

COVID-19: The Effects on the Course, Outcomes, and Discharge Destination From Acute Rehabilitation

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Abstract

This study aimed to (1) describe the rehabilitation hospital course after diagnosis with COVID-19 and the impact on functional outcomes and discharge destination and (2) compare outcomes for patients with and without COVID-19-related debility.

Design: A descriptive cohort study was performed.

Methods: Retrospective data were collected for 63 patients aged >18 years with COVID-19- or non-COVID-19-related debility between January 2015 and September 2020.

Results: Patients admitted with COVID-19-related debility had a mean length of stay of 20.35 days. 15.4% were transferred back to acute service, 92.3% required respiratory interventions, and 88.5% were discharged to the same residence.

Patients with COVID-19-related debility were significantly older, required more respiratory interventions, and had a longer length of stay than the non-COVID-19 group. No significant differences were found in functional outcomes.

Conclusions: Functional outcomes improved, allowing most patients to return to their same residence.

Clinical Relevance: Patients with COVID-19-related debility responded to rehabilitation as well as the non-COVID-19 group.

Keywords: COVID-19; outcomes; rehabilitation.

Introduction

On December 31, 2019, a cluster of cases of pneumonia were reported in Wuhan, China, that were eventually identified as coronavirus. Shortly after on January 5, 2020, the World Health Organization (WHO) published the first disease outbreak news to the scientific community, health community, and media, which included a risk assessment and public health advice regarding the outbreak. By January 30, an emergency committee convened by the Director General of the WHO determined that the outbreak constituted a public health emergency of international concern. At that time, cases

of the coronavirus were being reported worldwide, with most being in China and 98 cases reported in 18 countries outside China. Four countries including the United States reported human-to-human transmission of the coronavirus. On February 11, the coronavirus was named SARS-CoV-2 (COVID-19). By March 11, the WHO characterized COVID-19 as a pandemic based on the alarming spread and severity of the disease (WHO, 2021).

Healthcare institutions began experiencing the effects of the rapid spread and severity of COVID-19, with many hospitals beginning to treat patients with COVID-19-related illnesses. As the spread of COVID-19 began to increase, hospitals geared up for the strain on healthcare resources. As hospitalized patients began to recover from the acute COVID-19 illness, many were left with health issues and sequelae that required ongoing medical care and rehabilitation for recovery (Sheehy, 2020).

In response to the need to manage the sequelae associated with COVID-19, a rehabilitation hospital in Northeast Ohio opened a COVID-19 rehabilitation unit in March 2020. This was the first inpatient COVID-19 rehabilitation unit to open in the Cleveland area that was dedicated to managing impairments in activities of daily living, mobility, and other health-related issues associated with COVID-19-related debility. Although management of patients with debility is familiar to the rehabilitation interdisciplinary team, little is known about the rehabilitation hospital course

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Cite this article as:

Amato-Curran, S., Green, K., Rader, T., & Shimek, A. (2022). COVID-19: The effects on the course, outcomes, and discharge destination from acute rehabilitation. *Rehabilitation Nursing*, 47(3), 84–91. doi: 10.1097/RN.0000000000000366

(transfers back to the acute unit, need for respiratory interventions, and rehabilitation psychology services) and outcomes associated with COVID-19-related debility.

The purposes of this study were to describe the rehabilitation hospital course of a patient after a diagnosis with COVID-19 and the impact on functional outcomes and discharge destination. This study also compared outcomes of patients with COVID-19-related debility with non-COVID-19-related debility.

