

Assessing the Quality and Applicability of Systematic Reviews (AQASR)

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Center on
**KNOWLEDGE TRANSLATION FOR
DISABILITY & REHABILITATION RESEARCH**

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A Tool for Assessing the Quality and Applicability of Systematic Reviews (AQASR)

- ❑ Background of AQASR
- ❑ Systematic Review Steps
- ❑ How to Use the AQASR Checklist
- ❑ Demonstration (Selected Items)

Background of AQASR

What Is AQASR?

- AQASR is a web-based document with a checklist to help readers assess the quality of a systematic review by examining specific questions.

<https://ktdrr.org/aqasr>

- A systematic review is a synthesis of research evidence focused on a particular clinical question. It follows a protocol to find primary studies, assess it for quality, extract relevant information, and synthesize it.
- AQASR describes a series of critical questions that can be asked about a systematic review, with a rationale and items to look for to answer the questions.
- The checklist is a tool for readers to make notes about specific elements of the review.

Reasons for Creating AQASR

- Growing scientific and professional literature creates an increasing need for practitioners, administrators, policymakers, researchers, and others to rely on information from systematic reviews.
- Potential users may lack the knowledge and skills to assess the quality and reliability of a systematic review.
- Little guidance is available on how to assess systematic reviews for quality and utility.
- **The basic purpose of the AQASR document and checklist is to help busy clinicians, administrators, and researchers ask critical questions to reveal the strengths and weaknesses of a review, in general, and as relevant to their particular clinical question or other practical concern(s).**

AQASR Is Not a Rating Scale

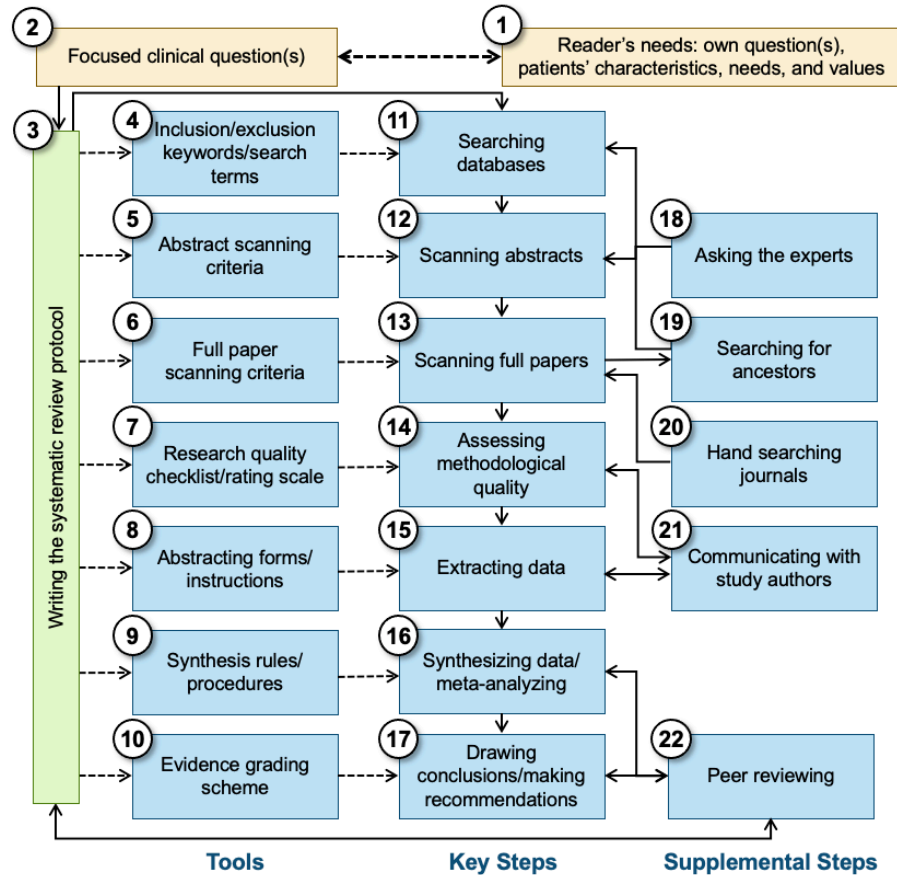
- Completing the checklist does not answer the question “Should I rely on this review?”
- There is no total score. The checklist helps organize the questions and your responses.
- Completing the checklist reveals the strengths and weaknesses of a particular review and in general, and the user determines the relevance to their particular questions or purpose.
- Your situation helps you assess the applicability of a review, depending on which elements are more important or critical to your specific purpose.

