

**PHARMACY LAW AND ETHICS**

**PHAR324**

***Pharmacy Historical Role VS. Current Global Role of Pharmacist & Pharm D***

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**The Ancient Pharmacy**

Drug is any substance that used for treatment or diagnosis of a disease, so we can say that primitive man used drugs to relieve pain of a wound by using of cool water or mud.

Early humans learned by experience that certain therapy was more effective than others and from these beginnings came the practice of drug therapy.

Among many early races, disease was believed to be caused by the entrance of demons or evil spirits into the body. The treatment was by removing spirits by the use of spiritual incantations.

The wise man of the tribe was responsible for preparing the remedy for sick people and it was usually by the administration of herbs and plant materials.

Pharmacy and medicine were indistinguishable in their early history. Then with the increasing diversity of drugs, pharmacy required special knowledge and skills. And the first pharmacy opened in Baghdad.

An example of the long history of pharmacy is that more than 800 prescription and more 700 drugs were mentioned in the Egyptian papyrus.

**Pharmacy Today & Pharmacist**

**History of modern Pharmacy**

Pharmacy has been separated from medicine, and became specific science which is learned and studied by specialized people.

In 1950, pharmacy focused on studying drug composition and drug properties. In later stages, the focus was on the pharmaceutical formulation on conjunction with physical pharmacy and pharmaceutical technology, and the drug activity and design.

In 1996: the attention was on biology. Pharmacokinetics and drug equivalent have appeared. In later stages, the interest was more on the patient which lead to the appearance of the clinical pharmacy.

**Pharmacy Science:** (pharmacy from (pharmacon), which is a Greek word), is the since that is specialized in studying drugs and its properties (chemical, physical, and biological) and composition, the best way to use, and everything is related to them e.g. manufacturing, storing…

The main aim of pharmacy: to ensure that patient has taken the best treatment, with the appropriate use of it.

Pharmacy is related to other sciences like biology and chemistry and based on anatomy, physiology, biochemistry and pharmacology.

**Pharmacist**

Pharmacist: is a member of the health care team. He /she is specialized in pharmacy and use its knowledge in order to prepare and dispense drugs for patients.

The pharmacist is every person that has a bachelor degree in pharmacy sciences, and has finished the practice in one of the pharmaceutical institution and has a license to be a pharmacist.

**Responsibilities & Jobs of Pharmacists**

The pharmacists are responsible of:

* Safeguarding drug purity, quality, and strength.
* Ensuring medicine supply within law.
* Dispensing medication, assuring the safety and the appropriateness of the prescribed therapy.
* Monitoring patient health and progress to achieve the best medication results.
* Partnering with consumers and patients to provide education and advice on the use of prescription and over the counter (OTC) medications, including how to take them, what reactions may occur and answering patients’ questions.
* Collaborating with physicians, nurses and other members of the health care team to provide expertise on drug decisions and improve patient outcomes.
* Respond to patients’ signs and symptoms.
* Provide services to patients, such as smoking cessation, blood pressure measurement, blood glucose measurement and cholesterol management.
* Supervise the production and preparation of medicines before they are supplied to patients.

**The Working Environment of Pharmacists:**

Pharmacists work in many different work environments. These include:

* Community Pharmacy: street pharmacy, the pharmacy in towns, cities and shopping moles. The pharmacist in it:

 \*\* Provides advice and counseling to patients

 \*\* Dispenses prescriptions

 \*\* Sells pharmacy\_ related products.

* Hospital Pharmacy: the pharmacy department in hospitals. The pharmacist

 \*\* Looks after the pharmaceutical needs of patients in the hospital.

 \*\* Provides information on medicines to doctors and nurses.

 \*\* Prepares special medicines for particular patients.

* Industry: in the manufacturers. The pharmacist is responsible of:

 \*\* Research and development of new medicines.

 \*\* Production and synthesis of proven medicines to the public.

 \*\* Formulation, product information and marketing.

Other places may work in it :{ Prisons, Primary care organizations, Universities in teaching and research, Military, Veterinary pharmacy, Pharmacy organizations, Publishing, Ministry of health and government agencies}.

**Doctor of Pharmacy & PHARM D. Program**

There are many questions strike in our minds when we hear about **doctor of pharmacy program**. What is this program? Its curriculum, its careers and working areas, and the differences between it and doctors and pharmacists?

Recently the career of pharmacy has changed a lot. It begins to take the form of business rather than the health form. The job of pharmacist became to dispense prescription and drugs versus a price, without counseling or even advising the patient and taking the health care of him/her. So it was important for the **pharmD** program to appear, to give the best medicinal treatments, lowers the direct and indirect medicinal expenses and provides the highest state of the health care.

**Doctor of pharmacy:**

The doctor of pharmacy is an academic degree that is given by the colleges of pharmacy. It focuses on the clinical side in the pharmaceutical practice, so it focuses on the patient health.

The person that has a degree in doctor of pharmacy is called a "clinical pharmacist" who follows up the patients' situations, the medicinal doses of the drug, the drugs interactions, and coordination with doctors in order to provide the best use of drugs.

**The history of doctor of pharmacy program:**

PharmD program began in the USA in 1960s. In 1990, all the pharmacy schools in the American universities give just doctor of pharmacy degree.

Then this program appeared in some of the development countries like: Canada, France, Australia, Portugal, Kuwait, Qatar, Saudi Arabia, Egypt and others. In 2002, the program appeared in the pharmacy school in science and Technology University in Jordan, within the same period, the program began to be studied in Palestine, first in Al-Najah national university, then in Birzeit University.

