

# PRISMA-S

*Systematic Review Training*

*Center for Knowledge Management*

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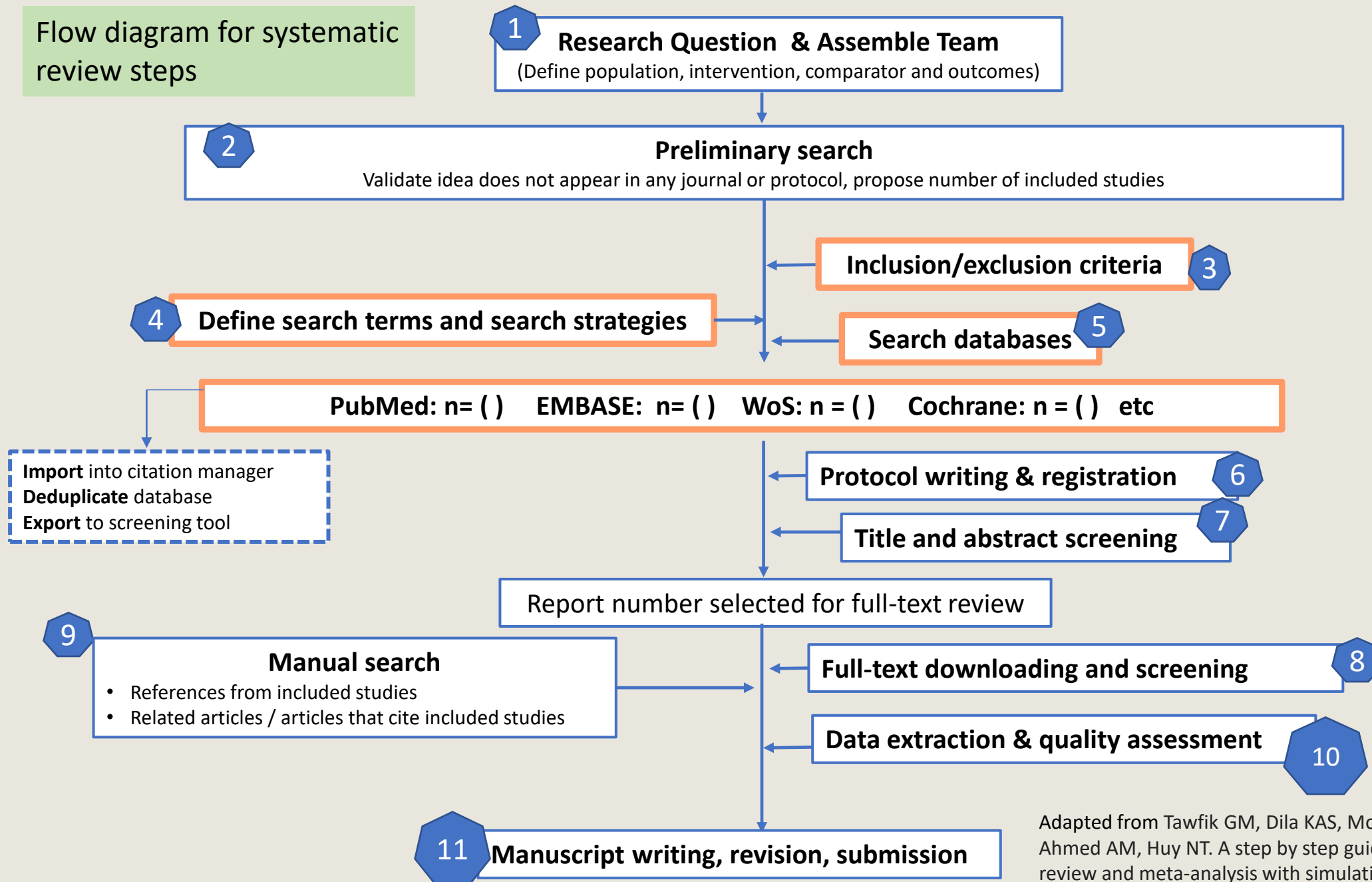
VANDERBILT  UNIVERSITY  
MEDICAL CENTER



## **Objectives:**

- ✓ *Discuss reporting requirements for search strategies (PRISMA-S)*

Flow diagram for systematic review steps



Adapted from Tawfik GM, Dila KAS, Mohamed MYF, Tam DNH, Kien ND, Ahmed AM, Huy NT. A step by step guide for conducting a systematic review and meta-analysis with simulation data. Trop Med Health. 2019 Aug 1;47:46. doi: 10.1186/s41182-019-0165-6. [PMID: 31388330](https://pubmed.ncbi.nlm.nih.gov/31388330/)

