

International Pharmacy Practice
Pakistan, Iraq, and Qatar

Maryam Khan

Introduction

Pharmacy practice in most Asian countries is limited to basic dispensing and cashier roles. However, many of those countries are now in an evolutionary phase, starting from improved academic curriculums and then expanding pharmacists' roles in different practice settings. There are many developments made and the future of pharmacy in these countries has a lot of potential. This paper will present the research on three selected Asian countries: Pakistan, Iraq, and Qatar. The four topics covered for each country in this paper include background and demographic information, pharmacy education, pharmacy regulation and lastly pharmacy practice.

The research on these topics was done through available papers and resources online and a couple of personal interviews as well. With the limited resources and at times, conflicting information from various sources, this paper presents information on the broad aspects of pharmacy practice within the respective countries. The objective here is for the reader to understand how pharmacies and pharmacists function in most areas of the country as compared to those in the United States and other more developed countries.

Background

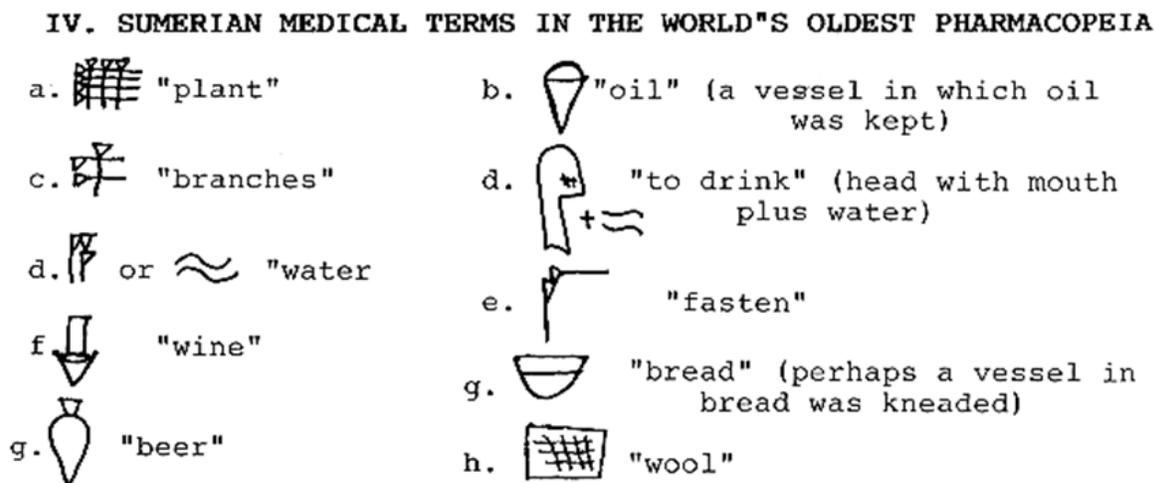
To better understand the current situation of each country and how it utilizes health care services, certain demographic information was collected. It may be useful for the reader to know this background information to understand why one country may be in such contrast to another. For example, the GDP per capita in Qatar is over ninety thousand dollars whereas that of Pakistan and Iraq is under seven thousand dollars.² This directly affects not only how much the government may be spending on healthcare but also how much of a burden health care costs may be for the individuals living within the country. Similarly, access to healthcare is an important factor to consider and one may be able to make an educated guess on this based on the percent of population living in urban areas. Another significant number is the percent of people being affected by chronic diseases. It is a fact that the more pharmacists are involved in patient health care, the better their chronic conditions can be managed.¹ Looking at these numbers for all three countries gives an idea of how much potential improved pharmacy practice has for the people living there. As is the case with the numbers discussed here, one must also look at all the provided demographic information to get a full picture of what the country is currently going through and how advancements in pharmacy practice may lead to a brighter future in healthcare for the given country.

