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Community Pharmacy Practice in Pakistan: From Past to Present -A Review

Ayesha Javeed*[1] and khawaja Tahir Mahmood[2]
[1] *Mayo Hospital Lahore, Pakistan*
[2] *DTL, Government of Punjab, Lahore*
*ayesha2022@gmail.com

Abstract
Pharmacy services in Pakistan have experienced both evolutionary and revolutionary changes since 1947. The pharmaceutical sector always remained regulated at different levels. The changes in legislation are also the contributing factor to uplifting of the pharmacy profession. The misuse and abuse of medicines remained a big issue at retail/ community level. Sale of medicines and this business remained in the hand of non qualified personnel for a long time. With time the pharmacists interest increased at community level and now the quality of services are improving but not up to the mark. While in comparison with the developed countries like U.K and U.S.A, where Community pharmacists are expanding patient care services and have enhanced their role as pharmaceutical care providers. The pharmacy profession in Pakistan is continuously evolving. The aim of this review is to explore history for evolutionary and revolutionary changes in community pharmacy practice in Pakistan and to highlight the current scenario in Pakistan. Pharmacists in Pakistan are concerned about their present professional role in the health care system. The healthcare services in community pharmacies, currently insignificant, must undergo reforms to meet the changing needs of modern medicines users. Although pharmacists' contributions to health care are not recognized yet, there is every reason to be optimistic toward making patient care in community pharmacy setting a success. For this, legislation must be reformed to give identity to the pharmacist and educational system for pharmacists has to be adapted.
Key Words: Community Pharmacy, Pharmacy Practice in Pakistan, Health System of Pakistan, Indo-Pak History of Pharmacy

REVIEW

BACKGROUND

To enjoy the highest attainable standard of "health" is a fundamental right of every human being [1]. Health is a broad concept that involves a Multidisciplinary Team of Health Care Providers to deliver optimum health care to the patient [2]. WHO in 1946 has defined health in its constitution as "Health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity [3].

Pharmacy practice takes place in a health care environment and it exists to serve the individual patients and the society to improve the overall quality of life of the patient [4]. Traditionally, pharmacy was regarded as a transitional discipline between the health and chemical sciences and as a profession that ensures safe use of medication [5]

HISTORY OF PHARMACY PROFESSION

For the history of pharmacy it is quite interesting to know the fact that the professional pharmacy was first started among Arabic population. The first ever drug stores in the world wide were established in Baghdad in 754 AD. The Arabs searched almost 2 thousand substances that they used to treat various health conditions. Even some of them are still in use to this date. The preliminary form of pharmacy spread later to Egypt, Ancient China and also to the Europe [6]. The second major finding in the history regarding pharmacy profession is that in 1683 B. Franklin legally stopped the practice of preparing drugs by the physicians of his hospital (Pennsylvania, America) and gave this job to a pharmacist [7]. Philadelphia College of Pharmacy in North America started a 2 years bachelor's degree course of pharmacy and later on this professional course was upgraded to 4 years. The degree awarded at that time was B-Pharm. In Europe, B.Sc. pharmacy was the first degree awarded to become professional pharmacists. This step in Europe was first taken by the Manchester University in 1904 [8]. The pharmacists started to involve in the direct patient care in America in the mid of the Nineteenth Century. In 1990, Helper and Strand defined Pharmaceutical Care as "the responsible provision of drug therapy to achieve definite positive outcomes that improves the patient quality of life". This caused an exemplary shift of pharmacy practice towards patient oriented services. [9]. Medication Therapy Management services were also evolved in the 1990s [10]. In the year 2001in U.K, the pharmacists supplementary prescribing was approved. In April 2006, the rights were extended to make pharmacists Independent Prescribers [11].

