Supplementary Material “**Depressive symptoms in youth before and during the COVID-19 pandemic: longitudinal investigation of patterns dependent on age, sex, and family history of mental illness”**

Emily Howes Vallis, Meg Stephens, Brianna Ross, Sheri Rempel, Cynthia Howard, Dara Liu, Kelsey Villars, Raegan Mazurka, Jill Cumby, Martin Alda, Barbara Pavlova, and Rudolf Uher

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**Supplementary Table 1:** Number of observations during COVID-19 by time quarter with restriction information

|  |  |  |
| --- | --- | --- |
|  | Familial Risk Group | Restrictions  |
| April 2020 – May 2022, divided into 8 quarters in chronological order | Low Risk(n of observations = 303, from 122 individuals) | High Risk(n of observations = 565, from 249 individuals) |  |
| Quarter 1, n (%) | 56 (18%) | 89 (16%) | Strict |
| Quarter 2, n (%) | 20 (7%) | 50 (9%) | Moderate |
| Quarter 3, n (%) | 33 (11%) | 66 (12%) | Moderate |
| Quarter 4, n (%) | 33 (11%) | 49 (9%) | Mild |
| Quarter 5, n (%) | 21 (7%) | 67 (12%) | Moderate |
| Quarter 6, n (%) | 48 (16%) | 76 (13%) | Mild |
| Quarter 7, n (%) | 44 (15%) | 59 (10%) | Moderate |
| Quarter 8, n (%) | 48 (16%) | 109 (19%) | Mild |

Strict = closures of all educational facilities and daycares, gathering limits/ household rules; Moderate = school closures, restrictions on activities; Mild = mask mandate (necessary in hospital, recommended in public, quarantine for those who are COVID +) (Habli, 2022).

**Supplementary Table 2: Comparison between study sample and participants not included due to lack of measurement during COVID-19**

|  |  |  |
| --- | --- | --- |
|  | Study sample(n = 371) | Offspring without during COVID-19 measurement(n = 41) |
| High risk offspring, n (%) | 249 (67%) | 30 (73%) |
| Age before COVID-19, mean (SD) | 12.95 (4.22) | 13.49 (3.68) |
| Sex, female, n (%)\* | 180 (49%) | 26 (63%) |
| MFQ before COVID-19, mean (SD)\* | 3.77 (4.26) | 5.21 (5.84) |
| MFQ clinical threshold before COVID-19(score≥12), n (%)\* | 47 (13%) | 11 (27%) |

\*denotes a significant difference between groups at p<0.05. We tested differences between groups using chi-square for categorical variables and t-test for continuous variables Study sample includes participants with depressive symptoms measures before and during COVID-19. Total sample includes participants with depressive symptoms measures before COVID-19, 90% of these participants also had during COVID-19 observations.

**Supplementary Table 3:** Effect of COVID-19 on depressive symptoms in young youth (age 5-14)

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.12 | 0.04 | 0.22 | 0.007 |
| Age (years) | -0.02 | -0.05 | 0.01 | 0.082 |
| Sex | 0.17 | 0.04 | 0.30 | 0.009 |
| Constant  | -0.04 | -0.31 | 0.23 |  |

**Supplementary Table 4:** Effect of COVID-19 on depressive symptoms in older youth (age 15-25)

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.23 | 0.05 | 0.41 | 0.012 |
| Age (years) | -0.01 | -0.06 | 0.04 | 0.706 |
| Sex | 0.75 | 0.46 | 1.04 | <0.001 |
| Constant  | -0.07 | -1.00 | 0.86 |  |

**Supplementary Table 5:** Effect of COVID-19 on depressive symptoms in female youth

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.13 | 0.01 | 0.25 | 0.036 |
| Age (years) | 0.06 | 0.03 | 0.08 | <0.001 |
| Constant  | -0.67 | -0.99 | -0.36 |  |

**Supplementary Table 6:** Effect of COVID-19 on depressive symptoms in male youth

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.04 | -0.05 | 0.13 | 0.356 |
| Age (years) | -0.02 | -0.04 | 0.01 | 0.083 |
| Constant  | -0.01 | -0.25 | 0.24 |  |

**Supplementary Table 7:** Effect of COVID-19 on depressive symptoms in low-risk youth

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.19 | 0.06 | 0.31 | 0.005 |
| Age (years) | 0.01 | -0.02 | 0.04 | 0.360 |
| Sex | 0.55 | 0.35 | 0.75 | <0.001 |
| Constant  | -0.64 | -1.01 | -0.26 |  |

**Supplementary Table 8:** Effect of COVID-19 on depressive symptoms in high-risk youth

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.02 | -0.07 | 0.12 | 0.651 |
| Age (years) | 0.03 | 0.01 | 0.05 | 0.005 |
| Sex | 0.28 | 0.11 | 0.44 | 0.001 |
| Constant  | -0.50 | -0.77 | -0.23 |  |

**Supplementary Table 9:** Effect of COVID-19 on depressive symptoms in low-risk females

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.35 | 0.14 | 0.56 | 0.001 |
| Age (years) | 0.04 | -0.01 | 0.08 | 0.0161 |
| Constant  | -0.51 | -1.02 | 0.01 |  |

**Supplementary Table 10:** Effect of COVID-19 on depressive symptoms in low-risk males

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.07 | -0.08 | 0.21 | 0.365 |
| Age (years) | -0.03 | -0.06 | 0.01 | 0.166 |
| Constant  | -0.07 | -0.52 | 0.37 |  |

