CHAPTER 13

Pharmacy Practice in Palestine

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Chapter Outline

1. Country background

The occupied Palestinian territories (OPT) are a small area in the Middle East, west of the Jordan River.[1,2] The two geographical areas that make up the OPT are the West Bank (including East Jerusalem) and the Gaza Strip. The Israeli occupation of these territories started after the Six-Day War in 1967.[1] The international community has denied the Israeli occupation of the Palestinian territories and uses the phrase OPT to describe them.[3] Parts of the OPT came under the legal and political control of the Palestinian National Authority (PNA) after the Oslo Accords in 1993.[2] Israeli occupation and its full military control are still present in 61% of the West Bank (Area C). As of this writing, parts of the West Bank area are under the control of the PNA, while the Gaza Strip split from the Palestinian Authority in 2007 after the internal conflict between different Palestinian parties. From 1948 until 1967,

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the West Bank was under the control of Jordan, and the Gaza Strip was under the control of Egypt, although limited authority had been exercised in Gaza by the All-Palestine Government from September 1948 until 1959. Before 1948, the West Bank and Gaza Strip were part of Mandatory Palestine under British governance, formed in 1922. According to the Palestinian Central Bureau of Statistics, the total number of Palestinian people in 2011 was 4,168,858. Gender distribution is as follows: 50.8% are males and 49.2% are females. Age distribution shows that 2.9% of the Palestinian population is above 65 years of age.[1] In 2011, the reported natural increase in population, crude birth rate, and fertility rate were 2.9%, 29.1/1000, and 4.3, respectively.[4] Almost all Palestinians belong to one ethnic group, which is Arabic ethnicity. According to World Bank data, the gross domestic product (GDP) for the West Bank and Gaza Strip was US$11.26 billion in 2012, while the GDP growth rate was –4.4% and the rate of inflation was 2.8% in 2009.[5]

2. Vital health statistics

The health status and health services in Palestine were discussed in detail in a series of publications in the journal *Lancet* by a public health research team at Birzeit University[2] as well as by the annual health report published by the Palestinian Ministry of Health (MOH).[6] Many fatal and disfiguring infectious diseases such as schistosomiasis, leprosy, diphtheria, plague, poliomyelitis, and rabies have been eliminated from Palestine. Few cases of other infectious diseases, such as meningococcal meningitis, brucellosis, HIV/AIDS, hepatitis, tuberculosis, diarrhea, and pneumonia, are still present in Palestine. Immunization coverage is close to 100% in Palestine.[7]

The major health burden in Palestine is the noncommunicable diseases, such as cardiovascular diseases, hypertension, diabetes, and cancer. In 2006, the rate of reported hypertension and diabetes was higher than 10%.[4,8] Cross-sectional studies done in Ramallah governorate showed a rate of diabetes mellitus between 9.8 and 12% at ages 30–65 years.[9–11] In 2011, the cancer incidence rate was 64.2 per 100,000 of population, with breast cancer ranking first, followed by colon and stomach cancer. Reports from the MOH showed that the rate of cancer incidence and mortality is on the rise.[6]

According to the Palestinian MOH, there has been a progressive decline in the crude death rate over the years. The crude death rate in 2011 was 2.6 and 2.7 per 1000 of population in the Gaza Strip and West Bank, respectively. In 2011, the infant mortality rate was reported to be 18.8 per 1000 live births. The top leading causes of death in the West Bank as reported in 2011 were cardiovascular diseases followed by cancer and cerebrovascular diseases.[6]

3. Overview of the health care system

The key player in health services in Palestine is the Palestinian government through the MOH. Many pharmaceutical departments are available within the MOH to ensure the enforcement of MOH laws and legislation and to enhance the quality of pharmaceutical services provided to patients. These departments are the Dangerous Drugs Department, Drug Control Department,

Table 1: Numbers of health personnel in Palestine[1]

Specialty	Palestine	Ministry of Health
Physicians	8093	3124
Dentists	2117	285
Pharmacists	4084	412
Nurses	7010	3572
Midwives	577	284

