

Short Communication

## Challenges in conducting small group sessions in pharmacology – a Caribbean perspective

Pathiyil Ravi Shankar\*

American International Medical University  
Gros Islet, Saint Lucia.

<sup>1</sup> Professor, Department of Pharmacology, American International Medical University, Gros Islet, Saint Lucia.

### **ABSTRACT**

**Background and Objectives:** Offshore Caribbean medical schools (OCMS) face various challenges with regard to learning practical and prescribing skills in pharmacology. These challenges range from short curricular time, low number of faculty, problems with early clinical exposure and geographically separated clinical sites.

**Materials and Methods:** The author highlights these challenges using his personal experience and articles from the published literature. The search terms used were pharmacology, Caribbean, medical students, prescribing skills and medical schools.

**Results:** Among the problems mentioned are lacunae in the teaching-learning of prescribing skills, teaching pharmacology as a discipline during a particular semester, excessive focus preparing students for licensing exams, low number of faculty, shortage of time, challenges with providing early clinical exposure, problems with assessing skills, lack of integration with essential medicines and standard treatment guidelines, among others.

**Conclusion:** There are a number of challenges in teaching pharmacology and therapeutics in OCMS. Most schools concentrate on the theoretical aspects of pharmacology which are tested during the licensing exams.

**Key words:** Caribbean, medical schools, pharmacology, practical, prescribing skills

### **INTRODUCTION**

Teaching medical students to choose and prescribe drugs in a scientific manner using objective criteria is an important objective for medical schools [1]. Prescribing rationally for a disease condition and counseling patients with regard to relevant medicine and non-medicine information is an important transferable skill in pharmacology [2]. Ten

basic competencies to be developed by a student at the end of practical training in pharmacology were listed by authors from a Nepalese medical school [3]. Among these were knowledge of national essential medicine lists and standard treatment guidelines, ability to select personal or P-drugs for a disease condition and prescribe the selected P-drug for an individual patient,

ability to communicate drug and non-drug information to patients, awareness of the influence of pharmaceutical promotion and the ability to respond appropriately to the same among others.

### ***Prescribing skills***

Doctors in nearly all specialties will be prescribing medicines and they should be knowledgeable about and be able to respond to rapid changes in and increase in information about drugs and therapeutics [4]. An integrated core curriculum in pharmacology as a means to strengthen prescribing skills emphasizes basic pharmacology during the first two years, principles of clinical pharmacology during year 3 and therapeutics in specialty modules during years 4 and 5.

In Nepal pharmacology is taught in an integrated organ system-based manner with other basic science subjects and community medicine during the first two years of the course [5]. Most schools also emphasize early clinical exposure. In most developing countries principles of therapeutics are partly addressed during the clinical postings but there is a no formal clinical pharmacology teaching.

### ***When pharmacology is taught during the course***

Most offshore Caribbean medical schools (OCMS) admit students thrice a year during the months of January, May and September [6]. OCMS vary in the size of the student population, the number of faculty and the educational resources available. The tuition fees also vary widely among these schools. Many OCMS still follow a traditional discipline-based curriculum though some have shifted or are shifting to an integrated

curriculum. Xavier University School of Medicine (XUSOM) at Aruba shifted to a fully integrated organ system-based curriculum from January 2014 and personal drug selection exercises have been conducted at the school since January 2013 [7]. At XUSOM, Pharmacology is learned through five semesters of the program and personal drug selection exercises are conducted for the conditions of bronchial asthma, epilepsy, hypertension, enteric fever and bronchial asthma. In OCMS with a subject-based curriculum, pharmacology is usually taught during the third and/or fourth semesters of the program.

### ***Focus on performing well in licensing exams***

Teaching-learning at OCMS mainly focuses on preparing students for licensing exams. Most OCMS have a large population of students from North America and teaching is mainly geared toward the United States Medical Licensing Exam (USMLE) step 1. The step 1 scores play an important role in selection for residency programs. Teaching and learning of pharmacology in most OCMS faces a number of challenges which are described in this article.

