**Searches:** Systematic searches in PubMed, Web of Science and the preprint server Biorxiv.org. This will be supplemented with a non-systematic search in Google Scholar. Papers written in English, Dutch, Spanish, German, or French will be included. Final search date is August 28 2022. The search string is uploaded below.

**Search terms PubMed:** (“COVID 19” [Title/Abstract] OR COVID-19 [Title/Abstract] OR COVID19[Title/Abstract] OR “SARS CoV-2” [Title/Abstract] OR “Severe Acute Respiratory Syndrome Coronavirus 2”[Title/Abstract] OR coronavirus [Title/Abstract] OR SARS-CoV [Title/Abstract] OR SARS-CoV-2[Title/Abstract]) AND (psychiatry [Title/Abstract] OR mental [Title/Abstract] OR “clinical psychology” [Title/Abstract] OR substance use [Title/Abstract] OR alcohol [Title/Abstract] OR “illegal drugs” [Title/Abstract] OR addiction OR dependence [Title/Abstract] OR depress\* [Title/Abstract] OR mood [Title/Abstract] OR “adjustment disorder” [Title/Abstract] OR Bipolar [Title/Abstract] OR mania [Title/Abstract] OR schizophrenia [Title/Abstract] OR psychosis [Title/Abstract] OR psychotic [Title/Abstract] OR anxi\* [Title/Abstract] OR PTSD [Title/Abstract] OR “post-traumatic stress disorder” [Title/Abstract] OR “adjustment disorder” [Title/Abstract] OR “somatic symptom disorder” [Title/Abstract] OR “eating disorders” [Title/Abstract] OR “Binge eating” [Title/Abstract] OR anorexia [Title/Abstract] OR ADHD [Title/Abstract] OR “attention deficit hyperactivity disorder” [Title/Abstract] OR “conduct disorder” [Title/Abstract])

**Search terms Web of Science and EMBASE:** TS = (“COVID 19” OR COVID-19 OR COVID19 OR “SARS CoV-2” OR “Severe Acute Respiratory Syndrome Coronavirus 2” OR coronavirus OR SARS-CoV OR SARS-CoV-2) AND TS = (psychiatry OR mental OR “clinical psychology” OR substance use OR alcohol OR “illegal drugs” OR addiction OR dependence OR depress\* OR mood OR “adjustment disorder” OR Bipolar OR mania OR schizophrenia OR psychosis OR psychotic OR anxi\* OR PTSD OR “post-traumatic stress disorder” OR “adjustment disorder” OR “somatic symptom disorder” OR “eating disorders” OR “Binge eating” OR anorexia OR ADHD OR “attention deficit hyperactivity disorder” OR “conduct disorder”)

|  |
| --- |
| **BOX 1.** Article selection and overlapping data sets: inclusion rules |
| Most of the data on these topics comes from (often open access) electronic data bases and articles probably report on overlapping samples. In order to avoid conclusions based on overlapping data - Inclusion of independent data is a crucial assumption in meta-analysis (Cheung 2019) - we checked the geographic region (*e.g.,* city or state) where the data was gathered in case multiple studies reported data that was gathered in a particular country. When we suspected overlap we contacted study authors to ask for overlap in data sets. In case of a confirmatory answer (and in case of no response) we a priori applied the following rules in the selection of articles in order to avoid results that are based on dependent data. Note that some decisions about overlap (notably about nation wide more local data) were made at the time of data-analysis (see the supplemental excel file). The first decision was made based on the level of matching/statistical control of psychiatric- and control sample. We preferred (propensity score) matching based over adjusting for covariates and the latter was preferred over no control. In case it was necessary we made a next decision based on the validity and the specificity of the predictor assessment. Here we preferred a specific diagnostic assessment over self-reported data, which in turn was preferred over categorization based on for example prescription drugs yes *vs.* no. In case no decision could be made based on this, the decision on inclusion was based on sample size, with a preference for the larger sample size. Below we describe our decisions for countries for which potential overlap was an issue.  When multiple studies were performed in a single country, we checked whether there was ground to suspect overlap with regard to specific associations, and in case there was (*e.g.,* 2 studies reporting infection risk fordepressedpatients from electronic data gathered in New York City hospitals), we included the one that was most informative with regard to our purposes. Third, when nationwide data was available for analysis alongside data gathered more locally (*e.g.,* nationwide data from Spain and data from the autonomous Basque region) we ran analyses once with the nationwide data included and the local data excluded and once with the local data included and the nationwide data excluded. Main meta-analysis outcomes are the ones based on the largest pooled samplesize. Similarity of results among these analyses was reported. For moderator and meta-regression analyses, we alsochose the pooled data-set that contained the largest number of participants.  References  Cheung MW. A Guide to Conducting a Meta-Analysis with Non-Independent Effect Sizes. Neuropsychol Rev. 2019 Dec;29(4):387-396. doi: 10.1007/s11065-019-09415-6. Epub 2019 Aug 24. |

*Assessment of methodological quality*

The methodological quality of input studies was scored by 2 members of the author team (PM, AR, and/or MM) using the *quality assessment tool for cross-sectional studies* that is recommended by the United States National Institutes of Health (US NIH 2021; <https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools>). The items of this tool are provided below, in **Table S4**.

**Table S1**. Items of the quality assessment tool for cross-sectional and prospective observational studies

|  |  |
| --- | --- |
| Item |  |
| 1 | Was the research question or objective in this paper clearly stated? |
| 2 | Was the study population clearly specified and defined? |
| 3 | Was the participation rate of eligible persons at least 50%? |
| 4 a | Were all the subjects selected or recruited from the same or similar populations (including the same time period)? |
| 4 b | Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants? |
| 5 | Was a sample size justification, power description, or variance and effect estimates provided? |
| 6 | For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured? |
| 7 | Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed? |
| 8 | For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)? |
| 9 | Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants? |
| 10 | Was the exposure(s) assessed more than once over time? |
| 11 | Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants? |
| 12 | Were the outcome assessors blinded to the exposure status of participants? |
| 13 | Was loss to follow-up after baseline 20% or less? |
| 14 | Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)? |

**Table S2**. Articles submitted to full-text assessment for in- vs exclusion. In- and excluded articles are indicated in green and red respectively.

