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Course Content:

(CONTENTCREATOR/TEACHER)

UNIT	CONTENTS
UNIT-1	Historical background and development of profession of pharmacy: History of profession of Pharmacy in India in relation to pharmacy education, industry and organization,

Historical background and development of profession of pharmacy:

Definition: Pharmacy Greek word of Pharmacy is called (**PHARMAKON**) Pharmakon means drug or medicine. Pharmacy is defined as the profession which is concerned with the art and science of **Identification, Selection, Preparation, Preservation & Standardization** of suitable drug substances from natural and synthetic sources and their formulations which are meant for administration for Diagnosis, Prevention, and Treatment of diseases. Therefore, a pharmacist is a “*medicine or drug man*”. While the classes of professionals legally permitted to prescribe medications are physicians, dentists, veterinary doctors and senior registered nurses, pharmacists are required by law to be experts in the preparation, preservation, distribution, and handling of drugs. A health profession that links the health sciences with the chemical sciences, and it is charged with responsibility which ensures the safe and effective use of medication. Hence forth a pharmacist is the right person to look all these aspects because he is educated and trained for this job. They are experts on medication.

Prehistoric Medicine links to Spirit World

The history of pharmacy is a recognized part of medical practice dating as far back as Sumer times, around 2,000 to 1,500 BC.(It mine BC Befour Christ) In which had list of animal, vegetable and mineral origin that were used in the management of diseases and prescriptions with details of the ingredients used in their compounding.

Chinese (2000 BC) – The Chinese believed that diseases resulted from the imbalance in forces acting on humans and animals, thus produced herbal drugs with “spiritual” effects. They were credited to be first users of podophyllum, rhubarb, ginseng, cinnamon etc. The text *Huangdi Neijing* listed the basic principles of pharmaceutical drugs in the third century BC.

Indian (800 BC) - the Indians art of healing is almost as old as the religion of hindiuism itself. Aurveda attained a state of reverence and is classified as one of the Upa-Vedas- a subsection- attached to the Atharva Veda, it also deals with the diseases, injuries, fertility, sanity and health. The main principle behind life or essence of all life forms was five elements of creation the pancha-maha-bhuta namely the earth, water, fire, air and ether form the basis. Out of these arise the three doshas namely Vata, pitta and kahpa. These three doshas unfortunately have been

crudely translated as air, bile and phlegm. The Ayurveda incorporates all forms of lifestyle in therapy. Thus yoga, aroma, meditation, gems, amulets, herbs, diets, astrology, color and surgery etc are used in a comprehensive manner in treating patients. The important contribution was by Charaka Samhita, Sushruta Samhita, Vagbhata.

Separation of pharmacy and medicine:

Pharmacy always existed, but not so for pharmacist. A person used to make diagnosis also provide medicines and he hired assistants to collect herbs for him and make preparation under his supervision known as pharmacopolae but they are not pharmacists.

Arabs were of thought that those who prepare medicines could do as independent profession. The first pharmacy shop was opened in Baghdad in 770 under Caliph Al-Mansour. Pharmacists don't have much that time knowledge of drug this situation was changed by Al Mamoon who ruled Baghdad from 813 to 833 and pharmacist started acquiring professional education.

The profession of pharmacy was honourable called as Sayadilah (Arabic) and Sandaliin (Latin). They also pharmacy as pharmaceutical terms' (the collection of equipment and methods used in the practice of medicine), for the exchange of ideas as well as of goods between people from India, China and Spain that introduced many new drugs in the field of medicine. Arabs develop number of new drug delivery forms such as syrups, pellets, preserves, confections, marmalades.

History of pharmacy profession in India:

Pharmacy practice includes traditional practice of compounding and dispensing of medications.

History of pharmacy profession in India can be divided into three parts

1. Ancient history
2. Pre-independence
3. Post –independence

Ancient Pharmacy Profession:

In India the source of drugs were of vegetables, animal and mineral origin. They were prepared empirically by few experienced persons. Knowledge of that medical system was usually kept secret within a family. There were no scientific methods of standardization of drugs. The Ayurveda work on internal medicine whereas Sushruta-Samhita deals with surgical medicine. Charaka and Sushruta were physicians and pharmacists who studied more than 1000 herbs.

In Tamil Nadu during 900 AD (AD mins Anno Domini/ Common Era) discovered organized

practice of hospital activity for the treatment of patients with diseases. India, being rich in flora and fauna, wide variety of herb was mainly used to treat disease like jaundice, haemorrhage etc. British traders brought the practice of allopathic system to India in 15th century. The Indian system of medicine declined during the Muslim rule while the Arabic or the Unani-Tibbi system flourished.

Pre-independence Pharmacy Profession:

The first chemist shop was opened by Scotch Bathgate at Calcutta in 1811. The pharmacy activities were performed according to London Pharmacopoeia. This situation forced back traditional practice in India and compelled to import drugs from European countries.