Pakistan was not an independent country until August of 1947 and is still in the developing phase when it comes to most areas, particularly healthcare.³ By land size, it is a little bigger than Texas; 796,095 km² compared to 695,241 km² for Texas.² However, it is the 6th most populous country in the world with only about 35% of its population living in urban areas.³ Average life expectancy is 66 years old for females and 64 for males.² With no insurance system, patients are generally expected to pay nearly 80% of all expenses out of pocket.² Because the leading cause of death is chronic diseases like cardiovascular disease and

diabetes, causing around 42% of all deaths, these expenses can quickly add up for the general public.² The GDP per capita is only \$1,252 and the government only spends about 0.5% of the total GDP on healthcare in contrast to the 17.9% spend by the United States on its health care.^{2,3,4} In fact, up to 95% of healthcare in Pakistan is funded via foreign sources.⁴ All of these factors together help to explain the lack of development in many careers in Pakistan. Being a very populous country, it does not have a lot of money to begin with. Also, health care is not the top most priority for the policy makers in the country hence the slow progress in these important areas of healthcare.

Iraq, on the other hand is a smaller country with a land size of 437,072 km², about four times the size of Ohio.⁵ Majority of the population (67%) lives in urban areas with a GDP per capita of \$6,309 and the country only spends 3.6% of its total GDP on healthcare.⁵ The amount of GDP spent is better than that of Pakistan but is still not sufficient to guarantee optimal health care for the entire country's population. Similar to Pakistan, the life expectancy in Iraq is higher for women than men, living up to 72 years and 65 years respectively.^{5,6} Moreover, the percentage of people dying due to cardiovascular disease is 43%, making it a significant area for pharmacists to work on.⁶

In addition to the other background information on Iraq, it is important for the reader to recognize that Iraq is the birthplace for the profession of pharmacy. Ancient populations in Iraq as far back as 4000 BC were using liquorice, mustard, myrrh, and opium for medicinal purposes.⁷ Furthermore, it was the first place to recognize pharmacists as separate practitioners from physicians.⁷ In the figure below, some of the oldest pharmacopeia symbols can be seen:



Symbols used in the oldest pharmacopeia.⁷

Lastly, Qatar stands out as an exceptional country with most of its numbers being outliers compared to either Pakistan or Iraq. By size, Qatar is a very small country, covering an area of only 11,606 km².⁸ In contrast to the other countries, the GDP per capita in Qatar is \$93,832 and

the country spend 2.2% which may seem low but considering the wealth of the country is more than enough.^{8,9} Ninety nine percent of the population there lives in urban areas and even has higher life expectancy compared to the other two countries with women living up to 81 years and men up to 83 years.⁸ The similarity between Qatar and the other countries is the fact that cardiovascular disease is still one of the leading causes of death.⁹

Education

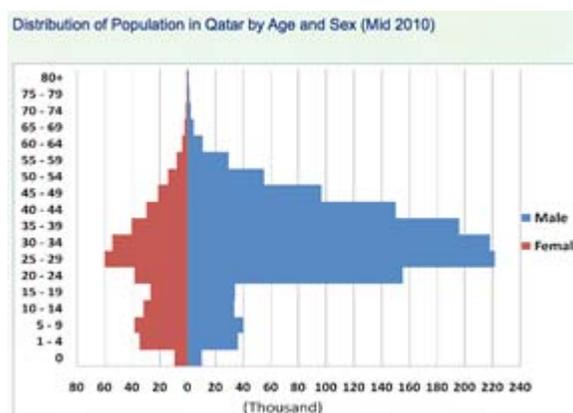
In Pakistan, prior to pharmacy school admission, the student must pass the F.Sc Exam or its foreign equivalent.¹⁰ F.Sc is a two year program focused on health sciences; it is completed after finishing 10th grade exams. The F.Sc scores is the only criteria used for admission into pharmacy school.¹⁰ All pharmacy schools in Pakistan have 5 year long programs that provide the student with a doctorate of pharmacy upon graduation.^{4,10} The PharmD programs have been established in Pakistan since 2003.⁴ The subjects taught in pharmacy school are similar to those in any college of pharmacy like pharmacology, compounding, etc. However some of the subjects that are in contrast to those taught in most universities include Islamic studies and Pakistan studies, which are only presented in a handful of lectures to get students familiar with the majority of the patient population they would be caring for.¹⁰ Also, students are required to take marketing and management class, forensic pharmacy as well as bio-statistics.¹⁰