|  |  |  |
| --- | --- | --- |
|  | **Study** | **Reason** |
|  | Abbasi-Oshaghi *et al.* 2022 | Opinion paper (1 page review) |
| Abbasi-Oshaghi E, Mirzaei F, Khodadadi I. Alcohol Misuse May Increase the Severity of COVID-19 Infections. Disaster medicine and public health preparedness. 2022;16(3):847–8. | | |
|  | Abdalbary *et al.* 2022 | No mental health 🡪 risk/outcome data |
| Abdalbary M, Kakani E, Ahmed Y, Shea M, Neyra JA, El-Husseini A. Characteristics and outcomes of prisoners hospitalized due to COVID-19 disease. Clinical nephrology. 2022;97(4):232–41. | | |
|  | Adamuz *et al.* 2021 | No mental health 🡪 risk/outcome data; poster |
| Adamuz, J., Gonzalez-Samartino, M., Jimenez-Martinez, E., Tapia-Perez, M., Lopez-Jimenez, M.  M., Rodriguez-Fernandez, H., . . . Juve-Udina, M. E. (2021). Risk of acute deterioration and care  complexity individual factors associated with health outcomes in hospitalised patients with COVID  19: a multicentre cohort study. *BMJ Open, 11*(2). doi:10.1136/bmjopen-2020-041726 | | |
|  | Ahmadi *et al.* 2020 | No mental health 🡪 risk/outcome data; poster |
| Ahmadi, N., Roach, J., Pynoos, R. S., Cardenas, J., & Kopelowicz, A. (2020). Clinical outcome of covid-19 patients with and without diagnosed mental health disorder treated at the los angeles county department of health science. *J Am Acad Child Adolesc Psychiatry, 59*(10), S251-S252. doi:10.1016/j.jaac.2020.08.413 | | |
|  | Ahmadi *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Ahmadi MN, Huang BH, Inan-Eroglu E, Hamer M, Stamatakis E. Lifestyle risk factors and infectious disease mortality, including COVID-19, among middle aged and older adults: Evidence from a community-based cohort study in the United Kingdom. Brain Behav Immun. 2021 Apr 30:S0889-1591(21)00180-X. doi: 10.1016/j.bbi.2021.04.022. Epub ahead of print. PMID: 33940153. | | |
|  | Al-Aly *et al.* 2022 | Mental health 🡪 risk/outcome |
| Al-Aly Z, Bowe B, Xie Y. Long COVID after breakthrough SARS-CoV-2 infection. Nature medicine. 2022;28(7):1461–7. | | |
|  | Alizadehsani *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Alizadehsani R, Alizadeh Sani Z, Behjati M, Roshanzamir Z, Hussain S, Abedini N, Hasanzadeh F, Khosravi A, Shoeibi A, Roshanzamir M, Moradnejad P, Nahavandi S, Khozeimeh F, Zare A, Panahiazar M, Acharya UR, Islam SMS. Risk factors prediction, clinical outcomes, and mortality in COVID-19 patients. J Med Virol. 2021 Apr;93(4):2307-2320. doi: 10.1002/jmv.26699. Epub 2020 Dec 17. PMID: 33247599; PMCID: PMC7753243. | | |
|  | Alizadehsani *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Alizadehsani R, Alizadeh Sani Z, Behjati M, Roshanzamir Z, Hussain S, Abedini N, Hasanzadeh F, Khosravi A, Shoeibi A, Roshanzamir M, Moradnejad P, Nahavandi S, Khozeimeh F, Zare A, Panahiazar M, Acharya UR, Islam SMS. Risk factors prediction, clinical outcomes, and mortality in COVID-19 patients. J Med Virol. 2021 Apr;93(4):2307-2320. doi: 10.1002/jmv.26699. Epub 2020 Dec 17. PMID: 33247599; PMCID: PMC7753243. | | |
|  | Allen *et al.* 2020 | Mental health 🡪 risk and course |
| Allen B, El Shahawy O, Rogers ES, Hochman S, Khan MR, Krawczyk N. Association of substance use disorders and drug overdose with adverse COVID-19 outcomes in New York City: January-October 2020. J Public Health (Oxf). 2020 Dec 26:fdaa241. doi: 10.1093/pubmed/fdaa241. Epub ahead of print. PMID: 33367823; PMCID: PMC7799011. | | |
|  | Amin  *et al.* 2022 | Mental health 🡪 risk |
| Amin MM, Futrawan R, Husada MS. Correlation Between Schizophrenia and Coronavirus Disease in North Sumatera, Indonesia: A Correlative Analytical Study. Frontiers in psychiatry. 2022;13:896623–896623. | | |
|  | An *et al.* 2020 | Exclude, overlapping data |
| An, C., Lim, H., Kim, D.-W., Chang, J.H., Choi, Y.J., Kim, S.W., 2020. Machine learning prediction for mortality of patients diagnosed with COVID-19: a nationwide Korean cohort study. Scientific Reports 10 (1), 18716. | | |
|  | Ao *et al.* 2022 | Mental health 🡪 risk/outcome, mortality |
| Ao G, Li A, Wang Y, Li J, Tran C, Chen M, et al. Opioid usage and COVID-19 prognosis: A systematic review and meta-analysis. The American journal of emergency medicine. 2022;56:51–6. | | |
|  | Arbel *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Arbel Y, Fialkoff C, Kerner A, Kerner M. (2020). Can Increased Recovery Rates from Coronavirus be explained  by Prevalence of ADHD? An Analysis at the US Statewide Level. *Journal of Attention* Disorders.  doi:10.1177/1087054720959707 | | |
|  | Arbel *et al.* 2021 | No mental health 🡪 risk and outcome |
| Arbel R, Hammerman A, Sergienko R, Friger M, Peretz A, Netzer D, Yaron S. BNT162b2 Vaccine Booster and  Mortality Due to Covid-19. N Engl J Med. 2021 Dec 23;385(26):2413-2420. doi: 10.1056/NEJMoa2115624.  Epub 2021 Dec 8. PMID: 34879190; PMCID: PMC8728797. | | |
|  | Arbello *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Arbelo N, López-Pelayo H, Sagué M, Madero S, Pinzón-Espinosa J, Gomes-da-Costa S, Pintor L. (2021).  Psychiatric Clinical Profiles and Pharmacological Interactions in COVID-19 Inpatients Referred to a  Consultation Liaison Psychiatry Unit: a Cross-Sectional Study. *Psychiatric Quarterly*, 1-13.  doi:10.1007/s11126-020-09868-6 | | |
|  | Aswathy *et al.* 2022 | No mental health 🡪 risk and outcome |
| Raj SVA, Jacob A, Ambu V, Wilson T, Renuka R. Post COVID-19 clinical manifestations and its risk factors among patients in a Northern District in Kerala, India. J Family Med Prim Care. 2022 Sep;11(9):5312-5319. doi:10.4103/jfmpc.jfmpc\_131\_22. Epub 2022 Oct 14. PMID: 36505604; PMCID: PMC9731023. | | |
|  | Atkins *et al.* 2020 | Exclude, overlapping data |
| Atkins JL, Masoli JAH, Delgado J, Pilling LC, Kuo CL, Kuchel GA, Melzer, D. (2020). Preexisting Comorbidities  Predicting COVID-19 and Mortality in the UK Biobank Community Cohort. *Journals of Gerontology Series a-*  *Biological Sciences and Medical Sciences, 75*(11), 2224-2230. doi:10.1093/gerona/glaa183 | | |
|  | Attalla *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Atalla E, Zhang RN, Shehadeh F, Mylona EK, Tsikala-Vafea M, Kalagara S, . . . Mylonakis E. (2021). Clinical  Presentation, Course, and Risk Factors Associated with Mortality in a Severe Outbreak of COVID-19 in Rhode  Island, USA, April-June 2020. *Pathogens, 10*(1). doi:10.3390/pathogens10010008 | | |
|  | Ausserhofer *et al.* 2023 | No mental health 🡪 risk/outcome data |
| Ausserhofer D, Mahlknecht A, Engl A, Piccoliori G, Pfitscher G, Silbernagl P, Giacomoni F, Pycha R, Lombardo S, Gärtner T, Mian M, Meier H, Wiedermann CJ, Keim R. Relationship between depression, anxiety, stress, and SARS-CoV-2 infection: a longitudinal study. Front Psychol. 2023 Apr 27;14:1116566. doi:  10.3389/fpsyg.2023.1116566. PMID: 37213392; PMCID: PMC10197902. | | |
|  | Ayana *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Ayana GM, Merga BT, Birhanu A, Alemu A, Negash B, Dessie Y. Predictors of Mortality Among Hospitalized COVID-19 Patients at a Tertiary Care Hospital in Ethiopia. Infection and drug resistance. 2021;14:5363–73 | | |
|  | Azar *al.* 2020 | Mental health 🡪 risk and course |
| Azar KMJ, Shen Z, Romanelli RJ, Lockhart SH, Smits K, Robinson S, Brown S, Pressman AR.  Disparities In Outcomes Among COVID-19 Patients In A Large Health Care System In California.  Health Aff (Millwood). 2020 Jul;39(7):1253-1262. doi: 10.1377/hlthaff.2020.00598. Epub 2020  May 21. PMID: 32437224. | | |
|  | Bailey *al.* 2021 | Mental health 🡪 risk and course |
| Bailey, L. C., Razzaghi, H., Burrows, E. K., Bunnell, H. T., Camacho, P. E. F., Christakis, D. A., . . .  Forrest, C. B. (2021). Assessment of 135 794 Pediatric Patients Tested for Severe AcuteRespiratory  Syndrome Coronavirus 2 Across the United States. *JAMA Pediatr, 175*(2), 176-184.  doi:10.1001/jamapediatrics.2020.5052 | | |
|  | Baillargeon *et al.* 2021 | Mental health 🡪 course |
| Baillargeon, J., Polychronopoulou, E., Kuo, Y. F., & Raji, M. A. (2021). The Impact of Substance Use Disorder  on COVID-19 Outcomes. *Psychiatr Serv, 72*(5), 578-581. doi:10.1176/appi.ps.202000534 | | |
|  | Bain *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Bain W, Yang H, Shah FA, Suber T, Drohan C, Al-Yousif N, DeSensi RS, Bensen N, Schaefer C, Rosborough BR, Somasundaram A, Workman CJ, Lampenfeld C, Cillo AR, Cardello C, Shan F, Bruno TC, Vignali DA, Ray P, Ray A, Zhang Y, Lee JS, Methé B, McVerry BJ, Morris A, Kitsios GD. COVID-19 versus Non-COVID ARDS: Comparison of Demographics, Physiologic Parameters, Inflammatory Biomarkers and Clinical Outcomes. Ann Am Thorac Soc. 2021 Feb 5. doi: 10.1513/AnnalsATS.202008-1026OC. Epub ahead of print. PMID: 33544045. | | |
|  | Bajaj *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Bajaj JS, Solanki SL. Study of risk factors and psychological impact in physicians diagnosed with COVID-19: An online, postexposure, cross-sectional survey. J Anaesthesiol Clin Pharmacol. 2020 Jul-Sep;36(3):345-349. doi: 10.4103/joacp.JOACP\_417\_20. Epub 2020 Oct 16. PMID: 33487901; PMCID: PMC7812967. | | |
|  | Banoei *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Banoei MM, Dinparastisaleh R, Zadeh AV, Mirsaeidi M. Machine-learning-based COVID-19 mortality prediction model and identification of patients at low and high risk of dying. Critical care (London, England). 2021;25(1):328–328. | | |
|  | Baranova *et al.* 2023 | Exclude because of overlap with controlled analyses [although strong because of Mendelian randomization [not included in the pre-registration] |
| Baranova A, Zhao Y, Cao H, Zhang F. Causal associations between major depressive disorder and COVID-19. Gen Psychiatr. 2023 Apr 5;36(2):e101006. doi:10.1136/gpsych-2022-101006. PMID: 37066117; PMCID: PMC10083530. | | |
|  | Barcella *et al.* 2020 | Mental health 🡪 risk and course |
| Barcella CA, Polcwiartek C, Mohr GH, Hodges G, Søndergaard K, Bang C, Andersen MP, Fosbøl E, Køber L, Schou M, Torp-Pedersen C, Kessing LV, Gislason G, Kragholm K. Severe mental illness is associated with increased mortality and severe course of COVID-19. Acta Psychiatr Scand. 2021 Apr 24. doi: 10.1111/acps.13309. Epub ahead of print. PMID: 33894064. | | |
|  | Barh *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Barh, D., Tiwari, S., Andrade, B. S., Weener, M. E., Góes-Neto, A., Azevedo, V., . . . Ganguly, N. K. (2021). A  novel multi-omics-based highly accurate prediction of symptoms, comorbid conditions, and possible long-  term complications of COVID-19. *Mol Omics, 17*(2), 317-337. doi:10.1039/d0mo00189a | | |
|  | Basrak *et al.* 2021 | No comparison group for course |
| Basrak, N., Mulcrone, N., Sharifuddin, S., Ghumman, Z., Bechan, N., Mohamed, E., . . . Davoren, M. (2021).  Risk of adverse outcome of COVID-19 among patients in secure psychiatric services: observational cohort  study. *BJPsych Open, 7*(1), e31. doi:10.1192/bjo.2020.169 | | |
|  | Batty *et al.* 2020 | Exclude; double data |
| Batty, G. D., Deary, I. J., Luciano, M., Altschul, D. M., Kivimaki, M., & Gale, C. R. (2020). Psychosocial factors and hospitalisations for COVID-19: Prospective cohort study based on a community sample. *Brain Behavior and Immunity, 89*, 569-578. doi:10.1016/j.bbi.2020.06.021 | | |
|  | Batty *et al.* 2021 | Exclude; double data |
| Batty GD, Gale CR. Pre-pandemic mental illness and risk of mortality from COVID-19. Lancet Psychiatry. 2021 Mar;8(3):182-183. doi: 10.1016/S2215-0366(21)00002-X. PMID: 33610222; PMCID: PMC7906744 | | |
|  | Bayrak and Çadirci, 2021 | Mental health 🡪 course |
| Bayrak, M., & Çadirci, K. (2021). The associations of life quality, depression, and cognitive  impairment with mortality in older adults with COVID-19: A prospective, observational study. *Acta*  *Clinica Belgica*, 1-8. doi:10.1080/17843286.2021.1916687 | | |
|  | Becker *et al.* 2021 | No diagnosed mental health 🡪 risk/outcome data |
| Becker C, Beck K, Zumbrunn S, Memma V, Herzog N, Bissmann B, et al. Long COVID 1 year after hospitalization for COVID-19: a prospective bicentric cohort study. Swiss Medical Weekly. 2021;151:w30091–w30091. | | |
|  | Beckwith *et al.* 2022 | No mental health 🡪 risk/outcome data |
| Beckwith N, Probert J, Rosenbaum BL, Bains A, Angelucci VC, Morfin Rodriguez AE, et al. Demographic Features, Physical Examination Findings, and Medication Use in Hospitalized, Delirious Patients With and Without COVID-19 Infection: A Retrospective Study. Journal of the Academy of Consultation-Liaison Psychiatry. 2022. | | |
|  | Bellan *et al.* 2022 | Mental heath 🡪 Long covid |
| Bellan M, Apostolo D, Albè A, Crevola M, Errica N, Ratano G, Tonello S, Minisini R, D'Onghia D, Baricich A, Patrucco F, Zeppegno P, Gramaglia C, Balbo PE, Cappellano G, Casella S, Chiocchetti A, Clivati E, Giordano M, Manfredi M, Patti G, Pinato DJ, Puricelli C, Raineri D, Rolla R, Sainaghi PP, Pirisi M; No- More COVID study group. Determinants of long COVID among adults hospitalized for SARS-CoV-2 infection: A prospective cohort study. Front Immunol. 2022 Dec 19;13:1038227. doi: 10.3389/fimmu.2022.1038227. PMID: 36601115; PMCID:PMC9807078. | | |
|  | Benzano *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Benzano D, Ornell F, Schuch JB, Pechansky F, Sordi AO, von Diemen L, Kessler FH. (2021). Clinical  vulnerability for severity and mortality by COVID-19 among users of alcohol and other substances. *Psychiatry*  *Res, 300*, 113915. doi:10.1016/j.psychres.2021.113915 | | |
|  | Bhargava *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Bhargava A, Sharma M, Riederer K, Fukushima EA, Szpunar SM, Saravolatz L. Risk Factors for In-hospital Mortality from Coronavirus Disease 2019 Infection Among Black Patients—An Urban Center Experience. Clinical infectious diseases. 2021;73(11):e4005–e4011. | | |
|  | Bhopalwala *et al.* 2022 | Mental health 🡪 outcome |
