Online glossary

Adjacency

A term relating to the searching of electronic databases. When using adjacency in a search, you are specifying that words should be searched together in a phrase (e.g. ‘heart attack’, ‘housing market’) to yield a smaller and more precise set of results.

Adjacency/Proximity Operators

Database specific terms (such as NEAR or WITH or “exact phrase”) that allow you to search by phrase or within two or more words in relation to one another. These operators increase specificity by removing occurrences of terms when they are distanced from one another.

Aggregative

Review approach concerned with assembling and pooling data (either quantitative as with meta-analysis or qualitative as with thematic synthesis). Compare configurative: review approach that addresses open questions, typically answered with qualitative data and iterative, by examining experiences and meaning to generate and explore theory.

Allocation concealment

A process to hide information from research participants and investigators regarding the sequence of allocation of participants to the intervention group(s) in a randomized controlled trial, until the moment of assignment. This is done primarily to prevent selection bias by participants and/or investigators who may otherwise allocate participants to a preferred/favoured treatment arm

AMSTAR

A Measurement Tool to Assess systematic Reviews. AMSTAR is a reliable and valid instrument, which contains 11 items in a checklist that is used to conduct and critically appraise systematic reviews. The aim of AMSTAR is to improve the methodological quality of the reviews for the benefit of authors, referees, editors and readers.

Analytic/Analytical

The facility to use analysis to discern patterns, trends, or themes to data or the properties of tools that assist in such analysis.

AND

A Boolean operator (qv), that is syntax entered into a search engine or database, that specifically requires two or more concepts to be present in an item (e.g. an abstract) for it to be retrieved (e.g. eat AND drink).

Applicability

The application of the results from individual studies or from a review of studies of a study population to individual people, cases or settings in a target population.

Attrition

The loss of participants during the conduct of a study.

Attrition bias

A type of selection bias caused by attrition (loss of participants).

Author Searching

A term relating to the searching of electronic databases or internet sources for one or more authors known to be working in a review topic area.

Bayesian Meta-Analysis

A specific type of meta-analysis whereby statisticians express their belief about the size of an effect by specifying some prior (up front) probability distribution before seeing the data. Once they have completed the meta-analysis, they update that belief by deriving a posterior (after the fact) probability distribution, taking the data into account. Some commentators suggest that qualitative research may be used to inform the prior belief e.g. parents’ attitudes to vaccination.

Bias

Systematic error in individual studies or in a review that can lead to erroneous conclusions about an intervention, programme, or policy.

Bibliographic Databases

A database of bibliographic records typically containing references to the published journal literature (although its scope may also include newspaper articles, conference proceedings and papers, reports, government and legal publications, patents, books, etc.).

Binary Outcome

An outcome that has two possible endpoints such as dead/alive, occurrence/no occurrence or success/failure. Binary variables are a sub-type of dichotomous variables. This type of outcome is usually used in clinical studies, including those that are interventional and observational.

Blind

When a study design is referred to as blind, this means the treatment a person has received or, in some cases, the outcome of their treatment is not known by individuals involved in the study. This is to avoid them being influenced by this knowledge. The person who is blinded could be either the person being treated, their caregiver or the researcher assessing the effect of the treatment (single blind), two of these people (double blind) or all three of these people (triple blind).

Boolean Logic

A system of logical operators (most commonly AND, OR and NOT) used for specifying information to be retrieved from a computer (bibliographic) database.

Boolean Logic

Syntax entered into a search engine or database (e.g. AND, OR), that specifies the relationship between two or more concepts required to be present in an item for it to be retrieved.

Boolean Operator

a term (most commonly AND, OR and NOT) used to specify the preferred relationship between two or more concepts to be retrieved from a computer (bibliographic) database. For example (eat AND drink; train OR bus; adult NOT child).

Campbell Collaboration

A non-profit organisation that applies a rigorous, systematic process to review the effects of interventions in the social, behavioural and educational arenas, in order to provide evidence-based information in the shape of systematic reviews.

Changes Clause

A term originally applied to the documentation of changes to provisions in government contracts but, in this context, used to refer to documented changes to a review plan or protocol.

Checklist(s)

Systematised list(s) of criteria used to assess the quality of a published research study in order to ensure that a standardised approach can be used in an attempt to minimise bias.

