
REVIEW ARTICLE

A REVIEW ARTICLE ON ROLE OF CLINICAL PHARMACIST IN THE HEALTHCARE SYSTEM

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ABSTRACT:

The purpose of this article is to introduce the clinical pharmacist position and raise awareness about clinical pharmacy service (CPS). Clinical Pharmacists (CP's) will soon play a significant role in the Indian healthcare system for two reasons:

- 1) CPS are helpful in many ways to improve healthcare system, &
- 2) CPS have already established their significance in western nations. Adverse drug reactions (ADRs), medication errors, and adverse drug events (ADEs) are just a few of the issues that can arise from drug use. Drug-related morbidity and mortality can result from ADEs. Numerous studies indicate that between 7-30 percent of hospital admissions are due to problems with medication therapy. One of the newest subspecialties in pharmacy is clinical pharmacy.

Keywords: Adverse Drug Reaction, CMM, Pharamaconomist

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INTRODUCTION:

Professional pharmacy is the area of pharmacy where clinical pharmacists directly care for patients, maximising the benefits of medication and fostering wellness, health, and disease prevention.[1] Although clinical pharmacists provide patient care across the board of healthcare facilities, the clinical pharmacy movement actually had its start in hospitals and clinics. Clinical pharmacists frequently collaborate with medical professionals like doctors, physician assistants, and nurses. and other medical specialists. Clinical pharmacists have the option to sign a formal agreement for collaborative practise with another healthcare professional, typically one or more physicians, which enables pharmacists to write prescriptions for drugs and request lab testing.

While pharmacists may take part in the treatment of certain drugs or individual disease states (such as diabetes or hypertension), their primary focus is on overall medication management (CMM).[2] CMM is defined as the standard of care that guarantees each patient's medications (prescription, over-the-counter, dietary supplements, or herbal remedies) are individually assessed to determine if appropriate for the patient, effective for the condition, safe for use with concurrent comorbidities and therapies, and that the patient is able to take them. The objectives, monitoring, and desired result are specified in an individualised care plan. The patient and other members of the care team actively

participate in the preparation of the CMM plan. The standards of practise section will provide descriptions of key CMM components.

A study is being conducted to examine the effectiveness of the CMM offered in settings by clinical pharmacists and to gauge the overall effectiveness of patient outcomes. The disease-state-specific pharmaceutical therapy management systems have demonstrated a decrease in the frequency of various medication-related issues, such as nonadherence, and have reduced some healthcare expenses.[3] The goal of professional education in clinical pharmacy and public health is to qualify each pharamaconomist (expert in pharmaceuticals) to practise clinical pharmacy at a higher, more professional level. Professional skills and ethics ensure the best possible safety in the distribution and use of medicine. ensures the patients' maximal well-being during their pharmacological therapy as a result.[4][5] In order to maximise patient compliance with the drug use process, clinical pharmacy practise also deals with good record maintenance regarding medication events.

ROLE OF CLINICAL PHARMACISTS IN HOSPITAL:

As shown here, clinical pharmacists play a crucial role in hospitals.:

MEDICATION HISTORY INTERVIEW:

The patient's complete medication history is crucial for determining the medical concordance, the justification for the drugs previously prescribed, the patient's understanding of medications, the presence of drug abuse, the patient's acceptance of the treatment, and the documentation of allergies and unfavorable drug reactions.

CLINICAL REVIEW:

Pharmacists must assess the medication therapy during clinical reviews to make sure the patient is receiving the best possible dose, dosage, dosage form, and duration of therapy for their particular medical/disease state.

In order to provide better patient care, he must also relate the patient's signs and symptoms, laboratory findings, medical diagnosis, and therapeutic objectives to the medication history.