| Bhopalwala H, Dewaswala N, Kolagatla S, Wisnieski L, Piercy J, Bhopalwala A, et al. Predictors of Mortality for Patients with COVID-19 in the Rural Appalachian Region. International journal of general medicine. 2022;15:2207–14. | | |
|  | Boland *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Boland X, Dratcu L. Clozapine in the Time of COVID-19. Clin Psychopharmacol Neurosci. 2020 Aug 31;18(3):450-453. doi: 10.9758/cpn.2020.18.3.450. PMID: 32702224; PMCID: PMC7383003. | | |
|  | Breslau *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Breslau J, Finucane ML, Locker AR, Baird MD, Roth EA, Collins RL. A longitudinal study of psychological distress in the United States before and during the COVID-19 pandemic. Prev Med. 2021 Feb;143:106362. doi: 10.1016/j.ypmed.2020.106362. Epub 2020 Dec 31. PMID: 33388325. | | |
|  | Brieghel *et al.* 2021 | Exclude; double data |
| Brieghel C, Ellekvist P, Lund ML, Soborg C, Walsted ES, Thomsen JJ, . . . Ravn P. (2021). Prognostic factors  of 90-day mortality in patients hospitalised with COVID-19. *Dan Med J, 68*(3). | | |
|  | Brinkman *et al.* 2022 | No mental health 🡪 risk/outcome data |
| Brinkman S, Termorshuizen F, Dongelmans DA, Bakhshi-Raiez F, Arbous MS, de Lange DW, et al. Comparison of outcome and characteristics between 6343 COVID-19 patients and 2256 other community-acquired viral pneumonia patients admitted to Dutch ICUs. Journal of critical care. 2022;68:76–82. | | |
|  | Bruggmann *et al.* 2022 | No Mental health 🡪 risk/outcome |
| Bruggmann P, Senn O, Frei A, Puhan MA, Fehr J, Falcato L. High SARS-CoV-2 seroprevalence but no severe course of COVID-19 disease among people on opioid agonist treatment in Zurich: a cross-sectional study. Swiss Medical Weekly. 2022;152:w30122–w30122. | | |
|  | Bucholc *et al.* 2022 |  |
| Bucholc M, Bradley D, Bennett D, Patterson L, Spiers R, Gibson D, Van Woerden H, Bjourson AJ. Identifying pre-existing conditions and multimorbidity patterns associated with in-hospital mortality in patients with COVID-19. Sci Rep. 2022 Oct 15;12(1):17313. doi: 10.1038/s41598-022-20176-w. PMID: 36243878; PMCID:PMC9568958. | | |
|  | Buonsenso *et al.* 2022 | No mental health 🡪 risk/outcome data |
| Buonsenso D, Pujol FE, Munblit D, Pata D, McFarland S, Simpson FK. Clinical characteristics, activity levels and mental health problems in children with long coronavirus disease: a survey of 510 children. Future microbiology. 2022;17(8):577–88. | | |
|  | Burgaña *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Burgaña Agoües A, Serra Gallego M, Hernández Resa R, Joven Llorente B, Lloret Arabi M, Ortiz Rodriguez J, et al. Risk Factors for COVID-19 Morbidity and Mortality in Institutionalised Elderly People. International journal of environmental research and public health. 2021;18(19):10221. | | |
|  | Bushman *et al.* 2021 | Mental health 🡪 mortality |
| Bushman D, Davidson A, Pathela P, Greene SK, Weiss D, Reddy V, et al. Risk Factors for Mortality Among Hospitalized Patients Aged 21–64 Years Diagnosed with COVID-19—New York City, March 13–April 9, 2020. Journal of racial and ethnic health disparities. 2021;9(4):1584–99. | | |
|  | Buttiron *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Buttiron Webber T, Provinciali N, Briata IM, Boitano M, Defferrari C, Magnani M, et al. Predictors of poor seroconversion and adverse events to SARS-CoV-2 mRNA BNT162b2 vaccine in cancer patients on active treatment. Role of the Research Nurse. In: Professioni infermieristiche. Italy; 2021. p. 261–261. | | |
|  | Canal-Rivero *et al.* 2021 | Mental health 🡪 risk and course |
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|  | Canal-Rivero *et al.* 2023 | No usable data |
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| Wong LP, Alias H. Temporal changes in psychobehavioural responses during the early phase of the COVID-19 pandemic in Malaysia. J Behav Med. 2021 Feb;44(1):18-28. doi: 10.1007/s10865-020-00172-z. Epub 2020 Aug 5. PMID: 32757088; PMCID: PMC7405711. | | |
|  | Wong *et al.* 2023 | No mental health 🡪 risk/outcome data |
| Wong MC, Huang J, Wong YY, Wong GL, Yip TC, Chan RN, Chau SW, Ng SC, Wing YK, Chan FK. Epidemiology, Symptomatology, and Risk Factors for Long COVID Symptoms: Population-Based, Multicenter Study. JMIR Public Health Surveill. 2023 Mar 7;9:e42315. doi: 10.2196/42315. PMID: 36645453; PMCID: PMC9994465. | | |
|  | Woodruff *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Woodruff RC, Campbell AP, Taylor CA, Chai SJ, Kawasaki B, Meek J, et al. Risk Factors for Severe COVID-19 in Children. Pediatrics (Evanston). 2022;149(1):1. | | |
|  | Wright *et al.* 2023 |  |
| Wright A, De Livera A, Lee KH, Higgs C, Nicholson M, Gibbs L, Jorm A. A repeated cross-sectional and longitudinal study of mental health and wellbeing during COVID-19 lockdowns in Victoria, Australia. BMC Public Health. 2022 Dec 27;22(1):2434. doi: 10.1186/s12889-022-14836-9. Erratum in: BMC Public Health.  2023 Jan 13;23(1):97. PMID: 36575409; PMCID: PMC9793381. | | |
|  | Xiang *et al.* 2021 [MEDRXIV] | No mental health 🡪 risk/outcome data [genetic risk] |
| Xiang Y, Qiu J, Zhang R, Chau CKL, Rao S, So HC. (2021). Neuropsychiatric disorders as risk factors and consequences of COVID-19: A Mendelian randomization study. *medRxiv*. | | |
|  | Xie *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Xie Q, Fan F, Fan XP, Wang XJ, Chen MJ, Zhong BL, Chiu HF. COVID-19 patients managed in psychiatric inpatient settings due to first-episode mental disorders in Wuhan, China: clinical characteristics, treatments, outcomes, and our experiences. Transl Psychiatry. 2020 Oct 2;10(1):337. doi: 10.1038/s41398-020-01022-x. PMID: 33009366; PMCID: PMC7531059. | | |
|  | Xu *et al.* 2021A? | No mental health 🡪 risk/outcome data |
| Xu J, Yin Z, Liu Y, Wang S, Duan L, An Y, Fan J, Liao T, Jin Y, Chen J. Clinical characteristics and outcomes of severe or critical COVID-19 patients presenting no respiratory symptoms or fever at onset. Engineering (Beijing). 2020 Oct 29. doi: 10.1016/j.eng.2020.09.009. Epub ahead of print. PMID: 33163252; PMCID: PMC7598919. Y | | |
|  | Xu *et al.* 2023 | Anxiety, bipolar disorder, schizophrenia 🡪 mortality |
| Xu H, Li S, Mehta HB, Hommel EL, Goodwin JS. Excess mortalitys from COVID-19 among Medicare beneficiaries with psychiatric diagnoses: Community versus nursing home. J Am Geriatr Soc. 2023 Jan;71(1):167-177. doi: 10.1111/jgs.18062. Epub 2022 Sep 22. PMID: 36137264; PMCID: PMC9537955. | | |
|  | Yaksi *et al.* 2022 | No mental health 🡪 risk/outcome data |
| Yaksi N, Teker AG, Imre A. Long COVID in Hospitalized COVID-19 Patients: A Retrospective Cohort Study. Iranian journal of public health. 2022;51(1):88–95. | | |
|  | Yang *et al.* 2020 UK | Mental health 🡪 risk and course |
| Yang H, Chen W, Hu Y, Chen Y, Zeng Y, Sun Y, Ying Z, He J, Qu Y, Lu D, Fang F, Valdimarsdottir UA, Song H 2020. Pre-pandemic psychiatric disorders and risk of COVID-19: a UK Biobank cohort analysis. The Lancet Healthy Longevity 1 (2), e69–e79. | | |
|  | Yang *et al.* 2021 | Opinion paper |
| Yang Y, Li W, Zhang Q, Zhang L, Cheung T, Ng CH, Xiang YT. Should people with severe mental illness be prioritized for the COVID-19 vaccination? Int J Biol Sci. 2021 Apr 10;17(6):1443-1445. doi: 10.7150/ijbs.57750. PMID: 33907507; PMCID: PMC8071759. | | |
|  | Yang *et al.* 2022 LA | Mental health 🡪 risk/outcome-anorexia |
| Yang HH, Wu TJ, Yu AC, Wells C, Orshansky G, Lee JT. Predictors of Mortality, Survival, Need for Intubation, and Need for Oxygen Support Among Admitted COVID-19 Patients of the Veterans Affairs Greater Los Angeles Healthcare System. Military medicine. 2022; 188(5-6):1276-1284. doi: 10.1093/milmed/usab550. | | |
|  | Yanover *et al.* 2020 | Mental health 🡪 course |
| Yanover C, Mizrahi B, Kalkstein N, Marcus K, Akiva P, Barer Y, ... & Chodick G (2020). What Factors Increase the Risk of Complications in SARS-CoV-2–Infected Patients? A Cohort Study in a Nationwide Israeli Health Organization. *JMIR public health and surveillance*, *6*(3), e20872. | | |
|  | Yee *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Yee K, Peh HP, Tan YP, Teo I, Tan EUT, Paul J, Rangabashyam M, Ramalingam MB, Chow W, Tan HK. Stressors and coping strategies of migrant workers diagnosed with COVID-19 in Singapore: a qualitative study. BMJ Open. 2021 Mar 19;11(3):e045949. doi: 10.1136/bmjopen-2020-045949. PMID: 33741672; PMCID: PMC7985935. | | |
|  | Yolken 2021 | Opinion paper |
| Yolken R. (2021). COVID-19 and psychiatry: can electronic medical records provide the answers? *Lancet Psychiatry, 8*(2), 89-91. doi:10.1016/s2215-0366(20)30479-x | | |
|  | Yoshida *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Yoshida N, Iwata S, Ogawa M, Izawa KP, Kuroda S, Kohsaka S, et al. Intensive Care Unit Admission for Moderate-to-Severe COVID-19 Patients With Known Cardiovascular Diseases or Their Risk Factors　― Insights From a Nationwide Japanese Cohort Study. Circulation reports. 2021;3(7):375–80. | | |
|  | Zhang *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Zhang J, Wang M, Zhao M, Guo S, Xu Y, Ye J, Ding W, Wang Z, Ye D, Pan W, Liu M, Li D, Luo Z, Liu J, Wan J. The Clinical Characteristics and Prognosis Factors of Mild-Moderate Patients With COVID-19 in a Mobile Cabin Hospital: A Retrospective, Single-Center Study. Front Public Health. 2020 Jun 5;8:264. doi: 10.3389/fpubh.2020.00264. PMID: 32582615; PMCID: PMC7291856. | | |
|  | Zhang *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Zhang H, Wu Y, He Y, Liu X, Liu M, Tang Y, et al. Age-Related Risk Factors and Complications of Patients With COVID-19: A Population-Based Retrospective Study. Frontiers in medicine. 2021;8:757459–757459. | | |
|  | Zhang *et al.* 2021 | Mental health 🡪 no risk/outcome data, anorexia |
| Zhang X, Wang F, Shen Y, Zhang X, Cen Y, Wang B, et al. Symptoms and Health Outcomes Among Survivors of COVID-19 Infection 1 Year After Discharge From Hospitals in Wuhan, China. JAMA network open. 2021;4(9):e2127403–e2127403. | | |
|  | Zhang *et al.* 2023 | No mental health 🡪 risk/outcome data |
| Zhang D, Chung VC, Chan DC, Xu Z, Zhou W, Tam KW, Lee RC, Sit RW, Mercer SW, Wong SY. Determinants of post-COVID-19 symptoms among adults aged 55 or above with chronic conditions in primary care: data from a prospective cohort in Hong Kong. Front Public Health. 2023 May 5;11:1138147. doi:  10.3389/fpubh.2023.1138147. PMID: 37213637; PMCID: PMC10196359 | | |
|  | Zhao *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Zhao A, Li Z, Ke Y, Huo S, Ma Y, Zhang Y, Zhang J, Ren Z. Dietary Diversity among Chinese Residents during the COVID-19 Outbreak and Its Associated Factors. Nutrients. 2020 Jun 6;12(6):1699. doi: 10.3390/nu12061699. PMID: 32517210; PMCID: PMC7352896. Y | | |
|  | Zheng *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Zheng XC, Chen JH, Deng LS, Fang ZX, Chen GQ, Ye D, . . . Hong ZS (2021). Risk factors for the COVID-19  severity and its correlation with viral shedding: A retrospective cohort study. *J Med Virol, 93*(2), 952-961.  doi:10.1002/jmv.26367 | | |
|  | Zhong *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Zhong R, Chen L, Zhang Q, Li B, Qiu Y, Wang W, Tan D, Zou Y. Which Factors, Smoking, Drinking Alcohol, Betel Quid Chewing, or Underlying Diseases, Are More Likely to Influence the Severity of COVID-19? Front Physiol. 2021 Jan 18;11:623498. doi: 10.3389/fphys.2020.623498. PMID: 33536941; PMCID: PMC7849623. | | |
|  | Zhou *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Zhou C, Huang Z, Tan W, Li X, Yin W, Xiao Y, Tao Z, Geng S, Hu Y. Predictive factors of severe coronavirus disease 2019 in previously healthy young adults: a single-center, retrospective study. Respir Res. 2020 Jun 22;21(1):157. doi: 10.1186/s12931-020-01412-1. PMID: 32571410; PMCID: PMC7306646. | | |
|  | Zhu *et al.* 2020 *J Psychiatric Res* | No mental health 🡪 risk/outcome data |
| Zhu Z, Liu Q, Jiang X, Manandhar U, Luo Z, Zheng X, Li Y, Xie J, Zhang B. The psychological status of people affected by the COVID-19 outbreak in China. J Psychiatr Res. 2020 Oct;129:1-7. doi: 10.1016/j.jpsyychires.2020.05.026. Epub 2020 May 28. PMID: 32526513; PMCID: PMC7255091. | | |
|  | Zhu *et al.* 2020 *PLoS ONE* | No mental health 🡪 risk/outcome data |
| Zhu S, Gao Q, Yang L, Yang Y, Xia W, Cai X, Hui Y, Zhu D, Zhang Y, Zhang G, Wu S, Wang Y, Zhou Z, Liu H, Zhang C, Zhang B, Yang J, Feng M, Ni Z, Chen B, Du C, He H, Qu Y, Wei Q, He C, Reinhardt JD. Prevalence and risk factors of disability and anxiety in a retrospective cohort of 432 survivors of Coronavirus Disease-2019 (Covid-19) from China. PLoS One. 2020 Dec 17;15(12):e0243883. doi: 10.1371/journal.pone.0243883. PMID: 33332386; PMCID: PMC7746260. | | |
|  | Zielinska-Turek *et al.* 2021 | No mental health 🡪 risk/outcome data |
| Zielinska-Turek J, Jasinska A, Kolakowska J, Szadurska J, Kosior DA, Dorobek M. (2021). Clinical features of  neurological patients with coronavirus 2019: an observational study of one centre. *Neurol Neurochir Pol,*  *55*(2), 195-201. doi:10.5603/PJNNS.a2021.0011 | | |
|  | Zijlmans *et al.* 2021 | Mental health 🡪 no risk/outcome data |
| Zijlmans J, Teela L, van Ewijk H, Klip H, van der Mheen M, Ruisch H, et al. Mental and Social Health of Children and Adolescents With Pre-existing Mental or Somatic Problems During the COVID-19 Pandemic Lockdown. Frontiers in psychiatry. 2021;12:692853–692853. | | |
|  | Zimering *et al.* 2020 | No mental health 🡪 risk/outcome data |
| Zimering MB, Razzaki T, Tsang T, Shin JJ. Inverse Association between Serotonin 2A Receptor Antagonist Medication Use and Mortality in Severe COVID-19 Infection. Endocrinol Diabetes Metab J. 2020 Sep 15;4(4):1-5. PMID: 33117497; PMCID: PMC7590925. | | |
|  | Zimmermann *et al.* 2021 | No mental health, review paper |
| Zimmermann P, Pittet LF, Curtis N. How Common is Long COVID in Children and Adolescents? The Pediatric infectious disease journal. 2021;40(12):e482–e487. | | |

