



ADDRESSING RATIONAL PRESCRIBERS THROUGH THE PHARMACOLOGY AND THERAPEUTICS COURSE WORK OF MBBS SYLLABUS IN BANGLADESH

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ABSTRACT

Pharmacology is most rapidly expanding science in medical discipline which leads to the development of many important drugs to treat many medical conditions that was previously untreatable. This paper focuses on the necessity of integration of pharmacology in the medical curriculum in all clinical phases and ethical aspects of medicine in terms of irrational prescribing. Irrational prescribing of drugs is a major global health problem in medical practice. Currently Pharmacology is taught at phase-II, a 2 year period in a 5 years undergraduate medical Programme in Bangladesh under the name 'Pharmacology and Therapeutics'. Indiscriminate use of clinically inappropriate and ineffective medicines are a serious problem. Medicines in Bangladesh are inappropriately prescribed, again all kinds of drugs including controlled products are dispensed and sold out frequently without prescription. Henceforth there are regular violation of medical ethics and professionalism. As only pharmacology and therapeutics deals with the correct selection of drugs, the subject should be continued to teach up to phase-III. In addition, therapeutic discussion should be incorporated with proper logbook during internship in order to make safe and efficient prescribers. Supreme priority should be given to legal and ethical aspects of medicine. Medical professionals must uphold social order by ensuring ethical practices of medicine and appropriate role modelling especially by the faculty.

Keywords: Pharmacology, teaching, phase-III, internship, ethical aspect of medicine

INTRODUCTION

Bangladesh is one of the densely populated countries in the world with about over 142.3 to 146.6 million people in only 1,47,570 sq km area^{1,2}. First medical college, established in the geographical area of Bangladesh is Dhaka Medical College and was established in 1946 during last time of British colonial rule³. In early days, pharmacology was taught under the name of *Materia Medica* in the second year of the course. Doses of the drugs, identification, composition, incompatibility and prescription writing were taught in the practical classes while the theoretical classes consisted of a summary of the syllabus⁴. Currently the undergraduate medical curriculum in Bangladesh consists of three phases over the duration of five years leading to a MBBS degree. Phase-I comprises of first 1 and half year, phase-II comprises of middle two years and phase-III comprises last 1 and half year⁵. Undergraduate medical education in Bangladesh after second national curricular review, at present pharmacology taught at Phase-II under the name 'Pharmacology and Therapeutics.' At the end of Phase-II, second professional MBBS examination takes place⁶. Bangladesh is having a new and third curricular review for MBBS programme and which is at the end stage and waiting to be implemented⁷. New review suggested having four professional examinations and Pharmacology and Therapeutics would taught as part of third professional course for one year duration⁷. Authorities of

Bangladesh are expecting upcoming new batch of 2013-2014 will be admitted under this new regulation.

Prescription Writing Pattern Globally

Prescription writing is an art of instruction from a prescriber to a dispenser and is a principal skill for any medical doctor⁸. Diverse medical scholars believe that medical students are not prepared to write prescription independently even in modern world⁹⁻¹². People expect that graduate medical doctors should be able to prescribe drugs safely and effectively without any errors. Prescribing is a multifaceted and baffling task that requires diagnostic skills, knowledge of medicines, communication skills and understanding of the principles of clinical pharmacology, appreciation of the risk, uncertainty and experience¹³⁻¹⁴. Pharmacology is the most expanding science and led to the development of many important drugs to treat diverse medical conditions. Prescribing is not an automated action without critical thinking or a response to commercial pressure¹⁴. Good prescriber need to acquire and understand in depth issues of disease process and how medicine will reverse the pathology to physiology. Obviously drug is a double edge sword hence prescriber must realise pros and cons of drug^{15,16}. Indeed, licensed health-care professionals, have a professional responsibility to ensure they have the knowledge and skill to ensure the quality use of medicines¹⁷. Furthermore, they are also required to recognise and, if necessary, challenge

inappropriate prescribing¹⁸. In order to carry out these roles and responsibilities safely and effectively, a good understanding of the scientific principles underpinning medications and the impact of the patient's condition upon this, is paramount^{19,20}. Hence prescriber will be able to prescribe drugs safely and effectively to the designated patients in order to prevent medical errors. Effectiveness of the prescriptions depends on writing of the quality drugs which are taken by the patients in proper dosage and schedule²¹. Young doctors are often found that they are not enough competent in prescription writing²²⁻²⁵. According to the World Health Organisation (WHO), almost 50% of the medicines are used globally irrationally²⁶. Furthermore, many scholars find "irrational prescribing is a habit which is difficult to change"²⁷. Multiple factors promote irrational prescribing which includes deficiency of consistent source of drug information, poor diagnosis, inadequate training, peer pressure, increasing number of therapeutic options with fixed dose combination (FDCs) and finally very "aggressive drug promotion" by the pharmaceutical industry and etc.^{14,27}. FDCs increase the more possibility of prescribing nonessential drugs; thus promote adverse drug reactions and also increase financial burden to the patient and country²⁸. Scholars advised regarding drug utilisation awareness should be increased among the medical practitioners²⁹.