Drug Import and Export Department, Pharmaceutical Policy Department, Quality Control Department, and Drug Registration Department.[6] All these departments work hand in hand to control the drugs available on the Palestinian market and to monitor all practices by pharmaceutical institutions. Therefore, this would protect patients and enhance the quality of all the services provided to them. Other major providers of health in Palestine include the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), Palestinian nongovernmental organizations (NGOs), Palestinian Military Medical Services (PMMS), and private for-profit organizations. The bulk of health services and health expenditures are provided by the Palestinian MOH through 458 primary health care centers distributed throughout Gaza and the West Bank. The international refugee agency UNRWA operates 102 primary health care centers that provide free medical services to Palestinians in refugee camps in Gaza and in the West Bank.[12] The NGO sector operates 206 primary health care centers and general clinics, while the PMMS operates 23 primary health care centers and clinics distributed through different districts in the West Bank and Gaza Strip.[6] There are 81 governmental hospitals in Palestine. The total number of beds in governmental and nongovernmental hospitals is 5414, with an average of 13 beds per 10,000 inhabitants.[1] The majority of these beds are general, while less than 25% of beds are specialized.[6] Overall, there are 4048 licensed pharmacists, 8093 physicians, and 7587 nurses and midwifery personnel in Palestine. This means that there are 10 pharmacists, 20 physicians, and 18.7 nurses per 10,000 population in Palestine.[13] Table 1 shows the number of health personnel in Palestine as reported in 2011.[1] According to the National Health Accounts 2000–2008 report published in 2011, Palestinian health expenditures increased from 400 million New Israeli Shekels (NIS) in 2000 to NIS900 million in 2008 (US$1.00 = NIS3.58 in 2008). In addition, according to the same report, the health expenditure percentage of the GDP increased from 9.5% in 2000 to 15.6% in 2008.[14]

4. *Medicine supply systems and drug use issues*

In Palestine there are five manufacturers of drugs for human use, which cover approximately 50% of the local pharmaceutical market. All five are in the West Bank; one was in the Gaza Strip, but it is no longer functioning owing to Israeli restrictions on goods allowed to enter Gaza. The major Palestinian pharmaceutical companies are Quds Pharmaceuticals (Jepharm), Birzeit Pharmaceuticals, Beit Jala Pharmaceuticals, and Pharmacare Pharmaceuticals.[15] The Paris Protocol and joint Customs Envelope, which outlined the economic relations between Israel and Palestine, have

many implications for the Palestinian pharmaceutical market. The joint Customs Envelope has maintained free one-way flow for Israeli manufacturers as well as foreign companies licensed in Israel into the Palestinian market.[16] These agreements have resulted in a deterioration of the Palestinian pharmaceutical industry. Furthermore, the joint Customs Envelope has contributed to the developing Israeli pharmaceutical market and deteriorating Palestinian pharmaceutical industry by applying Israeli standards on importing and exporting pharmaceutical products and raw materials to and from Palestine. Palestinian manufacturers have to obtain a license and approval from Israeli authorities prior to importing or exporting drugs to or from Palestine.[17] Therefore, to import drugs from any country, a Palestinian agent has first to register the products in Israel. This has resulted in the absence of cheap generics from China, India, or Eastern Europe from the Palestinian market, since Israel registers products mainly from Western countries. In addition, this has resulted in the loss of the neighboring markets in Israel and in the Arab countries. Israeli delegates have to visit the manufacturing institutions as a requirement of the registration process. However, Israeli inspectors refuse to inspect Palestinian pharmaceutical companies owing to security reasons. In addition, Arab countries refuse to send delegates to an occupied country.[16] Long procedures and restrictions for importing and exporting drugs and raw materials have presented real challenges for local manufacturers. The joint Customs Envelope also raised the prices of drugs in Palestine since Palestine was considered to be in the same socioeconomic zone as Israel, whereas in reality, there is a big difference in terms of socioeconomic level between Israel and Palestine. This has resulted in equal pricing of imported drugs from multinational companies in Palestine and Israel. Owing to the trade barriers mentioned earlier and the absence of real competition, the MOH procurement prices are 4.4 times higher than UNRWA prices and 7 times higher than the international procurement prices, with a total of US$105 million spent in 2005 on pharmaceutical products, which amounts to 20% of the MOH budget on health expenditures. It must be mentioned that medicines available in the public sector are bought through government tenders. Drug prices are normally higher in Palestine compared to the neighboring Arab countries.[18] The lowest generic product in the West Bank public sector was 4.5 times higher than that in countries with the same level of GDP, such as Syria. This has resulted in a high percentage of the Palestinian population being unable to afford medicines in the private sector, as around 47% of the population is below the poverty line. Drug prices are fixed throughout the country, by which a sticker obtained from the Palestinian Pharmacist Union is fixed on the medicine package indicating its price. Retail markups of medicines are regulated by the MOH in agreement with the Palestine Pharmacists' Association (PPA). An average of 25% markup is given to locally manufactured products and 10–15% is given to imported products.[18] Approximately 50% of the pharmaceutical market in Palestine is held by Israeli and foreign pharmaceutical companies. The major foreign pharmaceutical contributors are Teva and Novartis.

