

Characteristics of Musculoskeletal Signs and Symptoms during the Recovery Phase of Patients with Moderate-to-Severe COVID-19 at the Philippine General Hospital

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ABSTRACT

Introduction. Musculoskeletal complaints have been observed in the recovery phase of patients with moderate-to-severe coronavirus disease 2019 (COVID-19). We noted several referrals for physical rehabilitation at the University of the Philippines-Philippine General Hospital (UP-PGH), a designated COVID-19 referral center. These observations resembled the musculoskeletal manifestations associated with poorer outcomes reported in other coronavirus studies.

Objectives. The study determined the musculoskeletal signs and symptoms of adults in the recovery phase of moderate to severe COVID-19 using the COVID Musculoskeletal Assessment Tool (CMAT).

Methods. This was a three-phased, prospective, descriptive study of adults admitted for COVID-19 at the UP-PGH. Phase 1 was the development of the CMAT based on a review of related literature and patient charts, and patient interviews. The tool was pretested and validated in Phase 2 before it was used in the evaluation of study participants in Phase 3 of the research. Data was encoded using Microsoft® Excel 2007 and analyzed using STATA, Version 12.0 (Texas, USA). Descriptive statistics were used to summarize the variables collected for the study.

Results. A cohort of 40 patients admitted at the UP-PGH for moderate-to-severe COVID-19 infection was evaluated using the CMAT. Most of the patients had an average age of 55 years and were males. Majority resided in an urban area, reached high school education, and were ambulatory before their illness. The most common comorbidities were hypertension and diabetes. All patients required oxygen support.

Based on the CMAT, majority of the participants complained of muscle pain, generalized weakness, and easy fatigability. Other common findings were neck-shoulder and lower limb pain, dyspnea on exertion, limited mobility in the trunk, hips, and knees, joint pains, and decreased muscle strength. Half of the participants needed a wheelchair or walker to ambulate. These findings may be due to the COVID-19 disease and to prolonged confinement in bed. Only one patient underwent physical therapy through bedside instructions.

Conclusion. Musculoskeletal signs and symptoms were common in the patients recovering from COVID-19 disease. The COVID-19 Musculoskeletal Assessment Tool facilitated the evaluation of patients and the recording of results. Early referral for medical rehabilitation and timely intervention are strongly recommended.

Key Words: COVID-19, coronavirus, rehabilitation medicine, musculoskeletal, myalgia

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INTRODUCTION

On March 27, 2020, the University of the Philippines-Philippine General Hospital (UP-PGH) became one of the country's main COVID-19 referral centers, with at least 140 beds for moderate-to-severe cases. COVID-19 is the third coronavirus in two decades after the 2012 Middle East respiratory syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) of 2003.¹ In the February 2020 review by the World Health Organization-China Joint Mission of 55,924 laboratory-confirmed cases of COVID-19 in China, 80% of the patients had a mild-to-moderate disease.² Severe cases (13.8%) were clinically described as having dyspnea, respiratory rate ≥ 30 breaths per min, oxygen saturation $\leq 93\%$, partial pressure of arterial oxygen to fraction of inspired oxygen [PaO₂/FiO₂] ratio < 300 mmHg and an increase in lung infiltrates $> 50\%$ within 24–48 h. Patients with respiratory failure, shock, and multiple organ dysfunction or failure were classified as critical (6.1%).

Musculoskeletal complaints were often reported among the patients admitted for COVID-19, especially those with moderate-to-severe disease. Chen et al.³ published a retrospective analysis on 99 patients diagnosed with COVID-19 at a hospital in Wuhan, China, of which 11 patients reported muscle pain on admission. Newer studies have noted that the most frequent symptoms reported up to six months after COVID infection included fatigue, post-exertional malaise, and cognitive dysfunction.⁴⁻⁶ In a study by Mao⁷ and colleagues, 19% of patients with severe COVID had skeletal muscle injury symptoms leading to a poor prognosis. A long period of immobilization was seen in patients with COVID-19 because of the gradual deterioration of over two weeks, followed by prolonged confinement in an intensive care unit (ICU).⁸ Prolonged inactivity may have led to muscle weakness, fatigue, joint stiffness, dysphagia, psychological problems, impaired mobility, and dependence in doing the activities of daily living (ADL). The high risk of infection in the acute stage of COVID-19 hindered the early rehabilitation of these patients and prevention of the effects of prolonged immobilization.

Initially assumed to be a respiratory disease, it is now clearer that COVID-19 affects a variety of body systems. The early and long-term effects of the coronavirus on the physical and mental health of patients have alerted the rehabilitation medicine community to provide continuing interventions that will result in the complete physical and psychological recovery of patients with COVID-19.⁹⁻¹¹ However, much is still unknown about COVID-19, and more extensive research is needed to come up with relevant and responsive rehabilitation programs for patients in the recovery phase of moderate-to-severe COVID-19.

