Chapter 14
Lessons Learned From the COVID-19 Pandemic and the Implications for Pharmaceutical Graduate Education and Research

Alok Bhushan
https://orcid.org/0000-0002-4800-5009
Jefferson College of Pharmacy, Thomas Jefferson University, USA

Sudip K. Das
https://orcid.org/0000-0002-0091-182X
College of Pharmacy and Health Sciences, Butler University, USA

Kimberly B. Garza
https://orcid.org/0000-0002-4684-372X
Harrison School of Pharmacy, Auburn University, USA

David J. Feola
College of Pharmacy, University of Kentucky, USA

Omathanu Perumal
College of Pharmacy and Allied Health Professions, South Dakota State University, USA

Dorothy Farrell
American Association of Colleges of Pharmacy, USA

Angela Birnbaum
College of Pharmacy, University of Minnesota, USA

ABSTRACT

The COVID-19 pandemic has resulted in changes in the way we teach at all levels of education globally. This chapter specifically focusses on the impact of COVID-19 pandemic on MS and PhD programs in pharmaceutical sciences in schools/colleges of pharmacy in the United States. Potential expectations to bring the pandemic in control by rolling out the vaccine gives us hope, but there is an unmet need of medicines to treat patients affected by the disease. The impact of the pandemic on pharmaceutical sciences

DOI: 10.4018/978-1-7998-7623-6.ch014

education has been on the pedagogy of teaching, research, mentoring, writing, and enrollment. This has also affected the progression of students in their programs as well as their stress levels and well-being. The role of administrators and accreditation agencies is critical in supporting graduate education by providing leadership and directions for the successful outcomes of these programs. Challenges and opportunities for these graduate programs are discussed in this chapter.

INTRODUCTION

Pharmacy schools are well-recognized for their contribution to the development of health care practice-ready graduates who will work in community, inpatient, and ambulatory patient care settings as licensed pharmacists. In addition, graduate (MS and PhD) programs in schools of pharmacy develop future researchers who will advance drug development and discovery, drug delivery, pharmacology, health outcomes, behavioral, translational, clinical, public health, and practice-based research. Although the discovery and development of new therapies requires contributions from both academia and industry, most mechanistic research related to the cause of a disease or mode of action of a drug occurs in academic settings, with many research laboratories located in schools of pharmacy (Flier, 2019). Schools of pharmacy are also vital contributors to the body of knowledge about disease control and management through social science research in areas like health outcomes, pharmacoeconomics and pharmacoepidemiology. The COVID-19 pandemic underscores the need for accelerated development of new treatments and illustrates the need for a continuous supply of trainees to maintain a strong scientific research workforce. Reliable information and scientific discovery are needed to inform policy, prioritize treatment strategies, distribute, and administer drugs and vaccines, and encourage behaviors that support public health. This chapter highlights the need for and value of graduate education and research in pharmacy schools in the context of the COVID-19 pandemic, together with perspectives on lessons learned from the pandemic, and applying the lessons to strengthen graduate education and research.

BACKGROUND

Most schools of pharmacy operate under a dual educational mission: both to train future pharmacists in professional Doctor of Pharmacy (PharmD) programs and to train scientists in graduate programs, which we define here as Master of Science (MS) and Doctor of Philosophy (PhD) programs. These graduate programs exist across a wide spectrum of scientific disciplines, including basic and applied natural sciences, clinical and translational sciences, and social and administrative sciences. Currently, self-reported descriptive information on graduate programs at sixty-four schools of pharmacy in the US is included in the PharmGrad Graduate Directory, a resource for students interested in pursuing pharmaceutical graduate education (American Association of Colleges of Pharmacy [AACP], 2021). While there may be some overlap between the clinically focused PharmD and the research-focused pharmaceutical sciences graduate training, PharmGrad information indicates key didactic and experiential differences between graduate and PharmD programs. Graduate programs typically include a research component, which is the foundation of the PhD but varies significantly in importance across MS programs. There are fully online MS programs, although most graduate programs in pharmacy schools still offer coursework and research training in-person. Generally, graduate program structures provide flexibility in course require-