

IMPACT OF THE COVID-19 PANDEMIC ON THE DOCTOR OF PHARMACY (PHARM.D.) EDUCATION IN THE UNITED STATES

Petrova Tatjana¹, Do Duc²

¹Department of Pharmacy Practice, Chicago State University, Chicago, USA

²College of Pharmacy at University of Georgia, USA

e-mail: tpetrova@csu.edu

The Covid-19 pandemic has caused significant disruptions to academic experiences of students in professional programs on a global level. Professional programs, such as pharmacy, medicine and dental medicine have had to shift from in-person curriculum delivery to other forms of delivery (virtual, in-person, hybrid, etc.) in order to adapt to the new circumstances. The main objective of this commentary is to depict the Pharm.D. education prior to March 2020 and during the Covid-19 pandemic, as well as to provide a prospective outlook on what the academic experience may look like for Pharm.D. students during the next academic year.

Pre-pandemic delivery of pharmacy education

In the United States, there are 140 fully accredited colleges and schools of pharmacy currently. The Accreditation Council for Pharmacy Education (ACPE) is the body that accredits Pharm.D. programs. Seventy-two (72) colleges and schools of pharmacy are within private universities and seventy (70) are within public universities. In 2019, the total number of enrolled pharmacy students was 60,594¹.

The majority of Pharm.D. programs in the US follow either a 2+4 year or 4-year structure. In the 2+4 year program structure, students complete a minimum of two years of pre-pharmacy studies followed by four years of professional study (Pharm.D. program). With the 4-year program structure, students complete from two to four years of pre-pharmacy studies followed by four years of the Pharm.D. program.

In the traditional 4-year Pharm.D. programs, the first three years of the curriculum are focused primarily on didactic coursework, skills courses, and compounding laboratories. Skills courses are designed for acquisition of essential skills needed to become a pharmacist with specific focus on the pharmacist-patient care process, the prescription process, building communication skills for patient interviewing, and applying drug information skills. Compounding lab courses are focused on applications of pharmaceutical principles to the formulation and extemporaneous preparation of dosage forms such as liquids, solids and semisolids. In the first three years of the Pharm.D. curriculum, students are also required to complete Introductory Pharmacy Practice Experiences (IPPEs), where they observe a pharmacist applying knowledge in a variety of practice settings, such as community and institutional health-systems. The final and fourth year of the Pharm.D. curriculum is reserved for Advanced Pharmacy Practice Experiences (APPE), with the specific focus being on educating pharmacy students to optimize drug therapy and provide patient care in a variety of practice settings such as community pharmacy, ambulatory care pharmacy, hospital pharmacy and general medicine

pharmacy. Additionally, ACPE requires that Pharm.D. curricula provide intentional co-curricular and interprofessional education experiences (IPEs) to students. The co-curricular experiences are typically designed to provide opportunities for students to enhance their professionalism, leadership and career development skills.

Impact of pandemic on educational delivery and learning experiences for students

The pandemic had a significant impact on the educational delivery and learning experiences of pharmacy students. To comply with the Center for Disease Control and Prevention (CDC) Covid-19 safety guidelines and protect the wellbeing of students, faculty and staff, colleges and schools of pharmacy have come up with different approaches for curriculum delivery and other aspects of the academic and professional experience². Some programs have incorporated predominantly virtual didactic approaches (classes taught virtually while skill-based/compounding lab experiences being held in person), while others shifted to both didactic and skill-based/compounding lab experiences being all virtual. A number of pharmacy programs continued with in-person academic experiences. In-person experiences required social distancing and use of face coverings at all times.

The pandemic also impacted the experiential learning opportunities for pharmacy students. Due to decreased opportunities for on-site IPPE/APPE experiences, pharmacy programs increased offerings of simulations or non-direct care experiences, reduced APPE (experiential learning opportunities) hours, and allowed early graduation in some colleges of pharmacy. Another impacted area has been students' research experience. Students' involvement in bench research as well as clinical research has been either reduced to minimum or postponed.

To preserve the safety of students, faculty and staff, many colleges of pharmacy canceled spring breaks and enforced strict social interactions that asked of students to wear face coverings while indoors and to socially distance. More importantly, many students were very directly impacted by Covid-19 in that they either became sick, or had to take care of a sick family member, or both. This has had a tremendous impact on their academic progress in terms of a) decreased academic performance and lower grades, b) inability to complete APPE modules, and c) delayed graduation. In terms of the licensure process, with many testing sites working with reduced capacity at the beginning of the pandemic, students were unable to take the licensure exams in a timely manner, which postponed their licensure process.

Aside from the academic experiences directly impacting the learning process of students, other segments of pharmacy education have suffered an impact. One area has been the enrollment management processes. Recruitment, admissions processes, and academic advising transitioned to virtual interactions with prospective students. Graduation and professional milestone ceremonies (White Coat Ceremony, Pinning, award ceremonies, etc.) also suffered an impact. Professional ceremonies were delayed, canceled or shifted to being held virtually by some colleges of pharmacy. Students and faculty were unable to enjoy celebrating student accomplishments and professional milestones in the same way that they would during in-person ceremonies. Ceremonies and celebrations are important in that they remind students that they are a part of the health care profession, and reinforce development of altruism and professional socialization.

