Association of long COVID with health-related quality-of-life (HrQOL) outcomes

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BACKGROUND

- Long COVID is a significant public health concern.
- The association of long COVID with health-related quality-of-life (HrQOL) has not been well-characterized.

METHODS

- Participants who received blinded placebo in the ACTIV-2 outpatient COVID-19 treatment trial with symptom diary data at week 24 were assessed for long COVID, defined as presence of self-assessed COVID-19 symptoms within the last 4 weeks. Self-assessed return to pre-COVID health was also analyzed.
- HrQOL at week 24 was evaluated by the EQ-5D-5L (EQ-5D) and SF-36v2 (SF-36) questionnaires.
- Modified Poisson regression and Wilcoxon rank-sum tests compared EQ-5D and SF-36 measures between those with vs. without long COVID and who had vs. hadn't returned to pre-COVID health.
- For each HrQOL domain, analyses were performed in the overall population and in medical history subgroups defined by presence or absence of selected comorbidities at baseline.

COHORT BASELINE CHARACTERISTICS

- Cohort enrolled between January to August 2021. N=440 participants had both available symptom diary data and available EQ-5D or SF-36 data at week 24.
- Long COVID present in 14% (63/440) of participants and non-return to health in 22% (96/440).

Characteristic	Long COVID Present (N=63)	Long COVID Absent (N=377)	Total (N=440)
Age (years) (median, IQR)	47 (36, 55)	43 (33, 54)	43 (34, 54)
Sex (n, %)			
Male	16 (25%)	186 (49%)	202 (46%)
Female	47 (75%)	191 (51%)	238 (54%)
Gender Identity (n, %)			
Cisgender	63 (100%)	373 (99%)	436 (99%)
Transgender spectrum	0 (0%)	4 (1%)	4 (1%)
Race (n, %)			
White	50 (79%)	327 (87%)	377 (86%)
Black	7 (11%)	34 (9%)	41 (9%)
Asian	1 (2%)	6 (2%)	7 (2%)
Other	5 (8%)	10 (3%)	15 (3%)
Ethnicity (n, %)			
Hispanic or Latino	29 (46%)	219 (58%)	248 (56%)
Not Hispanic or Latino	34 (54%)	158 (42%)	192 (44%)
Time from symptom onset (days) (median, IQR)	5 (3, 7)	5 (3, 7)	5 (3, 7)
Risk for COVID progression (n, %)			
High Risk	40 (63%)	178 (47%)	218 (50%)
Low Risk	23 (37%)	199 (53%)	222 (50%)
SARS-CoV-2 Variant (n, %)[1]			
Delta	24 (45%)	99 (36%)	123 (37%)
Pre-Delta	29 (55%)	179 (64%)	208 (63%)
Vaccination status (n, %)			
No	52 (83%)	312 (83%)	364 (83%)
Yes	11 (17%)	65 (17%)	76 (17%)
Anti-nucleocapsid or anti-spike antibody positivity (n, %)[1]			
Positive	30 (51%)	194 (53%)	224 (53%)
Negative	29 (49%)	170 (47%)	199 (47%)

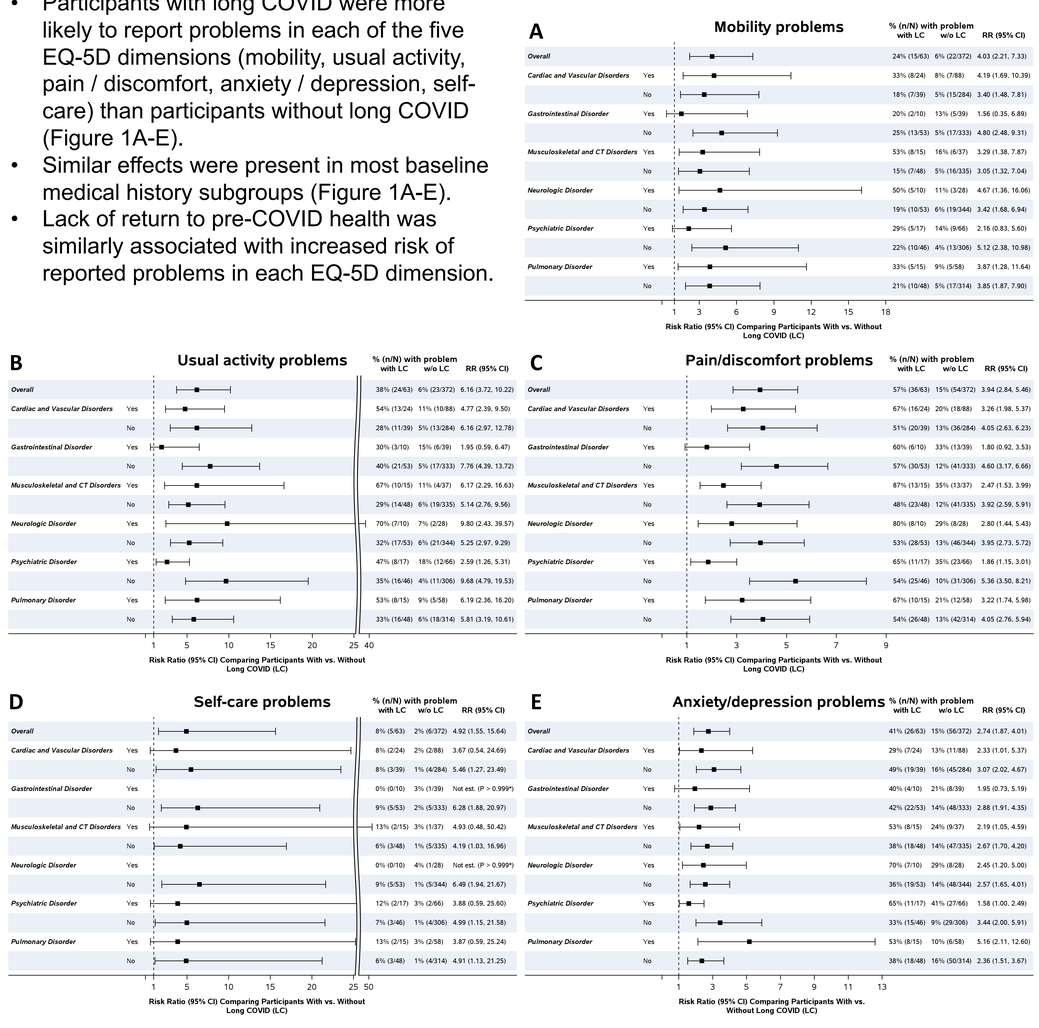
[1]*Data not available for all participants.*