Citation Searching

A term relating to the searching of electronic databases or Internet sources for items that have cited, or been cited by, an article or study known to be relevant to a review topic. This specialised function is only available on a limited number of databases such as Web of Knowledge, CINAHL, and Google Scholar.

Cite-While-You-Write

The facility to use a reference management package alongside a word processing package so that a reviewer can place markers (numerical document identifiers) as they write their article and then automatically generate a bibliography upon its completion.

Cochrane Collaboration

An international organisation of over 10,000 volunteers in more than 90 countries that aims to help people make well-informed decisions about health by preparing, maintaining, and ensuring the accessibility of systematic reviews of the benefits and risks of healthcare interventions.

Cochrane Library

A collection of databases in medicine and other healthcare specialties, including full-text systematic reviews provided by the Cochrane Collaboration and annotated bibliographic records supplied by other organisations.

Cochrane Review

A systematic summary of evidence of the effects of healthcare interventions intended to help people make practical decisions on focused health issues.

Cohort Study/ies

An observational study, commonly used in medicine and social science, in which a defined group of people (the cohort) is followed over time. The outcomes of people in subsets of this cohort are compared, to examine people who were exposed or not exposed (or exposed at different levels) to a particular intervention or other factor of interest.

Complex Intervention

Intervention with two specific characteristics: multiple components and complicated/multiple causal pathways, feedback loops, synergies, and/or mediators and moderators of effect. Complex interventions may target multiple participants, groups, or organizational levels; require multifaceted adoption, uptake, or integration strategies; or work in a dynamic multi-dimensional environment,

Concept Analysis

A type of analysis required to identify and determine the scope of a concept designated by a given term as it is used in the literature of a particular subject field.

Concept Map(s)

A diagram showing the relationships among concepts. Concept maps are useful graphical tools for organising and representing the knowledge covered by a review.

Concept Mapping

Visual organization and representation of knowledge that shows concepts and ideas and the relationships among them. You create a concept map by writing key words (sometimes within shapes e.g. circles, boxes, triangles, etc.) and then drawing arrows between related ideas.

Conceptual Map

See concept map

Confidence Interval (CI)

A statistical measure for quantifying uncertainty or probability around the sample mean. It gives a range of values in which one can be confident the true population value will lie within. The CI is normally used to indicate the level of precision associated with an estimate from a sample. In other words, large sample sizes usually provide narrow confidence intervals and thus more precision, while small sample sizes provide wide confidence intervals and less precision. The CI is calculated based on a pre-specified level of significance.

Confidence Value

A range of values considered to represent the likely range of values (i.e. the lowest and highest values) for a given population of effect sizes within a given margin of error (e.g. 95%)

Conflict of Interest Statement

A written declaration, typically accompanying a systematic review or a primary research study, that documents where individuals involved with the conduct, reporting, oversight or review of research also have financial or other interests, from which they can benefit, depending on the results of the research/review.

Confounding

The presence of one or more variables, in addition to the variable of interest, that makes it impossible to separate their unique effects leading to incomplete or incorrect conclusions.

Confounding Factors

Additional or background factors other than the exposure/treatment/intervention that can have an impact on the outcome(s) of a treatment or intervention. Confounding factors can lead to spurious results and mask the true relationship between the exposure/treatment/intervention of interest and the outcome(s)

Confounding Variable

An unforeseen, and unaccounted-for variable that poses a threat to the reliability and validity of an experiment’s outcome.

CONSORT

Consolidated Standards Of Reporting Trials. The CONSORT statement is a minimum set of recommendations for reporting randomized clinical trials that comprises a checklist of 25 items and a flow diagram to depict the flow of participants through a trial. The use of CONSORT by the authors of trials facilitates complete and transparent reporting as well as helping during the critical appraisal and interpretation of the results of a trial

Constant Comparative Method/Constant Comparison

A research methodology that, when applied to reviews, requires the comparison of findings from an additional study with findings from previously reviewed studies in the quest for additional insights.

Content Analysis

The process of organising written, audio, or visual information into categories and themes related to the central questions of a study or review.

