

Supplement A

PRISMA checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Title
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Introduction (second to last paragraph)
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Introduction (last paragraph)
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Methods (eligibility criteria)
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Methods (first paragraph)
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Supplement C
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Methods (Identification and selection of studies)
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Methods (Data extraction)
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Methods (Data extraction)
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Methods (Data extraction)
Study risk of bias	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed	Methods (Risk)

Section and Topic	Item #	Checklist item	Location where item is reported
assessment		each study and whether they worked independently, and if applicable, details of automation tools used in the process.	of bias assessment)
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Methods (Data synthesis)
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Methods (Data synthesis)
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Methods (Data synthesis)
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Methods (Data synthesis)
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Methods (Data synthesis)
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Methods (Data synthesis)
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Methods (Data synthesis)
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	NA
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	NA
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Results (Selection and inclusion of studies) & Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	NA
Study characteristics	17	Cite each included study and present its characteristics.	Supplement E & Supplement F
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Supplement G
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Results (Differences in mental disorder

Section and Topic	Item #	Checklist item	Location where item is reported
			outcomes between DHH and hearing adults), Table 2 and Table 3
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	NA
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	NA
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	NA
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Results (Differences in mental disorder outcomes between DHH and hearing adults), Table 2 and Table 3
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	NA
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	NA
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Discussion (first two paragraphs)
	23b	Discuss any limitations of the evidence included in the review.	Discussion (fourth paragraph)
	23c	Discuss any limitations of the review processes used.	NA
	23d	Discuss implications of the results for practice, policy, and future research.	Discussion (fifth paragraph)
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Methods (first paragraph)

Section and Topic	Item #	Checklist item	Location where item is reported
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	NA
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Methods (first paragraph) & Supplement B
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Financial Support
Competing interests	26	Declare any competing interests of review authors.	Competing interests
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Availability of data and materials

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71. This work is licensed under CC BY 4.0. To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>

Supplement B

Amendments from the protocol

First, in the original protocol, we planned to assess the risk of bias in the included studies using the Newcastle-Ottawa Scale. However, upon recognizing that most of the studies were cross-sectional, we opted to use the CLARITY tool, which is better suited for evaluating the risk of bias in studies with various research designs.

Second, the protocol initially included working-age adults aged 18 to 67 years. We revised this range to 18 to 60 years for two reasons. First, studies with mean ages above 60 frequently included older adults with age-related hearing loss, a population for which mental health differences between DHH and hearing adults have already been systematically examined. Second, OECD data indicate that although employment among adults aged 55 and over has increased, labour market participation declines rapidly from age 60, with many individuals leaving the workforce well before reaching pension eligibility (OECD, 2025). Given these considerations, we set the upper age limit at 60.

Third, although not explicitly specified in the protocol, we excluded studies focusing exclusively on neurocognitive disorders, which were outside the intended scope of this review given its focus on a primarily working-age adult population.

Fourth, the original protocol did not specify any language restrictions. During full-text screening, five potentially eligible studies were identified that could not be assessed because they were written in Chinese, a language not understood by the authors.

Reference

OECD (2025) OECD Employment Outlook 2025: Can We Get Through the Demographic Crunch?

Paris. Available at <https://doi.org/10.1787/194a947b-en> (accessed 25 November 2025).

Supplement C

Searches

Ovid Medline Search Results – 13 December 2025

Search	Query	Results
#5	4 not ((exp Adolescent/ or exp Child/ or exp Infant/ or (adolescen* or child* or schoolchild* or infant* or girl* or boy or boys or teen or teens or teenager* or youth* or pediater* or paediatric* or puber*).ab,ti,kf.) not (exp Adult/ or (adult* or man or men or woman or women).ab,ti,kf.))	4,139
#4	1 and 2 and 3	5,522
#3	exp "Severity of Illness Index"/ or exp "Regression Analysis"/ or Morbidity/ or exp Prevalence/ or exp Incidence or ((rate* or validat* or diagnos*) adj3 (tool* or assess* or measur* or instrument* or survey* or questionnaire* or index or standard* or analys* or criteri*)).ab,ti,kf. or ("logistic regress*" or "regression analys*" or sampl* or prevalen* or inciden* or severit*).ab,ti,kf.	6,719,081
#2	exp "Mental Health"/ or exp "Mental Disorders"/ or exp "Anxiety"/ or exp "Self-Injurious Behavior"/ or exp "Depression"/ or exp "Psychopathology"/ or mental.ab,ti,kf. or psychiatric.ab,ti,kf. or depress*.ab,ti,kf. or anxiet*.ab,ti,kf. or "suicid*".ab,ti,kf. or agoraphobia.ab,ti,kf. or phobia.ab,ti,kf. or "obsessive compuls*".ab,ti,kf. or "anorexia nervos*".ab,ti,kf. or "bulimia nervos*".ab,ti,kf. or "binge-eat*".ab,ti,kf. or "eating disorder*".ab,ti,kf. or "bipolar disorder*".ab,ti,kf. or "manic disorder*".ab,ti,kf. or "personality disorder*".ab,ti,kf. or "psychotic disorder*".ab,ti,kf. or psychos*.ab,ti,kf. or schizo*.ab,ti,kf. or "sleep disorder*".ab,ti,kf. or "substance-related disorder*".ab,ti,kf. or "stress disorder*".ab,ti,kf. or "attention deficit".ab,ti,kf. or "disruptive behav*".ab,ti,kf. or "conduct disorder*".ab,ti,kf. or "mood disorder*".ab,ti,kf. or autism.ab,ti,kf. or asperger*.ab,ti,kf.	2,742,188
#1	exp "Hearing disorders"/ or exp "Persons With Hearing Impairments"/ or ((exp "Hearing"/) and (impair*.ab,ti,kf. or disorder*.ab,ti,kf. or disabled.ab,ti,kf. or loss*.ab,ti,kf. or defect*.ab,ti,kf. or damage.ab,ti,kf. or handicap*.ab,ti,kf. or function*.ab,ti,kf. or dysfunction*.ab,ti,kf.)) or ((hearing.ab,ti,kf.) adj3 (impair*.ab,ti,kf. or disorder*.ab,ti,kf. or disabled.ab,ti,kf. or loss*.ab,ti,kf. or defect*.ab,ti,kf. or damage.ab,ti,kf. or handicap*.ab,ti,kf. or function*.ab,ti,kf. or dysfunction*.ab,ti,kf.)) or "hard-of-hearing".ab,ti,kf. or deaf*.ab,ti,kf. or "d deaf*".ab,ti,kf. or "auditory rehab*".ab,ti,kf. or "auditory disab*".ab,ti,kf. or "auditory impair*".ab,ti,kf. or "auditory handicap*".ab,ti,kf. or "hypoacus*".ab,ti,kf. or exp "Hearing Aids"/ or exp "Correction of Hearing Impairment"/ or "hearing aid*".ab,ti,kf. or "hearing implant*".ab,ti,kf. or "hearing prosthes*".ab,ti,kf. or "hearing device*".ab,ti,kf. or "cochlear implant*".ab,ti,kf. or "cochlear	170,346

Search	Query	Results
	prothes* ".ab,ti,kf. or "cochlear device* ".ab,ti,kf. or (auditory.ab,ti,kf.) and (implant*.ab,ti,kf. or prothes*.ab,ti,kf.))	

