

Supplementary Material for ‘The impact of COVID-19 movement restrictions on physical activity in a low-income semi-rural population in Malaysia: a longitudinal study’

Ruth Salway, PhD¹, Tin Tin Su², Roshidi Ismail², Miranda Elaine Glynis Armstrong, PhD¹, Charlie Foster, PhD¹, Laura Johnson, PhD¹

Table of Contents

| | |
|---|---|
| Table S1: Comparison of 2018 Demographics and missing data | 2 |
| Table S2: Hours of PA by domain and % insufficiently active at all three time points | 3 |
| Table S3: Percentage engaging in transport or leisure PA for those with and without a reduction in occupational PA | 4 |
| Table S4: Modelled difference in change in PA (hours/week) including NCD and BMI category | 5 |
| Table S5: Modelled difference in change in PA (hours/week) including NCD and BMI category, adjusting for baseline PA in 2018 | 6 |
| Table S6: Modelled perception of change in PA - logistic model for the probability that the participant felt they were less active during the MCO | 7 |

Table S1: Comparison of 2018 Demographics and missing data

| | HR2018 | | COVID-19 Survey | | |
|---------------------------------|-----------|--------|-----------------|--------|--------------|
| | N (%) | | N (%) | | Missing data |
| | Mean (sd) | | Mean(sd) | | N (%) |
| All | 18743 | | 1007 | | |
| Sex | | | | | 0 (0%) |
| Male | 8251 | 44% | 456 | 45% | |
| Female | 10492 | 56% | 551 | 55% | |
| Age in 2018 | 49.0 | (18.5) | 49.5 | (16.5) | 13 (1%) |
| Employment status (2018) | | | | | 0 (0%) |
| Working | 8245 | 44% | 489 | 49% | |
| Full-time | 5144 | 27% | 290 | 29% | |
| Part-time | 796 | 4% | 44 | 4% | |
| Self-employed | 2261 | 12% | 153 | 15% | |
| casual worker | 44 | <0.5% | 2 | <0.5% | |
| Not working | 10497 | 56% | 481 | 51% | |
| Homemaker | 5341 | 29% | 271 | 27% | |
| Not working | 3136 | 17% | 132 | 13% | |
| Pensioner | 916 | 5% | 74 | 7% | |
| Student | 1104 | 6% | 4 | 4% | |
| Ethnicity | | | | | 0 (0%) |
| Malay | 12049 | 64% | 653 | 65% | |
| Chinese | 4417 | 24% | 214 | 21% | |
| Indian | 1842 | 10% | 105 | 10% | |
| Orang Asli | 358 | 2% | 18 | 2% | |
| Other | 76 | <0.5% | 17 | 2% | |
| Physical activity | | | | | |
| PA hours/week (2018) | 18.5 | (19.4) | 18.5 | (18.2) | 3 (<1%) |
| % Insufficiently active (2018) | 3976 | 22% | 202 | 20% | 3 (<1%) |
| Missing PA at any timepoint | | | | | 20 (2%) |

Table S2: Hours of PA by domain and % insufficiently active at all three time points

| | 2018/19 N=1002 | | During MCO N=991 | | During rMCO N=987 | |
|------------------------------|-------------------|------|---------------------|------|----------------------|------|
| | median | IQR | median | IQR | median | IQR |
| Occupational (hours) | 12.0 | 26.5 | 6.0 | 14.4 | 7.0 | 20.5 |
| Transport (hours) | 0 | 0 | 0 | 0 | 0 | 0 |
| % any transport ¹ | | 25% | | 8% | | 14% |
| Nonzero transport (hours) | 3.0 | 4.8 | 1.9 | 6.3 | 2.0 | 3.9 |
| Sport/leisure (hours) | 0 | 0 | 0 | 0 | 0 | 0.5 |
| % any leisure ¹ | | 18% | | 16% | | 28% |
| Nonzero leisure (hours) | 3.0 | 3.5 | 2.0 | 2.5 | 2.0 | 3.0 |
| Total (hours) | 14.0 | 24.5 | 7.0 | 18.0 | 9.0 | 20.8 |
| % Insufficiently active | | 20% | | 37% | | 28% |

