

Assessment on the quality of prescriptions, prescribed by dental undergraduate students

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ABSTRACT

Introduction: Writing a prescription is one of the most important steps in the management of a patient. A failure in the appropriate understanding between the patient and the doctor can result as an error in the prescription writing. Error in the prescription can lead to incorrect instruction delivery to the patient which can compromise patient's health. **Aim:** The aim of the study is to concentrate and analyze the quality of the prescription, and their written pattern written by students of a dental institute in Chennai. **Materials and Methods:** A cross-sectional survey was done to analyze the quality of prescriptions prescribed by dental students to the patients. The study was conducted in a dental institute in Chennai. A case scenario with a clinical image of the disease condition was presented to the dental students and was asked to write a prescription for the condition. The samples collected were analyzed for their content based on the ideal prescription format, and the results were obtained and tabulated. **Results:** On analyzing the results, it was seen that some of the details were missing in the prescription such as, patient's details – name (6%), age (74%), sex (53%), and address (100%) and doctor's details name (32%), department (78%), signature (5%), and phone number (97%). When legibility is concerned, it was seen that 52% of the prescriptions are very unclear where more than one aspect of the details were missing and 31% were belonged to score 3 in which one aspect of the details was missing. Scores 1 and 2 were very less 2% and 15%, respectively. **Conclusion:** The present study depicted that most of the prescriptions were inadequate and had many details missing. Students should be taught to write a prescription with good quality by trained doctors to improve the quality of health of the patient.

KEY WORDS: Doctor, Error, Legibility, Patient, Prescription

INTRODUCTION

Prescription writing is an important and integral part of the health care by which a physician can influence the patient's health.^[1] A prescription refers to the written order of the medicines and other instructions from a medical, dental, and other health professionals to a patient.^[2] Writing a prescription is one of the most important steps in the management of a patient. The word prescription is derived from the word "prescribe" in which "pre" means before and "scribe" means writing. The prescription is the instruction given by the prescriber to the dispenser.^[3] The prescriber is the medical professional or any other paramedical worker, and the dispenser is a pharmacist who provides the

necessary medication to the patient. All the interaction of the doctor–patient communication comes to an end with a proper prescription writing.^[4]

A failure in the appropriate understanding between the patient and the doctor can result as an error in the prescription writing.^[5] Knowledge of good prescription writing is of prime importance to any medical professionals irrespective of their qualification. Error in the prescription can lead to incorrect instruction delivery to the patient which can compromise patient's health. Errors happen by missing one or more normal features of a prescription which directs the patient toward a wrong course of action.^[6] One of the most important factors that cause errors in the prescription is the careless attitude and hastiness exhibited by some of the health-care professionals during prescription writing.^[7]

The prevalence of errors in writing a prescription among the dental practitioners in teaching institutions

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was found to be high, and most of the prescriptions prescribed did not follow the appropriate guidelines given by the WHO.^[8] Data on irrational drug use show an increase in the trend worldwide leading to adverse health effects. Some of the factors for this irrational drug usage are patient demands, lack of education and training, wrong information about the drug, and misleading beliefs.^[9] The errors in prescription writing can lead an individual to worse consequences such as worsening of the treatment, increased expenditure, and other adverse effects. The most authentic and gold standard in writing a prescription is to follow the guidelines of WHO for training dentists.

Majority of the prescriptions written by health professionals are errors of omission which means lack of essential information in the prescription.^[10] These errors will cause wastage of resources and also therapeutic failure with a lot of clinical consequences to patients as well as the community. Errors in writing a prescription is one of the common forms of preventive errors which if prevented can improve the quality of the treatment and patient care.^[11]

Thus, this study was conducted to concentrate and analyze the quality of the prescription, their pattern written by students of a dental college, Chennai. The objective of the study was to assess the knowledge of the prescription writing among the dental students.

