

# Publishing a Systematic Review

*Systematic Review Training*

*Center for Knowledge Management*

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**Objectives:** ✓ *Describe reporting requirements for systematic reviews (PRISMA 2020 statement)*

# Selecting a Journal with SPI-Hub®

The screenshot shows the top of the SPI-Hub website. On the left is the Vanderbilt University Medical Center logo. In the center is the SPI-Hub logo with the tagline 'Scholarly Publishing Information Hub' and a background image of a city. Below the logo is a navigation bar with links for 'About Us', 'Overview', 'What's New', and 'Contact Us'. The main content area features two dark blue rounded rectangular boxes. The left box is titled 'Publishing Services' and contains a list of four items: 'Find journals', 'Learn about individual journals', 'Discover preprint services', and 'Discover data repositories'. An orange arrow points from the left edge of the slide to the 'Find journals' item. The right box is titled 'Guides and Tools' and contains three sections: 'Educational Tools' with one item 'Systematic Review: A Comprehensive Overview', 'Creating a Researcher Profile' with two items 'ORCID Profile' and 'NIH Biosketch using SciENcv', and 'SPI-Hub™' with one item 'SPI-Hub™ User Guide and FAQ'. An orange arrow points from the right edge of the slide to the 'SPI-Hub™ User Guide and FAQ' item.

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**SPI-Hub**  
Scholarly Publishing Information Hub

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### Publishing Services

- Find journals
- Learn about individual journals
- Discover preprint services
- Discover data repositories

### Guides and Tools

**Educational Tools**

- Systematic Review: A Comprehensive Overview

**Creating a Researcher Profile**

- ORCID Profile
- NIH Biosketch using SciENcv

**SPI-Hub™**

- SPI-Hub™ User Guide and FAQ

# Selecting a journal

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Journal Topic Author My Citations

Identify journals in which to publish your research

Run individual searches and select the most representative keywords matching your topic of research. Use free text if no autocomplete match is found.

Up to five keywords and/or free text can be combined.

Search by Topic:  Enter

INCLUDE RESULTS WEIGHTED WITH IMPACT METRICS

Yes No

health disparities genetic testing

Searching... Please wait.

SUBMIT

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Return to Search

QUERY: Health disparities AND Genetic testing  
Number of journals retrieved: 50

RESULTS

Journal of school health

Journal of American college health

Health education & behavior

Journal of genetic counseling

Evolution & the health professions

Journal of autism and developmental disorders

Developmental psychology

Genetics in medicine

Journal of child psychology and psychiatry and allied disciplines

Journal of applied research in intellectual disabilities

Journal of school nursing

Cancer

Journal of rural health

Compare Up to 5 journals

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Journal title:	Journal of genetic counseling
Corporate author(s):	National Society of Genetic Counselors
ISSN:	1059-7700(Print), 1573-3599(Electronic)
Scope/Aims URL:	Journal scope/aims link
Publisher:	Wiley
Publication start year:	1992
Publication frequency:	6 issues per year
Link to author instructions:	Author instructions link
Link to journal homepage:	Journal homepage link

Record last updated: February 09, 2023

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Journal title:	Journal of genetic counseling
Statement of peer review policy:	Yes
Adheres to ICMJE recommendations:	Not stated
Committee on Publication Ethics (COPE) journal member:	Yes
Archived in PubMed Central:	Not currently archived
Participates in national and international archiving services (e.g., CLOCKSS):	Yes (view details)
Preprint policy:	Manuscripts previously shared online as preprints are generally allowed for submission by this publisher, see the individual journal website for more details.

