# **Workshop on Scoping Review Methods for Producing Research Syntheses**

# ***Session 1: Introduction to Scoping Reviews and Synthesizing Evidence***

Sponsored by AIR’s Center on Knowledge Translation for Disability and Rehabilitation Research ([KTDRR](http://www.ktdrr.org))

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Text version of PowerPoint™ presentation:

[https://www.ktdrr.org/training/workshops/scoping/session2](http://www.ktdrr.org/training/workshops/scoping/session2/index.html)

**Slide 1: Title**

KTDRR’s Workshop on Scoping Review Methods for Producing Research Syntheses

Methods for Scoping Reviews

Session 2: May 25, 2016 (3-4:30 PM ET)

Faculty: Chad Nye, PhD; Ginny Brunton, PhD (candidate); Oliver Wendt, PhD

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**Slide 2: A brief reminder…**

Image of a red rectangle with white lettering. A crown is at the top of the rectangle with the words below: KEEP CALM AND CARRY ON

Google Images, 2016.

**Slide 3: Scoping reviews…**

* are a useful product in their own right
* can be a stage in the review process (to allow narrowing of the research question and criteria for studies included in synthesis)
* provide a context to assist interpretation for the synthesis

**Slide 4: Dimensions of difference in reviews - 1**

“Only a handful of **review types possess** prescribed and explicit methodologies and many of the labels used fall short of being mutually exclusive… the typology reported here acknowledges that there is **a lack of unique distinguishing features** for the most common review types, **whilst** highlighting that **some common features do exist**.”

Grant and Booth, 2009

**Slide 5: Dimensions of difference in reviews - 2**

* Questions and conceptual framework
* Studies considered
* Single or multi component reviews
* Breadth, depth and time available
* Methods of review, and aggregative and/ or configuring emphasis (Sandelowski et al., 2012)

 \*Many of the steps that follow could also apply to other types of review

**Slide 6: Differences in extent, detail and epistemology**

* Reviews (maps and syntheses) are not of a pre-defined breadth and depth
* Time, other resources, and type and extent of review need to be fit for purpose
* Scoping reviews
* Rapid, or interim,
* Evidence Assessments

Image on right: Triangle built of 4 smaller triangles. Top: Extent of work; Center: Epistemology; Left: Breadth & Depth; Right: Time & resources. © EPPI-Centre, 2016.

**Slide 7: Steps of a Scoping Review**

* Consult stakeholders
* Set the research question
* Literature search
* Select the studies
* Chart the data
* Summarize and report the results
* Consult with stakeholders to interpret the findings

Arksey & O’Malley 2005; Levac et al. 2010; Thomas et al. 2013

Image on right: Stick figure with question mark above head, looking at post with multiple signs. Google Images 2016

**Slide 8: Consult stakeholders**

Image in center: A group of people sitting in chairs in a circle. Google Images, 2016.

**Slide 9: Who are stakeholders?**

* Actual or potential recipients of services
* students, patients, carers, etc.
* Employers, industry, unions, pressure groups
* Other members of the public
* Practitioners
* teachers, health professionals
* Service managers
* Managers and policy-makers
* from local organisations to central government
* Researchers

**Slide 10: Why involve stakeholders?**

* To **broaden perspectives**
* To **reduce/uncover biases** via a transparent and critical approach:
* What questions are being asked? Why?
* Who and what is influencing the way an issue is looked at?
* To improve quality and **relevance**
* To **improve accessibility** by translating jargon
* To encourage **wider dissemination** of the review
* To ensure the **review’s claims stay within their warrant**

Image on right: Picture of person appearing to hold up a huge boulder. Pixabay.com

**Slide 11: Ways to involve users and access users’ perspectives**

- Consultation (arrow to right) Collaboration (arrow to right) Control

- ‘Active’ involvement in review activities

* + - as members of a review group, advisory panel, focus group
		- helping to set initial question/ influencing theoretical framework
		- identifying studies
		- day-to-day review activities
		- refining question for in-depth review
		- communication, interpretation and application of findings

- Other ways of accessing user perspectives?

