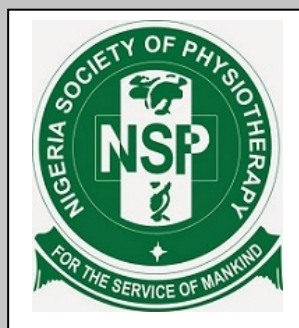
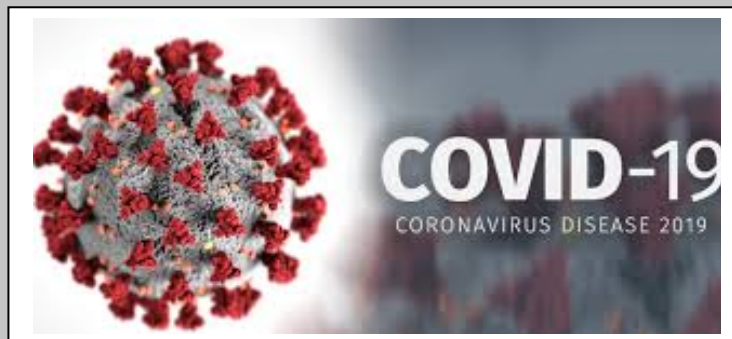


PHYSIOTHERAPY IN THE MANAGEMENT OF PATIENTS WITH COVID-19



NIGERIA SOCIETY OF PHYSIOTHERAPY, EBONYI STATE CHAPTER (EBNSP)

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1. EXECUTIVE SUMMARY

The Coronavirus Disease 2019 (COVID-19) has led to a global pandemic affecting a large proportion of the countries of the world. Affected individuals present with no symptom, mild, moderate or severe symptoms. Physiotherapists play pivotal roles in the management of these patients. The roles cover both asymptomatic and symptomatic patients. Cardiopulmonary physiotherapy when administered effectively by trained experts may help asymptomatic patients and also prevents worsening of those with mild to moderate symptoms. This in particular, will reduce the number of patients requiring mechanical ventilations, given the limited ventilators available in the country. In particular, cardiopulmonary physiotherapy is focused on the management of acute and chronic respiratory conditions and aims to improve physical recovery following an acute illness. High risk patients with existing comorbidities may also benefit from physiotherapy.

Given the intensive medical management for some COVID-19 patients including prolonged protective lung ventilation, sedation and use of neuromuscular blocking agents, patients with COVID-19 who are admitted to ICU may be at high risk of developing ICU acquired weakness (ICU-AW). This may worsen their morbidity and mortality. It is therefore essential to anticipate early rehabilitation after the acute phase of ARDS in order to limit the severity of ICU-AW and promote rapid functional recovery. Physiotherapy will have a role in providing exercise, mobilization and rehabilitation interventions to survivors of critical illness associated with COVID-19 in order to enable a functional return to home.

The Task Force on COVID-19 in Ebonyi State is leaving no stone unturned by setting up centres and mobilizing the necessary health professionals to work therein. It is against this background that the Ebonyi State Chapter of the Nigeria Society of Physiotherapy (EBNSP) thoughtfully acted to source for volunteer Physiotherapists to join other frontline healthcare providers to fight the scourge of COVID-19.

2. SERVICE PROVISION

The role of Physiotherapy spans from the asymptomatic and mild cases to the severe cases with Acute Respiratory Disease Syndrome (ARDS) with/without co-morbidities. Patients will be evaluated on a case-by-case basis and interventions will be applied based on clinical indicators. Physiotherapy management principles in respiratory care (chest physiotherapy) in COVID-19 may include:

- Airway clearance techniques. For example, positioning, active cycle of breathing, manual and/or ventilator hyperinflation, percussion and vibrations, positive expiratory pressure therapy (PEP), mechanical insufflation-exsufflation (MI-E).
- Inspiratory positive pressure breathing (IPPB) in the management of respiratory failure, or during exercise.
- Techniques to facilitate secretion clearance such as assisted or stimulated cough manoeuvres, and airway suctioning when necessary.
- Exercise prescription and mobilization.

Outline of physiotherapy intervention based on case presentation is presented in table 1 below:

Table 1: Physiotherapy Intervention in Patients with COVID-19

Service Category	COVID-19 presentation (confirmed or suspected)	Physiotherapy Intervention
A	Asymptomatic positive patients	<ul style="list-style-type: none"> i. Assess for physical fitness. ii. Recommend low to moderate intensity physical activity.
B	Mild respiratory symptoms without significant respiratory compromise (e.g. fever, dry cough, no chest x-ray changes)	<ul style="list-style-type: none"> i. Assess for fatigue and physical fitness ii. Teach deep breathing exercises and relaxation techniques iii. Low - moderate intensity aerobic exercises recommended
C	Pneumonia presenting with: <ul style="list-style-type: none"> a. Low-level oxygen requirement (eg. oxygen flow \leq 5l/min for SPO₂ \geq 90%) b. Non-productive cough or patient coughing and able to clear secretions independently 	<ul style="list-style-type: none"> i. Include others as outlined for category 'A' ii. Teach Active Cycle of Breathing Technique (ACBT)
D	Mild symptoms and/or pneumonia co-existing with: <ul style="list-style-type: none"> a. respiratory or neuromuscular comorbidity (e.g. COPDs, neuromuscular disease, spinal cord injury, bronchiectasis) b. current or anticipated difficulties with secretion clearance 	<ul style="list-style-type: none"> i. Airway clearance ii. Mobilization as tolerable iii. Plan care in line with present comorbidity e.g. neuro-rehabilitaion
E	Moderate symptoms and/or pneumonia AND	<ul style="list-style-type: none"> i. Chest Physiotherapy