Recognition of pharmacy profession is worldwide. WHO recommends a ratio of 1 pharmacist for a 2000 population [12]. But the recognition of the pharmacy profession varies from country to country. The pharmaceutical services in developing countries face challenges unlike those in developed countries. Some major barriers to effective pharmacy practice

models in developing countries include shortage of qualified professionals (pharmacists) , separate dispensing practices not implemented, revision and upgrading of pharmacy curriculum is needed, lack of standard practice guidelines, and loopholes in the legislation etc. [13]. For example in Malaysia, doctors still dispense medication as well and this is a part of their routine professional practice [14] [15]. In African countries, the pharmacists' shortage is even worse [16]. In India the pharmacists training is more focused towards industrial sector [17]. Irrational use of drugs is common in developing countries [18].

PAKISTAN

A BRIEF OVERVIEW OF SOCIO-ECONOMIC STATUS OF PAKISTAN

Pakistan is the sixth most populous country in the world with a population of above 160 million (estimated). Punjab is the most populous province of Pakistan [19]. Though Pakistan made economic progress in the recent past but still this country is struggling to be able to maintain development [20]. The per capita income came to 812 U.S dollars in 2006 [21]. But almost 40 million people were living below national poverty line in 2004/5 [22]. As one of the most populous countries in the world the Pakistan faces many economic and social crises. However the presence of abundance natural resources in Pakistan can help it overcome these challenges [22].

HEALTH SYSTEM OF PAKISTAN - A BRIEF OVERVIEW

Under the Pakistani constitution, health is primarily the responsibility of provincial governments except in federally administered territories. The federal govt. is responsible for planning and formulating the national health policies [23].

Health care is provided through either Public or private sector in Pakistan. 70% of population seeks health care through private sectors that is a fee-for-service system [24]. Ministry of health is responsible for all matters of national planning and coordination in the field of health. The drugs control organization is a subsidiary of ministry of health. There is an enormous need of an integrated primary health care system in Pakistan. Health care reforms must be ensured and implemented with good governance and total quality management [25]

The following table shows some Health Indicators of Pakistan [26]

Health

Federal Government Expenditure on Health (2007-08)	
Development Expenditure	Rs. 14.272 billion
Current Expenditure	Rs. 3.791 billion
Health Indicators	
Infant Mortality Rate (IMR)(per 1000 persons)	76.7
Maternal Mortality Rate (MMR) (per 100,000 live births)	350
Under -5mortality rate(per 1000 persons)	101
Parasite Incidence of Malaria (per 1000 persons)	0.75
Incidence of TB (per 100,000 persons)	181
Fertility Rate (percentage)	4.1 (source: NIPS)
Contraceptive prevalence rate %	30 (source: NIPS)
Births attended by skilled persons %	19
Population growth rate	1.9
Total Population	159.06: million (source NIPS)
Health Services Delivery (2006-07)	
Total Health Facilities	13,937
Hospitals	965
Dispensaries	4,916
Basic Health Units	4,872
Rural Health Centers	595
MCH Centers	1,138
TB Centers	371
First Aid Points:	1,080
Beds in hospitals & dispensaries	105,005
Population per bed	1,515
Population to health facility ratio	11,413

HISTORY OF PHARMACY IN THE INDO-PAK SUBCONTINENT AND PAKISTAN

Pharmacy is one of the oldest known professions in the Indo-Pak subcontinent before its partition. Apothecary system was fanous where "Hakeems" (Apothecaries) practice and used to prescribe herbal remedies in the form of medicines or foods [27]. However talking in context of proper pharmacy profession, the historical records reveal that the first Pharmacy in the Indo-Pak Subcontinent was founded in 1863 by the Sheikh Nabi Bakhsh (Late). He opened a general store with a 'Medical Store' in Gujarat [28].

In Madras Medical College an initiative was taken by giving training to the students to get skills in pharmacy practice as well. In 1881 training of compounders started in Bengal, while the first ever Degree Course for Pharmacy was started in 1937 at Banaras Hindu University [27].

