

Drug Prescribing Knowledge / Skill Among Undergraduate Dental Students

Drug Prescribing
Skill in Dental
Students

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ABSTRACT

Objective: This study was to assess the acquisition of prescribing skill of preclinical dental undergraduate students. Our targeted group of students is of third year BDS and Final year BDS students, of LCMD

Study Design: Prospective / descriptive / cross-sectional study.

Place and Duration of Study: This study was conducted at the Liaquat College of Medicine and Dentistry, Karachi from August 2017 to September 2017.

Materials and Methods: A total of 100 students of 3rd year and 4th year BDS were selected. A structured questionnaire was introduced to them to fill out. The questionnaire sought information about the demographics of the students, their undergraduate CPT teaching, experience of adverse drug reactions (ADRs) and drug interactions since starting work, confidence in drug usage and, in retrospect; any perceived deficiencies in their undergraduate CPT teaching¹⁻³.

Results: A total 100 students both boys and girls out of which 50 is from 3rd year BDS and 50 is from 4th year BDS participated in this study. Most common health condition treated in dental practice: to this question majority of respondent's answers Dental Caries denoted as =1 in questioner key (3 %), Periodontal disease =2 (26 %), Trauma =3 (6 %), Pulpitis =4 (68 %).

Conclusion: Dental caries was found to be the most common reason for drugs prescription encountered which includes treating and relieving its symptoms i-e; pain, ache, infection & swelling. Amoxicillin + Clavulanic acid was considered to be the most effective and convenient antibiotic to subside the infection. NSAIDs are given for pain removal most preferably. Definite posology of the drug was the main reason for error in prescription.

Key Words: Prescribing Drugs, Students, Patient, Skills

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INTRODUCTION

A sound knowledge of patho-physiology of a disease and clinical pharmacology and therapeutics (CPT) of a drug is required for secure and coherent prescribing³. Coherent drug use refers to the prescription of the right drug, for the right indication, in the right dosage and dosing frequency for the correct duration (WHO, 1985, 2002)^{1,6}.

Seem into the truth that the bulk of prescription-related errors in tertiary care hospital based system are made by junior doctors, there is a need to teach them and develop an intervention that will improve their prescription qualities⁶. The World Health Organization (WHO) recommends "defining the patient's problem (diagnosis), specify the therapeutic objective, and then, bearing in mind the different alternatives, choosing a

treatment with confirmed efficacy and safety; prescribing is a customized process. Treatment begins by providing the patient with clear information and instructions. After an suitable interval, results are evaluated. If the problem has been resolved, treatment may be clogged. If problem persists doctor have to look for other options of treatment that can vary from altering the prescription or surgical interventions according to the situation.

In the third year, students take a pharmacology course, focused on general pharmacology, chemotherapy, and specialized medical pharmacology, where they be taught about medical and dental issues. Also during the third year, students begin their clinical practice, becoming more concerned with patients from the various clinical courses⁹⁻¹⁴.

This study was therefore meant to conclude how effectively the undergraduate CPT teaching has prepared interns in Liaquat College of Medicine And Dentistry for secure and balanced prescribing, and how in retrospect the interns would modify their undergraduate training to get better patient safety when prescribing. The influence of internship training on the prescribing ability of the interns was also sought¹⁵⁻¹⁸.

MATERIALS AND METHODS

A total of 100 students were selected from the Liaquat College of Medicine and Dentistry of 3rd year and 4th

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year BDS. A structured questionnaire was introduced to them to fill out. The questionnaire sought information about the demographics of the students, their undergraduate CPT teaching, knowledge of adverse drug reactions (ADRs) and drug interactions since starting effort, confidence in drug usage and, in retrospect; any perceived deficiencies in their undergraduate CPT teaching ^{1,6}.

The possible answers of each question is denoted with the mathematical value to sort out the calculation in data entry.

Contents of Questioner:

What is the most common health conditions treated in dental practice?

Which is the most frequent non-steroidal anti-inflammatory drugs (NSAID) you prescribe?

Which antibiotics are most commonly prescribed & what is its common dose prescribed?

What are the most common errors occur during prescription of drugs?

What are your sources for prescription information?

Do you use World Health Organization (WHO) Guide to Good Prescribing for drug prescription?