MATERIALS AND METHODS

A cross-sectional survey was done to analyze the quality of prescriptions prescribed by dental students to the patients. The study was conducted in a dental institute in Chennai. The participants of the study are the undergraduate students attending during their clinical hours. The samples were selected on a random basis among the undergraduates. 100 students who were willing to participate in the study were subjected to provide an informed consent. A case scenario with a clinical image of the disease condition was presented to the dental students and was asked to prescribe medication for the condition on a A4 size-bonded white sheet. The students were instructed to design the outlook of the prescription as if it is for their own clinical practice.

The completed prescriptions were collected, and the layout was assessed on the basis of presence or absence of understated details. Eleven variables were assessed in each prescription. They were:

- Patient information
 - Name, age, sex, address, date of the treatment
- Doctors information
 - Name of the doctor, signature, contact number, department name
- Documentation of the drugs

- Instructions given to the patients (verbal/written)
- The clarity of the prescriptions was assessed on the basis of following points:
 - Legibility of the prescriptions
 - Score 1: Prescription details are legible and clear
 - Score 2: Clear but requires an effort to read
 - Score 3: Anyone aspect is not clear
 - Score 4: More than one aspect is not clear
 - Details of drug prescribed
 - Score 1: Prescription details are legible and clear
 - Score 2: Clear but requires an effort to read
 - Score 3: Criteria not met for one drug
 - Score 4: Criteria not met for more than one drug.

An overall rating system based on the above criteria is given:

Scoring parameter present (1), Absent (0)

Legibility: 1–4

Drug details: 1–4

The prescriptions were rated by the author. Hence, there was no possibility for interexaminer bias. The results were analyzed on a scoring format.

Scenario

A 10-year-old male child named Master. X comes to the clinic with a chief complaint of an excruciating pain and swelling in the lower right back tooth region for the past 3 days. The pain radiated on the affected side of the face; on clinical examination, the kid was diagnosed with a dental caries involving pulp in the coronal aspect of 75, and there was pus discharge from the swelling adjacent to the tooth. The treatment plan advised for pulpectomy followed by stainless steel crown. How will you format a prescription from the scenario given above?

RESULTS

A total of 100 samples of prescriptions were collected. An overall rating of all the prescriptions showed 94% of the samples below average level with many details missing.

On analysis of the obtained prescriptions, the following details were missing;

Personal details: [Figure 1]

- Name: 6%
- Age: 74%
- Sex: 53%
- Address: 100%

Doctor's details:[Figure 2]

- Doctor's name: 32%
- Department: 78%
- Signature: 5%
- Phone number: 97%

Comparison of the legibility of the prescriptions (four-point scaling) [Figure 3]

- Score 1: 2%
- Score 2: 15%
- Score 3: 31%
- Score 4: 52%

DISCUSSION

The study was undertaken to assess the quality of prescription written by dental students. A food dental and medical practitioner should have a up to date knowledge about the medical pharmacology and skill in prescription norms.^[12,13] This is one of the factors to provide a good health service to a patient. The most important factor in prescription writing is prescribing the correct drug to the patient. The patient comes to the clinic with pain as the most common symptom, so prescribing the right amount of dosage is important. The undergraduate students fail to correlate with the theoretical aspect of the drug with practical aspect which leads to prescription of the wrong drug and its dosage to patient leading to adverse effects. When prescribing drugs, the prescription should contain

the letter Rx, the proper dosage, duration, before or after food, etc.^[14] Medical errors such as transmitting the prescription details orally should be avoided completely which can lead to misinterpretation of the drugs by the patient and intake of wrong drugs.

An ideal prescription should include all the elements that are required for the proper communication for the patient by the doctor and between the patient and the pharmacist.^[15] Prescription writing can be considered as a form of treatment. The omission or improper writing of the prescription could result in the miscommunication and medical errors which can compromise the patient’s health.^[16] The questionnaire was distributed among the students of a dental college, and students were given a case scenario of which they were told to write a prescription. 100 students who were actually willing to participate in the study were subjected to provide an informed consent. The students were instructed to design an outlook of the prescription as if it is for their own practice.