Continuous Outcome

An outcome that has a numeric value on a scale. For instance, the outcome of treating patients for diabetes is haemoglobin, which is recorded in numeric values. However, a continuous outcome can be transformed into a binary outcome by grouping it into categories, so-called categorical data

Controlled Vocabulary

A carefully selected set of terms used in a bibliographic database, such that each concept is described using only one term in the set and each term in the set describes only one concept.

Convergent

Approach to integration that involves conducting two (or more) review components (e.g. quantitative and qualitative) separately before integrating the different data and methods of analysis within a third, final step. Compare sequential: where you complete one review component first with the results of this shaping the subsequent component(s).

Conversion Ratio

A term originally from the domain of business which, in this context, relates to the number of references that need to be examined in order to identify one study for inclusion in a review.

Covidence

The primary screening and data extraction tool for Cochrane authors conducting standard intervention reviews

Critical Appraisal

The use of explicit, transparent methods to assess the data in published research, by systematically considering such factors as validity, adherence to reporting standards, methods, conclusions and generalisability.

Critical Interpretive Synthesis

A critical and reflexive approach to the literature, including consideration of contradictions and flaws in evidence and theory

Critical Path

The path through a series of activities relating to a review, taking into account interdependencies, in which late completion of activities will impact on the review end date or delay a key milestone.

Critical Review

Form of research synthesis that aims to demonstrate extensive research and critical evaluation of quality. Goes beyond mere description to include degree of analysis and conceptual innovation and typically results in hypothesis or model.

Cross-Sectional Survey(s)

A specific research design that involves observation of some subset of a population at the same point in time, looking simply at occurrence without being able to establish causation.

Data Dredging

Is the inappropriate (sometimes deliberate) use of processes such as data mining to uncover misleading relationships in data. These relationships may be valid within the test set but are not statistically significant within the wider population.

Data Extraction

The process of retrieving and coding relevant variables from primary studies in order to facilitate comparison and the observation of patterns, themes, or trends.

Data Mining

Data processing using sophisticated search capabilities and statistical algorithms in large pre-existing databases as a way to facilitate the discovery of patterns, themes or trends.

Data Synthesis

The process of summarising the contents of original studies using textual, graphical, or tabular means.

Database Bias

A specific form of location bias (q.v.) that relates to the likelihood of a particular journal being indexed in a database and therefore to the likelihood of its constituent articles being identified through systematic literature searches. This may relate to language of publication or to location of publisher or other characteristics related to the database or the publishing industry.

Decision Support

Approach that seeks to go beyond research synthesis by taking on some of the decision-making process, for example, incorporating values or judgments. Compare knowledge support: approach that seeks to contribute to knowledge without necessarily impacting directly upon everyday decision-making.

Descriptive

Summarising data according to its patterns or characteristics as opposed to analytical which examines relationships between data.

Descriptive Data Synthesis

Summarising studies descriptively (i.e. what the literature looks like) rather than analytically (what the literature tells us).

Descriptive Mapping

Describing the scope of a topic according to the characteristics of its constituent literature.

Disconfirming Case

A case or example that that does not fit emergent patterns and allows the researcher to identify and evaluate alternative explanations.

Disconfirming Case

Analytic strategy to protect against generalisation or caricature when synthesising qualitative evidence. The search for disconfirming evidence, or negative cases, offers a valuable strategy for assessing the credibility or validity of qualitative research claims.

Dissemination

In the context of this chapter, making review results available to the scientific community, policy makers and industry or public services using scientific language prioritizing accuracy. Typically, focuses on the results of the review project (although planned much earlier), happens only when results are available and targets audiences who are most able to influence take-up and use of results.

Drop-Outs

The attrition or loss of subjects in one or more arms of a trial, sometimes called, nonparticipation. Drop-outs can occur for a variety of reasons including the effects of the drug/intervention, the unavailability of participants for review or their refusal to take a further part in the trial. If the number of drop-outs is substantial it can affect the validity of the results and the conclusions.

Duplicate Citations

The result of literature searching across multiple databases whenever there is significant overlap in journal coverage.