The study aimed to determine the musculoskeletal signs and symptoms of adults in the recovery phase of moderate-to-severe COVID-19 using the COVID Musculoskeletal Assessment Tool (CMAT). It is hoped

that the results of the study will help in the understanding of the musculoskeletal needs of patients recovering from COVID-19 and with recommendations for an appropriate rehabilitation program.

METHODS

This was a three-phased prospective descriptive study design, approved by the University of the Philippines Manila Research Ethics Board (UPMREB). All patient information and collected data were kept confidential. Participants had access to their data during and after the study period.

Phase 1 aimed to develop a structured assessment tool to facilitate the musculoskeletal evaluation of patients with COVID-19. A list of the most frequently reported musculoskeletal complaints in patients who had COVID-19 infection was entered into a data bank. It was based on a review of related literature, and a review of the charts of patients in PGH who were previously admitted for COVID-19. Ten patients from the COVID wards were also invited for in-depth interviews. These interviews explored experiences of pain, discomfort, difficulty, and weakness. The results of the interviews were used to categorize the musculoskeletal problems and organize the sequence of assessments.

The COVID-19 Musculoskeletal Assessment Tool (CMAT) is composed of four sections: 1) demographic and clinical profile of the client, 2) musculoskeletal signs and symptoms, mainly pain, 3) physical examination of vital signs, shortness of breath, range of motion, and muscle strength, and lastly, 4) medical rehabilitation interventions that were given to the client. Most items in the tool were presented as a checklist.

Both English and Filipino versions of the CMAT (Appendix 1 and 2) were pretested and validated for content and face validity in Phase 2 of the study. Five medical rehabilitation specialists did the qualitative evaluation using the Consensus-based Standards for the selection of health status Measurement Instruments (COSMIN) Criteria for Content/Face Validity developed by an international Delphi study.¹²⁻¹⁴ The Content Validity Index (CVI) was used for the quantitative evaluation with the Item-CVI (I-CVI) set at 0.80 or higher for excellent content validity.¹⁴

We tested the face validity of the CMAT on five patients recovering from COVID-19 infection using the cognitive interview or think-aloud method.¹⁵ Patients were asked to say out loud their interpretation and understanding of test items in the assessment tool.

The CMAT was modified based on the results of the pretest and validation process before it was used on the study participants for Phase 3 of the research. Participants were selected according to the following inclusion criteria: 1) 18 years and older, 2) an in-patient at the PGH COVID-19 ward, 3) admitted as positive for COVID-19 on Real Time-Polymerase Chain Reaction-based (RT-PCR) test, 4) latest RT-PCR is negative, 5) is in the recovery phase, 6) alert,

oriented and able to follow commands (Glasgow Coma Scale 15), 7) afebrile, with stable vital signs for at least 48 hours before joining the study, 8) no cough, 9) not ventilator-dependent, 10) shows clinical and/or radiological evidence of stability, and 11) with a signed consent to join the study. Patients with cognitive impairment and/or communication impairments were excluded from the study. Participants were allowed to withdraw from the study at any time. Any patient who became medically unstable or showed clinical deterioration or adverse reactions during the study were also withdrawn from Phase 3 of the research.

The study used the UP-PGH criteria for classifying the severity of a patient's illness. The definition for moderate-to-severe cases of COVID-19 is shown in the CMAT.

Descriptive statistics were used to summarize the variables collected for the study. Frequency and proportion were used for categorical variables, while mean and standard deviation, and medians were used for normally and non-normally distributed continuous variables. Data was encoded using Microsoft® Excel 2007 and analyzed using STATA, Version 12.0 (Texas, USA).

RESULTS

A total of ten studies and ten patient charts were reviewed and used to create the databank of musculoskeletal signs and symptoms in persons who were infected by COVID-19. The most common patient complaints noted were weakness, easy fatigability with exertion, and body stiffness.

The COVID-19 Musculoskeletal Assessment Tool (CMAT) was a helpful guide for the examiners. It ensured completeness of data and uniformity in the clinical evaluation of all the study participants. The checklist of items made it easy to record the responses keeping the period of assessment short. The average duration for completion of the tool was 20 minutes.

Forty patients were recruited for Phase 3 of the study. All participants were able to complete the study, and there were no withdrawals. There were no untoward events during the study period nor reports of adverse reactions from patients.

Table 1 shows the distribution of recovering patients according to demographic and clinical characteristics. The mean age was 51 years (range 21 to 83). Sixty percent of the participants were males. There were slightly more urban residents (55%) than rural dwellers. Three participants reached college, while 60% were high school graduates. The two most common morbidities were hypertension (50%) and diabetes mellitus (30%). The participants were walking independently before the coronavirus infection, except for one patient who was wheelchair-dependent before the illness. All patients were given oxygen support, mainly by face mask or cannula (90%). Only one participant used mechanical ventilation for three days.