## Preferred Reporting Items for Systematic Reviews and Meta-Analyses

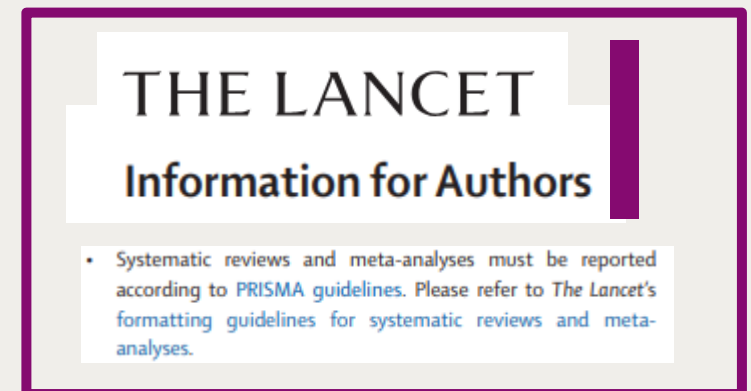
### What is PRISMA?

“PRISMA is an evidence-based **minimum set of items for reporting** in **systematic reviews** and meta-analyses. PRISMA primarily focuses on the reporting of reviews evaluating the effects of interventions, but can also be used as a basis for reporting systematic reviews with objectives other than evaluating interventions (e.g., evaluating aetiology, prevalence, diagnosis or prognosis).”

Originally  
released in 2009;  
updated in 2020


### Value

- Observational studies “suggest” that adherence to PRISMA 2009 standards results in “more complete reporting of systematic reviews”.\*
- ~ 190 journals are listed as PRISMA Endorsers, per the PRISMA website



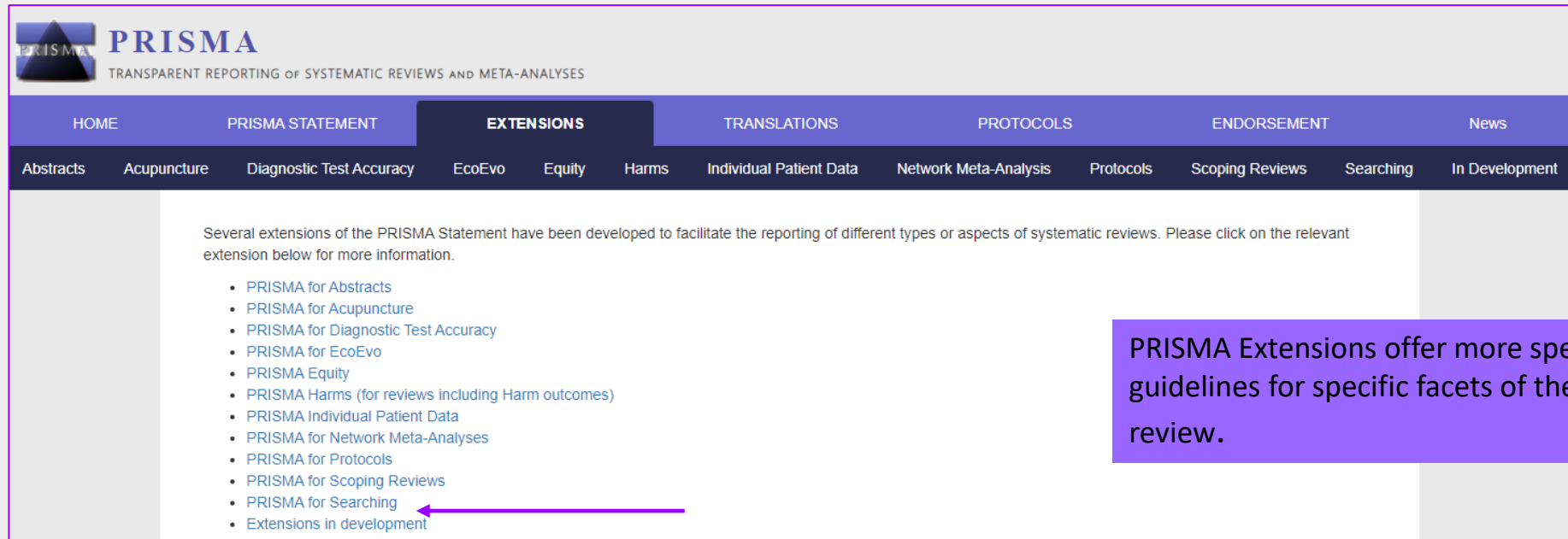
Example PRISMA document for manuscript:

Umeukeje EM, Koonce TY, Kusnoor SV, Ulasi II, Kostelanetz S, Williams AM, Blasingame MN, Epelbaum MI, Giuse DA, Apple AN, Kaur K, González Peña T, Barry D, Eisenstein LG, Nutt CT, Giuse NB. Systematic review of international studies evaluating MDRD and CKD-EPI estimated glomerular filtration rate (eGFR) equations in Black adults. PLoS One. 2022 Oct 18;17(10):e0276252. doi: 10.1371/journal.pone.0276252. [PMID: 36256652](https://pubmed.ncbi.nlm.nih.gov/36256652/); PMCID: PMC9578594.