Long COVID is associated with worse HrQOL outcomes across multiple domains.

ASSOCIATION OF LONG COVID WITH EQ-5D MEASURES

- Participants with long COVID were more likely to report problems in each of the five EQ-5D dimensions (mobility, usual activity, pain / discomfort, anxiety / depression, self-care) than participants without long COVID (Figure 1A-E).
- Similar effects were present in most baseline medical history subgroups (Figure 1A-E).
- Lack of return to pre-COVID health was similarly associated with increased risk of reported problems in each EQ-5D dimension.

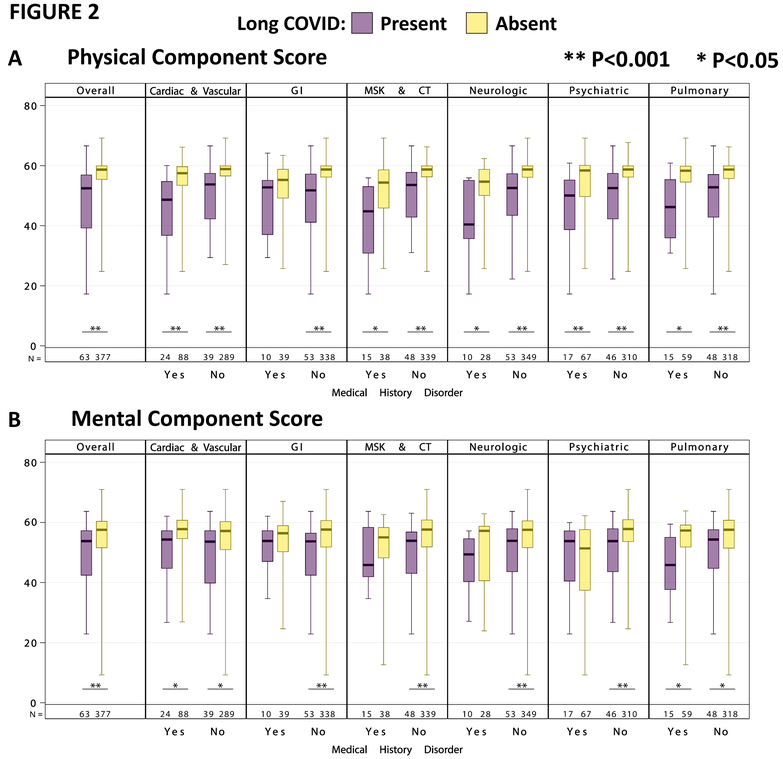
FIGURE 1



ASSOCIATION OF LONG COVID WITH SF-36 MEASURES

- Participants with long COVID had lower SF-36 composite Physical and Mental Component Scores (Figure 2A-B).
- Association of long COVID with worse Physical Component scores was present in most baseline medical history subgroups, but not significant among those with baseline gastrointestinal (GI) disorders.
- Mental Component Score effects were present in participants with baseline cardiac and vascular disorders and pulmonary disorders, but not significant among those with baseline psychiatric, neurological, GI, and musculoskeletal (MSK) and connective tissue (CT) disorders.
- Lack of return to pre-COVID health was similarly associated with worse SF-36 composite Physical and Mental Component Scores.

FIGURE 2



HOSPITALIZATION & HRQOL

- Hospitalization prior to week 24 was not associated with HrQOL.

CONCLUSIONS

- Long COVID is associated with worse HrQOL outcomes.
- These findings highlight the need to develop preventative and therapeutic interventions for this condition.

ACKNOWLEDGEMENTS

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