Literature Review

Short- and Long-Term Effects of COVID-19

Infection with the COVID-19 virus can result in a variety of responses. Although most people experience no symptoms or mild symptoms such as fever, cough, and dyspnea not requiring hospitalization (Simpson & Robinson, 2020), some can experience severe effects of the virus, resulting in critical illness or even death (Kakodkar et al., 2020). COVID-19 can affect the respiratory, cardiovascular, renal, and neurological system and has been found to increase the risk of coagulation and the development of venous thromboembolic complications (Perico et al., 2021). In the acute phase of the illness, persons hospitalized in the intensive care unit may require mechanical ventilation and an extended length of stay for recovery. Critical illness and associated immobility can contribute to weakness (Zorowitz, 2016), deconditioning, muscle shortening, contractures, and postural instability (Simpson & Robinson, 2020). In addition to the physical effects after critical illness, many patients experience cognitive impairment and psychiatric illnesses, now referred to as post-intensive care syndrome (Rawal et al., 2017).

After recovery from the acute COVID-19 illness, patients may experience long-term effects of COVID-19. Ongoing symptoms are varied and may result in physical impairments, cognitive changes, and psychosocial issues (Alemanno et al., 2021; Simpson & Robinson, 2020), with many patients requiring rehabilitation for optimal recovery (De Biase et al., 2020). In a study of 29 patients with post-COVID-19 infection admitted to an inpatient rehabilitation facility (IRF), impairments were noted in endurance, balance, ability to transfer, ambulate, and gait speed. In addition, deficits in cognition, speech, and swallowing were also identified, with deficits in cognition, balance, and gait speed still present at time of discharge (Olezene et al., 2021).

Although not fully understood, the terms “long COVID” or “post-COVID-19 syndrome” are now used for persons with persistent mental and physical fatigue (Van Herck et al., 2021), dyspnea, cognitive impairments, cardiac issues, alterations in taste or smell, and headache lasting months after the initial COVID-19 infection. These ongoing symptoms have been experienced by per-

sons with all severity levels of COVID-19 from mild to severe (Yong, 2021). Many persons also have long-lasting psychological effects, including depression, anxiety, post-traumatic stress disorder, or psychological effects related to ongoing symptoms (Strong, 2021). Because of the persistent nature of symptoms, there is support for developing care clinics/centers to meet the ongoing needs of patients with post-COVID-19 syndrome (Ahmad et al., 2021).

Impact on Care of Patients With COVID-19

The COVID-19 pandemic has resulted in numerous changes in the way IRFs provide care to patients and continues to evolve as new knowledge about COVID-19 is discovered. Changes in the structure of programs include whether IRFs can accommodate patients post-COVID-19 infection, use of different units to separate patients with and without COVID-19 infection, or limiting the unit census to provide adequate staffing of units (Camica et al., 2021). Other changes include use of personal protective equipment to reduce the likelihood of spreading the virus, treating patients in spaces separate from non-COVID-19-positive patients, and implementing strategies to manage fatigue and decreased endurance for patients to tolerate therapy. Although not all persons with post-COVID-19-related illness require inpatient rehabilitation services, those who have experienced a loss in function, decreased endurance, deconditioning, or debility can benefit from inpatient rehabilitation (Hatch, 2021). In addition, many patients present to IRFs with comorbidities (Sheehy, 2020) making the course of recovery more complex.

Research questions for this study included the following:

1. For patients admitted to inpatient rehabilitation with the diagnosis of COVID-19-related debility:
 - a. What were the length of stay, rate of readmission back to an acute medical or intensive care unit, and discharge destination from rehabilitation?
 - b. What were the admission and discharge self-care and mobility scores?
 - c. What was the functional change in self-care and mobility scores?
2. Are there differences in the rehabilitation hospital course and outcomes between patients admitted with a diagnosis of COVID-19-related debility compared to those admitted with non-COVID-19-related debility?

