

Prescribing skills for undergraduate medical students: Time to redress the neglect?

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Medical schools have a major challenge of preparing undergraduate students to choose and prescribe safe and cost-effective treatments. Problem-based learning in pharmacology based on national essential medicine lists and standard treatment guidelines has been recommended as a key intervention to improve prescribing¹. Recognizing the fact that traditional pharmacology teaching concentrates on memorizing information about medicines a number of initiatives have been introduced to improve teaching-learning of rational therapeutics.

Recognizing the vital importance of the subject, the World Health Organization (WHO) has developed four publications dealing with teaching rational use of medicines (RUM). These are 'Guide to good prescribing' (http://whqlibdoc.who.int/hq/1994/who_dap_94.11.pdf), 'Ethical criteria for medicinal drug promotion' (<http://apps.who.int/medicinedocs/documents/whozip08e/whozip08e.pdf>), 'How to investigate drug use in health facilities' (<http://apps.who.int/medicinedocs/en/d/Js2289e/>) and a book for teachers titled 'Teacher's guide to good prescribing' (<http://apps.who.int/medicinedocs/en/m/abstr>

[act/Js2292e/](http://apps.who.int/medicinedocs/en/d/Js2292e/)). 'Guide to good prescribing' was used to conduct rational pharmacotherapy training for fourth year medical students in a medical school in Turkey². Case-based teaching was used to impart rational pharmacotherapy skills to students in India³ and developing and using a personal formulary was found to be effective in schools following both a traditional and a problem-based curriculum⁴.

In a medical school in Lalitpur, Nepal students learn about various aspects of RUM during small group pharmacology learning sessions⁵. Personal (P) drug selection using objective criteria and unbiased sources of medicine information is an important exercise in pharmacology. At present in Nepal the exercise is being conducted at Manipal College of Medical Sciences, Institute of Medicine and KIST Medical College⁶. The P-drug selection process uses a logical deductive process, using accurate and objective information, to adopt strict criteria (efficacy, safety, convenience and cost, on selecting drugs and writing a complete prescription⁷. In a medical school in Brazil students liked the methodology and the opportunity to reflect on various factors involved in the prescribing process but could not use it much in practice due to lack of stimulation and not being allowed to do so by older residents and senior doctors⁷.

In the United Kingdom initiatives to improve prescribing have recently been carried out⁸. Prescribe, a repository of e-learning materials to support education in clinical pharmacology and prescribing has been created, and the Prescribing Skills Assessment, a national online assessment designed to allow medical students to

demonstrate that they have achieved the core competencies required to begin postgraduate training has been developed. The author recommends greater visibility of clinical pharmacology and therapeutics in the curriculum, clear learning outcomes that are consistent with national guidelines, strong and enthusiastic leadership, a student formulary, opportunities to practice prescribing, a robust assessment of prescribing competencies and external quality control to improve prescribing and reduce errors.

A recent article had mentioned ten basic competencies for undergraduate education in pharmacology⁹. Among these was familiarity with the national essential medicines list, ability to carry out the P-drug selection process, awareness of pharmaceutical promotion and the ability to respond to the same, knowledge of independent objective sources of medicine information, ability to use antibiotics rationally, analyzing prescribing using drug use indicators, counseling patients regarding use of medicines, reporting adverse drug reactions to a pharmacovigilance center and performing pharmaceutical calculations.

Challenges in teaching health science students about rational use of medicines include reservations of faculty members about the new learning resources, unfamiliarity with small group teaching, lack of involvement of pharmacologists in teaching therapeutics during the clinical years of training and non-involvement of pharmacists and pharmacologists in patient care activities¹⁰. These challenges have to be overcome and a major reorientation and refocusing of pharmacology departments in medical schools towards rational therapeutics may be needed. Modern medical education I feel focuses heavily on diagnosis of disease conditions. Considering the increasing complexity of modern treatment regimens, cost of care and the different stakeholders involved it is time 'prescribing skills' receive the attention and resources it richly deserves!

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