PATIENT COUNSELLING:

From the perspective of the patient, professional pharmacists who provide patient counselling are the most crucial. The patient's therapeutic results may be improved by the clinical pharmacists' information regarding his or her present clinical condition or progress, as well as their instruction in the safe and proper use of medications. In general, patients have a lot of concerns concerning their condition, medications, dietary restrictions, lifestyle changes, treatments, and length of therapy. For instance, insulin pens for diabetics or meter-dose inhalers for asthmatics. Here, pharmacists who work as clinical pharmacists can instruct patients about all of these topics. To maintain continuity of drug supply, continuity of medication concordance aids, communication of particular difficulties, adequate monitoring of the dosages, and for little interruption, a clinical pharmacist may give the patient information on ongoing treatment. The pharmacists may offer advice or instruction to the patient regarding the following aspects of the medications. Drug brand name and generic names Dosage, indications, benefits, and anticipated effects of the medication adequate storage taking the drug How long should you take your prescription for? Information about discontinued or new medications specific warnings regarding the medication Common Drug Adverse Reactions What should be done if

a dose is missed? foods and/or drugs to stay away from patient satisfaction, medication mistake avoidance, improved clinical outcomes, and patient psychological support are all advantages of patient counselling. Particularly with chronic conditions, patient education is crucial. Diabetes, hypertension, dyslipidemia, and other major issues are facing India, and patient education and counselling are important in all of these chronic situations.

WARD ROUND PARTICIPATION:

- The pharmacists might participate in ward rounds as a member of the healthcare team.
- The objectives are to offer information on clinical aspects of the patient's care, to assist discharge planning, and to improve understanding of the patient's history, progress, and clinical details.
- The pharmacists can also aid in decision-making to choose high-quality, low-cost medicines, improve the standard of patient care and clinical results, and make sure that medicines are chosen in accordance with local and national guidelines.

ROLE OF CLINICAL PHARMACIST IN COMMUNITY PHARMACY:

Community pharmacy services typically involve the dispensing of medications, promotion of healthy lifestyles, support for self-care, distribution of practise leaflets to patients, reviews of medication use, smoking/alcohol cessation programmes, etc. CPs may also participate in a variety of community service initiatives related to alcohol consumption, smoking cessation, health promotion, nutrition, etc.[6] As community pharmacy services are either uncommon in India or are offered by other experts, their implementation will be extremely beneficial to the country's average citizen.

ROLE OF CLINICAL PHARMACIST IN RESEARCH:

India's contribution to clinical epidemiological research is not particularly notable in the global community, despite the fact that it is a highly populated nation (ranked second on the planet) with a large number of hospitals. Indian doctors, nurses, and other healthcare professionals are more or less playing roles for the current contribution. The contribution of CPs to the research is now quite small because the idea of clinical pharmacy is still in its infancy.

Meanwhile, characteristics of CPs with regard to research include the inclusion of this work in the curriculum, sufficient hospital exposure, and understanding of fields like clinical toxicology, hospital pharmacy, clinical pharmacokinetics, and pharmacoeconomics, among others.[7] India may publish a great deal of data with the help of CPs, doctors, nurses, and other healthcare professionals. In addition, the presence of CPs will create new research opportunities in the nation for pharmacoeconomics, clinical research, patient-reported outcomes, quality of life, pharmacovigilance, clinical pharmacokinetics, etc.

CAREER PROSPECTUS AND JOB OPPORTUNITIES FOR CLINICAL PHARMACISTS:

A PharmD candidate is qualified to work in every position open to students with a Bachelor of Pharmacy (B.Pharm) degree. A CP (both PharmD and M pharm pharmacy practise) can work in a variety of other fields after completing the degree, aside from this. Here, we forecast the job opportunities and career prospects for CPs in light of the global environment. Even though none of these places in India are currently well-established for CPs, we anticipate that they will be in the near future.

ROLE OF CLINICAL PHARMACIST IN HOSPITAL ACADEMICS AND FURTHER EDUCATION:

A CP would be known / recognised for providing CPS in India, as giving CPS is the CP's primary duty, much as a surgeon is known for doing surgery and a doctor is known for diagnosing and treating a condition. A faculty position is open to CPs in academic institutions. Additionally, they can join a diploma, degree, or post-graduate pharmacy institute and join a relevant teaching position such as a lecturer, assistant professor, associate professor, professor, head of the department, head of the institution, principal, or director with the appropriate experience.[8] Numerous pharmD colleges are currently being constructed in India, giving both M.Pharm (pharmacy practise) and PharmD individuals a wide range of academic work opportunities. In fact, some prestigious US-based hospitals in India are currently hiring CPs. In the near future, it is anticipated that practising pharmacists will also be hired by government hospitals. In addition, CPs may participate in hospital management, teams, pharmacy/therapeutic committees.

