

COVID-19 Pandemic in Indonesia: Situation and Challenges of Rehabilitation Medicine in Indonesia

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ABSTRAK

COVID-19 telah menjadi pandemik di Indonesia sejak ditemukannya kasus pertama pada tanggal 2 Maret 2020 di Depok. Peningkatan kasus perhari semakin tinggi sejak akhir Agustus 2020 yang mencapai lebih dari 2000 kasus per hari. Sistem kesehatan di Indonesia perlu ditingkatkan dalam hal kapasitas, termasuk rehabilitasi medik yang harus dilibatkan dari fase akut hingga jangka panjang dalam penanganan pasien COVID-19. Rehabilitasi medik juga diperlukan untuk pasien lain yang bukan COVID-19. Pentingnya keterlibatan, pelayanan rehabilitasi medik dan implementasinya dimasa pandemik COVID-19 memerlukan strategi tersendiri yang harus dilakukan baik oleh pekerja kesehatannya, rumah sakit dan kebijakan pemerintah. Hal ini diperlukan untuk percepatan peningkatan kesehatan pasien, percepatan pemulangan dan menghindari readmisi pasien, dan juga pengoptimalan program kembali bekerja untuk pasien yang sembuh dari COVID-19.

Kata kunci: COVID-19, rehabilitation, health care, rehabilitation services, pandemic.

ABSTRACT

COVID-19 has become a pandemic in Indonesia since the first cases have been positively diagnosed on 2 March 2020 in Depok. The cases have been increased gradually since the end of August 2020 that has reached 1000 cases per day. The health system in Indonesia needs to be improved in terms of capacity, including rehabilitation medicine that should be involved in all health phases (from acute to long-term) in managing patients with COVID-19. Rehabilitation is also still needed for other non-COVID-19 patients. The importance of involvement and implementation of rehabilitation services during the COVID-19 pandemic will need special strategies that should be done by rehabilitation professionals, hospitals, and government. These are necessary to accelerate the improvement of patients' health, discharge, and avoid re-admission, as well as optimize return-to-work for patients who are recovered from COVID-19.

Keywords: COVID-19, rehabilitation, health care, rehabilitation services, pandemic.

INTRODUCTION

The COVID-19 pandemic that has started in Wuhan, China, has been spread all over the world since the end of 2019.¹ Covid-19 can infect all individuals of all ages,²⁻⁴ and people at all levels of economic status.³ However, persons with a high risk of severe or fatal course of the disease are older individuals and people with comorbidity, such as diabetes, cancer, and other chronic diseases.⁵⁻⁷

In Indonesia, the first cases of COVID-19 patients were identified on 2 March 2020 in Depok. Since the ends of August 2020, the number of new positively tested cases in Indonesia have reached more than two thousand per day (**Figure 1**). Currently (as of 8 September 2020), the total number of positively diagnosed cases reached more than 196,000.⁸

The confirmed cases of COVID-19 in Indonesia are placed the second among Association of South-East Asia Nations (ASEAN) countries (**Table 1**). However, the numbers of deaths are the highest. Both numbers of positive and death cases will keep increasing, considering the current total tested per Million populations in Indonesia are still low as compared to other countries. It seems that Indonesia will still need time to flatten the curve. Although the recovered cases are the highest among ASEAN countries, it does not mean that all recovered patients are without any lingering effects, such as fatigue, dyspnea, joint pain, chest pain, headache, muscle weakness, neurological symptoms, and mental health problems.⁹ Therefore, the recovered patients still need treatments, which mostly related to rehabilitation.

