

Assessing Knowledge and Attitude Regarding Drug Prescription among Dental House Officers- A Questionnaire-Based Study

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ABSTRACT

Objective: To evaluate the knowledge and attitude of dental house officers regarding proper drug prescription and factors influencing judgement of dental house officers during prescription writing.

Methods: This descriptive cross-sectional study was conducted with the approval of review board of CMH Lahore Medical College. Online questionnaire with 17 close ended questions was developed the authors and distributed among 400 dental house officers working in various private dental institutes of Pakistan. Statistical analysis was carried out using IBM Statistical Package for Social Sciences version 25.

Results: Majority of house officers relied on supervisor regarding drug prescription. Internet (37%), books (35.8%) as well as fellow colleagues (34.3%) was the other major sources of information. 8 out of 10 respondents 'always' consider medical history before prescription writing. 14.8% responded that they always explain side effects to the patient. There was a significant difference between males and females when it comes to need of supervision. Majority of the females felt the need of supervision when it comes to prescription writing. Male house officers were more significantly influenced by senior colleagues/supervisor, fellow colleagues and pharmaceutical companies during drug prescription.

Conclusion: The house offers should be instructed to explain side effects to the patients, take complete medical history and always consult with supervisor when confused. Workshops, refresher courses and constant supervision according to WHO Guide to Good Prescribing are essential to keep house officers up to date.

Keywords: Dental, Drug prescription, History, House-officers, Medication, Prescription writing, World Health Organization

INTRODUCTION

Effective drug prescription has a major impact on patients' health, as it is the primary medium used by the doctors. Prescription writing has prime importance in a doctor's profession, no matter what career he pursues.¹ Prescribing medication is a difficult and challenging task as it is based on critical thinking and diagnostic reasoning.² It involves advising relevant drugs with proper therapeutic dosage at optimum intervals.³ Moreover, knowledge about drug interactions and its side effects is also an essential part of prescription writing.⁴

The World Health Organization (WHO) recommends defining the patient's problem (diagnosis) and then specifying the therapeutic objective, considering the different alternatives and choosing a treatment plan with proven efficacy as well as safety.⁵ Hence, prescribing is a subjective and dynamic process.⁴

The parameters that occasionally lead to poor prescription writing are mainly subjective. However, inadequate training, lack of knowledge and influence of pharmaceutical companies can negatively affect effective drug prescription.⁶ Errors in prescription is a common phenomenon observed

worldwide.^{7,8}

At undergraduate level, dental students study pharmacology in second year and implement it clinically in the final year and house job. During their clinical years and house job, the medical graduates have to prescribe medication quite often.⁴ Majority of the doctors, due to lack of confidence and competency in their initial years, do not use their own knowledge for prescription writing instead rely on their supervisors' judgement. This can lead to poor drug prescription besides accurate diagnosis.⁹

The term 'rational drug prescription' means using the minimum number of drugs to obtain the desirable outcome in the shortest period of time at a reasonable cost.^{10,11,12} The periodic assessment of knowledge and expertise of final year dental students and house officers can minimize errors.^{13,14,15} A thorough knowledge of principles of pharmacology along with the understanding of mechanism of action of important drugs is essential for all medical and dental graduates.¹ The most commonly prescribed drugs in dentistry are local anesthetics used during dental procedures, antibiotics, Non-Steroidal anti-

inflammatory drugs (NSAIDs), obtundents and lifesaving drugs prescribed for emergencies.^{4,16} Most adverse drug related events (68-75%) are reported to have been related to incorrect prescription writing. The knowledge about proper dosage, and side effects as well as drug interactions is a pre-requisite for accurate prescription.¹⁰

The purpose of this survey was to assess the knowledge and attitude of dental house officers regarding drug prescription and the factors influencing judgement of dental house officers during prescription writing.

METHODOLOGY

This questionnaire based descriptive cross-sectional study was conducted from 15th April 2022 till 10th July, 2022 with the approval of Institutional review board of CMH Lahore Medical College and departments of respective institutes. (Case#. 683/ ERC/CMH/LMC)

The inclusion criteria were dental house officers working in private institutes of Lahore; Institute of Dentistry, CMH LMC, Lahore Medical and Dental College, Fatima Memorial Hospital, University of Lahore and Sharif Medical and dental College. The exclusion criteria were non-dental graduates, demonstrators, and post-graduate trainees. The survey was carried out using online questionnaires developed by the authors after extensive literature review. Individual items were generated and the questionnaire was validated by a panel of three researchers, expert in their field. Online questionnaire was distributed among 400 house officers working in various dental departments i.e., surgery, operative, orthodontics, periodontology etc., through E-mail and WhatsApp. The questionnaire consisted of two parts having 17 close-ended questions. The first part targeted demographics such as age, gender, institute and department they are currently working whereas, the second part dealt with knowledge and attitude of dental house officers regarding prescription writing. Statement of consent and confidentiality was mentioned in the questionnaire for the voluntary participants.

