called on medical practitioners to work more closely with pharmacists as research has suggested that 5 per cent of items prescribed were associated with prescribing or monitoring errors.[31] Prescription errors could potentially result in adverse effects.[32]

Thus our study has shown a high frequency of prescribing errors in a comparatively small number of prescriptions written by the consultants. The good thing is these prescribing errors is that they are preventable provided proper reinforcement of consultant medical practitioners is undertaken at the level of healthcare regulatory bodies.

CONCLUSION:

Errors in prescription writing are found to be common

in the prescriptions of consultants from various parts of Karachi. Future studies with large sample size perhaps as audits may be carried out on regular basis to improve the healthcare provision to the patients on the part of consultant physicians.

Recommendations: For patient safety team work is required. A proficient health care team requires doctor and pharmacist working together hand in hand and taking on board patient along with them as a team member. This could be achieved by conducting audit of the prescriptions for potential errors through a planned program (preferably run by government). Measures should also be taken to refresh the prescription writing skills of consultants through Continuous Medical Education Sessions (CMEs) and workshops so as to brush up their existing knowledge regarding the same.

Limitation of study: The study had a small sample size on account of resistance encountered from the consultants in study participation. The authors had to fulfil the ethical requirements by taking written informed consent from them before starting the study but it turned into verbal consent only.

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