The performance scores of the undergraduate students of the prescriber details and drug-related details were below average in our study. This shows that many of the students lack the skill of writing a quality prescription. This observation is in accordance with that observed in the study of Nigerian study; undergraduate final year students were found to be also deficient in prescription writing. A study done by Al Khaja *et al.* also showed that students lack writing skill in writing a prescription.^[17] However, details such as patient’s name, age, sex and doctor’s details such as doctor’s name and signature were available in majority of the prescriptions. Patient’s details are important to ensure that correct drugs go to the correct patient and also for record management. The presence of these details will help the pharmacies to deliver drugs to concerned patient. Another study done by Sujatha *et al.* shows that undergraduate students had a better quality in prescription than interns and postgraduates.^[18]

This study shows that 94% of the samples were below average in quality due to the lack of appropriate information. It is also seen that mistakes in prescription writing were majorly due to negligence. On analyzing the results, it was seen that some of the details were missing in the prescription such as, patient’s details – name (6%), age (74%), sex (53%), address (100%) and doctor’s details – name (32%), department (78%), signature (5%), and phone number (97%). Prescriptions in the study were divided into 4 groups, according to the scores, Score 1: Prescription details are legible and clear. Score 2: Clear but requires an effort to read. Score 3: Anyone aspect is not clear. Score 4: More than one aspect is not clear. When legality is concerned, it was seen that 52% of the prescriptions are very unclear where more than one aspect of the details

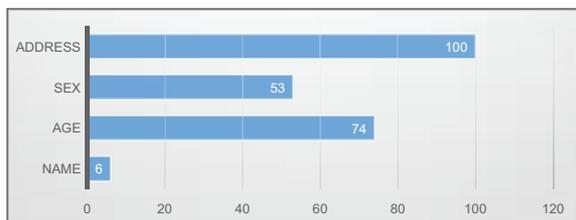


Figure 1: Personal details missing in the prescription (in percentages)

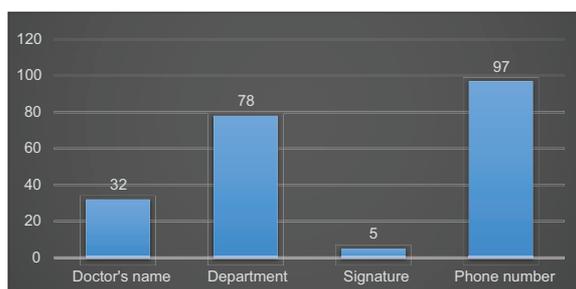


Figure 2: Doctors details missing in the prescription (in percentages)

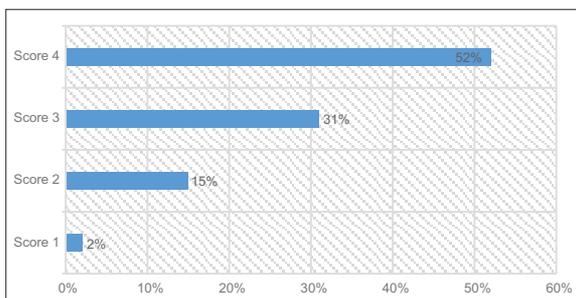


Figure 3: Legibility of prescription (in percentages)

were missing and 31% were belonged to Score 3 in which one aspect of the details was missing. Scores 1 and 2 were very less 2% and 15%, respectively. The drugs written in prescriptions were antibiotic and analgesic with wrong dosages with no proper instructions. Based on the study results obtained, we suggest that proper clinical training should be given to undergraduate students by trained staffs and training courses, CDE programs, and workshops can also be conducted in colleges to create an awareness about the importance of prescription writing. Therefore, this study shows that most of the prescriptions written were not legible and needs improvement in quality. Doctors should learn to prescribe drugs in generic names for better understanding. To make prescription better, a computerized version could be an option where the prescription is in a preprinted form. The art of prescription writing should be taught by dentists who are adequately trained.

CONCLUSION

The present study depicted that most of the prescriptions were inadequate and had many details missing. The overall legibility of the prescription was assessed and was found to be below average level, and students should take an effort to improvise their skills in writing a quality-based prescription to avoid contradictions.

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