



What I want for Pakistani pharmacy graduates, recommendations from personal experience

Dear Editor,

In recent years, the profession of pharmacy has become more dynamic. Additional practice and clinical skills are mandatory for pharmacy graduates, which can be achieved by participating in the clinical ward rounds, by direct interaction with patients and other healthcare professionals. To attain this, the course curriculum for pharmacy graduates should include more effective courses and clerkships.

Clinical pharmacy clerkship is structured training program where pharmacy graduates learn about pharmaceutical care process and skills needed to identify drug related problems and recommend appropriate management.^[1]

In Pakistan, clinical pharmacy is still in a juvenile phase that is why most of the pharmacists are confined to dispensing and stock management only without any patient care involvement.^[2] This is because of common misconception among health care professionals that the pharmacist role is only to manage the drug distribution in the hospital^[3] and they are not comfortable with direct pharmacist-patient interaction.^[4] This is why we would like to share our experience based on Malaysian healthcare setup so that the healthcare authorities, Pakistan Pharmacy council, and higher education commission can make effective changes in pharmacy course curriculum and the healthcare setting in order to establish a firm basis for pharmacy graduates.

Due to deficient clinical pharmacy elements, students have limited knowledge and experience in clinical setting. Keeping in view the current setting, it is important to suggest modifications in the course curriculum based on course curriculum of Malaysian Universities.

The program consists of 2 semesters (12 months). Students have to follow theoretical courses related to Clinical Pharmacy Practice, Clinical Pharmacokinetics, General Pharmacotherapeutics, Community Pharmacy, and Biostatistics and Research Methodology. Clinical skills are developed through clinical clerkships such as compulsory and elective clerkships. Cases are clerked by using Pharmacist Workup Drug Therapy (PWDT) form which includes subjective, objective, assessment, and plan. Approximately 20% of the students' time is spent on research related to quality use of medicine and clinical pharmacy throughout the year. Students have to submit a complete thesis, manuscript and have to give a viva. At the end of the year, the student is highly skilled in the clinical setup and capable to interact with patients and healthcare professionals to provide drug information based on the current available literature as evidence. Student's research skills are also polished as this is a main problem in Pakistan where undergraduates are deprived of research skills until they enter the Master level.

Throughout the world, attempts are being made to mold the role of hospital pharmacist into wards and clinics rather than being confined to dispensing only. Most importantly, Doctor of Pharmacy (Pharm D) has an increasing trend in countries such as Pakistan and India. About 2587 pharmacists are graduated every year in Pakistan and above 50% perform their duties in the pharmaceutical industry and below 25% get an opportunity to work in community and hospital pharmacy.^[5-8] With this statistics, it is almost not possible in community and hospital settings to provide quality healthcare to the population. The Pakistan Pharmacy Council and Higher Education Commission of Pakistan allowed few universities to start a 5 year Pharm D degree in 2003 which emphasized mostly on clinical pharmacy. The reasons for converting to a more clinically oriented program were complicated therapies, an increase in geriatric population with multiple co-morbid conditions requiring more complex treatment, and the growth in tertiary care and hospital-based care. In addition, much more attention has been given to the magnitude of drug related problems, the need for pharmaceutical care interventions to improve patient outcomes, safety, and pharmacoconomics.

RECOMMENDATIONS

Several recommendations should to be considered for the benefit of pharmacy graduates. Pharmacy course curriculum should include the following:

1. Clinical clerkships (compulsory and elective)
 - The aim is to provide the experience of the clinical presentation and management of disease states, focusing on pharmaceutical care. Resolving patient management problems which require conducting patient interviews or counseling. During the attachments, students should be able to: Describe the process by which the clinicians make management decisions, maintain records of clinical information relevant to patients' medications, contribute to management decisions where appropriate by helping to optimize drug therapy, monitor the pharmaceutical care and progress of the patients, resolve patient management problems, where appropriate, which require patient interviews or counseling.
 - Compulsory clerkships should be done in:
 - Pharmacotherapy in Internal Medicine
 - Pharmacotherapy in Intensive Care
 - Pharmacotherapy in Infectious Diseases
 - Pharmacotherapy in Pediatrics.
 - Elective clerkships should be done in:
 - Pharmacotherapy in psychiatry
 - Parenteral nutrition
 - Oncology pharmacy
 - Therapeutic drug monitoring
 - Obstetrics and Gynecology.
 - The duration for each compulsory attachment will be 5 weeks and the duration for each elective attachment will be 3 weeks. PWDT form should be designed by an institution. Students should clerk and maintain at least 10 cases at any one time. On average two meetings per week should be held with the preceptor to discuss clinical problems experienced during the attachment. At the end of the compulsory attachment, students will be expected to participate in an assessed oral presentation and small group discussions designed as exercises in peer review. Mini-presentations by the students will also be held every two weeks. Regular case studies will be used by the students to illustrate the supervised experience gained during the continuous clinical attachments
2. At the end of each lecture, students should be given case studies which aim at student's ability to integrate the skills and knowledge in clinical practice, and therapeutics in order to make rational decisions regarding patient's therapy management

3. Students should be encouraged to approach to new and updated reference books and should be taught on how to look for evidence-based medicine
4. Pharmacokinetics should be taught as a separate subject as therapeutic drug monitoring has a key role in clinical settings which will help the students to compare the pharmacokinetic consequences of different dosage regimens and dose forms, advocate dosage regimens taking into account individual patient characteristics, design optimum dosage regimens in patients receiving digoxin, aminoglycosides, xanthine bronchodilators, and anticonvulsants
5. Research methodology should also be a part of pharmacy curriculum. This should be taught through lectures, tutorials, workshops/practicals in order to introduce to the students principles of epidemiology, research methodology and statistics, meta-analyses, and critical appraisal.

CONCLUSION

Although the pharmacy profession is progressing after the introduction of Pharm D in Pakistan but still the role of the pharmacist is yet to be recognized. Their role should not only be restricted to dispensing and production of drugs, but it should also focus on the management and drug related problems. We wish that pharmacy graduates in Pakistan should be engaged in clinical clerkships so that our society could get competent health care providers as practiced in developed countries.

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Conflicts of interest

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