

## Evaluation of Prescription Writing Skills among Undergraduate Medical Students

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### Abstract

**Background:** Making a prescribing decision is vital in the prevention of morbidity and mortality. The present study was conducted to evaluate prescription writing skills among undergraduate medical students.

**Materials and Methods:** 200 undergraduate medical students of both genders were enrolled. Prescribing knowledge of students was evaluated based on a questionnaire given to them and also they were asked to prescribe for a common clinical scenario. Their prescriptions were analysed for various parameters like mention of patient's name, age and gender; date of issuance; the symbol Rx; drug name (generic), dose and dosage schedule; directions for use; the signature of the prescriber, prescriber's registration number, legible handwriting etc.

**Results:** Out of 200 subjects, males were 90 and females were 110. Prescription writing was previously learnt by 94%, 92% had written prescriptions previously, 83% replied that there were questions in summative assessment regarding prescriptions, 45% replied that clinicians discussed prescription writing but only 25% consider it to be a part of case discussion. 85% replied that undergraduate training had prepared them in prescription writing Also 92% consider the need of reinforcing classes during 3rd and 4th year in prescription writing to refresh their knowledge. 80% consider writing generic names in prescription but only 50 percent have actually written generic names in their prescriptions. On analysis of their prescriptions, patient's name was written in 99%, gender was mentioned in 95%, age in 92%, weight in 96%, date mentioned in 84%, doctor name mentioned in 89%, address of the doctor in 35%, doctor's phone number mentioned in 30%, registration number in 57%, patient's phone number mentioned in 25%, correct drug dose in 78%, dosage form in 85%, duration of treatment in 90%, generic names written in 50%, follow-up details in 36%, hand writing was legible in 92%, patient's instructions mentioned in 41%.

**Conclusion:** Undergraduate training during 2<sup>nd</sup> year and foundation course has definitely trained students in prescription writing as assessed from the quality of their prescriptions. But still there are certain shortcomings that need to be worked upon. There is need for reinforcement sessions during 3<sup>rd</sup> and 4<sup>th</sup> year in prescription writing to upgrade their skills. Moreover, there is a dire need to train students for prescription writing among special age groups as well as in pregnant and lactating females.

**Keywords:** Patient Instruction, Dose, Prescription

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## Introduction

Prescription writing is one of the important 'core' competencies expected from a medical graduate. Decision-making and proper transcribing are essential attributes of writing an ideal prescription [1]. The word, 'prescribe' comes from Latin word meaning 'to write' or 'to designate' or order the use of a remedy. Prescription not only indicates names of drugs, dosage and duration of treatment, but also acts as legal document indicating instructions to patients, pharmacists and contains essential contact information of prescriber and patient [2]. Making a prescribing decision is vital in the prevention of morbidity and mortality. The physician's prescribing decision is the result of input from patients, commercial sources, professional colleagues, academic literature and government regulations [3]. Ineffective use of these sources of information can result in a wide variety of prescribing errors''; Drug utilization studies are essential in order to establish the extent of rational and irrational prescribing and to deliver better healthcare". Medical teaching in India is mostly descriptive, although it is acknowledged that this type of teaching may not be effective for clinical practice [4]. Care must be taken to avoid any errors in prescribing as it adversely affects the treatment outcome. Therefore, there is need for proper education- based

## Results

intervention to aid improvement in prescribing competency [5]. The present study was conducted to evaluate prescription writing skills among undergraduate medical students i.e the aspiring Doctors.

## Materials and methods

The present study comprised of 200 undergraduate medical students of both genders from 2<sup>nd</sup> and 3<sup>rd</sup> year MBBS. The study was conducted at Department of Pharmacology, GMC Rajouri. Consent was obtained from all enrolled subjects. Data such as name, age, gender etc. was recorded. Prescribing knowledge of students was evaluated based on a pre-structured questionnaire administered to them and also, they were asked to prescribe for a case of peptic ulcer. Their prescriptions were analysed for various WHO's prescribing indicators like mention of patient's name, age and gender; date of issuance; the symbol Rx; the drug name (generic), dose and dosage regimen; directions for use; signature of the prescriber, date and prescriber's registration number, instructions to the patient, follow-up details, legible handwriting. Data thus obtained was subjected to statistical analysis. P value < 0.05 was considered significant.