Table 2 shows the distribution of patient symptoms. Pain was most often felt in the neck-shoulder and low back

Table 1. Baseline demographic and clinical characteristics of recovering patients (n=40)

Demographic characteristic	Mean \pm SD; Median (Range); Frequency (%)
Age (in years)	50.55 \pm 15.41
20 - 29	3 (7.5)
30 - 39	6 (15.0)
40 - 49	9 (22.5)
50 - 59	10 (25.0)
60 - 69	6 (15.0)
70 - 79	5 (12.5)
80 - 89	1 (2.5)
Sex	
Male	24 (60.0)
Female	16 (40.0)
Place of Residence	
Urban	22 (55.0)
Rural	18 (45.0)
Educational Attainment	
Elementary	12 (30.0)
High school	24 (60.0)
Vocational	1 (2.5)
College	3 (7.5)
Comorbidities	
Hypertension	20 (50.0)
Diabetes mellitus	12 (30.0)
Pulmonary disease	6 (15.0)
Kidney disease	6 (15.0)
Liver disease	2 (5.0)
Others	17 (42.5)
None	2 (5.0)
Pre-COVID capability	
Ambulatory	39 (97.5)
Wheelchair borne	1 (2.5)
Oxygen support	
With face mask or nasal cannula	36 (90.0)
High flow oxygen support	3 (7.5)
Use of mechanical ventilation (3 days)	1 (2.5)

area. The duration of the pain ranged from 3-8 days in most patients. The three leading musculoskeletal symptoms seen in more than 80% of the participants were: muscle pain (97.5%), generalized weakness (87.5%), and fatigue (80%). Half of them suffered from joint pains and 35% had moderate-to-severe dyspnea with activity (Figure 1).

Figure 1 shows the distribution of participants according to the Modified Borg Scale. A significantly higher proportion of patients had a score of 0 at rest (67.5%), but with activity, a higher proportion of patients had a score of 3 to 5 indicating deterioration to moderate-to-somewhat severe scores (35%).

Figure 2 shows the result of the evaluation for functional range of motion. Movements were generally symmetrical. Patients were able to perform most of the movements except for trunk flexion and knee flexion. More than half of the participants could not complete the range for knee flexion.

Only 30% of the participants retained good-to-normal muscle strength after the acute infection. Most patients could not move their upper and lower limbs against resistance

Table 2. Patient Symptoms

Symptom	Frequency (%) Mean \pm SD
Pain site	
Neck-shoulder	10 (25.0)
Low back	16 (40.0)
Head	5 (12.5)
Lower limb	9 (22.5)
Upper limb	5 (12.5)
Thoracic spine	13 (32.5)
Duration since onset of symptoms	
1 - 2	5.28 \pm 1.80
3 - 4	1 (2.5)
5 - 6	12 (30.0)
7 - 8	13 (32.5)
9 - 10	1 (2.5)
Signs and Symptoms	
Weakness	
Developing after the onset of critical illness	0
Weakness being generalized	35 (87.5)
Symmetrical	0
Facial weakness (with/without)	0
Stiffness	2 (5.0)
Soreness	1 (2.5)
Swelling	0
Redness	0
Cracking or popping sound	0
Trouble moving	1 (2.5)
Fatigue	32 (80.0)
Difficulty sleeping	7 (17.5)
Myalgia	39 (97.5)
Arthralgia	22 (50.0)

(MRC < 4/5). This is compatible with the finding that 60% of the participants used a mobility device to help them walk. (Table 3)

Of the 40 patients, only one patient had physical therapy where bedside instructions were given on breathing and coughing techniques.

DISCUSSION

The results of the study support the observed prevalence of musculoskeletal problems in patients recovering from moderate to severe COVID-19.^{6,16-18} The musculoskeletal symptoms obtained from the scoping review done by Shanbehzadeh et. al.⁶ are similar to the findings of the participants specifically, fatigue, pain, myalgia, and weakness. The deterioration of the musculoskeletal system and general condition of the participants may be due to the disease itself and their inactivity during the illness and confinement. The prolonged bed rest during the acute phase of the COVID disease may have resulted in muscle weakness, pain, joint stiffness, and a decrease in physical abilities. While these reasons are also mentioned in other literature, the exact cause of the musculoskeletal findings in coronavirus infections remains uncertain.^{6,17} The problems of fatigue, muscle pain, and dyspnea on exertion can persist in some patients for many months after the acute infection.¹⁶⁻¹⁸ More studies are beginning to describe these 'long-COVID' cases who do not recover completely.

