



Residual Fatigue and Cough, and Elevated 10-time Sit-to-Stand Test Present in Patients Discharged After Hospitalization with COVID-19

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INTRODUCTION

- SARS-CoV-2 has infected millions, resulting in significant mortality and morbidity, with both acute and long-term sequelae.
- The trajectory of COVID-19 recovery is not well described, nor whether acute sequelae are associated with lingering impairment.
- We aimed to describe symptoms and functional impairments in the 2-6 weeks after hospitalization.

METHODS

- Patients discharged from the University of Colorado Hospital after hospitalizations with symptomatic COVID-19 were contacted by the research team.
- Enrolled participants completed a phone or video visit between 2-6 weeks post-discharge to assess symptoms and performance on a 10-time sit-to stand test, which has been shown to correlate with general function and lower extremity strength.
- Participants also completed an online survey including frailty self-assessment (Clinical Frail Scale) and the WHO-DAS short disability score.
- Descriptive analyses were conducted in R.

RESULTS

Characteristic	Total %
Sex	
Male	49%
Female	51%
Age	Mean (SD) 52.8 (13.2)
Race/Ethnicity	
White Non-Hispanic	36%
Black Non-Hispanic	24%
Hispanic	24%
Native American	1%
Other/missing	15%
O₂ at discharge	Yes 40%
Re-admitted	Yes 9%

Time (seconds) to rise	Mean Time (SD) (n=71)*
5-time (normal <11.2s)	13.8 s (5.0)
10-time (normal <22.4s)	29.3 s (12.0)



*24 participants unable/unwilling to participate, and data is missing on 3 additional participants.

FIGURE 2. FRAILTY SCORES PRE-AND-POST-HOSPITALIZATION

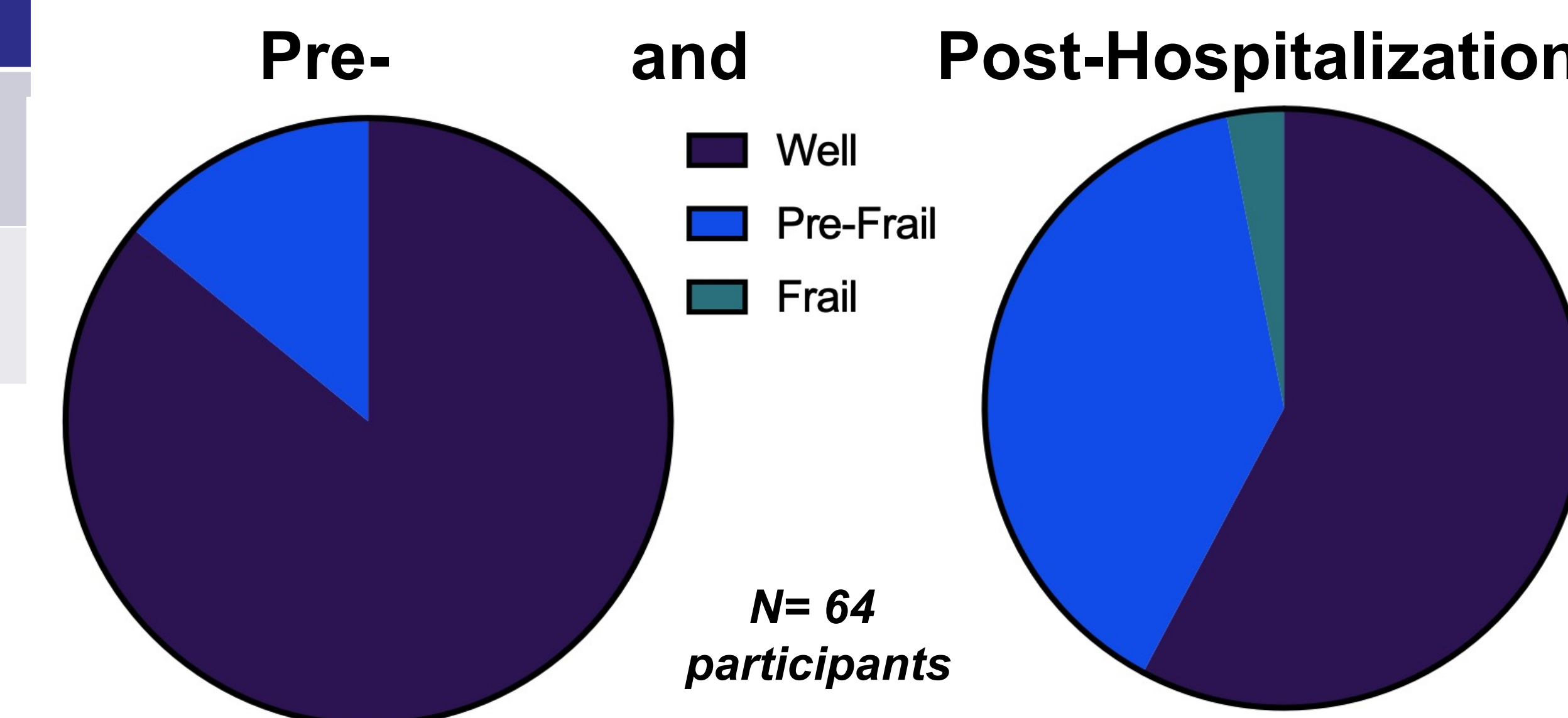
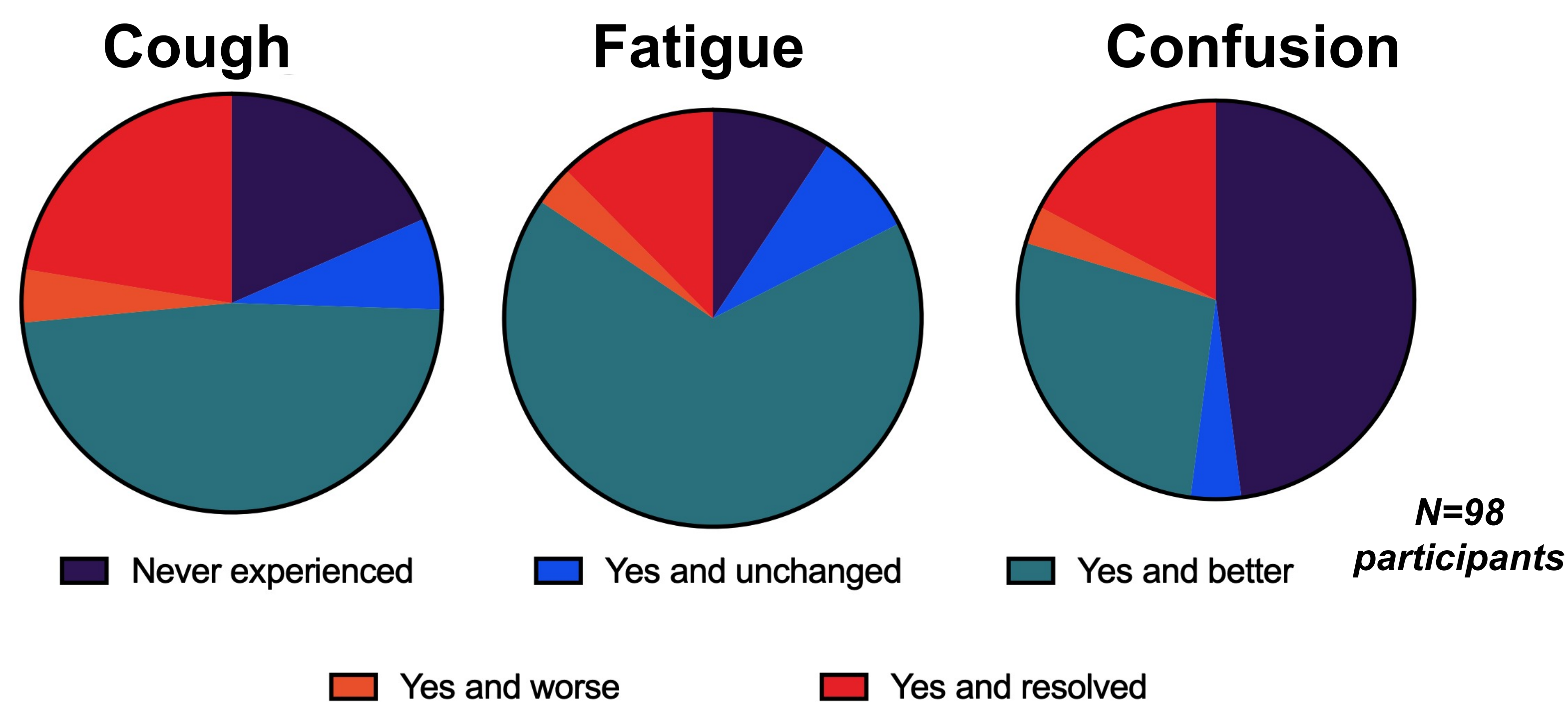