5. Overview of pharmacy practice and key pharmaceutical sectors

Modern pharmacies in Palestine began in the 1920s. Before then, pharmacy practice focused mainly on folk and traditional medicines through special shops, which continued to exist in

the form of herbalists. Among the first Palestinian pharmacists was Dr Fakhri Jdai, who started the pharmacy profession in Yafa in 1923.[19] In 1957, the Jordanian Pharmaceutical Association (JPA) was established with two operating centers, one in Amman and one in Jerusalem. Since both Jordan and the West Bank of Palestine were under Jordanian rule, Palestinian and Jordanian pharmacists had to register at the JPA to become licensed for work in the pharmacy profession. In 1973, and as a consequence of the physical separation of Jordan and Palestine by the Israeli occupation, a branch of the JPA located in East Jerusalem started functioning to serve Palestinian pharmacists and to organize the pharmacy profession in the West Bank. From the 1940s until the 1980s, most Palestinian pharmacists obtained their pharmacy professional degree from the American University of Beirut or Damascus University, or the University of Cairo. As of this writing, there is no published code of ethics for pharmacists in Palestine. Furthermore, there is no set of competency standards to evaluate pharmacists who graduate from different countries. The current Palestinian pharmacy legislation focuses on pharmacy and the pharmacist registration process, structure and area of the pharmacy premises, and controlled drug regulations.[20] However, the Palestinian legislation barely focuses on standard pharmacy practice. According to a 2011 health report, there were 4048 licensed pharmacists, at a ratio of pharmacists to population of 100:100,000. Of these, 412 were working in the governmental sector. There were approximately 1000 pharmacy technicians and assistants in Palestine. Most of them work in the private sector.[13]

6. Drug- and pharmacy-related regulations, policies, and ethics

The PPA is the organizational body of pharmacists in Palestine. This body was established in 1957 as a joint body with the pharmaceutical association in Amman, Jordan. The PPA has recently adopted new regulations regarding pharmacy practice, particularly those pertaining to establishing a private community pharmacy service. The regulations were set so that one community pharmacy per approximately 3000 inhabitants is permitted to be established. The regulations also include the physical specifications of the premises, whether it is a private community pharmacy or a drugstore. Such specifications include area, distance from nearest community pharmacy, and qualifications of pharmacist in charge. The PPA has a set of ethics upon which pharmacists' conduct should be judged. The General Directorate of Pharmacy in the MOH functions nationally to perform the following functions that address pharmaceutical regulations: marketing authorization/registration, inspection, import control, licensing, market control, quality control, medicine advertisement and promotion, clinical trial control, and pharmacovigilance. Registration of medicines in Palestine does not follow the mutual recognition mechanisms. Therefore, pharmaceutical products need to be registered before marketing. The number of registered pharmaceutical products in Palestine is approximately 7000 (http://pharmacy.moh.ps/index/RegisteredProducts/Language/ar). Regulations regarding governmental inspections of the pharmaceutical market and activities are also available. Inspection includes local manufacturers, public pharmacies and stores, private wholesalers, retail distributors, and pharmacies and dispensing points in health facilities.[13,21] There are also regulations pertaining to import of medicines. However, there are no regulations regarding inspection of

