

PERCEPTION AND PRACTICE ABOUT DRUG PRESCRIPTION AMONG DENTAL STUDENTS OF BOLAN MEDICAL COLLEGE/SANDEMAN PROVINCIAL HOSPITAL QUETTA

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ABSTRACT

Objective: This study aimed to assess the perception and practice of drug prescription among Dental Students of Bolan Medical College/Sandeman Provincial Hospital Quetta.

Materials and Methods: A cross-sectional observational study was carried out from January 2019 to July 2019. A total of 50 Dental Students participated in the Study.

Results: 29% of respondents were females, and 21% were male. The age ranged from 21-25 years. Majority of the respondents were between 22-23 years. The mean age was 22 years. According to a present survey, 97% of the respondents considered dental prescription writing vital for dentists, and only 26% had exposure to new scientific knowledge for prescription writing. 88.9% considered that drugs do have a contraindication to some patients as well as to different health conditions.

Conclusion: One of the most important problems faced by Dental Students during their study year and house job training was prescription writing. For this, they should have proper knowledge regarding prescription writing and their side effects as well as their interaction with other drugs. Shows that maximum Dental Students have good prescription writing skills along with adequate pharmacological knowledge.

Keywords: Perception, Practice, Drug Prescription, Dental Students

INTRODUCTION

A prescription has a unique characteristic, but it is always minded by cultural, social, economic and promotional factors. At the same time, graduates will need not only information of today's drugs but also an as strong knowledge of principles of therapeutics, underpinned by scientific understanding of drug action, to inform their learning about future developments. Precise diagnosis, appropriate prescription, authoritative dispensing, judicious packing and patient devotion are the five essential criteria

to attain the balanced drug use. As drugs can cause significant morbidity and mortality, and hence there is a risk of causing great harm.¹ It is a dynamic and individualized clinical process.² In Pakistan, the course of dentistry for undergraduates is covered in four years. First two years for the basic course and last two for the clinical course. Dentists get their license after completing their one-year house job and can work independently.³ Drug prescription by dental practitioners is an important aspect of dental practice because of the need for pharmacologic therapy along with dental procedure in several situations. Dental graduates are expected to learn clinical skills to perform certain clinical procedures and demonstrate good clinical judgment to undertake proper management decisions. Furthermore, effective and safe prescription of commonly used drugs should be

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a core competency of newly qualified dentists.⁴ Prescribing medication is an important aspect of patient health, care and wellbeing. Incorrect prescriptions have harmful effects. Half of the prescribing errors are potentially preventable and usually occurred due to limited knowledge of pharmacology and pharmacotherapy. Indeed, medical students often feel unprepared for their prescribing task when they graduate and have expressed a wish to have more opportunities to acquire these skills in practice. One of the reasons students feel unprepared is that they usually copy their supervisors' medication choices, without thinking autonomously about potential choices.⁵

Care must be taken to avoid any errors in prescribing as it adversely affects the treatment outcomes. Therefore, there is need for proper education-based intervention to aid improvement in prescribing competency.⁶ Whereas the term rational drugs prescription that often prescribed by many dentists mean as using the least number of drugs to obtain the best possible effect in the shortest period and at a reasonable cost. Error in prescription may be a reason for the rise in reported hospital adverse events, medico-legal problems, aggravation of illness, ineffective treatment, distress to the patient. It is utmost important to have accurate knowledge of the safe doses of the drugs, their toxic and side effects. Drugs can be harmful to the patient if not prescribed correctly. Still, dentists need to have detailed knowledge about drugs they are prescribing and should be aware of international rules of drug prescription⁷ Familiarization with the pharmacology of prescription drugs is important not only to understand their physiological effects on our patients but also when our dental treatment plans should be modified. Current medical history is required to ascertain not only a patient's present drug regimen but also any medical problems that affect drug metabolism such as hepatic and renal dysfunction. The integral component of drug prescription in treatment planning deserves the same attention to patient communication just as restorative or periodontal recommendations. As a result, the patient will benefit from enhanced compliance when taking prescriptions as directed, lessening the chances of inappropriate cessation of medication, dosing errors, and complication.⁸ According to British pharmacological society, the term 'appropriate prescribing' should be used to

cover overuse, underuse, and misuse of treatments. A suboptimal prescription is an inappropriate one.⁹

