

EDITORIAL**COVID-19 AND PHYSICAL THERAPY EDUCATION IN PAKISTAN: TRANSITION FROM TRADITIONAL TO DIGITAL EDUCATION.**

At the end of the year 2019, a pandemic of COVID 19 unexpectedly emerged in the Wuhan city of China, rapidly spreading across the country and eventually the globe. To mitigate the effect of viral spread resulting in a high transmission rate and increase the load on the healthcare sector governments were forced to impose lockdowns to flatten the curve of COVID 19. In addition, SOPs including mandatory mask, social distancing, thermal check, and frequent sanitizer use was advocated. Similarly following WHO guidance Pakistan also imposed a lockdown resulting in the closure of educational institutes and offices etc. The conventional lecture-based educational system in crowded lecture halls might have facilitated viral transmission so initially the institutes followed the same trend of closure of institutes stopping all educational activities. This created a huge pause in the educational activities in all fields of health sciences including physical therapy education as well¹. Due to the uncertain future direction of education activities, the continuous closure of educational institutes caused unrest not only among students but also in faculties of institutes in Pakistan². To mitigate these educational crises resulting from pandemic and lockdowns, the institutes entailed a change in the educational system from traditional class lecture-based to an online virtual educational system. Considering the complex nature of Physical therapy education including all aspects of teaching such as theoretical, practical, and research work³; shifting to virtual learning and teaching was a big challenge for the students as well as teachers. A low-middle-income country like Pakistan significantly lacked infrastructure and technical support aspects in universities and households to facilitate a virtual education. Few of these included lack of internet access, inadequate bandwidth, limited IT support facilities in universities, the expertise of faculties related to online portals and lack of students' responsiveness, etc.¹. Furthermore, issues of electricity and power failures resulted in additional difficulties. Moreover, because majority of the population of Pakistan lives in peripheral areas of the country, these problems increased manifold hindering physical therapy education. The missing component of the need for hands-on practice, one on one supervised interaction between student and patient for effective learning in physical therapy education was another missing factor in online education that required consideration.

Yet to prevent any further delay in educational activities due to lockdown majority of physical therapy educational institutes shift to online education. Few leading universities had tools for distant learning⁴ but the majority of institutes lacked the digital infrastructure to establish a connection with students to continue educational activities. Institutions lacked the basic software required for online education. To begin with, the faculties at institutions used different social media platforms such as WhatsApp groups, Facebook groups, google drive, etc. to disseminate recorded lectures¹. Higher education commission (HEC) also instructed institutes to develop virtual platforms such as a learning management system (LMS) for delivery of educational material, reporting, tracking, documentation, examination, and administration related to students. For such purpose, help of the sole online education university of Pakistan "virtual university" was sorted⁵. HEC in collaboration with Microsoft provided over 100 universities and more than half a million students access to the digital hub of Microsoft teams⁶. This further resulted in ease of lecture delivery, recording for future reference, attendance maintenance, online quiz, and student evaluation.

The scenario was no different for faculty and students. Pakistan has a significant number of students and faculty from low socio-economic backgrounds with limited access to high bandwidth internet facilities at home. Additionally, the lack of personal computers, laptops, and smartphone devices further hindered teaching and learning for faculty and students alike. Faculty and teachers also lacked basic training for utilizing online education delivery platforms and knowledge of online resources for effective digital teaching⁷. Such low resourced setting results in a significant increase in challenge to make digital education work and in turn made it difficult for students in physical therapy education to learn online and attend classes⁴. The faculty of physical therapy education institutes made a lot of effort to plan the lectures, record video demonstrations, and practical sessions, and provide necessary resources to the students to facilitate learning. Yet students faced significant difficulty in grasping the concepts especially those related to practical and clinical work. Physiotherapy programs require a lot of hands-on laboratory and practical work in addition to supervised interaction with patients for clinical learning in supervised clinical practice but due to social distancing and online learning, it was not possible to conduct such sessions and clinical rounds. Though clinical interaction with patients is a necessity for developing adequate clinical decision-making skills and patient management strategies, such was not possible in an online virtual environment. While faculty continued to provide students with recorded video demonstrations, YouTube tutorials, content from different databases yet learning at par with the traditional hands-on method was difficult to achieve. This is evident from fact that students have reported low satisfaction with online learning⁸. The evaluation was also one of the difficult aspects of online learning in physical therapy education. Different evaluation methods had been incorporated in online physical therapy education during COVID 19 such as assignment-based evaluation, MCQ-based examination, one on one online viva, etc. yet the fairness of such evaluation methods to appropriately examine students was questionable.

Physical therapy-related research activities were also significantly impacted by COVID 19 and the lockdowns. As educational institutes were closed, access to research laboratories for scholars was significantly hindered. Additionally, lack of availability of sample populations due to commutation problems, ban on intracity and intercity transportation systems, and lockdowns hindered participation in clinical trials and surveys. This raised significant concerns for researchers' markedly delaying research work, especially for those requiring mandatory research work for degree completion. Additionally, Research output related to the rehabilitation of COVID personal was also affected.

All these factors highlight the point that while high-cost institutes have been somewhat successful in transitioning to online physical therapy teaching and learning, a lot of institutes' still lack digital infrastructure for distant education. It is safe to say that though digital physical therapy education has come a long way since the start of the COVID 19 pandemic there is still a long way ahead for progress. Stakeholders should look beyond the current scenario of pandemic and continue working on establishing a distant learning system for health sciences education. Future work can be done on faculty development, establishment of distant learning courses, integration of virtual reality technology for clinical teaching, practical work, dissection, anatomy model study, and modernization of IT infrastructure for the provision of better internet accessibility, systems, and platforms. This would not only fill the distant learning education gap in Pakistan but will also facilitate the evidence-based practice (EBP) among the physical therapy community as these are also a few similar prospects identified as a barrier to EBP. By this, the huge impact of COVID-19 on the physical therapy education of the students in Pakistan can be turned into some positive outcomes.

Prof Dr. Muhammad Naveed Babur

Dean, Faculty of Allied Health Sciences
Superior University Lahore
ORCID ID: 0000-0002-5437-2497

Dr. Muhammad Ehab Azim P.T

Senior Lecturer
Foundation University Institute of Rehabilitation Sciences (FUIRS)
Foundation University, Islamabad (FU)
ORCID ID: 0000-0001-6561-6496

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