Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Adoption of telerehabilitation in a developing country before and during the COVID-19 pandemic

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Dear Editor,

Although most infected people show mild or uncomplicated forms of coronavirus disease 2019 (COVID-19), acute respiratory distress syndrome develops in approximately 14%, and 5% require admission to an intensive care unit [1]. The length of stay in the intensive care unit among such patients ranges from 4 to 12 days [2], which may be prolonged especially in resource-limited healthcare settings [3]. Understandably, many healthcare providers are more focused now on attending to the urgent and life-threatening health needs of people.

At present, it is more common to see the immediate effects of COVID-19 as compared with the disability and long-term effects of the disease, such as deconditioning. However, as a rehabilitation provider in private and government tertiary-care hospitals, I should not remain complacent. Healthcare providers, in general, must not only keep in mind the acute effects of COVID-19 but should also "urgently prepare for... the more long-lasting aftershocks of the pandemic" [4]. As patients improve and are sent home, we may see patients who are hemodynamically stable and infection-free but exhibit the consequences of prolonged hospitalization and isolation, such as physical (i.e., dyspnea, fatigue, weakness, pressure ulcers), cognitive (i.e., delirium), and emotional (i.e., depression) complications as part of the post-intensive care syndrome [4]. These complications may result in limited mobility, dependence in activities of daily living, re-hospitalization, and poor quality of life, which all may be mitigated by early rehabilitation [5]. Along with individuals with COVID-19-related complications, many more with disability but not with COVID-19 continue to be in need of face-to-face rehabilitation services, which are now inaccessible because of community quarantine.

After the first confirmed case of COVID-19 in the Philippines in January 2020, by early May, the nationwide total number of cases had increased to 10,463, with 696 deaths and 1734 recoveries [6]. At this time, we have no locally available disability report for patients who have recovered. Nonetheless, early reports abroad show the benefits of instituting mobilization and functional training as soon as a patient is medically cleared to do so, such that face-to-face pre-habilitation, habilitation and rehabilitation have a role in the acute, subacute, and long-term phases of care for patients with COVID-19 [4,5,7]. However, most, if not all, rehabilitation settings in the Philippines consider rehabilitation services non-essential. This may be understandable because with precious healthcare efforts and limited staff, hospitals and resources should be channeled to more urgent medical conditions. In very few local tertiary-care hospitals, whether private or government, face-to-face rehabilitation services are provided for confirmed, suspected, or probable COVID-19 cases. Essentially, access to rehabilitation is limited by the hospital's capacity to provide personal protective equipment, protect the rehabilitation workforce, limit the risk of viral spread, and mitigate healthcare costs.

Contrary to the typical delivery setting of rehabilitation interventions for patients with COVID-19 in developed countries [5], telehealth may play a role in our local setting not just in the long-term phase of care but also in the acute and subacute phases, in which face-to-face rehabilitation is costly, risky, and impractical. Otherwise, when rehabilitation cannot be provided face-to-face or from a distance, nurses, families, and healthcare personnel directly involved in the care of the patient will have to adapt and take an active role at least in preventing COVID-19 complications (i.e., post-intensive care syndrome). Telerehabilitation is a form of telemedicine that leverages telecommunication technologies to deliver rehabilitation services synchronously or asynchronously to remote patients to minimize the barriers of distance, time, and costs [8].

As a developing country of more than 7600 islands populated by nearly 110 million Filipinos [9,10], in the Philippines, telemedicine seems a viable option to expand the reach of limited healthcare providers and resources. Various local private and government telemedicine programs using different, mostly low-cost technologies were launched even before the COVID-19 pandemic [11], but many, including telerehabilitation, faced challenges that hindered wide-scale implementation. Despite being called the social media capital of the world, the Philippines continues to face challenges to the adoption of telerehabilitation arising from the stakeholder (i.e., internal to the patient, carer, healthcare provider, or policymaker) or the environment (i.e., external). Among the internal challenges are the lack of awareness, acceptance and technical readiness among stakeholders, along with skepticism and resistance to change. However, examples of external challenges are the lack of standard telerehabilitation guidelines, scarce local evidence, potential costs, limited technical resources, data privacy issues, risks to patient safety, and unclear liability of rehabilitation providers.

Probably similar to other developing countries, in the Philippines, there seems to be an urgent need to adopt telemedicine,

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or particularly telerehabilitation in some healthcare settings during the enhanced community quarantine period catalyzed by COVID-19. In the national university hospital that was converted to COVID-19 center, telerehabilitation was incorporated in the service, training and research arms of the Department of Rehabilitation Medicine, Philippine General Hospital. Several pre-COVID-19 barriers to telerehabilitation were suddenly addressed by establishing awareness (resulting in eventual acceptance or "forced" adoption), technical resources (i.e., computers, telecommunication devices, the Internet), telemedicine online training, guidelines, and data security measures. In some hospitals, especially in cities under lockdown, inpatients and outpatients, private or charity cases could now seek rehabilitation consultation and therapy services via telerehabilitation.

However, most patients, rehabilitation providers, and telerehabilitation set-ups still seem unready for full-scale implementation of telerehabilitation programs. Barriers include doctors' and therapists' difficulty in evaluating and managing various cases via telerehabilitation, patients' and rehabilitation providers' lack of readiness and technical know-how to interact in a secure telemedicine environment, costs of telecommunication, and persistent concerns about data privacy, patient safety, charging of professional and therapy fees, cost-effectiveness, and medicolegal implications. Likewise, the aforementioned stop-gap measures and persistent barriers are also seen in leading world-class private tertiary-care hospitals in Metro Manila.

Therefore, although telerehabilitation may seem like a viable alternative to face-to-face delivery of rehabilitation services during and after the enhanced community quarantine period, transitioning to the "new normal" will entail various internal and external adjustments for the different stakeholders. Greater-scale adoption of telerehabilitation will be gradual, as the unprecedented pandemic continues to usher it into the landscape of the practice of medicine in the country. Multidisciplinary collaboration with referring medical specialties, information and communication technology experts, data privacy officers, and medicolegal lawyers among others may have to continue to strengthen present and future telerehabilitation endeavors.

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