Original Article

To design and implement a prescription writing teaching module for second professional medical students

Parveen Kumar Sharma, Dinesh Kumar Kansal, Rekha Bansal[1], Aradhna Sharma

Departments of Pharmacology and [1]Pulmonary Medicine, Dr. RP Government Medical College, Kangra at Tanda, Himachal Pradesh, India

Abstract

Context: There is ample evidence to prove that medical graduates are not prescribing rationally and this can be improved by proper training. **Aims:** To design and implement a prescription writing teaching module for second professional medical students. **Subjects and Methods:** A module of 3 h duration consisting of didactic lecture, interactive audiovisual small group session, and evaluation method was framed for every disease and implemented. Completeness of the prescriptions was evaluated on a scale of 1–4. Appropriateness of the prescription, knowledge about the rationale behind the drugs used and adverse events related to the drugs used was judged in three categories, that is, appropriate and complete; appropriate but insufficient; and inappropriate. **Results:** One thousand six hundred and seven response sheets to 24 health problems were collected. Completeness score of 18% was 2, 59% was 3% and 24% was 4.41% prescriptions were appropriate and complete, 58% appropriate but insufficient and 1% inappropriate. The rationale behind the drugs used was appropriate and complete 24%, appropriate but insufficient 68%, inappropriate 8%. Documentation of adverse events was appropriate and complete 23%, appropriate but insufficient 49%, inappropriate 28%. All facilitators were satisfied with the duration, contents and conduct of the sessions. **Conclusions:** A module is an effective tool for teaching prescription writing to undergraduate students; modifications required in contents and strategy to emphasize the need of complete documentation.

Key words: Prescription writing, teaching module, undergraduate students

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Introduction

There is ample evidence to prove that medical graduates are not prescribing rationally throughout the world.[1,2] In many medical curricula, teaching in the clinical disciplines is focused on symptoms and diagnosis, and little or no time is given to the principles of drug treatment. Unfortunately, many medical schools still do not provide a structured training in pharmacotherapy but only lectures in basic pharmacology. This approach goes a long way to explaining why many medical graduates feel insufficiently prepared to assume prescribing responsibilities after graduation, and the many hospital admissions and even deaths caused by possibly avoidable medication errors.[3] There is also ample evidence that prescription writing by medical students, interns, and fresh graduates can be improved by proper training.[4,5]

Subjects and Methods

The study was conducted in the Department of Pharmacology, of a tertiary care health center, after taking permission from Institutional Ethics Committee.

Address for correspondence: Dr. Parveen Kumar Sharma, Department of Pharmacology, Dr. RP Government Medical College, Kangra at Tanda - 176 001, Himachal Pradesh, India.
E-mail: drdotsharma@gmail.com

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A core committee consisting of faculty and senior residents of the department was formed. In consultation with faculty and after studying the feasibility (depending on the approved sequence of topics to be covered in the semester) 24 diseases were selected for the purpose of this study. A module consisting of didactic lectures, interactive audiovisual small group sessions with evaluation methods were framed for every disease.

Contents of the module included: 1 h – Didactic lecture, 30 min – Audiovisual session on case history and records, 20 min – Preparation of prescriptions by the small groups based on focused group discussion and available literature, 40 min – Discussion on prescriptions prepared by the groups, its rationale and likely adverse events of the drugs prescribed, 15 min – Writing of final prescription and answer of questions by every student individually, and 15 min – Completing the reaction questionnaire by the facilitators.

The contents of the didactic lectures and audiovisual sessions were decided using standard text books, The World Health Organization (WHO) Guide to Good Prescribing, The WHO Teachers' Guide and other relevant information available on internet.

The resource persons for didactic lectures and facilitators were decided, and a pilot study was conducted consisting of one full session of the module for feedback and based on that the module was finalized. The module was implemented w.e.f. October 15, 2014, and until December 31, 2014, 24 prescriptions were completed. Six of the prescriptions were completed with the batch 2012 and 18 with batch 2013.

A uniform question in the form of "write an appropriate prescription for the given problem, write the rationale behind the drugs prescribed and write the adverse drug events (ADEs) that may arise because of the use of this prescription" was given in every session.

The questions put to the facilitators were: Was the duration appropriate, were the contents of the session appropriate, was the conduct of the session appropriate, and are you satisfied with the session?

The completeness of the prescription was evaluated based on the four parts of the prescription, that is: (1) Information about the patient. (2) Information about the medicines prescribed (Type of formulation, name of the medicine, strength, and duration). (3) Instructions about the consumption of the medicine to the pharmacist and patient and related advise and (4) Information about the prescriber. According to the parts documented the prescriptions were categorized into four categories 1–4, by a scoring system. Appropriateness of the prescriptions, the documentation of rationale of the medicines used and probable adverse events that may be caused because of the prescription were judged in three categories, that is, perfectly appropriate, appropriate but insufficient, and inappropriate.

