



Importance and role of Physiotherapy with special reference to Covid-19 treatment

¹Piyush Fauzdar: Student BPT 2 Year Career Point University Kota

¹Email: piyushfauzdar2001@gmail.com

Abstract: Physiotherapy is a allied health profession which maintain or restore health through physical intervention, rehabilitation by physical examination & diagnosis. Importance of physiotherapy once again establish its importance in post Covid-19 treatment after discharge from hospital in this article we focus how physiotherapy play a vital role in treatment of patients suffering from severe Covid-19

Index Terms: Covid-19, Physiotherapy, post Covid treatment

I INTRODUCTION

Physiotherapists who work in primary healthcare facilities will likely play a part in the management of patients admitted to hospital with confirmed or suspected COVID-19.¹ Physiotherapists are also often first contact practitioners, which means that they are in a position to take responsibility for the early identification of infectious disease and/or managing workload in primary care settings. They must use their professional judgment to determine when, where, and how to provide care, with the understanding this is not always the optimal environment for care, for anyone involved². At the same time, consideration must be given to the fact that physiotherapist plays a crucial role in the health of our society. A minority group of people will present with more severe symptoms of COVID-19 and will need to be hospitalised, most often with pneumonia. In some instances, the illness includes severe pneumonia, ARDS, sepsis and septic shock³. In these cases, the physiotherapist may find themselves involved in the respiratory care of the patient.

There are a wide range of specialised areas of physiotherapy such as

Cardiovascular and pulmonary

Cardiovascular and pulmonary rehabilitation respiratory practitioners and physical therapists offer therapy for a wide variety of cardiopulmonary disorders or pre and post cardiac or pulmonary surgery.

Clinical electrophysiology

This specialty area includes electrotherapy/physical agents, electrophysiological evaluation (EMG/NCV), physical agents, and wound management.

Geriatric

Geriatric physical therapy covers a wide area of issues concerning people as they go through normal adult aging but is usually focused on the older adult. There are many conditions that affect many people as they grow older and include but are not limited to the following: arthritis, osteoporosis, cancer, Alzheimer's disease, hip and joint replacement, balance disorders, incontinence, etc. Geriatric physical therapists specialize in providing therapy for such conditions in older adults.

Wound management

Wound management physical therapy includes the treatment of conditions involving the skin and all its related organs. Common conditions managed include wounds and burns. Physical therapists may utilize surgical instruments, wound irrigations, dressings, and topical agents to remove the damaged or contaminated tissue and promote tissue healing.

Neurology

Neurological physical therapy is a field focused on working with individuals who have a neurological disorder or disease. These can include stroke, chronic back pain, Alzheimer's disease, Charcot-Marie-Tooth disease (CMT), ALS, brain injury, cerebral palsy, multiple sclerosis, Parkinson's disease, facial palsy and spinal cord injury.

Orthopaedics

Orthopedic physical therapists diagnose, manage, and treat disorders and injuries of the musculoskeletal system including rehabilitation after orthopedic surgery. acute trauma such as sprains, strains, injuries of insidious onset such as tendinopathy, bursitis, and deformities like scoliosis.

Pediatrics

Pediatric physical therapy assists in the early detection of health problems and uses a variety of modalities to provide physical therapy for disorders in the pediatric population.

Sports

Physical therapists are closely involved in the care and wellbeing of athletes including recreational, semi-professional (paid), and professional (full-time employment) participants.

Women's health

Women's health or pelvic floor physical therapy mostly addresses women's issues related to the female reproductive system, child birth, and post-partum. These conditions include lymphedema, osteoporosis, pelvic pain, prenatal and post-partum periods, and urinary incontinence.

Oncology

Physical therapy in the field of oncology and palliative care is a continuously evolving and developing specialty, both in malignant and non-malignant diseases.

II METHOD

In treatment of patient a physiotherapist always follow some basic rule such as

1. Ensure that there are enough supplies and access to appropriate Personal Protective Equipment (PPE) for front line staff.
2. Ensure that staff have an opportunity to take adequate breaks during and between shifts.
3. Ensure access to appropriate support services for the psychological health of staff.

As with any contagious respiratory condition, care must be taken to protect yourself and those in the immediate environment by following strict protocols and ensuring the use of PPE as well as taking the following steps⁴:

- Where possible treat the patient in a single room with the door closed.
- Limit the number of staff present.
- Minimise entry and exit from the room during treatment.

Respiratory Interventions

As with any patient displaying respiratory symptoms, it may be necessary to provide treatment to relieve symptoms and improve function. The secretion load of people with COVID-19 is low so they don't usually require invasive or intensive airway clearance techniques⁵. Physiotherapy support is more focused on non-invasive ventilation support measures and then the rehabilitation phase⁵.