If a student wishes to continue education past the PharmD degree, they can spend another two to three years in school to earn a M.Phil or a PhD M.Phil in pharmacy.⁴ Another important point to make about pharmacy education in Pakistan is that many colleges there sign what is known as a Memorandum of Understanding (MAU).⁴ Many colleges have signed MAUs with Universiti Sains Malaysia or another university.⁴ When a university signs an MAU with a Pakistani university, that university is basically reviewing and approving the curriculum being used in that specific Pakistani university to be at the same level as their own universities. Many times this is done with well-established foreign universities to have a certification for the college that states that their education level is competitive and comparable to well known colleges.⁴

In Iraq, until the late 1970s, graduates were referred to as "chemical pharmacists" because the degree they earned required them to study both chemistry and pharmacy thoroughly.¹¹ However, there have been many changes made in the education system since then. For example, up until 1992 there was only one college of pharmacy in Iraq and since then 16 new colleges have opened.¹¹ Also, it is surprising to realize that until 2003, women were required to have higher admission scores which limited the number of female students in pharmacy schools.¹¹ Since then there has been a more equal distribution of male and female students. The education system in Iraq at this time is very straightforward. Currently, students must get a 92% on their pre-admission exams and can then earn a bachelor's degree in pharmacy and have the option of earning a master's or doctorate.¹¹ For the master's and doctorate degrees, students take specialized courses and also do research in one of the six available specialties: clinical pharmacy, clinical laboratory sciences, pharmaceuticals, pharmaceutical chemistry, pharmacognosy, or pharmacy and toxicology.¹¹ With these specialties, pharmacists have the

opportunity to perform more clinical roles. An important point to note is that the tuition is a hundred percent free in government colleges.¹¹

As with the background information, Qatar is once again an outlier among these countries even when it comes to education. As mentioned earlier, Qatar is a small and very wealthy country, and 80% of its population is made up of immigrant population.¹² Because of this, many of the pharmacists and other professionals are those with education from many different countries. For this reason, Qatar has never had the need to open its own pharmacy school but this changed when its very first college of pharmacy opened in 2007.¹² The Qatar University College of Pharmacy is unique in many ways. Firstly, since most colleges there are segregated by gender, the same applies to this college as it is only for females and accepts 25 students per year.¹³ This is even more surprising when one looks at the breakdown of Qatar's population, majority of which is young men. In the figure below, taken from a report titled Qatar Health Trends 2001-2010, it can also be seen that only about two percent of the entire population is geriatric.



Qatar Population Statistics¹⁴

Not only that, but the college also offers a bachelor's degree, master's degree, and PharmD.¹² Moreover, the college has collaborated with the Canadian Council on Accreditation of Pharmacy Program (CCAPP) instead of developing a new program of its own.¹² This is the only college outside of Canada to get accreditation from CCAPP.¹² In fact, the requirements for the college admission are nearly the same as for students in the United States. Students are required to take the US based PCAT, submit a personal statement and reference, and also have an interview with the college faculty.¹² Once admitted, the students spend four or five years to earn either a BS or PharmD, respectively.¹² The subjects taught are similar to those taught in the United States like disease based teaching and management, MTM, case-based learning. Also included in the curriculum is professional writing skills, communication skills, and patient assessment skills.¹² Those that graduate with a BS are referred to as pharmacy trainees and must get further practical experience in pharmacies before applying for a pharmacist's license.¹² To graduate, students must also pass the same tests that Canadian students are required to pass: Professional Competencies for Canadian Pharmacists.¹⁵ In this way, pharmacists graduating from Qatar University College of Pharmacy are competent to not only start practicing

in Qatar but also be able to apply for jobs internationally. In addition to this, Qatar has a two-year pharmacy technician program also approved by CCAPP.¹⁵