Methods

Study Design, Setting, and Sample

A descriptive cohort, retrospective chart review study was conducted. The setting was an inpatient rehabilitation

unit in the Midwest dedicated to the rehabilitation of patients with the diagnosis of COVID-19. No patients requiring ventilatory support were admitted to the COVID-19 rehabilitation unit. A convenience sample of 162 subjects with the diagnosis of debility (based on the rehabilitation impairment group code 16) between January 1, 2015, and September 30, 2020, were initially included in the study. The 5-year time frame was determined to allow for a sufficient number of patients with non-COVID-19 debility to be included in the sample. Debility was defined as generalized deconditioning not attributable to any other rehabilitation impairment group code (Centers for Medicare & Medicaid Services [CMS], 2021b). The study sample included two groups, one with COVID-19-related debility and one with non-COVID-19-related debility. Inclusion criteria for Group 1 included subjects aged 18 years and older admitted to inpatient rehabilitation with COVID-19-related debility between March 1, 2020, and September 30, 2020. Inclusion criteria for Group 2 were subjects aged 18 years and older admitted to inpatient rehabilitation with the diagnosis of debility (non-COVID-19 related) between January 1, 2015, and September 30, 2020. There were no exclusion criteria. During this time frame, the data collection instrument to measure outcomes was changed by Centers for Medicare & Medicaid Services (CMS). Prior to October 1, 2020, functional ability was scored using the Functional Independence Measures instrument; after this date, it was scored using section GG: Functional Abilities and Goals methodology (CMS, 2021b). Therefore, this article will only report on the analysis for subjects admitted after the new method of scoring was fully implemented to ensure a consistent comparison of functional outcomes between COVID-19 and non-COVID-19 groups. Thus, the final sample for analysis was 63 subjects, with 26 in the COVID-19 group and 37 in the non-COVID-19 group.

Procedures

Institutional review board approval was obtained prior to initiation of the study. A waiver of informed consent and Health Insurance Portability and Accountability Act authorization was granted because this was a retrospective chart review study. Data were collected by a multidisciplinary team, including a nurse manager, the director of nursing, a clinical nurse specialist, and the director of rehabilitation nursing. The data were stored and managed using the REDCap electronic data capture tool. REDCap is a secure web-based software platform used to minimize the risk of breach of confidentiality (Harris et al., 2009).

A retrospective chart audit was conducted to extract data from the electronic health record (EHR). The Inpatient Rehabilitation Facility Patient Assessment Instrument (CMS, 2021b) was used to collect data related to

mobility and self-care functional outcomes. Scores were abstracted from eRehabData, an outcomes system for inpatient rehabilitation hospitals that extracts data from the facility's Inpatient Rehabilitation Facility Patient Assessment Instrument. The system is provided by the American Medical Rehabilitation Providers Association.

After all initial data were collected from the EHR, two investigators verified the accuracy by double checking data abstracted for every fifth subject (19%) included in the study. As initial data abstracted were found to be accurate, no further double checking of data was completed. In addition, to increase the reliability of data collection efforts, each of the four investigators were assigned specific variables that were collected from all subjects. The director of rehabilitation collected all data related to functional outcomes from eRehabData and the nurse manager, the director of rehabilitation nursing, and the clinical nurse specialist collected all remaining variables from the EHR.

Hospital Course Definitions/Measurements

Day of transfer to rehabilitation was defined as the hospital day that the patient was admitted to inpatient rehabilitation with the day of admission to the acute hospital counted as Day 1. *Respiratory interventions* were defined as one or more episodes of incentive spirometry, oxygen via nasal cannula or face mask, continuous positive airway pressure, or bilevel positive airway pressure. Patients seen by *rehabilitation psychology* included a completed in-person or telehealth visit with the rehabilitation psychologist. *Transfers back to the acute service* were counted as any transfer back to a medical, surgical, or intensive care unit because of the need for a higher level of medical/nursing care during the rehabilitation stay. *Length of stay in rehabilitation* was defined as the total number of days the patient received rehabilitation services on an inpatient rehabilitation unit. If the patient was transferred to an acute unit during the rehabilitation stay and returned for additional rehabilitation services, the days were summed.

