nature research

Corresponding author(s): Pedro C. Hallal

Last updated by author(s): Jun 10, 2020

Reporting Summary

Nature Research wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Research policies, see Authors & Referees and the Editorial Policy Checklist.

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a	Confirmed	
☐	☒	The exact sample size (*n*) for each experimental group/condition, given as a discrete number and unit of measurement
☐	☒	A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☐	☒	The statistical test(s) used AND whether they are one- or two-sided *Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
☐	☒	A description of all covariates tested
☐	☒	A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
☐	☒	A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
☐	☒	For null hypothesis testing, the test statistic (e.g. *F*, *t*, *r*) with confidence intervals, effect sizes, degrees of freedom and *P* value noted *Give P values as exact values whenever suitable.*
☒	☐	For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
☒	☐	For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
☐	☒	Estimates of effect sizes (e.g. Cohen's *d*, Pearson's *r*), indicating how they were calculated

Our web collection on statistics for biologists contains articles on many of the points above.

Software and code

Policy information about availability of computer code

Data collection	GDS-coleta (Brazil) was used for data collection in the field with Android smartphones.
Data analysis	All analyses were performed using R version 3.6.1 (https://www.r-project.org/). The following R packages were used: metafor (https://cran.r-project.org/package=metafor) and survey (https://cran.r-project.org/package=survey).

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research guidelines for submitting code & software for further information.

Data

Policy information about availability of data

All manuscripts must include a data availability statement. This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

The dataset used to produce the analyses presented in this article is freely available at http://www.epicovid19brasil.org/

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☒ Life sciences ☐ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

Life sciences study design

All studies must disclose on these points even when the disclosure is negative.

Sample size	Sample size calculations were performed prior to data collection. The Statewide sample of 4,500 individuals allows estimating a prevalence levels of 3% and 10% with margins of error of 0.5 and 1.0 percent points, respectively, based on a binomial distribution.
Data exclusions	Two subjects with inconclusive test results were excluded from the analyses.
Replication	Does not apply given that the COVID pandemic is evolving and it will not be possible to replicate the results in other settings or at another point in time.
Randomization	Does not apply (observational study)
Blinding	The interviewers carried out the rapid test on all subjects, and could not be blinded as the test results had to be informed to the participants.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology
☒	☐ Animals and other organisms
☐	☒ Human research participants
☒	☐ Clinical data

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging

Human research participants

Policy information about studies involving human research participants

Population characteristics	The study included 8,688 participants in two waves. Women represented 58.3% and 59.5% of participants in each age. Subject under 20 years of age comprised 9.0% and 7.7% of participants in each age, and those over 60 years represented 30.1% and 31.4% in each wave. Full details are available in Table 1 in the manuscript.
Recruitment	We used multistage sampling to select 50 census tracts with probability proportionate to size in each sentinel city, and 10 households at random in each tract based on census listings updated in 2019. All household members were listed at the beginning of the visit, and one individual was randomly selected through an app used for data collection. In terms of selection bias, families where all individuals were not at home at the time of the visit were not included; in addition, the age distribution in our sample suggests that children were more likely to refuse the test (fingerprick blood sample) and adults.
Ethics oversight	Brazilian National Ethics Comittee (CONEP). Informed consent forms were signed by participants; in the case of minors, a parent or legal guardian signed on behalf of the child or adolescent.

Note that full information on the approval of the study protocol must also be provided in the manuscript.