

## Archives of pharmacy practice on pharmacy education

Dear Sir,

During the last 4 year, Archives of Pharmacy Practice (APP) managed to publish a variety of research articles addressing the challenges and practice needs to pharmacy education across different regions of the world.<sup>[1]</sup> Clinical pharmacy is new to the profession, the universal definition of which has still not been agreed on.<sup>[2]</sup> The natures of challenges coined through APP are of diverse nature. For example, in Pakistan, until date, 1<sup>st</sup> year pharmacy students were unclear about the scope of the pharmacy profession. Surprisingly, more than half of students were willing to pursue nonpharmacy careers, e.g., bureaucracy upon graduation. Moreover, a large number of students reported that they were discouraged by their seniors on their choice. This issue was rarely studied in Pakistan where every year 2587 pharmacists graduate from the 28 pharmacy institutions. The common barrier is the lack of awareness among students at intermediate level about pharmacy as a career option and most of them are interested in medicine. As a consequence, ending up in pharmacy program was a mere serendipity for most.<sup>[3-5]</sup>

Iran has seen great development in its pharmacy program since 1922, when the very first pharmacy division was formed. Recently, Tehran University made it a doctoral program, increasing the duration from the previous 4 to 5 years, which after a thesis, makes it a 6 years program, with the compulsory 350 credit hospital internship. Now many universities are offering postgraduate programs and optional courses for the pharmacy students. Despite these developments, there is room for improvement in curriculum development and lecturer training programs.<sup>[6]</sup>

In India, the integrated 6 years Pharm-D program was successful in terms of providing competent pharmacists. However, there are concerns about the lack of job opportunities for pharmacists in clinical settings, where clinical pharmacy practice is an abstract

concept yet to be implemented. The students get inadequate hospital exposure during their training due to lack of attached hospitals. Moreover, it is desirable to get international recognition for their program by streamlining their national board examinations with North American Pharmacist Licensure Examination and conducting national screening examinations for prospective graduates to maintain quality of pharmacists.<sup>[7]</sup>

In Sri Lanka, there is rising number of deaths from cancer every year (46.3% in 2012) and not enough radio-pharmacists as required with the modern diagnostic and treatment advancements in nuclear medicine. This shortage is due to the lack of specific training programs in radio-pharmacy, which leads to limited human resource, the legislature, in addition, not making it any easier. To overcome this shortage, postgraduate programs should be introduced in radio-pharmacy in Sri Lanka with 6 months training in radiotherapy units.<sup>[8]</sup>

There is ambiguity among curriculum developers in developing countries on whether to continue the traditional schemes, which serve the need of the hour or mold their curriculum according to the modern patient-oriented approach to which the government policies have still not adapted. As a result, students suffer from lack of opportunities. Second, differences in the degree titles and duration of study in different areas keep acceptability and equivalency in question. Many public universities in Pakistan offer evening sessions with a nonsubsidized fee to maximize the use of resources, but have resulted in commercialization of professional education.<sup>[9]</sup>

The situation is deterrent in countries like Pakistan, as seen in a survey on pharmacy attendants at community pharmacies, where only 9.49% were pharmacists. Many attendants believed that pharmacists are not required in community pharmacies, despite the fact that 95% sold drugs without prescription. They were not familiar with the latest prescription analysis and dispensing software.<sup>[10]</sup> Even the students face difficulty in getting appropriate training in community settings. Many feel that it is not rewarding to work there while the institutes still following traditional curricula do not equip their students with the patient-oriented skills required for community pharmacies. This leads to lack of experienced supervision for students, which

combined with the profit-oriented approach of the private community pharmacies can lead students to adopt many malpractices. This calls for the curriculum revision with careful selection of interns and memorandum of understanding should only be signed with approved institutes periodically audited in order to provide students with fruitful community pharmacy experience.<sup>[11]</sup>

The Middle East lags far behind other developed countries in its clinical pharmacy services. Keeping this in view, the Ras-Al Khaimah (RAK) College of Pharmaceutical Sciences designed an innovative curriculum for undergraduates and developed a Clinical Pharmacy Department in Ibrahim Bin Hamad Obaidullah Hospital of RAK, United Arab Emirates (UAE), which is a tertiary care hospital with 330 beds. This department provides students with clinical pharmacy training along with the clinical pharmacy services to the hospital. The department also has a drug information center with adverse drug reactions reporting being one of its services, which were underutilized. Still, it was a positive step to give pharmacists an opportunity to extend their services to patients and can be used as a model by other institutes. However, there should be an assessment of services to discover reasons of underutilization and more job opportunities need to be created for undergraduates in UAE.<sup>[12]</sup>

The faculty of University Teknologi MARA in Malaysia conducted a survey to assess the knowledge and skills needed to become a competent pharmacy assistant to design a "need-based curriculum" for Diploma in Pharmacy program. Pharmaceutical calculations, sterile compounding, aseptic techniques and intravenous admixtures and medication error deterrence were found to be important for inclusion in curriculum, while patient monitoring, research in pharmacy practice and complementary and traditional medicine were not considered unnecessary. Based on the findings, amendments in the curriculum were proposed.<sup>[13]</sup>

Representatives from International Pharmaceutical Federation (FIP) agreed on the shortage of pharmacists and lack of means to train more. Since the demands of health care are different around the world and keep evolving, no single curriculum can fit the needs of every society, so a need-based curriculum design is an efficient approach. The Pharmacy Education Taskforce of World Health Organization, United Nations Education and Cultural Organization and FIP are dedicated to finding the local needs of places around the world and development of education systems

to give the required competency according to those needs adopting FIP Policy on Quality Assurance of Pharmacy Education.<sup>[14]</sup>

The government policies need to reshape to accommodate pharmacists in their health care systems. More clinical jobs need to be created for them in accordance with their evolving role in both private and public health care facilities. The public awareness about the role of pharmacist should be increased to get recognition as health providers and also to inspire more people to join this profession.

In conclusion, pharmacy profession has greatly evolved in the past few years into a patient-orientated field. However, pharmacists have not coped well with this evolution and are faced by many challenges on their road to being successful health professionals. These challenges can be overcome by improving the pharmacy education, government policies, and public awareness about pharmacists.<sup>[15-18]</sup>

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