Supplementary Materials

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Supplementary Material 1 PRISMA Checklist

Section/topic		#	Checklist item	Reported on page #
	TITLE			
Title		1	Identify the report as a systematic review, meta-analysis, or both.	1
	ABSTRACT			
Structured summary		2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
	INTRODUCTION			
Rationale		3	Describe the rationale for the review in the context of what is already known.	3-5
Objectives		4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	5-6
	METHODS			
Protocol and registration		5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	6
Eligibility criteria		6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	7
Information sources		7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	6

Search		8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Supplementary Materials 2
Study selection		9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	7; Figure 1
Data collection process		10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	7-8
Data items		11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	7-8
Risk of bias in individual studies		12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	8
Summary measures		13	State the principal summary measures (e.g., risk ratio, difference in means).	8-9
Synthesis of results		14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	9
Risk of bias across studies		15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	8
Additional analyses		16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	9
RESULTS				
Study selection		17	Give numbers of studies screened, assessed for eligibility,	Figure 1

			and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	
Study characteristics		18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Table 1
Risk of bias within studies		19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	14; Supplementary Materials 4
Results of individual studies		20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Figure 2; Figure 3.
Synthesis of results		21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	10-11
Risk of bias across studies		22	Present results of any assessment of risk of bias across studies (see Item 15).	14
Additional analysis		23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	11-14
DISCUSSION				
Summary of evidence		24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	14-17
Limitations		25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	17-18
Conclusions		26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	18-19

Supplementary Materials 2 Full Search Strategy

A. Search terms (Following the CoCoPop mnemonic)

- Condition

    depression, depressive, depressed, anxiety, anxious, mental health, and psychological.

- Context

    covid-19, coronavirus, 2019-ncov, sars-cov-2, cov-19, and 2019 pandemic.

- Population

    Old, older, elderly, geriatric, geriatrics, aging, senior, and seniors.

- Region

    China, Chinese, mainland, Hong Kong, Taiwan and Macao.

B. Search strategy (An example from PubMed)

Search: **(((depression OR depressive OR depressed OR anxiety OR anxious OR "mental health" OR psychological) AND ("COVID-19" OR coronavirus OR "2019-ncov" OR "sars-cov-2" OR "cov-19" OR "2019 pandemic")) AND (old OR older OR elderly OR geriatric OR geriatrics OR aging OR senior OR seniors)) AND (China OR Chinese OR mainland OR "Hong Kong" OR Taiwan OR Macao)**

("depressed"[All Fields] OR "depression"[MeSH Terms] OR "depression"[All Fields] OR "depressions"[All Fields] OR "depression s"[All Fields] OR "depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depressivity"[All Fields] OR "depressive"[All Fields] OR "depressively"[All Fields] OR "depressiveness"[All Fields] OR "depressives"[All Fields] OR ("depressed"[All Fields] OR "depression"[MeSH Terms] OR "depression"[All Fields] OR "depressions"[All Fields] OR "depression s"[All Fields] OR "depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depressivity"[All Fields] OR "depressive"[All Fields] OR "depressively"[All Fields] OR "depressiveness"[All Fields] OR "depressives"[All Fields]) OR ("depressed"[All Fields] OR "depression"[MeSH Terms] OR "depression"[All Fields] OR "depressions"[All Fields] OR "depression s"[All Fields]