THE ROLE OF CLINICAL PHARMACIST IN HIGHER EDUCATION:

Anyone who has earned a pharmD or M.pharm in pharmacy practise or clinical pharmacy is eligible to apply for a Ph.D. in India or overseas. Some western nations offer speciality programmes after receiving a doctorate in pharmacy, including ones in psychiatry, nutrition support, nuclear pharmacy, oncology, and pharmacotherapy. These specialised courses are not now offered in India, but they will be in the future.

ROLE OF CLINICAL PHARMACIST IN MEDICAL WRITING:

Scientific writing or medical communication are other names for this. Writing in various forms of health care documentation for various purposes and target audiences is known as medical writing. Pharmaceutical and healthcare businesses as well as contract research groups demand medical writers (CROs). Companies that specialise in business process outsourcing and knowledge process outsourcing (BPOs/KPOs), organisations that provide healthcare communications, media and publishing outlets, medical journals, and medical societies, Domain knowledge, language and grammatical skills, the ability to quickly analyse medical data, and other abilities are required to become a proficient medical writer.[9] Many CROs, BPOs, KPOs, and pharmaceutical firms are currently employing medical writers in India.

ROLE OF CLINICAL PHARMACIST IN MEDICAL CODING:

Medical coding, commonly referred to as medical classification, is nothing more than the conversion of descriptions of diagnoses and treatments into internationally recognised codes. The codes are used for statistical analysis, reimbursement plans, and other purposes in a number of fields, including medicine, public health, and medical informatics.[10] There are currently several medical coding businesses in India.

ROLE OF CLINICAL PHARMACIST IN MEDICAL BILLING:

Medical coding and medical billing are two different things. It is a procedure for converting a medical service into a billing claim.[11] Although there are many health insurance businesses in the country,

as far as we are aware, hiring CPs is still relatively uncommon. However, we also anticipate CPs playing a part in medical billing.

ROLE OF CLINICAL PHARMACIST IN MEDICAL TRANSCRIPTION:

Medical transcription, to put it simply, is the typing of a doctor's report from dictated audio files. In developed nations, the medical professional dictates what he does after performing procedures on the patient, and a medical transcriptionist (MT) (also known as a medical language specialist) transcribes the oral dictations and/or edits the report. This process results in patient-specific health information being converted into a written text document and maintained in printed E-versions or kept in patient record files. These days, medical transcriptionists employ speech recognition software to improve their skills.[12] There are currently not many hospitals in India hiring MTs. Medical terminology, illness conditions, anatomy, physiology, pharmacology, medical language and grammar, typing proficiency, efficient communication abilities, etc. are among the talents required to become an MT.

ROLE OF CLINICAL PHARMACIST IN PHARMACOVIGILANCE:

Pharmacovigilance is described as "the science and actions relating to the detection, assessment, understanding and prevention of adverse effects or any other drug related concern" by the World Health Organization.[13] For epidemiological investigations and patient safety, ADRs must be documented, analysed, and prevented. Currently, several BPOs and KPOs in India are hiring individuals for pharmacovigilance, including certain hospitals. A strong understanding of pharmacology, adverse drug reactions (ADRs), laboratory results, clinical studies, etc. is required for employment in the field of pharmacovigilance.

ROLE OF CLINICAL PHARMACIST IN CLINICAL RESEARCH AND DRUG DEVELOPMENT:

Clinical trials are connected to both of these topics. In the nation, there are innumerable organisations dedicated to clinical research. In clinical research organisations, CPs should apply for employment as clinical research coordinators (CRCs), clinical research associates (CRAs), research statisticians, and higher positions (with the most experience). In clinical trials, CPs can serve as the lead investigators and patient educators. Pharmacists can help patients participate more actively in clinical trial research.[14] Knowledge of statistical, medical, and pharmaceutical jargon, pharmacovigilance, honesty in documentation, ability to travel extensively (particularly for CRAs), and other abilities are required for employment in a clinical research organisation.

