From Drug Development to Patient Care: Connecting Pharmaceutical Sciences, Pharmacy Practice, and Laboratory Medicine

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Abstract

Drug development aims to provide safe, effective, and quality medicines, but its success also depends on accurate diagnosis, appropriate medicine use, and continuous treatment monitoring. Connecting pharmaceutical sciences, pharmacy practice, and laboratory medicine helps translate scientific research into better patient care.

This review highlights the contribution of pharmaceutical sciences to drug discovery, formulation development, quality control, and safety evaluation. Laboratory medicine supports disease diagnosis, assessment of treatment response, and identification of possible drug-related problems. Pharmacy practice promotes the safe and rational use of medicines through patient counselling, medication adherence, pharmacovigilance, and prevention of medication errors. Collaboration among pharmacists, laboratory professionals, doctors, researchers, and the pharmaceutical industry can strengthen treatment decisions and improve patient safety.

Despite its importance, this integration faces challenges, including limited communication among healthcare professionals, high drug development costs, and unequal access to advanced diagnostic facilities. Improved coordination, professional education, and modern healthcare technologies may help overcome these barriers.

In conclusion, linking drug development with pharmacy practice and laboratory medicine is essential for improving the quality, safety, and effectiveness of healthcare. This integrated approach can support affordable and accessible healthcare in India and contribute to the vision of Viksit Bharat @2047.

Keywords

Drug Development, Laboratory Medicine, Pharmacy Practice, Patient Care.