**Table S3**. Characteristics of included studies and samples by outcome

|  |  |  |
| --- | --- | --- |
|  | *Type of study* | Controls / statistical control or matching |
| Al-Aly *et al.* 2022 | Retrospective | -/- condition / comorbidities |
| Allen *et al.* 2020 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Amin *et al.* 2022 | Retrospective | Healthy controls / no control |
| Azar *al.* 2020 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Bailey *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Baillargeon *et al.* 2021 | Retrospective | -/- condition / propensity matching |
| Barcella *et al.* 2020 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Bayrak and Çadirci, 2021 | Prospective | -/- condition / no control |
| Bellan *et al.* 2022 | Prospective | -/- condition / sociodemographic variables, comorbidities |
| Bhopalwala *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Canal-Rivero *et al.* 2021 | Retrospective | -/- condition / no control |
| Castro *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities (for mood, not for SUD and anxiety) |
| Catalan *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Cavallaro *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Chang *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Chen *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Chen *et al.* 2021b | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Clift *et al.* 2020 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Clouston *et al.* 2021 | Prospective | -/- condition / sociodemographic variables, comorbidities |
| Cohen *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Cummins *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Dai *et al.* 2022 | Prospective | -/- condition / sociodemographic variables, comorbidities |
| Descamps *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| De Miranda *et al.* 2022 | Prospective | -/- condition / No control |
| De Vito *et al.* 2021 | Retrospective | -/- condition / controlled but not further specified |
| Díaz-Simón *et al.* 2021 | Retrospective | -/- condition / No control |
| Diez-Quevedo *et al.* 2021 | Retrospective | -/- condition / controlled but not further specified |
| Durstenfeld *et al.* 2023 | Prospective | -/- condition / No control |
| Egede *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables |
| Fond *et al.* 2021 | Prospective | Null psychiatric diagnosis condition / propensity matching |
| Francis *et al.* 2021 | Prospective | -/- condition / controlled but not further specified |
| Garcia‑Cabrera *et al.* 2021 | Retrospective | -/- condition / no control |
| Gasnier *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, ICU stay |
| Giannoglou *et al.* 2021 | Retrospective | -/- condition / no control |
| Goldberger *et al.* 2022 | Retrospective | -/- condition / age |
| Haimovich *et al.* 2020 | Retrospective | -/- condition / controlled but not further specified |
| Hashemi‑Shahri *et al.* 2022 | Retrospective | -/- condition / controlled but not further specified |
| Hedberg *et al.* 2023 | Retrospective | -/- comorbidities / sociodemographic variables |
| Hirashima *et al.* 2021 | Retrospective | -/- condition / no control |
| Izurieta *et al.* 2020 | Retrospective | -/- condition / no control |
| Jeon *et al.* 2020 | Retrospective | -/- condition / matching |
| Jones *et al.* 2021 | Retrospective | -/- condition / no control |
| Kundi *et al.* 2020 | Retrospective | -/- condition / no control |
| Lebin *et al.* 2020 | Retrospective | -/- condition / no control |
| Lee *et al.* 2021 a | Prospective | -/- condition / sociodemographic variables, comorbidities |
| Lee *et al.* 2021 b | Retrospective | -/- condition / propensity matching |
| Lega *et al.* 2021 | Retrospective | -/- condition / no control |
| Li *et al.* 2022 | Prospective | -/- condition / sociodemographic variables, comorbidities |
| Maripuu *et al.* 2021 | Retrospective | -/- condition / no control |
| Meinlschmidt *et al.* 2022 | Prospective | -/- condition / sociodemographic variables, comorbidities |
| Merzon *et al.* 2020 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Merzon *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Musheyev *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Nemani *et al.* 2021 (1) | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Nemani *et al.* 2021 (2) | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Nilsson *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Nishimi *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Orlando *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Pavarin *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Poblador-Plou *et al.* 2021 | Prospective | -/- condition / sociodemographic variables |
| Qeadan *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Rodríguez-Molinero *et al.* 2020 | Retrospective | -/- condition / no control |
| Salvatore *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables |
| Sisó-Almirall *et al.* 2020 | Retrospective | -/- condition / sociodemographic variables |
| Tang *et al.* 2020 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Taquet *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Teixeira *et al.* 2021 | Retrospective | -/- comorbidities / sociodemographic variables, comorbidities |
| Thompson *et al.* 2022 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Tokuda *et al.* 2023 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Tzur Bitan *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Varela-Rodríguez *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Velásquez García *et al.* 2021 | Retrospective | -/- condition / controlled but not further specified |
| Vrotsou *et al.* 2021 | Retrospective | -/- condition / no control |
| Wang *et al.* 2021 (1) | Retrospective (C-C) | -/- comorbidities / sociodemographic variables |
| Wang *et al.* 2021 (2) | Retrospective (C-C) | -/- condition / sociodemographic variables, comorbidities |
| Wang *et al.* 2022 (3) | Retrospective | -/- condition / matching |
| Wang *et al.* 2022 (1) | Prospective | -/- condition / sociodemographic variables |
| Wang *et al.* 2022 (2) | Prospective | -/- condition / sociodemographic variables |
| Welch *et al.* 2021 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Yang *et al.* 2020 | Retrospective | -/- condition / sociodemographic variables, comorbidities |
| Yanover *et al.* 2020 | Retrospective | -/- condition / age |

-/- condition; versus people without the condition under study

-/- comorbidities versus people without the condition under study and no other comorbidity