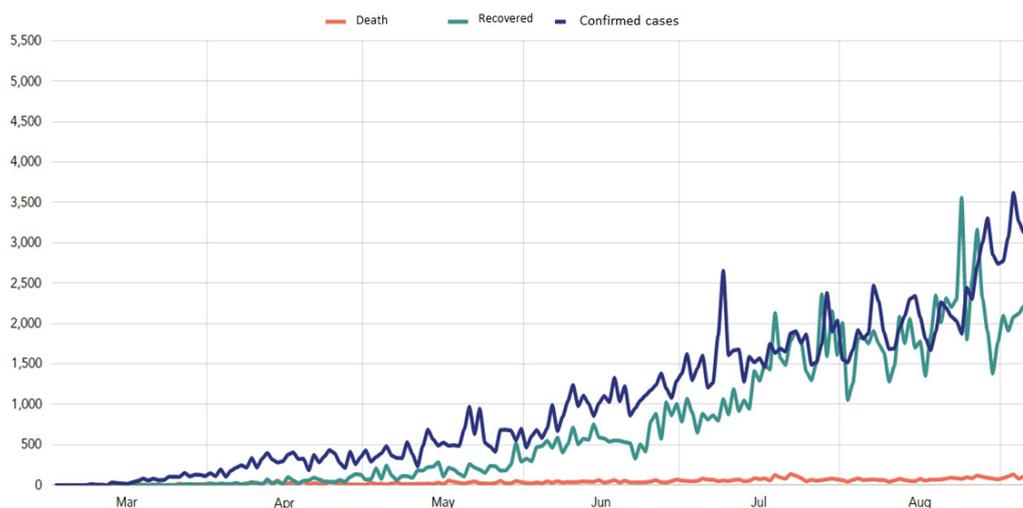


Figure 1. Data of COVID-19 in Indonesia.⁸

Table 1. Covid-19 cases in ASEAN countries (as of 7 September 2020).¹⁰

Countries	Confirmed cases	Total deaths	Total recovered	Test/1M Population	Total population
Philippines	238,727	3,890	184,906	25,855	109,850,251
Indonesia	196,989	8,130	140,652	8,948	274,061,093
Singapore	57,044	27	56,408	353,013	5,858,949
Malaysia	9,459	128	9,124	40,300	32,422,628
Thailand	3,445	58	3,281	10,729	69,833,165
Vietnam	1,049	35	853	10,350	97,501,966
Myanmar	1,518	8	388	3,055	54,478,228
Cambodia	274	--	272	6,356	16,761,610
Brunei	145	3	139	121,013	438,259
Laos	22	--	21	5,714	7,294,985

Similar to other countries all over the world, the government of Indonesia has been awaiting the development of effective medicine and vaccines. From the perspective of public health issues, many issues need to be taken promptly and accurately. During this period, some important actions have been also implemented by the government of Indonesia in order to reduce, control and mitigate the spread of SARS-CoV-2 infection, particularly by following actions: (1) Physical distancing, hand washing, cough and sneeze etiquette, as well as isolation; (2) Massive detection/testing for COVID-19 (both by swab test and/or rapid test) and tracing; (3) Increasing capacity of hospitals, particularly hospitals that are appointed as referral hospitals for COVID-19 patients; (4) Establishing national COVID-19 emergency team.

According to the survey that was held by the World Health Organization (WHO), the COVID-19 pandemic has influenced the health services worldwide, particularly in the low-and middle-income countries.¹⁰ In spite of rehabilitation play a major role in recovery after a severe illness due to COVID-19, the most effected health service is rehabilitation.¹¹ It was effected rehabilitation services in 63% out of 153 countries that were surveyed, particularly in low-and low-middle income countries.¹¹ Therefore, WHO has urged their member states that rehabilitation

should be integrated into the national strategy for managing the COVID-19 pandemic.¹¹

Considering the importance and relevancies of rehabilitation medicine during COVID-19, several important and relevant points need to be highlighted and discussed for Indonesia. These include: (a) What are the rehabilitation needs for COVID-19 patients; (b) The effects of reducing the capacity of rehabilitation services for other patients (non-COVID-19) in need for rehabilitation (e.g. people with disability, patient with chronic diseases (e.g. cancer, traumatic brain injury, spinal cord injury, stroke, diabetes, chronic pain, etc); (c) Situation and challenges of rehabilitation medicine in long-term COVID-19 pandemic in Indonesia.