After the independence of Pakistan from British rule in 1947, the University of Punjab started Pharmacy Department. After that the Karachi University and the Gomel University followed the track. The bachelors program of pharmacy was of 3 years until 1978. In 1978-79 it was extended to 4 years but the curriculum was directed mainly towards production of pharmaceuticals, but there was no consideration of the public health role of the pharmacist [29]. In 2003, to meet the international criteria, the pharmacy bachelors program was extended and upgraded to 5 years and now the degree awarded is Pharm.D i.e. doctor of pharmacy [30]. Currently all public and private universities are following HEC approved Pharm.D program [31]. By 2000 only 10 institutes were offering B.Pharm. Now the number of pharmacy institutes has been increased. There were 23 registered pharmacy institutes in the whole country in 2009 [32].

There was a research conducted in 2008 to estimate the density of pharmacists in Pakistan. The following results were obtained [33].

Pakistan Population mid 2008 -172,800,000
Density (per 10,000 populations)
Pharmacists 0.69
(this is very much low than the WHO set criteria i.e. 1/2000)
Pharmacy technicians 2.31

Pharmacists
Total licensed 12,000
Total female licensed 4,000
Total actively practicing 7,000
Total actively practicing and female 1,500
Newly licensed 2,500
Graduates, 2,500

Pharmacy technicians
Total, 40,000
Newly licensed 3,000
Graduates 3,000

Legislative reforms for the regulation of pharmaceutical sector in Pakistan majorly include the implementation of Drug Act 1976 and the Pharmacy Act 1967. Before the implementation of the drug act 1976 the Import, Export, Manufacture, Storage, Distribution and Sale of drugs had been regulated through The Drug Act 1940. Drug act 1976 provides a system of licensing of each and every manufacturing unit and registration of the finished dosage forms to ensure safety, efficacy and effectiveness of the drug. Central licensing and registration board with medical and pharmacy experts is established under this act. Fixing drug pricing, import, export, manufacturing and registration is regulated by the federal government. The provincial govt. regulates the sale of the drugs. Quality control is ensured through inspection and laboratories. [34]

The pharmacy act 1967 is an act to establish Pharmacy Councils to regulate the Practice of Pharmacy. It regulates the Pharmacy Education in Pakistan through the pharmacy council. Also the registration as a pharmacist (category A) or registration of diploma holders (register B and C) is maintained on the respective registers.

After registration the pharmacist can open his retail on form 9 and apprentices registered on register B/C can open a medical store. There are various other drug act rules 1976. These include

The Drugs (Labeling and Packing) Rules 1986,
The Drugs (Licensing, Registering & Advertising) Rules 1976,
The Drugs (Appellate Board) Rules 1976,
The Drugs (Research) Rules 1978,
The Drugs (Federal Inspectors, Federal Drug Laboratory & Federal Government Analysts) Rules 1976 ,
The Drugs (Imports & Exports) Rules 1976 ,
The Drugs (Specifications) Rules 1978 ,
The Northern Areas Drugs Rules 1996. [34]

Furthermore all the 4 Provinces have their Provincial Drug Rules to regulate the Practice of Pharmacy at provincial level.

These include Sind drug rules 1979, the Azad Jammu and Kashmir drug act (adaptation ordinance 1986), The north western frontier dangerous drugs

(confiscation and rewards) rules 1954, Baluchistan drug rules 1983 and the Punjab drug rules 2007. Previously there were Punjab drug rules 1988. The changes made in the Punjab drug rules 2007 have made it pharmacist friendly as now only the category A holders can open a pharmacy. Apprentices in pharmacy can open a medical store on form 10. But drugs in schedule G of Punjab Drug Rules 2007 cannot be sold at medical stores. These include Anti Leprosy, Vaccines, Anti Sera, Products related with Malignant Diseases and Immunosuppressant, anesthetics, antibiotics like Spectinomycin, Teicoplanin, Vancomycin, Colistin, Imipenem, Sodium Fusidate, Inotropics, Prostaglandins, Alpha Blockers, Narcotics, Psycho Tropics, Tricyclic Anti Depressants, and Hormones etc. Now these drugs can only be sold under the direct supervision of a qualified pharmacist and he must ensure the rational use of these drugs. These medicines are prescription only and patient can be counseled. This will reduce the chances of misuse and abuse of the drugs. Pharmacist presence at community pharmacies ensures better health care provision as private pharmacies are often the first and only source of in expensive medical care in developing countries [34]