Record last updated: February 09, 2023

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Journal title: Journal of genetic counseling

Citation count: 51

Citation(s):

1. Exploring experiences and expectations of prenatal health care and genetic counseling/testing in immigrant Latinas
2. Adult adoptees and their use of direct-to-consumer genetic testing: Searching for family, searching for health.
3. Precision Medicine: Familiarity, Perceived Health Drivers, and Genetic Testing Considerations Across Health Literacy Levels in a Diverse Sample.
4. Genetic testing and eHealth usage among Deaf women.
5. Elective genetic testing: Genetics professionals' perspectives and practices.
6. Clinical Cancer Genetics Disparities among Latinas.
7. Latinx attitudes, barriers, and experiences with genetic counseling and testing: A systematic review.
8. A road map for the future: An exploration of attitudes, perceptions, and beliefs among African Americans to tailor health promotion of cancer-related genetic counseling and testing.
9. Attitudes and beliefs regarding race-targeted genetic testing of Black people: A systematic review.
10. Racial and ethnic differences in knowledge and attitudes about genetic testing in the US: Systematic review.
11. Genetic counseling, virtual visits, and equity in the era of COVID-19 and beyond.
12. Demographic differences in the utilization of clinical and direct-to-consumer genetic testing.
13. Psychological correlates of interest in genetic testing among Korean American adoptees and their parents.
14. Barriers and facilitators to genetic testing for breast and ovarian cancer amongst Black African women in Luton (UK).
15. Latinas' knowledge of and experiences with genetic cancer risk assessment: Barriers and facilitators.
16. Advocating for equitable management of hereditary cancer syndromes.
17. The role of psychosocial factors in Black women's self-efficacy in receiving genetic counseling and testing.

# Review journal requirements



## Reviews

Review articles contain systematic or scoping reviews of the literature or concise tutorials on topics of broad interest to the readers.

The structured abstract for a review should contain the headings: Objectives, Methods, Results, and Discussion. It is suggested that systematic reviews follow Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Word count: up to 4000 words.

Structured abstract: up to 250 words.

Tables: up to 4.

Figures: up to 6.

References: unlimited.

# Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Originally released in 2009; updated in 2020

## RESEARCH METHODS AND REPORTING

OPEN ACCESS

Check for updates

### The PRISMA 2020 statement: an updated guideline for reporting systematic reviews

Matthew J Page,<sup>1</sup> Joanne E McKenzie,<sup>1</sup> Patrick M Bossuyt,<sup>2</sup> Isabelle Boutron,<sup>3</sup> Tammy C Hoffmann,<sup>4</sup> Cynthia D Mulrow,<sup>3</sup> Larissa Shamseer,<sup>6</sup> Jennifer M Tetzlaff,<sup>7</sup> Elie A Akl,<sup>8</sup> Sue E Brennan,<sup>1</sup> Roger Chou,<sup>9</sup> Julie Glanville,<sup>10</sup> Jeremy M Grimshaw,<sup>11</sup> Asbjørn Hróbjartsson,<sup>12</sup> Manoj M Lalu,<sup>13</sup> Tianjing Li,<sup>14</sup> Elizabeth W Loder,<sup>15</sup> Evan Mayo-Wilson,<sup>16</sup> Steve McDonald,<sup>1</sup> Luke A McGuinness,<sup>17</sup> Lesley A Stewart,<sup>18</sup> James Thomas,<sup>19</sup> Andrea C Tricco,<sup>20</sup> Vivian A Welch,<sup>21</sup> Penny Whiting,<sup>17</sup> David Moher<sup>22</sup>

For numbered affiliations see end of the article.

Correspondence to: M J Page  
matthew.page@monash.edu  
(ORCID 0000-0002-4242-7526)  
Additional material is published online only. To view please visit the journal online.

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<http://dx.doi.org/10.1136/bmj.n71>

Accepted: 4 January 2021

The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement, published in 2009, was designed to help systematic reviewers transparently report why the review was done, what the authors did, and what they found. Over the past decade, advances in systematic review methodology and terminology have necessitated an update to the guideline. The PRISMA 2020 statement replaces the 2009 statement and includes new reporting guidance that reflects advances in methods to identify, select, appraise, and synthesise studies. The structure and presentation of the items have been modified to facilitate implementation. In this article, we present the PRISMA 2020 27-item checklist, an expanded checklist that details reporting recommendations for each item, the PRISMA 2020 abstract checklist, and

the revised flow diagrams for original and updated reviews.