Do you have appropriate knowledge about dose of Drug to be Prescribe?

Do you know about the frequency of Drug to be prescribed?

Do you know for how long the drug has to be given?

Did you know the correct route of drug delivery?

Do you know the half life of drug you commonly prescribe?

Do you know the common side effects of drug you commonly prescribe?

Do you know the chemical composition of drug you are prescribing?

The data obtained was analyzed with SPSS version 19. The relationship between the confidence and experience of the interns to prescribe and the number of clinical rotations done were compared using Chi-square, at a significance level of $P < 0.05$.

RESULTS

A total of 100 students both boys and girls out of which 50 are from 3rd year BDS and 50 are from 4th year BDS participated in this study. Most common health condition treated in dental practice: to this question majority of respondent's answers Dental Caries denoted as =1 in questioner key, Periodontal disease =2 (26 %), Trauma =3 (6%), Pulpitis =4 (68%) (As shown in figure 1).

Most frequent non-steroidal anti-inflammatory drugs (NSAID) you prescribe: to this question respondent's answers vary according to the choice and preference out of which Aspirin=2%, Synflex 28%, Brufen 12 %, Panadol 15%, Ansaed 43%. (Shown in figure 2)

Antibiotics are most commonly prescribed & what is its common dose prescribed: to this question respondent's

answers vary according to the choice and preference out of which penicillin 89%, metronidazole 8%, don't know 3% (shown in table 1)

The most common errors occur during prescription of drugs: According to 3rd and 4th year students the common error encountered is categorized into; forgot to mention the dosage 45%, Time span of a drug 7%, Drug name 3%, Side effects 27%, don't know 18%. (According to Figure 3)

Table No.1: Frequency distribution of choice and preference of antibiotic

Antibiotic	choice and preference (Frequency distribution)
Amoxicillin + Clavulanic acid	89%
Metronidazole	8%
Don't Know	3%
Total	100%

Table No.2: Frequency of fulfill the criteria regards prescription writing

Criteria	Yes (%)	No (%)
Follow universal basic guidelines	65%	35%
Appropriate knowledge about dose of Drug to be Prescribe	75%	25%
The frequency of Drug to be prescribed	92%	8%
Knowledge of Correct route of drug delivery	98%	2%

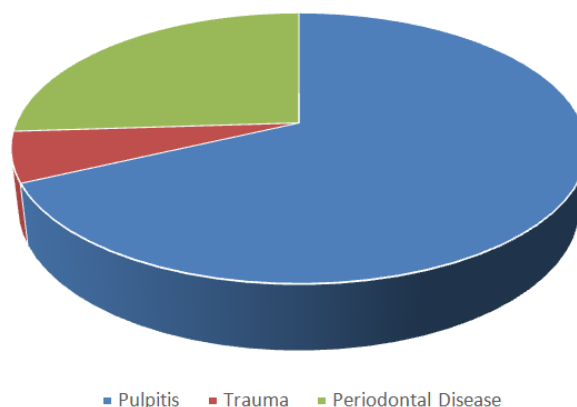


Figure No.1: Most common health condition treated in dental practice

What are your sources for prescription information: To verify the authenticity of prescription it is required to know where the source of information coming from expected answers were categorized as; Pharmacology guide books =1 (78 %), Self awareness = 2 (12%), Internet = 3 (10 %)

Use of World Health Organization (WHO) Guide to Good Prescribing for drug prescription: To evaluate that students are up to the mark on following universal

basic guidelines; No =1 (35%), Yes = 2 (65 %). (Shown in Table 2)

Knowledge of Correct route of drug delivery: No = 1 (2 %), Yes = 2 (98 %). Do you have appropriate knowledge about dose of Drug to be Prescribe; No = 1 (25%), Yes = 2 (75 %). The frequency of Drug to be prescribed; No = 1 (8 %), Yes = 2 (92 %). (Table 2)

For how long the drug has to be given i.e. the duration or time span of a drug you have been prescribing; 7 days 10%, 5 days 70%, 3 days 15%.