According to the World Health Organization's (WHO) recommendations, prescriptions should identify the professional, the patient, the mode of administration, as well as the medicine's pharmaceutical form, dosage, frequency of use, duration of treatment along with patient guidance and information. Errors in prescription can occur due to a variety of reasons; however, most common errors are human errors which occur in prescription writing. Some of the common errors observed during prescription writing can be attributed to the wrong format, lack of clarity in comprehending the prescription, or aberration in spelling. This results in pharmacist misinterpreting the prescription, dispensing the wrong drug or dose, providing ambiguous information to the patient, can lead to serious repercussions resulting in undesirable consequences such as worsening of treatment, increased cost of treatment, and other serious adverse events.¹⁰ Avoiding medication errors is important in balanced prescribing, which is the use of a medicine that is appropriate to the patient's condition and within limits created by the uncertainty that attends therapeutic decisions, in a dosage regimen that optimize the balance of benefit to harm.¹¹ All of this demands a thorough understanding of the pathophysiology of the problem and the pharmacology of the drug, including its pharmaceutical, pharmacokinetic, and pharmacodynamics properties, and how those properties are translated into a therapeutic effect via a chain of biochemical and physiological events.¹² Teaching pharmacology for Dental Students should be emphasized in all learning style such as a workshop, tutorials, problem-based learning and e-learning along with training related to the clinical aspect of the subject during 3rd year, final year and house job. It is important to get information about the latest medicine and have strong knowledge about drug action and the principle of therapeutic to give quality health in future.¹³

There are two types of legal prescription according to the Drugs and Cosmetics Act; those that can be obtained by prescription only and those that may be purchased without a prescription and one termed as non-prescription drugs or over-the-counter (OTC) drugs. While a prescription can be written on any piece of paper, but it should contain all legal elements,¹⁴ Poly-pharmacy and over-prescription

of drugs are common in south Asia. Studies on prescription behaviour in Pakistan have been focused on disease and treatment guideline.¹⁵

This study aimed to assess the knowledge about drug prescription among Dental Students in the Dental Section, Bolan Medical College/ Sandeman Provincial Hospital Quetta.

MATERIALS AND METHODS

This cross-sectional study was conducted from January 2019 to July 2019. Written permission has been granted for the Study by the Head of Department of Dental Section of Sandeman Provincial Hospital Quetta. Students from the first year to final year BDS in Sandeman Provincial Hospital Quetta/ Bolan Medical College Quetta were asked to participate in this study; they were asked to sign the consent form and those who did not sign the consent form were excluded from the Study. A self-prepared questionnaire was distributed among the participating Dental Students. Data so obtained was analyzed using SPSS 21.

RESULTS

Respondent’s characteristics

A total of 50 Dental Students from the first year to final year participated in this study. Several demographic parameters were recorded, including age, gender. Out of 50 participants, the majority of respondents were females with a dominance of 29 (29%), and a male was 21 (21%). The ages of participants were between 21-25 years, and the mean age of the respondent was 22 years, with 16.1% figure 1.

Prescription writing skills

In this study, we have set a scale of 1-8 on prescription writing skills that further shows on evaluation that on the scale of 5, there were only 28.9% of samples had good prescription writing skills. In comparison, 4.4% on the scale of 8 had average prescription writing skills table 1. These figures have been discussed thoroughly in the discussion part.

Error in prescription writing

For most frequent problem encounters during drug prescription writing results indicated that 37.8% variables were associated with having a problem of the wrong dosage, while 2.2% having problems with prescription wrongly filled table 3.