Systematic reviews serve many critical roles. They can provide syntheses of the state of knowledge in a field, from which future research priorities can be identified; they can address questions that otherwise could not be answered by individual studies; they can identify problems in primary research that should be rectified in future studies; and they can generate or evaluate theories about how or why phenomena occur. Systematic reviews therefore generate various types of knowledge for different users of reviews (such as patients, healthcare providers, researchers, and policy makers).<sup>1,2</sup> To ensure a systematic review is valuable to users, authors should prepare a transparent, complete, and accurate account of why the review was done, what they did (such as how studies were identified and selected) and what they found (such as characteristics of contributing studies and results of meta-analyses). Up-to-date reporting guidance facilitates authors achieving this.<sup>3</sup>

The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement published in 2009 (hereafter referred to as PRISMA 2009)<sup>4-10</sup> is a reporting guideline designed to address poor reporting of systematic reviews.<sup>11</sup> The PRISMA 2009 statement comprised a checklist of 27 items recommended for reporting in systematic reviews and an “explanation and elaboration” paper<sup>12-16</sup> providing additional reporting guidance for each item, along with

## 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).”

## Who Uses:

- Journal editors, peer reviewers, authors

What it is *not*: “a quality assessment instrument to gauge the quality of a systematic review”


<https://www.prisma-statement.org/>



## PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Section and Topic	Item #	Checklist item
<b>TITLE</b>			<b>RESULTS</b>		
Title	1	Identify the report as a systematic review.	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.
<b>ABSTRACT</b>				16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Study characteristics	17	Cite each included study and present its characteristics.
<b>INTRODUCTION</b>				Risk of bias in studies	18
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Results of individual studies		19
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.		Results of syntheses	20a
<b>METHODS</b>			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.
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were screened, included, excluded, or excluded based on duplicates.	20c		Present results of all investigations of possible causes of heterogeneity among study results.
Information sources	6	Specify all databases, registers, websites, organisations, reference lists, and other sources of information used to identify studies, and the date when each source was last searched or consulted.	20d		Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.
Search strategy	7	Present the full search strategies for all databases, registers and websites used, and the dates of searching.	Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.
Selection process	8	Specify the methods used to decide whether a study met the inclusion and exclusion criteria, and whether they worked independently, and if applicable, details of the process.	Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.
Data collection process	9	Specify the methods used to collect data from reports, including how data were extracted, how data were checked for accuracy, and how data were entered into the review.	<b>DISCUSSION</b>		
Data items	10a	List and define all outcomes for which data were sought. Specify whether data were sought for all measures, time points, analyses, and populations.	Discussion	23a	Provide a general interpretation of the results in the context of other evidence.
	10b	List and define all other variables for which data were sought (e.g. patient characteristics, risk factors, and confounding factors), and any assumptions made about any missing or unclear information.		23b	Discuss any limitations of the evidence included in the review.
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, and whether they worked independently, and if applicable, details of the process.		23c	Discuss any limitations of the review processes used.
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference, hazard ratio, odds ratio, relative risk, risk difference, risk ratio, mean difference, hazard ratio, odds ratio, relative risk, risk difference).		23d	Discuss implications of the results for practice, policy, and future research.
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for synthesis, and how studies were compared against the planned groups for each synthesis (item #5).	<b>OTHER INFORMATION</b>		
	13b	Describe any methods required to prepare the data for presentation of results, including any conversions.	Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.
	13c	Describe any methods used to tabulate or visually display results of individual studies, including any conversions.		24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.
	13d	Describe any methods used to synthesize results and provide a rationale for the synthesis method(s), method(s) to identify the presence and extent of statistical heterogeneity, and how heterogeneity was explored.		24c	Describe and explain any amendments to information provided at registration or in the protocol.
	13e	Describe any methods used to explore possible causes of heterogeneity among study results.	Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Competing interests	26	Declare any competing interests of review authors.
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in the synthesis.	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.
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for each outcome assessed.			