Outcome Definitions/Measurements

Self-care and mobility scores as defined by the IMPACT Act (CMS, 2021a) were used to measure functional outcomes in the study. *Self-care scores* included assessments of function on the following items: eating, oral hygiene, showering/bathing, dressing-upper, dressing-lower, toileting hygiene, and putting on/taking off footwear. Self-care items were assessed/scored by an occupational therapist and/or a registered nurse. *Mobility scores* were assessments of function on the following items: rolling left and right, sit to lying, lying to sitting on side of bed, sit to stand, chair/bed-to-chair transfer, toilet transfer, and car transfer. Mobility items were

assessed/scored by a physical therapist. *Self-care and mobility total admission scores* were the average scores for each self-care and mobility item on admission starting Day 1 of admission and ending 11:59 p.m. on Day 3 of the rehabilitation stay. *Self-care and mobility total discharge scores* were defined as the average scores for each self-care and mobility item upon discharge. The total admission and total discharge scores are calculated for each assessment. The change in *admission to discharge scores for self-care and mobility* items were calculated by subtracting the admission score total from the discharge score total for each assessment. The values were then averaged.

Discharge to the same residence was defined as the patient returning to the same residence prior to admission after discharge from the hospital. Finally, *30-day readmission rates* were defined as patients who were discharged and readmitted to the hospital within 30 days of discharge. Visits to the emergency room that resulted in discharge back to home were not counted as readmissions.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences software Version 22. Prior to the analysis, data were screened for missing data, data entry errors,

and outliers. Descriptive statistics were used to describe the study sample including the mean and standard deviation for continuous variables as well as frequencies and percentages for categorical variables. Descriptive statistics were used to assess for violations of assumptions for the statistical techniques and to answer the first research question. To answer the second research question, independent-sample *t* tests were used to test mean differences between the COVID-19 and non-COVID-19 groups for interval-level data/variables. Chi-square tests were used to test the association between COVID-19 and non-COVID-19 debility for categorical data/variables. The level of statistical significance was set at .05.

Results

Demographic Characteristics: COVID-19-Related Debility

The mean age for the 26 subjects with COVID-19-related debility was 69.35 years (*SD* = 14.68). Most were female (*n* = 15, 57.7%), Caucasian (*n* = 14, 53.8%), unemployed (*n* = 11, 42.3%), and resided at home prior to admission (*n* = 21, 80.8%; see Table 1).

Subjects admitted with COVID-19-related debility, on average, were transferred to rehabilitation 15.04 days

Table 1 Demographic Characteristics: COVID-19 and Non-COVID-19-Related Debility

Characteristic	COVID-19 <i>n</i> (%)	Non-COVID-19 <i>n</i> (%)	COVID-19 Mean (<i>SD</i>)	Non-COVID-19 Mean (<i>SD</i>)
Age (years)			69.35 (14.68)	58.65 (15.19)
Gender				
Female	15 (57.7)	21 (56.8)		
Male	11 (42.3)	16 (43.2)		
Race				
Caucasian	14 (53.8)	27 (73.0)		
African American	11 (42.3)	8 (21.6)		
Hispanic	0 (0.0)	0 (0.0)		
Asian	0 (0.0)	1 (2.7)		
Not documented	0 (0.0)	1 (2.7)		
Employment				
Employed	6 (23.1)	7 (32.4)		
Unemployed	11 (42.3)	14 (37.8)		
Retired	7 (26.9)	12 (32.4)		
Not documented	2 (7.7)	4 (10.8)		
Marital status				
Single	1 (3.8)	5 (13.5)		
Married	8 (30.8)	12 (32.4)		
Divorced	0 (0.0)	1 (2.7)		
Widowed	3 (11.5)	0 (0.0)		
Not documented	14 (53.8)	19 (51.4)		
Residence prior to admit				
Home	21 (80.8)	36 (97.3)		
Assisted living	4 (15.4)	0 (0.0)		
Skilled nursing	0 (00.0)	0 (0.0)		
Long-term care	0 (00.0)	1 (2.7)		
Other	1 (3.8)	0 (0.0)		

Note. COVID-19 debility, *n* = 26; non-COVID-19 debility, *n* = 37.