REHABILITATION NEEDS FOR COVID-19 PATIENTS

It has been known that the primary problem of patients with COVID-19 is respiratory functions. This was particularly due to the cytokine storm^{12,13} that leads to acute respiratory distress syndrome. The symptoms in moderate and severe problem patients, particularly related to the respiratory impairments (e.g. difficult to breathe). However, many findings have reported also non-pulmonary manifestations and complications problems.¹⁴ These include

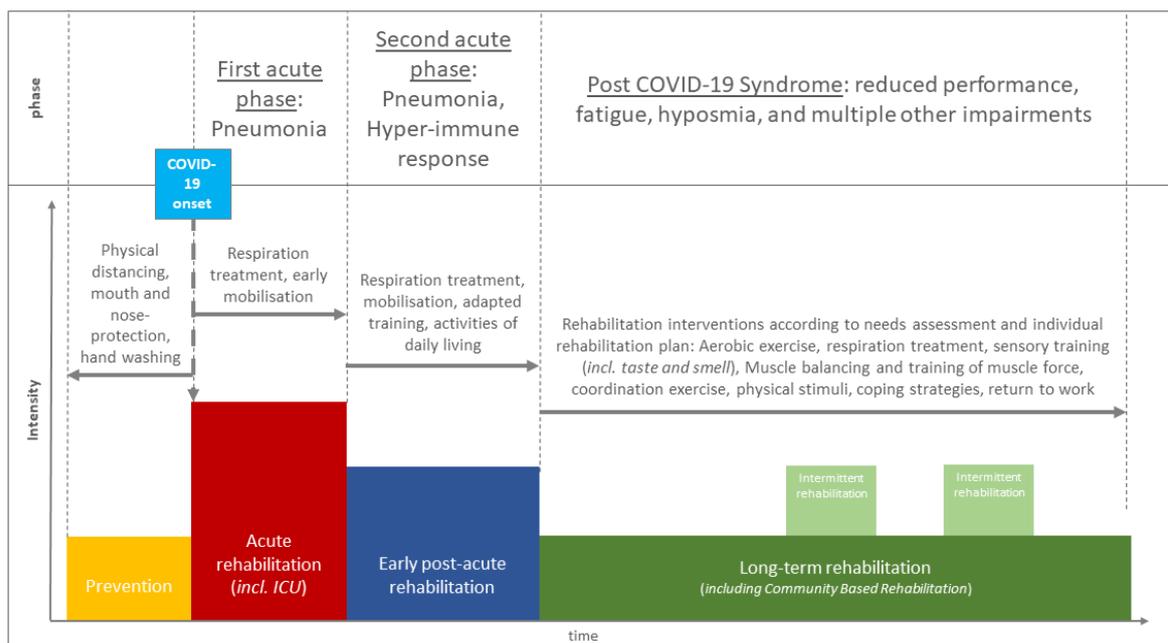


Figure 2. Phase-specific rehabilitation response for patients with SRAS-CoV-2 infection.

muscle weakness, delirium, swallow and communication problems, neurological and psychiatric sequelae.¹⁵ Therefore, patients with moderate and severe cases of COVID-19 have a high need for rehabilitation interventions.¹⁶ Additionally, rehabilitation for COVID-19 patients should be implemented in all phases (acute to long-term phases).¹⁶ This also can be seen in **Figure 2**.

COVID-19 is still not yet fully understood, however, many studies related to the mechanisms of this disease (many of them are observational) have been published. It becomes more and

more evident, that the disease is not only an airway infection but also causes a hyper-immune response in the body.^{12,17-19} This may explain the broad spectrum of long-term organ dysfunction and functional symptoms.^{20,21} Many of the symptoms and dysfunctions can be treated by rehabilitation interventions. As clinical outcome studies have not yet been performed, the approach at this stage is pragmatic and symptom-oriented. The main symptoms observed frequently are summarized in **Table 2**, and pragmatic rehabilitation approaches are listed (for more details see literature and

Table 2. Overview of clinical/organ impairment due to SARS-CoV-2 infections, rehabilitation needs, and interventions.