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

 **PRISMA 2020 Checklist** <http://prisma-statement.org/PRISMAStatement/>

Section and Topic	Item #	Checklist Item	Location where item is reported
<b>TITLE</b>			
Title	1	Identify the report as a systematic review.	
<b>ABSTRACT</b>			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
<b>METHODS</b>			

**Title**

**Item 1. Identify the report as a systematic review**

**Explanation:** Inclusion of "systematic review" in the title facilitates identification by potential users (patients, healthcare providers, policy makers, etc) and appropriate indexing in databases. Terms such as "review," "literature review," "evidence synthesis," or "knowledge synthesis" are not recommended because they do not distinguish systematic and non-systematic approaches. We also discourage using the terms "systematic review" and "meta-analysis" interchangeably because a systematic review refers to the entire set of processes used to identify, select, and synthesise evidence, whereas meta-analysis refers only to the statistical synthesis. Furthermore, a meta-analysis can be done outside the context of a systematic review (for example, when researchers meta-analyse results from a limited set of studies that they have conducted).

**Essential elements**

- Identify the report as a systematic review in the title.
- Report an informative title that provides key information about the main objective or question that the review addresses (for reviews of interventions, this usually includes the population and the intervention(s) that the review addresses).

**Additional elements**

- Consider providing additional information in the title, such as the method of analysis used (for example, "a systematic review with meta-analysis"), the designs of included studies (for example, "a systematic review of randomised trials"), or an indication that the review is an update of an existing review or a continually updated ("living") systematic review.

**Example of item 1 of PRISMA 2020 checklist**

"Comparison of the therapeutic effects of rivaroxaban versus warfarin in antiphospholipid syndrome: a systematic review"<sup>167</sup>

1 Cite Share

 **The Value of Applying Machine Learning in Predicting the Time of Symptom Onset in Stroke Patients: Systematic Review and Meta-Analysis.**  
Feng J, Zhang Q, Wu F, Peng J, Li Z, Chen Z.  
J Med Internet Res. 2023 Oct 12;25:e44895. doi: 10.2196/44895.  
PMID: 37824198

2 Cite Share

 **Researched Apps Used in Dementia Care for People Living With Dementia and Their Informal Caregivers: Systematic Review on App Features, Security, and Usability.**  
Ye B, Chu CH, Bayat S, Babineau J, How TV, Mihailidis A.  
J Med Internet Res. 2023 Oct 12;25:e46188. doi: 10.2196/46188.  
PMID: 37824187



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



PRISMA 2020 Checklist

<http://prisma-statement.org/PRISMAStatement/>

Section and Topic	Item #	Checklist item	Location where item is reported
<b>TITLE</b>			
Title	1	Identify the report as a systematic review.	
<b>ABSTRACT</b>			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
<b>METHODS</b>			

## Rationale

### Item 3. Describe the rationale for the review in the context of existing knowledge

**Explanation:** Describing the rationale should help readers understand why the review was conducted and what the review might add to existing knowledge.

#### Essential elements

- Describe the current state of knowledge and its uncertainties.
- Articulate why it is important to do the review.
- If other systematic reviews addressing the same (or a largely similar) question are available, explain why the current review was considered necessary (for example, previous reviews are out of date or have discordant results; new review methods are available to address the review question; existing reviews are methodologically flawed; or the current review was commissioned to inform a guideline or policy for a particular organisation). If the review is an update or replication of a particular systematic review, indicate this and cite the previous review.
- If the review examines the effects of interventions, also briefly describe how the intervention(s) examined might work.


#### Additional elements

- If there is complexity in the intervention or context of its delivery, or both (such as multi-component interventions, interventions targeting the population and individual level, equity considerations<sup>30</sup>), consider presenting a logic model (sometimes referred to as a conceptual framework or theory of change) to visually display the hypothesised relationship between intervention components and outcomes.<sup>31 32</sup>