### ***Short duration of time***

In most OCMS teaching of pharmacology takes place during a single semester. A semester is usually only of 15 weeks with the last week being devoted to exams. Monthly and other exams also reduce the time available for teaching-learning. The period available is about 12 weeks and the subject shares curricular time with Pathology and Introduction to Clinical Medicine and Physical Diagnosis in many institutions. With an average of 10 hours of instruction time a week the duration of the course is about 120

hours. This short duration creates challenges to incorporate small group activities and learning of prescribing skills. Lectures continue to be the dominant teaching strategy at many OCMS due to a variety of reasons.

**Low number of faculty**

The number of faculty is low in most OCMS. Most have one or a maximum of two faculty members teaching pharmacology. Though the situation is changing not all schools have faculty with advanced degrees in the subject. This creates challenges for faculty members to conduct small group sessions and teach rational prescribing. As each OCMS is its own university and conducts its own examinations opportunities for interactions among faculty from different schools is limited. There is no regional association of pharmacologists in the Caribbean and recent advances in teaching of the subject are not readily disseminated.

**Challenges with providing early clinical exposure**

OCMS face challenges with providing early clinical exposure (ECE) to students. This and other challenges with regard to undergraduate medical education at OCMS were highlighted in a recent article [8]. OCMS do not own clinical facilities and are located on small islands which lack major hospitals. Students are not introduced to clinical medicine and do not have contact with patients in hospitals and clinics. Health fairs provide a limited opportunity to interact with patients. Students have challenges with therapeutics and the use of medicines in patients. Students often lack knowledge about the pathophysiology and management of diseases.

**Assessment of skills**

Small group and practical exams in pharmacology are not common in OCMS. I was able to introduce these exams at the Xavier University School of Medicine in Aruba and at the American International Medical University in Saint Lucia. There is no tradition of external examiners and external quality control of assessments.

Table 1 shows the rubric used for small group examinations in pharmacology. The major emphasis is on the process of personal drug selection. In session assessment during the small group sessions is also important. At present, there is no formal assessment of prescribing skills in the United States Medical Licensing Exam (USMLE).

**Table 1: Grading format for small group examinations in pharmacology**

Activities	Marks
P-drug selection process (P-drug selection 25 marks (Definition, therapeutic objective 5 marks, selecting P-group 10 marks, selecting P-drug 7.5 marks, describing P-drug 2.5 marks), verifying the suitability for a particular patient 5 marks, writing the prescription 10 marks)	40
Communicating with a simulated patient	10
Analysis of drug advertisements	10
Social issues in use of medicines	10
In session assessment during the practical sessions	30

### ***Pharmacology teaching during the clinical years***

At most OCMS there are only one or two faculty members teaching pharmacology and the subject is taught for a limited duration of time. In contrast, at many medical schools in developed nations, pharmacology is taught throughout the course with the emphasis being on therapeutics during the clinical years. The geographical separation of clinical sites and the small number of faculty do not allow pharmacologists to be involved in teaching of therapeutics.

### ***Lack of exposure to other services of the department of pharmacology***

The department of pharmacology runs drug/medicine information centers with the support of the department of hospital pharmacy in medical schools in Nepal. At a medical college in Pokhara, Nepal, the drug information center played an important role in supporting student learning [9]. The center can support medication counseling and pharmacovigilance activities.

Students get practical experience in medication counseling, pharmacovigilance and a clearer idea about the reporting systems in their country. Students are also introduced to the hospital pharmacy and the activities of the drug/medicine and therapeutics committee. As OCMS usually do not have an attached teaching hospital, exposure to these areas is lacking.