Embase.com Search Results – 13 December 2025

Search	Query	Results
#6	#5 NOT ('conference abstract'/it OR 'conference review'/it) NOT 'clinical trial':dtype	11,888
#5	#4 NOT (('adolescent'/exp OR 'child'/exp OR (adolescen* OR child* OR schoolchild* OR infant* OR girl* OR boy OR boys OR teen OR teens OR teenager* OR youth* OR pediatr* OR paediatr* OR puber*):ab,ti,kw) NOT ('adult'/exp OR (adult* OR man OR men OR woman OR women):ab,ti,kw))	15,475
#4	#1 AND #2 AND #3	19,332
#3	'severity of illness index'/exp OR 'regression analysis'/exp OR 'morbidity'/de OR 'prevalence'/de OR 'incidence'/de OR ((rate* OR validat* OR diagnos*) NEAR/3 (tool* OR assess* OR measur* OR instrument* OR survey* OR questionnaire* OR index OR standard* OR analys* OR criteri*)):ab,ti,kw OR ("logistic regress*" or "regression analys*" or sampl* or prevalen* or inciden* or severit*):ab,ti,kw	9,549,345
#2	'mental health'/exp OR 'mental disease'/exp OR 'anxiety'/exp OR 'automutilation'/exp OR 'suicidal behavior'/exp OR mental:ab,ti,kw OR psychiatric:ab,ti,kw OR depress*:ab,ti,kw OR anxiet*:ab,ti,kw OR "suicid*":ab,ti,kw OR agoraphobia:ab,ti,kw OR phobia:ab,ti,kw OR "obsessive compuls*":ab,ti,kw OR "anorexia nervos*":ab,ti,kw OR "bulimia nervos*":ab,ti,kw OR "binge-eat*":ab,ti,kw OR "eating disorder*":ab,ti,kw OR "bipolar disorder*":ab,ti,kw OR "manic disorder*":ab,ti,kw OR "personality disorder*":ab,ti,kw OR "psychotic disorder*":ab,ti,kw OR psychos*:ab,ti,kw OR schizo*:ab,ti,kw OR "sleep disorder*":ab,ti,kw OR "substance-related disorder*":ab,ti,kw OR "stress disorder*":ab,ti,kw OR "attention deficit":ab,ti,kw OR "disruptive behav*":ab,ti,kw OR "conduct disorder*":ab,ti,kw OR "mood disorder*":ab,ti,kw OR autism:ab,ti,kw OR asperger*:ab,ti,kw	4,393,608
#1	'hearing disorder'/exp OR 'hearing impaired person'/exp OR ('hearing'/exp AND (impair*:ab,ti,kw OR disorder*:ab,ti,kw OR disabled:ab,ti,kw OR loss*:ab,ti,kw OR defect*:ab,ti,kw OR damage:ab,ti,kw OR handicap*:ab,ti,kw OR function*:ab,ti,kw OR dysfunction*:ab,ti,kw)) OR ((hearing) NEAR/3 (impair* OR disorder* OR disabled OR loss* OR defect* OR damage OR handicap* OR function* OR dysfunction*)):ab,ti,kw OR "hard-of-hearing":ab,ti,kw OR deaf*:ab,ti,kw OR "d deaf*":ab,ti,kw OR "auditory rehab*":ab,ti,kw OR "auditory disab*":ab,ti,kw OR "auditory impair*":ab,ti,kw OR "auditory handicap*":ab,ti,kw OR	283,181

Search	Query	Results
	"hyoacus*":ab,ti,kw OR 'hearing aid'/exp OR 'auditory rehabilitation'/exp OR 'auditory implant'/exp OR "hearing aid*":ab,ti,kw OR "hearing implant*":ab,ti,kw OR "hearing prothes*":ab,ti,kw OR "hearing device*":ab,ti,kw OR "cochlear implant*":ab,ti,kw OR "cochlear prothes*":ab,ti,kw OR "cochlear device*":ab,ti,kw OR (auditory:ab,ti,kw AND (implant*:ab,ti,kw OR prothes*:ab,ti,kw))	

APA PsycInfo (Ebsco) Search Results – 13 December 2025

Search	Query	Results
S5	S4 NOT ((TI ((adolesc* OR child* OR schoolchild* OR infant* OR girl* OR boy OR boys OR teen OR teens OR teenager* OR youth* OR pedi* OR paediatr* OR puber*) NOT (adult* OR man OR men OR woman OR women))) OR (AB ((adolesc* OR child* OR schoolchild* OR infant* OR girl* OR boy OR boys OR teen OR teens OR teenager* OR youth* OR pedi* OR paediatr* OR puber*) NOT (adult* OR man OR men OR woman OR women))) OR (KW ((adolesc* OR child* OR schoolchild* OR infant* OR girl* OR boy OR boys OR teen OR teens OR teenager* OR youth* OR pedi* OR paediatr* OR puber*) NOT (adult* OR man OR men OR woman OR women))))	1,196
S4	S1 AND S2 AND S3	1,678
S3	DE "Statistical Regression" OR DE "Logistic Regression" OR DE "Severity (Disorders)" OR DE "Morbidity" OR TI (((rate*" OR "validat*" OR "diagnos*") N3 ("tool*" OR "assess*" OR "measur*" OR "instrument*" OR "survey*" OR "questionnaire*" OR "index" OR "standard*" OR "analys*" OR "criteri*")) OR "logistic regress*" OR "regression analys*" OR "sampl*" OR "prevalen*" OR "inciden*" OR "severit*") OR AB (((rate*" OR "validat*" OR "diagnos*") N3 ("tool*" OR "assess*" OR "measur*" OR "instrument*" OR "survey*" OR "questionnaire*" OR "index" OR "standard*" OR "analys*" OR "criteri*")) OR "logistic regress*" OR "regression analys*" OR "sampl*" OR "prevalen*" OR "inciden*" OR "severit*") OR KW (((rate*" OR "validat*" OR "diagnos*") N3 ("tool*" OR "assess*" OR "measur*" OR "instrument*" OR "survey*" OR "questionnaire*" OR "index" OR "standard*" OR "analys*" OR "criteri*")) OR "logistic regress*" OR "regression analys*" OR "sampl*" OR "prevalen*" OR "inciden*" OR "severit*")	1,164,678
S2	DE "Mental Health" OR DE "Mental Disorders" OR DE "Affective Disorders" OR DE "Major Depression" OR DE "Anxiety Disorders" OR DE "Anxiety" OR DE "Behavior Disorders" OR DE "Bipolar Disorder" OR DE "Borderline States" OR DE "Chronic Mental Illness" OR DE "Eating Disorders" OR DE "Anorexia Nervosa" OR DE "Binge Eating Disorder" OR DE "Bulimia" OR DE "Mental Disorders due to General Medical Conditions" OR DE "Neurosis"	1,556,966