**Table 1: Distribution of patients**

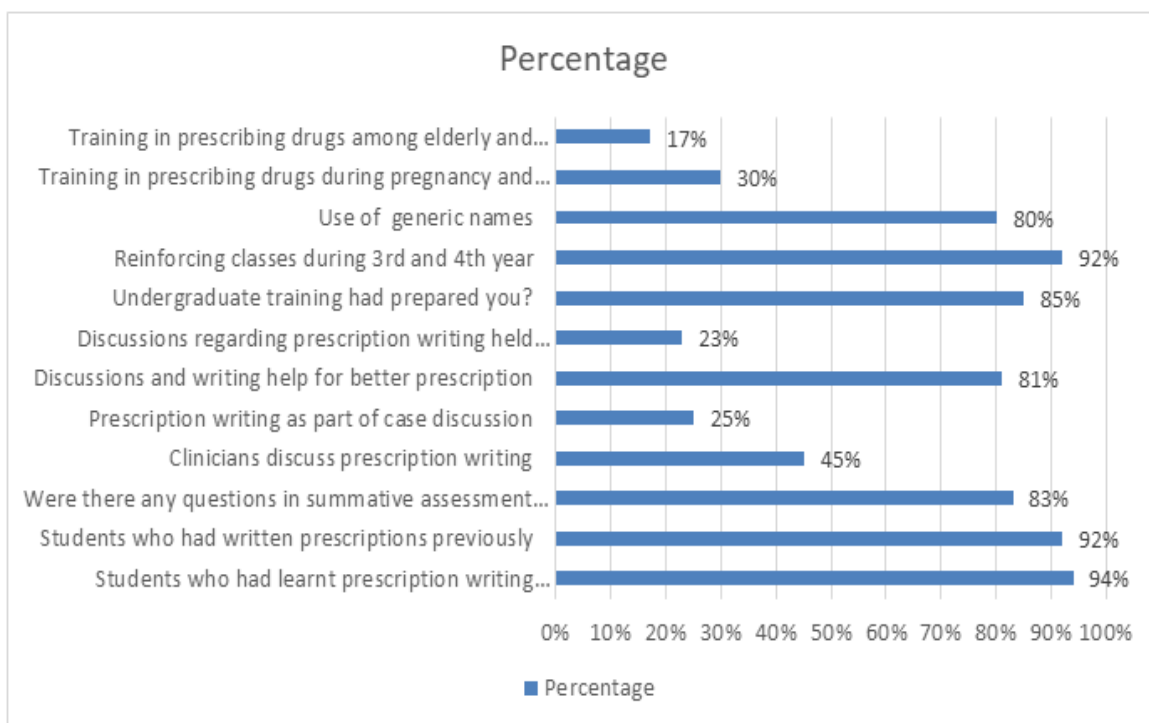
Total- 200		
Gender	Males	Females
Number	90	110

Table I shows that out of 200 subjects, males were 90 and females were 110.

**Table 2: Assessment of questionnaire**

Questionnaire	Percentage
Students who had learnt prescription writing previously	94%
Students who had written prescriptions previously	92%
Were there any questions in summative assessment regarding prescriptions	83%
Clinicians discuss prescription writing	45%
Prescription writing as part of case discussion	25%
Discussions and writing help for better prescription	81%
Discussions regarding prescription writing held regularly	23%
Undergraduate training had prepared you?	85%
Reinforcing classes during 3rd and 4th year	92%
Use of generic names	80%
Training in prescribing drugs during pregnancy and lactation	30%
Training in prescribing drugs among elderly and paediatric population	17%

Table II, graph I analyses the questionnaire answered by students. Prescription writing was previously learnt by 94%, 92% had written prescriptions previously, 83% replied that there were questions in summative assessment regarding prescriptions, 45% replied that clinicians discussed prescription writing but only 25% consider it to be a part of case discussion, 81% replied that there were discussions and writing help for better prescription, but such discussions are not that regular as believed by 77%. 85% replied that undergraduate training had prepared them in prescription writing but there is need for reinforcing sessions in 3<sup>rd</sup> and 4<sup>th</sup> year according to 92%. 80% consider using generic names in prescription. Only 30% had knowledge regarding prescribing in pregnancy and lactation and only 17% feel they had knowledge regarding prescribing in elderly and pediatric population.

