CURRENT ISSUES in PHARMACY
Volume 2

Edited by
Muhammad Taher
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Chapter 1

Introduction: Current Issues in Pharmacy

Qamar Uddin Ahmed and Muhammad Taher

The purpose of preparing this research book entitled Current Issues in Pharmacy Vol. 2 is to deliver students and academics related to pharmacy disciplines with the necessary awareness and skills to recognize, envisage and discuss current research issues in pharmacy. The field of pharmacy consists of many disciplines of pharmaceutical sciences particularly pharmacy practice, pharmaceutics, pharmacology, molecular biology, pharmacognosy and medicinal chemistry. Pharmacy is involved in a wide array of pharmaceutical research and education, too. Pharmacy practice research focuses on the areas of pharmacogenetics, pharmacokinetics and pharmacodynamics. It also covers the inter-relationship between these areas in different ethnic groups, as well as methodological issues on pharmacoeconomics. Clinical and applied research is conducted on studies that are supposed to improve patient outcomes and could have a favourable impact on pharmacy practice and service. Pharmaceutics research is concerned with drug formulation, stability, and delivery science, and also works on medical devices. Medicinal chemistry research is mainly focused on pharmaceutical chemistry, drug discovery and compound library, and receptor biology. Pharmacology research works on molecular and cellular mechanisms of disease states and associated pharmacology, as well as a range of toxicology research.

The pharmaceutical sciences have become progressively quantitative and, in addition to pharmacogenomics, comprise the wide areas of quantitative and systems pharmacology, molecular pharmacology, therapeutic bioengineering and drug development sciences. Besides, pharmaceutical sciences research is driven by the continuous advancement in techniques; for example, tissue and temporal expression of genes in genetically modified mice, modelling of complex
systems, confocal and electron microscopy and nanotechnology. Together, these disciplines provide a strong multidisciplinary approach to research. Research studies in this field lead to a molecular understanding of target and off-target effects of clinically used drugs, identification of new drug targets, complex models that can guide drug development and clinical drug testing, novel drug delivery systems and pharmacogenomics, which is the application of genetics and genomics to drug action and disposition.

The profession and practice of pharmacy have been greatly reformed and revolutionized during the past decade. Nowadays, pharmacists have greater responsibilities in the field of medicine. Pharmacists carry out different kinds of research studies with the aim of improving patient care and the healthcare system. They research chemical and herbal ingredients, review and test medications for efficacy and safety issues, conduct clinical and translational outcomes research with respect to improve patient care and healthcare systems.

The scope of pharmacy disciplines research is enormous in order to promote safe and appropriate use of medicines, pharmacists have to take many key issues into consideration. New, well-planned and well-orchestrated, constructive directions in health policies, changing needs and expectations of the population, the structural, economic, social and cultural contexts of healthcare, and the aspirations of pharmacists for a greater role in its delivery all provide the background and frameworks for the conception and execution of pharmacy research. Equally diverse is the range of methodologies that may be employed to answer important questions. Research activities related to pharmacy disciplines are vital to patients, healthcare organizations, governments and professionals. The definitive goal is to lead the way in the adaptation of pharmacy services to meet healthcare and pharmaceutical care needs and contribute to pharmacy and health policy agendas. Moreover, the formation of different research clusters that could draw upon existing research strengths within the Schools of Pharmacy, the faculty and the hospital is now considered very important. It is now universally accepted that the creation of pharmacy research clusters has proved crucial for constructive studies to facilitate multidisciplinary research and provide opportunities for obtaining research funding bodies and the profession.

Obviously, the contents are from Practice, Section, Pharmaceutical
research funding from the national and international competitive granting bodies and the pharmaceutical industries worldwide.

Obviously, this book is not intended as a comprehensive coverage in this area. The book consists of 16 chapters including the introduction. The contents are grouped into four sections; viz. Section 1: Pharmacy Practice, Section 2: Pharmacognosy/Medicinal Plant Therapy, Section 3: Pharmaceutical Technology and Section 4: Basic Medical Sciences.
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QAMAR UDDIN AHMED, is currently working as an associate professor at the Department of Pharmaceutical Chemistry, Kulliyyah of Pharmacy, International Islamic University Malaysia. His core responsibilities are to teach and research associated with organic chemistry, medicinal chemistry and pharmacognosy disciplines. His current research interests are the synthesis of medicinal active compounds and isolation and characterization of biological active substances from medicinal plants. He has won many research awards while working at IIUM. Dr. Ahmed’s research findings have appeared in several international peer-reviewed ISI & Scopus indexed journals. He is also the editor-in-chief of Current Issues in Pharmacy.