ROLE OF CLINICAL PHARMACIST IN FORENSIC PHARMACY:

The topic of forensic pharmacy involves the use of drug studies to medical and legal problems. A pharmacist may participate in instances involving malpractice in western nations. ADRs, DUIs, drug abuse, medical fraud, poisoning, toxicity, and several other civil and criminal matters.[15] Although there are now very few pharmacists in India working in these fields, we think that CPs will also have a future in these fields.

ROLE OF CLINICAL PHARMACIST IN MEDICAL / CLINICAL SCIENCE LIAISON:

Pharmaceutical, biotechnology, medical device, and managed care businesses use medical science liaisons (MSLs) to provide objective (nonpromotional) information about their products. MSL.[16] Ensures ensuring products are used properly; acts as a peer and resource for scientists in the medical community; and acts as a scientific expert to internal coworkers at businesses.

THE ROLE OF CLINICAL PHARMACIST IN CONTRACT RESEARCH ORGANIZATIONS:

A contract research organisation is a business that offers contract research services to support the development of pharmaceutical, biotechnology, and medical products and devices. The following CROs may take on CPs: those that specialise in pharmacoeconomics, patient-reported outcomes, health technology evaluation, literature reviews, systematic reviews, quality of life studies, etc. These are all new areas in India, but CROs of this nature do leave the nation. Excellent analytical skills, together with knowledge of therapeutics and statistics, a strong grasping ability, and database management (such as using PubMed) are required for employment in CRO.

THE ROLE OF CLINICAL PHARMACIST IN BIOAVAILABILITY /BIO-EQUIVALENCE STUDIES:

Simply said, bioavailability (BA) refers to the percentage of a medicine that is delivered that is present in the bloodstream, whereas bioequivalence (BE) compares the bioavailabilities of two pharmaceutical products that contain the same drug and dosage. The development and determination of a drug's dose and dosage form, the quality control of drug products, and the creation of new formulations for medicines already on the market are the three major goals of BA/BE studies. There are businesses in India that specialise in BA/BE.

1. To enter the field of BA/BE studies, one must have knowledge of pharmacotherapeutics, clinical pharmacokinetics, and clinical research.
2. The role of clinical pharmacists in the public sector, private industry, and non-profit organisations
3. In addition to community pharmacies, clinical pharmacists have a role in public health. The areas of responsibility and roles of clinical pharmacists are as follows:[17]
4. Immunization programmes: Immunisation administration and promotion, disaster preparedness and response, public education, and emergency response planning, as well as monitoring of notifiable syndromic conditions, public outreach, distribution of mass medications, etc.
5. Contraceptive services: Provision of contraceptive methods and instruction on their application.
6. Disease and injury prevention and control: encouragement of a healthy lifestyle, decrease in hospitalisations.

In the public sector and nongovernmental organisations, CPs may be active in policy formulation, drug/poison information centres, health fairs, awareness campaigns, pharmacovigilance centres, patient counselling centres, etc.

CONCLUSION:

Clinical pharmacy services can play a significant role in improving the health care system. Clinical pharmacists' involvement in discharge planning and patient counselling regarding medication use may

help to cut down on hospital readmissions. Pharmacy technicians and nurses should receive training from pharmacists on how to properly utilise medications and administer them to patients. Pharmacists should also participate directly in patient conversations about the appropriate use of medications. Getting patients to take their medications is one of clinical pharmacy's key goals. The use of evidence-based best practises may contribute to better patient outcomes. Ensure that patients receive the benefits of their pharmaceutical care by working as a team and as individual practitioners.

The Indian healthcare system will undoubtedly rely heavily on clinical pharmacists. CPS will be advantageous to patients, doctors, other healthcare professionals, hospitals, and several enterprises.

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