	evidence of exudative consolidation with difficulty clearing or inability to clear secretions independently (e.g. weak, ineffective and moist sounding cough, tactile fremitus on chest wall, wet sounding voice, audible transmitted sounds)	techniques ii. Airway clearance techniques iii. Appropriate Mobilisation
F	Severe symptoms suggestive of pneumonia/lower respiratory tract infection (eg.: increasing oxygen requirements, fever, difficulty breathing, frequent, severe or productive coughing episodes; chest x-ray, CT or lung ultrasound changes consistent with consolidation)	i. Others in Category 'E' ii. Observe significant rest between interventions. iii. Stop when intervention exacerbates symptoms.
G	Any patient at significant risk of developing or with evidence of significant functional limitations e.g. patients who are frail or have multiple comorbidities impacting their independence, ICU patients with significant functional decline and/or (at risk for) ICU acquired weakness	i. Chest Physiotherapy techniques ii. Airway clearance techniques iv. Appropriate Mobilisation iv. Rehabilitation
H	All initially positive patients with COVID-19, who now tests negative but with reduced cardio-pulmonary function at the point of discharge	Follow-up Pulmonary Rehabilitation shall be recommended

Physiotherapists **are expected** to use airborne precautions during all physiotherapy procedures (e.g. N95 facemasks). If not ventilated, where possible, the patient too should wear surgical mask during any physiotherapy.

3. TRAINING

a. **Standard Safety Measures:** Physiotherapists are expected to be trained on Infection Prevention and Control (IPC), use of Personal Protective Equipment (PPE) and other precautionary and safety policies/measure including safe access to and exit from treatment and isolation facility.

b. **Instrumentation and Skills:** Physiotherapists with expertise in Cardiopulmonary Physiotherapy will train other volunteer Physiotherapists on handling of various equipment and required interventions for patients at the centre.

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STANDARD OPERATING PROCEDURES FOR PHYSIOTHERAPISTS IN THE MANAGEMENT OF PATIENTS WITH COVID-19

1. During a health care interaction with a patient with COVID-19, the Physiotherapist **MUST ALWAYS** wear Personal Protective Equipment (PPE) [Single-Use gloves, Medical masks, Face shield or goggles/ protective glasses and disposable gowns]
2. When a medical mask becomes wet, the Physiotherapist **MUST ALWAYS** dispose the wet PPE in the waste bin with lid and perform hand hygiene as recommended.
3. During a health care interaction with a patient with COVID-19, the Physiotherapist **MUST ALWAYS** perform hand hygiene before and after touching the COVID-19 patient (whether or not you were wearing gloves) as recommended.
4. During a health care interaction with a patient with COVID-19, the Physiotherapist **MUST ALWAYS** perform hand hygiene after touching the patient's surroundings (bed, door handle, etc.), regardless of whether you were wearing gloves.
5. When performing CHEST PHYSIOTHERAPY, NEBULISATION, SUCTIONING or any other procedure regarded as aerosol generating procedure on a patient with COVID-19, the Physiotherapist **MUST ALWAYS** wear respirators in addition to the PPE outline in (1) above namely: Single-Use gloves, **N95 Medical masks**, Face shield or goggles/ protective glasses and disposable gowns and waterproof aprons.
6. The use of nebulizing agents (e.g. salbutamol, saline) for the treatment of non-intubated patients with COVID-19 is **NOT** recommended as it increases the risk of aerosolization and transmission of infection to health care workers in the immediate vicinity. Metered dose devices could be used instead.
7. In order to reduce the risk of infection, **spirometry** will only be done for an initially positive patient who has tested negative prior to discharge. This is in order to determine those that will require a pulmonary rehabilitation programme.
8. At the end of every service shift, the Physiotherapist **SHOULD** fill the WHO Risk assessment and management of exposure of health care workers in the context of COVID-19 questionnaire to determine risk exposure. (Available at: [WHO/2019-nCov/HCW_risk_assessment/2020.2](https://www.who.int/publications/m/item/who-2019-nCoV-HCW_risk_assessment-2020.2)).

9. We recommend that Physiotherapists should maintain constant hand hygiene using soap and water other than chlorine solution

10. Physiotherapy staff should **NOT** be routinely entering isolation rooms where patients with confirmed or suspected COVID-19 are isolated or cohorted just to screen for referrals. Options for conducting a subjective assessment for mobility information and/or providing education on airway clearance techniques via telephone or public address system should be considered.