imported pharmaceutical products at authorized ports of entry. Pharmaceutical activities in Palestine require licensing from the Palestinian MOH. Licensing is granted for importers, wholesalers, and distributors. Domestic and international manufacturers have to comply with good manufacturing practices (GMP) per governmental regulations. However, no regulations regarding good distribution or good pharmacy practice exist. Limited quality control testing for pharmaceutical products present in the Palestine market is available. Such limited testing is performed through collection of samples from the market by governmental inspectors.[22] It has been reported that 4% of the collected samples fail to meet the quality standards. Pharmaceutical promotion in Palestine is not regulated. Furthermore, there is no national code of conduct concerning advertising and pharmaceutical promotion. Regarding controlled medicines, morphine, fentanyl, and pethidine are the most commonly reported controlled medicines in Palestine.[23] Although Palestine is a signatory of several international conventions regarding narcotic drugs, there are no laws regarding the control of narcotics and psychotropic drugs.[23]

7. Core pharmacy practices

7.1 Hospital pharmacy

There is no documented history of hospital services in Palestine. However, based on personal communications with senior physicians, it is believed that hospital services in Palestine started as early as 1900 in some major cities in Palestine, such as Yafa. The current status of hospital services in Palestine is shown in Table 2.[1]

As of this writing, all hospitals have a pharmacy department; however, very few offer clinical pharmacy services inside the hospital. Actually, hospital pharmacy in Palestine is not a well-defined subsection of pharmacy practice. Hospital pharmacy is seen mainly in governmental hospitals. Such hospital pharmacies have a small window for dispensing medications for in- and outpatients. No or limited patient counseling or pharmaceutical care services or pharmacy research activities are performed by hospital pharmacies in Palestine. Furthermore, compounding activities are very limited and pharmacists try to avoid compounding, especially in chemotherapy preparations. Nurses are more involved in chemotherapy preparation than pharmacists in the Palestinian governmental hospitals. Several projects have been carried out to upgrade such activities, including the rational drug use project funded by the French Agency. The rational use of medicines project funded by the French government focused on training governmental pharmacists, including hospital pharmacists, on rational drug use and chemotherapy preparation.[24]

7.2 Industrial pharmacy

Industrial pharmacy in Palestine has witnessed a great advancement in the past 20 years. Table 3 shows the list of current pharmaceutical manufacturers in Palestine with their year of establishment.[1] Palestinian pharmaceutical companies have obtained local certificates of ISOs and GMP.[13] Pharmacare, Birzeit-Palestine, and Jerusalem Pharmaceutical companies have

Table 2: Number of hospitals in Palestine and indicator of hospital quality as reported in 2011[1]

Indicator/Palestine, 2010	Palestine	Ministry of Health
No. of hospitals	76	25
Population/hospital ratio	53,268	161,936
No. of beds	51,105	3.002
Population bed ratio	807	1349
Beds per 10,000 population	12.6	7.4

Table 3: List of pharmaceutical companies in Palestine

Company	Location	Year Established
Jordan Chemical Laboratory	Beit Jala/Bethlehem	1968
Jerusalem Pharmaceutical Company	Al-Bireh/Ramallah	1969
Birzeit-Palestine Pharmaceutical Company	Birzeit/Ramallah	1973
Pharmacare	Beitunia/Ramallah	1986
Medical Arab Supply Company	Gaza	1981

succeeded in exporting medicines to Africa, Europe, and Russia. Most pharmaceutical manufacturers in Palestine lack research and development as well as discovery of new drug entities. Furthermore, Palestine lacks manufacturing capabilities of pharmaceutical raw materials. However, all Palestinian pharmaceutical companies have the capability to produce formulations and repackage finished dosage forms.

7.3 Community pharmacy

Community pharmacy in Palestine is still traditional. There are approximately 1000 community pharmacies in West Bank and East Jerusalem. There are no chain pharmacies in Palestine. However, several trials were made to initiate such activity in the past. Most pharmacists working in community pharmacies in Palestine are graduates of Palestinian national universities. No professional development or continuing pharmacy education exists for community pharmacists in Palestine. Community pharmacies in Palestine are engaged mainly in dispensing medications, and most drugs, including antibiotics, are dispensed as nonprescription. Self-medication is common practice in Palestine, and in most cases, community pharmacists are the first-line health care providers for most people with minor aliments or for medical consultation.[25–27] According to regulations, all community pharmacies must have a laboratory area for compounding. However, compounding practices are very limited in Palestine.[28] Female pharmacists are dominating the scene in community pharmacies in Palestine. According to regulations, only pharmacists can own a community pharmacy and only those with no other full-time job are allowed and granted permission to own a community pharmacy.

