

Rehabilitation research challenges and recommendations during COVID-19

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Clinical rehabilitation research is complex, challenging, and it requires appropriate adaptations in methodology for better health outcomes while fulfilling the standard of clinical trials at the same time. Rehabilitation research plays a significant role in understanding the effectiveness of rehabilitation interventions, improving the quality of care through evidence-based decisions and contributing to the body of knowledge in rehabilitation.(1) Rehabilitation research has gained considerable attention in the past two decades, aiming to enhance the community's functional status and activity level through different innovative rehabilitation approaches. However, these approaches require long-term assessment and observation to document changes and clinical improvement through various objective measurement tools. The assessment methods and interventions used in rehabilitation research are often complex and time-consuming. Unlike the usual clinical research methods, there are a few concerns that the researchers need to consider during the design and conduct of rehabilitation research using the existing models of clinical research. These include, but not limited to the presence of a true control group, appropriate expertise, environmental factors, face-to-face interaction, physical contact, frequency of visits, and long term follow-ups.(2)

During the pandemic across different countries, the full or partial lockdown has substantially reduced face-to-face interaction with patients for clinical and research purposes. This has led to limited patient availability to participate in the randomized control trials and other studies, not meeting the required sample size according to the recommended guidelines. COVID-19 has also, directly and indirectly, compromised the mobility, participation, and activity levels of healthy and diseased populations.(3) The patients are at an increased risk of developing functional

deficits, balance impairments and undergoing deconditioning and experiencing falls.(4) The clinical research studies cannot be put on hold for a long time as they are a dire need during this pandemic to guide the efficacy of different interventions and preventative measures to reduce the adverse effects of both COVID infection and long term isolation. Proper rehabilitation reduces complications and hospital admission and improves the quality of life in patients.(5) On the other hand, using the traditional methods of conducting face-to-face clinical research during the pandemic will put the participants and research staff at risk of getting the infection. Therefore, it is crucial for rehabilitation researchers to continue the clinical research studies whilst following all standard operating procedures (SOPs) for COVID-19, improvising their methods and minimizing the face-to-face contact between participants and research staff.

Considering the current pandemic and social distancing, clinical researchers can adopt the following recommendations to continue clinical research, which can help clinicians make evidence-based decisions during this pandemic and help improve patient care and quality of life.

I). Digital assessment and data collection tools: The traditional consent forms and assessment tools can be converted to electronic consent forms, online assessment and screening tools or digital calculators. Software or mobile applications can be developed and used to record and compare evaluations and observations. Furthermore, researchers can use online survey forms and social media platforms for recruitment and data collection.

II). Tele-rehabilitation /video conferencing: Telerehabilitation or video conferencing should be adopted by the researchers to intervene remotely, monitor the participant's progress, and address their issues. Remote interventions involving video consultations also reduces the risk of depression amongst self-isolated or homebound patients. Group therapy via telerehabilitation is also an effective strategy to engage multiple participants in physical activity simultaneously and improve their motivation levels.(6)

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III). Home-based interventions: Supervised/unsupervised simple and easy interventions should be promoted at home during research to prevent unnecessary physical contact and risk.(3)

IV). Risk prediction models: These models can be used for secondary data analysis and predict health outcomes according to the trends and existing available data.

V). Qualitative Interviews: The perceptions and opinions of the participants should also be incorporated in clinical studies through online semi-structured interviews regarding the interventions to address the specific issues during this pandemic.

VI). Protocol deviations and Ethical permissions: There must be some flexibility to do minor changes in protocol according to situation during this pandemic. The procedure of ethical approval should also be quick to facilitate the initiation and conduct of research to prevent unnecessary delay and waste of time.

VII). International collaboration: It is possible to do research collaborations with international researchers during this pandemic to achieve similar targets and provide a complete insight to the target population.(2)

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