Development of AQASR

- AQASR was a project of a task force of disability and rehabilitation researchers, facilitated by the National Center for the Dissemination of Rehabilitation Research (NCDRR), which was funded by the National Institute on Disability and Rehabilitation Research (NIDRR).
- The task force identified elements from the literature related to the quality of systematic reviews and began developing questions sorted into categories.
- The following questions were discussed and reviewed:
 - Does the item/question address the *quality* of a review?
 - Can the reader find the answer to the question by reading the review at hand?
 - Does asking the question help readers of a systematic review to understand the *strengths and limitations* of the review?
 - Does the question assist readers in *making decisions* on whether or not to use information from the review in a specific situation?

Systematic Review Steps

Systematic Reviews



- Research/Review Questions
- Database Searching
- Scanning/Screening Abstracts
- Full Paper Review
- Assessing Methodological Quality
- Extracting Data
- Synthesizing Data
- Drawing Conclusions

Figure 1. Schematic Overview of Systematic Review Production and Linking the Results to the Reader's Interests

How to Use the AQASR Checklist

Using AQASR

How to Use the AQASR: [systematic-reviews/assessing-quality/how-to-use-aqasr.html](https://www.ktdrr.org/systematic-reviews/assessing-quality/how-to-use-aqasr.html)

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**Assessing the Quality and
Applicability of Systematic
Reviews (AQASR)**

How to Use the AQASR

- About the AQASR
- An Introduction to the Process of Creating Systematic Reviews
- References/Further Reading
- Glossary

How to Use the AQASR

Following an introduction that relies on a flowchart (see [Figure 1](#)) to lay out the typical process of conducting a systematic review, this document offers a list of questions that systematic review users should ask themselves. For each question, there is a list of the type of information to look for in answering it and an explanation of why the question is important (termed rationale). The AQASR checklist is a separate document that lists the same questions (without the items to look for and the rationale) and gives the user space to note their observations on a particular systematic review.

A core set of questions can be asked of every systematic review, whether it deals with prevention studies or economic evaluation of treatment studies. Not all questions in these sections are relevant to all systematic reviews. This document covers questions relevant only to [meta-analysis](#), a genre of systematic review that attempts to provide a quantitative [synthesis](#) of the literature. These questions are presented in the following sections:

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Create Your AQASR Checklist

Assessing the Quality and Applicability of Systematic Reviews (AQASR)

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- About the AQASR
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YOUR CHECKLIST



Create Your AQASR Checklist

Create your AQASR checklist:

[systematic-reviews/assessing-quality/checklist.php](https://www.cchr.ca/systematic-reviews/assessing-quality/checklist.php)

Create/Edit Your AQASR Checklist

Assessing the Quality and Applicability of Systematic Reviews (AQASR)

How to Use the AQASR

YOUR CHECKLIST



Create/Edit Your AQASR Checklist

Create/Edit Your AQASR Checklist

You can fill out the AQASR online by creating an account and logging in.

If you would like to fill out the checklist offline, click here to download the [AQASR checklist in MS Word format](#).

Demo

If you would like to see the checklist without signing up for an account, click here to [login to a demo account](#) (*demo account does not allow saving of data*).

Please Log On or Create an Account to Proceed

Please login with your email address and password.

User ID:

Password:

Log on

First time?

[Register for a free account](#).

Forgot password?

The [forgot password](#) page can help you log on.

[systematic-reviews/assessing-quality/checklist.php](https://www.ktrdr.org/systematic-reviews/assessing-quality/checklist.php)

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Assessing the Quality and Applicability of Systematic Reviews (AQASR)

How to Use the AQASR

YOUR CHECKLIST



Create Your AQASR Checklist

Registration

All fields are required.

