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COMMUNITY PHARMACY PRACTICE – AN INTRODUCTION

LEARNING OBJECTIVES

- Define community pharmacy and community pharmacist
- Know the scope of community pharmacy practice
- Understand the professional roles of community pharmacists

INTRODUCTION

From ancient days, medicines are being used to treat various ailments. Medicines are prepared using plant, animal and mineral sources. The Apothecaries, who were the trained individuals, compounded and dispensed the medicines against the prescriptions given by the physicians. Availability of modern prepackaged medicines has slowly eliminated the compounding activities of the pharmacists. Thus the pharmacists are confined to dispensing activity both in hospital and community setting. However over the years, worldwide pharmacists have gained a special recognition due to their patient focused services.

Definition

Community Pharmacy is defined as a place where the medicines are stocked and dispensed to the patients on a valid prescription and where legally permitted without a prescription and also offer various professional services that improves the health of the patient.

Community pharmacists are the health care professionals easily accessible to the public and supply medicines in accordance with a prescription or sell them without a prescription when legally permitted. In addition to ensuring an accurate supply of appropriate medicines and health care products, their professional activities include patient counseling, dissemination of unbiased drug information, providing clinical pharmacy services, and health promotion.

World Health Organisation (W.H.O) defines **Community Pharmacist** as legally qualified, trained health care professional who act as a vital link between the patient and the prescriber. The pharmacist ensures the correct supply of medicines and provides medication usage information both to patients and prescribers and helps in minimizing the drug related problems through clinical pharmacy services.

SCOPE

An occupation possessing special attributes characterized by power, knowledge, and autonomy is called as a profession. An individual possessing knowledge and concerned with providing services to the client, patient or to the community is called as professional. Among health care professions, medical profession from the beginning dominated the other health related occupations, by virtue of subordination, limitation, and exclusion. Nursing is an example of subordination in medicine since nurses directly work under the doctors. Dentistry and Pharmacy are examples of limitation, because dentistry is limited to a part of the body, where as pharmacy limits to a therapeutic technique. Alternate practice of medicine such as Chiropody, and Osteopathy are the examples of exclusion, since they do not have any official recognition. Doctor's dominance is preserved by their capacity to determine the overall parameters of the division of labor. But in recent times, other branches such as physiotherapy, which has achieved some autonomy in the health care system, posing challenges to the dominance of doctors.

PHARMACY AS A PROFESSION

There is a broad agreement that pharmacy is an underdeveloped profession due to limitation by the authority of the doctor who delegates the pharmacist with the medical division of labor. The traditional activities of the pharmacists include preparation of various dosage forms, maintaining the stability and strength, ensuring that the drug is extracted and prepared in such a way to maximize its therapeutic properties under safe storage practices. With the technical advancement in pharmaceutical industry, and bulk production of pharmaceutical formulations, dispensing of prescriptions has become the major job function of the pharmacists. During early days, pharmacists were underutilized despite pharmacists' authority on drugs and were not included in the health care team. Automation of tablet counting and computerization of dispensing, and trader approaches of community pharmacists, have become hurdles in recognition of community pharmacist as a health care professional.

The Nuffield inquiry report in 1986 established the need for community pharmacists' to improve their professional knowledge, and skills to interpret the therapeutic regimens for drug related issues and counsel the patients to get recognition from the medical professionals. Researchers have identified the need of reprofessionalisation among the pharmacists through acquiring the knowledge of clinical skills such as direct involvement in drug therapy decisions through monitoring the patient case notes, laboratory investigation details, adverse drug reactions and counseling of patients about the optimal use of medications and providing unbiased information on drugs.

The development of clinical pharmacy in 80's has provided some individualization to the pharmacy profession. During the early days though the doctors were antagonistic to the pharmacists' therapeutic intervention activities later realized the importance of therapeutic advisory roles of the clinical pharmacists.

In 1973, Linn and Davis focused on the importance of developing new professional roles for the community pharmacists in order to improve their self worth and job satisfaction. Attempts were made in the direction to improve professionalization in community pharmacies through patient counseling and pharmacist role in maximizing the patient medication adherence.

INTERNATIONAL SCENARIO OF COMMUNITY PHARMACY PRACTICE

Globally pharmacy profession has undergone significant changes in the recent decades. It has shifted the focus from the product to the patient. The role of the pharmacist has changed from that of a commander and supplier of pharmaceutical products to that of a provider of services and information and ultimately as a provider of patient care through pharmaceutical care services.

