

Assessing Prescription Writing Skills of House Officers in Dental Teaching Hospitals of Karachi, Pakistan

Aisha Wali, Anwar Ali, Talha Mufeed Siddiqui, Hamza Jafri

ABSTRACT

Introduction: A prescription is 'a written order, which includes detailed instructions of what medicine should be given to whom, in what formulation and dose, by what route, when, how frequently, and for how long'.

Aim: To determine competency and knowledge gained during undergraduate dental studies regarding clinical pharmacology and therapeutics (CPT) by house officers in the form of prescription writing skill assessment.

Materials and methods: A survey form with a clinical scenario was designed and distributed to house officers working in nine different dental teaching hospitals. It required a response in the form of a complete prescription. Out of 360 forms distributed, 200 were returned. Each form was assessed for all the 20 required parameters and scored accordingly. Data was analyzed by using SPSS 19.

Results: Frequency (92.5%) and route (93%) of drug administration were the most commonly listed, followed by dose (82.9%), symbol Rx (65.2%), duration (60.4%), doctor's signature (59.3%), patient's name (52.4%), patient's age (44.9%) and date (44.4%).

Parameters that were least or not listed include hospital address (0%), refill information (0%), instructions for labeling (0.5%), quantity to be dispensed (1.1%), patients address (1.1%), professional degree and registration number (1.1%), doctor's name (1.6%), diagnosis (7%), hospital name (22%), appropriateness of drug (26.2%) and patients sex (26.2%).

Conclusion: The current study concluded that prescription writing skills of a majority of house surgeons were deficient in important details.

Keywords: Prescription writing skills, Errors in prescription writing, Junior house surgeons.

How to cite this article: Wali A, Ali A, Siddiqui TM, Jafri H. Assessing Prescription Writing Skills of House Officers in Dental Teaching Hospitals of Karachi, Pakistan. *World J Dent* 2012;3(4):294-296.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

A prescription is 'a written order, which includes detailed instructions of what medicine should be given to whom, in what formulation and dose, by what route, when, how frequently, and for how long'.¹ However, due to an inconsistent criteria used for assessing prescription writing skills, errors have been reported to range from 4.2 to 82%.²

Drugs are usually prescribed for a number of conditions by dentists. These drugs may cause harm to the patient if are not prescribed accordingly.³ Most adverse drug events (68-75%) are reported to have been related to incorrect prescription writing.⁴ Although these events may not be fatal, they may be a source of morbidity to the patient.

The act of prescribing is becoming increasingly challenging due to multiple factors. Prescribing errors can generally be categorized into those of decision making or of prescription writing. While the former may include errors, such as underprescribing, overprescribing, irrational prescribing and inappropriate prescribing^{2,5} the later focuses on errors made while writing a prescription.⁶

Although poor prescribing by junior doctors and students has been reported in a number of studies, partly attributing it to knowledge-based errors,^{7,8} little is known about the skills of junior dentists/house officers, especially in Pakistan. The purpose of this study is to focus on the assessment of prescription writing skills of dental house officers in teaching hospitals of Karachi, Pakistan. It aims to determine their competency and knowledge gained during undergraduate dental studies regarding clinical pharmacology and therapeutics (CPT). Also, it directly evaluates how the house officers are applying their knowledge clinically while writing a prescription. The scientific question: 'Are house officers competent in prescription writing' is asked.

MATERIALS AND METHODS

Participants

A total of nine dental teaching hospitals registered with the Pakistan Medical and Dental Council (PMDC) were randomly selected in Karachi, Pakistan. Four were government hospitals while the other five were private. In total, 200 on duty house officers participated who were either graduates of the same respective college or had graduated from dental colleges from other parts of the country. All dental house officers were selected regardless of their OPD rotation in each of the teaching hospitals.

Duration

The study took place between 5th May 2011 and 5th July 2011.

Survey Form

A question-based form was designed to assess the prescription writing skills. Each participant was required to write a detailed prescription in response to a clinical question. A completely blank space was provided to write the prescription without any preprinted parameter.⁹ All forms had the same clinical question to maintain a standard assessing criterion. In each hospital, the survey forms were distributed and collected on the same day to test the skills without any material or electronic aid. None of the house officers were foretold about the prescription writing skills assessment until on the day of the survey.