Email Address	<input type="text"/>
First Name	<input type="text"/>
Last Name	<input type="text"/>
Institution	<input type="text"/>

Verification (to prevent automated submissions)

Please enter the **sum** of **4** and **2**:

Register

Configure Your Checklist (1)

Assessing the Quality and Applicability of Systematic Reviews (AQASR)

How to Use the AQASR

YOUR CHECKLIST



Create/Edit Your AQASR Checklist

■ Configure Your Checklist

■ Save/Print Your Checklist

■ Change Password

■ Logout

Configure Your Checklist

Directions: Enter a name for your checklist, so once you have multiple checklists on file you can tell them apart.

Name of Your Checklist

Review/authors to identify your checklist

Tip: You may want to title your checklist using elements from the publication's citation.

Type of Systematic Review: Select Optional Questions to Include

Directions: The AQASR checklist has six optional blocks of questions that are applicable only to some types of systematic reviews. Click the "yes" checkbox next to any of the six questions below if the systematic review matches the criteria. For items you check "yes," additional questions will appear in your AQASR checklist. If you are unsure for any items, do not check the box, and you can edit this setting later by clicking "Setup" in the left-side menu to return to this page.

Configure Your Checklist (2)

Type of Systematic Review: Select Optional Questions to Include

Directions: The AQASR checklist has six optional blocks of questions that are applicable only to some types of systematic reviews. Click the "yes" checkbox next to any of the six questions below if the systematic review matches the criteria. For items you check "yes," additional questions will appear in your AQASR checklist. If you are unsure for any items, do not check the box, and you can edit this setting later by clicking "Setup" in the left-side menu to return to this page.

Is this a systematic review of intervention/prevention studies?

Yes

Is this a systematic review of prognostic studies?

Yes

Is this a systematic review of studies of diagnostic accuracy?

Yes

Is this a systematic review of studies of measurement instrument(s)?

Yes

Is this a systematic review of economic evaluation studies?

Yes

Save

Edit Your Checklist (1)

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Assessing the Quality and Applicability of Systematic Reviews (AQASR)

How to Use the AQASR

YOUR CHECKLIST

- 1. Review Question (RQ)
- 2. Protocol (PR)
- 3. Database Searching (DB)
- 4. Other Searches (OS)
- 5. Search Limitations (SL)
- 6. Scanning (SC)
- 7. Methodological Quality (MQ)
- 8. Data Extracting (DA)
- 9. Qualitative Synthesis (QS)
- 10. Discussion (DI)
- 11. Various (VA)
- 12. Meta-analysis (MA)

1. SYSTEMATIC REVIEW QUESTION/ CLINICAL APPLICABILITY (RQ)

Directions: This section has six questions related to **Systematic Review Question/Clinical Applicability (RQ)**. Answer the questions and enter your notes into the boxes provided.

Enter N/A if the question does not apply to your review. To save your answers, you **MUST** scroll to the bottom of the form and click the "Submit" button. After you respond to all the questions in this section, the left-side menu will show this section as complete with a green checkbox.

A systematic review addresses an important question or questions that have relevance for decision making by clients/patients, clinicians, administrators, policymakers, or researchers. The questions need to be specific with relevant outcomes addressed. They can be broad or narrow in scope, depending on the issues addressed. Generally, a systematic review addresses just one question or a few closely related questions.

RQ1. Do the authors ask a concrete, concise, clearly stated **question** as the basis for their review?

Response here

Edit Your Checklist (2)

RQ6. Is the population of interest described or defined?

Look for:

- Discussion of specific inclusion and exclusion criteria for the target population
- Specific information on reasons for exclusion
- Definitions of all the terms describing the population (e.g., type of condition or disability, level of disability, age, ethnicity, gender) and the settings in which they reside (e.g., hospital, community)

Rationale:

The population characteristics must be clearly delineated to enable researchers and clinicians to assess the applicability of the interventions or diagnostic procedures to a particular target group. Inclusion and exclusion criteria help define the population more precisely. It must be very clear as to which populations the review findings can be generalized.

Save

► **Further reading on the systematic review question and the clinical applicability of the review**

Print Your Checklist



Create/Edit Your AQASR Checklist

- Configure Your Checklist
- Save/Print Your Checklist
- Change Password
- Logout

Save/Print Your AQASR Checklist

Directions: This page displays the entire AQASR checklist you entered. You may print the page, copy/paste its contents to a word processor, or you can use your web browser's print feature to print the page to a PDF file.