Search	Query	Results
	<p>OR DE "Obsessive Compulsive Disorder" OR DE "Personality Disorders" OR DE "Psychosis" OR DE "Serious Mental Illness" OR DE "Sleep Wake Disorders" OR DE "Somatoform Disorders" OR DE "Stress and Trauma Related Disorders" OR DE "Substance Related and Addictive Disorders" OR DE "Attention Deficit Disorder" OR DE "Attention Deficit Disorder with Hyperactivity" OR DE "Suicide" OR DE "Affective Psychosis" OR DE "Schizophrenia" OR DE "Schizoaffective Disorder" OR DE "Schizophrenia (Disorganized Type)" OR DE "Schizophreniform Disorder" OR DE "Undifferentiated Schizophrenia" OR DE "Substance Induced Psychotic Disorders" OR DE "Alcohol Induced Psychotic Disorders" OR DE "Disruptive Behavior Disorders" OR DE "Conduct Disorder" OR DE "Oppositional Defiant Disorder" OR DE "Autism Spectrum Disorders" OR TI ("mental" OR "psychiatric" OR "depress*" OR "anxiet*" OR "suicid*" OR "agoraphobia" OR "phobia" OR "obsessive compuls*" OR "anorexia nervos*" OR "bulimia nervos*" OR "binge-eat*" OR "eating disorder*" OR "bipolar disorder*" OR "manic disorder*" OR "personality disorder*" OR "psychotic disorder*" OR "psychos*" OR "schizo*" OR "sleep disorder*" OR "substance-related disorder*" OR "stress disorder*" OR "attention deficit" OR "disruptive behav*" OR "conduct disorder*" OR "mood disorder*" OR "autism" OR "asperger*") OR AB ("mental" OR "psychiatric" OR "depress*" OR "anxiet*" OR "suicid*" OR "agoraphobia" OR "phobia" OR "obsessive compuls*" OR "anorexia nervos*" OR "bulimia nervos*" OR "binge-eat*" OR "eating disorder*" OR "bipolar disorder*" OR "manic disorder*" OR "personality disorder*" OR "psychotic disorder*" OR "psychos*" OR "schizo*" OR "sleep disorder*" OR "substance-related disorder*" OR "stress disorder*" OR "attention deficit" OR "disruptive behav*" OR "conduct disorder*" OR "mood disorder*" OR "autism" OR "asperger*") OR KW ("mental" OR "psychiatric" OR "depress*" OR "anxiet*" OR "suicid*" OR "agoraphobia" OR "phobia" OR "obsessive compuls*" OR "anorexia nervos*" OR "bulimia nervos*" OR "binge-eat*" OR "eating disorder*" OR "bipolar disorder*" OR "manic disorder*" OR "personality disorder*" OR "psychotic disorder*" OR "psychos*" OR "schizo*" OR "sleep disorder*" OR "substance-related disorder*" OR "stress disorder*" OR "attention deficit" OR "disruptive behav*" OR "conduct disorder*" OR "mood disorder*" OR "autism" OR "asperger*")</p>	
S1	<p>DE "Hearing Disorders" OR DE "Hearing Loss" OR DE "Deafness" OR DE "Hearing Aids" OR DE "Cochlear Implants" OR TI (((("hearing") N3 ("impair*" OR "disorder*" OR "disabled" OR "loss*" OR "defect*" OR "damage" OR "handicap*" OR "function*" OR "dysfunction*"))) OR "hard-of-hearing" OR "deaf*" OR "d deaf*" OR "auditory rehab*" OR "auditory disab*" OR "auditory impair*" OR "auditory handicap*" OR "hypoacus*" OR "hearing aid*" OR "hearing implant*" OR "hearing prothes*" OR "hearing device*" OR "cochlear implant*" OR "cochlear prothes*" OR "cochlear device*" OR (("auditory") AND ("implant*" OR "prothes*"))) OR AB (((("hearing") N3 ("impair*" OR "disorder*" OR "loss*" OR "defect*" OR "damage" OR "handicap*" OR "function*" OR "dysfunction*"))) OR "hard-of-hearing" OR "deaf*" OR "d deaf*" OR "auditory rehab*" OR "auditory disab*" OR "auditory impair*" OR "auditory handicap*" OR "hypoacus*" OR "hearing aid*" OR "hearing implant*" OR "hearing prothes*" OR "hearing device*" OR "cochlear implant*" OR "cochlear prothes*" OR "cochlear device*" OR (("auditory") AND ("implant*" OR "prothes*"))) OR AB (((("hearing") N3 ("impair*" OR "disorder*" OR "loss*" OR "defect*" OR "damage" OR "handicap*" OR "function*" OR "dysfunction*"))) OR "hard-of-hearing" OR "deaf*" OR "d deaf*" OR "auditory rehab*" OR "auditory disab*" OR "auditory impair*" OR "auditory handicap*" OR "hypoacus*" OR "hearing aid*" OR "hearing implant*" OR "hearing prothes*" OR "hearing device*" OR "cochlear implant*" OR "cochlear prothes*" OR "cochlear device*" OR (("auditory") AND ("implant*" OR "prothes*"))))</p>	40,004