The prevalence of musculoskeletal problems in the early and late recovery period of COVID-19 magnifies the importance of 1) starting a comprehensive rehabilitation medicine program as early as possible, and 2) long-term follow-up. The absence of a rehabilitation program for nearly all the participants should be evaluated. An early rehabilitation program can lessen or promptly reverse the effects of inactivity on the musculoskeletal and other organ systems. The lone patient who had rehabilitation therapy primarily received pulmo-physiotherapy. This may not adequately address the functional limitations caused by muscle pain and weakness. Results of the Modified Borg Scale for Dyspnea showed that most patients experienced shortness of breath with activity. The rehabilitation program should aim to

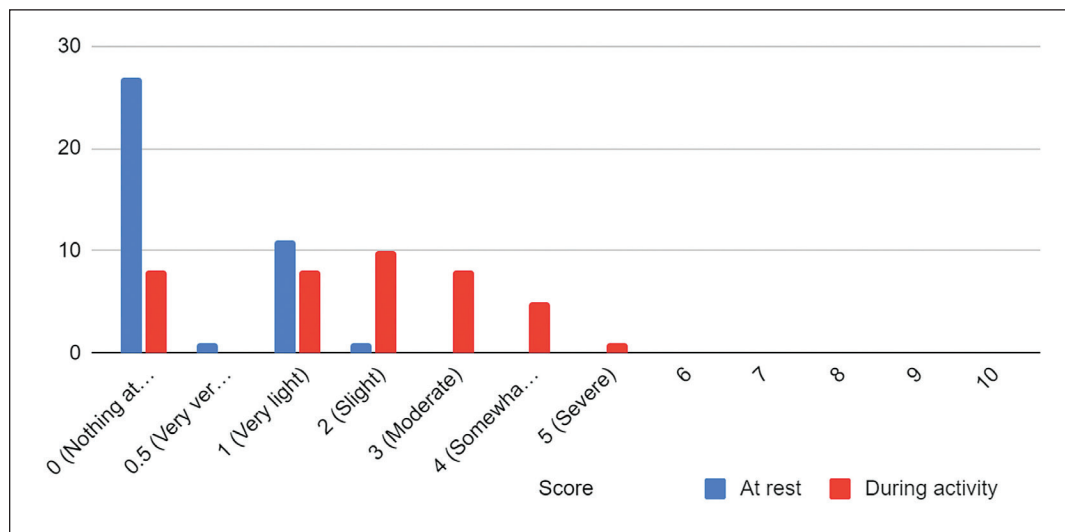


Figure 1. Distribution of patients according to the Modified Borg Scale Score.

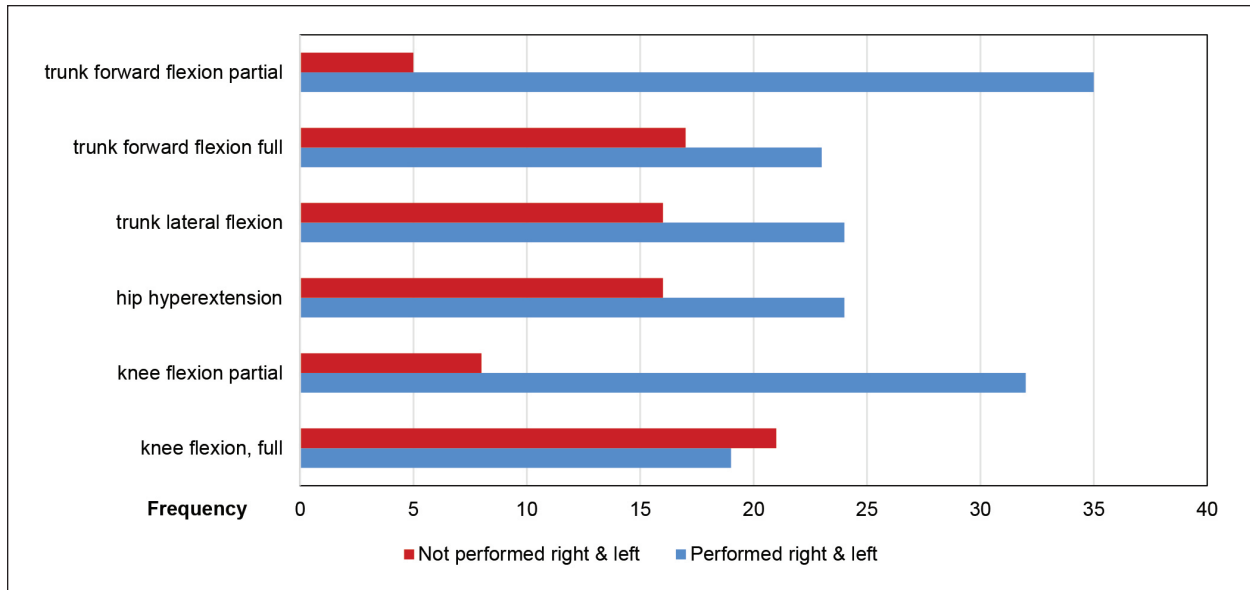


Figure 2. Distribution of participants who had symmetrical limitations in their functional range of motion for trunk flexion and knee flexion.