Effect Size

The magnitude of difference between groups, when two or more interventions are being compared; it is also called the treatment effect or effect estimate. For continuous outcomes, the effect size is the difference between the mean value of the intervention and comparator, also called the mean difference. However, in some situations within a meta-analysis where studies were conducted using different measurements or scales, the mean difference cannot be used for pooling the effect size. Therefore, the standardized mean difference is used to transform the effect to a scale that is easily understood. For binary outcomes (or categorical outcomes), the effect size can be presented using the odds ratio, risk ratio, rate ratio, hazard ratio or other measures.

Electronic Database(s)

Databases, most typically bibliographic databases, that can be used to speed up the process of study identification.

Eligibility Criteria

Specific conditions that define the criteria for the inclusion/exclusion of studies in a systematic review in order to answer the research question. These criteria are framed on the basis of the population, intervention (or exposure), control, outcome and study design (PICOS) in a systematic review. Adherence to the eligibility criteria prevents bias in the selection of studies, which is generally not observed in a narrative review

eMERGe

Reporting guideline for meta-ethnographies, developed using consensus methods and a rigorous literature review.

empty reviews systematic reviews around clearly focused questions that have been unable to identify any studies that fulfil the requirements for both relevance and rigour and therefore contain no included studies.

ENTREQ

Generic reporting guideline for qualitative evidence syntheses that has become a de facto standard despite the absence of rigorous development.

EPICOT+

Acronym that represents the structured format for formulating research recommendations according to the essential components of Evidence, Population, Intervention, Control, Outcome, Time. Offers a response to the imprecision implied by “More Research is Needed”.

epistemology: the branch of philosophy concerned with knowledge; Epistemologists study the nature, origin, and scope of knowledge. Within the context of reviews it requires recognition of the assumptions about knowledge and what it is for that underpin different review types.

Evidence Base

Information gathered by a reviewer that characterises what is known about a topic, typically from higher quality studies.

Evidence Gap Map

A tool for collecting and summarizing existing evidence to inform policy decision-making and to prioritize future research. It maps out existing and ongoing primary studies or systematic reviews in a particular sector or subsector in terms of the types of policies or programmes evaluated and the outcomes measured. It is usually presented as a visualized map and highlights the gaps where no (or little) evidence exists

Evidence Synthesis

The process of summarising the contents of original research, typically of higher quality studies.

Evidence-Based Health Policy

The application of principles from evidence-based practice to the making of decisions at a population level regarding effective programmes and policies.

Evidence-Based Practice

The integration of individual professional expertise with the best available external evidence from systematic research.

Exclusion Criteria

The standards or criteria used to specify the circumstances in which a person is disqualified from being included in a trial and, by extension, the standards used to determine whether an individual paper is disqualified from inclusion in a systematic review.

Exhaustivity

The extent to which all possible sources are covered in the quest to identify relevant studies for a review.

Explanatory Variables

Variables that may be used to explain the cause of a particular result or finding.

External Validity

The extent to which you can reasonably apply the results of a study to a definable population in a particular setting in day-to-day practice. Often described as applicability.

Fixed Effects Analysis

An analysis using a statistical model that treats all measurements as if those quantities were non-random. A fixed effects analysis is therefore more likely to underestimate the effect of variation and, correspondingly, to overestimate the effect of an intervention, programme or policy.

Forest Plot (or Blobbogram)

A graphical display designed to illustrate the relative strength of effects in multiple studies addressing, and quantifying the effects for, the same question.

Formative

An adjective describing those aspects of a review that appear throughout its conduct and may thus inform its ultimate form and content.

Framework Analysis

The process of analysing primary data using an existing framework or model as an organising structure to facilitate the analysis.

Framework Synthesis

A process of synthesis that is analogous to the use of framework analysis but in this case used to analyse data from multiple studies within a review.

Free-Text

A retrieval term referring to when a search engine examines all of the words in every stored document in an attempt to match search words supplied by the user, not just terms pre-specified as entry terms by an indexer.

Funnel Plot

A graphical device for exploring the likelihood of publication bias by plotting a measure of study size against a measure of effect size and thereby seeking to identify any likelihood of missing populations of studies.

Gantt Chart

A project management tool that seeks to convey project tasks, timescales, deliverables, and dependencies.

Generalisability

The extent to which findings from research conducted in one time and place can be applied to populations in another time and/ or place.

Gold Standard

A metaphorical term used to describe the extent to which a particular study or characteristic may be used as a basis for comparison with other studies or characteristics.