Print

Other Items

YOUR CHECKLIST



Create/Edit Your AQASR Checklist

- Configure Your Checklist
- Save/Print Your Checklist
- Change Password
- Logout

Demonstration (Selected Items)

AQASR Checklist

Standard Checklist

1. Review Question (RQ)
2. Protocol (PR)
3. Database Searching (DB)
4. Other Searches (OS)
5. Search Limitations (SL)
6. Scanning (SC)
7. Methodological Quality (MQ)
8. Data Extracting (DA)
9. Qualitative Synthesis (QS)
10. Discussion (DI)
11. Various (VA)
12. Meta-Analysis (MA)

Additional Items

13. Intervention Studies (IN)
14. Prognostic Studies (PS)
15. Diagnostic Studies (DS)
16. Measurement Instruments (MI)
17. Economic Evaluations (EC)

Multifaceted Interventions for Supporting Community Participation Among Adults With Disabilities: A Systematic Review

- ❑ Webcast 63:

<https://ktdrr.org/training/webcasts/webcast63/index.html>

- ❑ Webcast 77:

<https://ktdrr.org/training/webcasts/webcast77/index.html>

- ❑ Review in *Campbell Systematic Reviews*, Vol. 16, No. 2:

<https://onlinelibrary.wiley.com/doi/10.1002/cl2.1092>

1. Review Questions

RQ1. Do the authors ask a concrete, concise, clearly stated question as the basis for their review?

Yes, "(1) What are the reported community participation outcomes of multifaceted interventions targeted on adults with disabilities? (2) What are the identified components of effective multifaceted interventions?"

Page 6

RQ4. Are the outcomes of interest described or defined?

Yes:

"Direct access to or participation in the community (Integrated competitive employment, Adult learning, Housing, Civic Involvement, Recreation, Navigating the community/accessing community (e.g., transportation))

Dimensions of community participation (Increased self-determination, Improved health, Improved quality of life, Increased family support/activities in the home, Social networking)"

Page 8

3. Database Searching

DB1. Were the methods for locating evidence described?

Yes, "The goal is to ensure that all types of disabilities are included in the search results, but also exclude irrelevant results. In addition, we considered that each database has a specific search strategy because of the different controlled vocabulary and search mechanisms, and we used the vocabulary and search strategies most effective for each database to improve and narrow the search results to more accurately represent our research questions. We also searched two additional databases, Dissertations and Theses Abstracts and PolicyFile, to find potentially relevant "grey" literature. These two databases were selected because they offer a variety of literature as well as controlled search environments."

Page 3

DB9. Was the grey literature searched for primary studies?

Yes, "We also searched two additional databases, Dissertations and Theses Abstracts and PolicyFile, to find potentially relevant "grey" literature."

Page 3

4. Other Searches

OS1. Were experts and prolific authors asked to identify published or unpublished studies?

No

OS2. Were the reference lists of identified publications reviewed for additional studies (ancestor search)?

No, but authors do thorough job of primary search

5. Search Limitations

SL5. Was the literature collected limited by the research design?

Yes, Included: "RCTs, Quasi-experimental," Excluded: "Case studies, Single subject, Single group—pre/post, Qualitative"

Page 7

SL6. Was the literature collected limited by type of intervention(s)?

Yes, Multi-faceted interventions: "Interventions that address two or more individual (changing something about the person—enhancing skills/ knowledge, changing behavior, changing perceptions/attitudes) or environmental characteristics (changing something about the people, places, or things in the environments in which the person interacts) in different domains (e.g., social skills, financial management, physical health, mental health, employment, adult learning, health care)."

Page 8

6. Scanning

SC1. Did the authors specify the inclusion and exclusion criteria used for selecting abstracts?

Yes, "The initial inclusionary criteria were as follows: Original research involving testing an intervention, Interventions must be applied in community-based settings, Intervention must target one or more community participation outcomes, Intervention targets persons with a disability/ies for at least a portion of the, Target sample—with identifiable outcomes for the disability sample"

Pages 7-8

SC3. Were all abstracts of studies reviewed by two or more persons independently?

Yes, "A total of 551 of the 4,738 articles (12%) were initially reviewed by two researchers. This paired review was conducted when it was determined that there was a need for input from another researcher with content knowledge expertise. Decisions for those articles were made jointly by the two reviewers."

Page 11

7. Methodological Quality

MQ1. Were studies reviewed for methodological quality?

