LETTER TO THE EDITOR

Covid-19 Outbreak Highlights: Importance of Home-Based Rehabilitation in Orthopedic Surgery

Dear Editor

We are facing a public health emergency in relation to coronavirus disease 2019 (COVID-19) (1). Efforts to limit the outbreak show that social distancing by means of limitations in public transportation, restrictions in travel, and closing workplaces as well as mass masking can be successful ,at least temporarily (2). It seems that outpatient and even inpatient rehabilitation schedules should be re-evaluated in this status. So, how does this situation affects physiotherapists? Logically, if the exposure risk to COVID-19 for patients and physiotherapy staffs are high, they cannot provide in-patient services furthermore, as a fact, many major health conditions, especially in the field of orthopedics, need prehabilitaion and rehabilitation to improve the outcomes. Now there is an important question. How should physicians approach patients in this situation? Home-based rehabilitation and tele-rehabilitation may hold the answer, although it is still possible to provide care for out-patient, inpatient, skilled nurse care (SNC) with a limited number of patients (3). To maximize patient/staff safety, we suggest:

1. Ask patients to call ahead their scheduled appointment. On the phone ask about fever, respiratory symptoms, family contact with a case of COVID-19, or recent travel to evaluate need to postpone upcoming appointments.
2. Reevaluate the reasons for an appointment to find-out suitable patients for tele-rehab or home-based care.
3. At entrance provide instructions about social distancing and hand hygiene for both patients and staff.
4. Provide alcoholic sanitizer or hand rub solutions. Tissues should be available in check-in front desk and waiting area.
5. Plastic/glass barrier is useful to minimize the contact between your staff and patients.
6. Consider cancellation of appointment if personal protection equipment (PPE) is not enough to admit a suspected or confirmed case of COVID-19.
7. Reduce the number of out-patient appointments by using the capacity of tele-rehabilitation, this would help to establish a one by one service.
8. Disinfection of all devices and equipment of modalities after each session.

Home-based rehabilitation is one of the supportive programs that allow the continuation of patients care in a familiar living environment in order to reduce the burden on caregivers and improve the subject's quality of life (QOL) (4). It is believed that home rehabilitation may have similar effects on out-patient clinics and there is no difference between pediatric and adult patients (5). Implementation of modalities such as TENS (Transcutaneous Electrical Nerve Stimulation) and ultrasound to home-based physiotherapy care have been studied before, but, the evidence is low and further studies are needed (6, 7). Tele-rehabilitation is the great key to success in most home rehabilitation programs. "Telerehab", is a tool that makes rehabilitation process more accessible and cost-effective and increases subject engagement. Tele-rehabilitation services use technology to mediate the communication between remote patients and specialists. Importantly, it will allow better access to rehab care, while accessing to rehabilitation assessment and treatment is challenging these days (8).

There are evidences that home- based rehabilitation is effective in different orthopedic patients including after major orthopedic surgeries and common musculoskeletal problems. A systematic review and meta-analysis was carried out to evaluate the effectiveness of home-based rehabilitation in patients with hip fracture. Fortunately, home rehabilitation has shown significant positive effects on activity of daily living (ADL) and physical function in the subjects (9). A well-designed study on the efficacy of home rehabilitation program for osteoarthritic patients undergoing total knee arthroplasty shows promising results as well (10). Moreover, tele-rehabilitation has been demonstrated as a considerable substitute for clinic-based rehabilitation in common musculoskeletal pain (11). During COVID-19 crisis it would be helpful to utilize training exercise videos for patients and track their recorded videos to affirm that patient stay in line with the protocols.

Despite the surprising scenario there are limitations for tele-rehabilitation programs. First, as of now American Physical Therapy Association (APTA) notes that Medicare does not cover these services, it might be the same problem in many countries in which health insurance companies do not pay for these services. Second, the infrastructure for electronic visits and patient education

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is not available worldwide.

In summary, the effectiveness of rehabilitation process is undeniable in many musculoskeletal and joint conditions. When social distancing policies limit orthopedic surgeons to use hospital or clinic-based rehabilitation, developing home-based & tele-rehabilitation modalities are highly recommended by orthopedic surgeons, physiatrists, and physiotherapists societies. (12-14).

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