Table 2 Hospital Course for Patients With and Without COVID-19-Related Debility

Characteristic	COVID-19	Non-COVID-19	COVID-19	Non-COVID-19	<i>p</i>
	<i>n</i> (%)	<i>n</i> (%)	Mean (<i>SD</i>)	Mean (<i>SD</i>)	
Day of transfer to rehabilitation			15.04 (9.59)	14.62 (8.97)	.86
Referral location					
Internal	12 (46.2)	32 (86.5)			<.002*
External	14 (53.8)	5 (13.5)			
Transfer back to acute					
Yes	4 (15.4)	6 (16.2)			1.000
No	22 (84.6)	31 (83.8)			
Respiratory intervention					
CPAP/BIPAP	3 (11.5)	2 (5.4)			.641
O ₂ via mask	0 (0.0)	0 (0.0)			—
O ₂ via NC	11 (42.3)	9 (24.3)			.217
IS	19 (73.1)	10 (27.0)			<.001*
None	2 (7.7)	16 (43.2)			<.005*
Other	3 (11.5)	2 (5.4)			.641
Seen by rehabilitation psychology					
Yes	7 (26.9)	7 (18.9)			.657
No	19 (73.1)	30 (81.1)			

Note. COVID-19 debility, *n* = 26; non-COVID-19 debility, *n* = 37. CPAP = continuous positive airway pressure; BIPAP = bilevel positive airway pressure; NC = nasal cannula; IS = incentive spirometry.

*Statistically significant at .05 level.

(*SD* 9.59) after admission to acute care, and a majority were referred from an outside hospital (*n* = 14, 53.8%). Four subjects (15.4%) required additional medical care necessitating the need for transfer back to the acute service. Twenty-four patients (92.3%) required some type of respiratory intervention (incentive spirometry, oxygen via mask or nasal cannula, or continuous positive airway pressure/bilevel positive airway pressure). Seven subjects (26.9%) were seen by a rehabilitation psychologist (see Table 2),

and 23 (88.5%) were discharged to the same residence after hospitalization. The average length of stay was 20.35 days (10.93; see Table 3).

Hospital Course and Outcomes for COVID-19- Versus Non-COVID-19-Related Debility

There was no significant difference on when subjects were transferred to rehabilitation; subjects with COVID-19-related debility were transferred 15.04 days postadmission

Table 3 Comparison Between COVID-19- and Non-COVID-19-Related Debility

Variable	COVID-19 Mean (<i>SD</i>)	Non COVID-19 Mean (<i>SD</i>)	COVID-19 <i>n</i> (%)	Non-COVID-19 <i>n</i> (%)	<i>p</i>
Age (years)	69.35 (14.68)	58.65 (15.19)			.007**
Length of stay in rehab	20.35 days (10.93)	13.76 days (9.55)			.014*
Mobility total admission	16.15 (7.06)	18.65 (4.89)			.102
Mobility total discharge	32.04 (8.59)	31.59 (9.15)			.847
Mobility change per day	1.09 (.808)	1.21 (1.06)			.633
Mobility change A/D	15.88 (7.49)	12.95 (9.33)			.188
Self-care total admission	18.77 (6.47)	20.59 (4.41)			.187
Self-care total discharge	32.12 (9.94)	31.86 (9.08)			.918
Self-care change per day	.98 (.863)	1.07 (.900)			.701
Self-care change A/D	13.42 (7.93)	11.35 (7.30)			.289
Discharge to same residence					
Yes			23 (88.5)	30 (81.1)	.504
No			3 (11.5)	7 (18.9)	
Thirty-day readmission rates					
Yes			0 (0.0)	6 (16.2)	.038*
No			26 (100)	31 (83.8)	

Note. COVID-19 debility, *n* = 26; non-COVID-19 debility, *n* = 37. HD = hospital day; A/D = admit to discharge.