Linn and Davis stressed upon the importance of developing new roles for community pharmacists in order to meet the professional challenges and gain recognition as a health care professional. As a result, community pharmacists in developed countries like Australia, U.S, and U.K have accepted the new professional responsibilities apart from dispensing. The new roles of the community pharmacists include medication record review, medication usage counseling, unbiased drug information, home medication review, health screening services, and education on smoking cessation and family planning.

In the USA, practicing pharmacists have developed a smoking cessation program for the patients in cooperation with National Cancer Institute. They have also engaged in screening and counseling of Diabetes and Hypertension patients, detection, and prevention of Cancer, education on family planning and sexually transmitted diseases.

In U.K, pharmacists are engaged in health education programs to the public about safe use of medicines, dental health, prevention of coronary diseases and patient compliance with the help of posters, leaflets, badges, and audiovisual displays as information sources. Other services they offered to the public were screening of blood pressure and cholesterol and providing necessary information to the patients. These services are showing a positive impact on the patient's health.

In Australia, community pharmacists are offering wide range of activities, such as home medication reviews, population screening and testing for hypertension, glaucoma, and diabetes apart from providing necessary patient counseling on drugs and diseases.

INDIAN SCENARIO OF COMMUNITY PHARMACY PRACTICE

In India, community pharmacy is often referred as "Medical & General Store". As per the legal requirement to open a pharmacy, a qualified person or "Registered Pharmacist" is

required under section 42 of Drugs & Cosmetic Act and all dispensing activities are expected to be carried out in presence of the pharmacist. In India, minimum qualification for registration as “pharmacist” is Diploma in Pharmacy (D.Pharm) where as in majority of developed countries, the minimum qualification required for registration is B.Pharm or Pharm D. A strict legal enforcement is practiced to dispense the medications only by the pharmacist. Unfortunately in India, pharmacists are not seen physically in majority of community pharmacies. In a study conducted in Mysore by R Adepu *et al.*, about 68% of pharmacies in Mysore city did not have the physical presence of the pharmacist while dispensing the medicines. Major activity that happens in the pharmacies is prescription filling only. Often this prescription filling is done by the non qualified persons who basically treat the pharmacy profession as trade.

ROLES AND RESPONSIBILITIES OF COMMUNITY PHARMACIST

The consultative group of the World Health Organization listed the following responsibilities as the professional responsibilities of the community pharmacists. The International Pharmaceutical Federation also confirms the same.

- Processing of the prescriptions
- Dispensing
- Patient counseling
- Drug information services
- Health promotion
- Health screening services
- Responding to symptoms of minor ailments
- Consultation to General Practitioners

Processing of the Prescriptions

Pharmacists are expected to review and check the prescriptions for the legality, appropriateness and potential drug related problems in the prescription. Upon satisfaction with the content of the prescription, the pharmacist will dispense the prescribed medicines.

Dispensing

The meaning of “dispensing” according to Oxford dictionary is to make up and give out the medicines on a prescription. In the early days as the pharmacists were engaged in compounding activity, the prescribed medicines were appropriately compounded and dispensed to the patient. Currently, prepackaged medicines as various pharmaceutical dosage forms are available in the market, thus the compounding and dispensing activity has become obsolete. Thus the pharmacist should label each item prescribed in the prescription with the name of the patient, age, gender, name of the drug, instructions for proper use of the drug, name of the prescriber and the seal of the pharmacy.

Patient Counseling

Majority of the patients may not have proper ideas about the correct usage of their medicines. Due to their busy schedules and over patient load, often prescribers may give very brief information about the medicines. Thus it is an opportunity for the pharmacists to step into the counseling role.

Patient counseling is defined as providing the disease related and medication related information in layman language to the patients or patient's representative for appropriate use of prescribed medication and controlling the disease symptoms by practicing an appropriate diet and lifestyle modifications as per the individual requirements.

Many research studies have corroborated the positive influence of counseling in disease management and improved medication adherence behavior and ultimately on improved therapeutic outcomes and health related quality of life.

