

Assessment of knowledge of pharmacotherapeutics amongst medical undergraduates of a tertiary care teaching hospital of Chhattisgarh, India: a questionnaire based study

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ABSTRACT

Background: Knowledge of pharmacology forms the basis of rational pharmacotherapy practice. Teaching the medical students about systematic application of pharmacology in patients' care forms an essential component. It facilitates the medical students to develop a methodical approach in solving patients' clinical problems.

Methods: A questionnaire-based study was conducted, at Government Medical College Rajnandgaon involving second year MBBS students. Total 100 students participated in the study.

Results: Hundred percent of the students responded that pharmacology was presently taught to them, seventy nine percent of them agreed with the fact that pharmacology was preferred to pass the MBBS, eighty eight percent of them responded that in pharmacokinetics was the least preferred topic, ninety seven of them were not aware of the essential drug list. Their suggestions regarding the change in teaching methodology was recorded.

Conclusions: This study concludes that efforts are needed to develop a curriculum that encompasses important aspects of clinical pharmacology and therapeutics along with incorporation of the useful suggestions by the undergraduate students.

Keywords: Clinical pharmacology and pharmacotherapeutics, Medical education, Prescription writing, Undergraduate medical curriculum

INTRODUCTION

Pharmacology forms one of the most important subjects in medical curriculum and can be considered as the backbone of Clinical Medicine.¹ Prescribing the appropriate and rational therapy is the essential duty of doctors and hence, adequate knowledge about the drug's efficacy, safety, cost, and convenience is of utmost importance.² Proper training in pharmacology can enhance medical students' knowledge and skill about drug prescription along with their utility in various diseases.³ Selection of the most

appropriate drug, dosage and duration of treatment taking into account the specific features of a patient are a part of pharmacotherapeutics.⁴ An integrated knowledge of pharmacotherapeutics along with good clinical exposure is vital in the formation of a good healthcare professional. Nowadays the approach of horizontal integration of pharmacology along with microbiology, pathology as well as vertical integration with medicine and surgery is applied to have a proper understanding of the subject. All this is done with the help of didactic lectures, audio-visual aids, tutorials and computerized animal simulation

experiments.⁵ This questionnaire based study was done to assess the knowledge of pharmacotherapeutics among 2nd year MBBS undergraduates. The goal of this study was to investigate differences in pharmacology and pharmacotherapy knowledge of 2nd year medical students. It can help to enhance the knowledge of pharmacotherapeutics. Knowledge of potential differences can be used to develop integrated educational programmes, both undergraduate and postgraduate, with a view to improving interdepartmental collaboration and medical care.

METHODS

A cross-sectional questionnaire-based study was conducted amongst 2nd professional MBBS at Government Medical College Rajnandgaon. The study was performed in first week of August 2018. An exhaustive questionnaire of multiple-choice questions related to common medical conditions was prepared. Questionnaires of similar studies were taken into consideration while framing questions for the current study.⁶⁻⁸ Each question had four options out of which one was correct. Test questions were discussed and reviewed by senior faculty members of the department of pharmacology. Questions that were found to be inappropriate were either removed or altered. One mark was awarded for each correct response. Based on the number of correct responses, students were given marks. Total 30 minutes were given to solve the questionnaire.

Inclusion criteria

- Second MBBS students presently studying and Exam going
- Both boys and girls

Exclusion criteria

- Referred students
- Detained students

Methodology

- Students were instructed to be meticulously solve the questionnaire
- Do not keep any question unattempt
- Give your true opinions
- Avoid discussions, cross talk
- Return the questionnaire promptly.

The data was entered in the excel sheet and was analysed and percentages were drawn accordingly.

RESULTS

Pharmacology is one of the subjects taught to second year MBBS students that is well shown by the response they gave to the question that when did you study pharmacology, all of them said presently studying (100%).

Table 1: Knowledge of second MBBS students regarding pharmacology.

Questions	Answers	Percentage
When did you study Pharmacology?	Presently studying	100%
Why do you study Pharmacology?	Because to be able to treat patients	83%
What do you prefer to study?	Everything necessary to get MBBS	79%
What do you want to know?	Different drugs in a group	68%
What do you like best?	Mechanism of action	35%
Which one do you like least?	Pharmacokinetics	88%
Which topics are you interested?	Pharmacotherapy	47%

Table 2: Knowledge of students about prescribing.

Questions	Answers	Percentage
Are you being taught prescription writing?	Yes	100%
How do you rate your prescribing knowledge?	Average	58%
Do you think that your knowledge has prepared you to prescribe safely?	Yes	84%
Do you think your knowledge has prepared you to prescribe rationally?	Yes	93%
Are you aware of essential drugs list?	No	97%
Do you know how to prescribe according to essential lists?	No	68%
Whether one should prescribe a newly promoted drug?	No	76%
Whether one should check information about drugs before prescribing	Yes	92%
If, yes which materials would you like to refer	Drug information through CIMS/MIMS/Drug today/ADR	91%

Second MBBS forms a bridge between paraclinical and clinical exposures as an efficient knowledge of pharmacology and therapeutics will help the students later on in their succeeding years. Therefore, their knowledge of knowledge of pharmacology was assessed by the answers given to the following questions (Table 1).