OR "depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND
"disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depressivity"[All
Fields] OR "depressive"[All Fields] OR "depressively"[All Fields] OR
"depressiveness"[All Fields] OR "depressives"[All Fields]) OR ("anxiety"[MeSH
Terms] OR "anxiety"[All Fields] OR "anxieties"[All Fields] OR "anxiety s"[All
Fields]) OR ("anxiety"[MeSH Terms] OR "anxiety"[All Fields] OR "anxious"[All
Fields]) OR "mental health"[All Fields] OR ("psychologic"[All Fields] OR
"psychological"[All Fields] OR "psychologically"[All Fields] OR
"psychologization"[All Fields] OR "psychologized"[All Fields] OR
"psychologizing"[All Fields])) AND ("COVID-19"[All Fields] OR
("coronavirus"[MeSH Terms] OR "coronavirus"[All Fields] OR "coronaviruses"[All
Fields]) OR "2019-ncov"[All Fields] OR "sars-cov-2"[All Fields] OR "cov-19"[All
Fields] OR "2019 pandemic"[All Fields]) AND ("old"[All Fields] OR ("older"[All
Fields] OR "olders"[All Fields]) OR ("aged"[MeSH Terms] OR "aged"[All Fields]
OR "elderly"[All Fields] OR "elderlies"[All Fields] OR "elderly s"[All Fields] OR
"elderlys"[All Fields]) OR ("geriatric"[All Fields] OR "geriatrics"[MeSH Terms] OR
"geriatrics"[All Fields]) OR ("geriatric"[All Fields] OR "geriatrics"[MeSH Terms]
OR "geriatrics"[All Fields]) OR ("aging"[MeSH Terms] OR "aging"[All Fields] OR
"ageing"[All Fields]) OR ("senior"[All Fields] OR "seniorities"[All Fields] OR
"seniority"[All Fields] OR "seniors"[All Fields]) OR ("senior"[All Fields] OR
"seniorities"[All Fields] OR "seniority"[All Fields] OR "seniors"[All Fields])) AND
("china"[MeSH Terms] OR "china"[All Fields] OR "china s"[All Fields] OR
"chinas"[All Fields] OR ("asian continental ancestry group"[MeSH Terms] OR
("asian"[All Fields] AND "continental"[All Fields] AND "ancestry"[All Fields] AND
"group"[All Fields]) OR "asian continental ancestry group"[All Fields] OR
"chinese"[All Fields] OR "chineses"[All Fields]) OR ("mainland"[All Fields] OR
"mainlands"[All Fields]) OR "Hong Kong"[All Fields] OR ("taiwan"[MeSH Terms]
OR "taiwan"[All Fields] OR "taiwan s"[All Fields] OR "taiwans"[All Fields]) OR
("macau"[MeSH Terms] OR "macau"[All Fields] OR "macao"[All Fields]))

Translations
depression: "depressed"[All Fields] OR "depression"[MeSH Terms] OR
"depression"[All Fields] OR "depressions"[All Fields] OR "depression's"[All Fields]

OR "depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depressivity"[All Fields] OR "depressive"[All Fields] OR "depressively"[All Fields] OR "depressiveness"[All Fields] OR "depressives"[All Fields]

depressive: "depressed"[All Fields] OR "depression"[MeSH Terms] OR "depression"[All Fields] OR "depressions"[All Fields] OR "depression's"[All Fields] OR "depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depressivity"[All Fields] OR "depressive"[All Fields] OR "depressively"[All Fields] OR "depressiveness"[All Fields] OR "depressives"[All Fields]

depressed: "depressed"[All Fields] OR "depression"[MeSH Terms] OR "depression"[All Fields] OR "depressions"[All Fields] OR "depression's"[All Fields] OR "depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depressivity"[All Fields] OR "depressive"[All Fields] OR "depressively"[All Fields] OR "depressiveness"[All Fields] OR "depressives"[All Fields]

anxiety: "anxiety"[MeSH Terms] OR "anxiety"[All Fields] OR "anxieties"[All Fields] OR "anxiety's"[All Fields]

anxious: "anxiety"[MeSH Terms] OR "anxiety"[All Fields] OR "anxious"[All Fields]

psychological: "psychologic"[All Fields] OR "psychological"[All Fields] OR "psychologically"[All Fields] OR "psychologization"[All Fields] OR "psychologized"[All Fields] OR "psychologizing"[All Fields]

coronavirus: "coronavirus"[MeSH Terms] OR "coronavirus"[All Fields] OR "coronaviruses"[All Fields]

older: "older"[All Fields] OR "olders"[All Fields]

elderly: "aged"[MeSH Terms] OR "aged"[All Fields] OR "elderly"[All Fields] OR "elderlies"[All Fields] OR "elderly's"[All Fields] OR "elderlys"[All Fields]