**p* < .05.

***p* < .01.

compared to subjects with non-COVID-19-related debility being transferred 14.62 days postadmission ($p = .86$). Subjects with COVID-19-related debility were older ($p = .007$), more likely to be referred from an external location ($p = .002$), and had a longer length of stay compared to the non-COVID-19 group ($p = .014$). During the rehabilitation stay, only 7.7% of subjects with COVID-19-related debility did not require any respiratory interventions compared to 43.2% of the non-COVID-19 group. In addition, incentive spirometry was used more often in the COVID-19 group ($p = .001$) during the rehabilitation stay. There were no significant differences ($p = .657$) in the percentage of subjects seen by a rehabilitation psychologist (26.9% COVID-19 group vs. 18.9% non-COVID-19 group) or those transferred back to the acute service for a medical decline requiring a higher acuity of care (15.4% COVID-19 group vs. 16.2% non-COVID-19 group; see Table 2).

Subjects with COVID-19-related debility had lower total mobility and self-care scores on admission although the differences were not significant. They also had greater but nonsignificant increases in mobility ($p = .188$) and self-care ($p = .289$) scores from admission to discharge compared to subjects with non-COVID-19-related debility. There were no significant differences between groups for subjects discharged to the same residence ($p = .504$), with 88.5% of the COVID-19 group and 88.1% of the non-COVID-19 group returning to the same residence after discharge. Subjects with COVID-19-related debility had a mean rehabilitation length of stay of 20.35 days ($SD = 10.93$), which was significantly longer ($p = .014$) than the non-COVID-19 group. No subjects diagnosed with COVID-19-related debility were readmitted within 30 days of discharge, compared to (16.2%) of the non-COVID-19 group ($p = .038$; see Table 3).

Discussion

The opening of the COVID-19 rehabilitation unit was in response to the pandemic and need for rehabilitative care to support ongoing recovery for patients. Literature has supported the need for rehabilitative care because of ongoing physical, psychological, and cognitive changes resulting from COVID-19 infection (Barker-Davis et al., 2020; De Biase et al., 2020; Hatch, 2021).

Subjects in the COVID-19-related debility group, on average, were more than 10 years older than the non-COVID-19 group. These findings are not surprising because older adults are at a higher risk of serious illness and complications from COVID-19 infection (Centers for Disease Control and Prevention, 2021). Interestingly, there were no differences in the length of time that subjects were transferred to rehabilitation, although subjects with COVID-19-related

debility had a significantly longer length of stay. Reasons for the increased rehabilitation length of stay are unclear, although the subjects may have required more time to achieve functional goals because of respiratory symptoms and an increased need for respiratory interventions.

During the rehabilitation stay, there were no significant differences between groups in the percentage of subjects requiring services from a rehabilitation psychologist. Data regarding reasons for a consultation were not collected; therefore, it is unknown whether the focus of sessions was different. During the time frame the COVID-19 rehabilitation unit was open, no visitors were permitted, which may have impacted the subjects' ability to cope with physical, cognitive, and psychosocial changes caused by the COVID-19 infection. Similarly, there were no significant differences in the percentage of subjects transferred back to the acute service (medical/surgical or intensive care units), suggesting that most subjects with (84.6%) or without (83.8%) COVID-19 did not have declines in their medical status requiring a higher level of care.

Although not significant, both self-care and mobility functional scores were lower at the time of admission in the COVID-19 group. It is unclear whether the decreased functional scores were age-related declines in function or whether comorbidities and/or COVID-19 illness contributed to the lower scores. A systematic review by Rooney et al. (2020) found that impairments in function are common after COVID-19 and can last up to 1–2 years postinfection. Literature has also suggested that a decline in physical function may be related to a decrease in muscle strength and endurance from extended stays in the intensive care unit or acute care units (De Biase et al., 2020; Zorowitz, 2016).