Scoring

The forms were scored for 20 parameters which were to be ideally mentioned in a well written prescription (Fig. 1).

Every prescription written was, therefore, analyzed and scored for date, patient's name, age, sex and address, doctor's name, registration number, professional degree and signature, symbol Rx, diagnosis, drug name, dose, frequency, route, duration, quantity, refill information and instructions for labeling. Since the survey forms distributed had no preprinted name of hospital and hospital address, these were also included.

Each of the above-mentioned parameter was given a score of 1. Instead of determining a total score for every prescription per doctor, a total of each parameter of the 200 forms was calculated. The focus was not to determine which house officer/hospital scored best, but to evaluate the writing skills of all the participants in total in relation to every

Table 1: Number of participants who listed each parameter

Parameters	Total	%
Hospital name	6	3
Hospital address	0	0
Date	83	41.5
Patients name	98	49
Patients age	84	42
Patients sex	49	24.5
Patients address	2	1
Doctors name	3	1.5
Prof degree and registration no	2	1
Doctors signature	111	55.5
Symbol Rx	122	61
Diagnosis	13	6.5
Drug name (generic)	8	4
Dose	155	77.5
Frequency	173	86.5
Route	174	87
Duration	113	56.5
Refill information	0	0
Quantity to be dispensed	2	1
Instructions for labeling	1	0.5

parameter. Scoring regarding drug name was done on the basis of listing any analgesics' generic name.

Data was analyzed by using SPSS 19.

RESULTS

Out of 360 survey forms originally distributed to house officers in different hospitals, 200 were returned.

The forms were scored for 20 parameters which were to be ideally mentioned in a well written prescription. Frequency (92.5%) and route (93%) of drug administration were the most commonly listed, followed by dose (82.9%), symbol Rx (65.2%), duration (60.4%), doctors signature (59.3%), patient's name (52.4%), patient's age (44.9%) and date (44.4%).

Parameters that were least or not listed include hospital address (0%), refill information (0%), instructions for labeling (0.5%), quantity to be dispensed (1.1%), patients address (1.1%), professional degree and registration number (1.1%), doctors name (1.6%), diagnosis (7%), hospital name (22%), appropriateness of drug (26.2%) and patients sex (26.2%). Table 1 gives a detailed account of the parameters and the number of times each was listed.

DISCUSSION

The study highlights overall knowledge of the house officers in relation to each prescription writing parameter. The omission of key parameters can be majorly attributed to lack of preprinted blanks provided in the survey form. However, since the aim of the study was to assess knowledge and prescription writing skills, this blank omission was necessary. The results of this study as well as others clearly suggest that a majority of house officers miss out key information while writing a prescription, such as date and

Prescription Writing Skills Survey

The following exercise is designed to assess your prescription writing skills as part of a survey. No names or your details will be published. Results will be shown in numerical values.

Thank you for your cooperation.

Mr X, 40 years, had a simple dental extraction today in your clinic/hospital. You, as a dentist, are required to prescribe an analgesic. Please write a complete prescription with all the necessary details.

Date:.....	
Mr X—40 years Simple extraction done	
Rx	12 tablets
• Panadol (Tab)	500 mg
• 2 + 2 + 2	(2 day)

Fig. 1: An example of a filled sample survey form

instructions for labeling.¹⁰ Since no study on adverse drug reactions due to incorrect prescriptions has been carried out here in Karachi, the nature and prevalence of these reactions are unknown.

The parameters listed by more than 50% of the participants are just six out of a total of 20 and include doctor's signature, symbol Rx, drug dose, frequency, route and duration.

Hospital address was completely unlisted (0%) in contrast to hospital name (3%) as probably the participants were used to hospital prescription pads which have this information prelisted.