FIGURE 1. SYMPTOMS AT 2-6 WEEKS POST-HOSPITALIZATION



CLINICAL FRAILTY SCALE

Score	Category	Description
1	VERY FIT	People who are robust, active, energetic and motivated. They tend to exercise regularly and are among the fittest for their age.
2	FIT	People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g., seasonally.
3	MANAGING WELL	People whose medical problems are well controlled, even if occasionally symptomatic, but often are not regularly active beyond routine walking.
4	LIVING WITH VERY MILD FRAILTY	Previously "vulnerable," this category marks early transition from complete independence. While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up" and/or being tired during the day.
5	LIVING WITH MILD FRAILTY	People who often have more evident slowing, and need help with high order instrumental activities of daily living (finances, transportation, heavy housework). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation, medications and begins to restrict light housework.

Score	Category	Description
6	LIVING WITH MODERATE FRAILTY	People who need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.
7	LIVING WITH SEVERE FRAILTY	Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~6 months).
8	LIVING WITH VERY SEVERE FRAILTY	Completely dependent for personal care and approaching end of life. Typically, they could not recover even from a minor illness.
9	TERMINALLY ILL	Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise living with severe frailty. (Many terminally ill people can still exercise until very close to death.)

SCORING FRAILTY IN PEOPLE WITH DEMENTIA

The degree of frailty generally corresponds to the degree of dementia. Common symptoms in mild dementia include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal. In moderate dementia, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting. In severe dementia, they cannot do personal care without help. In very severe dementia they are often bedfast. Many are virtually mute.



Clinical Frailty Scale ©2005-2020 Rockwood, Version 2.0 (EN). All rights reserved. For permission: www.geriatricmedicine.ca
Rockwood K et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

ACKNOWLEDGMENTS

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CONCLUSIONS

- In the 2-6 weeks after hospitalization with COVID-19, our cohort exhibited high rates of fatigue, shortness of breath and frailty.
- Whether early interventions can attenuate post-hospital impairments, and whether early deficits predict "Long COVID" needs to be established.
- Further investigations at 12 and 18-week follow-up are ongoing.