



KNOWLEDGE OF DRUG PRESCRIPTION AMONG DENTAL STUDENTS- A CROSS SECTIONAL STUDY

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ABSTRACT

Aim: A cross sectional questionnaire study was done to assess the dental students knowledge of drug prescription.

Materials and methods: A total of 150 students were included in the study and a open ended questionnaire with 10 questions was used. Third and final year students answered the questions. The data were subjected to quantitative analysis.

Results: Majority of students have the habit of prescribing paracetamol and Ibuprofen (70% and 17%). Amoxicillin was the common brand prescribed (94.45%). Sixty percentage of students were unknown with the WHO guidelines while 78.85% of the students knows for how long the drug had to be given and 80% of the students knows about the route of drug administration

Conclusion: The knowledge of prescribing drugs is of utmost need 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

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INTRODUCTION

The act of indicating one or more drugs to be taken by the patient, its dosage, and the interval of the treatment is known as prescribing.^[1] Drug therapy is the main tool that doctors have for influencing the health of their patients. As these drugs, can offer great benefits to patients, they can also cause great harm. Most junior doctors are unaware of the fact that prescribing errors may contribute to a significant rise in reported hospital adverse events and subsequent medicolegal problems.^[1] The World Health Organization (WHO) recommends defining the patient's problem (diagnosis), specifying the therapeutic objective, and then, considering the different alternatives, choosing a treatment with proven efficacy and safety; prescribing is a customized process. Treatment begins by providing the patient with clear information and instructions. After an appropriate interval, results are evaluated. If the problem has been resolved, treatment may be stopped. If the problem persists, each step should be re-examined.^[2] The most prescribed drugs in dentistry are the local anesthetics used during dental procedures, antibiotics, and NSAIDs. Because of the characteristics of these drugs, it is important to determine accurate doses and be aware of any adverse or toxic effects.^[3] Rational drug prescription is defined as using the

least number of drugs to obtain the best possible effect in the shortest period and at a reasonable cost.^[4,5] Medical students and interns should be periodically assessed on prescribing knowledge and skills during their training as a means of minimizing prescribing errors.^[6,7,8] The present study was undertaken to assess the prescribing skill of third and final year student of bachelor of dental surgery (BDS) as the students starts their clinical work from third year onward

MATERIALS AND METHODS

A questionnaire cross sectional study was conducted in a sample of third year and final year students of Al-Azhar dental college, Thodupuzha, Kerala. The pre-testing of the questionnaire was done by running a pilot test to know the feasibility and any difficulties in answering the questions on 20 students. The result of the pilot study was evaluated and a reliability coefficient (α) of 0.76 or more was considered adequate. The result of pilot study was not included in the main study. The questionnaire consists of 10 multiple choice open ended questions regarding the basic things that a dental professional should be aware of. Ethical approval was obtained from the IRB and informed consent was taken from the participants before their participation in the study. A convenient sample of 150 was taken (75 from each group for a uniform representation). Total population of the students in these categories was 200(100 each). Study was conducted over a period one week during the month July, 2016. Participants were invited and the first 75 students in each

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category filled the questionnaire and any doubt regarding the questionnaire was clarified by the investigator.

Statistical analysis

Data collected during the study were entered into excel sheets and were subjected to data analysis. Statistical analysis was done by Statistical Package for Social Sciences (SPSS) version 19(Chicago, USA SPSS Inc.) for descriptive data analysis.