7.4 Medicine marketing and promotion

Medicine marketing and promotion have witnessed great advancement since 2005. In the past, most medical representatives were chemists and biologists. Currently, there are hundreds of pharmacists working as medical representatives for local and international manufacturers. Medical representatives for foreign companies receive good training in pharmaceutical promotion and marketing compared to those working in local pharmaceutical companies. Promotion is mainly through free medical samples for physicians and scientific conferences and workshops held by a pharmaceutical association or physician association. For community pharmacists, promotion is made through the bonus policy, which creates a good profit margin. Prices of medicines in Palestine are fixed through an official label on the product. The most commonly dispensed drugs in Palestine are antibiotics and analgesics.[29] Most expensive drugs, such as chemotherapy drugs, are available through medical insurance from governmental pharmacy services.

8. Special pharmacy-related services and activities

In 2006, An-Najah National University established the first poison control and drug information center (PCDIC) in Palestine. The PCDIC was established by Dr Ansam Sawalha, who is a pioneer in toxicology and poisoning.[30] The center is run by clinical toxicologists, pharmacists, and researchers.[31] The PCDIC offers free telephone services both to the public and to the medical community. The PCDIC is the first and only specialized center in Palestine that offers such services. During its first years of establishment, the PCDIC received thousands of calls regarding medical poisoning and emergency treatment of such cases. The center is also engaged in clinical toxicology research and pharmacoepidemiology activities. The PCDIC is also working on improving awareness regarding toxic and hazardous materials through its annual poison prevention week held each April. The PCDIC is run by a clinical toxicologist and a group of consultants in the fields of pharmacology and pharmacy, herbal specialists, clinical pharmacists, pediatric specialists, and others.[30] In Palestine, there is no specialized pharmacovigilance center or adverse drug reaction (ADR) advisory committee. However, the Palestinian MOH has developed an official standardized form for reporting ADRs. No database is available nationally or at the MOH level pertaining to ADR data.

Research in pharmacy practice in Palestine was initiated by a group of researchers at An-Najah University. The group has published many articles in the field of pharmacy practice, pharmacy education, clinical pharmacology/toxicology, and public health. However, research in pharmacy practice in Palestine still needs more efforts to reshape the profession in the future.

9. Pharmacy education

Pharmacy education in Palestine started in the mid-1990s (Table 4). The initiative to start pharmacy education in Palestine was begun in early 1990 at An-Najah National University in Nablus and Al-Azhar University in the Gaza Strip. As of this writing, there are four

Table 4: Pharmacy programs offered in universities in Palestine[32–36]

University Name	Faculty Name	Year Established	University Type	Pharmacy Degrees Offered	Curriculum–Credit Hours
Al-Azhar University–Gaza	Faculty of Pharmacy	1992	Public, nonprofit	• Bachelor in Pharmacy. • M.Sc. in Pharmacy in all the above majors. • M.Sc. in Clinical Nutrition	B.Sc. 170
An-Najah National University–Nablus	College of Medicine and Health Sciences/ Department of Pharmacy	1994	Public, nonprofit	• Bachelor in Pharmacy. • Doctor of Pharmacy • M.Sc. in Pharmacy in Pharmaceutical Sciences • M.Sc. in Clinical Nutrition	B.Sc. 170 PharmD 240
Birzeit University–Birzeit	Faculty of Nursing, Pharmacy, and Health Professions	2009	Public, nonprofit	• Doctor of Pharmacy	210
Al-Quds University–Jerusalem	Faculty of Pharmacy	2002	Public, nonprofit	• Bachelor in Pharmacy.	172
Hebron University–Hebron	College of Pharmacy & Medical Science	2010	Public, nonprofit	• Bachelor in Pharmacy.	172