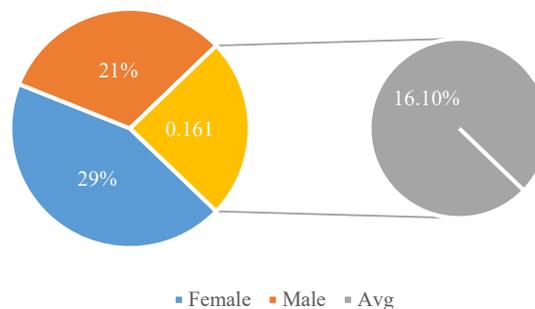


Fig 1: Demographic data

Table 1: Up to what extent you are confident that you have good prescription writing skills

Scale	Frequency	Percent
1	4	6.7
2	5	8.9
3	8	17.8
4	7	15.6
5	13	28.9
6	5	6.7
7	6	11.1
8	2	4.4

Table 2: Dental Student perception and practice about drug prescription

Description	Yes %	No %	Don't know %
Drug Prescription for a dental disease called dental drugs?	28.9%	60.0%	11.1%
Do you think Prescription writing is vital for treating dental diseases?	97.0%	1.0%	2.0%
Do you consider some drugs contraindicated to some patients?	100.0%	0%	0%
All drugs used have certain side effects?	100.0%	0%	0%
Drugs may cause worsening of the patient's condition?	74.0%	13.0%	13.0%
Wrong antibiotics use may produce drug resistance?	100.0%	0%	0%
Have you taken any CME for DP writing?	20%	46.7%	33.3%
Reading new scientific material for prescription writing?	26.7%	71.1%	2.2%
Drugs should be used for a specific duration?	88.9%	11.1%	0%
Should dental drugs be used for specific doses?	100.0%	0%	0%

Table 3: Problem you encounter during drug prescription writing

Problem	Frequency	Percent
Wrong dosage	17	37.8
Wrong treatment duration of drug	10	20.0
No history taking of drug dosage	12	24.4
Prescription wrongly is written.	1	2.2
Spelling mistakes	4	6.7
Do not have knowledge about drug interaction	6	8.9

DISCUSSION

It is defined by WHO rational uses of drugs “Rational use of drugs requires that patient receives medications appropriate to their clinical needs, in doses that meet their requirements for an adequate period, and the lowest cost to them and their community” (WHO, 1985).¹⁶

In this Study, Only 4.4% Dental Students don’t have good prescription writing skills because at the initial stages of clinical training most medical students find that they don’t have an obvious idea of how to prescribe a drug for their patients or what information they need to provide and that shows a good ratio as compared to Guzman-Alvarez because the Study conducted by Guzman-Alvarez states that 5% Dental Students rely on their teachers and even classmates to seek knowledge for prescription writing.¹⁷ While, Aisha Wali assessed the prescription writing skill in dental teaching hospitals of Karachi Pakistan. She suggested that newly graduated dentist should provide some guidelines to reduce medication errors.¹⁸ because their earlier pharmacology training had concentrated more on theory than on practice. The material was probably ‘drug-centred’, and focused on indications and adverse effects of several drugs. But in clinical practice, the antithetical approach has to be taken, from the diagnosis to the drug.

Moreover, patients vary in age, gender, size and sociocultural characteristics, all of which may affect treatment choices. All of this is not always taught in medical schools, and the number of hours spent on therapeutics may be low compared to regular pharmacology teaching. Clinical training for undergraduate students often focuses on diagnostic rather than therapeutic skills. Sometimes students are only expected to copy the prescribing behaviour of their clinical teachers, or existing standard treatment

guidelines, without explanation as to why certain treatments are chosen. The most common reason for drug prescription by Dental Students is obvious that patients with dental problems need to relieve their pain and most of their dental problems occur as a result of low dental care.¹⁹ Books may not be of much help either. Pharmacology reference works and formularies are drug-centred, and although clinical textbooks and treatment guidelines are disease-centred and provide treatment recommendations, they rarely discuss why these therapies are chosen.