**Graph 1: Assessment of questionnaire**

**Table 3: Parameters noted in prescription written by subjects**

Parameters noted in prescription	Percentage
Gender	95%
Age	92%
Weight	96%
Patient name written	99%
Date mentioned	84%
Doctor's name mentioned	89%
Address of the doctor	35%
Doctor's phone number mentioned	30%
Patient's phone number mentioned	25%
Drug dose	78%
Dosage form	85%
Generic name	50%
Duration of treatment	90%
Follow-up details	36%
Legible Handwriting	92%
Patient's instructions	41%
Registration number of doctor	57%

Table 3, graph II analyses the prescriptions written by students with respect to various parameters. Patients's name written in 99%, gender mentioned by 95%, age by 92%, weight by 96%, date mentioned in 84%, doctor name mentioned in 89%, address of the doctor in 35%, doctor phone number mentioned in 30%, patient phone number mentioned in 25%, correct drug dose in 78%, dosage form in 85%, generic name in 50%, duration of treatment in 90%, follow up details in 36%, hand writing legible in 92%, patient's instructions in 41% and registration number of the prescriber in 57%

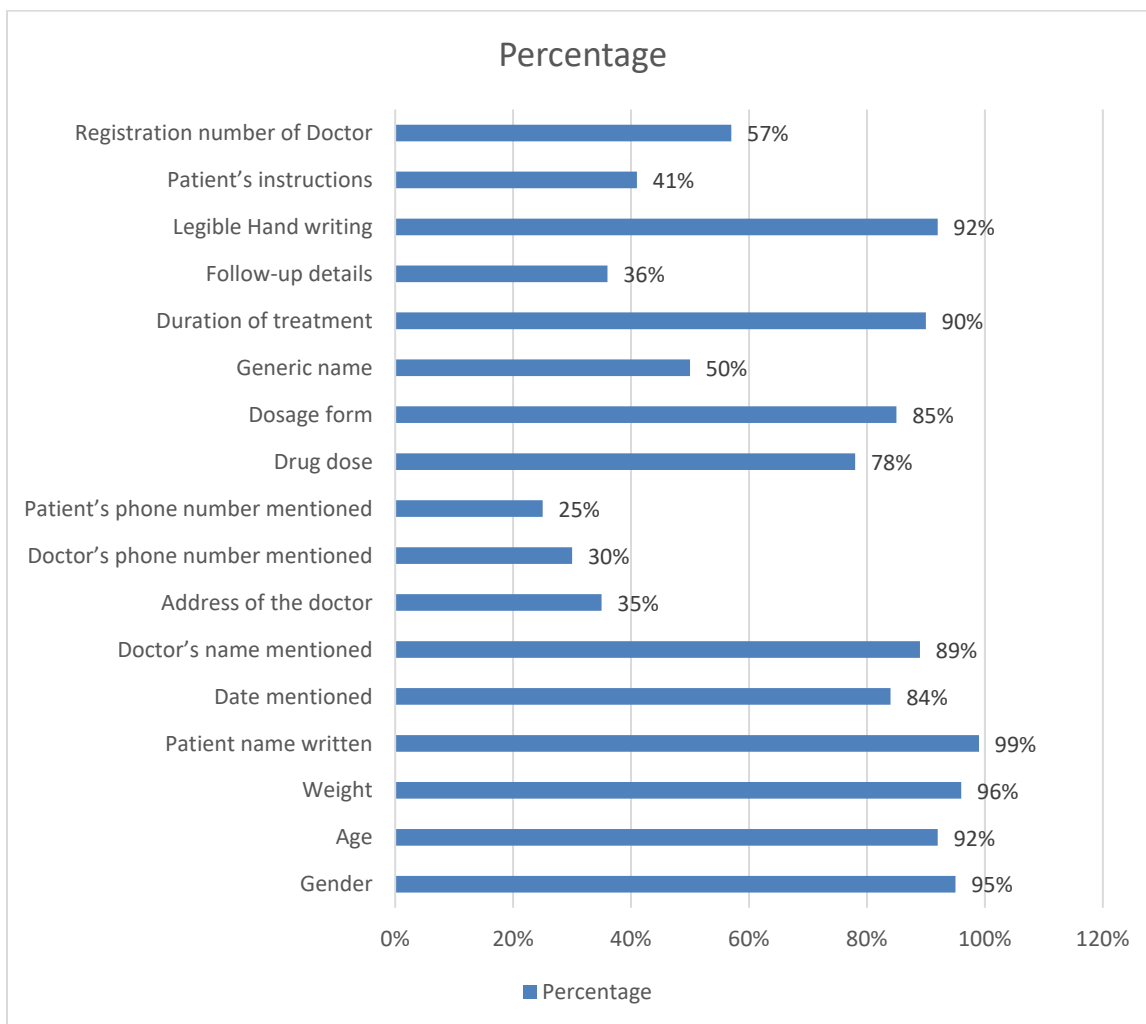
### Discussion

Prescription is a written order from physician to the pharmacist and the patient which contains name of drug, its dose and its method of dispensing and advice over consuming it [6,7]. The prescriber is not always a doctor but can also be a paramedical worker, such as a medical assistant, a midwife or a nurse. The dispenser is not always a pharmacist, but can be a pharmacy technician, an assistant or a nurse [8]. Every country has its own standards

for the minimum information required for a prescription, and its own laws and regulations to define which drugs require a prescription and who is entitled to write it [9]. The present study was conducted to evaluate prescription writing skills among undergraduate medical students.