* + - other people’s research on user views (Rees et al., 2014)

**Slide 12: Practical ways of working**

* + - Design time
		- when to bring stakeholders in (early and throughout!)
		- different for different subjects
		- Be clear about purpose of map
* its claims should not exceed its warrant
* Consider the amount of understanding/complexity that needs to be considered in the answer provided by the scoping review
	+ - populations, related concepts, processes

**Slide 13: Set the review question**

Image in center: A sphere covered in question marks. Pixabay.com

**Slide 14: What is a review question?**

* Is an **investigative statement** rather than a topic of interest
* Should be **clear and answerable**
* Is the **driver** for all review processes
* Is in dynamic **interplay** with theory and inclusion/exclusion criteria

**Slide 15: Identify the research questions**

* Key domains to be explored
* Boundaries
* Wording
* **instead of** ‘what is the effectiveness of...’
* **use** ‘what is the nature/ extent of research about...’ or ‘what research has been undertaken on...’
* Tint & Weiss, 2016

“What are current conceptualizations and measurements of family wellbeing in the ASD literature?”

“What are the key findings?”

“What are the gaps and limitations in the literature?”

**Slide 16: Specify and clarify main concepts**

**PICOC**: **P**opulation, **I**ntervention, **C**omparator, **O**utcome, **C**ontext/Setting

**ECLIPSE**: **E**xpectation, **C**lient Group, **L**ocation, **I**mpact, **P**roviders, **Se**rvice

**SPIDER**: **S**ample, **PI**- Phenomenon of Interest, **D**esign, **E**valuation, **R**esearch type

**Slide 17: Search for literature**

Image in center: A light highlights a pin with a red circle on top sticking out of some hay. Flickr.com

**Slide 18: Common characteristics of systematic searching**

Search strategies are:

* intended to find studies that ***might be***relevant for the review’s question
* **derived from the review question**
* **practically** **constrained**
* supported by a **rationale**
* **explicitly** reported
* **iterative**: draft, test and implement a structured search plan (search strategy)

**Slide 19: Sources of research**

* Bibliographic databases
	+ ‘general’, e.g. ERIC, Medline, EconLit
	+ ‘specialised’, e.g. OpenGrey
* Internet search engines and gateways
	+ e.g. Google Scholar, PolicyHub
* Hand-searching journals and websites
* Scanning reference lists
* Forward citation searching
* Professional contacts, key authors/ experts
* Balance feasibility with breadth and comprehensiveness of the scoping process
	+ e.g. limit the sources (rather than the search terms)
	+ e.g. limit by dates
	+ e.g. limit by study designs (where possible)
* Don’t rely on databases alone

Stansfield et al., 2014

**Slide 20: Approaches to searching**

* **Purposive searching**
	+ To identify main themes in the literature (sometimes uses saturation sampling)
	+ Searching plans may develop as evidence comes to light
* **Comprehensive searching**
	+ Ideal is to find all studies that answer the review question
	+ An unbiased sample is next best

**Slide 21: Controlled and free-text terms**

* Indexers use standardized **controlled terms** to describe papers
	+ e.g. Subject headings in ASSIA, Descriptors in ERIC
	+ Scope notes define controlled terms for indexers (and us)
* Use controlled terms for each concept in your review
	+ check controlled terms applied to known relevant studies
* Supplement with non-indexed **free text** terms

**Slide 22: Study Selection and Classification**

**Slide 23: Initial Decision Profile**

**Employment Strategies for Adults with Autism
Title/Abstract Inclusion Step**

* Study #
* Full Citation (APA style):

1. Is this an Intervention Study?

* Yes (go to #2)
* Unclear (go to #2)
* No, Then STOP, study not eligible for inclusion!

2. Were the Participants at least 18 Years Old?

* Yes (go to #3)
* Unclear (go to #3)
* No, Then STOP, study not eligible for inclusion!

3. Were Employment strategies the aim of the study?

* Yes (get full text
* Unclear (get full text)
* No, Then STOP, study not eligible for inclusion!

**Slide 24: What are the Criteria for Inclusion or Exclusion?**

Assume the initial decision was accurate!!