Prescription Writing Pattern In Bangladesh

Bangladesh drug market is expanding in a jet speed. Currently Bangladesh manufacture about 450 generic drugs for 5,300 registered brands having 8,300 different forms of dosages and strengths³⁰. In very recent time number of generics increased nearly to eleven hundred (1100) and average 50-60 new molecules entering in Bangladeshi drug market every year. More than 95% of the total national requirement of medicines in Bangladesh is fulfilled by the local pharmaceutical companies and the rest is imported³⁰. Thus Bangladesh drug market is flooded with roughly 23000 formulations as like of neighbouring country India³¹. At present Bangladeshi drugs are exported to around 83 countries. In 2010 Bangladesh exported formulated medicines of about 48 million US dollar³⁰. However, Bangladesh has achieved great success in drug manufacturing, but there is a great problem arising due to the irrational use of drugs and inappropriate prescriptions that affects the completely health care system. Indiscriminate uses of clinically inappropriate and inefficient medicines are a serious problem here. 'Prescribing errors, poly-pharmacy, irrational prescribing' is a globally established issue³². Another study reported that globally more than 50% of the medicines are inappropriately prescribed, dispensed or sold³³. Endless growing number of drugs availability actually exaggerates the increase possibility of polypharmacy, irrational prescribing and adverse drug reactions^{34,35}. Unethical marketing is quite common in Bangladesh. Pharmaceutical companies try to motivate the physicians in many ways as the patient follows the prescription of graduate medical doctors³⁰. There are always tremendous pressures of aggressive promotion from pharmaceutical industries. Companies push their products and offer rewards to contracted doctors based on prescriptions written for their products²¹. Young medical graduates are always getting confused to choose a right drug for his patient from a long list of medicines because of industry sponsored aggressive

marketing and promotion of the products. Doctors are also influenced by the pharmaceutical industries due to their close relationship with them that ultimately influences their prescribing habit²¹. The continuing crisis of irrational drug prescription in the country, ultimate burden of which falls entirely on the patient. Researchers conclude that the differential prescribing patterns is due to the greater influence of Drug Company's marketing and promotion on doctors³⁶. Similar study also reported findings of irrational drug prescription in Bangladesh³⁷.

DISCUSSION AND CONCLUSION

Globally irrational prescribing of drugs is a major health problem in medical practice³⁸. As a consequence of superfluous prescribing of drugs particularly antimicrobials and injections, expansion of antibiotic-resistant strains, adverse effects, treatment failure and economic draining both in personally and at community level, eroded patient confidence³⁹. More than 50% of national and 60-80% of personal health care were spending on medicines⁴⁰. Pharmacology and therapeutics is the only subject that deals with the prescribing rather should say rational use of medicine. Now there is increasing concern about the pharmacology education in medical schools and higher prescription errors by the young doctors. Research showed that high incidence of drug prescribing errors is mainly due to inadequate pharmacology teaching^{35,41-45}. In most countries, pharmacology taught during the early, basic science years of the course and students memorize information about drugs without a direct clinical context. Now many countries have done modification in their pharmacology teaching methodology. In the United Kingdom, a core curriculum in prescribing and therapeutics has been developed for medical schools^{46,47} and a therapeutics curriculum emphasizes on pharmacovigilance and drug safety in the United States^{46,48}. Enlighten people believe negative behaviour towards rational prescribing once developed is very difficult to ratify⁴⁹. We have to take initiatives to overcome the problem to ensure the safe use of drugs. To overcome this problem of irrational prescription in Bangladesh, we suggest that 'Pharmacology and Therapeutics' should be taught with utmost importance throughout all of the clinical years. Moreover, during internship there should be incorporated therapeutic discussion programme with proper log book. Motivation of the students is essential for the selection of appropriate drug and good prescription practice to reduce the problem of irrational prescription. Consequently, the young doctors will be more competent in prescription writing that can be continuing throughout their life. It is also evident that there is erosion of medical professionalism^{23-25,50} and faculty members fail to demonstrate core issues of professionalism before their students by not applying in real setting what they teach students in class room setting⁵¹⁻⁵⁴. Legal and ethical aspects of medicine needs highest and sovereign importance⁵¹. Medical professionals should be committed to uphold social order and awareness by ensuring ethical practices of medicine for the betterment of public⁵⁵⁻⁶⁰. So, appropriate role modelling by the faculty is of utmost importance here^{54,61-65}. Eventually, we will be able to ensure doctors' fitness for safe, effective and rational practice while adhering to higher standards of care for people of Bangladesh as well as for the whole world.

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