Statistical analysis was carried out using IBM Statistical Package for Social Sciences (SPSS version 25, IBM Corporation, USA, New York, 2011). Descriptive statistics was used to illustrate the frequencies and percentages. Chi-Square Test was used to

determine percentages of categorical variables. P-value less than or equal to 0.05 was taken as significant.

RESULTS

There were 400 respondents in our study and 38.3% of them were from CMH Lahore Medical College whereas 22.5% were from Sharif Medical College, 12.8% from Lahore Medical Dental College, 9% from Akhtar Saeed Medical College and 1.5% were from Fatima Memorial Hospital. two third of the respondents were females, whereas, one third were males.

67.8% of the respondents were taught about the art of proper diagnosis and drug prescription, whereas 26.5% were not and 5.8 % were unaware about this knowledge.

Majority of the house officers (85.8%) relied on the senior faculty / supervisor and considered them as a source of information and guidance for effective drug prescription, whereas, almost 1/3rd of the respondents revealed that internet (37%), books (35.8%) as well as fellow colleagues (34.3%) was their major source of information regarding drug prescription. However, 32.3% of house officers used their own self-judgement when it comes to prescribing drugs.

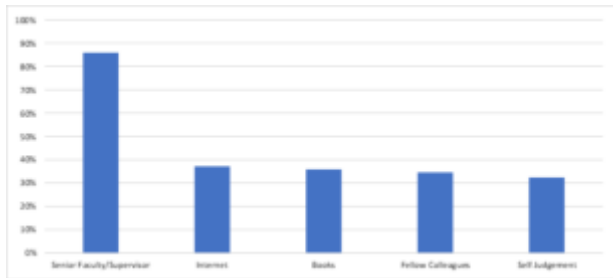


Figure-1: Major sources of information and guidance regarding drug prescription

When it comes to need of supervision regarding correct diagnosis and prescription writing, there was a statistically significant difference among male and female respondents ($X^2=10.39$, $P=0.016$). Majority of the females felt the need of supervision when it comes to prescription writing. 20% of respondents responded that they 'always' need supervision while prescribing, whereas majority of the respondents responded that they 'sometimes' need supervision. Whereas 8% said that they 'never' needed supervision. 8 out of 10 respondents 'always' consider medical history before prescription writing whereas 15.8% 'sometimes' considered medical history, and 2.3% 'rarely' considered medical history before prescription writing. 14.8 % of respondents in our study, responded that they always explain side effects to the patient. 46.5% of respondents sometimes explain side effects of the drugs they are prescribing. However, 24.8 % rarely whereas 14% never explained the side effects of the drugs they are prescribing.

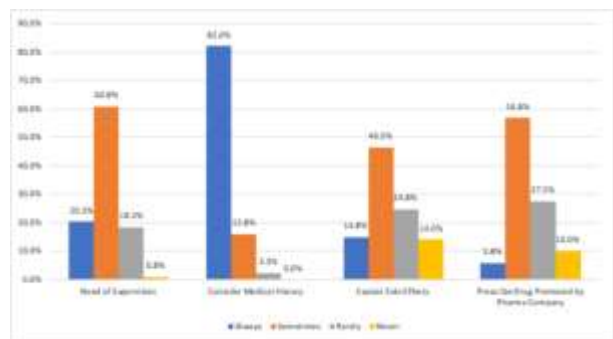


Figure-2: Attitude of dental house officers regarding drug prescription

Almost 1/4th of the respondents 27.5% were confident that they can prescribe drug without supervision. Whereas more than half of the respondents 56% were somewhat confident about it. Whereas 15% of the respondents were very little confident about their own skill of prescription writing. Almost 1/3rd of the respondents revealed that they feel influenced by the pharmaceutical company representatives when it comes to selection of product brand.

