COVID-19 Child & Adolescent Mental Health and Parenting Study

Sarah Whittle1 & Other authors2

1 Melbourne Neuropsychiatry Centre (MNC), Department of Psychiatry, The University of Melbourne & Melbourne Health, Melbourne, Australia

2 Other Institute

Author note

Correspondence concerning this article should be addressed to Sarah Whittle, Postal address. E-mail: [swhittle@unimelb.edu.au](mailto:swhittle@unimelb.edu.au)

COVID-19 Child & Adolescent Mental Health and Parenting Study

# Methods

## Participants

## Material

## Procedure

## Data analysis

We used R (Version 4.0.2; R Core Team, 2020) and the R-packages *corrplot2017* (Wei & Simko, 2017), *corx* (Version 1.0.6.1; Conigrave, 2020), *dplyr* (Version 1.0.0; Wickham, François, Henry, & Müller, 2020), *kableExtra* (Version 1.1.0; Zhu, 2019), *papaja* (Version 0.1.0.9942; Aust & Barth, 2020), *psych* (Version 1.9.12.31; Revelle, 2019), and *tidyselect* (Version 1.1.0; Henry & Wickham, 2020) for all our analyses.

# Results

## Reproducible table section

## Things to do:

N’s/stats for the sample used in analysis (i.e., those that completed SDQ1 or PTSD, n parents is 381): Frequencies,% for demographic info - gender of parent and children, country, income, edu, occupation, ethnicity, biological vs other relationship to child stay at home (Y/N), stay at home length, job change SDQ change since COVID - M/SD + frequencies based on number of items where more is reported (something to indicate the extent of kids who had worsening problems)

Table 1:

*Descriptive statistics*

|  |  |  |
| --- | --- | --- |
| Demographic measure | Frequency (or Mean) | Percentage (or Stnd. Dev.) |
| Country |  |  |
| Australia | 133 | 34.55 |
| U.K. | 133 | 34.55 |
| U.S.A | 52 | 13.51 |
| New Zealand | 28 | 7.27 |
| Other | 39 | 10.13 |
| Age |  |  |
| Parent Age | 38 | 7.15 |
| Child Age | 10 | 3.62 |
| Parent Gender |  |  |
| Female | 362 | 94.03 |
| Male | 20 | 5.19 |
| Non-binary/gender-fluid | 1 | 0.26 |
| Other | 1 | 0.26 |
| Missing | 1 | 0.26 |
| Child Gender |  |  |
| Female | 251 | 51.02 |
| Male | 239 | 48.58 |
| Non-binary/gender-fluid | 1 | 0.20 |
| Other | 1 | 0.20 |
| Missing | 0 | 0.00 |
| Parent Education |  |  |
| Partial primary school | 3 | 0.78 |
| Completed primary school | 3 | 0.78 |
| Partial high school | 20 | 5.19 |
| Completed high school | 37 | 9.61 |
| TAFE | 56 | 14.55 |
| Partial University | 80 | 20.78 |
| Graduated Bachelor’s degree | 53 | 13.77 |
| Honors degree | 29 | 7.53 |
| Partial graduate school | 21 | 5.45 |
| Completed graduate school | 81 | 21.04 |
| Missing | 2 | 0.52 |
| Another parent in the home |  |  |
| No | 104 | 21.14 |
| Yes | 387 | 78.66 |
| Missing | 1 | 0.20 |
| Household income |  |  |
| Less than AU$36,400 per year | 0 | 0.00 |
| Up to AU$36,400 per year | 22 | 5.71 |
| Up to AU$52,000 per year | 39 | 10.13 |
| Up to AU$90,000 per year | 64 | 16.62 |
| Up to AU$140,000 per year) | 49 | 12.73 |
| > AU$140,000 per year | 75 | 19.48 |
| Prefer not to say | 72 | 18.70 |
| Missing | 64 | 16.62 |

Table 2:

*Clinical scales - levels of symptoms*

|  |  |  |
| --- | --- | --- |
| Clinical subscale | Frequency | Percentage |
| Depression |  |  |
| Normal | 155 | 40.26 |
| Mild | 80 | 20.78 |
| Moderate | 86 | 22.34 |
| Severe | 31 | 8.05 |
| Ext. Severe | 33 | 8.57 |
| Anxiety |  |  |
| Normal | 215 | 55.84 |
| Mild | 42 | 10.91 |
| Moderate | 39 | 10.13 |
| Severe | 34 | 8.83 |
| Ext. Severe | 55 | 14.29 |
| Stress |  |  |
| Normal | 175 | 45.45 |
| Mild | 57 | 14.81 |
| Moderate | 79 | 20.52 |
| Severe | 56 | 14.55 |
| Ext. Severe | 18 | 4.68 |
| Emotional Problems |  |  |
| Average | 261 | 53.05 |
| Slightly Raised | 61 | 12.40 |
| High | 157 | 31.91 |
| Missing | 13 | 2.64 |
| Conduct Problems |  |  |
| Average | 304 | 61.79 |
| Slightly Raised | 63 | 12.80 |
| High | 113 | 22.97 |
| Missing | 12 | 2.44 |
| Hyperactivity |  |  |
| Average | 281 | 57.11 |
| Slightly Raised | 56 | 11.38 |
| High | 142 | 28.86 |
| Missing | 13 | 2.64 |
| Peer Problems |  |  |
| Average | 279 | 56.71 |
| Slightly Raised | 53 | 10.77 |
| High | 148 | 30.08 |
| Missing | 12 | 2.44 |

Table 3:

*Percentage change in children’s symptoms*

|  |  |  |  |
| --- | --- | --- | --- |
| Symptom | More | Same | Less |
| Conduct |  |  |  |
| Fights | 7.69 | 85.27 | 7.03 |
| Lies | 10.60 | 85.65 | 3.75 |
| Obedient | 10.72 | 68.05 | 21.23 |
| Steals | 3.30 | 92.73 | 3.96 |
| Temper | 34.72 | 58.30 | 6.99 |
| Emotional |  |  |  |
| Fears | 20.22 | 74.73 | 5.05 |
| Headaches | 22.05 | 67.69 | 10.26 |
| Nervous | 21.05 | 74.34 | 4.61 |
| Unhappy | 29.10 | 66.52 | 4.38 |
| Worries | 33.12 | 60.35 | 6.54 |
| Hyperactivity |  |  |  |
| Attention | 8.57 | 73.85 | 17.58 |
| Distracted | 26.48 | 69.58 | 3.94 |
| Fidget | 22.93 | 74.67 | 2.40 |
| Restless | 36.44 | 58.13 | 5.42 |
| Thinks | 6.17 | 83.70 | 10.13 |
| Peer |  |  |  |
| Adults | 6.37 | 90.77 | 2.86 |
| Bullied | 2.20 | 81.06 | 16.74 |
| Friend | 2.63 | 86.18 | 11.18 |
| Liked | 1.75 | 94.74 | 3.51 |
| Solitary | 25.27 | 64.92 | 9.80 |

Table 4:

*Bivariate correlations for key variables and covariates (Pearson’s)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 1. par\_age | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2. par\_gender\_num | .10 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3. par\_ed\_ord | .43\*\*\* | .12\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4. income\_famsize | .28\*\*\* | .15\*\* | .42\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5. DASSDep | -.31\*\*\* | -.05 | -.36\*\*\* | -.28\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6. DASSAnx | -.36\*\*\* | -.10\* | -.36\*\*\* | -.26\*\*\* | .67\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7. DASSStress | -.34\*\*\* | -.06 | -.22\*\*\* | -.20\*\*\* | .72\*\*\* | .70\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8. covid\_neg\_num | -.21\*\*\* | -.09 | -.18\*\*\* | -.13\* | .52\*\*\* | .40\*\*\* | .53\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9. covid\_pos\_num | .06 | .02 | .05 | -.03 | -.21\*\*\* | -.07 | -.15\*\* | -.31\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10. ch\_age | .38\*\*\* | -.07 | -.07 | -.06 | .08 | .05 | -.11\* | .02 | .02 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11. ch\_gender\_num | .01 | .01 | .01 | .01 | -.02 | -.03 | .03 | -.02 | .02 | -.01 | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12. SDQemo | -.15\*\* | -.06 | -.12\*\* | -.12\*\* | .21\*\*\* | .21\*\*\* | .20\*\*\* | .13\*\* | -.06 | .00 | -.18\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13. SDQcon | -.23\*\*\* | -.02 | -.25\*\*\* | -.17\*\*\* | .20\*\*\* | .22\*\*\* | .17\*\*\* | .16\*\*\* | -.15\*\* | -.05 | .03 | .33\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14. SDQhyp | -.27\*\*\* | -.05 | -.15\*\* | -.17\*\*\* | .13\*\* | .16\*\*\* | .18\*\*\* | .19\*\*\* | -.13\*\* | -.17\*\*\* | .15\*\* | .27\*\*\* | .54\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15. SDQpeer | -.11\* | -.05 | -.26\*\*\* | -.21\*\*\* | .26\*\*\* | .28\*\*\* | .18\*\*\* | .10\* | -.16\*\*\* | .22\*\*\* | -.01 | .40\*\*\* | .38\*\*\* | .27\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16. SDQpro | -.04 | -.03 | .09 | .07 | -.01 | -.01 | -.01 | -.05 | .11\* | -.08 | -.09 | -.08 | -.48\*\*\* | -.34\*\*\* | -.28\*\*\* | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 17. SDQemo2 | -.12\*\* | .04 | -.06 | .00 | .21\*\*\* | .28\*\*\* | .36\*\*\* | .37\*\*\* | -.12\* | -.10\* | -.06 | .32\*\*\* | .14\*\* | .13\*\* | .09 | .07 | - |  |  |  |  |  |  |  |  |  |  |  |
| 18. SDQcon2 | -.16\*\*\* | .02 | .06 | .05 | .13\*\* | .10\* | .24\*\*\* | .25\*\*\* | -.11\* | -.21\*\*\* | .00 | .07 | .24\*\*\* | .17\*\*\* | -.03 | -.10\* | .41\*\*\* | - |  |  |  |  |  |  |  |  |  |  |
| 19. SDQhyp2 | -.11\* | .02 | -.04 | -.04 | .13\*\* | .13\*\* | .27\*\*\* | .29\*\*\* | -.12\*\* | -.14\*\* | .00 | .15\*\* | .18\*\*\* | .28\*\*\* | .07 | -.07 | .48\*\*\* | .46\*\*\* | - |  |  |  |  |  |  |  |  |  |
| 20. SDQpeer2 | .00 | .01 | -.02 | .02 | .12\* | .12\* | .14\*\* | .15\*\* | -.16\*\*\* | .00 | .03 | .02 | .12\* | .08 | .06 | -.06 | .23\*\*\* | .16\*\*\* | .12\* | - |  |  |  |  |  |  |  |  |
| 21. SDQpro2 | .02 | -.02 | .00 | -.05 | -.06 | .04 | -.04 | -.05 | .09\* | .09 | -.06 | -.01 | -.25\*\*\* | -.14\*\* | -.02 | .15\*\* | .03 | -.33\*\*\* | -.20\*\*\* | -.03 | - |  |  |  |  |  |  |  |
| 22. PARQwarmth | -.08 | .13\*\* | -.05 | -.07 | .10\* | .09 | .09 | .08 | -.02 | .00 | .03 | .10\* | .32\*\*\* | .23\*\*\* | .13\*\* | -.25\*\*\* | .04 | .13\*\* | .07 | .00 | -.18\*\*\* | - |  |  |  |  |  |  |
| 23. PARQhostile | .03 | .07 | .05 | .00 | .08 | .06 | .20\*\*\* | .09 | .07 | -.11\* | .05 | .16\*\*\* | .29\*\*\* | .20\*\*\* | .07 | -.19\*\*\* | .18\*\*\* | .24\*\*\* | .19\*\*\* | -.01 | -.26\*\*\* | .42\*\*\* | - |  |  |  |  |  |
| 24. PARQneglect | .08 | .01 | .12\* | -.01 | .06 | .05 | .15\*\* | .08 | -.08 | -.04 | -.01 | .14\*\* | .15\*\* | .15\*\* | .11\* | -.11\* | .09 | .16\*\* | .09 | .02 | -.05 | .36\*\*\* | .48\*\*\* | - |  |  |  |  |
| 25. PARQundiff | .03 | .00 | .07 | .03 | .06 | .05 | .16\*\*\* | .11\* | -.11\* | -.05 | .03 | .19\*\*\* | .28\*\*\* | .15\*\* | .11\* | -.19\*\*\* | .16\*\* | .19\*\*\* | .17\*\*\* | .05 | -.14\*\* | .30\*\*\* | .53\*\*\* | .44\*\*\* | - |  |  |  |
| 26. PARQcontrol | -.02 | -.02 | -.02 | .04 | .02 | .01 | .14\*\* | .11\* | .00 | -.10\* | .05 | .01 | .10\* | .10\* | -.06 | -.04 | .11\* | .12\* | .15\*\* | .04 | -.09 | .09 | .26\*\*\* | .10\* | .16\*\*\* | - |  |  |
| 27. facts\_comm | .11\* | -.02 | -.01 | .00 | .08 | .09 | .02 | .00 | .07 | .25\*\*\* | .01 | .01 | -.03 | -.13\*\* | .03 | .11\* | -.02 | -.07 | -.01 | .05 | .09\* | -.08 | -.07 | -.02 | -.07 | .02 | - |  |
| 28. emotion\_comm | -.07 | .01 | -.06 | .02 | .09 | .11\* | .07 | .08 | .05 | -.07 | -.10\* | .14\*\* | -.02 | -.02 | .02 | .18\*\*\* | .18\*\*\* | .00 | .12\* | .11\* | .14\*\* | -.30\*\*\* | -.17\*\*\* | -.20\*\*\* | -.15\*\* | -.13\*\* | .36\*\*\* | - |
| 29. self\_comm | -.27\*\*\* | -.03 | -.26\*\*\* | -.12\*\* | .36\*\*\* | .35\*\*\* | .34\*\*\* | .32\*\*\* | -.13\*\* | -.05 | -.02 | .26\*\*\* | .24\*\*\* | .24\*\*\* | .18\*\*\* | -.03 | .30\*\*\* | .21\*\*\* | .23\*\*\* | .05 | -.07 | .13\*\* | .13\*\* | .15\*\* | .14\*\* | .12\* | -.06 | .06 |

*Note.* \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001. Not corrected for multiple comparisons. Full variable names: .

