

Impacts of COVID-19 on Pharmacy Studies

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ABSTRACT

Coronavirus outbreak has disrupted educational processes around the world. Policies like social distancing and lockdown of colleges and universities surrounding the coronavirus pandemic are responsible for disrupting educational processes. Consequently, educational stakeholders have resulted in using online digital resources to enable the continuation of learning and the curriculum. While online platforms serve the purpose of offering an alternative learning process, most of them are not as effective as an in-person attendance. In addition, not all students are able to access these online learning resources since they lack the resources necessary for accessing the online learning platform. A number of students are not tech savvy enough while others are in remote areas where internet connectivity is scanty. Nonetheless, the coronavirus pandemic has catalysed a new trend that is going to change how education and learning is conducted. Evidently, we have witnessed a number of collaborations from renowned education stakeholders.

Key words: Coronavirus, Online learning, Pharmaceutical studies, Lockdown, Colleges and Universities.

INTRODUCTION

The coronavirus outbreak has caused a major interruption to education activities in colleges and universities worldwide. The worsening pandemic threatens to affect certain aspects of college life, from admission, tuition, extra learning activities, boarding and other school activities.¹ Since the WHO declared the coronavirus outbreak, the number of infections has burgeoned to worrying levels. For this reason, educational stakeholders decided on implementing school closure policies in order to slow down the rate of infection. Social distancing rules were also introduced to reduce close contact as a countermeasure to coronavirus infections. Social distancing rules were felt hard by pharmaceutical and other health care graduate students who were restricted from visiting healthcare facilities where they can observe and learn from experienced practitioners. The making of a competent pharmaceutical practitioner demands a hands-on practice and a physical presence which is majorly undermined by the coronavirus crisis. This paper seeks to explore the various effects coronavirus

has on pharmaceutical education and the different counter measures taken to facilitate education.

EFFECTS OF CORONAVIRUS TO PHARMACEUTICAL STUDIES

Social distancing rules fuelled by the coronavirus outbreak have led to the cancellation of physical attendance of class activities. Micheal Avaltroni, the Dean of the Fairleigh Dickinson University School of Pharmacy in Morris County, New Jersey, was reported as saying that pharmacy school lectures and labs that are normally delivered through personal instruction have now moved to virtual courses and digital simulations. By March 2020, more than 1000 pharmaceutical institutions across America cancelled their in-person classes,² hence shifting to online learning. An exclusively online class raises concerns about the quality of delivery through online instructions. A recent study by³ has warned that the performance of pharmaceutical students is expected to seriously suffer from online courses.

DOI: 10.5530/ijopp.14.2.31

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The mishaps that accompany online education are myriad. A research study by Mustafa⁴ (2020) from Gelism University in Turkey, revealed that approximately 20% of pharmaceutical undergraduates have problems in acquiring efficient technology for online studies, including working laptops and reliable high-speed internet.

The pedagogic paradigm shift to online learning has also compelled many learning institutions to review their grading systems in an effort to accommodate as many students as possible.^{5,6} A number of pharmacy colleges and universities have declared their plans to change to the rudimentary pass and fail grading system as opposed to the standard letter grading system. The outbreak is also responsible for disrupting testing and exams processes in colleges. In the USA a scheduled nationwide test for pharmacy undergraduate students was cancelled. The National College board announced that it will offer the nationwide tests later in the academic year since the home digital version of the exam was not as effective as expected. Although educational stakeholders had discovered a way to avert the detrimental effects of coronavirus to pharmaceutical studies, online education was not as efficient as predicted. It is covered with a variety of inadequacies which hinder a seamless learning process.

Pharmacy courses, like many other healthcare educational programmes are demanding and require a dedicated commitment to in-person laboratory attendance. Laboratory classes help students to equip themselves with the vital skills of experimenting, analysing and prerequisite learning. The outbreak of coronavirus has a huge impact on the completion of prerequisite laboratory learning required for pharmaceutical learner.^{7,8} Although online platforms have attempted to address this dilemma with the introduction of advanced technology such as the immersive technology of virtual reality, simulations and other intuitive platforms, these learning processes are not as effective as in-person attendance. Most laboratory experiments require students to use all their five senses including smell, sight, touch and sound. As Susanna Loeb ref suggests, online learning may fail to provide the precise feeling of a laboratory experience. In addition, it is impossible for students to perform hands-on activities involved with laboratory experiences like recording the temperature change, smelling the reaction odour or using a scalpel to cut through animal tissue. Furthermore, laboratory facilities of most medical colleges have now become coronavirus testing centres. The John Hopkins University is one such institution where education has been halted to accommodate coronavirus testing and diagnoses. This has definitely disrupted the learning process of pharmaceutical students. Some of the

activities found in school laboratories are necessary for building the required skill set for the job. Pharmacy students stand to lose a lot when they miss laboratory attendance due to the coronavirus crisis.

A substantial number of undergraduate and postgraduate pharmacy students enjoy the Federal Work Study subsidies every year. Federal work subsidies are economic grants that the government gives to working students to encourage certain activities that the government wishes to promote. The current conditions have made it hard for Federal Work Study students to work in their scheduled hours due to coronavirus disruptions like student quarantines, employer closures and school closures as many colleges and universities close due to the coronavirus outbreak, a number of students who work on the institutions find it challenging when reporting to work. The federal education department has directed colleges and other learning organizations to keep on paying students their Federal Work Study payments during this time of school closures. However, the decisions to pay those students lies solely with the management of the institution. Many colleges and universities have complained of the stretch in their limited funds caused by the corona virus outbreak. Apart from the payment, pharmacy students will lose a chance to improve their skills and broaden their experience in their line of work. The Federal Work Study programme acts as a stepping stone for novice practitioners to start their professional experience. New practitioners are introduced to the work environment and experience their first hands on experience through the Federal Work Study Programme. Skipping this learning stage would mean that graduates will be ill experienced to handle the dynamic challenges of the pharmaceutical world.