geriatric: "geriatric"[All Fields] OR "geriatrics"[MeSH Terms] OR "geriatrics"[All Fields]

geriatrics: "geriatric"[All Fields] OR "geriatrics"[MeSH Terms] OR "geriatrics"[All Fields]

aging: "aging"[MeSH Terms] OR "aging"[All Fields] OR "ageing"[All Fields]

senior: "senior"[All Fields] OR "seniorities"[All Fields] OR "seniority"[All Fields] OR "seniors"[All Fields]

seniors: "senior"[All Fields] OR "seniorities"[All Fields] OR "seniority"[All Fields] OR "seniors"[All Fields]

China: "china"[MeSH Terms] OR "china"[All Fields] OR "china's"[All Fields] OR "chinas"[All Fields]

Chinese: "asian continental ancestry group"[MeSH Terms] OR ("asian"[All Fields] AND "continental"[All Fields] AND "ancestry"[All Fields] AND "group"[All Fields]) OR "asian continental ancestry group"[All Fields] OR "chinese"[All Fields] OR "chineses"[All Fields]

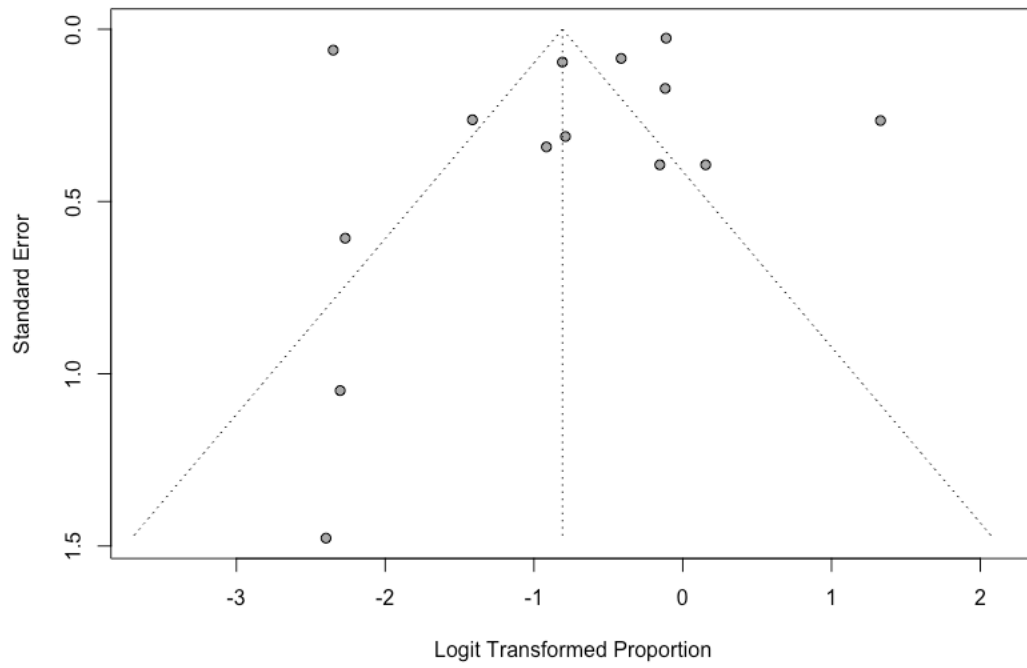**mainland:** "mainland"[All Fields] OR "mainlands"[All Fields]

Taiwan: "taiwan"[MeSH Terms] OR "taiwan"[All Fields] OR "taiwan's"[All Fields] OR "taiwans"[All Fields]

