

Impact of Physiotherapy Services in the Phase of a Pandemic

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Abstract: *Patients in need of hospital treatment and/or critical care unit care benefit greatly from the services provided by physiotherapists. However, little is known regarding the treatments carried out by physiotherapists and multidisciplinary teams in COVID-19 patient care facilities in the published literature. We focus on the care of hospitalized patients with COVID-19 in this viewpoint and highlight the function and value of physiotherapy in this context. Physiotherapists have a well-established role in the care of patients with COVID-19, but one key concern is how to handle patients not infected with COVID-19 with the same degree of discretion as COVID-19 patients. There are now more of a number of obstacles to actual practice. Because the illness spawned a plethora of complications. In this article, we'll look at some of the most significant effects of the epidemic on the current physiotherapy delivery system, the challenges that have arisen as a result, and potential solutions to the problem.*

Keywords: Coronavirus, COVID-19, Rehabilitation, Pandemic

1. Introduction

Physiotherapists are highly valued in the healthcare systems of a number of different nations, both in primary and secondary settings where they provide critical support for patients requiring ventilatory assistance during the acute illness phase and rehabilitation interventions to help them recover and return to full functionality WHO declared COVID-19 an epidemic on January 30, 2020, and a pandemic on March 11, 2020 [1]. As of the 22nd of December, 2020 it has been responsible for the infection of an estimated 76,250,431 people due to the fact that 1,699,230 people died all around the world [2]. The world's first case of was recorded in India on January 30, 2020, will mark COVID-19 [3]. Starting on the 22nd of December in the year 2020, With 10,075,116 reported cases, India ranks second globally behind the United States. This country has the highest rate of casualties [2]. The Collaborative on the Verge of Pandemic Influenza is putting all aspects of society to the test, not just healthcare. Activities that require the use of muscle or other proprioceptive or neural systems are considered physical activities. People have a hard time getting in shape because technology has pampered them.

As soon as possible, people with COVID-19 need to receive treatment, which includes Remedy for the lungs Efficient evaluation and objective setting and rehabilitation, open lines of contact, and frequent check-ins Important tools for preventing injury include personal protective equipment (PPE). The Chartered Society of Physiotherapy's established criteria for excellence in the treatment of COVID-19 patients (CSP) [4]. Measures attempted to contain the epidemic (like lockdown) resulted in a plethora of issues, such as movement limitations and loss or diminution the availability of outpatient and home health care services, which have completely changed the trajectory of the disaster for the recovery process. The nightmare has continued to increase significantly during the previous seven months, to the point that the CSP, a 'tsunami of rehabilitative needs,' [5] as it has been called, has hit the nation hard. SARS-CoV-2 is a novel coronavirus belonging to the same family as SARS-CoV and

Middle East respiratory syndrome coronavirus (MERS-CoV), which caused outbreaks of SARS in 2003. In Guangdong, China [1], and Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in Saudi Arabia [1]. Soon enough Once the first case of COVID-19 was recorded on February 27, 2020 in Nigeria, it was immediately labeled a global health emergency. This resulted in the implementation of quarantine in major urban centers to stop the spread of the infection; with some success it was successful in accomplishing [2]. Yet, in other states (regions), the number of confirmed cases rising countrywide despite countrywide curfew [3]. When in lockdown, everyone was expected to remain inside and is forbidden to leave the building for any reason. Somewhere outside of the nation or inside unless absolutely necessary [4]. Health care in general, but especially in countries with low and moderate incomes, was affected by this law [5].As a developing nation with poor infrastructure, India felt the impact the most as hospitals were converted into isolation wards in certain areas of the country, while in others, only Isolation wards were set up in other areas of hospitals as well [6]. Separately, personal Clinics and hospitals, as well as other community facilities, were forced into seclusion centers [6], to the point that some people were so cut off from society.

Recommendations were made for protective gear, traditional chest physiotherapy, exercise, early mobilization, oxygen therapy, nebulizer treatment, non-invasive ventilation, and high-flow nasal oxygen; endotracheal intubation; protective mechanical ventilation; management of mechanical ventilation in severe and refractory cases of hypoxemia; prone positioning; cuff pressure; tube and nasotracheal intubation; and nasotracheal intubation.