**Table S4.** Overlap inclusion over meta-analyses and date of assessment.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Study*** | ***In earlier meta-analyses 1*** | ***Outcome assessment*** | ***Variant 2*** |
| Al-Aly *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | *Not known* | *Not known* |
| Allen *et al.* 2020 | 1 [N], 2 [Y], 3 [N], 4 [Y] | 01-01-2020 – 26-10-2020 | Wuhan |
| Amin *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | O8-2021 – 01-2022 | Omicron |
| Azar *al.* 2020 | 1 [Y], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 08-04-2020 | Wuhan |
| Bailey *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 08-09-2020 | Wuhan |
| Baillargeon *et al.* 2021 | 1 [N], 2 [Y], 3 [N], 4 [Y] | Prior to 14-06-2020 | Wuhan |
| Barcella *et al.* 2020 | 1 [N], 2 [N], 3 [N], 4 [N] | 27-02-2020 – 02-01-2021 | Wuhan |
| Bayrak & Çadirci, 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-08-2020 – 31-10-2020 | Wuhan |
| Bellan *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | Prior to 28-06-2021 | Mix |
| Bhopalwala *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 04-2020 – 12-2020 | Wuhan |
| Canal-Rivero *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [Y] | 01-03-2020 – 30-11-2020 | Wuhan |
| Castro *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 25-02-2020 – 04-05-2020 | Wuhan |
| Catalan *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 03-2020– 03-2021 | Wuhan |
| Cavallaro *et al.* 2021 | 1 [N], 2 [N], 3 [Y], 4 [N] | Prior to 28-06-2020 | Wuhan |
| Chang *et al.* 2021 | 1 [Y], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 30-09-2020 | Wuhan |
| Chen *et al.* 2021 (1) | 1 [N], 2 [N], 3 [N], 4 [N] | 01-02-2020 – 31-08-2020 | Wuhan |
| Chen *et al.* 2021 (2) | 1 [N], 2 [N], 3 [N], 4 [N] | 01-03-2020 – 28-02-2021 | Mix |
| Clift *et al.* 2020 | 1 [N], 2 [N], 3 [N], 4 [N] | 24-01-2020 – 30-04-2020 | Wuhan |
| Clouston *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 03-07-2020 – 01-09-2020 | Wuhan |
| Cohen *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | *Not known* | *Not known* |
| Cummins *et al.* 2021 | 1 [N], 2 [Y], 3 [N], 4 [N] | 01-02-2020 – 30-06-2020 | Wuhan |
| Dai *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | *Not known* | *Not known* |
| Descamps *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 03-2020 – 09-2020 | Wuhan |
| De Miranda *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 03-2020 – 11-2021 | Mix |
| De Vito *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 09-03-2020 – 31-04-2020 | Wuhan |
| Díaz-Simón *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-03-2020 – 02-07-2020 | Wuhan |
| Diez-Quevedo *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-03-2020 – 17-11-2020 | Wuhan |
| Durstenfeld *et al.* 2023 | 1 [N], 2 [N], 3 [N], 4 [N] | 26-03-2020 – 04-04-2022 | Mix |
| Egede *et al.* 2021 | 1 [N], 2 [Y], 3 [N], 4 [N] | 01-03-2020 – 10-07-2020 | Wuhan |
| Fond *et al.* 2021 | 1 [N], 2 [Y], 3 [Y], 4 [Y] | 01-02-2020 – 09-06-2020 | Wuhan |
| Francis *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 17-03-2020 – 17-05-2020 | Wuhan |
| Garcia‑Cabrera *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-03-2020 – 01-05-2020 | Wuhan |
| Gasnier *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 15-07-2020 – 18-09-2020 | Wuhan |
| Giannoglou *et al.* 2021 | 1 [N], 2 [N], 3 [Y], 4 [N] | 21-02-2020 – 30-06-2020 | Wuhan |
| Goldberger *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-03-2020 – 31-03-2020 | Wuhan |
| Haimovich *et al.* 2020 | 1 [Y], 2 [N], 3 [N], 4 [N] | 01-03-2020 – 08-04-2020 | Wuhan |
| Hashemi‑Shahri *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 29-02-2020 – 31-04-2020 | Wuhan |
| Hedberg *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-03-2020 – 31-07-2021 | Mix |
| Hesni *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | *Not known* | *Not known* |
| Hirashima *et al.* 2021 | 1 [N], 2 [N], 3 [Y], 4 [N] | 20-02-2020 – 30-04-2020 | Wuhan |
| Izurieta *et al.* 2020 | 1 [Y], 2 [N], 3 [N], 4 [Y] | 01-04-2020 – 08-05-2020 | Wuhan |
| Jeon *et al.* 2020 | 1 [Y], 2 [Y], 3 [Y], 4 [N] | 01-12-2019 – 15-05-2020 | Wuhan |
| Jones *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 07-08-2020 – 20-01-2021 | Wuhan |
| Kundi *et al.* 2020 | 1 [Y], 2 [N], 3 [N], 4 [N] | 11-03-2020 – 22-06-2020 | Wuhan |
| Lebin *et al.* 2020 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-05-2020 – 31-07-2020 | Wuhan |
| Lee *et al.* 2021 (1) | 1 [N], 2 [Y], 3 [Y], 4 [Y] | 01-01-2020 – 10-04-2020 | Wuhan |
| Lee *et al.* 2021 (2) | 1 [N], 2 [Y], 3 [Y], 4 [N] | 01-01-2020 – 15-05-2020 | Wuhan |
| Lega *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 14-12-2020 | Wuhan |
| Li *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 06-01-2020 – 09-03-2020 | Wuhan |
| Maripuu *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 11-03-2020 – 15-06-2020 | Wuhan |
| Merzon *et al.* 2020 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-02-2020 – 30-06-2020 | Wuhan |
| Merzon *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-02-2020 – 30-04-2020 | Wuhan |
| Meinschmidt *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | *Not known* | *Not known* |
| Musheyev *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 27-03-2020 – 11-08-2020 | Wuhan |
| Nemani *et al.* 2021 (1) | 1 [Y], 2 [Y], 3 [Y], 4 [Y] | 03-03-2020 – 17-02-2021 | Mix |
| Nemani *et al.* 2021 (2) | 1 [N], 2 [N], 3 [N], 4 [N] | 03-03-2020 – 15-07-2020 | Wuhan |
| Nilsson *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 27-02-2020 – 15-10-2021 | Mix |
| Nishimi *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 20-02-2020 – 16-11-2021 | Mix |
| Orlando *et al.* 2021 | 1 [Y], 2 [N], 3 [N], 4 [N] | Prior to 10-06-2020 | Wuhan |
| Pavarin *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 30-12-2020 | Wuhan |
| Poblador-Plou *et al.* 2021 | 1 [Y], 2 [Y], 3 [N], 4 [Y] | 04-03-2020 – 17-04-2020 | Wuhan |
| Qeadan *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 30-06-2020 | Wuhan |
| Rodríguez-M. *et al.* 2020 | 1 [Y], 2 [N], 3 [N], 4 [N] | 12-03-2020 – 02-05-2020 | Wuhan |
| Salvatore *et al.* 2021 | 1 [Y], 2 [N], 3 [N], 4 [N] | 10-03-2020 – 02-10-2020 | Wuhan |
| Sisó-Almirall *et al.* 2020 | 1 [N], 2 [N], 3 [N], 4 [Y] | 29-02-2020 – 04-04-2020 | Wuhan |
| Tang *et al.* 2020 | 1 [Y], 2 [N], 3 [N], 4 [N] | 01-02-2020 – 12-06-2020 | Wuhan |
| Taquet *et al.* 2021 | 1 [Y], 2 [Y], 3 [N], 4 [N] | 01-03-2020 – 01-06-2020 | Wuhan |
| Teixeira *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 29-12-2020 | Wuhan |
| Thompson *et al.* 2022 | 1 [N], 2 [N], 3 [N], 4 [N] | Prior to spring 2021 | Mix |
| Tokuda *et al.* 2023 | 1 [N], 2 [N], 3 [N], 4 [N] | 01-01-2020 – 30-11-2021 | Mix |
| Tzur Bitan *et al.* 2021 | 1 [N], 2 [Y], 3 [N], 4 [Y] | Prior to October 2020 | Wuhan |
| Varela-Rodríguez *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 25-02-2020 – 04-09-2020 | Wuhan |
| Velásquez García *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 26-01-2020 – 15-01-2020 | Mix |
| Vrotsou *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [N] | 28-02-2020 – 31-05-2020 | Wuhan |
| Wang *et al.* 2021 (1) | 1 [Y], 2 [N], 3 [Y], 4 [N] | 01-01-2020 – 03-02-2020 | Wuhan |
| Wang *et al.* 2022 (2) | 1 [Y], 2 [N], 3 [Y], 4 [N] | Prior to 15-06-2020 | Wuhan |
| Wang *et al.* 2021 (3) | 1 [N], 2 [N], 3 [N], 4 [N] | Prior to 24-02-2021 | Mix |
| Wang *et al.* 2022 (1 and 3) | 1 [N], 2 [N], 3 [N], 4 [N] | 04-2020 – 05-2020 | Wuhan |
| Welch *et al.* 2021 | 1 [N], 2 [N], 3 [N], 4 [Y] | Prior to 2021 | Wuhan |
| Yang *et al.* 2020 | 1 [Y], 2 [Y], 3 [Y], 4 [Y] | 01-01-2020 – 28-06-2020 | Wuhan |
| Yanover *et al.* 2020 | 1 [Y], 2 [Y], 3 [N], 4 [Y] | Prior to 22-04-2020 | Wuhan |

1 1. Ceban *et al.,* 2021), 2. Fond *et al.,* 2021, 3. Toubasi *et al.,* 2021, Vai *et al.,* 2021.