As per the responses given by the students, they expressed a few inabilities due to the following reasons:

- Inadequate knowledge of the brand names of drugs to be prescribed. As the teaching mostly revolves around generic names, the students felt at a loss when required to write brand names.
- Inadequate knowledge of fixed dose combinations rational or irrational.
- Lack of knowledge of newer drugs.
- In undergraduate teaching, the main focus is on passing MBBS rather than clinical approach.
- No experience of writing prescriptions in a clinical setting.

After assessing the following questions, the students gave certain vital suggestions to improve undergraduate teaching so as to facilitate in better prescribing:

- Teaching should be more practical, with an emphasis on clinical approach.
- Pharmacology should be taught in a manner which is knowledge oriented rather than exam oriented.
- Emphasis should be made on prescription writing.
- Problem based learning should be implemented.
- Treatment of common ailments should have focused upon rather than rare ailments.
- More clinical visits should be arranged to improve bedside teaching.

DISCUSSION

The subject of pharmacology is a broad one and embraces the knowledge of the source, physical and chemical properties, compounding, physiological actions, absorption, fate along with excretion and therapeutic uses of drugs.⁹

Pharmacology is one of the most important subjects for training students pursuing MBBS. It forms the backbone of medical practice. Apart from providing the therapeutic uses of drugs, it also provides a deep insight into their pharmacokinetic and pharmacodynamic parameters.¹⁰

The methodical application of pharmacology knowledge and skill by medical students is important for the upcoming work as clinicians. Facilitating the medical students to develop a disciplined approach towards drug prescribing enables them for rational prescription. Prescription writing is a vital part in patient care and also can have medicolegal repercussion. The importance of writing proper

prescription should be emphasized during the medical course to inculcate appropriate prescribing skill.

In present study it was found out that most students just focus on learning the pharmacology for passing MBBS rather than gaining complete knowledge of the subject. They are more concerned with the theoretical aspects like mechanism of action, pharmacokinetics seems to be the difficult arena in pharmacology.

They are eager to learn drug lists. Prescription writing is an essential part of practical pharmacology, but they don't presently understand its importance as they don't frequently and independently deal with patients. Concept of essential drug is not known to them as well as they are not well versed with the updated list. In the pharmaceutical industry emerging drugs are everyday story but there are various problems with recently marketed drugs as their efficacy is not known. Student's reliability is more on tried and tested drugs which are efficiently prescribed since a lot of time.

In this study, the majority of students checked drug information before prescribing. The most preferred source was drug indexes, followed by books, journals, the Internet, and product inserts, while very few relied on information provided by medical representatives. There are many websites that provide information about the safe and effective use of drugs, over-the-counter medications, herbal medicines, brand names and generic names of drugs, drug interactions, and treatment options.¹¹ Subscription sources include Medical Letter, the Drug and Therapeutic Bulletin, and the Australian Prescriber.¹²

The essential drugs List is the foundation for every public health program aimed at reducing morbidity and mortality. It is the key strategy in helping to improve access to essential drugs and contributing to public health. Irregular access to essential medicines is an important issue in developing countries. The main causes are lack of availability, expensive drugs, no facilities or trained professionals to prescribe the drugs, inefficient pharmaceutical policies and management systems, poor funding, and bad distribution and use.¹³

Nowadays medical profession has become intensely competitive and globalized. It is important that the graduates and post graduates from medical institutions are well equipped with adequate knowledge and clinical skills to face challenges anywhere in the world. For this, medical institutes need to bring about innovations in medical teaching and regularly monitor them through regulatory bodies.¹⁴ The World federation for Medical Education (WFME) has decided to form a policy to improve health system performance by promoting high quality medical education.¹⁵ Its mission is to improve the quality of higher education by establishing accreditation standards for basic medical education, post graduate medical education and continuing professional development of medical doctors.¹⁶⁻¹⁸ The present study is providing us valuable

information about the knowledge of pharmacotherapeutics among Second MBBS students in a Government medical college. In other similar studies, comparison between two batches as well as between topics taught with integrated learning program versus traditional method showed that students performed better in the topics, taught with integrated approach.¹⁹

CONCLUSION

The traditional teaching is in the form of didactic lectures and bench work practicals. This form of teaching polishes the theoretical aspect of the subject but as per our study the students face difficulties in applying this knowledge towards clinical prescribing. These results give us an inspiration to improve undergraduate teaching by incorporating the essential drug lists, acquainting them with the concept of P drug. More emphasis could be laid on prescription writing and problem-based learning to make the students competent enough in clinical practice.

Participated present undergraduates will be the future clinicians serving the society, so it is the dire necessity of the hour to develop a rational curriculum based on the above learning objectives which will increase the desired level of pharmacotherapeutic competence amongst our medical students.

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