**Slide 25: Eligibility Criteria**

* Need to assess the relevance of each study based on pre-selected eligibility criteria
* Provides consistency in study selection
* Provides a basis of justification of study selection
* Aids in reducing bias in selection process

**Slide 26: Eligibility Criteria cont.**

* Specify which studies will be ‘in’ and which studies will be ‘out’ of the review.
* Criteria may be modified during the retrieval process
* Criteria fundamental to collecting rigorous & defensible set of data for review

**Slide 27: Eligibility Criteria cont.**

* How ‘broad’ or ‘narrow’ the study selection process is determined in part by the review question.
	+ If criteria too strict (e.g., clinic setting) results may not generalize
	+ If criteria too broad (e.g., including all types of study designs) may be less confident in results

**Slide 28: Inclusion/Exclusion Guideline**

* Characteristics to Consider
	+ Participant Characteristics
	+ Intervention/Focus Characteristics
	+ Study/Methodological Characteristics
	+ Outcome and Measure Characteristics
	+ Study Design Characteristics

**Slide 29: Inclusion/Exclusion Criteria**

Participant Characteristics

* N of Participants
* Age
* Gender
* SES
* Education
* Diagnosis
* Language Ability
* Race/Ethnicity
* Severity Rating

**Slide 30: Inclusion/Exclusion Criteria cont.**

Intervention Characteristics

* Treatment Type
* Treatment Dosage
	+ Number of Sessions
	+ Frequency of Sessions
	+ Length of Program
* Treatment Grouping

**Slide 31: Inclusion/Exclusion Criteria cont.**

Study Methodological Characteristics

* Aim of Study
* Recruitment Source
* Study Source
* Outcome Measures
* Year of Publication
* Setting
* Geographical Location
* Study Design

**Slide 32: Managing Study Data: A Coding Form**

**Slide 33: Coding Form
Employment Strategies for Adults with Autism
Participant Characteristics**

SES (pg )

1. Low

2. Low-Middle

3. Middle

4. Middle-Upper

5. Upper

6. Labeled Mixed

7. Unlabeled Mixed

8. Unclear/Not Reported

**Slide 34: Coding Form
Employment Strategies for Adults with Autism
Intervention Characteristics**

- Treatment Type

1. Supported Employment

2. Occupation Training

3. Employer Training

- Treatment Dosage

1. Length of Employment

2. Hours worked per day

3. Days worked per week

**Slide 35: Coding Form
Employment Strategies for Adults with Autism
Study/Methodological Characteristics**

- Study/Methodological Characteristics

Recruitment Source

1. Shelter Workshop

2. School Transition Program

3. Private Agency

4. Public Agency

5. Unclear/Not Reported

**Slide 36: Quality of Evidence**

1. Systematic Review w/ Meta Analysis

2. Randomized Control Trial

3. Quasi-experimental (Cohort) Trial

4. Single Group Trial

5. Single Subject Experimental Design

6. Case Study

7. Book

8. Opinion Paper

**Slide 37: Chart the Data**

* At time of protocol development come up with plan for data extraction and presentation of results
* Can be draft chart or table
* “Living document”
* Can be refined as review nears completion
* Towards the end reviewers will have greatest awareness of the contents of their included studies

**Slide 38: Chart the Data (cont.)**

* In scoping reviews charting means data extraction
* Draft chart (basically your coding form) should be piloted with a few selected studies and be refined
* As reviewers chart each study it may become apparent that additional unforeseen data can be meaningfully charted

Joanna Briggs Institute, 2015

**Slide 39: Presentation or Charting Options**

* Map of the data extracted
* Diagrammatic or tabular form
* Descriptive format
* Whatever you decide on, align it with the aims and the scope of the review

**Slide 40: Presentation or Charting Options cont.**

Use the elements of the P-C-C format as a guide to how the data should be mapped most appropriately:

* Participants/Population
* Concept (can include Outcomes)
* Context

**Slide 41: Presentation or Charting Options cont.**

* Examples: Potential chart categories can include
	+ Authors
	+ Year of publication
	+ Study location
	+ Research design
	+ Study population
	+ Aims of the study
	+ Overview of methods
	+ Outcomes measures
	+ Results (of the primary studies)

Modified from Armstrong et al., 2011

**Slide 42: Charting Example**

Table 1A Summary of articles included in review.

Author/Year: Davison et al. (2013)

Caregiver group: Family carers

Patient group: Children with overweight/obesity

Intervention: Family developed, family-centered intervention for childhood obesity.

Location: Upper State New York, USA

Study method: Pre-post cohort design. N=154 at baseline, N=119 at follow-up (77% retention).