2 Wuhan [December 2020], Alfa [January – June 2021], Delta [June 2021], Omicron [October 2021]

**Table S5**. Characteristics of included studies and samples by outcome

|  |  |  |
| --- | --- | --- |
|  | Predictor [Method] | Outcome |
| Al-Aly *et al.* 2022 | Time frame not known, any mental health conditions [ICD 10] | Infection risk, mortality, long covid  Covid assessment: not known |
| Allen *et al.* 2020 | Lifetime SUD [ICD 10] | Infection risk, hospitalization, ICU admission, mortality  Covid assessment: positive PCR |
| Amin *et al.* 2022 | Time frame not known, schizophrenia, age [ICD 10] | Infection risk  Covid assessment: positive PCR |
| Azar *et al.* 2020 | Timeframe not known, mood disorder [ICD 10] | Infection risk, hospitalization, ICU admission, mortality  Covid assessment: any kind |
| Bailey *et al.* 2021 | Lifetime, any mental health conditions [ICD-10] | Infection risk Covid assessment: diagnosis |
| Baillargeon *et al.* 2021 | Lifetime SUD [ICD 10] | Hospitalization, ventilator use, mortality  Covid assessment: |
| Barcella *et al.* 2020 | Lifetime schizophrenia spectrum, bipolar depression, unipolar depression, other disorders [ICD 8 and 10] | Severe COVID19 (yes *vs* no), mortality  Covid assessment: diagnosis |
| Bayrak & Çadirci, 2021 | Current / lifetime unknown, Depression – method unknown | Mortality  Covid assessment: positive PCR |
| Bellan *et al.* 2022 ***2*** | Current anxiety and depressive symptoms [MINI] | Longcovid  Covid assessment: not known |
| Bhopalwala *et al.* 2022 | Time frame not known, opiate or alcohol dependence [ICD-10] | Duration of hospitalization, readmission, mortality  Covid assessment: diagnosis |
| Canal-Rivero *et al.* 2021 | Current severe mental disorders (psychotic spectrum, affective spectrum, personality disorders, other disorders)[ICD 10] | Infection risk, hospitalization, ICU admission, mortality  Covid assessment: not known |
| Castro *et al.* 2021 | Lifetime mood disorders incl. bipolar disorder, SUD, anxiety disorder [ICD 10] | Hospital discharge to nursing facility/with care *vs* home, mortality. Effect size on hospital discharge was recalculated because of a prevalence > .10  Covid assessment: positive test |
| Catalan *et al.* 2021 | Lifetime affective disorders, SUD, anxiety disorders, psychosis, personality disorders and eating disorders [ICD 8-10, DSM IV] | Mortality  Covid assessment: not known |
| Cavallaro *et al.* 2021 | Lifetime serious mental illness [incl. a.o., depression, anxiety, and schizophrenia], diagnosed by the UK national health services – exact method is unknown | ICU admissions, Mortality  Covid assessment: not known |
| Chang *et al.* 2021 | Lifetime depression, schizophrenia, opioid use disorder [ICD 10-CM] | Hospitalization  Covid assessment: diagnosis |
| Chen *et al.* 2022 (1) | Current / lifetime unknown, severe mental illness | Mortality  Covid assessment: not known |
| Chen *et al.* 2021 (2) | Current / lifetime unknown, severe mental illness, dementia, lockdown exposed vs lockdown unexposed | Mortality  Covid assessment: positive PCR |
| Clift *et al.* 2021 | Lifetime severe mental illness, amongst which bipolar disorder, psychosis, schizophrenia or schizoaffective disorder, severe depression – exact method is unknown | Hospitalization (for mortality, the UK biobank data is preferred)  Covid assessment: diagnosis |
| Clouston *et al.* 2021 | Current/lifetime unknown depression, comorbidities | Mortality, final discharge  Covid assessment: not known |
| Cohen *et al.* 2022 | ADHD (medication treatment yes vs no) vs non-ADHD | Infection risk  Covid assessment: diagnosis |
| Cummins *et al.* 2021 | Lifetime depression and sever mental illness – exact diseases and method unknown | Hospitalization, ICU admissions, mortality  Covid assessment: diagnosis |
| Dai *et al.* 2022 | Lifetime mental disorders [ICD 10] | Infection risk  Covid assessment: diagnosis |
| Descamps *et al.* 2022 | Lifetime psychotic disorders, mood disorders, anxiety disorders, SUD [ICD 10] | Course, ICU admission, mortality Covid assessment: diagnosis |
| De Miranda *et al.* 2022 | Depression diagnosis, timw frame not known | Longcovid  Covid assessment: diagnosis |
| De Vito *et al.* 2021 | Diagnosed mental illness, exact method is unknown | Infection risk, symptomatic, mortality  Covid assessment: positive PCR |
| Díaz-Simón *et al.* 2021 | Alcohol use disorder, timeframe and method unknown | incidence of respiratory  failure, ICU admission, mortality, length of hospital stay  Covid assessment: positive PCR |
| Diez-Quevedo *et al.* 2021 | Current alcohol use disorder, mood disorder, ‘stress, anxiety, adjustment disorder’ [ICD-10] | Mortality  Covid assessment: diagnosis |
| Durstenfeld *et al.* 2023 | Precovid depression (PHQ-9) and anxiety (GAD-7) symptoms | Longcovid  Covid assessment: not known |
| Egede *et al.* 2021 | Current bipolar, psychotic-, internalizing-, externalizing- disorders [ICD 9 and 10] | Infection risk, hospitalization, mortality  Covid assessment: positive PCR |
| Fond *et al.* 2021 | Time frame not known, schizophrenia [ICD 10 and CCAM] | ICU admission, mortality  Covid assessment: diagnosis |
| Francis *et al.* 2021 | Current / lifetime unknown, diagnosed mental health status - method unknown | Deterioration  Covid assessment: mix |
| Garcia‑Cabrera *et al.* 2021 | Current mental and functional health status, comorbidities | Emergency department referrals, mortality, hospitalization  Covid assessment: mix |
| Gasnier *et al.* 2022 | Current psychiatric disorders [DSM 5] | Longcovid  Covid assessment: not known |
| Giannoglou *et al.* 2021 | Current / lifetime unknown, diagnosed mental health disease – exact method is unknown | Mortality  Covid assessment: not known |
| Goldberger *et al.* 2022 | Current [ICD 10], psychiatric disorders (schizophrenia, affective disorders, bipolar disorder | Infection risk, hospitalization, mortality  Covid assessment: positive PCR |
| Haimovich *et al.* 2020 | Lifetime psychosis, depression [ICD 9 and 10] | Infection risk  Covid assessment: diagnosis |
| Hashemi‑Shahri *et al.* 2022 | Current substance abuse | Severity  Covid assessment: not known |
| Hedberg *et al.* 2023 ***2*** | Current / lifetime unknown, diagnosed mental health disease – exact method is unknown | Longcovid  Covid assessment: diagnosis |
| Hirashima *et al.* 2021 | Current / lifetime unknown, panic and OCD – exact method is unknown | Severity  Covid assessment: positive PCR |
| Izurieta *et al.* 2020 | Lifetime depression [ICD 10 CM] | Hospitalization, mortality  Covid assessment: diagnosis |
| Jeon *et al.* 2020 | Current mood disorders and schizophrenia/schizotypal/delusional disorders [ICD 10] | Severity, ICU admission, mortality  Covid assessment: positive PCR |
| Jones *et al.* 2021 2 | Mental disorders [mix assessment] | Longcovid  Covid assessment: self-diagnosis |
| Kundi *et al.* 2020 | Depression, SUD [ICD 10 CM] | Mortality  Covid assessment: positive PCR |
| Lebin *et al.* 2020 | Lifetime AUD – exact method is unknown | Infection risk  Covid assessment: positive PCR |
| Lee *et al.* 2021 a | Past year anxiety and stress related disorders, mood disorders, SUD, personality disorders, eating disorders [ICD 10] | Infection risk  Covid assessment: diagnosis |
| Lee *et al.* 2021 b | 6-month mental disorder of any type – [ICD 10] | Mortality  Covid assessment: not known |
| Lega *et al.* 2021 | Lifetime severe psychiatric disorder (psychotic- and bipolar disorder) and common mental disorder (depression and anxiety) [ICD 10] | Severity, ICU admission  Covid assessment: positive PCR |
| Li *et al.* 2022 | Current depression and anxiety. Validated cut-off score on the HADS | Course  Covid assessment: diagnosis |
| Maripuu *et al.* 2021 | Lifetime severe mental disorder; psychotic disorders, bipolar disorders [ICD 10] | Mortality  Covid assessment: diagnosis |
| Merzon *et al.* 2020 | Lifetime autism spectrum disorder, depression and anxiety, schizophrenia, ADHD [ICD 9 and 10] | Infection risk  Covid assessment: positive PCR |
| Merzon *et al.* 2021 | Lifetime autism spectrum disorder, depression and anxiety, schizophrenia, ADHD [ICD 9 and 10] | Hospitalization, symptomatic  Covid assessment: positive PCR |
| Musheyev *et al.* 2021 | Any psychiatric disorder. Time frame not known, in hospital rehabilitation | pre-COVID-19 admission, discharge assistive equipment, length of stay,  discharge medical follow-up refferals  Covid assessment: positive PCR |
| Nemani *et al.* 2021 (1) | Current schizophrenia, schizoaffective disorder, or bipolar disorder [ICD 10] | Mortalitiy  Covid assessment: |
| Nemani *et al.* 2021 (2) | Current anxiety disorder, mood disorder, schizophrenia spectrum disorder [ICD 10R CM] | Infection risk, 45-day mortality or hospice  Covid assessment: positive PCR |
| Nilsson *et al.* 2022 | Current substance abuse, severe mental illness [ICD 8 and 10] | Hospitalization, mortality, intensive care admission  Covid assessment: positive PCR |
| Nishimi *et al.* 2021 | Current depressive disorder, posttraumatic stress disorder, anxiety disorders, alcohol use disorder, substance use disorders, bipolar disorders, psychotic disorder, attention-deficit/hyperactivity disorder, eating disorder [ICD 9 and 10] | Breakthrough Infection risk  Covid assessment: positive PCR |
| Orlando *et al.* 2021 | Lifetime psychosis, depression, anxiety (ICD-9) | Test positivity, mortality  Covid assessment: positive PCR |
| Pavarin *et al.* 2022 | Lifetime SUD or AUD [ICD 10 or 9] | Hospitalization rate, mortality  Covid assessment: not known |
| Poblador-Plou *et al.* 2021 | Current adjustment disorder, anxiety disorders, developmental disorders, mood disorders, personality disorders, schizophrenia/psychotic disorders, substance-related disorders, [ICD 9 CM] | Mortality  Covid assessment: not known |
| Qeadan *et al.* 2021 | Current OUD [ICD 9 and 10] | Hospitalization, severity, mortality  Covid assessment: not known |
| Rodríguez-Molinero *et al.* 2020 | Lifetime AUD, schizophrenia, depression, other psychiatric disorders | Course (severe vs mild) and mortality  Covid assessment: positive PCR |
| Salvatore *et al.* 2021 | Lifetime anxiety, bipolar disorder, depression, SUD, schizophrenia/psychosis [ICD 9 and 10] | Hospitalization, ICU admission, mortality  Covid assessment: positive PCR |
| Sisó-Almirall *et al.* 2020 | Depression, method of assessment and time frame not known | Mortality/ICU admission, hospitalization  Covid assessment: positive PCR |
| Tang *et al.* 2020 | Depression, time frame not known [ICD 10R CM] | Infection risk, hospitalization, mortality  Covid assessment: positive PCR |
| Taquet *et al.* 2021 | Current any psychiatric illness [ICD 10] | Infection risk  Covid assessment: diagnosis |
| Teixeira *et al.* 2021 | Time frame not known, schizophrenia, mood disorders, anxiety disorders [ICD 9 and 10] | Infection risk and mortality  Covid assessment: positive PCR |
| Thompson *et al.* 2022 | Mental health disorders. Time frame unknown | Long COVID  Covid assessment: self-diagnosis |
| Tokuda *et al.* 2023 | Lifetime schizophrenia and psychotic disorders, bipolar disorder [ICD 10] | In hospital mortality  Covid assessment: positive PCR |
| Tzur Bitan *et al.* 2021 | Lifetime schizophrenia [ICD 9 and 10] | Infection risk, hospitalization, mortality  Covid assessment: not known |
| Varela-Rodríguez *et al.* 2021 | Lifetime AUD [ICD 10 and DSM 5] | Infection risk, ICU admission, respirator need, complications  Covid assessment: diagnosis |
| Velásquez García *et al.* 2021 | Current schizophrenia and psychotic disorders, mood and anxiety disorders, dementia, SUD [ICD 9 and 10] | Hospitalization  Covid assessment: positive PCR |
| Vrotsou *et al.* 2021 | Lifetime psychotic disorders, other mental disorders [ICD 9] | Hospitalization (incl. ICU), mortality  Covid assessment: positive PCR+ |
| Wang *et al.* 2021 (1) | Time frame not known, psychotic disorder, substance use disorder, bipolar disorder, anxiety, and depression [ICD 10] | Risk of infection and mortality  Covid assessment: diagnosis |
| Wang *et al.* 2021 (2) | Current, any SUD, SNOMED concept codes | Infection risk, hospitalization (incl. ICU), mortality  Covid assessment: diagnosis |
| Wang *et al.* 2021 (3) | Lifetime (of whom 63% recent) ADHD, bipolar disorder, unipolar depression, schizophrenia SNOMED concept codes | Hospitalization, mortality  Covid assessment: positive PCR |
| Wang *et al.* 2022 (1) | Lifetime depression, through multiple indicators, a.o., CESD-10 depression | Longcovid  Covid assessment: self-reported |
| Wang *et al.* 2022 (2) | Lifetime depression, through multiple indicators, a.o., CESD-10 depression. Current diagnosis may concur with the onset of COVID. | Hospitalization  Covid assessment: self-reported |
| Welch *et al.* 2021 | Lifetime, mental health, diagnosed by a clinician [ICD and DSM] | ICU admission, care after discharge, mortality  Covid assessment: positive PCR |
| Yang *et al.* 2020 | Current/recent depression, anxiety, stress-related disorders, SUD, psychotic disorder [ICD 9 and ICD 10) | Infection risk, inpatient status, mortality  Covid assessment: mix |
| Yanover *et al.* 2020 | Depression, no information on he time frame nor on the exact method. | Complicated disease  Covid assessment: positive PCR |