We found that prescription writing was previously learnt by 94%, 92% had written prescriptions previously, 83% replied that there were questions in summative assessment regarding prescriptions, 45% replied that clinicians discussed prescription writing but only 25% consider it to be a part of case discussion. 81% replied that there were discussions and writing help for better prescription, but such discussions are not that regular. 85% replied that undergraduate training had prepared them in prescription writing but 92% feel the need for reinforcing classes during 3rd and 4th year in prescription writing. 80% believe in writing generic names in prescription but only 50% had actually used generic names in their prescription. Only 17% had knowledge regarding prescribing in elderly and paediatric population and 30% had

knowledge regarding prescribing in pregnant and lactating females.



**Graph 2: Parameters noted in prescription written by subject**

Sudha *et al* [10] found that of the 350 medical undergraduate students and interns invited, 281 of them participated in the study. 169 participants (60.1%) agree that they have not written a formal prescription to any patient when the questionnaire was administered. 134 participants (47.6 %) feel that undergraduate training has not prepared them for prescribing properly. 90% of participants said reinforcing classes during 3rd, 4th year and during compulsory routine rotatory internship will be beneficial. Though 220 participants have opined that generic name should be used while prescribing, only 124 have actually used

generic names in their prescriptions. Fifteen participants have failed to write the symbol while prescribing. All 121 interns in the study have used brand names while prescribing.

Regarding the quality of students prescriptions, they have shown adherence to most of the parameters like patient's name written in 99%, gender was mentioned in 95%, age 92%, weight in 96%, date of prescription mentioned in 84%, doctor's name mentioned in 89%, address of the doctor in 35%, doctor's phone number mentioned in 30%, patient's phone number mentioned in 25%, generic name of drug in 50%, correct drug dose in

78%, dosage form in 85%, duration of treatment in 90%, follow-up details in 36%, hand writing legible in 92%, patient's instructions in 41% and registration number in 57%. So the areas where they are lagging is regarding contact details of Doctor and patient, correct dose of the drug, follow-up details, any instructions to the patient and use of generic names. Phalke VD *et al* [11] undertaken a study to understand the current prescription writing practices and to detect the common errors in them at a tertiary health care centre situated in a rural area of Western Maharashtra, India. All the prescriptions were on the hospital pad. A significant number of the prescriptions (n=88, 17.6%) were written in illegible handwriting and not easily readable. The name, age and sex of the patient were mentioned in majority of the prescriptions. All the prescriptions (100%) failed to demonstrate the presence of address, height and weight of the patient. Only the brand name of the drugs was mentioned in all the prescriptions with none of them having the generic name. The strength, quantity and route of administration of the drug were found on 73.1%, 65.3% and 75.2% prescriptions.

Dean *et al* [12] found that most of the prescription errors were due to omissions of dosage, administration route, and length of treatment and may potentially cause harm to the elderly outpatients. The prescribing errors could be broadly classified into two types- errors in decision making and errors in prescription writing. The causes of errors can be classified in three major categories: non vigilance caused by stress, lack of appropriate routines or violation of them, and lack of appropriate skills/negligence [13].

### Conclusion

Undergraduate training during 2nd year and foundation course has definitely trained students in prescription writing as assessed from the quality of their prescriptions. Students have shown adherence to most of the parameters of prescription writing. But still

there are certain shortcomings that need to be worked upon especially regarding use of generic names in prescriptions, adequate mention of contact details of prescriber and patient, information regarding follow-up and any instructions to the patient. Also, students themselves feel the need for reinforcement sessions during 3rd and 4th year to upgrade their prescription writing skills. Also emphasis should be given on regular discussions on prescription writing especially as a part of their clinical case discussion so that they get well versed with drugs to be prescribed, their strength, dosage regimen etc. with regard to specific cases on routine basis. Moreover there is a dire need to train students in prescribing among elderly and paediatric population as well as in pregnancy and lactation.

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