

Recover, rebuild, rise!

Tracking physical recovery in Long COVID

Physical outcomes of a novel Australian multidisciplinary Long COVID clinic that incorporates exercise: a prospective observational study

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Background

In Australia, few studies have investigated the impact of exercise in people with Long COVID¹, as exercise in this population remains controversial^{2,3}. The Post COVID Recovery Clinic opened in March 2022 in the ACT at the University of Canberra Hospital, a first for the territory. The clinic is based on individualised assessment and person-specific prescription of tailored progressive exercise therapy. The novel aspect of this clinic is an approach that is more progressive than current guidelines^{4,5}.

Aims

This observational study investigates the physical outcomes of people who attended an Australian multidisciplinary Long COVID clinic that incorporates both peripheral and inspiratory muscle strength training and carefully monitored cardiovascular exercise therapy.

Methods

Design

Prospective observational study of consumers engaging with a single site Long COVID Recovery Clinic from March 2022 to 30 June 2023.

Setting and participants

Adult consumers ≥ 18 years old referred to the clinic and completed an initial and final assessment by 30 June 2023. Clinic eligibility required symptoms > 12 weeks which impaired activities of daily living.

Main outcome measures

Safety was pre-defined as $< 10\%$ of patients experiencing a minor adverse event rate, and no serious disability or death. Physical outcomes on enrolment and completion included Modified COVID-19 Yorkshire Rehabilitation Scale, muscle strength (maximum inspiratory pressure), mobility/function (Timed-Up-and-Go), walking speed (ten-metre-walk-test) and exercise capacity (6-minute-walk-test).

Data analysis

Descriptive statistics and comparison of assessment and reassessment of outcome measures using t-tests.

Results

207 consumers were referred, 119 (57% of those referred) commenced, 72 (60% of those who commenced) completed the program, 128 (62% of those referred) male, median age 45 (range 18-84), median time spent attending the clinic 112 days (range 5-384). The main reason for not completing the program was not being able to contact the consumer. There were no adverse events as a result of participation in exercise. Consumers who completed the clinic showed improvement in physical measures including total score and overall health score of the Modified COVID-19 Yorkshire Rehabilitation Scale, inspiratory muscle strength, mobility/function, walking speed and endurance (Table 2).

Table 1. Participant characteristics.

Characteristic	
Age (years), median (SD) [range]	45 (16) [18-84]
Sex (male), n (%)	128 (62%)
Vaccinated against COVID-19 infection, n (%)	94 (82%)
≥ 1 Long term health conditions, n (%)	84 (73%)
Admitted to hospital due to COVID-19 infection, n (%)	10 (7%)
Exercise per week prior to COVID-19 infection, n (%)	
No regular exercise	14 (11%)
< 150 min	21 (17%)
≥ 150 min	61 (49%)
Exercise per week following COVID-19 infection, n (%)	
No exercise	53 (43%)
< 150 min	38 (31%)
≥ 150 min	10 (8%)
Wait time to attend the clinic (days), median (SD) [range]	111 (67) [3-293]
Time spent attending the clinic (days), median (SD) [range]	112 (65) [5-384]

Table 2. Summary of outcome measures from t-test analysis.

Outcome measure	Assessment			Reassessment			Mean difference	p-value
	Mean	SD	Min, max	Mean	SD	Min, max		
Modified COVID-19 Yorkshire Rehabilitation Scale								
Other symptoms score (x/25)	5	4	0, 13	4	3	0, 11	-1.5	0.003
Overall health score (x/10)	4	1	1, 10	5	2	3, 8	1.3	< 0.001
Total score* (x/93)	39	15	0.83	32	15	3.60	-6.5	0.02
Max Inspiratory Pressure (cmH2O)								
Timed-Up-and-Go (sec)	72	28	6, 168	84	26	44, 162	11.7	0.002
Ten-Metre-Walk-Test (m/sec)								
Comfortable speed	6.7	2.2	3.6, 13.6	5.8	1.9	2.9, 12.0	-0.9	< 0.001
Fast speed	1.3	0.3	0.6, 1.9	1.4	0.3	0.5, 2.0	0.7	0.006
Six-Minute-Walk-Test (m)	1.8	0.4	0.9, 2.7	2.0	0.6	1.1, 3.9	0.2	< 0.001
6-Minute-Walk-Test (m)	461	131	60, 730	524	140	90, 942	63	< 0.001

*Total score includes questions 1-15 of the Modified COVID-19 Yorkshire Rehabilitation Scale.



Fig 1. University of Canberra Hospital where the Post COVID Recovery Clinic is held.



Fig 2. Gym at the Post COVID Recovery Clinic.

Conclusion

- No adverse events occurred when prescribing personalised peripheral and inspiratory muscle training to consumers with Long COVID.
- Participation in the Long COVID clinic was associated with improvements in physical outcomes, although lack of a control group limits interpretation of these findings.
- Two-thirds of consumers who commenced completed the program. Reasons for not completing the were largely a result of the consumer being uncontactable. This has implications for future Long COVID clinic design in Australia.

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