

Supplementary data file to; Rehabilitation post COVID-19 – Cross-sectional observations using the Stanford Hall remote assessment tool.

Exploratory univariate binary logistic regressions for post-acute symptoms with a prevalence of greater than 30%:

Cross tabulations were checked for each independent categorical variable ensuring each cell contained greater than 1 case and the no more than 20% of independent variables for consideration in the multivariate model contained less than 5 cases (Field 2014 4th Ed p.770).

1. Dependent variable: Post-acute Fatigue

| Independent variable | Direction of effect | Odds ratio | 95% CI | Sig. |
|----------------------|--|------------|-------------|-------|
| Age | Less likely with increased age | 0.980 | 0.945-1.016 | 0.276 |
| Time to VTC | Less likely with increased time to VTC | 0.971 | 0.936-1.007 | 0.113 |
| LC/NLC | Less likely with LC | 0.663 | 0.329-1.336 | 0.250 |
| Admitted | Less likely if admitted | 0.680 | 0.315-1.470 | 0.327 |
| Acute SOB | More likely with acute SOB | 1.397 | 0.649-3.008 | 0.393 |
| Acute Fever | Less likely with acute fever | 0.585 | 0.253-1.352 | 0.210 |
| Acute Fatigue | More likely with acute fatigue | 1.617 | 0.776-3.369 | 0.199 |
| Acute Cough | Less likely with acute cough | 0.726 | 0.347-1.518 | 0.394 |

No significant univariate relationships identified predictive of post-acute fatigue. Multivariate model not pursued.

2. Dependent variable: Post-acute cough

| Independent variable | Direction of effect | Odds ratio | 95% CI | Sig. |
|----------------------|---------------------|------------|-------------|-------|
| Age | Less likely | 0.977 | 0.944-1.010 | 0.171 |

| | | | | |
|------------------|--|--------------|--------------------|---------------|
| | with increased age | | | |
| Time to VTC | Less likely with increased time to VTC | 0.989 | 0.956-1.024 | 0.541 |
| LC/NLC | Less likely with LC | 0.851 | 0.443-1.635 | 0.628 |
| Admitted | Less likely if admitted | 0.717 | 0.346-1.487 | 0.371 |
| Acute SOB | More likely with acute SOB | 2.607 | 1.247-5.452 | 0.011* |
| Acute Fever | Less likely with acute fever | 0.618 | 0.294-1.300 | 0.205 |
| Acute Fatigue | More likely with acute fatigue | 1.354 | 0.677-2.710 | 0.392 |
| Acute Cough | More likely with acute cough | 1.199 | 0.618-2.329 | 0.592 |

One univariate relationship identified predictive of post-acute fatigue. Final univariate model for prediction of post-acute cough below:

Coefficients of the model predicting post-acute cough

| | <i>b</i> (SE) | 95% CI for Odds ratio | | |
|-----------|---------------|-----------------------|-------|-------|
| | | Lower | Odds | Upper |
| Constant | -0.405(0.323) | | | |
| Acute SOB | 0.958*(0.376) | 1.247 | 2.607 | 5.452 |

$R^2=.056$ (Nagelkerke). Model (1) $\chi^2=6.646$, $p=0.010$, $*p=0.011$

SE = Standard error, CI=Confidence Interval. No standardised residuals > 2, no Cook's distances >1, no leverage > 300% of average, No DFbeta > 1.

3. Dependent variable: SOB on mild activity

| Independent variable | Direction of effect | Odds ratio | 95% CI | Sig. |
|----------------------|---|--------------|--------------------|---------------|
| Age | More likely with increased age | 1.008 | 0.975-1.043 | 0.630 |
| Time to VTC | Less likely with increased time to VTC | 0.957 | 0.922-0.994 | 0.022* |

| | | | | |
|---------------|--------------------------------|-------|-------------|-------|
| LC/NLC | Less likely with LC | 0.796 | 0.410-1.547 | 0.501 |
| Admitted | More likely if admitted | 1.403 | 0.674-2.919 | 0.366 |
| Acute SOB | More likely with acute SOB | 1.795 | 0.831-3.877 | 0.137 |
| Acute Fever | Less likely with acute fever | 0.613 | 0.298-1.260 | 0.183 |
| Acute Fatigue | More likely with acute fatigue | 1.199 | 0.590-2.439 | 0.616 |
| Acute Cough | More likely with acute cough | 1.429 | 0.722-2.828 | 0.305 |

One univariate relationship identified predictive of SOB on mild activity. Final univariate model for prediction of SOB on mild activity:

Coefficients of the model predicting SOB on mild activity

| | <i>b</i> (SE) | Lower | Odds | Upper |
|-------------|----------------|-------|-------|-------|
| Constant | 0.237(0.319) | | | |
| Time to VTC | -0.044*(0.019) | 0.922 | 0.957 | 0.994 |

R²=.048 (Nagelkerke). Model (1) $\chi^2=5.561$, $p=0.018$, * $p=0.022$

SE = Standard error, CI=Confidence Interval. No standardised residuals > 2, no Cook's distances >1, no leverage > 300% of average, No Dfbeta > 1.