 **PRISMA 2020 Checklist**

Section and Topic	Item #	Checklist item	Location where item is reported
<b>TITLE</b>			
Title	1	Identify the report as a systematic review.	Title
<b>ABSTRACT</b>			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	We reviewed the checklist and applied it for our abstract.
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Introduction [lines 66-105]
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Introduction [lines 105-118]
<b>METHODS</b>			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Eligibility criteria [lines 116-123] Data synthesis [lines 175-182]
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.	Search process [lines 125-130] S3 Tables and Text
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	S3 Tables
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.	Eligibility criteria [lines 116-123] Study screening and data extraction [lines 132-140] Data synthesis [lines 175-182]
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.	Study screening and data extraction [lines 132-140]

## Preferred Reporting Items for Systematic Reviews and Meta-Analyses *Extensions*



The screenshot shows the PRISMA website's 'EXTENSIONS' page. The navigation bar includes 'HOME', 'PRISMA STATEMENT', 'EXTENSIONS', 'TRANSLATIONS', 'PROTOCOLS', 'ENDORSEMENT', and 'News'. Below the navigation bar, a list of extensions is provided: Abstracts, Acupuncture, Diagnostic Test Accuracy, EcoEvo, Equity, Harms, Individual Patient Data, Network Meta-Analysis, Protocols, Scoping Reviews, Searching, and In Development. The 'Searching' extension is highlighted with a red arrow. The main content area contains the text: 'Several extensions of the PRISMA Statement have been developed to facilitate the reporting of different types or aspects of systematic reviews. Please click on the relevant extension below for more information.' followed by a bulleted list of the same extensions. A red arrow points to the 'Searching' extension in the list.

PRISMA Extensions offer more specific guidelines for specific facets of the systematic review.

“The *literature search*, or information retrieval process, **not only informs the results of a systematic review; it is the underlying process that establishes the data available for analysis**. Additional components of the systematic review ... are dependent on the identification of eligible studies. As such, the literature search must be designed to be both robust and reproducible to ensure the minimization of bias.”

“*Literature searches underlie the foundations of systematic reviews* and related review types. **Yet, the literature searching component of systematic reviews ... is often poorly reported. Guidance for literature search reporting has been diverse, and, in many cases, does not offer enough detail to authors who need more specific information about reporting search methods and information sources in a clear, reproducible way.** This document presents the PRISMA-S (Preferred Reporting Items for Systematic reviews and Meta-Analyses literature search extension) checklist, and explanation and elaboration.”



## PRISMA for Searching

### PRISMA-S Checklist

Section/topic	#	Checklist item	Location(s) Reported
<b>INFORMATION SOURCES AND METHODS</b>			
Database name	1	Name each individual database searched, stating the platform for each.	
Multi-database searching	2	If databases were searched simultaneously on a single platform, state the name of the platform, listing all of the databases searched.	
Study registries	3	List any study registries searched.	
Online resources and browsing	4	Describe any online or print source purposefully searched or browsed (e.g., tables of contents, print conference proceedings, web sites), and how this was done.	
Citation searching	5	Indicate whether cited references or citing references were examined, and describe any methods used for locating cited/citing references (e.g., browsing reference lists, using a citation index, setting up email alerts for references citing included studies).	
Contacts	6	Indicate whether additional studies or data were sought by contacting authors, experts, manufacturers, or others.	
Other methods	7	Describe any additional information sources or search methods used.	
<b>SEARCH STRATEGIES</b>			
Full search strategies	8	Include the search strategies for each database and information source, copied and pasted exactly as run.	
Limits and restrictions	9	Specify that no limits were used, or describe any limits or restrictions applied to a search (e.g., date or time period, language, study design) and provide justification for their use.	
Search filters	10	Indicate whether published search filters were used (as originally designed or modified), and if so, cite the filter(s) used.	
Prior work	11	Indicate when search strategies from other literature reviews were adapted or reused for a substantive part or all of the search, citing the previous review(s).	
Updates	12	Report the methods used to update the search(es) (e.g., rerunning searches, email alerts).	
Dates of searches	13	For each search strategy, provide the date when the last search occurred.	
<b>PEER REVIEW</b>			
Peer review	14	Describe any search peer review process.	
<b>MANAGING RECORDS</b>			
Total Records	15	Document the total number of records identified from each database and other information sources.	
Deduplication	16	Describe the processes and any software used to deduplicate records from multiple database searches and other information sources.	