Most of the time, medical graduates choose an inappropriate or doubtful drug, write one-third of prescriptions incorrectly, and sometimes fail to give the patient important information. Some students may think that they will improve their prescribing skills after finishing dental school. Still, research shows that despite gains in general experience, prescribing skills do not improve much after graduation. Bad prescribing habits lead to ineffective and unsafe treatment, exacerbation or prolongation of illness, distress and harm to the patient, and higher costs. Later on, new graduates will copy them, completing the circle. Changing existing prescribing habits is troublesome. So good training is needed before poor habits get a chance to develop.²⁰

While on evaluating of current Study showed that most common error in prescription writing among Dental Students is the wrong dosage that is about (37.8%) This is a critical issue since it affects patient health and safety; too low doses, extended administration intervals, or short duration of treatment will undoubtedly lead to therapeutic failure, which could complicate the patient’s condition. While, excessively high doses, short intervals, or prolonged duration of treatment may result in toxicity. On the other hand, Study conducted by Guzman-Alvarez stated that when evaluating the most common prescription errors, 74% of students acknowledge lack of awareness about drug dosage.¹⁷ However, 2.2% Dental Students are not aware how to write the prescription accurately that can lead to serious health issues because drugs have their specific mechanism of action and even they can interact or worsen the pre-existing medical condition that would be life-threatening to the patient.

Bacteria alter themselves in a way that decreases the effectiveness of drugs, chemicals, or other agents

intended for the prevention or cure of infections. The bacteria survive and continue to multiply, causing immense harm.²¹ According to our Study, 100% Dental Students have acknowledged that antibiotics have drug resistance. The problem of drug resistance is one of the important issues that brought up prolonged illnesses and prolonged hospital stays. Then there are some factors underlying the irrational use of drugs like Prescribers lack the knowledge and clinical practice, the pressure to the prescriber, higher use IVs due to false assumption that it improves patients satisfaction, industry promotional activities incentive by pharmaceutical company, self-medication by patient, generalization of limited experience, inappropriate role models, patient demands and expectations, misleading belief about drug efficiency while the Study conducted by Dr. Aarti S. Panchbhai on the rationality of prescription writing stated that over 50% of the surveyed population do not know the consequence of antibiotic resistance.¹⁶ According to our survey, 74% Dental study agrees that drug may cause worsening of the patient condition if not prescribed correctly. At the same time, the Yemeni medical journal illustrates that Dental drug therapy may interact with the general health condition, especially for medically compromised patients. Drugs may exaggerate the disease or interact with pre-existing drug treatment, and this may complicate the systemic health of dental patients. High awareness levels of the importance of considering the history of drug intake 24% and the dental prescription are vital for treating dental diseases 97% of respondents during clinical sessions, respectively. This could be attributed to the fact that they had been taught this topic in the curriculum of other courses other than pharmacology, like oral and maxillofacial surgery, management of medically compromised patients, general medicine, oral medicine and periodontology. The WHO guide determines six steps to be considered before drug prescribing as follows: define the patient's problem, "specify the therapeutic target, mention the outcome needed from treatment, verify effectiveness and safety, start the treatment, give information, instructions and warnings, and supervise the treatment".⁴

Good quality prescriptions are known to contribute to improving patient care.²² the goal of drug therapy is to improve a patient's quality of life.²³ With this understanding of quality prescriptions

the current Study shows the following results that include the wrong dosage 17%, wrongly filled prescriptions is only 1% and only 6% samples do not know drug interaction indications.²⁴ Medicine plays a vital role in drug therapy. The drug should be used in the right way, knowing what medicine is right for a patient at the right dose for adequate periods as per clinical need.²⁵

CONCLUSION

Dental Students in Sandeman Provincial Hospital Quetta have satisfying knowledge of prescription writing. Still, proper knowledge of prescribing drugs is needed for good dental practice and hence, it is essential to expand the knowledge related to pharmacological therapy and to know about the proper therapeutic guidelines. With the help of the WHO Guide to Good Prescribing and some educational programs, Dental Students will develop better prescribing skills, which affects the quality of patient care and the usefulness and safety of treatments. Dental Students should be aware of the various aspects of the prescribed drugs for the effective management of the condition for which the drug is going to be prescribed.

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