- 1840- Goa medical college was started at Panjim
- 1841- Bengal Dispensatory and Pharmacopoeia was published
- 1870- The Madras Medical College were first to train the students to gain skills in pharmacy practice
- 1878- The Opium Act was implemented the dealt with cultivation of poppy and the manufacture, transport, export, import and sale of opium
- 1889- Indian Merchandise Act was implemented to avoid misbranding of goods in general
- 1894- Indian Tariff Act passed for levy of customs duty on goods including foods, drinks, drugs, chemicals and medicines import to India or export
- 1909- Bengal Excise Act was implemented

Pharmaceutical Education:

Pharmacy education in India traditionally has been industry and product oriented. In contrast to the situation in developed nations, graduate pharmacists prefer placements in the pharmaceutical industry. To practice as a pharmacist in India, one needs at least a diploma in pharmacy, which is awarded after only 2 years and 3 months of pharmacy studies. These diploma-trained pharmacists are the mainstay of pharmacy practice. The pharmacy practice curriculum has not received much attention. In India, there have been number of institutions offering pharmacy degrees at various levels and a practice-based doctor of pharmacy (Pharm D) degree program was started in some private institutions in 2008. However, relatively little information has been published describing the current status of complex pharmacy education of India.

D Pharm Program:

In India, higher secondary study is concluded by a terminal examination, the higher secondary examination, at the end of 12 years. Admission to the first year D Pharm program in any government college is based on performance on the higher secondary examination. However, private colleges have their own admission procedures that comply with the education regulations of the PCI. Students generally may choose to undertake the D Pharm program as their second or third choice, having been unable to obtain a place at the college in another degree program that was their first choice. The D Pharm curriculum is framed through the education regulations of the Pharmacy Act. The present education regulations framed way back in 1991 (ER91). The curriculum is the same throughout the country. In the 1990s, the efforts of the pharmacy council of India for upgrading the minimum qualification for registration from D Pharm to B Pharm failed due to lack of consensus.¹²

B Pharm Program:

Admission to the first-year B Pharm program is made directly from higher secondary school on the basis of marks obtained in the higher secondary examination or on the basis of a merit list rank prepared based on scores on an entrance examination administered by a state or individual institution. Administering an entrance examination as an admissions requirement is used mainly by public institutions. For example, admission to the first-year B Pharm of Banaras Hindu University (BHU) is made through the joint entrance examination (JEE) conducted by Indian Institutions of Technology (IITs), a group of 13 autonomous engineering and technology-oriented public institutes of higher education established and declared as institutes of national importance by the government of India.

M Pharm Program:

The criterion for entry to an M Pharm program is academic performance in the B Pharm or an entrance test or both. Currently, there is more demand for the M Pharm program than the availability of places in the country. An important criterion, a high Graduate Aptitude Test for Engineering (GATE) score, qualifies a student to receive government scholarship during the period of their M Pharm study. This criterion is optional for admission to the first-year M Pharm program. However, many public institutions require both past academic performance and GATE score for application to the M Pharm program.

Pharm D Program:

Admission to a Pharm D degree program is on the basis of successful completion of the higher secondary examination or the D Pharm program. Passing the higher secondary examination with physics, chemistry, and biology or mathematics entitles a student to enter the Pharm D program. B Pharm degree holders can join the Pharm D program in the fourth year.

Table 1. First 10 Pharmacy Colleges/Universities Offering Degree Programs in India

Year of Inception	Colleges/Universities	Category	Current Degrees Offered
1937	Department of Pharmaceutical Engineering, Institute of Technology, Banaras Hindu University, Varanasi	Central University	BPharm, MPharm, PhD
1944	University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh	State University	BPharm, MPharm, PhD
1947	L. M. College of Pharmacy, Ahmedabad	Private College	BPharm, MPharm, PhD
1950	Department of Pharmacy, Madras Medical College, Chennai	Medical College	BPharm, MPharm
1950	Birla Institute of Science and Technology, Pilani	Private University	BPharm, MPharm, PhD
1951	College of Pharmaceutical Sciences, Andhra University, Visakhapatnam	State University	BPharm, MPharm, PhD
1952	Department of Pharmaceutical Sciences, Dr. H.S. Gour University, Sagaur	Central University	BPharm, MPharm, PhD
1956	Department of Pharmaceutical Sciences, Nagpur University, Nagpur	State University	BPharm, MPharm, PhD
1958	Pharmaceutical Department, University Institute of Chemical Technology, Mumbai University, Mumbai	State University	BPharmSci, MPharmSci, PhD (Tech)
1963	Department of Pharmaceutical Technology, Jadavpur University, Kolkata	State University	BPharm, MPharm, PhD

Pharmacy education in India is regulated by 2 organizations: the Pharmacy Council of India (PCI), under the Pharmacy Act of 1948, and the All India Council for Technical Education (AICTE), which was established under the AICTE Act of 1987. As mentioned previously, the PCI makes regulations regarding the minimum standard of education required for qualification as a pharmacist. It is responsible for registration of persons fulfilling the prescribed eligibility criteria (minimum D Pharm) and issuing a license permitting them to practice in an Indian state. Registration activity is decentralized and the state pharmacy councils are responsible for registering pharmacists in their respective states. Thus, the PCI regulates the D Pharm program and the recently introduced Pharm D program. The B Pharm program needs to be recognized by the PCI for the qualifications to be accepted for registration purpose only. The PCI has no jurisdiction over M Pharm and other higher-level degree programs.

Indian Pharmaceutical Industry:

In 1930, in Calcutta the first pharmaceutical company called Bengal Chemicals and Pharmaceutical Works, which still is today as one of 5 government-owned drug manufacturers was started. The history of Indian pharmaceutical market in 1970s was almost non-existent. Today, India has gained immense importance and carved a niche for itself in the pharmaceutical domain. In fact, it has emerged as a big mart for the pharmaceutical industry. Formulations, bulk drugs, generics, Novel Drug Delivery Systems, New Chemical Entities, or Biotechnology, etc. Indian companies are dominating in the marketplace which was traditionally manned by MNC.

References:

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