Search	Query	Results
	OR "disabled" OR "loss*" OR "defect*" OR "damage" OR "handicap*" OR "function*" OR "dysfunction*") OR "hard-of-hearing" OR "deaf*" OR "d deaf*" OR "auditory rehab*" OR "auditory disab*" OR "auditory impair*" OR "auditory handicap*" OR "hypoacus*" OR "hearing aid*" OR "hearing implant*" OR "hearing prosthes*" OR "hearing device*" OR "cochlear implant*" OR "cochlear prosthes*" OR "cochlear device*" OR (("auditory") AND ("implant*" OR "prosthes*"))) OR KW (("hearing") N3 ("impair*" OR "disorder*" OR "disabled" OR "loss*" OR "defect*" OR "damage" OR "handicap*" OR "function*" OR "dysfunction*") OR "hard-of-hearing" OR "deaf*" OR "d deaf*" OR "auditory rehab*" OR "auditory disab*" OR "auditory impair*" OR "auditory handicap*" OR "hypoacus*" OR "hearing aid*" OR "hearing implant*" OR "hearing prosthes*" OR "hearing device*" OR "cochlear implant*" OR "cochlear prosthes*" OR "cochlear device*" OR (("auditory") AND ("implant*" OR "prosthes*"))))	

Web of Science (Core Collection) Search Results – 13 December 2025

Search	Query	Results
#5	#4 NOT TS=(("adolescen*" OR "child*" OR "schoolchild*" OR "infant*" OR "girl*" OR "boy" OR "boys" OR "teen" OR "teens" OR "teenager*" OR "youth*" OR "pediatr*" OR "paediatr*" OR "puber*") NOT ("adult*" OR "man" OR "men" OR "woman" OR "women"))	3,297
#4	#1 AND #2 AND #3	4,371
#3	TS=(((("rate*" OR "validat*" OR "diagnos*") NEAR/3 ("tool*" OR "assess*" OR "measur*" OR "instrument*" OR "survey*" OR "questionnaire*" OR "index" OR "standard*" OR "analys*" OR "criteri*")) OR "logistic regress*" OR "regression analys*" OR "sampl*" OR "prevalen*" OR "inciden*" OR "severit*"))	9,882,765
#2	TS=(("mental" OR "psychiatric" OR "depress*" OR "anxiet*" OR "suicid*" OR "agoraphobia" OR "phobia" OR "obsessive compuls*" OR "anorexia nervos*" OR "bulimia nervos*" OR "binge-eat*" OR "eating disorder*" OR "bipolar disorder*" OR "manic disorder*" OR "personality disorder*" OR "psychotic disorder*" OR "psychos*" OR "schizo*" OR "sleep disorder*" OR "substance-related disorder*" OR "stress disorder*" OR "attention deficit" OR "disruptive behav*" OR "conduct disorder*" OR "mood disorder*" OR "autism" OR "asperger*"))	2,652,147
#1	TS=(((("hearing") NEAR/3 ("impair*" OR "disorder*" OR "disabled" OR "loss*" OR "defect*" OR "damage" OR "handicap*" OR "function*" OR "dysfunction*")) OR "hard-of-hearing" OR "deaf*" OR "d deaf*" OR "auditory rehab*" OR "auditory disab*" OR "auditory impair*" OR "auditory handicap*"))	149,979

Search	Query	Results
	<p>OR "hypoacus*" OR "hearing aid*" OR "hearing implant*" OR "hearing prothes*" OR "hearing device*" OR "cochlear implant*" OR "cochlear prothes*" OR "cochlear device*" OR ("auditory") AND ("implant*" OR "prothes*"))</p>	

Supplement D

CLARITY tool explanation.

1. Is the source population representative of the general population?

Low – selection of target population from a representative population roster such as a national population registry

High – hospital-based patient records, undefined source population, volunteer recruitment

2. Was selection of exposed and non-exposed cohorts drawn from the same population?

Low – exposed and unexposed are drawn from same administrative database of patients presenting at same points of care over the same time frame

High – exposed and unexposed presenting to different points of care or over a different time frame

3. Can we be confident in the assessment of exposure?

Low – secure record (surgery records, pharmacy records); repeated interview or other ascertainment of current exposure

High – uncertain how exposure information obtained

4. Can we be confident in the assessment of the outcome?

Low – independent blind assessment, record linkage, validated instrument
High – clinical interviews, chart diagnosis, unvalidated or ad hoc instrument

5. Did the design or analysis account for important confounding factors?

Low – comprehensive matching or adjustments for all plausible confounding factors
High – matching or adjustments for few or no confounding factors

6. Can we be confident in the assessment of no confounding factors?

Low – participant interview, self-completed survey, chart review with reproducibility, database with documented accuracy

High – database with no information on accuracy of confounding factors

7. Missing data

Low – sufficient response proportion (>50%) with little missing data for variables (<15%)

High – low response proportion (<50%) and substantial missing data for variables (>15%)

Supplement E

References of the studies included in the systematic review.

