

Prescription Writing - Are We Training our Students Adequately?

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Abstract

Teaching of Clinical Pharmacology has taken a backseat in most medical schools worldwide, especially with the introduction of newer methods of learning. Appropriate prescription writing skills depend on a large measure on the understanding of Clinical Pharmacology and therapeutics. The necessity of acquiring appropriate prescription writing skills, at the same time coupled with a reduction in time allotted to the teaching of Clinical Pharmacology poses unique problems. Through the introduction of a special module geared towards teaching prescribing skills to medical students, we have made an effort to mitigate the effects of reduction in time allotted to Clinical Pharmacology teaching. Our experience in this regard has been positive and we have found the module has served its purpose well.

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Running title: Clinical Pharmacology and Prescription Writing

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WHAT IS ALREADY KNOWN ABOUT THIS SUBJECT?

Teaching of Clinical Pharmacology has been reduced in medical schools in recent times and coupled with the demonstrated inadequate prescribing skills amongst newly graduated doctors, poses an important problem with implications for patient safety. Structured prescribing skills training has been shown to work when used during medical school, and mostly forms part of therapeutics teaching. Rarely have entire modules dedicated to prescribing skills been used in medical schools and there was a need felt to introduce and assess their effectiveness.

WHAT THIS STUDY ADDS?

Through this experiment in teaching prescribing skills, we have demonstrated that a module dedicated to teaching Prescribing Skills, based on a Clinical Pharmacology background, is both useful and effective.

There is a need to spread this idea of a dedicated prescribing skill training framework to improve our current teaching framework.

Abstract:

Teaching of Clinical Pharmacology has taken a backseat in most medical schools worldwide, especially with the introduction of newer methods of learning. Appropriate prescription writing skills depend on a large measure on the understanding of Clinical Pharmacology and therapeutics. The necessity of acquiring appropriate prescription writing skills, at the same time coupled with a reduction in time allotted to the teaching of Clinical Pharmacology poses unique problems. Through the introduction of a special module geared towards teaching prescribing skills to medical students, we have tried to mitigate the effects of reduction in time allotted to Clinical Pharmacology teaching. Our experience in this regard has been positive and we have found the module has served its purpose well.

Prescription writing is the culmination of the process of medical history taking, examination and diagnosis. Writing medical prescriptions forms a substantial part of a Physician's work. For the patient the medical prescription reflects a chance of alleviating his suffering and a hope for better health. Prescription writing on its own is a complex process and is based on the fundamental understanding of Pharmacology and Therapeutics(1,2). It may be said that prescription writing is both an art and a science. Considering the amount of time Physicians spend in writing prescriptions it would seem prudent that medical students would be trained in the process of prescription writing. This would ensure that students do not pick up a vital skill 'on the job' but learn it through structured teaching. But the observation is that the teaching of Clinical Pharmacology is on the decline in medical schools. This is a global phenomenon and introduction of newer methods of medical teaching like organ-based, problem-based learning systems seem to have exacerbated this phenomenon(3). The lack of adequate instruction in Clinical Pharmacology has been documented to have multiple adverse effects on patient care. Prescribing errors are a leading cause of preventable harm to the patients. Physicians, especially junior physicians at the start of their medical careers have expressed scepticism about their prescription writing skills. They tend to learn prescription writing while 'on the job' and tend to imitate their immediate supervisors, thus avoiding any independent thought about the reasons behind drug selection and questions related to it(4).

The College of Medicine at Majmaah University follows a problem-based learning curriculum for the teaching of medicine. There is no dedicated time slot for teaching systemic pharmacology barring a short four-week course on the principles of general pharmacology. The teaching of Pharmacology is spread out over a four-year period, though the hours of instruction are much less as compared to a traditional subject-based medical curriculum. A felt need was expressed by the clinical faculty for training students in prescribing skills. The oft received feedback was that students were aware of the drugs and their uses but were unable to describe their actual use in a clinical scenario. This seems like a perplexing thing to say because students have spent four years reading and learning about these drugs. On deeper probing what the Clinical Teachers meant was the fact that students had no inkling about the actual usage of the drugs but had only 'theoretical' knowledge about their mechanisms of actions and other properties.

On questioning interns and students in the final year of medical school we received a similar feedback. We had a cohort who had trained for four years but was unsure how to do the 'doctoring' when it came to writing a complete prescription. This was the genesis of the introduction of an optional module in Clinical Pharmacology and Therapeutics. This is a longitudinal module spread over 18 weeks involving 30 instruction hours taught just before the start of the clinical instruction years. The module is based on the 6-step method of the World Health Organization's guide to good prescribing (WHO-6-step), the only validated pharmacology and pharmacotherapy education tool (5). The tool has been shown to be effective in improving prescribing skills and help to develop the learners thinking process. The tool insists on a step-wise application of pharmacological knowledge ensuring development of a structured thought process. It encourages application of basic principles underlying behaviour of drugs in the body. Considering the increasing number of drugs now available the possibilities of adverse and unintended effects because of inappropriate drug use are increasing. Simultaneously there has been a resurgence in use of herbal medicines

which tend to interact with many of the drugs prescribed by the allopathic physician. The WHO-6-step tool ensures that learners consider these possibilities when writing a prescription, thus eliminating some of the most common causes of adverse effects. The optional nature of the module provided us with an opportunity to examine two groups of students with a similar level of background level of knowledge at the start. The group of students who received instruction in Clinical Pharmacology added to their baseline knowledge, while the students who did not opt for this module continued to receive routine instruction in Pharmacology as part of the medical curriculum. The module has been running consecutively for four years now and we feel confident enough to comment on its utility as an instruction tool. We polled instructors from the clinical years about the utility of the module and an overwhelming number responded positively mentioning significant differences between students who opted for the module vis-à-vis students who continued with only the routine instruction in Pharmacology. Some of the salient points mentioned by multiple instructors included – demonstration of structured prescription writing by students, extensive considerations about potential causes of altered pharmacokinetics like age and co-morbidity, use of calculator apps routinely for dose-calculation, routine enquiring about use of alternative and herbal medicines, and a consideration for deprescribing. These points are some of the most important considerations when writing a prescription and the Clinical Pharmacology & Therapeutics module, using the WHO-6-step tool seems to have helped the students to learn these skills. We are in agreement with the clinical instructors that students have made an appreciable gain in the prescription writing skills and are looking at the process holistically. We also conducted a focussed group discussion with students who have participated in this module. The student feedback centred around the concepts of increased confidence in prescription writing, integration of basic concepts in prescription writing, informing the patients about drug effects and potential adverse effects, using resources to find about drug dosages and effects. Overall there was a sense of accomplishment and new skill acquisition amongst the students.

Our intent with this communication is to raise the issue regarding the relevance and importance of teaching Clinical Pharmacology and Prescribing Skills to the undergraduate. It is our sincere hope that this communication acts as a catalyst for formation of more concrete guidelines in this regard in the undergraduate medical curriculum in Saudi Arabia and elsewhere.

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