Table 3. Muscle power assessed by the MRC Baseline - Physical Exam

Muscle group	Frequency (%)					
	MRC grade 1-2		MRC grade 3		MRC grade 4-5	
	Right	Left	Right	Left	Right	Left
<i>Shoulder abductors</i>	0	1 (2.5)	28 (70.0)	27 (67.5)	12 (30.0)	12 (30.0)
<i>Elbow flexors</i>	0	1 (2.5)	28 (70.0)	27 (67.5)	12 (30.0)	12 (30.0)
<i>Wrist extensors</i>	0	1 (2.5)	28 (70.0)	27 (67.5)	12 (30.0)	12 (30.0)
<i>Hip flexors</i>	7 (18.0)	7 (18.0)	23 (57.5)	23 (57.5)	10 (25.0)	10 (25.0)
<i>Knee extensors</i>	3 (7.5)	4 (10.0)	25 (62.5)	24 (60.0)	12 (30.0)	12 (30.0)
<i>Ankle dorsiflexors</i>	0	1 (2.5)	28 (70.0)	27 (67.5)	12 (30.0)	12 (30.0)

MRC, Medical Research Council

increase the patient’s capacity to do meaningful activities. Experiencing an early return to their former activities may better motivate patients and prevent mental health problems.

The UP-PGH Department of Rehabilitation Medicine should consider the suggestions made by the members of the Healthy Living for Pandemic Event Protection (HL-PIVOT) Network and the World Health Organization to improve outcomes for patients of the coronavirus.^{17,18} Both groups encouraged doing more research on COVID-19 sequelae to generate an evidence base and develop clinical guidelines. This will call for the use of a structured assessment tool that is backed by research data, similar to the CMAT. The CMAT can be expanded as more information on the long-term sequelae of COVID-19 becomes available. Adding the other potentially disabling problems associated with long-COVID will enhance its use in predicting outcomes, evaluating treatment protocols, and even developing clinical guidelines. The invaluable features of the CMAT that must be duplicated in similarly structured assessment tools

are: 1) does not fatigue the patient, and 2) commands are easily understood and will have uniform interpretation among patients. The length of the examination will be more important when the tool is used in acute infections since patients will be more ill and the examiners may be at risk of getting infected.

CONCLUSION

Patients recovering from moderate-to-severe COVID-19 have musculoskeletal problems that affect their mobility and delay their return to previous levels of function. The most common musculoskeletal symptoms were myalgia, generalized weakness, easy fatigability, and dyspnea on exertion. Physical examination showed stiffness and poor-to-fair muscle strength in the trunk and proximal joints of the upper and lower limbs. The use of a structured musculoskeletal assessment tool in the early and late recovery stages of COVID-19 can help in the recognition of these

problems and monitor outcomes of patients with COVID. An early and comprehensive medical rehabilitation program is strongly recommended.

Statement of Authorship

Both authors contributed in the conceptualization of work, acquisition of data and analysis, drafting and revising and approved the final version submitted.

Author Disclosure

Both authors declared no conflicts of interest.

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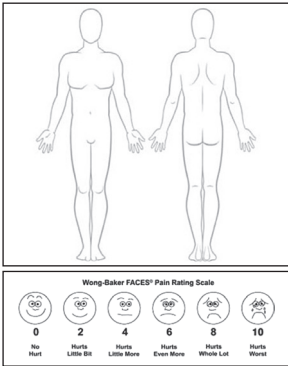
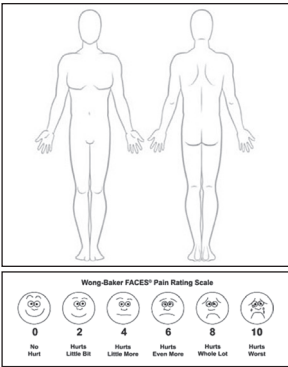
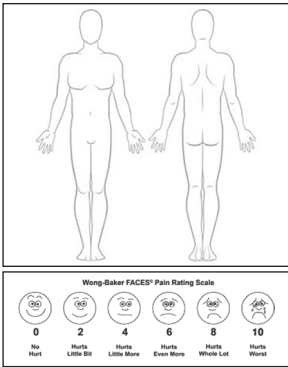
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3. PHYSICAL EXAMINATION				
D. Vital signs	BP: mmHg HR: bpm	Temp. °C RR: bpm	SpO ₂ : at FiO ₂ GCS:	
E. Modified Borg Scale Dyspnea Score	Shortness of breath		At rest	During activity
	0	Nothing at all	<input type="checkbox"/>	<input type="checkbox"/>
	0.5	Very very well	<input type="checkbox"/>	<input type="checkbox"/>
	1	Very slight	<input type="checkbox"/>	<input type="checkbox"/>
	2	Slight	<input type="checkbox"/>	<input type="checkbox"/>
	3	Moderate	<input type="checkbox"/>	<input type="checkbox"/>
	4	Somewhat severe	<input type="checkbox"/>	<input type="checkbox"/>
	5	Severe	<input type="checkbox"/>	<input type="checkbox"/>
	6		<input type="checkbox"/>	<input type="checkbox"/>
	7	Very severe	<input type="checkbox"/>	<input type="checkbox"/>
	8		<input type="checkbox"/>	<input type="checkbox"/>
	9	Very very severe	<input type="checkbox"/>	<input type="checkbox"/>
10	Maximal	<input type="checkbox"/>	<input type="checkbox"/>	
F. Range of Motion	Functional ROM		Right	Left
	Shoulder • Raise till shoulder level • Raise shoulder to overhead • Reach the small of the back • Reach the opposite shoulder		<input type="checkbox"/>	<input type="checkbox"/>
	Elbow • Bend the elbow midway • Bend the elbow and touch the shoulder with the forearm supinated		<input type="checkbox"/>	<input type="checkbox"/>
	Wrist • Point the fingers up • Point the fingers down		<input type="checkbox"/>	<input type="checkbox"/>
	Trunk • Bend forward till the level of the knee • Bend forward to reach the feet • Bend on the side to reach the side of the knee		<input type="checkbox"/>	<input type="checkbox"/>
	Hip • Bring your thigh up til midway • Push your thigh at the back • Spread your thighs • Bring your thighs together		<input type="checkbox"/>	<input type="checkbox"/>
	Knee • Bend the knee midway • Bend the knee and touch the thigh		<input type="checkbox"/>	<input type="checkbox"/>
	Ankle • Point your toes up • Point your toes down		<input type="checkbox"/>	<input type="checkbox"/>
G. Medical Research Council (MRC) Scale for Muscle Strength Grade 5: Normal Grade 4: Movement against gravity and resistance Grade 3: Movement against gravity (almost) the full range Grade 2: Movement of the limb but not against gravity Grade 1: Visible contraction without Grade 0: No visible contraction MRC grade for each muscle given in full number: (4+/4.5 = 4) (4- = 3) (5 = 4)	MRC Sum Score			
	Muscle	Right	Left	
	Shoulder abduction			
	Elbow flexion			
	Wrist extension			
	Hip flexion			
	Knee extension			
	Ankle dorsiflexion			
H. Physical Functional Level:	<input type="checkbox"/> Ambulatory <input type="checkbox"/> Assisted <input type="checkbox"/> Assistive device: Wheelchair / Walker / Quad cane			