Note the reciprocal (positive) relationship between time to VTC and SOB on moderate activity below (point 5) as SOB on mild or moderate activity were mutually exclusive the more biologically plausible relationship at point 5 was retained in favour. In summary patients with increased time to VTC were less likely to have SOB on mild activity because they had SOB on moderate activity.

4. Dependent variable: anxiety/mood disturbance

| Independent variable | Direction of effect | Odds ratio | 95% CI | Sig. |
|----------------------|--|------------|-------------|-------|
| Age | Less likely with increased age | 0.976 | 0.943-1.010 | 0.157 |
| Time to VTC | More likely with increased time to VTC | 1.029 | 0.993-1.065 | 0.113 |

| | | | | |
|-----------------|--------------------------------|--------------|--------------------|---------------|
| LC/NLC | Less likely with LC | 0.311 | 0.151-0.639 | 0.001* |
| Admitted | Less likely if admitted | 0.439 | 0.196-0.985 | 0.046* |
| Acute SOB | Less likely with acute SOB | 0.730 | 0.352-1.512 | 0.397 |
| Acute Fever | Less likely with acute fever | 0.887 | 0.429-1.836 | 0.747 |
| Acute Fatigue | More likely with acute fatigue | 1.509 | 0.731-3.113 | 0.265 |
| Acute Cough | Less likely with acute cough | 0.675 | 0.346-1.319 | 0.250 |

Two univariate relationships identified predictive of anxiety/mood disturbance. Final univariate model for prediction of anxiety/mood disturbance below:

Coefficients of the model predicting anxiety/mood disturbance: Model 1

| | b (SE) | 95% CI for Odds ratio | | |
|----------|----------------|-----------------------|-------|-------|
| | | Lower | Odds | Upper |
| Constant | -0.021 (0.205) | | | |
| LC/NLC | -1.169*(0.368) | 0.151 | 0.311 | 0.639 |

R²=.092 (Nagelkerke). Model (1) $\chi^2=10.916$, p=0.001, *p=0.001.

Coefficients of the model predicting anxiety/mood disturbance: Model 2

| | b (SE) | 95% CI for Odds ratio | | |
|----------|-----------------------------|-----------------------|-------|-------|
| | | Lower | Odds | Upper |
| Constant | 0.033(0.213) | | | |
| LC/NLC | -1.041*(0.388) | 0.165 | 0.353 | 0.756 |
| Admitted | -0.430 [†] (0.444) | 0.272 | 0.650 | 1.552 |

R²=.100 (Nagelkerke). Model (2) $\chi^2=11.872$, p=0.003, *p=0.007, [†]p=0.332. Block (2) $\chi^2=0.956$, p=0.328. **Model 1 retained as final model.**

SE = Standard error, CI=Confidence Interval. N=3 standardised residuals > 2, no Cook's distances >1, n=10 leverage > 300% of average, No DFbeta > 1.

5. Dependent variable: SOB on moderate activity

| Independent variable | Direction of effect | Odds ratio | 95% CI | Sig. |
|----------------------|--------------------------------|--------------|--------------------|---------------|
| Age | Less likely with increased age | 0.982 | 0.947-1.018 | 0.312 |
| Time to VTC | More likely | 1.039 | 1.001-1.078 | 0.044* |

| | with increased time to VTC | | | |
|---------------|-----------------------------------|-------|-------------|-------|
| LC/NLC | Less likely with LC | 0.975 | 0.482-1.972 | 0.945 |
| Admitted | Less likely if admitted | 0.616 | 0.266-1.426 | 0.258 |
| Acute SOB | More likely with acute SOB | 1.423 | 0.630-3.217 | 0.397 |
| Acute Fever | More likely with acute fever | 2.145 | 0.904-5.089 | 0.083 |
| Acute Fatigue | More likely with acute fatigue | 1.151 | 0.539-2.458 | 0.717 |
| Acute Cough | More likely with acute cough | 1.664 | 0.788-3.513 | 0.181 |

One univariate relationship identified predictive of post-acute SOB on moderate activity. Final univariate model for prediction of post-acute SOB on moderate activity below:

Coefficients of the model predicting SOB on moderate activity

| | <i>b</i> (SE) | Lower | Odds | Upper |
|-------------|---------------|-------|-------|-------|
| Constant | -1.428(0.354) | | | |
| Time to VTC | 0.038*(0.019) | 1.001 | 1.039 | 1.078 |

$R^2=.037$ (Nagelkerke). Model (1) $\chi^2=4.087$, $p=0.043$, * $p=0.044$

SE = Standard error, CI=Confidence Interval. No standardised residuals > 2, no Cook's distances >1, $n=2$ leverage > 300% of average, No DFbeta > 1.