- Ahrenfeldt LJ, Moller S, Nielsen DL, Kjaer NK, Sondergaard J and Lykkegaard J** (2024) Sensory impairments and depressive symptoms in Europe: a cross-national cohort study. *Aging & Mental Health* **28**(12), 1591-1599. <https://doi.org/10.1080/13607863.2024.2345790>.
- Akobirshoev I, McKee MM, Reif S, Adams RS, Li FS and Mitra M** (2022) Opioid use disorder-related emergency department visits among deaf or hard of hearing adults in the United States. *Disability and Health Journal* **15**(2S), 101291. <https://doi.org/10.1016/j.dhjo.2022.101291>.
- Akram B and Batool M** (2020) Suicidal Behavior Among the Youth With and Without Sensory Impairment: Prevalence and Comparison. *Omega* **81**(3), 393-403. <https://doi.org/10.1177/0030222818779711>.
- Aram J, Dallal CM, Cosgrove C, Arria A, Liu H and Slopen N** (2024) The risk of drug overdose death among adults with select types of disabilities in the United States – A longitudinal study using nationally representative data. *Preventive Medicine* **178**. <https://doi.org/10.1016/j.ypmed.2023.107799>.
- Awad M, Abdalla I, Jara SM, Huang TC, Adams ME and Choi JS** (2024) Association of Sleep Characteristics with Tinnitus and Hearing Loss. *OTO open* **8**(1), e117. <https://doi.org/10.1002/oto2.117>.
- Bakir S, Penbegul N, Gun R, Yorgancilar E, Kinis V, Ozbay M, Atar M and Gunes M** (2013) Relationship between hearing loss and sexual dysfunction. *The Journal of Laryngology and Otology* **127**(2), 142-147. <https://doi.org/10.1017/S0022215112002952>.
- Bernard A, Weiss S, Rahman M, Ulin SS, D'Souza C, Salgat A, Panzer K, Stein JD, Meade MA, McKee MM and Ehrlich JR** (2022) The Impact of COVID-19 and Pandemic Mitigation Measures on Persons With Sensory Impairment. *American Journal of Ophthalmology* **234**, 49-58. <https://doi.org/10.1016/j.ajo.2021.06.019>.
- Bigelow RT, Reed NS, Brewster KK, Huang A, Rebok G, Rutherford BR and Lin FR** (2020) Association of Hearing Loss With Psychological Distress and Utilization of Mental Health Services Among Adults in the United States. *JAMA Network Open* **3**(7), e2010986. <https://doi.org/10.1001/jamanetworkopen.2020.10986>.
- Bikbov MM, Gilmanshin TR, Kazakbaeva GM, Iakupova EM, Panda-Jonas S, Zainullin RM, Fakhretdinova AA, Tuliakova AM, Gilemzianova LI, Khakimov DA, Miniازهva LA and Jonas JB** (2023) Prevalence of depression, anxiety and suicidal ideas and associated factors, in particular sensory impairments, in a population of Bashkortostan in Russia. *Scientific Reports* **13**(1), 17256. <https://doi.org/10.1038/s41598-023-44561-1>.
- Bizjak MC** (2009) Understanding Emotional Health and Psychological Adjustment in Students With or Without a Specific Hearing Deficiency. *Journal of Developmental and Physical Disabilities* **21**(3), 213-224. <https://doi.org/10.1007/s10882-009-9136-x>.
- Choi JW and Han E** (2021) Risk of new-onset depressive disorders after hearing impairment in adults: A nationwide retrospective cohort study. *Psychiatry Research* **295**, 113351. <https://doi.org/10.1016/j.psychres.2020.113351>.

- Ciesla K, Lewandowska M and Skarzynski H** (2016) Health-related quality of life and mental distress in patients with partial deafness: preliminary findings. *European Archives of Oto-Rhino-Laryngology* **273**(3), 767-776. <https://doi.org/10.1007/s00405-015-3713-7>.
- Cormier K, Brennan C and Sharma A** (2024) Hearing loss and psychosocial outcomes: Influences of social emotional aspects and personality. *PLoS One* **19**(6), e0304428. <https://doi.org/10.1371/journal.pone.0304428>.
- Cui Y, Wu T, Du H and Zhang W** (2025) Exploring the association between hearing status and suicidal ideation among U.S. adults: An observational study. *General hospital psychiatry* **92**, 52-59. <https://doi.org/10.1016/j.genhosppsych.2024.12.014>.
- Dammeyer J and Chapman M** (2017) Prevalence and characteristics of self-reported physical and mental disorders among adults with hearing loss in Denmark: a national survey. *Social Psychiatry and Psychiatric Epidemiology* **52**(7), 807-813. <https://doi.org/10.1007/s00127-017-1397-6>.
- Del Vecchio V, Tricarico L, Pisani A, Serra N, D'Errico D, De Corso E, Rea T, Picciotti PM, Laria C, Manna G, Franze A, Malesci R and Fetoni AR** (2023) Vascular Factors in Patients with Midlife Sensorineural Hearing Loss and the Progression to Mild Cognitive Impairment. *Medicina (Kaunas, Lithuania)* **59**(3), 481. <https://doi.org/10.3390/medicina59030481>.
- Fellinger J, Holzinger D, Dobner U, Gerich J, Lehner R, Lenz G and Goldberg D** (2005) Mental distress and quality of life in a deaf population. *Social Psychiatry and Psychiatric Epidemiology* **40**(9), 737-742. <https://doi.org/10.1007/s00127-005-0936-8>.
- Fors A, Abel KM, Wicks S, Magnusson C and Dalman C** (2013) Hearing and speech impairment at age 4 and risk of later non-affective psychosis. *Psychological Medicine* **43**(10), 2067-2076. <https://doi.org/10.1017/S0033291712002644>.
- Fox ML, James TG and Barnett SL** (2020) Suicidal Behaviors and Help-Seeking Attitudes Among Deaf and Hard-of-Hearing College Students. *Suicide and Life-Threatening Behavior* **50**(2), 387-396. <https://doi.org/10.1111/sltb.12595>.
- Gao J, Zhu D, Deal JA, Lin FR and He P** (2022) Hearing impairment, family financial support, and depressive symptoms among Chinese middle-aged and older adults. *International Journal of Geriatric Psychiatry* **37**(9), 1-10. <https://doi.org/10.1002/gps.5788>.
- Genc GA, Muluk NB and Belgin E** (2013) The effects of tinnitus and/or hearing loss on the Symptom Checklist-90-Revised test. *Auris Nasus Larynx* **40**(2), 154-161. <https://doi.org/10.1016/j.anl.2012.06.002>.
- Grewal M and Golub J** (2023) Association Between Hearing Loss and Multiple Negative Emotional States in the US Hispanic Population. *Otolaryngology–Head and Neck Surgery* **168**(5), 1047-1053. <https://doi.org/10.1002/ohn.208>.
- Hou X, Yang C, Wan M and Yang L** (2025) When love becomes a hurt: Parental overprotection and suicide risk among deaf and hearing college students. *Current Psychology*, 18714-18724. <https://doi.org/10.1007/s12144-025-08453-z>.
- Hsu WT, Hsu CC, Wen MH, Lin HC, Tsai HT, Su P, Sun CT, Lin CL, Hsu CY, Chang KH and Hsu YC** (2016) Increased risk of depression in patients with acquired sensory hearing loss: A 12-year follow-up study. *Medicine (Baltimore)* **95**(44), e5312. <https://doi.org/10.1097/MD.0000000000005312>.