It is the duty of Pakistan Pharmacy Council PPC and ministry of health to ensure the presence of practicing person that is the pharmacist at the pharmacy. The pharmacies where category displayed is on rent should be closed. PPC should discontinue that registration of category C diploma holders in pharmacy. According to ministry of health rules and regulations, a physician can set up his own medical store where patients can get the prescribed medicines [32].

A study conducted in 2005 regarding the quality of pharmacies in Pakistan concluded in alarming findings. Only about one fifth of the sampled pharmacies met the licensing requirements. Nearly half of the pharmacies were found selling food stuff, house hold items along with the drugs and in most of these cases the pharmacist was absent from the premises [35]. More than half of the pharmacies were keeping vaccines without appropriate storage conditions, and its results are also consistent with another study conducted in Karachi [35, 36]. Only half of the respondents knew the correct temperature range for vaccines and prescription abbreviations [36].

Limitation of the above study is that it is conducted only in the urban Rawalpindi. But this situation is more alarming that if urban area has this situation of not meeting the law requirements then what about the small towns and rural areas where there is less education and access to health care facilities in Pakistan [35].

CURRENT SCENARIO OF COMMUNITY PHARMACY PRACTICE IN PAKISTAN

There are relatively a few studies articulating the situation with community pharmacy services in Pakistan. The Licensed premises in Pakistan include the medical stores, the retail pharmacies and also the Wholesale Distribution Setups.

Among the total no. of pharmacists in Pakistan, 55 % join industrial sector, 15% works at public sector, 15% in sales marketing, 5 % in teaching and research, and 10 % in community pharmacies. About more than 1000 students are passed out each year now [37].

The health care services at community pharmacies must undergo reforms to meet the international standards [38]. Most of the personnel (dispensers) in pharmacies have minimum training [39]. Even if the license is displayed the pharmacy, the professional is seldom present [39]. The dispensers working at retail outlets (so-called community pharmacies) are mostly untrained, non-qualified but have experience in years. Retail outlets in developing or low income countries sell Prescription Only Medicines without a Prescription on patient's demand [40]. The doctors are receptive to the pharmacists expanded roles in Pakistan but their expectations do not match with their actual experiences [41].

Community pharmacist is in a best position to perform these main activities:

Direct patient care
DUR
Extemporaneous preparations
Respond to minor ailments
Drug information
Health promotion
Counseling [42]

In current scenario, Pakistani pharmacists are seeking foreign opportunities as this profession has a much higher demand worldwide as compared to Pakistan. In Pakistan there is less recognition and lesser opportunities [30].

CONCLUSION AND RECOMMENDATIONS

In Pakistan, the pharmacy education as well as the pharmacy profession is in transitional stage. Though there had been evolutionary and revolutionary changes in this field but still the area of pharmacy practice has many loopholes. One of the major loopholes is in the legislation of the system. Strict

legislative reforms and inspections should be ensured to provide quality services through pharmacies. Reimbursement system must be developed to pay to the pharmacists for the provision of direct patient care services

Pharmacy institutes have been increased quantitatively but when speaking qualitatively there is still a need to undergo reforms. Curriculum be upgraded again and training of the students must be made compulsory. Besides this, there should be the additional training of the pharmacists to develop skills.

Pharmacy practice can be best done at community pharmacies as mostly the patients in minor ailments first go to the pharmacies. And if the patient consults a doctor then again the last health care provider that a patient sees is the pharmacist at the community pharmacy. So the pharmacists are in an ideal position to provide cognitive services to the patients at community level.

Although the pharmacists contributions are not yet recognized in Pakistan but there is every reason to be optimistic towards making patient care in community pharmacy a success.

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