¹ more than 10 minutes of PA per day reported

Table S3: Percentage engaging in transport or leisure PA for those who did and did not experience a reduction in occupational PA

| | Any transport PA ¹ | | Any leisure PA ¹ | |
|---------------------------------|-------------------------------|------------|-----------------------------|------------|
| | % | 95% CI | % | 95% CI |
| During MCO | | | | |
| Reduction in occupational PA | 8% | (6%, 10%) | 18% | (14%, 21%) |
| No reduction in occupational PA | 8% | (6%, 11%) | 15% | (12%, 19%) |
| During rMCO | | | | |
| Reduction in occupational PA | 13% | (10%, 16%) | 28% | (24%, 32%) |
| No reduction in occupational PA | 16% | (13%, 19%) | 28% | (24%, 32%) |

¹ more than 10 minutes of PA per day reported

Table S4: Modelled difference in change in PA (hours/week) including NCD and BMI category

Only those aged 35 and over were asked about NCD so this table is based on a smaller sample size than Table 4

| | Difference in PA (hours/week) between 2018/19 and MCO N=758 | | | Difference in PA (hours/week) between 2018/19 and rMCO N=757 | | |
|------------------------|---|----------------|--------------------|--|---------------|--------------------|
| | Estimate | 95% CI | p-value | Estimate | 95% CI | p-value |
| Intercept ¹ | -16.4 | (-21.5, -11.2) | <0.0005 | -7.7 | (-13.4, -2.0) | 0.008 |
| Age (per 10 years) | 1.0 | (-0.5, 2.8) | 0.198 | 0.7 | (-1.1, 2.4) | 0.451 |
| Sex | | | | | | |
| Male | Reference | | | Reference | | |
| Female | 3.9 | (0.5, 7.3) | 0.025 | 1.4 | (-2.3, 5.1) | 0.458 |
| Ethnicity | | | | | | |
| Malay | Reference | | | Reference | | |
| Chinese | -2.7 | (-6.1, 0.8) | | -3.4 | (-7.0, 0.3) | |
| Other | 5.7 | (1.1, 10.3) | 0.004 ² | 4.4 | (-0.4, 9.2) | 0.011 ² |
| Employment Status | | | | | | |
| Working | Reference | | | Reference | | |
| Not working | 6.3 | (3.1, 9.5) | <0.0005 | 2.5 | (-1.1, 6.0) | 0.178 |
| Highest education | | | | | | |
| Up to primary | Reference | | | Reference | | |
| Secondary | 2.1 | (-1.5, 5.8) | | 1.7 | (-2.2, 5.6) | |
| Tertiary | 4.4 | (0.8, 9.5) | 0.222 ² | 3.5 | (-2.1, 9.1) | 0.332 ² |
| BMI category | | | | | | |
| Underweight/Healthy | Reference | | | Reference | | |
| Overweight | 1.2 | (-2.4, 4.7) | | 1.3 | (-2.6, 5.1) | |
| Obese | 2.8 | (-0.9, 6.6) | 0.330 ² | 3.4 | (-0.8, 7.6) | 0.266 ² |
| Doctor diagnosed NCD | | | | | | |
| No | Reference | | | Reference | | |
| Yes | 3.7 | (0.6, 6.7) | 0.017 | 2.2 | (-1.2, 5.6) | 0.198 |

¹ intercept represents average hours/week change in PA for a 50-year old primary-educated working Malay man, of healthy weight and with no doctor-diagnosed NCDs.