- Idstad M, Tambs K, Aarhus L and Engdahl BL** (2019) Childhood sensorineural hearing loss and adult mental health up to 43 years later: results from the HUNT study. *BMC Public Health* **19**(1), 168. <https://doi.org/10.1186/s12889-019-6449-2>.
- Keidser G, Seeto M, Rudner M, Hygge S and Ronnberg J** (2015) On the relationship between functional hearing and depression. *International Journal of Audiology* **54**(10), 653-664. <https://doi.org/10.3109/14992027.2015.1046503>.
- Kushalnagar P, Bruce S, Sutton T and Leigh IW** (2017) Retrospective Basic Parent-Child Communication Difficulties and Risk of Depression in Deaf Adults. *Journal of Developmental and Physical Disabilities* **29**(1), 25-34. <https://doi.org/10.1007/s10882-016-9501-5>.
- Kushalnagar P, Reesman J, Holcomb T and Ryan C** (2019) Prevalence of Anxiety or Depression Diagnosis in Deaf Adults. *Journal of Deaf Studies and Deaf Education* **24**(4), 378-385. <https://doi.org/10.1093/deafed/enz017>.
- Lee DJ and Gomez-Marin O** (1997) Major depressive disorder, depressive symptoms, and bilateral hearing loss in hispanic adults. *Journal of Affective Disorders* **44**(2-3), 189-195. [https://doi.org/10.1016/s0165-0327\(97\)00044-x](https://doi.org/10.1016/s0165-0327(97)00044-x).
- Leigh IW, Robins CJ, Welkowitz J and Bond RN** (1989) Toward greater understanding of depression in deaf individuals. *American Annals of the Deaf* **134**(4), 249-254. <https://doi.org/10.1353/aad.2012.0662>.
- Li CM, Zhang X, Hoffman HJ, Cotch MF, Themann CL and Wilson MR** (2014) Hearing impairment associated with depression in US adults, National Health and Nutrition Examination Survey 2005-2010. *JAMA Otolaryngology – Head & Neck Surgery* **140**(4), 293-302. <https://doi.org/10.1001/jamaoto.2014.42>.
- Linszen MMJ, van Zanten GA, Teunisse RJ, Brouwer RM, Scheltens P and Sommer IE** (2019) Auditory hallucinations in adults with hearing impairment: a large prevalence study. *Psychological Medicine* **49**(1), 132-139. <https://doi.org/10.1017/S0033291718000594>.
- MacGregor AJ, Joseph AR and Dougherty AL** (2023) Self-Reported Hearing Aid Requirements among U.S. Military Personnel and the Association with Probable Posttraumatic Stress Disorder. *Journal of the American Academy of Audiology* **34**(7), 170-175. <https://doi.org/10.1055/s-0044-1789601>.
- Marlow NM, Xie Z, Tanner R, Jo A and Kirby AV** (2021) Association Between Disability and Suicide-Related Outcomes Among U.S. Adults. *American Journal of Preventive Medicine* **61**(6), 852-862. <https://doi.org/10.1016/j.amepre.2021.05.035>.
- McClintock HF, Hinson-Enslin AM and Nahhas RW** (2023) Depression as a mediator of the association between vision and/or hearing loss and recent substance use: Nhanes 2013–2018. *Disability and Health Journal*, 101575. <https://doi.org/10.1016/j.dhjo.2023.101575>.
- McDermott S, Moran R, Platt T, Issac T, Wood H and Dasari S** (2005) Depression in adults with disabilities, in primary care. *Disability and Rehabilitation* **27**(3), 117-123. <https://doi.org/10.1080/09638280400007380>.
- McKee MM, Meade MA, Zazove P, Stewart HJ, Jannausch ML and Ilgen MA** (2019) The Relationship Between Hearing Loss and Substance Use Disorders Among Adults in the U.S. *American Journal of Preventive Medicine* **56**(4), 586-590. <https://doi.org/10.1016/j.amepre.2018.10.026>.

- Meher T and Gharge S** (2022) Visual and hearing impairment and their association with depression among middle-aged and older individuals in India: Evidence from a cross-sectional study. *International Journal of Geriatric Psychiatry* **37**(5), 1-12. <https://doi.org/10.1002/gps.5716>.
- Merten N, Schultz AA, Walsh MC, van Landingham SW, Peppard PE, Ryff CDS and Malecki KC** (2023) Psychological distress and well-being among sensory impaired individuals during COVID-19 lockdown measures. *Annals of Epidemiology* **79**, 19-23. <https://doi.org/10.1016/j.annepidem.2023.01.002>.
- Park EY, Nelson-Bakkum ER, Schultz AA and Dillard LK** (2024) Self-reported hearing loss and health during a pandemic: Findings from a cross-sectional analysis using a 2021 household survey. *Disability and Health Journal*, 101706. <https://doi.org/10.1016/j.dhjo.2024.101706>.
- Parker FNH, Fear NT, Stevelink SAM and Rafferty L** (2022) Self-reported auditory problems are associated with adverse mental health outcomes and alcohol misuse in the UK Armed Forces. *Social Psychiatry and Psychiatric Epidemiology* **57**(3), 563-573. <https://doi.org/10.1007/s00127-021-02169-8>.
- Parker M, Duran B, Rhew I, Magarati M, Larimer M and Donovan D** (2021) Risk and Protective Factors Associated with Moderate and Acute Suicidal Ideation among a National Sample of Tribal College and University Students 2015-2016. *The Journal of Rural Health* **37**(3), 545-553. <https://doi.org/10.1111/jrh.12510>.
- Peñacoba C, Garvi D, Gomez L and Alvarez A** (2020) Psychological Well-Being, Emotional Intelligence, and Emotional Symptoms in Deaf Adults. *American Annals of the Deaf* **165**(4), 436-452. <https://doi.org/10.1353/aad.2020.0029>.
- Pojatić D and Degmecic D** (2019) Symptoms of Anxiety, Depression and Attitudes Toward Justice in the World in a Sample of Deaf and Blind Persons in Osijek Baranja Region. *Socijalna Psihijatrija* **47**(2), 168-184. <https://doi.org/10.24869/spsih.2019.168>.
- Reavis KM, Snowden JM, Henry JA, Gallun FJ, Lewis MS and Carlson KF** (2021) Blast exposure and self-reported hearing difficulty in service members and veterans who have normal pure-tone hearing sensitivity: The mediating role of posttraumatic stress disorder. *Journal of Speech, Language, and Hearing Research* **64**(11), 4458-4467. https://doi.org/10.1044/2021_jslhr-20-00687.
- Saperstein AM, Meyler S and Medalia A** (2023) Hearing Loss Among People With Schizophrenia: Implications for Clinical Practice. *Psychiatric Services* **74**(5), 543-546. <https://doi.org/10.1176/appi.ps.20220226>.
- Schenkel LS, Rothman-Marshall G, Schlehofer DA, Towne TL, Burnash DL and Priddy BM** (2014) Child maltreatment and trauma exposure among deaf and hard of hearing young adults. *Child Abuse & Neglect* **38**(10), 1581-1589. <https://doi.org/10.1016/j.chiabu.2014.04.010>.
- Scinicariello F, Przybyla J, Carroll Y, Eichwald J, Decker J and Breyse PN** (2019) Age and sex differences in hearing loss association with depressive symptoms: analyses of NHANES 2011-2012. *Psychological Medicine* **49**(6), 962-968. <https://doi.org/10.1017/S0033291718001617>.
- Shin HY and Hwang HJ** (2017) Mental Health of the People with Hearing Impairment in Korea: A Population-Based Cross-Sectional Study. *Korean Journal of Family Medicine* **38**(2), 57-63. <https://doi.org/10.4082/kjfm.2017.38.2.57>.