Results

A total of 1607 response sheets consisting of prescription slip for the given health problem, the rationale of the medicines prescribed and likely adverse events because of the prescription were collected. Three hundred and twenty-three response sheets were from batch 2012 as response to the six health problems, that is, duodenal ulcer, amoebic liver abscess, shigellosis, pulmonary tuberculosis, iron deficiency anemia and hypertension Stage II. Rest of the 1284 response sheets were from batch 2013 as response to the 18 health problems, that is, belladona poisoning, acute organophosphate poisoning, chronic organophosphate poisoning, anaphylactic shock, benign prostate hypertrophy, motion sickness, narrow angle glaucoma, open angle glaucoma, pheochromocytoma, mild depression, major endogenous depression, posttraumatic stress, jet lag, chronic insomnia, sleep onset insomnia, generalized tonic-clonic seizures, absence seizures, status epilepticus.

On evaluation, completeness score of 18% was 2, 59% was 3 and 24% was 4, that means a majority 83% of the prescriptions were almost complete with a score of three or four [Figure 1]. Similarly, 99% of the prescriptions were appropriate; 41% prescriptions were appropriate and complete, 58% appropriate but insufficient and 1% inappropriate. The rationale given for the prescription was appropriate in 92% of the cases; appropriate and complete 24%, appropriate but insufficient in 68% and inappropriate in 8%. Documentation of adverse events was appropriate in 72%; appropriate and complete in 23%, appropriate but insufficient 49% and inappropriate in 28% [Figure 2].

All the facilitators were satisfied with the duration, contents and conduct of the sessions.

Discussion

Eighty-three percent of the prescriptions were almost complete with a score of three or four. Ninety-nine percent were either perfectly appropriate or appropriate but insufficient. Similarly, the rationale given for the prescription was either perfectly appropriate or appropriate but insufficient in 92% of the cases, and documentation of ADEs was either perfectly appropriate or appropriate but insufficient in 72%

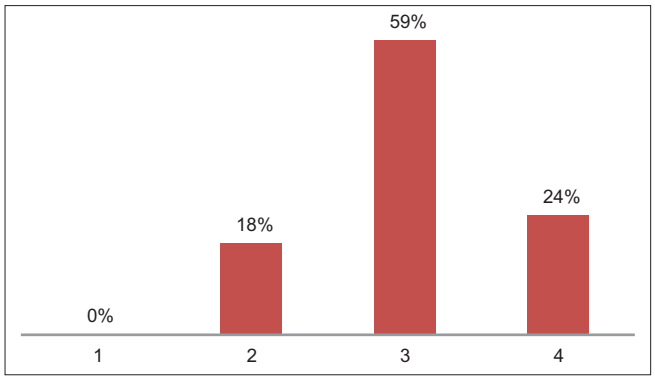

Figure 1: Completeness score of prescriptions in different categories (*n* = 1607)

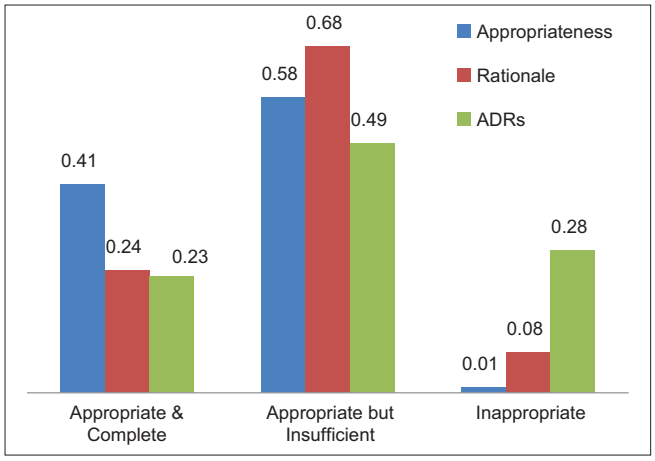

Figure 2: Appropriateness of prescriptions and documentation of rationale and adverse drug reactions (*n* = 1607)

cases. The figure of 28% incorrect knowledge of ADEs is an area of concern, and necessary modifications are required in the module. Another area of concern that needs to be addressed is a large number of insufficient documentation. A habit of documentation needs to be inculcated in the students. The evaluation of the session by the facilitators does not appear very helpful. The reason may be, they were a part of the panel who decided the contents and implementation strategy of the sessions.

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Conflicts of interest

There are no conflicts of interest.

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