Rethlefsen ML, Kirtley S, Waffenschmidt S, Ayala AP, Moher D, Page MJ, Koffel JB; PRISMA-S Group. PRISMA-S: an extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews. *Syst Rev.* 2021 Jan 26;10(1):39. doi: 10.1186/s13643-020-01542-z. [PMID: 33499930](https://pubmed.ncbi.nlm.nih.gov/33499930/); [PMCID: PMC7839230](https://pubmed.ncbi.nlm.nih.gov/33499930/).



## Prevalence of Hip or Groin Pain in Adolescents: A Systematic Review and Meta-Analysis

### Methods

A protocol for this systematic review was registered with the PROSPERO database (CRD42017070402).<sup>30</sup> The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used in the conduct and reporting of this review.<sup>31</sup>

#### Search Strategy

Five electronic databases (Embase, Medline, the Cumulative Index to Nursing and Allied Health Literature [CINAHL], PsycINFO, Web of Science) were searched by 2 review authors (R.G. and A.O.G.). The search strategy combined words associated with hip or groin, pain, adolescence, musculoskeletal, and prevalence. A sample search strategy is shown in Appendix S1. Databases were searched for articles published in the English language from inception to January 2019. Articles were screened for inclusion by 2 independent review authors (R.G. and A.O.G.) according to title and abstract. Any irrelevant articles were excluded and differences in opinion were resolved by a third review author (H.F.). Full texts of remaining articles were obtained and screened independently by 2 review authors (H.F. and M.D.). Authors of studies were contacted for further information in instances where hip/groin specific data were not available or if prevalence estimates were not available for our included age range (13 to 19 years). Additional searches of Google Scholar were undertaken for further relevant citations of the final included studies, and reference lists of included studies were also searched.

### PRISMA for Searching Checklist

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Citation searching	5	Indicate whether cited references or citing references were examined, and describe any methods used for locating cited/citing references (e.g., browsing reference lists, using a citation index, setting up email alerts for references citing included studies).
Contacts	6	Indicate whether additional studies or data were sought by contacting authors, experts, manufacturers, or others.
Other methods	7	Describe any additional information sources or search methods used.





## Effects of vitamin D supplementation on cardiometabolic outcomes in children and adolescents: a systematic review and meta-analysis of randomized controlled trials

### Search strategy

We searched the databases PubMed, EMBASE, CENTRAL (Cochrane Central Register of Controlled Trials), and Web of Science for relevant studies published until 22nd of June 2018 with no restriction on earliest time of publication. The PubMed search was updated on the 8th of April 2019 and no additional studies eligible for inclusion were identified. The applied search strings are detailed in Supplementary Fig. 1. We also searched bibliographies of identified RCTs and reviews. The search was limited to papers published in English.

PRISMA for Searching Checklist

SEARCH STRATEGIES		
Full search strategies	8	Include the search strategies for each database and information source, copied and pasted exactly as run.
Limits and restrictions	9	Specify that no limits were used, or describe any limits or restrictions applied to a search (e.g., date or time period, language, study design) and provide justification for their use.
Search filters	10	Indicate whether published search filters were used (as originally designed or modified), and if so, cite the filter(s) used.
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## A systematic review on gender dysphoria in adolescents and young adults: focus on suicidal and self-harming ideation and behaviours

### Information sources and database search

To systematically collect empirical studies on the possible relation between suicidality/self-harming and GD in adolescents and young adults, several keywords were used to search for appropriate publications in four electronic databases, i.e., PubMed, Scopus, PsycINFO, and Web of Science since their inception and no date or language restriction.