4. REHABILITATION INTERVENTIONS		
Exercises		
* Exercise intensity is between rest (1.0 metabolic equivalents [METs]) and light exercise (<3.0 METs)		
<input type="checkbox"/> PT face to face	<input type="checkbox"/> Bedside instruction (Nurse/PT/MD)	<input type="checkbox"/> Sessions
<input type="checkbox"/> Teletherapy	<input type="checkbox"/> None	<input type="checkbox"/> Duration
		<input type="checkbox"/> Function level
A. Respiratory function training	<input type="checkbox"/> Respiratory control training	<input type="checkbox"/> Incentive spirometer
	<input type="checkbox"/> Chest expansion exercise	<input type="checkbox"/> Deep diaphragmatic breathing exercise
	<input type="checkbox"/> Breathing exercise: training in controlled breathing movements	<input type="checkbox"/> Pursed lip breathing
	<input type="checkbox"/> Coughing / huffing	<input type="checkbox"/> Positioning
		<input type="checkbox"/> Dyspnea relieving positions
B. Range of Motion Exercises	<input type="checkbox"/> Passive Range of Motion	
	<input type="checkbox"/> Active Assisted Range of Motion	
	<input type="checkbox"/> Active Range of Motion	
C. Mobilization	<input type="checkbox"/> Bed mobility	<input type="checkbox"/> Sit to stand
	<input type="checkbox"/> Sitting out of bed	<input type="checkbox"/> Standing balance
	<input type="checkbox"/> Sitting balance	
D. Strengthening	<input type="checkbox"/> Active limb exercise	
	<input type="checkbox"/> Progressive muscle strengthening	
E. Flexibility	<input type="checkbox"/> Static stretching	
	<input type="checkbox"/> Self-stretching	
F. Functional capacity and performance measurements	<input type="checkbox"/> Capacity for activities of daily living:	<input type="checkbox"/> Berg Balance Scale
	<input type="checkbox"/> Barthel	<input type="checkbox"/> Overall motor function:
	<input type="checkbox"/> Functional Independence Measure	<input type="checkbox"/> Number of chair stands in 1 minute under SpO ₂ monitoring
	<input type="checkbox"/> Balance:	
	<input type="checkbox"/> Sitting/standing postural balance	
5. Adverse Reactions/Events during Testing and Interview:		
Yes, pls specify: _____		No _____

Appendix 2. COVID Pagsusuri ng Laman at Buto (Filipino version)