Only 4% of the participants mentioned the generic name of the drug while the rest listed brand names. It has been reported that if a drug is not prescribed generically, it greatly reduces the choice of a patient to a single drug with less cost savings.¹¹

The omission of date by more than half of the house officers is again disturbing as it represents their ignorance on the legal importance of the prescription order. Also, the course of drug therapy and number of refills cannot be fully determined.¹⁰

These findings highlight the urgent need of educational interventions during undergraduate studies and close monitoring during house job. The Emerge recommendations provide some guidelines to reduce medication errors by newly graduated medical doctors. These however, can also be implemented in dentistry and include exposing students to clinical environment and training them in prescription writing during undergraduate studies rather than after graduating in internship,¹² as was concluded in a study in Nepal.¹³ It is only then that the house officers would be sufficiently trained to implement their knowledge clinically. Helen and Joseph have also reported that with a change in the dental curriculum that focuses more on pharmacology and therapeutics in the preclinical years, significant improvements in the knowledge of dental graduates regarding drug prescribing can be seen.¹⁴

The study, however, has its limitations because it did not focus much on the accuracy of the information but more on the number of parameters listed. Drug dose, frequency and duration were scored only if these were mentioned even if they were inaccurate. Drug name, however, was scored only if a generic name of an analgesic was listed. More studies that focus both on the accuracy of drug information and overall knowledge regarding prescription writing parameters are needed to fully assess the skills of house officers.

CONCLUSION

The current study concluded that prescription writing skills of a majority of house surgeons were deficient in important details. The results highlight an urgent need for vigorous educational interventions regarding prescription writing

skills during undergraduate studies and close monitoring during house job.

REFERENCES

1. Aronson JK. Medication errors: Definitions and classifications. *Br J Clin Pharmacol* 2009;67(6):599-604.
2. Velo GP. Medication errors: Prescribing faults and prescription errors. *Br J Clin Pharmacol* 2009;67(6):624-28.
3. Ehigiator O. Evaluation of drug prescriptions in oral surgery. *Nigerian Hospital Practice* 2011;5(6):77-81.
4. Lee BH. Minimizing prescription writing errors: Computerized prescription order entry. *John Hopkins Medical Institutions* 2006;1-10.
5. Ross S, Loke KY. Do educational interventions improve prescribing by medical students and junior doctors? A systematic review. *Br J Clin Pharmacol* 2009;67(6):662-70.
6. Calligaris L, Panzera A, Arnold L, et al. Errors and omissions in hospital prescriptions: A survey of prescription writing in a hospital. *BMC Clin Pharm* 2009;9(9):1-6.
7. Harding S, Nicky B, David B. The performance of junior doctors in applying clinical pharmacology knowledge and prescribing skills to standardized clinical cases. *Br J Clin Phar* 2010;69(6):598-606.
8. Ross S, Bond C, Rothnie H, et al. What is the scale of prescribing errors committed by junior doctors? A systematic review. *Br J Clin Phar* 2008;67(6):629-40.
9. Charlton R. Writing a prescription. In: *Learning to Consult*, Radcliffe Publishing Ltd. 2007;124-32.
10. Akoria OA, Isah AO. Prescription writing in public and private hospitals in Benin city, Nigeria: The effects of an educational intervention. *Can J Clin Pharmacol* 2008;15(2):295-305.
11. Plianbangchang P, Jetiyanon K, Suttaloung C, Khumchuen L. Physicians' generic drug prescribing behavior in district hospitals: A case of Phitsanulok, Thailand. *Pharmacy Practice (Internet)* 2010 Jul-Sep;8(3):167-72.
12. Aronson JK. Medication errors: Problems and recommendations from a consensus meeting. *Br J Clin Pharmacol* 2009 Jun;67(6):592-98.
13. Rauniar GP, Roy RK, Das BP, Bhandari G, Bhattacharya SK. Prescription writing skills of pre-clinical medical and dental undergraduate students. *JNMA J Nepal Med Assoc* 2008 Oct-Dec;47(172):197-200.
14. Ryding HA, Murphy HJ. Assessing outcomes of curricular change: A view from program graduates. *J Dent Education* 2001;65(5):422-26.

ABOUT THE AUTHORS

Aisha Wali (Corresponding Author)

Senior Lecturer, Department of Operative Dentistry, Baqai Dental College, Karachi, Pakistan, e-mail: aishawali@hotmail.com

Anwar Ali

Assistant Professor, Department of Oral Surgery, Dow University of Health Sciences, Karachi, Pakistan

Talha Mufeed Siddiqui

Associate Professor, Department of Operative Dentistry, Baqai Dental College, Karachi, Pakistan

Hamza Jafri

House Surgeon, Department of Operative Dentistry, Baqai Dental College, Karachi, Pakistan