#### Example of item 3 of PRISMA 2020 checklist

"To contain widespread infection and to reduce morbidity and mortality among health-care workers and others in contact with potentially infected people, jurisdictions have issued conflicting advice about physical or social distancing. Use of face masks with or without eye protection to achieve additional protection is debated in the mainstream media and by public health authorities, in particular the use of face masks for the general population; moreover, optimum use of face masks in health-care settings, which have been used for decades for infection prevention, is facing challenges amid personal protective equipment (PPE) shortages. Any recommendations about social or physical distancing, and the use of face masks, should be based on the best available evidence. Evidence has been reviewed for other respiratory viral infections, mainly seasonal influenza, but no comprehensive review is available of information on SARS-CoV-2 or related betacoronaviruses that have caused epidemics, such as severe acute respiratory syndrome (SARS) or Middle East respiratory syndrome (MERS). We, therefore, systematically reviewed the effect of physical distance, face masks, and eye protection on transmission of SARS-CoV-2, SARS-CoV, and MERS-CoV."<sup>169</sup>

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

 **PRISMA 2020 Checklist**

Section and Topic	Item #	Checklist item	Location where item is reported
<b>METHODS</b>			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
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 strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
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.	
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.	

## Effect measures

**Item 12. Specify for each outcome the effect measure(s) (such as risk ratio, mean difference) used in the synthesis or presentation of results**

**Explanation:** To interpret a synthesised or study result, users need to know what effect measure was used. Effect measures refer to statistical constructs that compare outcome data between two groups. For instance, a risk ratio is an example of an effect measure that might be used for dichotomous outcomes.<sup>89</sup> The chosen effect measure has implications for interpretation of the findings and might affect the meta-analysis results (such as heterogeneity<sup>90</sup>). Authors might use one effect measure to synthesise results and then re-express the synthesised results using another effect measure. For example, for meta-analyses of standardised mean differences, authors might re-express the combined results in units of a well known measurement scale, and for meta-analyses of risk ratios or odds ratios, authors might re-express results in absolute terms (such as risk difference).<sup>91</sup> Furthermore, authors need to interpret effect estimates in relation to whether the effect is of importance to decision makers. For a particular outcome and effect measure, this requires specification of thresholds (or ranges) used to interpret the size of effect (such as minimally important difference; ranges for no/trivial, small, moderate, and large effects).<sup>91</sup>

### Essential elements

- Specify for each outcome or type of outcome (such as binary, continuous) the effect measure(s) (such as risk ratio, mean difference) used in the synthesis or presentation of results.
- State any thresholds or ranges used to interpret the size of effect (such as minimally important difference; ranges for no/trivial, small, moderate, and large effects) and the rationale for these thresholds.
- If synthesised results were re-expressed to a different effect measure, report the methods used to re-express results (such as meta-analysing risk ratios and computing an absolute risk reduction based on an assumed comparator risk).

### Additional elements

- Consider providing justification for the choice of effect measure. For example, a standardised mean difference may have been chosen because multiple instruments or scales were used across studies to measure the same outcome domain (such as different instruments to assess depression).

### Example of item 12 of PRISMA 2020 checklist

"We planned to analyse dichotomous outcomes by calculating the risk ratio (RR) of a successful outcome (i.e. improvement in relevant variables) for each trial...Because the included resilience-training studies used different measurement scales to assess resilience and related constructs, we used standardised mean difference (SMD) effect sizes (Cohen's d) and their 95% confidence intervals (CIs) for continuous data in pairwise meta-analyses."<sup>179</sup>

<http://prisma-statement.org/PRISMAStatement/>

# There are two broad categories of data synthesis.



## PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
	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 synthesise 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 synthesised results.	

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

## Items 16-27

### PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
<b>RESULTS</b>			
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.	
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	
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 of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	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.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	
<b>DISCUSSION</b>			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	
	23b	Discuss any limitations of the evidence included in the review.	
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	
<b>OTHER INFORMATION</b>			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	
Competing interests	26	Declare any competing interests of review authors.	
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.	