Yes

MQ2. If YES, was the instrument for assessing study quality identified?

Yes, "We used an adapted version of the National Technical Assistance Center on Transition (NTACT) Quality Indicator Checklists for Group Experimental studies (see, <http://www.transitionta.org/effectivepractices>) to assess the methodological quality of the selected articles. Two of the studies met the criteria of 'high quality' as defined by the items on the NTACT checklist. The remaining 13 studies were in the category of 'acceptable quality.'"

Page 3

MQ6. Was bias or potential bias in reviewed studies addressed?

Yes, "To investigate the potential impact of publication bias in the present review, we used appropriate measures such as the funnel plot in combination with Egger's regression test for funnel plot asymmetry (Egger, Smith, Schneider, & Minder, 1997; Light & Pillemer, 2004)."

Page 10

8. Data Extraction

DA2. Were study data extracted by two or more persons independently?

Yes, "At least two reviewers independently extracted data for all eligible studies and then reviewed and compared the data for accurate entry."

Page 3

DA5. Is the experience or are the qualifications of the data extractors specified?

Yes, qualifications and experience more thoroughly described in "Roles and Responsibilities."

Page 22

9. Qualitative Synthesis

QS1. Did the review include studies that are relevant to the question?

Yes

QS2. Is the method for **data synthesis** (aggregated evidence across studies) described?

Yes, "Data extracted from all included studies reported continuous outcomes, the effect size data was synthesized using outcome means and standard deviations when available. For those studies reporting F test, t test, or p values rather than means and standard deviations, effect sizes were calculated using appropriate conversion conventions provided by the metafor package in R (Viechtbauer, 2010)."

Page 12

10. Discussion

DI1. Are study limitations discussed (e.g., search limitations, the effects of **publication** and other biases, strength of studies, decisions on synthesis)?

Yes, "Limitations of this meta-analysis include the overall quality of the studies (only two high quality RCT studies), the small number of studies identified for the various outcomes of interest related to community participation of adults with disabilities, and the lack of research base focused on the implementation and evaluation of multifaceted interventions in the field.

Potential bias may be introduced with regard to the lack of gray literature included in the meta-analysis, the differences among research team members in knowledge and education regarding disability and best practices in promoting community participation, and language bias. Although we searched two sources of gray literature, we did not find any eligible studies, which may be indicative of the sources searched, biased inclusionary criteria, or reporting bias."

Page 21

DI2. Was publication bias or other potential bias assessed?

Yes, "To investigate the potential impact of publication bias in the present review, we used appropriate measures such as the funnel plot in combination with Egger's regression test for funnel plot asymmetry (Egger, Smith, Schneider, & Minder, 1997; Light & Pillemer, 2004)."

Page 10

12. Meta-Analysis

MA2. Was the heterogeneity of studies in terms of outcomes analyzed and reported?

Yes, "Heterogeneity analysis was conducted for participant, intervention, and outcome characteristics. In light of the fact that multiple effect sizes may be attributable to sampling error, a random effects model and the associated inverse variance weight at the 95% confidence level was used for all analysis. The random effects model provides for an assumption of population variation from which the sample is drawn and calculates the impact of the effect size by estimating the parameters of that population."

Page 12

MA6. Were any subgroup analyses specified a priori?

Yes, "Subgroup analysis was planned for (a) types of direct access to commu- nity participation, (b) dimension of community participation, (c) length of intervention, (d) place of intervention, (e) type of outcome measure, and (f) disability type. However, because of an insufficient number of studies, analysis was only conducted for employment and length of intervention."

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Summary

- *Assessing the Quality and Applicability of Systematic Reviews (AQASR)* is a web-based document with a checklist to help readers assess the quality of a systematic review by examining specific questions.
<https://ktdrr.org/aqasr>
- For questions about AQASR, please contact ktdrr@air.org.
- Webcast evaluation:
<https://survey.alchemer.com/s3/7946543/Evaluation-Webcast-87-AQASR>
- KTDRR webcasts: <https://ktdrr.org/training/webcasts/index.html>

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The contents of this presentation were developed under grant number 90DPKT0010 from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR). NIDILRR is a Center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this presentation do not necessarily represent the policy of NIDILRR, ACL, HHS, and you should not assume endorsement by the Federal Government.