RESULTS

Table 1

| Sl no | Question | Options | 3 rd yr(n=75) | Final year (n=75) | Average response |
|-------|--|---|--------------------------|-------------------|------------------|
| 1 | Most common health condition treated in dental practice? | Pain | 57 (76%) | 68(91%) | 83.5% |
| | | Infection | 15 (20%) | 5(7%) | 13.5% |
| | | Others | 3 (4%) | 2(2%) | 3% |
| | | Ibuprofen | 14(19%) | 11(15%) | 17% |
| | | Paracetamol | 55 (73%) | 50(67%) | 70% |
| 2 | Most common NSAIDs prescribed? | Ketoloc | 0 | 0 | 0 |
| | | Naproxen | 0 | 0 | 0 |
| | | Diclofenac | 6(8%) | 14(18%) | 13% |
| | | Aspirin | 0 | 0 | 0 |
| | | Amoxillin | 70(93%) | 72(96%) | 94.5% |
| | | Ampicillin | 2(3%) | 3(4%) | 3.5% |
| | | pencillin | 3(4%) | 0 | 2% |
| 3 | Most common antibiotics prescribed? | Clindamycin | 0 | 0 | 0 |
| | | Others | 0 | 0 | 0 |
| | | Wrong posology | 10(13%) | 5(7%) | 10% |
| | | Prescription wrongly filled. | 2(3%) | 3(4%) | 3.5% |
| | | Not knowing the brand names. | 35(47%) | 25(33%) | 40% |
| | | Not asking the patient about allergies. | 4(5%) | 10(13%) | 9% |
| | | Not giving a prescription | 1(1%) | 4(5%) | 3% |
| 4 | Most common error during prescription? | Professor | 20(27%) | 30(40%) | 33.5% |
| | | Pharmacology course | 6(8%) | 4(5%) | 6.5% |
| | | Prescription books | 26(35%) | 24(32%) | 33.5% |
| | | Classmate | 23(30%) | 12(16%) | 23% |
| | | Medical representative | 0 | 5(7%) | 3.5% |
| 5 | Sources of prescription information? | No response | 0 | 0 | 0 |
| | | Yes | 4(6%) | 6(8%) | 7% |
| | | No | 19(25%) | 31(41%) | 33% |
| 6 | WHO guide to prescription used? | Unknown | 52(69%) | 38(51%) | 60% |
| | | Yes | 30(40%) | 55(72%) | 56% |
| | | No | 25(33%) | 10(14%) | 23.5% |
| 7 | Knowledge about dose of drug prescribed? | Unknown | 20(27%) | 10(14%) | 21% |
| | | Yes | 36(48%) | 53(71%) | 59.5% |
| | | No | 24(32%) | 16(21%) | 26.5% |
| 8 | Frequency of drug to be prescribed? | Unknown | 15(20%) | 6(8%) | 14% |
| | | Yes | 48(64%) | 70(93%) | 78.5% |
| | | No | 21(28%) | 2(3%) | 15.5% |
| 9 | Knowledge of duration for which drug has to be prescribed? | Unknown | 6(8%) | 3(4%) | 6% |
| | | Yes | 52(69%) | 68(91%) | 80% |
| | | No | 15(20%) | 5(6%) | 13% |
| 10 | Knowledge about route of drug administration? | Unknown | 8(11%) | 2(3%) | 7% |

DISCUSSION

As per Dental Council of India, Students in their second-year Bachelor of Dental Surgery attain pharmacology course that includes prescribing and knowledge regarding pharmacology and pharmacokinetics. It is the institution and the faculty's responsibility to educate students to become highly skilled in their professional practice. Students were not entirely answerable for prescribing as they prescribe under the guidance of seniors.^[1]The most common health conditions treated in dental practice in the present study is pain which is in accordance with the study conducted by Jain A *et al.*^[1] Particulars of pain and appropriate diagnostic procedure

should be used so that the suitable treatment can be implemented.^[3,9] Majority of students have the habit of prescribing paracetamol and Ibuprofen (70% and 17% respectively) which agrees with the previous studies by Jain A *et al.*^[1] Paracetamol can be prescribed alone but it has less anti inflammatory properties. However, it is the only NSAID that possibly will be prescribed in amalgamation with other NSAIDs.^[10,11]13% of the students mentioned Diclofenac as their first preference. No students prescribed Naproxen, Ketorolac, and Aspirin.

Amoxicillin offset the result with 94.45%. since it is the first choice in dentistry so prescribed by maximum number of students in dentistry.^[12-17] Not knowing the brand names (33.33%) was the most frequent prescription error done by students which is in contrast with previous studies by Jain A *et al.*^[1] Not knowing what to prescribe, Wrong posology, improperly filled out prescriptions is a common problem and in addition compromises patient safety. without asking about patient's allergies, wrong duration of administration will unquestionably lead to therapeutic failure and this could worsen the patient's condition and may result in toxicity.^[13]To avoid the problem of not knowing brand names, the WHO Guide to Good Prescribing recommends making a customized

list including the essential drugs for each healthcare professional who prescribes drugs at the clinic.^[14-16] Most of the students gather their information for prescribing from their professors and prescription books (33.5% each) which agrees with previous study by Jain A *et al.*^[1] To acquire information from professors is good as this is stage of the student's development, but it is enormously troubling that approximately 23% students still rely on their classmates for advice which is more than that in previous studies by Jain A *et al.*^[1] WHO Guide to good prescribing provides systematic guidance to the process of reasonable prescribing, together with many illustrative examples. It teaches skills that are necessary throughout a clinical career. This book can help the students as well as professionals to prescribe any medication. Sixty percentage of students were unknown with the WHO guidelines for prescribing which is tremendously more than previous studies while 7% follow the indications whilst prescribing which is again lesser than that in previous studies by Jain A *et al.*^[1] 56% of the students know about the dose to be given to the patient and know how many times the drug had to be prescribed which agrees with the previous studies by Jain A *et al.*^[1] 78.85% of the students knows for how long the drug had to be given and 80% of the students knows about the route of drug administration which is far higher compared to the previous studies by Jain A *et al.*^[1] In this field, further studies must be done to know the overall prescription writing skills of the students.

CONCLUSION

The knowledge of prescribing drugs is of utmost need 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 WHO Guide to Good Prescribing, and some educational programs students will develop better prescribing skills. Further studies are needed to decide on whether this issue affects the quality of patient care and the usefulness and safety of treatments.

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