1. BASELINE DEMOGRAPHIC AND CLINICAL CHARACTERISTICS		
A. Araw ng Kapanganakan (MM/DD/YYYY)	___ / ___ / _____	
B. Case number:	Edad / Kasarian	
C. Lugar ng tirahan (Municipality/City/Province)		
D. Antas pang-edukasyon	<input type="checkbox"/> Elementarya <input type="checkbox"/> Mataas na Paaralan	<input type="checkbox"/> Bokasyonal <input type="checkbox"/> Kolehiyo
E. Mga Karamdaman	<input type="checkbox"/> DM <input type="checkbox"/> Hypertension <input type="checkbox"/> COPD <input type="checkbox"/> Chronic Lung Disease <input type="checkbox"/> CKD	<input type="checkbox"/> Heart Failure <input type="checkbox"/> CAD <input type="checkbox"/> Malignancy <input type="checkbox"/> Liver Disease <input type="checkbox"/> Neurological Disease
		<input type="checkbox"/> Post-graduate <input type="checkbox"/> HIV <input type="checkbox"/> Chronic Steroid <input type="checkbox"/> Chemotherapy <input type="checkbox"/> Others:
F. Kalubhaan ng Covid	<input type="checkbox"/> KATAMTAMAN (B): Ang mga may sapat na gulang (edad >60) na may matatag o hindi matatag na karamdaman at / o katamtamang pulmonya <input type="checkbox"/> MALUBHA (C): Ang mga may sapat na gulang na may malubhang pulmonya, sepsis o septic shock <input type="checkbox"/> MALUBHA (D): Ang mga may sapat na gulang na may Acute Respiratory Distress Syndrome (ARDS)	
G. Paggamit ng Oxygen	<input type="checkbox"/> Oo <input type="checkbox"/> Oo <input type="checkbox"/> Oo <input type="checkbox"/> Oo	<input type="checkbox"/> Hindi <input type="checkbox"/> Hindi <input type="checkbox"/> Hindi <input type="checkbox"/> Hindi
Face mask or cannula		
High flow		
Mekanila na bentilasyon		
Kung Oo, gaano katagal:		
H. Pre-Covid Functional level	<input type="checkbox"/> Nakakalakad <input type="checkbox"/> Nakakalakad na may pantulong na aparato	<input type="checkbox"/> Wheelchair borne <input type="checkbox"/> Nakaratay sa kama
2. MUSCULOSKELETAL SIGNS AND SYMPTOMS		
A. Parte ng katawan kung saan nakaramdam ng sakit	<input type="checkbox"/> Ulo <input type="checkbox"/> Leeg - Balikat <input type="checkbox"/> Mga braso at mga kamay <input type="checkbox"/> Thoracic spine <input type="checkbox"/> Balakang <input type="checkbox"/> Mga binti at mga paa	
B. Tagal mula nang magsimula ang mga sintomas:		
C. Mga palatandaan at sintomas	<input type="checkbox"/> Paninigas <input type="checkbox"/> Pagkirot <input type="checkbox"/> Pamamaga <input type="checkbox"/> Pamumula <input type="checkbox"/> Pananakit ng kalamnan	<input type="checkbox"/> Cracking <input type="checkbox"/> Problema sa paggalaw <input type="checkbox"/> Hirap sa pagtulog <input type="checkbox"/> Pagod <input type="checkbox"/> Panghihina <input type="checkbox"/> Nag-umpisa pagkatapos ng pagsisimula ng kritikal na karamdaman <input type="checkbox"/> pangkalahatang kahinaan <input type="checkbox"/> pantay o hindi pantay <input type="checkbox"/> panghihina ng mukha (meron o wala) <input type="checkbox"/> Pananakit ng kasukasuan
		