Drug Information Services

Every year many new molecules are approved by the regulatory authorities and permit the pharmaceutical companies to market them for the labeled indications. However efficacy and the safety profile of these new molecules is often ambiguous. In such situations, prescribers depend on pharmaceutical companies for medication related information. Due to the commercial interests, the information given by the companies in product literature is product favored and biased. To overcome this problem, the pharmacist may take the responsibility to provide unbiased information about the drugs. Drug information is defined as the systematic approach of reviewing various sources of published literature, evaluating the published information and providing the suitable answer to the requester. To provide the information, pharmacist may use various resources such as primary sources (peer reviewed journals e.g., LANCET, BMJ, Annals of Pharmacotherapy etc.), secondary resources (Various databases like IDIS, MicroMedex etc.) and tertiary resources such as text books and compendia.

Health Promotion

Pharmacists by virtue of their knowledge, skills and the rapport with the public, they will be able to educate the individuals to practice healthy habits and lifestyle practices to prevent diseases. Health promotion activities include smoking cessation programs, family planning, participation in vaccination program and education about deworming and balanced diet.

Health Screening Service

Health screening service is the patient care service that is offered by the pharmacists in community pharmacies. Health screening service plays an important role in early detection of the chronic diseases, and thereby patient can receive early treatment and prevent the complications of the disease. By offering health screening service, community pharmacists can also involve in monitoring and managing the chronic disorders like hypertension, diabetes mellitus, hyperlipdemia, asthma. This will minimize the disease burden on the individual and also on the society. Monitoring refers to observation and in some cases

intervention of the disease condition after the diagnosis and treatment, which helps to assess and improve the therapeutic outcomes.

Responding to Symptoms of Minor Ailments

Worldwide pharmacists are known as easily accessible health care professionals to the common man on matters related to the health. When required in case of minor ailments such as common colds, diarrhea, simple body aches, spasms and sprains, pharmacists will be able to give suitable medications to alleviate the symptoms.

Consultation to General Practitioners

Pharmacists by virtue of their professional liaison, they can guide patients to the general practitioners for suitable management of the medical condition. When required pharmacists will provide the drug information to the doctors, supply the emergency drugs to clinics and nursing homes. In Australia, pharmacists in consultation with the general practitioners, participate in home medicine review programs (HMR). HMR is a specialized service offered by accredited community pharmacists. In HMR activity, the HMR pharmacist in consultation with the general practitioners will visit the patients at their residences by taking their appointment. During the house visit, HMR pharmacist review the patient case notes and medications to identify any drug related problems and resolve the same in consultation with the general practitioners and educate the patient appropriately for increased medication adherence and better therapeutic outcomes.

KEY POINTS

- Community Pharmacists are the health care professionals easily accessible to the public and supply the medicines according to the prescriptions and where legally permitted without the prescription for minor ailments as over the counter (OTC) drugs.
- The scope of the community pharmacist has changed from medicine dispenser to pharmaceutical care provider.
- Various professional associations across the world have developed professional standards for their community pharmacists for better patient care services and for professional recognition.
- Important professional roles of the community pharmacists include processing of the prescriptions, dispensing of the medicines, patient counseling, drug information services, health promotion, responding to symptoms of minor ailments and referral of the patients to general practitioners.

SUGGESTED READINGS

1. A. Ramesh, B. G. Nagavi and K. V. Ramanath, Critical review of community Pharmacies (Drug stores) in Mysore city. *Indian J Hosp Pharm*; 2000 ; May – June : 91 – 93.
2. Bloom MZ (1990). Clinical Pharmacy services improve patient care and reduce costs. *American Pharmacy NS* **30**: 17 - 18.

3. Hepler CD, Strand LM (1990). Opportunities, and responsibilities in pharmaceutical care. *Am J Hosp Pharm.* **47**: 533 - 543.
4. Maddock DH (1990). Potential influential role of the community pharmacists. *Pharm. J* **245**: 233-234.
5. Michael Tatchel, Angela Shepherd (2003). Health care and community pharmacy in Australia. *Pharmacy Review.* **27(3)**: AE 2 - AE 4.
6. Mitchell R E, Smart JD, Herring C N (1989). Extended role and the community pharmacist. *Pharm. J* **243**: R 42.
7. Richard K Lewis, Nancy L Lasack, Bruce L Lambert and Sharon E Conner (1997). Patient counseling – a focus on maintenance therapy. *Am J health System Pharm.* **54**: 2084 - 98.
8. The Role of the Pharmacist in the health care system, W.H.O. Consultative group 1993: p. 16-19.
9. Turner P (1984). Pharmacy: An inquiry into contribution to health care. *Bare MED J.* **288**: 810 - 811.
10. USP medication counseling behavior guidelines, USPDI update, 1997: p. 664 – 675.