Regulation

In Pakistan, the department responsible for pharmacy and pharmacist licensure in the Pharmacy Council specific to the four states in which the licensure is given.¹⁶ Additionally, the Pharmacy Council of Pakistan is the regulatory body that overlooks the department of education, registrations, and promotion of the field of pharmacy.¹⁶ Lastly, the Drug Regulatory Authority of Pakistan or DRAP is responsible for enforcing drug laws, particularly those focused on trade and commerce of drugs.¹⁷ Though there are agencies and laws in place, the enforcement of these laws is a big issue in Pakistan.⁴ Many pharmacies and pharmacists can be easily observed breaking all sorts of laws but the lack of law enforcement limits any disciplinary action that would perhaps improve pharmacy practice in the country.⁴

In Iraq, a non-government organization, Syndicate for Iraqi Pharmacists (SIP), serves as the national pharmacy association that all pharmacists are members of.¹¹ There is also SIKP, Syndicate for Iraqi-Kurdistan Pharmacists, that overlooks the northern part of Iraq.¹¹ SIP requires pharmacy school graduates to obtain one year practical experience in a government hospital and two years at a MOH health center in a remote area prior to becoming a registered pharmacist.¹¹ This additional training after graduating must be under the supervision of a licensed pharmacist and ensures that graduates become familiar with the field before they start their own independent practice.¹¹

In Qatar, there is no autonomous professional pharmacy association to date, which makes sense since their first pharmacy school did not open until 2007.¹² Nonetheless, the laws surrounding registrations, applications, and drug trade processes are well defined and enforced.¹² However, laws about pharmacy practice are more fluid and not so well defined.¹² The requirements for registration for those with a BS degree include three year post graduation experience, a pro-metric exam, and registration from home country if licensed and educated from a foreign country.¹⁸

In both Qatar and Iraq, similar to many Middle Eastern countries, pharmacists are licensed for a specific location of employment and must obtain a new license in the case of change in location of employment.¹⁸

Pharmacy Practice

In Pakistan, the ratio of actively working to licensed pharmacists is only around 0.5 to 0.6 at a given time.¹⁹ This can partly be explained by the lack of job opportunities but also with another trend seen commonly in Pakistan among women. Many times, women are encouraged to get high level education but post graduation, most women want to and are expected to lead a family life, taking care of all household issues. This leads to many educated women not obtaining jobs that they are trained for hence the low ratio. Going along with the same idea, only 37% of the

pharmacists are females, majority of whom work in hospitals since retail jobs are not commonly preferred for females.¹⁹ Many of the graduates also seek jobs in foreign countries as the pay and job outlook is much better compared to Pakistan.⁴ In Pakistan, most jobs are available in industry and regulatory affairs; 55% of pharmacists join industry, 10% enter community jobs, while another 5% take on teaching or research positions.¹⁹

Hospital pharmacy in Pakistan is at a very preliminary stage; most hospital pharmacists are limited to a dispensing or clerical role. However, hospitals like Shaukat Khanam Cancer Hospital and Agha Khan University Hospital are taking strides towards giving pharmacists more clinical roles but it will be a slow process until pharmacist are able to fully use their knowledge in their respective job areas.⁴ Similarly, community pharmacy practice is also very limited. By law, a registered pharmacist has to be the one who owns a medical store or a pharmacy, but many pharmacists are not even present at the physical location.⁴ Instead, the store is run like any other shop by dispensers who have little to no training and simply sell what is being asked for and offer suggestions or answers based on their limited experience at the job.⁴ In fact, a survey conducted in 2005 found that only about one fifth of the pharmacies evaluated met licensing requirements but the lack of law enforcement allows for such incidences to be overlooked.²⁰