*Abbreviations.* CCAM, Classification Commune des Actes M.dicaux (CCAM); DSM, Diagnostic and Statistical Manual of Mental Disorders; ICD, International Classification of Disease, ICU, Intensive Care Unit

|  |
| --- |
| **BOX 2.** Article selection to avoid overlapping data sets |
| *Overlap prior to inclusion of articles*  Below we describe our decisions for countries for which potential overlap was an issue.  *UK Biobank*  Seven articles (Atkins *et al.,* 2020, Batty *et al.,* 2021, Batty *et al.,* 2020; Yang *et al.,* 2020, van der Meer *et al.,* 2020, Kolin *et al.,* 2021; Kirov *et al.,* 2021 ; Wang *et al.,* 2021[3]) reported on data derived from the UK Biobank. Based on the above specified criteria we only included Yang *et al.* 2020. Clift *et al.* 2021 do not report on UK Biobank data but they do report on COVID-19 related mortality based on UK nationwide data. Given that it is highly likely that this data set will have overlap with the UK Biobank, we also excluded the reporting on mortality in this study from further analysis. We did use Clift *et al.* for analysis on hospitalization, since Yang *et al.* 2020 do not report on this outcome. For the overall analysis on COVID-19 course we excluded Clift *et al.* 2021 because of a relative lack of specificity of the predictor variable ‘severe mental illness’. We did not include Wang *et al.,* 2021[3] for mortality outcomes because of sample size.  *Danish nation wide*  Barcella *et al.* (2021) report on SARS-CoV-2 infection rate and COVID-19 related mortality based on Danish nationwide data. For this reason, the Danish infection risk data and the mortality data reported by Reilev *et al.* (2021) and Brieghel *et al.* (2021) respectively, were not included in the meta-analysis on mortality. The data reported by Nilsson *et al.* (2021) were used in analyses of SUD and the mix category mental disorders on hospitalization and ICU admission and mortality.  *USA nation wide*  Four articles reported on nationwide data from the USA (Murk *et al.* 2021, Taquet *et al.* 2021; Wang *et al.* 2021 a; Wang *et al.* 2021 b). Based on the above, we decided to include Taquet *et al.* 2021 in the meta-analysis on risk for non-SUD patients above Wang *et al.* 2021 b. Wang *et al.* 2021 a was included in the meta-analysis on infection risk and COVID-19 course of SUD patients. Wang *et al.* 2021 b, was included in analyses on course and mortality analyses for patients with non-SUD mental disorders. Murk *et al.* 2021 was excluded because of the smallest sample size.  *South-Korean nation-wide data*  We detected 7 published records that used (parts) of nationwide data from gathered in South Korea *(*Lee *et al.* 2021 a Lee *et al.* 2021 b; Lee *et al.* 2021 c; Park and Rhim, 2021; Kim *et al.* 2021; Jeon *et al.* 2020 *risk* An *et al.* 2020). Kim *et al.* 2021 and An *et al.* 2020 were excluded for reasons specified above. Lee *et al.* 2021 b was excluded in the met-analysis on COVID-19 course and mortality in the general population. For these outcomes we favored Jeon *et al.* 2020 as their predictor variables are more specific. Lee *et al.* 2021 a was included in the meta-analysis on infection rate. Lee *et al.* 2021 c was included in the meta-analysis on mortality in older adults.  References to the articles mentioned here can be found in **Table S2**.  *Overlap after inclusion of articles*  After inclusion we examined the per predictor variable and outcome and tried to optimize the data in order to both avoid overlap and loss of relevant data (see the supplemental excel file). |

**Table S6.** Quality assessment of included prospective and cross-sectional studies (**T** is total score)

|  |  |
| --- | --- |
| Al-Aly *et al.* 2022 | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 4** |
| Allen *et al.* 2020 | 1**⊕**; 2**⊕**; 3**∅**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 6** |
| Amin *et al.* 2022 | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 3** |
| Azar *al.* 2020 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 2** |
| Bailey *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 3** |
| Baillargeon *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊗**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Barcella *et al.* 2020 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 10** |
| Bayrak & Çadirci, 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 3** |
| Bellan *et al.* 2022 ***2*** | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 7** |
| Bhopalwala *et al.* 2022 | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Canal-Rivero *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 1** |
| Castro *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**∅**: **T = 3** |
| Catalan *et al.* 2021 | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Cavallaro *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 1** |
| Chang *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 3** |
| Chen *et al.* 2021 (1) | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Chen *et al.* 2021 (2) | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Clift *et al.* 2020 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 3** |
| Clouston *et al.* 2021 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 2** |
| Cohen *et al.* 2022 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Cummins *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 4** |
| Dai *et al.* 2022 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 2** |
| Descamps *et al.* 2022 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| De Miranda *et al.* 2022 ***2*** | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| De Vito *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 3** |
| Díaz-Simón *et al.* 2021 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = -2** |
| Diez-Quevedo *et al.* 2021 | 1**⊕**; 2**∅**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 4** |
| Durstenfeld *et al.* 2022 ***2*** | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Egede *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 7** |
| Fond *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 9** |
| Francis *et al.* 2021 | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 7** |
| Garcia‑Cabrera *et al.* 2021 | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 3** |
| Gasnier *et al.* 2022 | 1**⊕**; 2**∅**; 3**∅**; 4a**⊕**; 4b**∅**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Giannoglou *et al.* 2021 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = -3** |
| Goldberger *et al.* 2022 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Haimovich *et al.* 2020 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Hashemi‑Shahri *et al.* 2022 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Hedberg *et al.* 2023 ***2*** | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Hirashima *et al.* 2021 | 1**∅**; 2**⊗**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = -2** |
| Izurieta *et al.* 2020 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 5** |
| Jeon *et al.* 2020 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 9** |
| Jones *et al.* 2020 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 4** |
| Kundi *et al.* 2020 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 5** |
| Lebin *et al.* 2020 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 4** |
| Lee *et al.* 2021 (1) | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊕**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 12** |
| Lee *et al.* 2021 (2) | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 6** |
| Lega *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 4** |
| Li *et al.* 2021 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 2** |
| Maripuu *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 3** |
| Meinschmidt *et al.* 2022 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 7** |
| Merzon *et al.* 2020 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Merzon *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Musheyev *et al.* 2021 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Nemani *et al.* 2021 (1) | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 6** |
| Nemani *et al.* 2021 (2) | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Nilsson *et al.* 2022 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Nishimi *et al.* 2021 ***1*** | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 7** |
| Orlando *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 5** |
| Pavarin *et al.* 2022 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Poblador-Plou *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**∅**: **T = 9** |
| Qeadan *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 7** |
| Rodríguez-M. *et al.* 2020 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**∅**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 6** |
| Salvatore *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 9** |
| Sisó-Almirall *et al.* 2020 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**∅**: **T = 3** |
| Tang *et al.* 2020 | 1**⊕**; 2**∅**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 4** |
| Taquet *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 6** |
| Teixeira *et al.* 2021 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Thompson *et al.* 2022 ***2*** | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = -2** |
| Tokuda *et al.* 2023 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Tzur Bitan *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊗**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 4** |
| Varela-Rodríguez *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊗**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 4** |
| Velásquez-García *et al.* 2021 | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Vrotsou *et al.* 2021 | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 7** |
| Wang *et al.* 2021 (1) | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 9** |
| Wang *et al.* 2021 (2) | 1**⊕**; 2**⊕**; 3**⊕**; 4a**⊕**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 9** |
| Wang *et al.* 2021 (3) | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Wang *et al.* 2022 (1) | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 2** |
| Wang *et al.* 2022 (2) | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 2** |
| Wang *et al.* 2022 (3) | 1**⊕**; 2**⊗**; 3**∅**; 4a**∅**; 4b**⊗**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**⊗**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 0** |
| Welch *et al.* 2021 | 1**⊕**; 2**⊕**; 3**∅**; 4a**⊗**; 4b**⊕**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 2** |
| Yang *et al.* 2020 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊕**: **T = 6** |
| Yanover *et al.* 2020 | 1**⊕**; 2**⊕**; 3**∅**; 4a**∅**; 4b**∅**; 5**⊗**; 6**⊕**; 7**⊕**; 8**⊕**; 9**⊕**; 10**∅**; 11**⊕**; 12**∅**; 13**⊕**; 14**⊗**: **T = 4** |

**⊕** = yes; **∅** = neutral / don’t know; **⊗** = no

**Table S7.** Results from frequentist and Bayesian meta-analyses on infection risk based on local and nation wide data. See the Supplemental dataset (S1) for the studies included per analysis.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *SARS-CoV-2 infection risk* | *K* a | *N* | OR (95% CI) | BF10 for OR = 1.00 b | *I2* | Egger’s *t* |
| Anxiety disorders [1] | 4 | 3060903 | 1.20 (0.99 to 1.46) | 0.48 + H0 | 95.0 \*\*\* | 8.54 |
| Neurodevelopmental disorders [1] | 4 | 566411 | 1.29 (0.87 to 1.90) | 0.79 + H0 | 85.8 \*\*\* | 0.72 |
| Mood disorders [1] | 7 | 9247673 | 0.87 (0.68 to 1.11) | 0.86 + H0 | 98.3 \*\*\* | 12.5 |
| Mood disorders [2] | 10 | 68492565 | 0.96 (0.64 to 1.44) | 0.31 ++ H0 | 99.4 \*\*\* | -1.62 |
| Psychosis spectrum disorder [1] | 6 | 61783950 | 1.06 (0.80 to 1.41) | 0.31 ++ H0 | 89.1 \*\*\* | 4.85\*\* |
| Psychosis spectrum disorder [2] | 8 | 3075141 | 1.33 (0.99 to 1.79) | 1.53 + H1 | 91.7 \*\*\* | 4.51\*\* |
| Substance use disorder[1] | 9 | 78236869 | 1.09 (0.75 to 1.59) | 0.32 ++ H0 | 99.6 \*\*\* | 1.06 |
| Substance use disorder[2] | 8 | 78183925 | 1.12 (0.78 to 1.61) | 0.34 + H0 | 99.6 \*\*\* | 1.53 |
| Mix/other[1] | 11 | 7354951 | 1.09 (0.81 to 1.47) | 0.30 ++ H0 | 99.2 \*\*\* | -1.62 |
| Mix/other[2] | 9 | 5655910 | 0.95 (0.78 to 1.57) | 0.04 +++ H0 | 92.5 \*\*\* | -0.88 |