There was a significant difference between males and females when it comes to various influencing factors regarding drug prescription. When inquired about major factors that influence drug prescription among House officers, 71% responded that Supervisor was their biggest influence, followed by senior colleagues (68.3%), self judgement (59.8%), internet (38%), fellow colleagues (37%) and books (28.7%) whereas the least influence was of pharmaceuticals companies (14.2%).

Table-1: Gender wise comparison of major sources of information and influencing factors regarding drug prescription

Major sources of information regarding drug prescription	Males n (%)	Females n (%)	X ²	P
Fellow colleagues	54(46.1)	83(29.3)	10.4	0.001
Self Judgement	45(38.4)	84(29.6)	2.92	0.087
Senior Faculty	94(80.3)	249(87.9)	3.95	0.047
Internet	51(43.5)	97(34.2)	3.08	0.079
Books	66(56.4)	191(67.4)	4.42	0.035
Major influencing factors regarding drug prescription				
Fellow colleagues	51(43.5)	97(34.2)	3.08	0.079
Senior colleagues	88(75.2)	185(65.3)	3.70	0.054
Pharmacological companies	24(20.5)	33(11.6)	5.3	0.021
Supervisor	82(70)	205(72.4)	0.22	0.634
Internet	48(41)	104(36.7)	0.64	0.42
Books	39(33.3)	76(26.8)	1.69	0.193

DISCUSSION

Prescription writing holds prime importance in medical profession. The knowledge about proper dosage, as well as side effects is a pre requisite for effective drug prescription; therefore, every doctor should be skilled to prescribe medication independently.¹⁷

Higher Education Commission (HEC) recommended curriculum for Bachelor of Dental Surgery (BDS) ensures dental pharmacology and prescription writing to be studied during second year of BDS. However, most of these students when they reach in the final year, they cannot recall and hence require supervisions or refresher course before prescribing drugs to the patients.^{18,17} Majority of participants in our study required supervisions and a significant proportion of them were females. Half of the respondents (56%) were moderately confident when it comes to prescription writing. Moreover, females were less confident when it comes to prescription writing without supervision.

Previous literature has shown that majority of students and house officers rely heavily on their professors or senior faculty for drug prescription.^{19,10,4} These findings were consistent with our results. However, unexpectedly a great proportion of respondents (34%) were also consulting their fellow colleagues which is an alarming situation and this practice should be discouraged. The WHO Guide to Good Prescribing offers detailed instructions with examples to help readers understand the process of reasonable prescribing. It imparts knowledge and crucial to a clinical career that can benefit both professionals and students.²⁰

Medication history is critical in preventing prescription errors and protects patients. The patient should be given pertinent information about the medication. Early symptomatic warnings of common adverse events, as well as monitoring tests, may help to reduce serious adverse events. Additional information should be documented and compared with the patient's general practitioner, such as therapy compliance, prior hypersensitivity reactions, and negative consequences.²¹ Majority of the respondents (82%) in present study always consider medical history before writing

prescription. However, when it comes to explaining side effects to the patients, majority of the respondents (46.5%) 'sometimes' explain side effects to the patients about drugs prescribes whereas 14% never do that. This should be taken into account and house officers should be trained to always explain side effects of their prescription to their patients.

Pharmaceutical is a huge industry and prescribers of pharmaceuticals are the 'primary keepers' of this industry, and hence a top focus of this corporation. Pharmaceuticals can only influence brand selection but not the choice of generic drug. It was established that pharmaceutical corporations' promotional techniques influence physicians in addition to supervisor's advice and other factor.²² Similarly, several studies have reported that these pharmaceutical companies have a positive influence on prescribing habits of physicians.²³ Majority of the responders in this study felt influenced by the pharmaceutical companies especially when it comes to brand selection. However, otherwise supervisor was the biggest influence. Moreover, male house officers were more significantly influenced by senior colleagues/supervisor, fellow colleagues and pharmaceutical companies during drug prescription.

One of the limitations in the study was we did not inquire about errors in prescription writing. Moreover, public sector colleges were not included in this study. As future recommendation, public sector institutes should be included as comparison.

CONCLUSION

Every doctor should be skilled to prescribe medication independently. The house officers should be instructed to explain side effects to the patients, take complete medical history and always consult with supervisor when confused. Workshops, refresher courses and constant supervision according to WHO Guide to Good Prescribing are essential to keep house officers up to date with newer knowledge. Supervisor, fellow colleagues and pharmaceutical companies were the biggest influence on drug prescription.

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