### ***Lack of exposure to medicines and dosage forms***

Most medical colleges in Nepal have a good collection of dosage forms and medicines in the department of pharmacology which is used to teach students. At a medical school in

Lalitpur, Nepal medicines were arranged according to the anatomical-therapeutic-chemical (ATC) classification along with medicine related information [10]. 'The world of medicines' played an important role in educating students. At OCMS, teaching hospitals and pharmacies are lacking and most have only a very limited collection of medicines for teaching-learning. Online resources address this challenge to a certain extent.

### ***Lack of integration with essential medicine lists and standard treatment guidelines***

Problem-based pharmacotherapy learning with emphasis on national essential medicine lists and standard treatment guidelines have been mentioned as an important recommendation to improve the use of medicines [11]. OCMS do not have close linkages with the health systems of the countries where they are located.

The Basic Sciences are learned in the Caribbean and the clinical in other countries. Students could be from North America, the Caribbean, Asia and Africa. Hence pharmacotherapy learning in small groups with emphasis on essential medicines lists and standard treatment guidelines is not common.

### **CONCLUSION**

There are a number of challenges in teaching pharmacology and therapeutics in OCMS. Most schools concentrate on the theoretical aspects of pharmacology which are tested during the licensing exams. The author has introduced some aspects of practical learning in pharmacology in two OCMS though challenges remain. Despite challenges a certain amount of learning of prescribing skills may be possible in OCMS.

## ACKNOWLEDGEMENT

The author thanks all students who have participated in these sessions

## AUTHOR'S CONTRIBUTION

**PRS-** was involved in review of literature and writing the manuscript. He also revised it for intellectual content.

## SOURCES OF SUPPORT:

None

## CONFLICT OF INTEREST:

The author has been a faculty and an academic leader at two different OCMS.

## REFERENCES

1. Flockhart DA, Yasuda SU, Pezzullo JC, Knollmann BC. Teaching rational prescribing: a new clinical pharmacology curriculum for medical schools. *Naunyn-Schmiedeberg's Arch Pharmacol* 2002; 366:33-43.
2. Shankar PR, Mishra P, Shenoy N, Partha P. Importance of transferable skills in pharmacology. *Pharmacy Education* 2003; 3:97-101.
3. Shankar PR. Ten basic competencies for undergraduate pharmacology education at KIST Medical College, Lalitpur, Nepal. *Australasian Medical Journal* 2011; 4(12): 677-82.
4. Maxwell S, Walley T. Teaching safe and effective prescribing in UK medical schools: a core curriculum for tomorrow's doctors. *Br J clin Pharmacol* 2003; 55:496-503.
5. Shankar PR, Jha N, Bajracharya O, Shrestha R, Thapa HS. Teaching Pharmacology at a Nepalese Medical School: The Student Perspective. *Australas Med J*. 2010; 1:14-22.
6. Shankar PR. Designing and conducting a two day orientation program for first semester undergraduate medical students. *J Educ Eval Health Prof*. 2014; 11:31.
7. Shankar PR. Seven Semesters of Personal Drug Selection in a Caribbean Medical School. *Education in Medicine Journal* 2015; 7(2);e80-e82.
8. Shankar PR, Balasubramaniam R, Dakubo G. Challenges with regard to undergraduate medical education in offshore Caribbean medical schools. *Education in Medicine Journal*. 2017; 9(4):69-75.
9. Shankar PR, Mishra P, Subish P, Upadhyay DK. The drug information center at the Manipal Teaching

Hospital – going beyond drug information. *Drug Information Journal* 2007; 41:761-8.

10. Shankar PR, Jha N, Bajracharya O, Thapa H. Developing 'The world of medicines' in a Nepalese medical school. *Clin Teach*. 2011; 8:59-60.
11. Laing RO, Hogerzeil HV, Ross-Degnan D. Ten recommendations to improve use of medicines in developing countries. *Health Policy Plan*. 2001; 18:13-20.

### ***Correspondence to:***

**Prof. Dr Pathiyil Ravi Shankar**

Department of Pharmacology,

American International Medical University

Gros Islet, Saint Lucia.

E-mail: ravi.dr.shankar@gmail.com