- In the mild and moderate stages of disease, normal oxygen supportive measures (facemask oxygen) may be advantageous.
- Patients with severe pneumonia often need oxygenation support. High flow nasal oxygen** is recommended at this stage, in conjunction with negative pressure room (if available)⁶. Nebulisation is not recommended⁶.
- Some patients may go on to develop ARDS. Noninvasive ventilation (NIV) is not routinely recommended⁶ and these patients usually warrant intubation with mechanical ventilation. Prone positioning may assist ventilation and closed suctioning is recommended⁶. Extracorporeal membrane oxygenation may be indicated in patients with refractory hypoxia.

During the acute phase of COVID 19, Lazzeri *et al* suggest any interventions that could potentially increase the risk of breathing are contraindicated and should be avoided⁷. Once stable and no longer in the, if indicated the main goal in respiratory physiotherapy is to mobilise secretions and ease the work of breathing. Interventions may include techniques such as positioning, autogenic drainage, deep breathing exercises, breath stacking, active cycle of breathing mobilisation and manual techniques (e.g. percussion, vibrations, assisted cough) to aid sputum expectoration^{8,9,10}. These interventions can be performed at any stage of the disease where appropriate and safe to perform.

Telemedicine Consultations

To reduce transmission or in the case where a clinic is forced to close, you may consider implementing digital strategies to continue the delivery of your service. There are currently no established or recognised global standards or agreement for delivering physiotherapy care digitally. However, the overall emerging evidence appears to indicate that digital technologies are providing new opportunities for the physical therapy profession to deliver high-quality and acceptable care to users of their service in ways that can have benefits for all¹¹. Some national physiotherapy organisations are welcoming the use of digital practices where it enhances the service to the patient¹². To implement telemedicine a variety of approaches can be used such as the use of general communication tools such as email, chat/messaging and video conferencing and/or physiotherapy specific platforms such as online exercise prescription tools. It is important to take into account the barriers to access the use of these tools may present for some patients and provide support where required if possible.¹³ Review and follow all national or state laws (practice acts/legislations) regarding telemedicine or telehealth services.¹⁴

III RECOMMENDATION:

Table 1- Assessment guidelines for physical therapy association with COVID-19¹ .

Physical therapy management	COVID-19 person appearance (infected or suspects)	Physical therapy recommendation
Respiratory	Slight signs with insignificant respiratory involvement e.g. pyrexia, dry-cough, normal chest x-ray.	Chest Physical therapy is not required. Non-contact physical therapy.
	Presentation of symptoms of Pneumonia: ✓ Requiring minimal O2 e.g. O2 flow less than 5 liters per min for SpO2 more than 90 percent. ✓ Dry cough ✓ Coughing and can clear secretions without help.	Chest Physiotherapy is not required. Non-contact physical therapy.
	Slight signs of pneumonia with existing respiratory or neuro- muscular conditions e.g. cystic- fibrosis, neuro-muscular illness, SCI, bronchiectasis, COPD, along with difficulty in clearing secretions	Referral for chest Physiotherapy to clear airways. Employee should follow airborne precautions. The patients should be wearing face mask during physiotherapy sessions.
	Slight signs of pneumonia along with presence of exudation and consolidation with difficulty in clearing secretions without any assistance e.g. mild, unproductive and humid cough, tactile fremitus on percussion, wet audible sounds on auscultation.	Referral for chest Physiotherapy to clear airways. Employee should follow airborne precautions. The patients should be wearing face mask during physiotherapy sessions.

	Serious signs of pneumonia or lower respiratory tract infection e.g. increased O ₂ supplies; pyrexia; SOB; repeated cough with sputum; changes in chest x-ray, CT scan and US along with presence of lung consolidation.	Referral for chest Physiotherapy to clear airways. Employee should follow airborne precautions. The patients should be wearing face mask during physiotherapy sessions. Recommending optimizing of early care and ICU involvement.
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Procedures NOT to be applied in the Acute Phase

In the presence of acute respiratory failure that determines a reduction of lung compliance, the increase of respiratory breathing work and alteration of blood oxygenation leads to a rapid and shallow respiratory pattern¹⁵. This pattern is usually spontaneously adopted by the subject representing a strategy to minimize inspiratory effort and maximize mechanical efficiency of breathing. Furthermore, in such clinical conditions, the strength of the respiratory muscles can also be reduced. It is important that treatments and procedures used by physical therapists do not cause a further burden on the work of breathing, patient exposed to greater respiratory distress risk. Following physical therapy treatment methods are not recommended in acute phase for COVID-19 patients:

- ✓ Abdominal breathing exercises.
- ✓ Incentive spirometer.
- ✓ Pursed-lips breathing exercises.
- ✓ Manual mobilization/ rib cage stretching.
- ✓ Respiratory muscle training.
- ✓ Nasal cleaning.
- ✓ Mobilization during clinical instability like multidisciplinary assessment required.
- ✓ Exercise training.