Although improvements from time of admission to discharge between groups were not significantly different for self-care ($p = .289$) and mobility ($p = .188$), the direction of mean change supported improvement for both groups. An important finding was that there were no significant differences between groups on all self-care and mobility outcomes and despite an increased age and need for more respiratory interventions, the COVID-19 group responded to rehabilitation as well as the non-COVID-19 group.

The length of stay in rehabilitation was longer in the COVID-19 group. Because these subjects were older and a majority required some type of respiratory intervention, it is possible that these factors may have contributed to the longer length of stay. This study found that functional status was impaired at the time of admission and improved over time, which is consistent with study results by Olezene et al. (2021). Because patients with COVID-19-related debility had an increased length of stay, it is unclear why improvements in function were not significantly higher than patients with non-COVID-19 debility

at discharge. One explanation could be related to family goals and their willingness to take patients home despite having greater functional needs. It is also unclear whether discharge self-care and mobility scores returned to baseline for both groups prior to admission because this was not measured. Despite this, 88.5% of subjects with and 81.1% without COVID-19-related debility ($p = .504$) returned to the same residence after discharge.

Study Limitations

The study was conducted at one site limiting the generalizability of the findings. Because a convenience sample of subjects with the diagnosis of COVID-19 and non-COVID-19-related debility were used, external validity may be affected. Most of the data were collected from the EHR; therefore, validity of data was dependent on the accuracy of the documentation. Although data were collected on some functional outcomes, outcome data such as ambulation were not collected. Finally, respiratory interventions were based on at least one episode in which oxygen or incentive spirometry was used, although the amount of time administered was not recorded.

Implications for Rehabilitation Nursing Practice

Patients with COVID-19-related debility require individualized plans of care to meet their specific needs. Because many patients are older, have decreased function, and have comorbidities that can make recovery more complex, rehabilitation nurses must consider these factors when developing plans of care. Although the standards of nursing care and requirement for therapy time were consistent for both groups, because most patients with COVID-19 debility required respiratory interventions, the timing of therapy and rest periods must be modified to allow patients to tolerate 3 hours of therapy required for inpatient rehabilitation. This can be done through spacing therapy times to include morning, afternoon, and late day sessions, or spacing therapy sessions over 7 days. In addition, allowing opportunities for naps or rest periods in bed may decrease fatigue associated with COVID-19 and therapy sessions.

In addition to the physical needs addressed by nursing and therapy staff, psychosocial needs must also be considered. Because infection prevention measures included eliminating or limiting visitors hospital wide, psychosocial needs of all patients must be addressed. Although additional needs for rehabilitation psychology by the COVID-19 group was not represented in findings from this study, rehabilitation nurses must consider providing creative ways for patients to stay connected with family members and friends. Increased use of technology to connect with significant others, including use of phones, iPads, and computers can

be a temporary substitute for in-person visitation. These devices can also provide an alternative to in-person family teaching, providing updates to families, and discharge planning. Although goals of care must be individualized based on the needs of each patient, the goal of optimizing physical, cognitive, and psychological function to promote the transition from the hospital to home or other level of care remains consistent for all patients with debility.

Conclusion

The COVID-19 pandemic has resulted in the need for inpatient rehabilitation services for patients with debility post-COVID-19 infection. This need is demonstrated by a decreased function of self-care and mobility at the time of admission, along with the complex medical needs associated with the illness. Patients with COVID-19-related debility in this study were older, required more respiratory interventions, and had a longer length of stay compared to patients with non-COVID-19-related debility. Despite this, patients were able to make functional gains, with a majority being discharged to home. Rehabilitative care should involve a transdisciplinary approach to meet the complex needs of patients with COVID-19-related debility, and nurses should advocate for rehabilitation care.

Conflict of Interest

The authors declare no conflict of interest.

Funding

The authors declare that there is no funding associated with this project.

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