(#tab:main\_varstable)

*Means, standard deviations and range for the key measures*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Measure of interest | N | Mean | SD | Minimum | Maximum |
| DASS |  |  |  |  |  |
| Depression | 385 | 6.19 | 4.64 | 0.00 | 21.00 |
| Anxiety | 385 | 4.40 | 4.23 | 0.00 | 21.00 |
| Stress | 385 | 8.44 | 4.36 | 0.00 | 21.00 |
| FES | 384 | 5.62 | 1.75 | 1.00 | 8.00 |
| PARQ |  |  |  |  |  |
| Hostile | 427 | 8.14 | 2.51 | 6.00 | 20.00 |
| Warmth | 427 | 9.49 | 2.17 | 8.00 | 23.00 |
| SDQ |  |  |  |  |  |
| Emotional problems | 479 | 3.50 | 2.67 | 0.00 | 10.00 |
| Hyperactivity | 479 | 4.92 | 2.79 | 0.00 | 10.00 |
| Conduct | 480 | 2.20 | 2.04 | 0.00 | 10.00 |
| Peer problems | 480 | 2.54 | 2.17 | 0.00 | 9.00 |
| PTSD symptoms | 473 | 3.19 | 3.10 | 0.00 | 14.13 |
| Communication |  |  |  |  |  |
| Fact-focused | 481 | 3.14 | 1.63 | 0.00 | 6.00 |
| Emotion-focused | 481 | 6.73 | 2.73 | 0.00 | 12.00 |
| Self-focused | 481 | 0.65 | 1.10 | 0.00 | 6.00 |
| COVID Impact |  |  |  |  |  |
| Negative | 492 | 3.03 | 1.16 | 0.00 | 5.00 |
| Positive | 492 | 2.27 | 1.19 | 0.00 | 5.00 |

Table 5:

*Bivariate correlations for key variables and covariates (Pearson’s)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. facts | - |  |  |  |  |  |  |
| 2. information | .47\*\*\* | - |  |  |  |  |  |
| 3. child emotions | .18\*\*\* | .34\*\*\* | - |  |  |  |  |
| 4. parent emotions | .21\*\*\* | .25\*\*\* | .52\*\*\* | - |  |  |  |
| 5. others’ feelings | .27\*\*\* | .36\*\*\* | .58\*\*\* | .57\*\*\* | - |  |  |
| 6. reassurance | .13\*\* | .28\*\*\* | .67\*\*\* | .37\*\*\* | .44\*\*\* | - |  |
| 7. didn’t know what to say | -.07 | -.03 | .04 | .01 | -.02 | .13\*\* | - |
| 8. too upset | -.03 | -.03 | .07 | .07 | .00 | .06 | .46\*\*\* |

*Note.* \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001. Not corrected for multiple comparisons. Full variable names: .

# Discussion

# References

Aust, F., & Barth, M. (2020). *papaja: Create APA manuscripts with R Markdown*. Retrieved from <https://github.com/crsh/papaja>

Conigrave, J. (2020). *Corx: Create and format correlation matrices*. Retrieved from <https://CRAN.R-project.org/package=corx>

Henry, L., & Wickham, H. (2020). *Tidyselect: Select from a set of strings*. Retrieved from <https://CRAN.R-project.org/package=tidyselect>

R Core Team. (2020). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from <https://www.R-project.org/>

Revelle, W. (2019). *Psych: Procedures for psychological, psychometric, and personality research*. Evanston, Illinois: Northwestern University. Retrieved from <https://CRAN.R-project.org/package=psych>

Wei, T., & Simko, V. (2017). *R package "corrplot": Visualization of a correlation matrix*. Retrieved from <https://github.com/taiyun/corrplot>

Wickham, H., François, R., Henry, L., & Müller, K. (2020). *Dplyr: A grammar of data manipulation*. Retrieved from <https://CRAN.R-project.org/package=dplyr>

Zhu, H. (2019). *KableExtra: Construct complex table with ’kable’ and pipe syntax*. Retrieved from <https://CRAN.R-project.org/package=kableExtra>