As far as the public outlook on pharmacy is concerned, many Pakistanis do not even consider pharmacists as health care providers.²⁰ In fact in a personal interview, when a patient was asked who they go to if they have a question about their medication, the answer was either the prescribing doctor, another doctor known by the patient, family or friends, and also the internet. Notice that asking the pharmacist was not even an option the patient thought of. This shows that currently, the role of the pharmacist is unfortunately limited to shop owners and dispensers. One reason for this is the lack of law enforcement but also the fact that most doctors own their own medical stores or dispensaries. Generally, when a patient goes to the doctor's office, the doctor write them a prescription which is directly handed to the so called compounder who also serves as the front desk receptionist. This compounder gets the medication ready for the patient so it can be picked up just before leaving the patient leaves the doctor's office. Not only does the patient never see the prescription, they also are never encounter the pharmacists. In contrast to how pharmacists are viewed in the United States, people in Pakistan get very little exposure to what a pharmacist can do for them.

In Iraq, many pharmacists have two jobs, working in a hospital from 8am to 3pm and then going to work at a community pharmacy for the rest of the evening.¹¹ For hospital jobs, pharmacists must have a master's or doctorate degrees in order to practice more clinical roles. As previously mentioned these higher degrees are in one of the six available specialties and therefore the role of the pharmacists in a hospital depends on their area of specialty.¹¹ For community practice, there are only private pharmacies unlike the United States where the majority are chain pharmacies.¹¹ Just like Qatar, a pharmacist's license is specific for the location of employment.¹¹ Furthermore, in Iraq a pharmacist can only be licensed for one private business in addition to a possible hospital job. The laws and specifications required by a private pharmacy are very specific, including the size of the pharmacy, the utilities and appliances available on location, and even the distance between one pharmacy and the next. A comprehensive list of required

criteria includes: glass door cabinets, refrigerator, air conditioning, a compounding bench, water and electricity supply, sewages, personal computer, official labels, bar-code scanner, and adequate furniture for patients.¹¹ All pharmacy technicians must also get a two year diploma before practicing in a pharmacy.¹¹

Besides hospital and private pharmacies, the two other major area of employment for pharmacists include drug stores and scientific drug bureaus. These drug stores are just wholesalers selling to pharmacies and hospitals, while the scientific drug bureaus are largely responsible for regulatory affairs particularly those involving drug trade and commerce as well as scientific advertising and related issues.¹¹

Pharmacy practice in Qatar is diverse throughout the country. Like Iraq, there are only private community pharmacies but each may differ a lot in how involved the pharmacist is. This difference in practice is largely due to a lack of federal pharmacy practice laws. As previously mentioned, pharmacists in Qatar come from different educational training and background and that is what influences how each individual pharmacists practices in the community setting.¹²

Besides community pharmacy, pharmacists in Qatar also practice in publicly funded hospitals, public and private clinics but have minimal opportunity to work in industry.²¹ In all of Qatar, there is 305 retail pharmacies, about 20 primary care health centers, 8 government funded hospitals and 11 satellites for urgent care and services like dialysis.¹²

In both hospital and community setting, pharmacists are still playing a product-centered role rather than a patient-centered role.¹² However, there are facilities that are looking into expanding the role pharmacists play in their hospitals. For example, a small cancer hospital serving 50 beds has hired two clinical pharmacists with the intend to adopt pharmaceutical care and medication therapy management in their patient care model. Additionally the Hamada Medical Corporation (HMC), which includes seven of the eight hospitals in the country, is actively working to enhance pharmacy practice in their hospitals.¹² They have developed a Pharmacy Practice Committee (PPC) with a focus on four main objectives including pharmacy leadership, good pharmacy practice models, application of the models in HMC facilities, and evidence based pharmacy practice that meets the needs of the citizens of Qatar.¹²

Currently, Qatar is in an evolutionary phase when it comes to healthcare. There are many laws and practice models that are under review at this time and the hope is that over the next decade pharmacy practice laws among other health care regulations will greatly improve patient care.¹²