**Supplementary Table 11:** Effect of COVID-19 on depressive symptoms in younger low-risk females

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.17 | -0.04 | 0.38 | 0.112 |
| Age (years) | 0.03 | -0.02 | 0.09 | 0.265 |
| Constant  | -0.38 | -0.98 | 0.21 |  |

**Supplementary Table 12:** Effect of COVID-19 on depressive symptoms in older low-risk females

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.59 | 0.10 | 1.08 | 0.019 |
| Age (years) | -0.02 | -0.19 | 0.14 | 0.775 |
| Constant  | 0.67 | -2.09 | 3.42 |  |

**Supplementary Table 13:** Effect of COVID-19 on depressive symptoms in younger high-risk females

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.12 | 0.02 | 0.34 | 0.144 |
| Age (years) | -0.01 | -0.05 | 0.04 | 0.839 |
| Constant  | -0.13 | -0.58 | 0.33 |  |

**Supplementary Table 14**: Effect of COVID-19 on depressive symptoms in older high-risk females

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | -0.06 | -0.36 | 0.23 | 0.666 |
| Age (years) | 0.02 | -0.07 | 0.11 | 0.641 |
| Constant  | 0.26 | -1.26 | 1.79 |  |

**Supplementary Table 15:** Sensitivity analysis controlling for socioeconomic status (SES) – main model

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| **Time** | **0.09** | **0.01** | **0.17** | **0.024** |
| Age (years) | 0.02 | 0.01 | 0.03 | 0.036 |
| Sex | 0.36 | 0.23 | 0.49 | <0.001 |
| **SES** | **-0.09** | **-0.14** | **-0.03** | **0.002** |
| Constant  | -0.18 | -0.50 | 0.14 |  |

**Supplementary Table 16:** Sensitivity analysis controlling for socioeconomic status (SES) – low risk offspring

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| **Time** | **0.24** | **0.12** | **0.36** | **<0.001** |
| Age (years) | 0.01 | -0.02 | 0.04 | 0.460 |
| Sex | 0.53 | 0.34 | 0.73 | <0.001 |
| **SES** | **-0.15** | **-0.24** | **-0.05** | **0.002** |
| Constant  | -0.08 | -0.61 | 0.44 |  |

**Supplementary Table 17:** Sensitivity analysis controlling for socioeconomic status (SES) – high risk offspring

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| **Time** | **0.02** | **-0.08** | **0.12** | **0.673** |
| Age (years) | 0.02 | 0.01 | 0.04 | 0.010 |
| Sex | 0.28 | 0.11 | 0.44 | 0.001 |
| **SES** | **-0.06** | **-0.13** | **0.01** | **0.085** |
| Constant  | -0.28 | -0.65 | 0.09 |  |

**Supplementary Table 18:** Sensitivity analysis controlling for living with both biological parents – main model

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| **Time** | **0.08** | **0.01** | **0.16** | **0.041** |
| Age (years) | 0.02 | 0.01 | 0.04 | 0.010 |
| Sex | 0.37 | 0.24 | 0.49 | <0.001 |
| **Living with both biological parents** | **-0.23** | **-0.38** | **-0.08** | **0.003** |
| Constant  | -0.36 | -0.61 | -0.11 |  |

**Supplementary Table 19:** Sensitivity analysis controlling for living with both biological parents – low risk offspring

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| **Time** | **0.19** | **0.07** | **0.32** | **0.003** |
| Age (years) | 0.01 | -0.02 | 0.04 | 0.483 |
| Sex | 0.53 | 0.33 | 0.72 | <0.001 |
| **Living with both biological parents** | **-0.38** | **-0.65** | **-0.12** | **0.005** |
| Constant  | -0.31 | -0.74 | 0.12 |  |

**Supplementary Table 20:** Sensitivity analysis controlling for living with both biological parents – high risk offspring

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| **Time** | **0.03** | **-0.07** | **0.12** | **0.586** |
| Age (years) | 0.02 | 0.01 | 0.04 | 0.010 |
| Sex | 0.29 | 0.12 | 0.45 | 0.001 |
| **Living with both biological parents** | **-0.17** | **-0.35** | **0.02** | **0.075** |
| Constant  | -0.37 | -0.67 | -0.06 |  |

**Supplementary Table 21:** Sensitivity analysis only including self-report MFQ – main model

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.04 | -0.05 | 0.13 | 0.331 |
| Age (years) | 0.02 | 0.01 | 0.04 | 0.005 |
| Sex | 0.41 | 0.26 | 0.56 | <0.001 |
| Constant  | -0.61 | -0.87 | -0.36 |  |

**Supplementary Table 22:** Sensitivity analysis only including self-report MFQ – low risk offspring

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | 0.20 | 0.05 | 0.34 | 0.007 |
| Age (years) | 0.01 | -0.02 | 0.04 | 0.481 |
| Sex | 0.62 | 0.41 | 0.85 |  |
| Constant  | -0.67 | -1.10 | -0.23 |  |

**Supplementary Table 23:** Sensitivity analysis only including self-report MFQ – high risk offspring

|  |  |  |  |
| --- | --- | --- | --- |
|  | beta value | 95% confidence interval lower upper | p-value |
| Time | -0.02 | -0.14 | 0.08 | 0.607 |
| Age (years) | 0.03 | 0.01 | 0.05 | 0.006 |
| Sex | 0.31 | 0.13 | 0.50 | 0.001 |
| Constant  | -0.57 | -0.88 | -0.26 |  |