Advice

In order not to increase the work of breathing, it is necessary to limit bronchial hygiene techniques to limited cases, always taking into strong consideration the risk of contamination of the environment and providing appropriate PPE for health personnel.

IV CONCLUSION

Individuals infected with Covid-19 requiring admission, presenting with viral pneumonia usually get complicated to ARDS. To deal with such situations, whole hospital wards are converted into Intensive Care Unit and High Dependency Units to accommodate patients who require ventilator support. Appropriately qualified employees are needed for efficiently managing such units. All healthcare workers have been reacting with incredible commitment and willingness and of course, physiotherapists are also being called to contribute. This recommendation to provide a quick respiratory physiotherapist reference guide to set up treatments for the management in acute stages of patients suffering from severe COVID-19. The primary aim of this management is to decrease adverse effects in this patients' population, as well as maximally protecting health-care specialists.

V ACKNOWLEDGEMENT

Author is thankful to all faculties of physiotherapy department Career Point University Kota for their motivation and support special thanks to Dr. Pushpendra Yaduvanshi HOD physiotherapy for their constant support and motivation

VI REFERENCES

1. Thomas P, Baldwin C, Bissett B, Boden I, Gosselink R, Granger CL et al. Physiotherapy management for COVID-19 in the acute hospital setting: clinical practice recommendations. *J Physiother*. 2020;66(2):73-82.
2. APTA Statement on Patient Care and Practice Management During COVID-19 Outbreak. 17 March 2020 <http://www.apta.org/Coronavirus/Statement/> Accessed 18 March 2020.
3. World Health Organisation. Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected. 13 March 2020. <https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf>. Accessed 18 March 2020.
4. Rachael Moses. COVID 19: Respiratory Physiotherapy On-Call Information and Guidance. Lancashire Teaching Hospitals. Version 1 dated 12th March 2020
5. Rachael Moses. Physiotherapy Interventions for COVID-19. 18 March 2020. <https://vimeo.com/398333258> Accessed 19 March 2020
6. Australian and New Zealand Intensive Care Society. ANZICS COVID-19 Guidelines. Melbourne: ANZICS 2020
7. Lazzeri M, Lanza A, Bellini R, Bellofiore A, Cecchetto S, Colombo A, D'Abrosca F, Del Monaco C, Gaudellio G, Paneroni M, Privitera E. Respiratory physiotherapy in patients with COVID-19 infection in acute setting: a Position Paper of the Italian Association of Respiratory Physiotherapists (ARIR). *Monaldi Archives for Chest Disease*. 2020 Mar 26;90(1).
8. David A. Autogenic Drainage - the German approach. In: J. Pryor, editor. *Respiratory Care*, Edinburgh: Churchill Livingstone; 1991
9. Pryor JA. Physiotherapy for airway clearance in adults. *European Respiratory Journal*. 1999;14: 1418-1424
10. Chatwin M, Ross E, Hart N, Nickol AH, Polkey MI, Simonds AK. Cough augmentation with mechanical insufflation/exsufflation in patients with neuromuscular weakness. *Eur Respir J*. 2003;21:502-508.
11. WCPT and INpTRA. Report of the WCPT/INPTRA Digital Physical Therapy Practice Task Force. May 2019. http://www.inptra.org/portals/0/pdfs/ReportOfTheWCPTINPTRA_DigitalPhysicalTherapyPractice_TaskForce.pdf Accessed online 14 March 2020
12. Irish Society of Chartered Physiotherapists. POLICY and GUIDELINES on e-HEALTH for Physiotherapists in Private Practice. March 2020. iscp.ie/sites/default/files/documents/ISCP%20E%20Health%20Guidelines%20March%202020.pdf. Accessed online 14 March 2020
13. Scott Kruse C, Karem P, Shifflett K, Vegi L, Ravi K, Brooks M. Evaluating barriers to adopting telemedicine worldwide: A systematic review. *Journal of telemedicine and telecare*. 2018 Jan;24(1):4-12.
14. Phzio Telehealth. COVID-19 Phzio Virtual Care Treatment. Published on 13 March 2020. Available from <https://youtu.be/UMnh2WdkvdA>.
15. Wujtewicz M, Dylczyk-Sommer A, Aszkielowicz A, Zdanowski S, Piwowarczyk S, Owczuk R. COVID-19—what should anaesthesiologists and intensivists know about it?. *Anaesthesiology intensive therapy*. 2020;52(1):34-41.