1. Bunting BA, Smith BH, Sutherland SE. The Asheville Project: Clinical and economic outcomes of a community-based long-term medication therapy management program for hypertension and dyslipidemia. *J Am Pharm Assoc.* 2008;48:23-31.
2. World Health Organization. Countries. www.who.int/countries/pak/en/ Updated 2015. Accessed December 2014.
3. Global Health Facts. The Henry J. Kaiser Family Foundation. www.kff.org/globaldata/?country=PK Published December 2014. Accessed December 2014.
4. Khan T. Challenges to pharmacy and pharmacy practice in Pakistan. *The Australasian Medical Journal* 2011;4(4):230-235. doi:10.4066/AMJ.2011.488.
5. Global Health Facts. The Henry J. Kaiser Family Foundation. www.kff.org/globaldata/?country=IQ Published December 2014. Accessed December 2014.
6. World Health Organization. Countries. www.who.int/countries/irq/en/ Updated 2015. Accessed December 2014.
7. The Oldest Known Prescriptions. http://www.uic.edu/classes/osci/osci590/11_1OldestPrescription.htm Published November 1999. Accessed December 2014.
8. Global Health Facts. The Henry J. Kaiser Family Foundation. <http://kff.org/globaldata/?country=QA> Published December 2014. Accessed December 2014.
9. World Health Organization. Countries. www.who.int/countries/qat/en/ Updated 2015. Accessed December 2014.
10. Pharmacy Council of Pakistan. Doctor of Pharmacy Degree Course. Regulations, 2005. Accessed December 2014.
11. Al-Jumaili AA, Hussain SA, Sorofman B. Pharmacy in Iraq: History, current status, and future directions. *Am J Health-Syst Pharm.* 2013; 70:368-72.
12. Kheir N, Fahey M. Pharmacy Practice in Qatar: challenges and opportunities. *South Med Rev.* 2011;4(2): 92-96. doi:10.5655/smr.v4i2.1007.
13. College of Pharmacy Qatar University. Doctor of Pharmacy. <http://www.qu.edu.qa/pharmacy/academics/postgraduate/doctor-of-pharmacy/index.php> Updated June 2014. Accessed December 2014.
14. State of Qatar Supreme Council of Health. Annual Health Report 2010. Qatar Health Trends 2001-2010. Published 2012. Accessed December 2014.
15. College of Pharmacy Qatar University. Professional Competencies for Qatar Pharmacy at Entry to Practice.
16. Pharmacy Council of Pakistan. About Pharmacy Council of Pakistan. <http://www.pharmacycouncil.org.pk/index.php> Published 2011. Accessed December 2014.
17. Drug Regulatory Authority of Pakistan. Drug Regulatory Authority of Pakistan. <http://www.dra.gov.pk/gop/index.php?q=aHR0cDovLzE5Mi4xNjguNzAuMTM2L2RyYXAvZnJtRGV0YWlscy5hc3B4P29wdD1taXNjbGlua3MmaWQ9MTY%3D> Published 2013. Accessed December 2014.

Khan 10

2014

18. Qatar Council for Healthcare Practitioners (QCHP). Guidelines for Pharmacists. www.qchp.org.qa Published Date unknown. Accessed December 2014.
19. Federation Internationale Pharmaceutique (FIP). 2012 FIP Global Pharmacy Workforce Report. <http://www.fip.org/static/fipeducation/2012/FIP-Workforce-Report-2012/m/index.html#/page/1> Published 2012. Accessed December 2014.
20. Azhar S, Hassali M, Taha A, Khan SA, Murtaza G, Hussain I. Evaluation of the Perception of Community Pharmacists Regarding their Role in Pakistan's Healthcare System: A Qualitative Approach. *Trop J Pharm Res.* 2013;12(4):635-39. Published August 2013. Accessed December 2014.
21. Kheir N, Zaidan M, Younes H, Hajj ME, Wilbur K, Jewesson PJ. Pharmacy Education in 13 Middle Eastern Countries. *Am J Pharm Educ.* 2008;72(6):133. Published Dec 15, 2008. Accessed December 2014.