Organ system and functioning problems	Symptoms with rehabilitation needs	Rehabilitation interventions			
		Hospitalized patients		Discharged patients	
		Acute care (including critical care)	Early-post acute care	Post-acute rehabilitation	Long-term rehabilitation
Respiratory system	Respiratory insufficiency, low oxygen uptake	Breathing exercise, positioning	Breathing exercise, assistive respiration treatment, early mobilization	Breathing exercise, aerobic exercise, nutritional support	
Central and peripheral nervous system	Headache, dizziness, confusion, pain, consciousness, delirium, cognitive dysfunction	Passive and assisted movements, sensory stimulation, early mobilization	Assisted and active movements, neurophysiological techniques, sensory stimulation, cognitive training	Coordinative training, gait training, training of activities of daily living, cognitive training (incl. telerehabilitation)	
	Stroke				
	Sensory dysfunction, i.e. smell and taste dysfunction	Smell training		Smell training	
	Dysphagia, communication problems	Dysphagia management, speech therapy		Dysphagia management, speech therapy (incl. telerehabilitation)	
Musculoskeletal system	Paresthesia, dyscoordination	Coordination exercise, sensory stimuli		Coordination exercise, sensory stimuli	
	Muscle weakness and muscular imbalance, muscle pain	Passive and assisted movements, muscle balancing, early mobilization	Assisted and active mobilization and positioning, adapted muscle exercise	Aerobic training, muscle strengthening exercise, balancing muscle tone	
Cardiovascular system	Myopericarditis, hypoxia, heart failure	Graded early mobilization, peripheral vascular training		Graded aerobic exercise	
	Thrombosis	Passive movements, respiratory training, compression, positioning		Active dynamic muscular exercise, compression treatment	
Pain	Generalized pain (fibromyalgia-like symptoms)	Physical modalities	Graded activities	Aerobic exercise, muscle balancing, cognitive behavioral treatment	
Mental health	Depression, anxiety	Coping strategy	Coping strategy, exercise	Exercise, psychotherapy, social reintegration	
Autonomous regulation	Fatigue, reduced general physical performance, sleep disorders	Passive physical stimuli	Passive physical stimuli, graded exercises	Aerobic training, sleep hygiene, coping strategies	

surveys on Cochrane Rehabilitation.²² Of course selection of treatments and intensity must be individually adapted by skilled rehabilitation physicians, and team integrated rehabilitation will be essential. All of the rehabilitation interventions should be supported with well-defined functional assessment by physical and rehabilitation medicine (PRM) physicians. The functional assessment, particularly at acute and early acute phases, should consider comorbid aspects that could lead to pneumonia and mortality; functional impairment (existed and impending) which is caused by SARS-CoV-2 infection; actual functional capacities that could support the recovery process and improvement of quality of life.²³ It is also important to stress that the long term dysfunction has a high impact on the quality of life and participation (i.e. unfit for work). This also is a strong argument of why rehabilitation must be provided for patients after COVID-19.²⁴

From the perspective of care planning it is recommended to set-up specialized rehabilitation centers (within existing rehabilitation units), and to build up networks of partners in the community. Teleconsulting and telerehabilitation will be core elements to adequately manage the complex problems as well as the growing number of persons with a need for acute rehabilitation and suffering from long-term symptoms.²⁵

Taken together, rehabilitation plays a major role in managing the health-related issue of COVID-19 patients for both hospitalized and discharged patients. However, rehabilitation interventions in this situation are quite complex and need well-trained professionals. This is due to the complex of hygiene regulations, specific training, and personal protective equipment that are needed to handle this specific group of patients.

In addition to the above-mentioned problems, participation is also a problem for post-COVID-19 patients, which include unfit for work and other social integration issues. These also should be managed by vocational rehabilitation, stepwise re-integration, social activities, and family-oriented psychotherapy.