Level of evidence: 4

Main findings: Significant improvement in child’s obesity, daily TV viewing and dietary intake. Parents reported higher self-efficacy in offering healthy lifestyles and better support for children’s physical activity.

Hithersay et al., 2014

**Slide 43: Preparing for Final Summary**

* Key difference: Scoping versus Systematic Review
	+ Overview of existing literature typically (but not necessarily) without quality assessment (arrow to right) therefore data synthesis is often minimal
	+ Whether or not to do quality assessment (arrow to right) will depend on resource limitations and purpose of the scoping review
* The resources available and purpose determine how results are summarized
	+ Narrative may describe the range of study types or focus on the scope of definitions and the implications of this on the number of located studies
	+ Consider the implications of the findings of the scoping review within the broader research, policy and practice context

Armstrong et al., 2011; Levac et al., 2010

**Slide 44: Summarize and report the results**

 “Data is not information; Information is not knowledge; Knowledge is not wisdom” Clifford Stoll.

Image in center: A cartoon person with a light bulb over its head and hand pointing up, captioned: “Knowledge: “*I have the answer*”

Image on right: A a stick figure under a large wave, captioned: “Data: “*I have the files*”

acreelman.blogspot.com, pixabay.com

**Slide 45: Methods of summarizing studies - 1**

* Numeric
	+ ‘…for instance, wellbeing was used interchangeably with adjustment (n=4), physical health (n=8), mental health (n=9), stress (n=19), and depression (n=23).’
* Narrative approach
	+ ‘Across studies, family wellbeing was consistently viewed with positive connotations.’

Tint and Weiss, 2016:264

**Slide 46: Methods of summarizing studies - 2**

* Thematic approach

‘One approach was to view family wellbeing as a subjective concept in itself that leads to physical and mental health outcomes…A contrasting approach was to view wellbeing as a *collection* of different constructs…in these situations, physical and mental health were seen as components of the overall wellbeing composite.’

Tint and Weiss, 2016:264

**Slide 47: Consult to interpret findings**

Photo of a man and woman viewing or organizing multicolored notes on a whiteboard.

Flickr.com

**Slide 48: Interpreting the Results**

* Consult with stakeholders to…
	+ ‘Sense-check’…
		- the findings against original questions
		- the implications against reasons why scoping review was commissioned
	+ Identify priority areas for in-depth synthesis…
		- e.g. meta-analysis

Image on the left: 4 stick figures hold a disk. The disk is marked as 4 joined puzzle pieces, with each person holding a piece that is a different color.

Flickr. Com

**Slide 49: Communicate the findings**

Graphic in the center: “THE STORY SO FAR

en.wikipedia.org

**Slide 50: To communicate…**

* Consider:
	+ Who (policy-maker, practitioners?)
	+ What (findings, methods?)
	+ Where (journal article, newsletters?)
	+ When (beginning, middle or end?)
	+ Why (what are you trying to achieve by communicating?)
* Report:
	+ your rationale for doing the scoping review
	+ its research questions
	+ what purpose it is ultimately meant to serve (prevents misuse)

Dobbins et al., 2009; Trevena et al., 2006, Wanyoni et al., 2011

**Slide 51: To communicate… cont.**

* Structure:
	+ One page summary (tailored\*)
	+ Report (actually a user friendly summary)
	+ Technical report (methods section is main part)
	+ Data coding

\*Some evidence that active communication strategies that translate or tailor to target audiences are effective

Dobbins et al., 2009; Trevena et al., 2006, Wanyoni et al., 2011

**Slide 52: Evidence-informed policy and practice (EIPP) model**

This slide depicts the process of evidence-informed policy and practice, which is delineated by a blue oval labeled EIPP SYSTEM. Inside the oval are two boxes in the center; on the left, Evidence Production, on the right, Evidence use. There is a large blue two-way arrow labeled ‘mediation’ between the boxes. A green box at the top of the oval bridges the original boxes, with smaller two-way arrows linking to each of the items below (Evidence Production, Mediation, and Evidence Use.) A dotted orange circle labeled Systematic Reviews is placed below and between Evidence Production and Mediation, with arrows pointing to each. Below the oval is a blue box labeled Research on Evidence Production and Use, with a blue two-way arrow between this box and the oval.