Authors conducted the search separately in each database using the following agreed upon search strategy for PubMed and adapting the search for the other databases: (suicid\* OR self-injur\* OR self-harm\* OR self-inflict\* OR self-lesion\*) AND (gender dysphori\* OR transgender) AND (child\* OR ad

Since the terms GD and transge searches we used both terms to

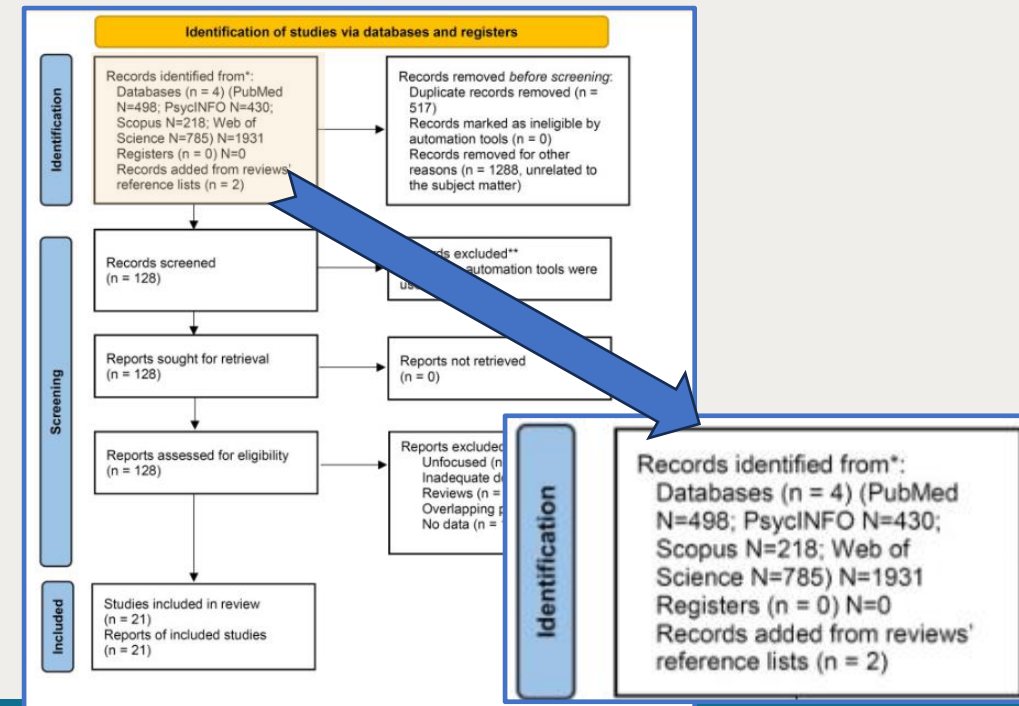
### Eligibility criteria

Inclusion criteria were a study published in a peer-reviewed journal, reporting data on suicide and related behaviours (thinking, planning, and attempts) and/or non-suicidal self-harming thoughts and acts (using methods that reliably obtain the desired result) in adolescent and young adult (14–27 years old) samples with GD/transgender status/gender diverse identity.

Exclusion criteria were studies conducted on children or adult samples and those with mixed populations not providing data for adolescents and young adults separately. Also, opinion papers, such as editorials, letters to the editor, and hypotheses without providing data were excluded, as well as case reports or series, reviews/meta-analyses, animal studies, studies with inadequate/poor methodology and inadequate reporting of data, unfocused, or unrelated to the subject matter. All inter- and intra-database duplicates were removed, as well as abstracts, meeting presentations and studies presenting incomplete data.

## PRISMA for Searching Checklist

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Peer review	14	Describe any search peer review process.
MANAGING RECORDS		
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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.
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.
	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.
Study risk of bias assessment	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 each study and whether they worked independently, and if applicable, details of automation tools used in the process.
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.
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)).
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.
	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.
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.



# Module recap

PRISMA  
TRANSPARENT REPORTING OF SYSTEMATIC REVIEWS AND META-ANALYSES

HOME PRISMA STATEMENT **EXTENSIONS** TRANSLATIONS PROTOCOLS ENDORSEMENTS

Abstracts Acupuncture Diagnostic Test Accuracy EcoEvo Equity Harms Individual Patient Data Network Meta-Analysis Protocols Scoping Reviews

Several extensions of the PRISMA Statement have been developed to facilitate the reporting of different types or aspects of systematic reviews. Please click on the relevant extension below for more information.

- PRISMA for Abstracts
- PRISMA for Acupuncture
- PRISMA for Diagnostic Test Accuracy
- PRISMA for EcoEvo
- PRISMA for Equity
- PRISMA Harms (for reviews including Harm outcomes)
- PRISMA Individual Patient Data
- PRISMA for Network Meta-Analyses
- PRISMA for Protocols
- PRISMA for Scoping Reviews
- PRISMA for Searching
- Extensions in development

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		Indicate whether search filters from other literature reviews were adapted or reused for this search, citing the previous review(s).	
		State the search(es) (e.g., rerunning searches, email alerts).	
		State the date when the last search occurred.	

## What is PRISMA?

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