Conventional Chest Physiotherapy

Patients with airway disorders can benefit from chest physical therapy (CPT), an intervention that is extensively employed. The primary objective is to improve secretion transit and reduce secretion retention in the respiratory system. Forced expirations (a guided cough or huff), postural drainage, percussion, and shaking are all elements

of the traditional CPT. It is unclear whether patient populations might benefit from various CPT modalities, despite the fact that CPT has shown to increase mucus transport. Patients with airways disease who show objective signs of secretion retention (such as persistent rhonchi or decreased breath sounds) or subjective signs of difficulty expectorating sputum, and whose disease appears to be progressing for reasons that may be related to secretion retention, are the ones who benefit most from CPT (eg, recurrent exacerbations, infections, or a fast decline in pulmonary function). Among the several components of traditional CPT, directed cough stands out as the most useful and significant. Conventional CPT's other parts are unnecessary and provide minimal value at best. High-frequency chest wall compression, vibratory positive expiratory pressure, and exercise are all examples of alternative airway clearing techniques that have not been shown to be more effective than standard CPT. Other CPT techniques should be explored only if coughing and sneezing are ineffective. A patient's response to therapy and personal preference will likely play the biggest roles in determining which of the CPT options will be used.

Impact on Physiotherapy Services

It has been suggested by the World Physiotherapy (WP) that policymakers not cut corners on patients' rehabilitation requirements [7], since doing so would raise mortality and morbidity. The potential for diminished and restricted functional activities may result from unfulfilled rehabilitation demands. These factors have been linked to diminished engagement, diminished autonomy, and diminished quality of life [8]. The topic of how to best rehabilitate those who have already contracted COVID-19 should not be overlooked in favor of finding a cure as soon as possible. As was previously said, physiotherapy services, which were crucial to the medical system, were negatively harmed by the numerous limitations established by different administrations. Distancing societal standards, the lack of "non-essential" services, the end of public transportation, and limits on outpatient and home care all had a detrimental impact on these types of assistance. As a result, care for the population's already ill was compromised. A policy that can adequately meet the requirements of both present and future COVID-19 patients and the unmet needs of patients who do not have COVID-19 is urgently required. It is impossible to overstate the importance of physiotherapists as first-line caregivers for patients with COVID-19. Respiratory physiotherapy has been emphasized as an important part of treatment for COVID-19, with the current research placing a strong focus on this approach to symptom management [9, 11]. Likewise, muscular therapy should be a priority in addition to respiratory rehabilitation. According to their symptoms, WHO divides patients into the following groups: Clinical indicators of pneumonia (fever, cough, dyspnea, increased respiratory rate) characterize the mild form of pneumonia (stage a), whereas the severe form of pneumonia (stage c) requires neuromuscular electrical stimulation, exercise, respiratory muscle training, and psychological support [9, 13, 14]. The increasing number of patients who have been released from the intensive care unit with COVID-19 necessitates a focus on their long-term rehabilitation requirements. It's also important to keep in mind that some of the COVID-19 patients are seniors who

may have rehabilitation needs even before they get ill. Therefore, this population needs special care in order to reduce the prevalence of impairment and frailty. Some adjustments to the standard physiotherapy practice are needed to deal with the difficulty of caring for patients with COVID-19 and without, as well as for the sake of the therapist's own safety [15]. The fight against COVID-19 relies heavily on the safety of the personnel involved. In order to combat this epidemic, we must ensure the safety of our healthcare professionals. Remember that in both Toronto and Singapore, over 20% of the sick population was made up of medical professionals during the SARS outbreak [16]. Researchers have learned through studying different transmission methods that health care (World Physiotherapy) WP has already begun a push to ensure that physiotherapists have access to PPE [17]. Furthermore, physiotherapists dealing with patients with COVID-19 should be completely compliant with the WHO guidelines [20], which includes the proper administration of PPE, as respiratory physiotherapy is an integral element of the care of COVID-19 [9,18,19]. To further aid in containing the epidemic, it is crucial that all physiotherapists be taught the right techniques for wearing and doffing the PPE [18]. There is an urgent need to restructure clinical practice procedures. Urgent reorganization of patient management techniques for those not in the COVID-19 cohort is required [10]. If they are to do their jobs effectively, physiotherapists need to come up with novel approaches, all the while bearing in mind regulations concerning the prevention of infection. Methods and Standard Operating Procedures (SOPs) that assist limit the spread and keep the therapist and patients safe should also be given their due attention. The World Health Organization's standards can guarantee this. For exercise and home programmes to take the lead in patient treatment and cut down on clinic visits, patient compliance must be enhanced. Manual and orthopedic therapists need to reconsider their usual methods of therapy since they may not be the best option for the patient. Video conferencing and home therapy programmes are an option [15].