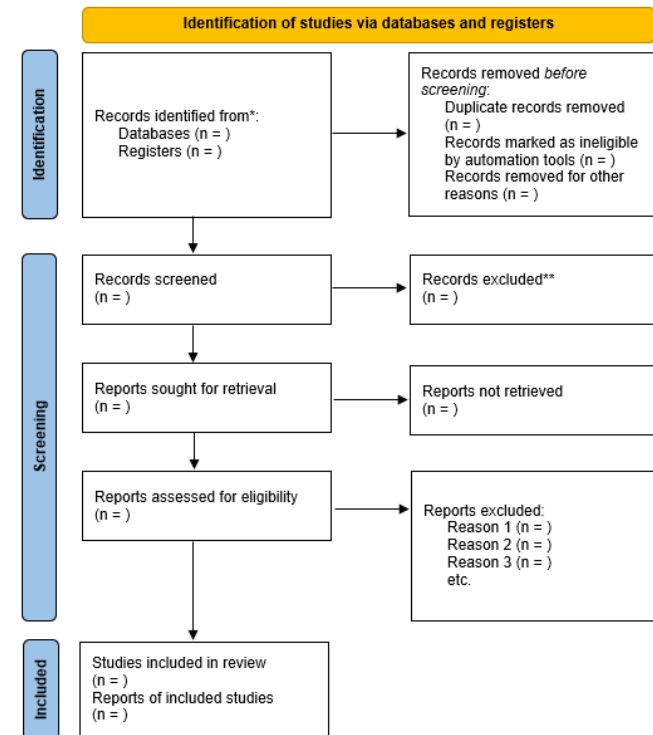
From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: <http://www.prisma-statement.org/>

<http://prisma-statement.org/PRISMAStatement/>

### PRISMA Flow Diagram (also called disposition of citations)

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only



\*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/register).

\*\*If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

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

BMJ's Author Instructions page: <https://bmjopen.bmj.com/pages/authors>

### PRISMA Endorsers

Several editorial organization and several hundreded journals publishing systematic reviews endorse the PRISMA Statement, as listed below.

To find out more about endorsement and how your organization or journal can become an endorser, click [here](#).

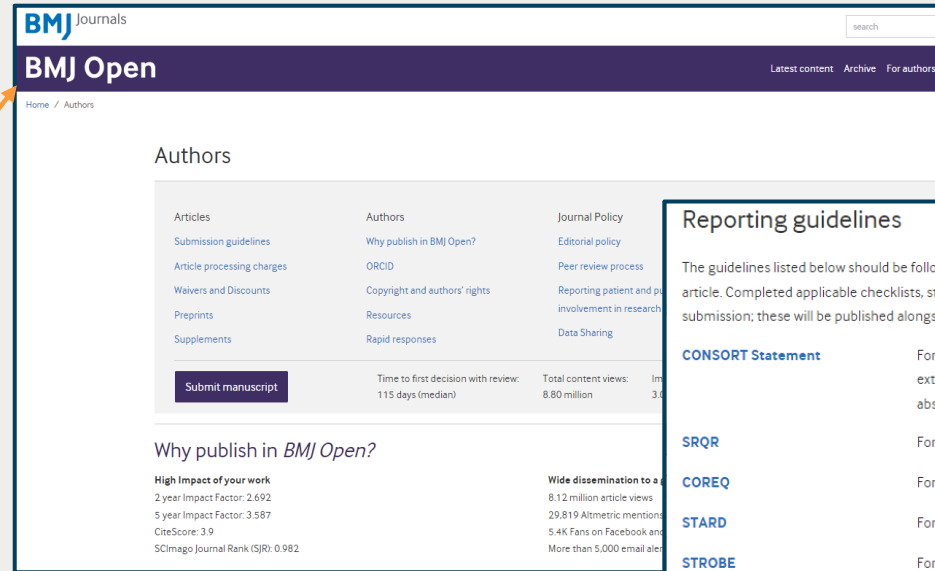
#### Editorial Organizations

- Centre for Reviews and Dissemination
- Cochrane Collaboration
- Council of Science Editors
- National Evidence-based Healthcare Collaborating Agency (NECA)
- World Association of Medical Editors