3. PHYSICAL EXAMINATION				
D. Vital signs	BP: mmHg HR: bpm	Temp. °C RR: bpm	SpO ₂ : at FiO ₂ GCS:	
E. Modified Borg Scale Dyspnea Score (Antas ng Pagkakapos sa hininga)	Kinakapos ng hininga		Naka-pahinga	Habang may ginagawa
	0	Wala sa lahat	<input type="checkbox"/>	<input type="checkbox"/>
	0.5	Mabuting mabuti	<input type="checkbox"/>	<input type="checkbox"/>
	1	Napaka bahagya	<input type="checkbox"/>	<input type="checkbox"/>
	2	Bahagya	<input type="checkbox"/>	<input type="checkbox"/>
	3	Katamtaman	<input type="checkbox"/>	<input type="checkbox"/>
	4	Medyo matindi	<input type="checkbox"/>	<input type="checkbox"/>
	5	Matindi	<input type="checkbox"/>	<input type="checkbox"/>
	6		<input type="checkbox"/>	<input type="checkbox"/>
	7	Napaka tindi	<input type="checkbox"/>	<input type="checkbox"/>
	8		<input type="checkbox"/>	<input type="checkbox"/>
	9	Lubhang matindi	<input type="checkbox"/>	<input type="checkbox"/>
10	Pinakamataas	<input type="checkbox"/>	<input type="checkbox"/>	
F. Saklaw ng paggalaw	Saklaw ng paggalaw		Kanan	Kaliwa
	Balikat <ul style="list-style-type: none"> • Itaas hanggang sa antas ng balikat • Itaas mula balikat hanggang ulo • Abutin ang maliit na bahagi ng likod • Abutin ang kabilang balikat 		<input type="checkbox"/>	<input type="checkbox"/>
	Siko <ul style="list-style-type: none"> • Ibaluktot ang siko hanggang gitna • Ibaluktot and siko at hawakan ang balikat habang and braso ay nakatihaya 		<input type="checkbox"/>	<input type="checkbox"/>
	Pulso <ul style="list-style-type: none"> • Ituro ang mga daliri pataas • Ituro ang mga daliri pababa 		<input type="checkbox"/>	<input type="checkbox"/>
	Katawan <ul style="list-style-type: none"> • Yumuko hanggang sa antas ng tuhod • Yumuko hanggang maabot ang mga paa • Yumuko sa gilid upang maabot ang gilid ng tuhod 		<input type="checkbox"/>	<input type="checkbox"/>
	Balakang <ul style="list-style-type: none"> • Itaas ang iyong hita hanggang sa kalagitnaan • Itulak ang iyong hita patalikod • Paghiwalayin ang iyong hita • Pagdikitin ang iyong hita 		<input type="checkbox"/>	<input type="checkbox"/>
	Tuhod <ul style="list-style-type: none"> • Ibaluktot ang tuhod hanggang gitna • Ibaluktot ang tuhod at hawakan ang hita 		<input type="checkbox"/>	<input type="checkbox"/>
	Bukung-bukong <ul style="list-style-type: none"> • Ituro ang mga daliri sa paa pataas • Ituro ang mga daliri sa paa pababa 		<input type="checkbox"/>	<input type="checkbox"/>
G. Medical Research Council (MRC) Scale for Muscle Strength (Lakas)	MRC Sum Score			
	Muscle	Kanan	Kaliwa	
	Pagtaas ng braso sa antas ng balikat			
	Pagbaluktot ng siko			
	Pag-angat ng pulso pataas			
	Pagbaluktot ng balakang			
	Pagbaluktot ng tuhod			
Pag-angat ng paa pataas				
H. Lebel o Kakayanan ng Paggalaw:	<input type="checkbox"/> Nakakalakad <input type="checkbox"/> May gabay <input type="checkbox"/> Pantulong na aparato: Wheelchair / Walker / Quad cane			

4. REHABILITATION INTERVENTIONS		
Exercises		
* Exercise intensity is between rest (1.0 metabolic equivalents [METs]) and light exercise (<3.0 METs)		
<input type="checkbox"/> PT face to face	<input type="checkbox"/> Bedside instruction (Nurse/PT/MD)	<input type="checkbox"/> Sessions
<input type="checkbox"/> Teletherapy	<input type="checkbox"/> Wala	<input type="checkbox"/> Duration
		<input type="checkbox"/> Function level
A. Pagsasanay sa paghinga	<input type="checkbox"/> Pagsasanay sa pag control sa paghinga <input type="checkbox"/> Ehersisyo sa pagpapalawak ng dibdib <input type="checkbox"/> Ehersisyo sa paghinga: - Pagsasanay na kinokontrol - Paggalaw ng paghinga <input type="checkbox"/> Pag-ubo / Bahagyang pag-ubo	<input type="checkbox"/> Incentive spirometer <input type="checkbox"/> Ehersisyo sa malalim na paghinga <input type="checkbox"/> Paghinga nang bahagyang nakasara ang mga labi <input type="checkbox"/> Pagpoposisyon <input type="checkbox"/> Mga posisyon na nagpapagaan sa maigsi na paghinga
B. Ehersisyo sa saklaw sa paggalaw	<input type="checkbox"/> Kusang saklaw ng paggalaw <input type="checkbox"/> Paggalaw na may bahagyang tumutulong <input type="checkbox"/> Paggalaw na may aktibong tumutulong	
C. Pagpapakilos	<input type="checkbox"/> Kadaliang kumilos <input type="checkbox"/> Naka-upo sa kama <input type="checkbox"/> Balanse sa pag-upo	<input type="checkbox"/> Pagkaka-upo hanggang pagtayo <input type="checkbox"/> Balanse sa pagtayo
D. Pagpapalakas	<input type="checkbox"/> Aktibong ehersisyo ng mga kamay at paa <input type="checkbox"/> Progresibong pagpapalakas ng kalamnan	
E. Kakayahang umangkop	<input type="checkbox"/> Pag-uunat nang nakapirmi ang posisyon <input type="checkbox"/> Sariling pag-uunat	
F. Sukat sa kapasidad ng tungkulin at paggawa	<input type="checkbox"/> Kakayahan para sa mga gawain ng pang-araw-araw na pamumuhay: <input type="checkbox"/> Barthel <input type="checkbox"/> Sukat sa kusang paggawa <input type="checkbox"/> Balanse: <input type="checkbox"/> Pag-upo / pagtayo balanse sa postura	<input type="checkbox"/> Berg Balance Scale <input type="checkbox"/> Pangkalahatang paggalaw: <input type="checkbox"/> Bilang ng pagtayo sa upuan sa loob ng isang minuto gamit ang SpO ₂ monitor
5. Hindi magandang reaksyon o pangyayari habang tinatanong o ineeksamen: Oo, paki bigay ng detalye: _____		
		Hindi _____