Tele-rehabilitation has the potential to bridge the gap in care for those who cannot physically travel to a facility. It has applications in motor and cognitive rehabilitation, as well as the monitoring of several rehabilitation indicators, such as cardiovascular [21]. Infrastructure and technological know-how for both the caregiver and the care recipient are required for the use of the different modes of tele-rehabilitation: mobile-app, text, video, or telephone [22-24]. It's important to remember that a patient's language and education level may be a challenge to providing successful tele-rehabilitation [6]. The importance of providing care closer to home with little interaction through community-based rehabilitation, in which home care is the mainstay, cannot be overstated. The present staffing crisis can be overcome with an interdisciplinary team. There has to be less of a focus on keeping information to oneself and more on sharing knowledge and information among professionals [6, 15].

Directed Cough and Forced Expirations

The most useful and significant aspects of CPT are forced expirations and coughing. As was previously mentioned, it is observed that in comparison to regulated cough alone,

there was no significant difference between therapist-administered combination procedures. For those with cystic fibrosis, CPT may not be necessary if they engage in regular, strong coughing bouts. Secretions Patients with conditions such as chronic It is very advised that you refrain from expectorating any sputum Expirations that are compelled are as forceful expirations are just as helpful as coughing for individuals with chronic obstructive pulmonary disease (COPD) or bronchiectasis. While a short-term trial of CF patients has shown some promise, a revealed a slower yearly drop in expiratory flow during The FEV_{25-75%} range is the intermediate range of the forced expiratory volume with chest percussion, postural drainage, and FET than with self-administered FET alone. Forced vital capacity did not significantly differ across the groups, number of hospitalizations, or forced expiratory volume in one second (FEV₁).

The Benefits of Physical Therapy for ICU COVID-19 Patients

Patients with COVID-19 in the intensive care unit have regular contact with both respiratory and musculoskeletal physiotherapists. Management of pain, agitation/sedation, delirium, immobility, and sleep disturbance are all emphasized in the several clinical recommendations for the prevention and treatment of adult patients in the ICU that are currently extant in the literature [16]. Interstitial pneumonitis and severe acute respiratory distress syndrome are the primary symptoms of the COVID-19 illness, which mostly affects the lungs. In certain cases, individuals with acute hypoxemia will need oxygen flows because they are experiencing dyspnea. Some technologies, including high-flow nasal oxygen [17], CPAP [18], or noninvasive ventilation [19], have been reported to aid in pulmonary rehabilitation practice. It's also important to remember that individuals with COVID-19 may experience a fast deterioration of hypoxemia, leading to the necessity for intubation and invasive mechanical ventilation [20]. When a large number of patients needed to be admitted to an intensive care unit (ICU) and, in certain situations, invasive mechanical ventilation was necessary, the physiotherapist's duty expanded accordingly. Optimal ventilation and oxygenation, better compliance and ventilation/perfusion mismatch, less labor of breathing, less reliance on mechanical ventilation, better residual function, stronger respiratory muscles, and fewer problems are the primary targets here [8]. There is also a need for a deeper comprehension of the disease in its chronic, rather than acute, phase. While the requirements of those who survived COVID-19 may differ from person to person, the most of what is known about them comes from studies based on expert opinion, the vast majority of which originate in either China or Italy [21]. Therefore, it is essential that COVID-19 patients pay close attention to all of the suggestions made in this publication [9]. The risk of thromboembolism [22] is another important subject in recently published research on COVID-19 patients in the intensive care unit. Patients in the intensive care unit have a significant risk of venous thromboembolism due to the presence of both systemic and individual risk factors. Clinical practise guidelines were developed in 2016 by the American Physical Therapy Association (APTA) in collaboration with the APTA's Cardiovascular & Pulmonary and Acute Care sections to aid