**The curriculum of pharmD program**:

The student gets a degree in doctor of pharmacy after finishing certain number of hours (210 hrs in Palestine) in 6 years, divided into three domains:

**First**: theoretical and basic sciences like: pharmacology, pharmaceutics, pathology, anatomy and physiology.

**Second**: practicing in pharmacies (community and hospital pharmacies) for at least two months. So the student gets the skill of communication with patients, the knowledge of the pharmaceutical forms of drugs, the drug companies and their stores, and the trade names and generic names of drugs.

**Third**: the clinical practicing in hospitals in the last year. In this section, there are compulsory and selective departments, and it differs from one collage to another.

**The responsibility and jobs of pharmD:**

1-To choose the best treatment for the patient: the appropriate drug, its pharmaceutical form, the appropriate root of administration, the number of doses and the duration of treatment.

2- To communicate with doctors in order to give the most appropriate drugs, also educating the patient and advising him/her in what related to his/her drugs.

3- To work with the doctor in order to give the suitable treatment plan for each patient during the treatment period. This includes the supervision on patient to ensure that the patient takes the drug in the right time and right way. Also measure the concentration of some toxic drugs in the blood and other body fluids to make sure of the drug activity and prevent the toxicity. In addition, follow up the problems that may arise upon the use of the drug, such as drug interaction, side effects, sensitivity and drug toxicity.

4- Provide the medicinal information for the clinical team and the audience, beside the educational programs frequently.

5- To be a member in the medicinal committee in the hospital.

6- To participate in the studies and researches those are related to diseases and drugs.

**Where does Doctor of Pharmacy work?**

1. Clinical departments of hospital
2. Hospital pharmacy or community pharmacy
3. drug research and development
4. WHO
5. Food and drug administration (FDA).

**Some challenges stand in front of the real practicing of clinical pharmacy:**

1. The health care legislations don't keep up with the new role of the clinical pharmacist.
2. The unacceptance of the Pharm-D from the doctors.
3. There is no realization from the hospitals for the role that is offered by the doctors of pharmacy.
4. The ministry of health doesn’t keep up with the developments that occur in clinical pharmacy. That's by the unemployment of the clinical pharmacist (Pharm-D); there is no compulsion on hospitals to provide clinical pharmacy services, or even creation clinical pharmacy departments in hospitals.

**فوائد وجود الصيدلاني السريري:**

وجود صيدلاني سريري يؤدي إلى حصول المريض على أفضل النتائج العلاجية، وذلك لأنه يُجنب المريض أخذ أدوية غير مناسبة لحالته والتي تزيد من احتمالية حدوث الأضرار الجانبية وارتفاع تكلفة العلاج.
هناك العديد من الدراسات التي أظهرت مدى تأثير الأخطاء الدوائية على الخطة العلاجية، والأخطار الناجمة عنها، بينما أظهرت دراسات أخرى أهمية الدور الذي يؤديه الصيدلاني السريري سواء من الناحية المادية أو الصحية، ومن هذه الدراسات:

1) في الولايات المتحدة الأميركية يموت ما يقارب 44،000 إلى 98،000 شخص سنوياً بسبب الأخطاء الدوائية التي يتم ارتكابها والتي كان من الممكن منع حدوثها، وقد تجاوز هذا الرقم عدد الوفيات الناتجة عن حوادث السيارات.
2) في العام 1999م في مستشفيات الولايات المتحدة قُدرت التكلفة الناتجة عن الأخطاء الدوائية، والتي كان من الممكن منع حدوثها، ما يقارب 2 بليون دولار.
3) في الولايات المتحدة الأميركية العام 2000م، كانت التكلفة الإجمالية لمعالجة المشاكل الصحية التي سببها الاستخدام الخاطئ للأدوية حوالي 177.4 بليون دولار.
4) بينت إحدى الدراسات التي ضمت حوالي 1000 مستشفى طبي أن وجود الصيدلاني السريري قد حَسن وبشكل ملحوظ النتائج العلاجية، ووفر ما يقارب 5 بليون دولار سنوياً، بالإضافة إلى الحفاظ على حياة 40،000 شخص في كل عام.
5) في العام 2008م في مستشفى الملك في الاردن، وبعد فتح قسم للصيدلة السريرية (الذي يقدم خدمات صيدلانية لكافة أقسام المستشفى). بينت الاحصائيات ما يلي:

1. %79.8  من التوصيات التي يقدمها قسم الصيدلة السريرية في المستشفى تم تطبيقها من قبل الأطباء، ومعظم هذه التوصيات كانت بخصوص فعالية الأدوية، ومدى سلامتها على صحة المريض.
2. قلت التكلفة المالية على المستشفى بنسبة 7.2 % كنتيجة لإتباع التوصيات.
3. انخفض حدوث الأخطاء الطبية بنسبة 8.7 %.
4. تم تجنب التسمم الدوائي والأعراض الجانبية للأدوية بنسبة 12.7 %.
5. تحسنت النتائج العلاجية بمقدار 24.1 %.
6. زادت نسبة الاستفادة من فعالية الأدوية بمقدار 21.7 %.

وبالتالي فإن الفائدة من وجود الصيدلاني السريري لا تقتصر فقط على توفير النقود، وإنما تمتد للحفاظ على حياة المرضى وصحتهم، والتي في كثير من الحالات لا تقدر بثمن.

قريبا ستدرك المستشفيات و مؤسسات الصحة أهمية الدور الذي يقوم به الصيدلاني السريري، ونتمنى أن يتم في المستقبل القريب العمل بإنشاء أقسام للصيدلة السريرية في مستشفيات فلسطين.

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