Macao: "macau"[MeSH Terms] OR "macau"[All Fields] OR "macao"[All Fields]
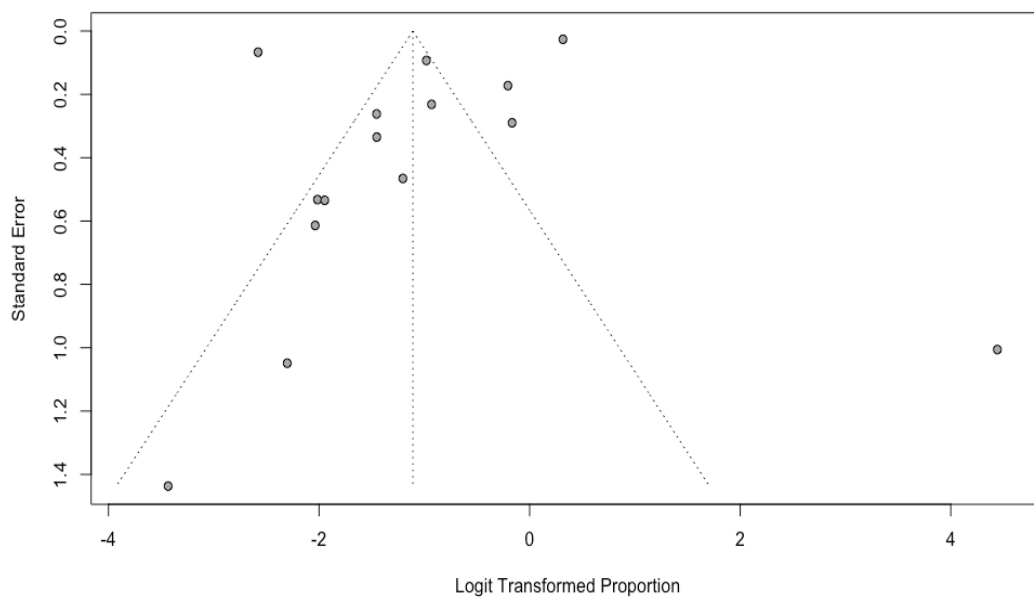
Supplementary Materials 3 JBI Critical Appraisal Checklist for Studies Reporting Prevalence Data

Item number	Item	Standard
1	Was the sample frame appropriate to address the target population?	An item would be scored
2	Were study participants sampled in an appropriate way?	"0" if it was answered
3	Was the sample size adequate?	"No", "Unclear", or "Not
4	Were the study subjects and the setting described in detail?	Applicable"; if it was
5	Was the data analysis conducted with sufficient coverage of the identified sample?	answered "Yes", then the item scored "1".
6	Were valid methods used for the identification of the condition?	
7	Was the condition measure in a standard, reliable way for all participants?	
8	Was there appropriate statistical analysis?	
9	Was the response rate adequate, and if not, was the low response rate managed appropriately?	