In the absence of in-person interactions with fellow students and faculty during the pandemic, pharmacy students increasingly utilized social media to communicate professional and course-related information and exchange ideas. While their increased presence on social media enhanced communication in some aspects, it also led to emergence of unprofessional

behaviors such as spending time on personal social media sites during virtual lectures or other academic activities. Poor virtual or e-etiquette contributed to reduced engagement during lectures and other virtually held academic activities. Aside from the challenges of poor e-etiquette, many students had to obtain or improve their digital literacy skills to navigate multiple digital or virtual platforms for content delivery and assessment. Unlike any other time in their lives, most students had to spend significant time in front of their electronic devices. The many digital platforms for communication did not necessarily enhance the quality of the communication. For example, when students used email to communicate with faculty, emails were often brief and less formal.

While the pandemic had a significant impact on the already established pedagogical and administrative processes in pharmacy education, the impact of the quality of the student experience during the pandemic cannot be undermined. Much has already been published on the impact of the pandemic on the emotional and psychological well-being of individuals across the world. Pharmacy students have been no exception. Being socially isolated, lacking a professional community, spending hours at an end behind a computer (to study, attend lectures, take exams, attend tutoring sessions or social events, etc.) or worrying about contracting Covid-19 have all had a tremendous impact on the quality of life of pharmacy students. Additionally, a number of students experienced financial challenges. Students have provided feedback to their respective colleges that during the pandemic, they felt like they had to teach themselves, which highlights the experience of isolation and disconnect from the pharmacy program. On the other hand, the perception of faculty has been that they had to work harder and identify creative strategies to keep students engaged and connected, as well as meet their learning and assessment needs.

The physical and mental health of the students, faculty, and staff was prioritized in pharmacy programs during the pandemic. Different Covid-19 reporting systems for contact tracing were established on university and colleges of pharmacy level. Colleges continued to provide counselling services/ mental health service for students and faculty in a virtual format. Complementing the efforts of the Offices of Student Affairs, student chapters of national organization were involved in providing additional support to students by organizing workshops and presentations on wellbeing and stress management. Mindfulness and wellness content was added to the core courses or new elective courses were created with the sole purpose of providing different opportunities for students to adapt and rise to the educational and personal challenges that emerged from the Covid-19 pandemic.

Prospective post-pandemic outlook on the pharmacy education

While the pandemic necessitated many changes in the pedagogical and administrative processes in pharmacy education in the US, students and faculty have adapted well to many of the changes described above. Some of the changes in the pedagogical and administrative processes have led to positive outcomes and may be more permanent for pharmacy education. While it is difficult to predict what pharmacy education will exactly look like when the world heals from the pandemic, it may be safe to assume that some of the practices which emerged as a result of the pandemic will remain because they have proven to be more cost effective, efficient and practical.

It is feasible to assume that colleges will retain some of the curricular changes that emerged as a result of the pandemic. Programs may continue to offer elective courses virtually. Some pharmacy programs may even decide to be entirely virtual or to maintain the hybrid format.

Also, it is feasible that recruitment and admissions processes of new students and academic advising of students will be done virtually, for some colleges of pharmacy. This practice is cost effective for prospective students who may otherwise not be able to afford to travel to different colleges for admissions interviews. Students would spend less time traveling and would be able to continue with their work/studies because the virtual format removes the barrier of travel.

Colleges of pharmacy will have the opportunity and obligation to assist their students with transitioning to an academic experience in post-pandemic circumstances. While both students and faculty will have to go through an adaptation process, this is particularly applicable for students because they will need to learn how to transition to a different “normal” academic experience. The different “normal” will entail developing or re-developing a sense of belonging and a pharmacy student identity, and adapting to in-person didactic and experiential learning, in-person exams and assessments, and in-person presentations and group projects, etc. Students will need to develop and adapt to new routines including traveling to and from colleges and practicum sites, have a formal dress code in an in-person academic and professional environment, rely more on verbal communication with faculty (*v.s.* chats or email), or follow in-person classroom etiquette.

The American Association of Colleges of Pharmacy (AACP), Colleges and Schools of Pharmacy, as well as faculty and staff in Pharm.D. programs have been and will continue to evaluate the impact of the Covid-19 pandemic on Pharm.D. education. While this commentary is based on the authors’ year-long observations of the changes in Pharm.D. education due to the pandemic at two Colleges of Pharmacy, formal research findings from the above-listed stakeholders will influence which long-lasting changes will be implemented in pharmacy education in post-pandemic times.

References

1. Academic Pharmacy’s Vital Statistics: Official Website of the American Association of Colleges of Pharmacy [Internet]. Arlington, (VA): American Association of Colleges of Pharmacy [updated 2021; cited 2021 May 5]. Available from: <https://www.aacp.org/article/academic-pharmacys-vital-statistics>
2. National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases [Internet]. Atlanta (GA): Centers for Disease Control and Prevention (US); [last updated 2021 March 8; cited 2021 May 5]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>