² p-value refers to test for a difference between categories

Table S5: Modelled difference in change in PA (hours/week) including NCD and BMI category, adjusting for baseline PA in 2018

Only those aged 35 and over were asked about NCD so this table is based on a smaller sample size than Table 4

| | Difference in PA (hours/week) between 2018/19 and MCO (N=758) | | | Difference in PA (Hours/week) between 2018/19 and rMCO (N=757) | | |
|------------------------|--|---------------|----------------------|---|--------------|--------------------|
| | Estimate | 95% CI | p-value | Estimate | 95% CI | p-value |
| Intercept ¹ | -9.4 | (-13.2, -5.7) | <0.0005 | -1.2 | (-5.6, 3.3) | 0.609 |
| Baseline PA (per 1h) | -0.9 | (-0.9, -0.8) | <0.0005 | -0.8 | (-0.9, -0.7) | <0.0005 |
| Age (per 10 years) | -0.3 | (-1.4, 0.9) | 0.655 | -0.7 | (-2.1, 0.6) | 0.289 |
| Sex | | | | | | |
| Male | Reference | | | Reference | | |
| Female | 5.1 | (2.6, 7.6) | <0.0005 | 2.6 | (-0.4, 5.6) | 0.089 |
| Ethnicity | | | | | | |
| Malay | Reference | | | Reference | | |
| Chinese | -2.3 | (-4.7, 0.1) | | -2.9 | (-5.9, -0.3) | |
| Other | 6.6 | (2.8, 10.4) | <0.0005 ² | 5.2 | (1.1, 9.3) | 0.002 ² |
| Employment Status | | | | | | |
| Working | Reference | | | Reference | | |
| Not working | -2.3 | (-4.7, 0.1) | 0.061 | -5.3 | (-8.3, -2.4) | <0.0005 |
| Highest education | | | | | | |
| Up to primary | Reference | | | Reference | | |
| Secondary | 3.2 | (0.6, 5.7) | | 2.5 | (-0.6, 5.5) | |
| Tertiary | 1.2 | (-2.5, 4.8) | 0.048 ² | 0.4 | (-4.0, 4.8) | 0.236 ² |
| BMI category | | | | | | |
| Underweight/Healthy | Reference | | | Reference | | |
| Overweight | -0.7 | (-3.4, 1.9) | | -0.5 | (-3.7, 2.7) | |
| Obese | 0.7 | (-2.1, 3.6) | 0.575 ² | 1.3 | (-2.2, 4.8) | 0.526 ² |
| Doctor diagnosed NCD | | | | | | |
| No | Reference | | | Reference | | |
| Yes | 0.2 | (-2.1, 2.5) | 0.862 | -0.9 | (-3.7, 1.8) | 0.516 |

¹ intercept represents average hours/week change in PA for a 50-year old primary-educated working Malay man, of healthy weight and with no doctor-diagnosed NCDs, who engaged in a mean of 18.5 hours/week of PA in 2018.

² p-value refers to test for a difference between categories

Table S6: Modelled perception of change in PA - logistic model for the probability that the participant felt they were less active during the MCO (N=930)

| | Less active in MCO | | |
|------------------------------|--------------------|--------------|---------|
| | Odds Ratio | 95% CI | p-value |
| Age (per 10 years) | 0.83 | (0.73, 0.95) | 0.007 |
| Sex | | | |
| Male | 1 | | |
| Female | 0.70 | (0.47, 1.03) | 0.070 |
| Ethnicity | | | |
| Malay | 1 | | |
| Chinese | 1.00 | (0.63, 1.59) | |
| Other | 1.48 | (0.89, 2.47) | 0.310 |
| Employment Status | | | |
| Working | 1 | | |
| Not working | 0.94 | (0.62, 1.45) | 0.794 |
| Highest education | | | |
| Up to primary | 1 | | |
| Secondary | 1.12 | (0.72, 1.75) | |
| Tertiary | 1.15 | (0.62, 2.14) | 0.862 |
| Job changes during MCO | | | |
| None | 1 | | |
| One or more ¹ | 1.12 | (0.75, 1.68) | |
| PA (increase of 1 hour/week) | | | |
| In 2018/19 | 1.00 | (0.99, 1.01) | 0.537 |
| During MCO | 0.99 | (0.97, 1.00) | 0.104 |
| During rMCO | 1.00 | (0.99, 1.01) | 0.736 |

¹ worked from home, reduced hours, stopped working, lost job, didn't go to work