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**Slide 53: Research synthesis as a part of knowledge accumulation**

This graphic depicts research synthesis as a cycle of knowledge accumulation. In the center is a large dotted circle with various arrows pointing clockwise around it., indicating continuing input and feed back throughout.

On the upper left is a blue box intersecting the circle. Funders, other review users and researchers ask questions: what do we know (and how we know it) and what do we want to know?

Two other blue boxes intersect the circle below this box: ‘Is there more that we want to know?’ and ‘Communication, Interpretation, Application.’

On the right side a large box also intersects the circle. At the top of the box: Systematic Review. Below that: Review Question. In the center of the box: Apply systematic review methods. At the bottom: Review findings.

EPPI-Centre, 2016

**Slide 54: Questions?**

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**Slide 55: References and Further Reading**

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, *8*(1), 19-32.

Armstrong, R., Hall, B. J., Doyle, J., & Waters, E. (2011). ‘Scoping the scope' of a Cochrane review. *Journal of Public Health*, *33*(1), 147-150.

Brunton, G., Stansfield, C., & Thomas, J. (2012). Finding relevant studies. In: Gough, D., Oliver, S., Thomas, J. eds. *An introduction to systematic reviews*. Sage, 2012.

Dobbins, M., Hanna, S.E., Ciliska, D., Manske, S., Cameron, R., Mercer, S.L., O'Mara, L., DeCorby, K., & Robeson, P. (2009). A randomized controlled trial evaluating the impact of knowledge translation and exchange strategies. *Implementation Science*, *4*(1), 61.

**Slide 56: References - 2**

Grant, M. J., & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, *26*(2), 91-108. Armstrong, R., Hall, B. J., Doyle, J., & Waters, E. (2011). ‘Scoping the scope' of a Cochrane review. *Journal of Public Health*, *33*(1), 147-150.

Hithersay, R., Staydom, A., Moulster, G., & Buszewicz, M. (2014). Carer-led health interventions to monitor, promote and improve the health of adults with intellectual disabilities in the community: A systematic review. *Research in Developmental Disabilities, 35,* 887-907.

Joanna Briggs Institute (2015). The Joanna Briggs Institute Reviewers’ Manual 2015: Methodology for JBI Scoping Reviews. University of Adelaide: The Joanna Briggs Institute.

**Slide 57: References - 3**

Levac, D., Colquhoun, H., & O’Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implementation Science*, *5*(1), 1-9.

Rees, R.W., Caird, J., Dickson, K., Vigurs, C., & Thomas, J. (2014). ‘It’s on your conscience all the time’: a systematic review of qualitative studies examining views on obesity among young people aged 12–18 years in the UK. *BMJ Open*, *4*(4), e004404.

Sandelowski, M., Voils, C. I., Leeman, J., & Crandell, J. L. (2012). Mapping the mixed methods–mixed research synthesis terrain. *Journal of Mixed Methods Research*, *6*(4), pp.317-331.

Stansfield, C., Brunton, G., & Rees, R. (2014). Search wide, dig deep: literature searching for qualitative research. An analysis of the publication formats and information sources used for four systematic reviews in public health. *Research Synthesis Methods*, *5*(2), 142-151.

**Slide 58: References - 4**

Thomas, J., Newman, M., & Oliver, S. (2013). Rapid evidence assessments of research to inform social policy: taking stock and moving forward. *Evidence & Policy: A Journal of Research, Debate and Practice*, *9*(1), 5-27.

Tint, A., & Weiss, J. A. (2016). Family wellbeing of individuals with autism spectrum disorder: A scoping review. *Autism*, 20(3), 262-275 .

Trevena, L. J., Barratt, A., Butow, P. & Caldwell, P. (2006). A systematic review on communicating with patients about evidence. *Journal of Evaluation in Clinical Practice*, *12*(1), 13-23 .

Wanyonyi, K. L., Themessl-Huber, M., Humphris, G., & Freeman, R. (2011). A systematic review and meta-analysis of face-to-face communication of tailored health messages: implications for practice. *Patient Education and Counseling*, *85*(3), 348-355 reviews in public health. *Research Synthesis Methods*, *5*(2), 142-151.

**Slide 59: Disclaimer**

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