- Shiue I** (2016) Chronic diseases and life events accounted for 2-18 % population attributable risks for adult hearing loss: UK Adult Psychiatric Morbidity Survey, 2007. *European Archives of Oto-Rhino-Laryngology* **273**(1), 93-103. <https://doi.org/10.1007/s00405-015-3504-1>.
- Stam M, Smit JH, Twisk JW, Lemke U, Smits C, Festen JM and Kramer SE** (2016) Change in Psychosocial Health Status Over 5 Years in Relation to Adults' Hearing Ability in Noise. *Ear and Hearing* **37**(6), 680-689. <https://doi.org/10.1097/AUD.0000000000000332>.
- Stefanis N, Thewissen V, Bakoula C, van Os J and Myin-Germeys I** (2006) Hearing impairment and psychosis: a replication in a cohort of young adults. *Schizophrenia Research* **85**(1-3), 266-272. <https://doi.org/10.1016/j.schres.2006.03.036>.
- Suzuki J, Kobayashi Y, Takahashi H, Tozuka H, Takai S, Ikeda R, Tabuchi T and Katori Y** (2025) Relationship between Subjective Hearing Loss and Work-related and Somatic Issues in the Working-age Population: A Large-scale Internet-based Cross-sectional Study. *JMA journal* **8**(3), 753-765. <https://doi.org/10.31662/jmaj.2024-0430>.
- Test T, Canfi A, Eyal A, Shoam-Vardi I and Sheiner EK** (2011) The Influence of Hearing Impairment on Sleep Quality Among Workers Exposed to Harmful Noise. *Sleep* **34**(1), 25-30. [https://doi.org/DOI 10.1093/sleep/34.1.25](https://doi.org/DOI%2010.1093/sleep/34.1.25).
- Thewissen V, Myin-Germeys I, Bentall R, de Graaf R, Vollebergh W and van Os J** (2005) Hearing impairment and psychosis revisited. *Schizophrenia Research* **76**(1), 99-103. <https://doi.org/10.1016/j.schres.2004.10.013>.
- Tonelli M, Wiebe N, Lunney M, Donald M, Howarth T, Evans J, Klarenbach SW, Nicholas D, Boulton T, Thompson S, Schick Makaroff K, Manns B and Hemmelgarn B** (2023) Associations between hearing loss and clinical outcomes: population-based cohort study. *eClinicalMedicine* **61**, 102068. <https://doi.org/10.1016/j.eclinm.2023.102068>.
- Tremblay KL, Pinto A, Fischer ME, Klein BE, Klein R, Levy S, Tweed TS and Cruickshanks KJ** (2015) Self-Reported Hearing Difficulties Among Adults With Normal Audiograms: The Beaver Dam Offspring Study. *Ear and Hearing* **36**(6), e290-299. <https://doi.org/10.1097/AUD.0000000000000195>.
- van der Werf M, Thewissen V, Dominguez MD, Lieb R, Wittchen H and van Os J** (2011) Adolescent development of psychosis as an outcome of hearing impairment: a 10-year longitudinal study. *Psychological Medicine* **41**(3), 477-485. <https://doi.org/10.1017/S0033291710000978>.
- Viertio S, Perala J, Saarni S, Koskinen S and Suvisaari J** (2014) Hearing loss in persons with psychotic disorder--findings from a population-based survey. *Schizophrenia Research* **159**(2-3), 309-311. <https://doi.org/10.1016/j.schres.2014.08.016>.
- Wallace S, Mactaggart I, Banks LM, Polack S and Kuper H** (2020) Association of anxiety and depression with physical and sensory functional difficulties in adults in five population-based surveys in low and middle-income countries. *PLoS One* **15**(6), e0231563. <https://doi.org/10.1371/journal.pone.0231563>.

Study title and author year	Condition	Type of outcome	Method	Recruitment	Country	Study group (N)	Type of experimental test	Testing group (N)	Age range of reported N (SD)	Gender sex distribution (%)	Language used by DSM	Testing device	Item labels or other language acquisition	Timeline	Education Data	Question/Messure	Analysis	Language	Other measures	Other measures	Result / effect size / statistic	Risk of Bias	
Verdeli, 2014	Psychotic disorders	Prevalence	Case-control	National representative survey	Ethiopia	Impaired or hearing (2208) or deaf (18 388) = 2186 N 2087 = 7% Concomitant = 198, hearing impairment = 228, deafness = 758	Screening questionnaire, self-report questionnaire (SQ)	100	<20	NA	NA	Participants asked their hearing aids during the interview	NA	NA	NA	SDC Visual aid cards	Cable sets	none	None	None	Mask	No difference	Lower
Verdeli, 2010	Depressive Anxiety	Prevalence	Case-control	Population-based sampling regional / district	Comoros, Chad, India, Maldives, Nepal	Functional or difficulty hearing been when using hearing aids (Comoros, N = 52; Chad, N = 152; India, N = 80; Maldives, N = 24; Nepal, N = 46)	Self-report	People without functional hearing difficulties or worse difficulty (Comoros, N = 152; Chad, N = 152; India, N = 80; Maldives, N = 24; Nepal, N = 46)	Comoros = 18 to 64 (24.5) Chad = 18 to 64 (24.5) India = 18 to 64 (24.5) Maldives = 18 to 64 (24.5) Nepal = 18 to 64 (24.5)	Comoros = 48.4% Chad = 47.3% India = 47.3% Maldives = 47.3% Nepal = 47.3%	NA	Comoros = 2.2 (1% used hearing aids, hearing 100% and used hearing aids) Chad = 2.2 (1% used hearing aids, hearing 100% and used hearing aids) India = 2.2 (1% used hearing aids, hearing 100% and used hearing aids) Maldives = 2.2 (1% used hearing aids, hearing 100% and used hearing aids) Nepal = 2.2 (1% used hearing aids, hearing 100% and used hearing aids)	NA	NA	NA	Revised Washington Group Extended Question Set on Functioning Questionnaire	Multi-linear regression analysis	Age and sex	None	None	Mask	No difference	Lower