Supplementary Materials 4 Results for Risk of Bias Assessment

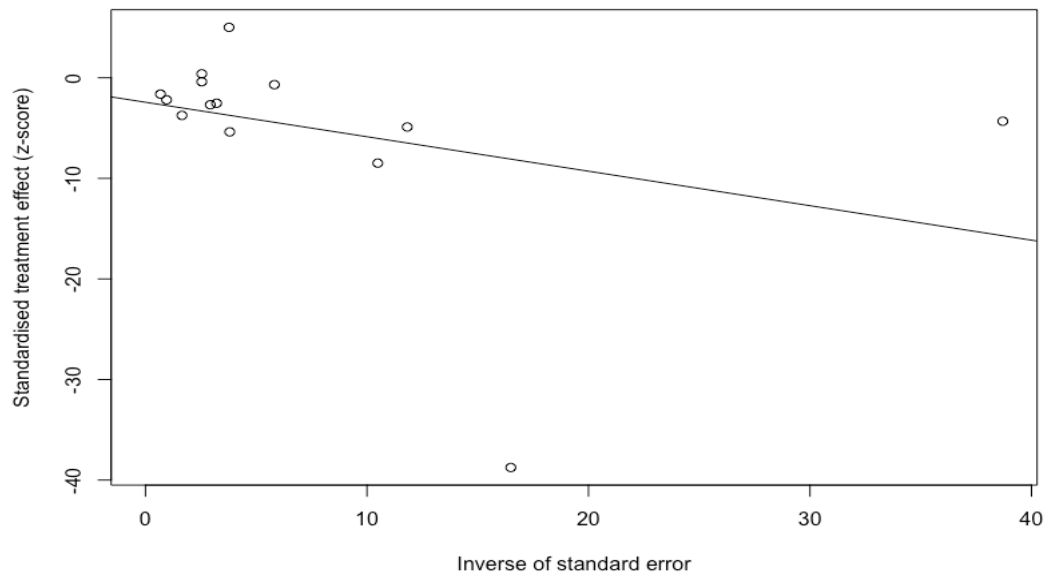| Item	1	2	3	4	5	6	7	8	9	Total
Cai, et al. [24]	No	Unclear	No	Yes	Yes	Yes	Yes	Yes	Yes	6
S. H. Chen, et al. [61]	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	6
L. L. Chen, et al. [62]	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	7
Choi, et al. [51]	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	8
Dai, et al. [52]	Yes	Unclear	No	Yes	Yes	Yes	Yes	Yes	Yes	7
Fong, et al. [58]	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	6
X. Li, et al.[53]	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	6
Q. Li, et al. [54]	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	6
Liang, et al. [59]	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7
X. Liu, et al. [60]	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	6
Ren, et al.[55]	Unclear	No	No	Yes	Yes	Yes	Yes	Yes	Yes	6
S. Y. S. Wong, et al.[21]	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
F. H. C. Wong, et al.[57]	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7
M. Wu, et al. [41]	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
Yan, et al. [63]	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	7
J. Zhang, et al. [42,]	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7
J. L. Zhang, et al. [56]	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	6

Supplementary Materials 5 Funnel Plot for Pooled Prevalence of Depression

Supplementary Materials 6 Funnel Plot for Pooled Prevalence of Anxiety
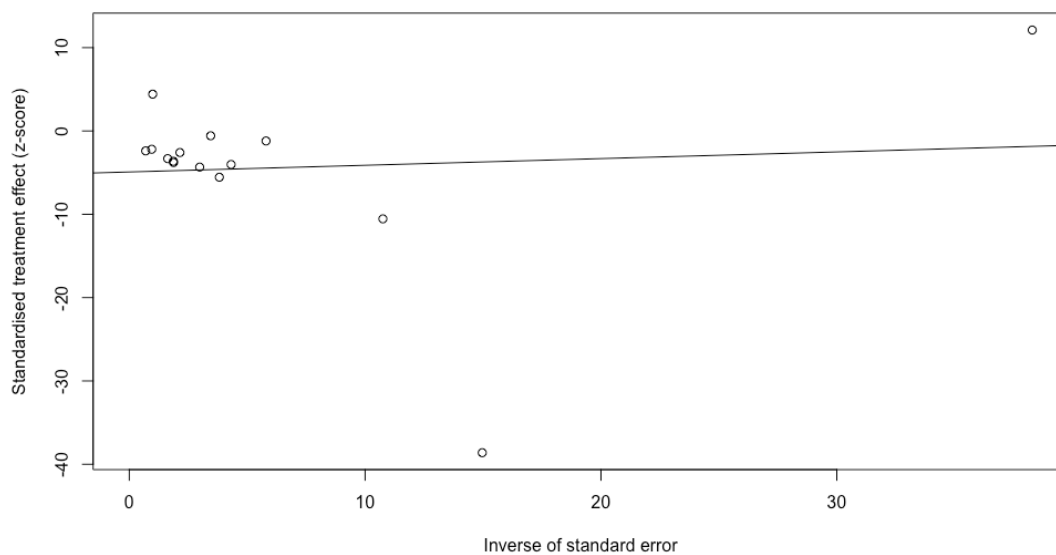
Supplementary Materials 7 Egger' Test for Asymmetry in Funnel Plot for Pooled Prevalence of Depression

Note: bias=-2.4337, t=-0.72, p>0.05

Supplementary Materials 8 Egger' Test for Asymmetry in Funnel Plot for Pooled Prevalence of Depression

Note: bias=-4.92, t=-1.43, p>0.05