**Substituting Face to Face with Virtual teaching and learning during the Covid-19**

**Pandemic: Challenges of Nurse Educators from Developing Countries**

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The global public health crisis (COVID-19 pandemic) has substantially affected the health care and nursing education practices across the world 1, 2. During these unprecedented times, global nursing and medical institutions and universities have shifted to virtual teaching and learning 3. This shift from face to face to virtual teaching and learning may be challenging and overwhelming for nurse educators and students as these groups may need to adapt to new norms of learning and teaching. One recent study of nurse educators from the US reported that the shift to online teaching requires greater resources, personal knowledge, and ability to adapt to a role change, efficient technological and pedagogical management system, and mentorship 4. A systematic review of the barriers and facilitators of online teaching in health sciences also reported that limited resources, motivation, and limited technological skills, are the key barriers to online teaching 5. Adapting to new norms and shifting teaching and learning environments may be more comfortable in regions such as the UK, the US, Europe, Australia, and Canada because of their high-quality university educational environments. These high income and developed countries have had the experience of virtual teaching and learning because many undergraduate and graduate nursing programs were already offered online. On the contrary, low-income countries such as Pakistan may find it extremely difficult to switch from face to face to virtual teaching and learning. In this commentary, we highlight the challenges of nurse educators in low-income countries when substituting face to face with virtual teaching and learning during this pandemic. Since the establishment of nursing education in 1948, Pakistan's nursing education system remains underdeveloped and somewhat substandard 6. Compared to high-quality nursing education in developed countries, the quality of education in Pakistan could be considered low. Except for a few private nursing colleges, most of the nursing institutions experience a significant shortage of qualified nurse educators, a dearth of nursing educational research, and a lack of resources and sophisticated clinical and educational learning environments 7, 8.

The nurse educators and students in Pakistan are not accustomed to virtual teaching and learning environments 8 for two reasons. First, virtual nursing education has hardly been appreciated or emphasized in Pakistan. Based on our experiences in nursing educational settings, we found out that the national regulatory body and institutions across the country hold a preconceived biased notion that virtual nursing education is mediocre compared to face-to-face education. Undoubtedly, the quality of nursing education may compromise in virtual learning environments because it could be challenging to teach the practical aspects of nursing. Nevertheless, virtual teaching and learning are beneficial in many ways, such as creating local and global communities of practice, initiating self-directed learning behaviors, and enabling flexible and comfortable environments for busy and introverted students respectively 9. Virtual teaching is particularly important in these unparalleled times when delaying student education could negatively affect the future nursing workforce and students’ financial and emotional well-being. Including the current student cohorts in future sessions, when this pandemic is over, could be unmanageable for educational institutions, educators, and affiliated teaching hospitals and health centers 3. Given this lack of emphasis on virtual teaching, nurse educators feel that they are not prepared to take on the challenges associated with virtual teaching and learning.

The second reason is the limited capacity and confidence of nurse educators to switch to virtual learning. Most of the nurse educators in Pakistan possess a bachelor's degree in nursing, and only a few hold masters and doctoral degrees 6, 10. Most of these educators do not have any personal experience of learning in virtual environments. Therefore, it may be extremely challenging for them to learn the new norms of conducting virtual sessions and exams, meet the institutional objectives, accomplish their educational goals, and assist students in tackling virtual learning challenges.

## Even if we assume that nurse educators possess the capacity to shift to the new norm of virtual education, the limited resources at the national and the institutional level are critical constraints. According to studies, the minimal research on nursing education from Pakistan designates the inadequate resources at various levels 8, 10. At a personal level, nurse educators may not have the competencies to develop online curricula, lectures, assessments, and exams. At the institutional levels, there is a great dearth of multimedia resources, internet, access to scholarly resources, and collaboration among and between educators and nurse administrators10. At the national level, the inconsistency of nursing curricula, limited support from the regulatory body and higher education commission, and limited monetary sources are major barriers to nurse educators’ transition to the virtual mode of education. For successful and quality health sciences education during the pandemic, simulation-based teaching-learning could play an excellent role3. However, the nursing institutions across the low and middle-income countries do not have specialized and advanced simulation labs and resources to ease student learning. So, shifting from face to face to virtual teaching and learning is the need for these unprecedented times. Apart from numerous deficiencies related to virtual teaching and learning, it has several advantages, such as becoming technology literate and advancing teaching and learning repertoire. Although this extraordinary shift may seem overwhelming and challenging to both students and educators, they have to learn these novel and technology-laden teaching methods and learning to meet their organizational and educational goals.

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