

## Telerehabilitation Services

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Telerehabilitation is the dire need of time due to the recent covid-19 pandemic. It is also an era of technology integration in the delivery of health services. In the literature, telerehabilitation has been defined to provide rehabilitation service to patients with the use of technology from a distance or at the comfort of one's home. The idea was introduced a few decades back due to many advantages including greater privacy, work at one's own pace, minimize travel barriers, higher patient independence, Protection from virus infections and to be cost effective.<sup>1</sup> The current pandemic where many rehabilitation centers were closed to protect immunocompromised patients and also to control the spread of the disease. However, many patients suffered and were deprived from the essential rehabilitation services resulted in many complications especially patients with cardiopulmonary issues.<sup>2</sup> Although the researchers are agreed that telerehabilitation will be an excellent alternative for the situation like covid-19 to provide essential health care services without any interruption. However, many challenges and questions arise, is telerehabilitation effective for all conditions that need to be rehabilitated or maybe for specific conditions? Professional training, Patient evaluation, practice standards, required technology (Equipment), secure and high-speed internet are the main challenges for telerehabilitation in Pakistan.

The effectiveness of telerehabilitation has been evaluated by many researchers for specific conditions. The cardiac telerehabilitation effectiveness was evaluated by Scherrenberg et al. They concluded that the core components of cardiac rehabilitation can be provided effectively in the future as an alternative to facility based rehabilitation.<sup>3</sup> Another study conducted by Nuara et al on

telerehabilitation for neurological conditions. They concluded that telerehabilitation should be an integral part of facility-based rehabilitation to reduce the burden and avoid discontinuity care due to the pandemics like covid-19. Especially the long term care for many neurological conditions (CP children, stroke patients and Parkinson's disease etc.)<sup>4</sup> A systemic review was conducted by Ahmad et al, for clinical effectiveness depending on the specific condition, functionality, quality of life, satisfaction, adherence and safety. The review concluded that telerehabilitation is an excellent alternative in the post covid-19 era for providing rehabilitation care to patients as effective as facility-based care. This should be an integral part of all facility-based rehabilitation care. However further research studies should be continued on telerehabilitation to establish proper methodology and standards of practice for the delivery of health care services using technology effectively.<sup>5</sup>

A variety of technologies are available to be used in telerehabilitation based on the specific needs of the patients including Textual-based Technologies for simple recording, offering, or streaming of textual information that can later be presented in the form of reports and diagrams. Email may be used as the basis for both clinical training and ongoing therapeutic communication. Mobile phone text messages can be used for following up visits or guidance/instructions to the patients. Audio-based (Voice/Sound) Technologies can be used to store the data electronically and can be shared or forwarded as email attachments at no cost. Audiotapes and videotapes are good tools to store and forward audio/video presentations at minimal cost. Vision-based Technologies may be used in real time interaction with patients (videoconferences). Virtual Reality (VR) is

another form of technology that provides a unique opportunity to simultaneously present and manipulate a variety of visual, auditory, tactile, and even olfactory sensations to represent physical experiences. Web-based Technologies also offer a wide variety of incorporating text, audio, images, and video experiences that may incorporate both real-time communication and stored material for asynchronous use into a rehabilitation service. Wireless Technologies offer numerous opportunities for the remote provision of rehabilitation. Integrated systems allow users to represent a wider variety of communication media that may accurately mimic face-to-face interaction.<sup>6</sup> Social media and mobile apps can be used for skill demonstration, consultation, and patient education effectively and a large number of populations are able to use these technologies currently.

We have all the essential technologies available for the establishment of telerehabilitation services, but we need to focus on professional training for proper use of the technology as well as patient education, how to operate the required equipment on their end for effective care delivery. Telerehabilitation is believed to be an excellent alternative for facility-based rehabilitation centers which will be affordable and effective as well.

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