#### Journals

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

- Acta Obstetrica et Gynecologica Scandinavica
- AIDS Research and Therapy
- Algerian Journal of Chemical Engineering
- Alimentary Pharmacology and Therapeutics
- Allergy, Asthma & Clinical Immunology
- Alzheimer's Research & Therapy
- American Society for Quality (ASQ)
- Annals of Clinical Microbiology and Antimicrobials
- Annals of Emergency Medicine
- Annals of General Psychiatry
- Annals of Surgical Innovation and Research
- Annals of Translational Medicine
- Archives of Disease in Childhood**
- Archives of Disease in Childhood. Fetal and neonatal edition
- Asia Pacific Family Medicine
- AUTISM
- Automated Experimentation



The screenshot shows the 'BMJ Journals' website with the 'BMJ Open' section highlighted. The 'Authors' page is visible, featuring a navigation menu with links like 'Articles', 'Submission guidelines', 'Waivers and Discounts', 'Preprints', and 'Supplements'. A 'Submit manuscript' button is present. Below the menu, there are statistics for 'Time to first decision with review' (115 days median) and 'Total content views' (8.80 million). The 'Why publish in BMJ Open?' section is also visible, highlighting the journal's high impact and wide dissemination.

### Reporting guidelines

The guidelines listed below should be followed where appropriate. Please use these guidelines to structure your article. Completed applicable checklists, structured abstracts and flow diagrams should be uploaded with your submission; these will be published alongside the final version of your paper.

<b>CONSORT Statement</b>	For reporting of randomised controlled trials; please use the appropriate extension to the CONSORT statement, including the extension for writing abstracts
<b>SRQR</b>	For reporting qualitative research
<b>COREQ</b>	For reporting qualitative research
<b>STARD</b>	For reporting of diagnostic accuracy studies
<b>STROBE</b>	For reporting of observational studies in epidemiology Checklist for cohort, case-control, and cross-sectional studies (combined) Checklist for cohort studies Checklist for case-control studies Checklist for cross-sectional studies
<b>PRISMA</b>	For reporting of systematic reviews
<b>PRISMA-P</b>	For reporting of systematic review and meta-analysis protocols
<b>PRISMA-ScR</b>	For reporting of scoping reviews
<b>MOOSE</b>	For reporting of meta-analyses of observational studies
<b>SPIRIT</b>	For reporting protocols for RCTs
<b>STREGA</b>	For reporting of gene-disease association studies
<b>TRIPOD</b>	For reporting of studies developing, validating, or updating a prediction model, whether for diagnostic or prognostic purposes.
<b>CHEERS</b>	For reporting of health economic evaluations

The Equator Network (Enhancing the Quality and Transparency Of Health Research) provides a comprehensive list of reporting guidelines.

List of journals endorsing PRISMA:

<http://www.prisma-statement.org/Endorsement/PRISMAEndorsers>



S2 Table: 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
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Introduction
<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 Data synthesis
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 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 and Text
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 Study screening and data extraction Data synthesis
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
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.	Study screening and 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.	Study screening and data extraction
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.	Quality 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.	Study screening and data extraction 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)).	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.	Data synthesis

**Several extensions of the PRISMA Statement have been developed to facilitate the reporting of different types or aspects of systematic reviews.**



The screenshot shows the PRISMA website header with the logo and the text "PRISMA TRANSPARENT REPORTING OF SYSTEMATIC REVIEWS AND META-ANALYSES". Below the header is a navigation bar with three main sections: "HOME", "PRISMA STATEMENT", and "EXTENSIONS". Under "EXTENSIONS", there are five sub-sections: "Abstracts", "Acupuncture", "Diagnostic Test Accuracy", "EcoEvo", and "Equity". The "EXTENSIONS" section is currently selected, and the main content area displays a list of extensions:

- [PRISMA for Abstracts](#)
- [PRISMA for Acupuncture](#)
- [PRISMA for Diagnostic Test Accuracy](#)
- [PRISMA for EcoEvo](#)
- [PRISMA 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](#)

<http://prisma-statement.org/Extensions/>



**Objectives:** ✓ *Describe reporting requirements for systematic reviews (PRISMA 2020 statement)*



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