physical therapists in making treatment decisions for patients at risk for venous thromboembolism or diagnosed with lower extremity deep vein thrombosis [23]. Also, new data shows that early movement and rehabilitation of mechanically ventilated patients is safe, doable, and beneficial [24]. ICU-acquired weakness is becoming better recognized as a serious issue with long-term consequences [25]. Furthermore, there is significant muscle atrophy during an ICU stay due to the combination of acute disease and bed rest. There is strong evidence that early mobilization and rehabilitation can shorten the time a patient has to be on mechanical ventilation and the time they spend in the hospital, allowing them to make a full recovery and return home. Intensive care unit (ICU) rehabilitation and active mobilization do not affect short- or long-term mortality, although they may increase mobility, muscular strength, days alive, and time to discharge from the hospital to 180 days [26]. Due to the unprecedented nature of this pandemic, the potential effects of mobility and rehabilitative therapy on mortality, length of ventilation, and length of intensive care unit (ICU)/hospital stay warrant special attention.

Physiotherapy Practice and Indian Scenario

The Indian healthcare system has collapsed under the strain of the pandemic, revealing its weakness and inability to effectively combat the epidemic [25]. The government of India has ordered a complete lockdown on March 24, 2020, with only four hours' warning [26]. Only in-patient rehabilitation treatments could be provided, while outpatient and home care were halted [23]. When it comes to measures adopted by governments to halt the spread of the virus, this is among the toughest in the world. While the World Health Organization was generally supportive of the decision [27], some academics disagreed [28, 29]. While some questioned the government's ability to implement adequate capacity development steps during the lockdown, others disputed about the impact on the economy [28]. There are many who think the unusual lockdown came too early of a period, and that it would have been more appropriate if the number of reported cases began to rise sharply. The Indian government's actions had a substantial effect on relief and restoration efforts. For starters, patients were hesitant to leave the facility, even if it had been necessary for their recovery, due to their fear of contracting COVID-19. Secondly, to avoid the "cohorting" of patients with and without COVID-19, the government turned certain government hospitals into "COVID-19 exclusively" institutions [30]. As a result, normal patients with rehabilitation requirements could no longer gain access to them. Thirdly, non-government health care facilities and home-based care providers were either closed or operating at much reduced capacity. Finally, the government regulations meant that the few operational hospitals were operating at a reduced capacity in order to comply with social distance standards and reduced or rotating personnel. Because of this, the preexisting system was put under extreme duress. Some independent medical doctors provide treatment remotely using services like WhatsApp and Zoom [23]. Unfortunately, it was obvious that technology couldn't substitute direct caregiving interactions. Very little research on the effects of COVID-19 has been published in Indian journals [31], and what has been published primarily deals with suggestions for physiotherapy practice. Anecdotal

evidence suggests that the most harm was done to and is still being done to older people with disabilities and youngsters with special needs. This has compounded an already serious issue in a nation like India, where the rehabilitation requirements of the population are mostly unmet. New inequalities have emerged between those who have extensive access to such technology and others who rely on it for their primary means of operation as a result of the prevalence of alternative technology-assisted alternatives. Dharavi, the biggest slum in Asia, has become a success story and example for cities throughout the world despite the darkness brought on by the COVID-19 pandemic. On April 1, 2020, they announced the first incidence of COVID-19, and by the following year, it had become an epidemic [32]. By June of 2020, however, they claimed that the epidemic had caused no deaths. Collaboration between citizens, authorities, and non-governmental organizations (NGOs) made this a reality. Because of everyone's combined efforts in Dharavi, we know that obstacles can be overcome. [33]

2. Conclusions

Physical therapists in primary care settings may be called upon to assist with the care of hospitalized patients who have tested positive for, or are suspected of having, COVID-19. The field of physiotherapy has become well-established over the globe. Physical therapists have a significant presence in emergency rooms and intensive care units (ICUs) in India and elsewhere. In particular, cardiorespiratory physiotherapy works to facilitate a speedier physical recovery after hospitalization by addressing both short- and long-term respiratory issues. Patients with COVID-19 may benefit from physiotherapy for respiratory treatment and physical rehabilitation.

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