GRADE

Grading of Recommendations, Assessment, Development and Evaluations. GRADE is a framework that evaluates the quality, certainty and level of evidence for developing clinical practice recommendations. The evaluation is based on the risk of bias (risks of systematic errors), imprecision (risks of random errors), inconsistency, indirectness and publication bias.

GRADE-CERQual

An approach measures confidence in evidence from qualitative evidence syntheses by assessing how well findings from these syntheses represent the phenomenon they are investigating. It does this through 4 areas of consideration: 1) methodological limitations, 2) coherence, 3) adequacy of data, and 4) relevance. A fifth area of ‘dissemination bias’ is currently being considered for addition to the assessment.

Graded Entry Format

Reporting format that allows stepwise access (‘graded-entry’) to the evidence. Typically, starts with a ‘front-end’ short interpretation of findings/conclusions followed by a short, contextually framed, executive summary or narrative report highlighting review results (often with locally relevant factors) and then the full systematic review itself.

Grey Literature

Any information not produced by commercial publishers. It includes research reports, working papers, conference proceedings, theses, preprints, white papers, and reports produced by government departments, academics, business and industry. May be referred to as fugitive literature.

Grounded Theory

Procedures developed within primary data analysis, and subsequently applied to secondary research, that seek to provide a method for generating theory grounded in the data in the absence of an a priori theory or hypothesis.

Hand Searching

A complementary method of searching that requires systematic scanning of the contents of key journals in order to offset perceived deficiencies in database coverage or indexing.

Health Technology Assessment

A type of review commonly conducted for health policymakers that seeks to inform decisions about the effectiveness and cost-effectiveness of a particular procedure, programme, policy or intervention, typically within a tightly constrained timeframe.

Heterogeneity

The extent to which studies demonstrate variation across a range of key variables.

heterogeneous this refers to the extent to which studies included in a systematic review display variability. Such variability may relate to differences in the included participants, interventions and outcomes or to diversity in study design and the consequent risk of bias. These differences may in turn contribute to variability in the intervention effects being evaluated in the different studies (statistical heterogeneity).

Hierarchy/ies of Evidence

An approach to defining the quality of research studies based on their study design, favouring studies that are comparative, prospective, and protected against systematic error or bias.

Homogeneity

The extent to which studies exhibit shared characteristics across a range of key variables.

Idea Web(s)/Idea Webbing

A form of concept mapping regarded as particularly valuable in making sense of a complex phenomenon or programme.

Implementation Fidelity

The degree to which an intervention, programme, or policy can be seen to have been put into practice as originally intended.

Incident Knowledge

The rate by which new knowledge is added to the knowledge base of a specific topic. Compare prevalent knowledge: the amount of knowledge already known to exist on that topic.

Inclusion Criteria

The standards or criteria that have to be fulfilled in order for a person to be eligible to be included in a trial and, by extension, the standards used to determine whether an individual study is eligible for inclusion in a systematic review.

Index Paper

A paper that is regarded as being rich in content and is therefore considered an appropriate starting point for a subsequent investigation of a series of papers.

Information Explosion

A social phenomenon that describes the state at which information is being produced at a rate quicker than it can be identified, organised, managed, or retrieved.

Information Literate

The facility of an individual to be able to undertake basic information processing tasks.

Information Overload

The point at which an individual has too much information and is therefore unable to process it effectively.

Information Retrieval

A set of techniques and procedures used to specify and identify relevant items from a data source such as an electronic database. Informational

Redundancy

A point at which further information fails to add additional value to knowledge or understanding already established from previously identified studies.

Integrative Review

Form of research synthesis that utilises broad methods to include both experimental and non-experimental research in order to understand more fully a focus of interest. Integrative reviews may also combine data from theoretical and empirical literature.

Intention-to-Treat Analysis

An analytical approach that aims to compare outcomes based on a group of patients allocated after randomization, even though they may not have fully complied with the indicated treatment as the study progressed (e.g. a patient who was not taken their medication for the duration of the study, patient who dropped-out, etc.). The results obtained from an intention-to-treat analysis will estimate what happens in the ‘real world’, where the situation is not perfect.

Internal Validity

The extent to which the design and conduct of a study are likely to have prevented bias and therefore the results may be considered reliable.