universities in the West Bank that offer pharmacy education and one in the Gaza Strip. An-Najah National University (established in 1994), Al-Quds University (established in 2002), Birzeit University (established in 2010), and Hebron University (in the process of starting a pharmacy program) all have pharmacy programs. The program in the Gaza Strip is at Al-Azhar University.[32–36] Table 4 shows a list of universities in the West Bank, year of establishment, types of pharmacy degrees offered, and number of credit hours in their pharmacy curriculum.[32–36] Prior to 1994, most pharmacists working in the West Bank studied and were trained outside Palestine, mainly in Jordan, Syria, and Egypt. The four pharmacy schools in the West Bank have a 5-year bachelor of science (B.Sc.) program, which requires the completion of at least 10 full semesters with a total of 163–176 credit hours and 1440 h of training at community pharmacies, hospitals, or industry. Birzeit University has a pharmacy doctor program and does not have a B.Sc. degree in pharmaceutical sciences. An-Najah University has B.Sc. in pharmacy and PharmD programs. Most students in colleges of pharmacy in Palestine are females. In general, students who enroll in the B.Sc. 5-year program study basic sciences such as mathematics, chemistry, and physics in the first year of

study. During the following 4 years of study, pharmacy students take biomedical and pharmaceutical courses. All pharmacy students in Palestinian universities are required to finish a total of 1444 practical hours in any pharmacy settings before graduation. The language used in teaching in all pharmacy programs is English. The College of Pharmacy at An-Najah University is being restructured to be a division of the College of Medicine and Health Sciences. The PharmD program at Birzeit University is structured to be part of the College of Nursing, Pharmacy, and Health Sciences. The other colleges of pharmacy in Palestine exist as independent colleges. The concept of department is being remodeled at the pharmacy program at An-Najah University with three general departments: pharmaceutical technology, clinical pharmacy, and pharmaceutical chemistry. At Al-Azhar University, they have departments similar to those at An-Najah University in addition to a pharmacology/toxicology department. The other programs of pharmacy in Palestine have no well-defined departments.[20]

The PharmD program at An-Najah National University awards the doctor of pharmacy degree after the completion of 48 weeks of clinical training consisting of 8 consecutive 6-week rotations in various medical specialties such as pediatrics, internal medicine, and surgery at governmental and private hospitals as well as at Najah teaching hospital. This program started in 2006 with the objective of introducing a new clinical component to pharmacy education and practice in Palestine. The program was designed to meet the increased need for high-quality hospital-based pharmacy services in Palestine. An-Najah University also has a graduate clinical pharmacy program that offers a master's of science (M.Sc.) degree in clinical pharmacy after the successful completion of theoretical and practical courses consisting of 36 credit hours and 36 weeks of clinical rotations. The M.Sc. clinical pharmacy program started in 2003 as a joint program with the Palestinian MOH with the objective of improving clinical pharmacy services at the MOH. An-Najah National University has started a graduate program in pharmaceutical sciences with emphasis on various pharmacy disciplines.[20]

All pharmacy graduates from the national universities can register with the PPA and get their practice license without sitting for any exam. On the other hand, all pharmacy graduates from universities outside Palestine have to sit for written and oral exams in the PPA prior to getting a license to practice pharmacy services in Palestine. According to current regulations and laws implemented by the PPA and MOH, continuing pharmacy education is not mandatory and there are no relicensure procedures.

10. Achievements

Definitely, the presence of several colleges of pharmacy in Palestine has provided the Palestinian community with a qualified number of pharmacists who initiated several pharmaceutical services that were lacking in the past. In the field of education, the introduction of PharmD programs and graduate programs in clinical pharmacy and pharmaceutical sciences has advanced pharmacy practice in Palestine. Research in Palestine was led by a group of pharmacists who helped in starting clinical and basic research in Palestine.

Palestinian pharmaceutical manufacturers have increased their share of the market with time, while the share of imported medicines has started to decrease. This was achieved through continuous development of pharmaceutical manufacturing in Palestine.

The pharmaceutical services in the Palestinian government have also advanced in the past 10 years. The development of an updated essential drug list, Palestinian National Formulary, and therapeutic protocols were all published and nationally discussed. Advancements in poison control and management have been seen since 2005 and were led by a group of pharmacists particularly.[30,31]

11. Challenges

Owing to the political instability of the country and the low level of available resources, both public health institutions and pharmacists face many challenges.