**Table S8.** Results of moderation analysis of infection risk presented as regression weight and SE for data-sets in which *k* ≥ 10 (see the manscript).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *COVID-19 infection risk* | % female | Average age | Risk of bias | *N* |
| Anxiety | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Neurodevelopmental disorders | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mood disorders | -0.01 (0.02) | 0.03 (0.01) \* | 0.01 (0.02) | -0.005 (0.02) |
| Psychosis spectrum | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| SUD | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mix/other | -0.04 (0.01) \*\* | 0.01 (0.01) | -0.02 (0.06) | -0.02 (0.03) |

**Table S9.** Results from frequentist and Bayesian meta-analyses on local and nation wide data. See the Supplemental dataset (S1) for the studies included per analysis.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *COVID-19 severity* / course | *k* | *N* | OR (95% CI) | BF10 for OR = 1.00 a | *I2* | Egger’s *t* |
| Anxiety disorder [1] | 4 | 100072 | 1.23 (1.12 to 1.36) \*\*\* | 1.53 + H1 | 24.0 | -0.04 |
| Neurodevelopmental disorders [1] | 1 | 1780 | 1.81 (1.29 to 2.25) \*\* | Not sufficient data | *No data* | *No data* |
| Mood disorders [1] | 7 | 250230 | 1.65 (1.22 to 2.23) \*\* | 9.37 ++ H1 | 88.3 \*\*\* | -1.30 |
| Psychosis spectrum disorder [1] | 5 | 244758 | 1.76 (1.06 to 2.92) \* | 4.10 ++ H1 | 80.5 \*\*\* | -0.79 |
| Substance use disorder [1] | 7 | 122592 | 1.51 (1.24 to 1.83) \*\*\* | 193.41 ++++ H1 | 64.9 \*\* | 2.42 \*\* |
| Substance use disorder [2] | 6 | 152880 | 1.23 (1.11 to 1.34) \*\*\* | 17.89 +++ H1 | 92.6 \*\*\* | -0.79 |
| Substance use disorder [3] | 6 | 102922 | 1.73 (1.28 to 2.35) \*\*\* | 24.70 +++ H1 | 68.8 \*8 | 2.48 \*\* |
| Mix/other [1] | 10 | 258947 | 1.35 (1.11 to 1.64) \*\* | 7.16 ++ H1 | 56.9 \* | 0.65 |
| *COVID-19 hospitalization* | *k* | *N* | OR (95% CI) | BF10 for OR = 1.00 a | *I2* | Egger’s *t* |
| Anxiety disorder [1] | 4 | 633041 | 1.44 (1.17 to 1.78) \*\* | 8.30 ++ H1 | 76.7 \* | -4.63 |
| Anxiety disorder [2] | 3 | 580842 | 1.30 (0.92 to 1.83) | 0.64 + H0 | 88.8 \* | -6.82 \* |
| Neurodevelopmental disorders [1] | 1 | 1780 | 1.93 (1.06 to 3.51) \* | *No data* | *No data* | *No data* |
| Mood disorders [1] | 6 | 28983811 | 1.63 (1.34 to 1.97) \*\*\* | 16.45 +++ H1 | 92.5 \*\*\* | 2.21 \* |
| Mood disorders [2] | 6 | 3654145 | 1.65 (1.51 to 1.82) \*\*\* | 733.12 ++++ H1 | 34.7 | 0.92 |
| Mood disorders [3] | 11 | 4330466 | 1.44 (1.16 to 1.79) \*\* | 12.65 +++ H1 | 95.0 \*\*\* | 1.73 |
| Psychosis spectrum disorder [1] | 10 | 36522290 | 1.86 (1.32 to 2.62) \*\*\* | 160.10 ++++ H1 | 98.5 \*\*\* | -0.72 |
| Psychosis spectrum disorder [2] | 10 | 1431436 | 1.75 (1.26 to 2.41) \*\*\* | 115.25 ++++ H1 | 96.6 \*\*\* | -0.21 |
| Substance use disorder [1] | 7 | 914933 | 1.54 (1.44 to 1.69) \*\*\* | 82.88 ++++ H1 | 69.4 \*\* | -0.69 |
| Substance use disorder [2] | 6 | 950783 | 1.88 (1.29 to 2.20) \*\*\* | 10.51 +++ H1 | 92.2 \*\*\* | -0.07 |
| Substance use disorder [3] | 9 | 1579214 | 1.56 (1.30 to 1.86) \*\*\* | 7.92 ++ H1 | 93.6 \*\*\* | 0.49 |
| Mix/other [1] | 5 | 9319916 | 1.55 (1.16 to 2.07) \*\* | 2.89 + H1 | 98.1 \*\*\* | -0.76 |
| Mix/other [2] | 6 | 6699380 | 1.54 (1.17 to 2.03) \*\* | 4.87 ++ H1 | 97.6 \*\*\* | -0.57 |
| Mix/other [3] | 6 | 6267140 | 1.33 (0.95 to 1.85) | 0.64 + H0 | 97.8 \*\*\* | -0.85 |
| *COVID-19 ICU admission* | *k* | *N* | OR (95% CI) | BF10 for OR = 1.00 a | *I2* | Egger’s *t* |
| Anxiety disorder [1] | 2 | 100034 | 1.08 (0.76 to 1.54) | *No data* | *No data* | *No data* |
| Neurodevelopmental disorders [1] | 0 |  | | | | |
| Mood disorders [1] | 6 | 6246991 | 1.11 (0.84 to 1.46) | 0.31 ++ H0 | 49.9 | -0.6o |
| Psychosis spectrum disorder [1] | 6 | 290253 | 1.45 (0.98 to 2.15) | 1.02 + H0 | 93.6 \*\* | 0.90 |
| Substance use disorder [1] | 4 | 194035 | 1.59 (1.11 to 2.28) \* | 8.30 ++ H1 | 83.0 \*\*\* | 0.02 |
| Mix/other [1] | 9 | 6384393 | 1.34 (1.02 to 1.75) \* | 2.03 + H1 | 93.7 \*\*\* | -0.26 |
| Mix/other [2] | 8 | 6370529 | 1.28 (0.97 to 1.71) | 1.23 + H1 | 94.0 \*\*\* | -0.51 |
| *COVID-19 mortality* | *k* | *N* | OR (95% CI) | BF10 for OR = 1.00 a | *I2* | Egger’s *t* |
| Anxiety disorder [1] | 6 | 3215223 | 1.14 (0.72 to 1.80) | 0.49 + H0 | 91.4 \*\*\* | 0.07 |
| Anxiety disorder [2] | 9 | 694418 | 1.08 (0.81 to 1.41) | 0.30 ++ H0 | 79.8 \*\*\* | 0.70 |
| Neurodevelopmental disorders [1] | 2 | 4412 | 1.26 (0.77 to 2.05) | 0.65 + H0 | 0.0 | *No data* |
| Mood disorders [1] | 14 | 34395611 | 1.50 (1.31 to 1.71) \*\*\* | 1170.29 ++++ H1 | 79.2 \*\*\* | 1.67 |
| Mood disorders [2] | 14 | 36509695 | 1.49 (1.31 to 1.70) \*\*\* | 462.35 ++++ H1 | 77.1 \*\*\* | 1.80 \* |
| Mood disorders [3] | 20 | 8662467 | 1.42 (1.24 to 1.63) \*\*\* | 878.38 ++++ H1 | 68.4 \*\*\* | 2.03 \*\* |
| Psychosis spectrum disorder [1] | 13 | 57137783 | 2.15 (1.68 to 2.75) \*\*\* | 1594.72 ++++ H1 | 88.4 \*\*\* | -0.08 |
| Psychosis spectrum disorder [2] | 14 | 798320 | 2.57 (1.63 to 4.04) \*\*\* | 1483.74 ++++ H1 | 90.9 \*\*\* | -0.23 |
| Substance use disorder [1] | 11 | 1094627 | 1.45 (1.12 to 1.87) \*\*\* | 101.02 ++++ H1 | 86.0 \*\*\* | 0.47 |
| Substance use disorder [2] | 14 | 785992 | 1.49 (1.21 to 1.84) \*\*\* | 97.52 ++++ H1 | 69.5 \*\*\* | 0.09 |
| Mix/other [1] | 20 | 6787842 | 1.26 (1.08 to 1.47) \*\*\* | 9.91 ++ H1 | 81.4 \*\*\* | -0.83 |
| Mix/other [2] | 21 | 12802505 | 1.32 (1.16 to 1.49) \*\*\* | 19.42 +++ H1 | 85.7 \*\*\* | -1.00 |
| Mix/other [3] | 21 | 7284738 | 1.32 (1.14 to 1.53) \*\*\* | 15.26 +++ H1 | 85.6 \*\*\* | -0.79 |
| Mix/other [4] | 21 | 6855656 | 1.34 (1.13 to 1.59) \*\*\* | 1.80 + H1 | 90.0 \*\*\* | -0.52 |
| Mix/other [5] | 22 | 6858209 | 1.21 (1.05 to 1.39) \*\* | 2.51 + H1 | 84.4 \*\*\* | -0.92 |

\* *P* < .05, \*\* *P* < .01, \*\*\* *P* < .001

a For more information see **dataset S1**

b Evidence category for the results from Bayesian analyses: + anecdotal evidence for H**0** or H**1**; ++ moderate evidence for H**0** or H**1**; +++ strong evidence for H**0** or H**1** ; ++++ very strong evidence for H**0** or H**1**

**Table S10.** Results of moderation analysis of morbidity and mortality presented as regression weight and SE for data-sets in which *k* ≥ 10 (see the manuscript).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *COVID-19 severity / course* | % female | Average age | Risk of bias | *N* |
| Anxiety | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Neurodevelopmental disorders | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mood disorders | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Psychosis spectrum | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| SUD | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mix/other | -0.06 (0.02) \*\* | 0.01 (0.01) | 0.05 (0.03) | -0.0007 (0.0001) |
| *COVID-19 hospitalization* | % female | Average age | Risk of bias | *N* |
| Anxiety | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Neurodevelopmental disorders | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mood disorders | 0.04 (0.05) | 0.003 (0.03) | 0.09 (0.16) | 0.00073 (0.0011) |
| Psychosis spectrum | -0.08 (0.14) | -0.05 (0.07) | -0.12 (0.63) | 0.003 (0.002) |
| SUD | 0.58 (0.28) \* | 0.008 (0.04) | -0.26 (0.17) | 0.0003 (0.0006) |
| Mix/other | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| *COVID-19 ICU admission* | % female | Average age | Risk of bias | *N* |
| Anxiety | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Neurodevelopmental disorders | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mood disorders | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Psychosis spectrum | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| SUD | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mix/other | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| *COVID-19 mortality* | % female | Average age | Risk of bias | *N* |
| Anxiety | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Neurodevelopmental disorders | *k* < 10 | *k* < 10 | *k* < 10 | *k* < 10 |
| Mood disorders | -0.009 (0.02) | -0.0006 (0.006) | 0.05 (0.04) | -0.0002 (0.0002) |
| Psychosis spectrum | 0.02 (0.05) | -0.02 (0.03) | 0.06 (0.20) | 0.0007 (0.0006) |
| SUD | 0.006 (0.03) | -0.01 (0.02) | -0.07 (0.06) | -0.007 (0.009) |
| Mix/other | 0.005 (0.004) | 0.00004 (0.0006) | -0.02 (0.02) | 0.0003 (0.0001) \*\* |