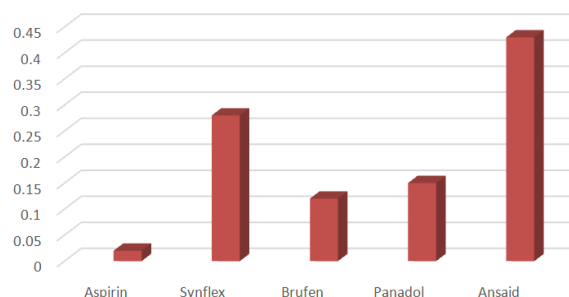


Figure No.2: Most common non-steroidal anti-inflammatory drugs (NSAID) you prescribe

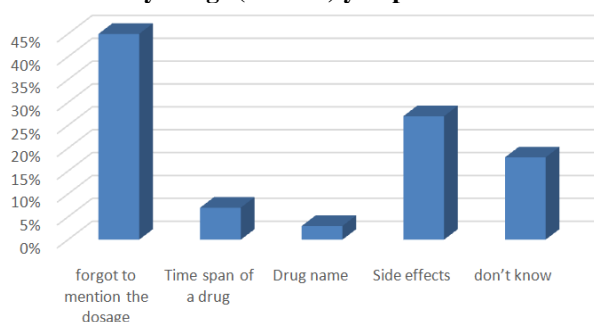


Figure No.3: The most common errors occur during prescription of drugs

DISCUSSION

In Pakistan (according to Pakistan Medical & Dental Council) the course curriculum or BDS 2nd and 3rd year include thorough study of pharmacology and pathophysiology, chemotherapy. Students learn about medical and dental issues. Also during third and fourth year, students start their clinical practice, becoming more concerned with patients from the various clinical courses but the prescription is guided and supervised by senior dentist and whatever clinical practice students perform they perform under the strict supervision of senior dentist⁷⁻¹¹.

The most common dental problems encountered in OPDs are dental caries (68 %) in present study conducted in Liaquat College Of Medicine And Dentistry conducted in Aug- Sep 2017, which is different from the study conducted by Moradabad, INDIA where the most common condition encountered is concluded on a whole as Pain. Here we concluded dental caries as the chief complain which ultimately involves pain as one of its presenting complain.

To prescribe medication it is important to know the pharmacokinetics and pharmacodynamics of the pain killers wither we use NSAIDS such as gelofen, ibuprofen was prescribed more than the other analgesics in our study^{1,8}. Most of the students are likely to prescribe as per their preference. .

Common mistake occur by junior dentist while writing a prescription when asked comes out to be that they forget the dosage of drug / mg (45 %) students common error of prescription writing encountered is this followed by, (18 %) forgot to mention the possible side effects of drugs, (6 %) forgot to mention for how long the drug should be taken, (2 %) forgot the drug name.

Source of information and up to dated knowledge about the commonly prescribed drugs in OPDs are answered to be Pharmacology guide books, from where students have learnt the universal prescription dosage and guide lines about the drugs, their frequency or intake , time span or duration, route of drug, half life of drug common side effects and there chemical composition . Most of the students select pharmacology guide book (70%) as there source of information in our research which differ from the research which we are following according to their research (34.67%) gather information from professors²⁰⁻²². Here authentication level and validity of information is much superior then the pioneer research because pharmacology guide used as a reference is much superior the professor knowledge.

The main precincts of this study were that only 13 open ended questions were used to carry out the survey, and a small sample size was considered for pilot study²³⁻²⁴.

CONCLUSION

Dental caries was found to be the most common reason for drugs prescription encountered which includes treating and relieving its symptoms i-e; pain, ache, infection & swelling. penicillin (Amoxicillin + Clavulanic acid) was considered to be the most effective and convenient antibiotic to subside the infection. NSAIDs are given for pain removal most preferably. Definite posology of the drug was the main reason for error in prescription.

The information of pharmacology among third and fourth-year BDS students in the School of Dentistry has gaps that could have an effect on patient security. More studies are desired to decide whether this issue affects the class of patient care and the success and safety of treatments. Since prescribing accurately is very important, it is needed to develop therapeutic guidelines, and to give pharmacological therapy courses²⁴.

Author's Contribution:

Concept & Design of Study:	Sana Farooq
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Revisiting Critically:	Muhammad Nadeem,
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Final Approval of version:	Sana Farooq,
	Muhammad Nadeem

Conflict of Interest: The study has no conflict of interest to declare by any author.

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