For public health institutions it is difficult to maintain a good level of pharmaceutical services provided to patients, difficult to have long-term plans for pharmaceutical services, and difficult to expand the pharmaceutical services to certain Palestinian areas that are under full Israeli control. In addition, pharmacy graduates have great challenges in terms of choosing their career. Owing to the presence of many Israeli colonies surrounding the Palestinian cities in the West Bank, it is very difficult to expand the areas of residence in these cities. Thus pharmacy graduates who mainly prefer to work in the community setting, which provides them more freedom and is more profitable in that they can sell over-the-counter and prescription drugs, medical supplies, and cosmetics, have to work within limited areas in their cities. This has caused the presence of a saturated market for pharmacy graduates. Graduates have the options of working in the industrial field mainly as medical representatives or continuing their M.Sc. or Ph.D. studies or leaving the country and working overseas. As of this writing, new graduates in the West Bank cannot open their own community pharmacies immediately. First they have to register their applications in the PPA and wait until their turn comes. The queue might take several years. Therefore, practice options are limited for pharmacy graduates in the West Bank. Creation of jobs in hospitals and clinical settings might decrease the pressure on new graduates.

On the other hand, owing to the presence of the Gaza Siege, the recurrent Israeli attacks on Gaza, the split between the PNA in the West Bank and the Hamas Party in the Gaza Strip, as well as the difficulty for residents in the West Bank to visit the Gaza Strip and vice versa, it is very difficult to define and evaluate the actual practices for pharmacists and pharmaceutical institutions in the Gaza Strip. In the Gaza Strip, Hamas has its own government, which sets the regulations and has control over all practices in the Gaza Strip. Trade barriers forced by Israel on Palestinian manufacturers present a real challenge to them in that they are forced to get permissions and licenses for every shipment in and out of Palestine. In addition, limited markets and high operating costs are main barriers for their development.

At the educational level, the pharmacy curriculum, particularly the PharmD curriculum, needs to be upgraded to international standards to pursue international accreditation. All pharmacy programs in Palestine have local accreditation only and in most cases the curriculum is based on an individual vision rather than global or international vision for pharmacy education and practice. Relicensure and continuing professional development of Palestinian pharmacists remain the most debatable future issues and the real future challenge in the pharmacy profession in Palestine.

Finally, research in pharmacy needs to be focused on social and professional issues related to pharmacy practice. Although several articles have been published from Palestine in the fields of social pharmacy and pharmacy practice, the current vision and research in pharmacy in Palestine are centered on traditional chemistry research and herbal-based chemistry research.

12. Recommendations

All parties involved in the pharmacy profession must combine their efforts to promote pharmacy practice and pharmacy education in Palestine. The presence of five colleges of pharmacy in Palestine has led to a higher number of pharmacy graduates who are currently facing serious employment problems given the limited opportunities for pharmacists both in government and in the private sector. The Palestinian pharmaceutical association needs to upgrade and reshape the pharmacy profession by adopting modern patient-oriented pharmacy practices instead of the business-oriented practices. Both An-Najah and Birzeit universities need to pursue international accreditation for their PharmD programs. Laws and regulations regarding the pharmacy profession need to be revisited and upgraded. For example, laws and regulations regarding chain pharmacies need to be discussed at all levels and approved by the pharmaceutical association and MOH. This is an important step owing to the financial restraints and the limited opportunities for most pharmacists to start a new independent pharmacy business. Research in clinical pharmacology, pharmacoepidemiology, and drug utilization is highly required to obtain baseline data on the drug situation in Palestine. Continuing pharmacy education and professional development must be part of the relicensure requirements. Finally, universities and the MOH should work together to establish clinical pharmacy residency programs to create needed clinical pharmacy specializations.

13. Conclusion

Pharmacy practice in Palestine is still progressing. Continuing pharmacy education is needed to upgrade pharmacists and pharmacy services in Palestine. Pharmacy education needs better organization to meet international standards. Clinical pharmacy services are still primitive and collaboration with the pharmaceutical association and MOH is required to implement such services.

14. Lessons learned

1. Regulation regarding many aspects of pharmacy practice are required.
2. Pharmacy education and research need to be coordinated and upgraded.
3. Clinical pharmacy services need to be implemented.
4. Professional pharmacy development is highly needed.
5. Collaboration between industry, community, government, and universities regarding pharmaceutical services is needed.

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