THE EFFECTS OF REDUCING THE CAPACITY OF REHABILITATION SERVICES FOR OTHER PATIENTS (NON-COVID-19) IN NEED FOR REHABILITATION (E.G. PEOPLE WITH DISABILITY, PATIENT WITH CHRONIC DISEASES (E.G. CANCER, TRAUMATIC BRAIN INJURY, SPINAL CORD INJURY, STROKE, DIABETES, CHRONIC PAIN, ETC))

As aforementioned, rehabilitation services have been disrupted during COVID-19, including in Indonesia. Not only in top referral hospitals but also in rehabilitation practices (e.g. PRM practices, physiotherapy practices, etc.) have reduced the capacity during the COVID-19 pandemic. This capacity reduction is not only because of prevention of the spreading the SARS-CoV-2 infection, but also the need of hygiene and special personal protective equipment. These increase the health cost, too. Because of these issues, many non-COVID-19 patients who are in need of rehabilitations have delayed of treatment that could lead to complications and consequently increase the functioning deficits.

In addition to the existing patients who are in need of rehabilitation, such as stroke, musculoskeletal, cancer and cancer survivor, spinal cord injury, diabetes, and others, the COVID-19 patients (both in and outpatients) need to have special concerns. As aforementioned, COVID-19 patients and their survivors need multi-rehabilitation interventions from a multi-professional team in rehabilitation. These should also take into account when prioritizing and managing patients in rehabilitation needs.

SITUATION, CHALLENGES, AND RECOMMENDATION OF REHABILITATION MEDICINE IN LONG-TERM COVID-19 PANDEMIC IN INDONESIA

It is predicted that COVID-19 will last longer.²⁶ It means, a different aspects of life will be affected. From an economic perspective, long-term COVID-19 can lead also to poverty.²⁷ As it is known, poverty and disability are bidirectional.²⁸ Therefore in the long-term pandemic, it will increase also the prevalence of disability worldwide, including in Indonesia.

Prior to the pandemic of COVID-19, health-related issues in Indonesia still needed to be improved, including in the field of rehabilitation

medicine.²⁹ The issue was not only the lack of health professionals but also health provisions. These issues are also worsened due to an uneven distribution of both rehabilitation professionals and rehabilitation provision all over Indonesia,²⁹ which are being taken into consideration and improved by The National Organization of the Indonesian Physical Medicine and Rehabilitation Specialists through several strategic plans.

As rehabilitation can shorten the length of stay in all phases of healthcare, optimize health outcomes, avoid re-admission, reduce health care and social cost, increase the employment rate for COVID-19 survivors, and strengthen the health care workforces, therefore, in order to achieve the highest level and quality of rehabilitation services during (and in the cases of long-term) COVID-19, some recommendations need to be considered. The following are generic list recommendations in the field of rehabilitation medicine based on practical and opinion of authors at different levels of health systems.

At the Government Level

1. As suggested by WHO11, rehabilitation should be included as an integral part of the national strategy for the COVID-19 pandemic.
2. Improve rehabilitation capacity and rehabilitation service-related financing for COVID-19 patients.
3. Ensure that other persons in need for rehabilitation get access to good quality rehabilitation services.

At the Hospital Level

1. Make available rehabilitation services at all phases of health care (acute to long-term) in the COVID-19 referral hospitals (early rehabilitation and outpatient services).
2. In the case of insufficiency, prioritize patients based on needs and the risk of having complications.
3. Increase the capacity of rehabilitation services in order to treat other non-COVID-19 patients with rehabilitation needs.
4. Implement telerehabilitation as a complementary treatment for patients.
5. Implement prevention and rehabilitation programs for health workforces who are in

charge of COVID-19 patients.

6. Include hygiene and personal protection equipment when treating COVID-19 patients.

At Health Professional Level

1. Rehabilitation professionals should collaborate with all other health professionals in order to achieve an effective and optimal health outcomes in general (inter-professional).
2. Collaboration with health rehabilitation professionals to deliver quality rehabilitation services (team integration/multi-professional rehabilitation).
3. In order to fill in the gap of health professionals in rehabilitation, training basic rehabilitation programs related to the symptoms of COVID-19 patients for other health professionals, like nurses, general practitioners, and others such as CBR workers, family, and others are needed for treating recovered patients.

CONCLUSION

Hopefully, the presented situation of COVID-19 pandemic and rehabilitation medicine in Indonesia, as well as list of recommendations, can be considered in managing the COVID-19 pandemic by relevant stakeholders.

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