Not all pharmacy students are suited by the Federal Work Study programme. According to the American Association of Colleges of Pharmacy, more than 170,000 pharmacy students graduated from colleges and universities across America in 2020 alone. These graduates are looking forward to beginning the arduous task of job hunting. With the onset of the coronavirus outbreak, job seekers have a challenging task of getting an interview. Many companies have altered their recruiting efforts by considering ways to minimise the spread of coronavirus. Interviews have now moved to online platforms of video conferencing and phone interviews while replacing face to face interviewing. However, a number of companies have not yet adopted these new hiring and recruitment practices. The chances of pharmacy graduates acquiring a job have dwindled after the new coronavirus restrictions. Companies are not willing to go against governments directives like social

distancing which help to prevent the rapid infection of the disease. For this reason, there are fewer interviews and job opportunities, increasing competition. On the other hand, many pharmaceutical companies have opted to significantly cut their spending in order to salvage their business amidst hard times of the coronavirus outbreak.⁹ To cut down on their spending, companies are not willing to hire new employees since these places a pressure on their expenditure budget. Pharmacy graduates have reported a hard time in seeking new employers especially since the introduction of the lockdown policy that came with the coronavirus outbreak.

America has the largest number of international students compared to other countries. Being a country that emphasizes an efficient health system, many of the international students in America are in the area of medicine. Many of the international students pursuing pharmacy in the country have been hit hard by the outbreak of coronavirus.¹⁰ Because of the coronavirus outbreak, many colleges and institutions have suspended the study abroad programs and requested international students not to report to school. There are concerns about those students that are locked in their countries and are not able to return to their respective schools. For others there are concerns about those who were locked in their host countries without a permanent residence to live either off campus or in the campus hostels. International students are not eligible for the Government's Federal Work Study programme. International students are more likely to get stranded in their host countries. International students who were locked down in the country with the termination of international flights are having problems with their visa. Their visas have exceeded the required period of stay which is normally a semester. The process of acquiring a new visa is always long and tedious filled with a lot of bureaucratic processes. Events like this may discourage the visiting international students from continuing their educational programme in the country. Furthermore, these foreign students can discourage other aspiring students who would like to join overseas colleges.

Merits of online learning practices adopted after the coronavirus pandemic

In a short span of time, coronavirus has redefined how students are educated. The changes give us a view of the future of pharmacological studies across the world. Following the outbreak of coronavirus pandemic, educational stakeholders have taken swift and decisive measures to deal with the pandemic. Paul Reville, a Harvard specialist in education systems, is quoted saying that lockdown of schools and institutions have

sparked a new spirit of educational innovation. The innovations introduced have been ground breaking and are expected to have a long-lasting impact on the trajectory of learning innovations. A good example is the introduction of simulated interactive learning programs. This kind of program can be used to elaborate complex pharmacological studies in an easy to understand manner. Pharmacy students are now required to have an extra digital skill set adding to their already versatile plethora of skills. In the past months, the education sector has witnessed important education associations and coalitions forming. Diverse educational stakeholders like government's agencies, educational professionals, technology givers, publishers, as well as network operators have joined hands to utilize the available digital learning platforms as a momentary solution to the coronavirus pandemic.¹¹ Ministries of education have established a cloud-based, online learning and broadcasting platform for pharmacy students and other students alike. The existing learning platform in America is made up of a consortium of 60 educational organisers, publishers, media companies as well as entertainment professionals who are providing a pool of above 900 educational materials like book chapters, video, interactive content, counselling services and assessment tools for free. These kinds of approaches have proven that education innovation is gaining traction and receiving beyond the typical government-funded non-profit project.¹² The last few months have brought greater interest and investment from the private sector. Renowned technology moguls like Microsoft, Google, Samsung, Tencent, Alibaba and others are awakening to the strategic imperative of remote and online based learning platforms. While most of the initiatives are relatively isolated and limited in scope, the coronavirus pandemic might have paved a path for a much greater scale, cross industry collaborations which are fashioned around mutual educational goals.

RECOMMENDATIONS AND CONCLUSION

The rapid spread of coronavirus has influenced the paradigm shift around learning and education processes across the world. Following the lockdown and social distance policies that came along with the coronavirus pandemic, many colleges and institutions have been forced to move their learning operations to remote and online platforms. While this has served to ensure learning and education continues, online learning has been faced with a number of challenges. In some cases, online experience is not as effective as a real classroom experience in other cases students are ill equipped in resources that enable them access online learning platform.¹³ Despite the myriad limitations of online learning, the coronavirus

pandemic has catalysed a new digital learning trend to substitute the archetypal classroom. Students and teachers alike are now equipped with a new set of digital skills. Online learning has attracted a number of other private investors apart from the government.

The coronavirus pandemic has proven the importance of adapting to challenging situations. Most learning has shifted to digital and online learning. When classes transition to online, the less digital affluent students stand to lose. Educational stakeholders should look into ways of decreasing the cost of accessing online learning materials in a quest to reduce the digital divide among students. On the other hand, students are required to improve on their skills for them to adapt well in a digitally oriented educational program. Whether learning will resume in the typical classroom or continue on online platforms, an astute approach is required in the implementation of new learning processes.

ACKNOWLEDGEMENT

The authors would acknowledge Portsmouth University for its support for the work.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS:

WHO: World health organization; **COVID-19:** Corona virus diseases.

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