Supplement G

Risk of bias of studies included in the systematic review

Study First author, year (<i>outcome</i>)	Domain 1 Represent- ativeness	Domain 2 Match exposed non- exposed	Domain 3 Assessment of exposure	Domain 4 Assessment of the outcome	Domain 5 Confoun- ding	Domain 6 Assessment of confounding	Domain 7 Missing data	Number of Low risk domains
Ahrenfeldt, 2024	Low	Low	High	Low	Low	Low	High	(5/7)
Akobirshoev, 2022 (<i>SUD-opiod</i>)	High	Low	Low	Low	Low	Low	Low	(6/7)
Akobirshoev, 2022 (<i>all other outcomes</i>)	High	Low	Low	Low	High	High	Low	(4/7)
Akram, 2020	High	Low	High	Low	High	High	unclear	(2/7)
Aram, 024	Low	Low	High	Low	Low	Low	Low	(6/7)
Awad, 2024	Low	Low	Low	High	Low	Low	unclear	(5/7)
Bakir, 2013	High	Low	Low	Low	High	High	unclear	(3/7)
Bernard, 2022	High	Low	Low	Low	Low	Low	High	(5/7)
Bigelow, 2020 (<i>depression and anxiety</i>)	Low	Low	High	High	Low	Low	unclear	(4/7)
Bigelow, 2020 (<i>general distress</i>)	Low	Low	High	Low	Low	Low	unclear	(5/7)
Bikbov, 2023 (<i>suicide</i>)	Low	Low	Low	High	Low	Low	low	(6/7)
Bikbov, 2023 (<i>all other outcomes</i>)	Low	Low	Low	Low	Low	Low	low	(7/7)
Bizjak, 2009	High	High	High	Low	High	High	unclear	(1/7)
Choi, 2021	Low	Low	Low	Low	Low	Low	Low	(7/7)
Ciesla, 2016	High	unclear	Low	Low	High	High	unclear	(2/7)
Cormier, 2024	High	Low	High	Low	Low	unclear	High	(3/7)
Cui, 2025	Low	Low	High	High	Low	Low	High	(4/7)

Dammeyer, 2017	Low	unclear	High	High	High	High	high	(1/7)
Del Vecchio, 2023	High	Low	Low	Low	High	High	unclear	(3/7)
Fellinger, 2005	High	High	High	Low	High	High	unclear	(1/7)
Fors, 2013	High	Low	Low	Low	Low	Low	High	(5/7)
Fox, 2020	High	Low	High	High	Low	Low	High	(3/7)
Gao, 2022	Low	Low	High	Low	Low	Low	High	(5/7)
Genc, 2013	Unclear	unclear	Low	Low	Low	Low	unclear	(4/7)
Grewal, 2023	High	Low	Low	Low	Low	Low	High	(5/7)
Hou, 2025	High	Low	Low	Low	High	High	unclear	(3/7)
Hsu, 2016	Low	Low	Low	Low	Low	Low	Low	(7/7)
Idstad, 2019	High	unclear	Low	Low	Low	Low	unclear	(4/7)
Keidser, 2015	Low	Low	Low	High	High	Low	unclear	(4/7)
Kushalnagar, 2017	High	Low	High	Low	High	Low	unclear	(3/7)
Kushalnagar, 2019	High	Low	High	High	High	Low	unclear	(2/7)
Lee, 1997	High	Low	Low	Low	Low	Low	Low	(6/7)
Leigh, 1989	High	unclear	Low	Low	High	Low	unclear	(3/7)
Li, 2014 (<i>depression</i>)	Low	Low	High	Low	Low	Low	unclear	(5/7)
Li, 2014 (<i>sleep</i>)	Low	Low	High	unclear	High	High	unclear	(2/7)
Linszen, 2019	High	Low	Low	High	Low	unclear	Low	(4/7)
MacGregor, 2023	High	Low	High	Low	Low	Low	unclear	(4/7)
Marlow, 2021	Low	Low	High	High	Low	Low	unclear	(4/7)
McClintock, 2023	Low	Low	High	Low	Low	Low	unclear	(5/7)
McDermott, 2005	High	Low	Low	Low	High	High	Low	(4/7)
McKee, 2019	Low	Low	High	High	Low	Low	unclear	(4/7)
Meher, 2022	Low	Low	High	Low	Low	Low	unclear	(5/7)

Merten, 2023	Low	Low	High	Low	Low	Low	High	(5/7)
Park, 2024	Low	Low	High	Low	Low	Low	unclear	(5/7)
Parker, 2021	High	Low	High	Low	Low	Low	High	(4/7)
Parker, 2022	High	Low	High	Low	Low	Low	Low	(5/7)
Peñacoba, 2020	High	Low	Low	Low	High	High	unclear	(3/7)
Pojatić, 2019	High	unclear	Low	Low	High	High	unclear	(2/7)
Reavis, et al., 2021	High	Low	Low	Low	Low	Low	unclear	(6/7)
Saperstein, 2023	High	Low	Low	Low	High	High	unclear	(3/7)
Schenkel, 2014	High	Low	High	Low	High	High	unclear	(2/7)
Scinicariello, 2019	Low	Low	Low	Low	Low	Low	Low	(7/7)
Shin, 2017	Low	Low	Low	High	Low	Low	unclear	(5/7)
Shiue, 2016	Low	Low	High	High	Low	Low	unclear	(4/7)
Stam, 2016	High	Low	Low	Low	Low	Low	unclear	(5/7)
Stefanis, 2006	Low	Low	High	Low	Low	Low	unclear	(5/7)
Suzuki, et al., 2025	Low	Low	High	Low	High	Low	High	(4/7)
Test, 2011	High	Low	Low	Low	High	Low	unclear	(4/7)
Thewissen, 2005	Low	Low	High	Low	Low	Low	unclear	(5/7)
Tonelli, 2023 (<i>general and schizophrenia</i>)	Low	Low	Low	Low	High	High	unclear	(4/7)
Tonelli, 2023 (<i>depression</i>)	Low	Low	Low	Low	Low	Low	unclear	(6/7)
Tremblay, 2015	High	Low	Low	Low	High	Low	unclear	(4/7)
van der Werf, 2011	Low	Low	High	Low	Low	unclear	unclear	(4/7)
Viertio, 2014	Low	Low	Low	Low	High	High	High	(4/7)
Wallace, 2020	Low	Low	High	High	High	Low	Low	(4/7)