Interpretive

A type of review that seeks to use the process of synthesis as a means of explaining a particular phenomenon.

Language Bias

A form of bias relating to the original language of a publication. It is characterised by a tendency for reviews to be more likely to include studies published in the language of that review.

Language of Publication Bias

A systematic bias caused by the increased/decreased likelihood of a research paper containing positive or negative results as a function of the language in which it is being published.

Law of Diminishing Returns

The phenomenon that, as one extends searching across more and more databases the yield becomes correspondingly less productive.

Limit Function

A facility on bibliographic databases that allows the searcher to restrict search results by date, language, or publication type in order to make retrieval results more manageable.

Line of Argument (Synthesis)

A component method of metaethnography that seeks to organise findings from multiple studies into a single explanatory line of argument.

Location Bias

An umbrella term referring to any form of bias relating to the location(s) in which a study is originally conducted. Most commonly, but not necessarily, associated with language bias it may result in a review being less likely to include studies that originate from a particular region of the world (e.g. the systematic exclusion of studies from low and middle income countries).

Logic Model

Diagram or flow chart that conveys relationships between contextual factors, inputs, processes and outcomes. Logic models are considered valuable in illustrating influential relationships and components from inputs to outcomes.

Longitudinal

Study design in which the same subjects are observed repeatedly over a period of time.

Lumping

The action of deciding to undertake a broad review in preference to several related, but individual, reviews on the basis of commonalities shared by the population, interventions and/or outcomes (cf. splitting).

Mapping Review

Maps out and categorises existing literature across a broadly-defined topic from which to commission further reviews and/or primary research by identifying gaps in research literature.

Meaningfulness

The value that an individual or population ascribes to a particular intervention, programme or policy as established from the personal opinions, experiences, values, thoughts, beliefs or interpretations of the individuals themselves, their families, or significant others.

Memo-ing

The process of documenting observations on a research process conducted by a researcher or reviewer as their work progresses.

Meta-Analysis

Statistical analysis that combines the results of multiple scientific studies. Meta-analysis can be performed when multiple scientific studies address the same question and measure the same outcomes using similar or comparable methods. The aim is to use statistical approaches to derive a pooled estimate closest to the unknown common truth.

Meta-Ethnography

Interpretive approach that aims to provide a new interpretation of studies or a new theory to explain research findings encountered, rather than a simple aggregation.

Meta-Method

A type of synthesis that seeks to derive insights from studying the characteristics of different methods used to investigate a shared phenomenon.

Meta-Narrative

A type of synthesis that seeks to explore large and heterogeneous literatures from different research traditions or disciplines by following the unfolding storyline or narrative from each.

Meta-Regression

A statistical method to investigate heterogeneity within a meta-analysis. It allows the meta-analyst to investigate the effect of potential effect modifiers on the pooled effect estimates, whether the potential effect modifiers are continuous or categorical variables.

Meta-Theory

A type of synthesis that seeks to synthesise multiple theories from research papers examining a shared phenomenon.

Methodological Filter(s)

Standardised search strategies designed to retrieve studies of a particular methodology type.

Mind Map(s)

A diagram used to represent words, ideas, tasks or other concepts linked to, and arranged around, a central key word or idea.

Mixed Methods Review

A generic term for a review that integrates (a) qualitative and quantitative research questions, (b) qualitative research methods and quantitative research designs, (c) techniques for collecting and analyzing qualitative and quantitative evidence, and (d) qualitative findings and quantitative results.

Narrative Review

A versatile approach that weaves together different questions, research designs, and contexts of individual studies within a common line of argument. Not to be confused with meta-narrative review which explores how a common concept has been handled within different research paradigms or traditions.

Narrative Synthesis

A systematic process of describing the shared properties of a group of studies included in a review primarily through text but augmented by tabular and graphical displays of data.

Network Meta-Analysis

Technique for comparing multiple interventions simultaneously within a single analysis by combining direct and indirect evidence within a network of comparative studies (typically randomized controlled trials).

NOT

A Boolean operator (see above), that is syntax entered into a search engine or database, that explicitly requires that one concept is present in an item (e.g. an abstract) and the other is absent for it to be retrieved (e.g. Female NOT Male).

Observational Study/Studies

A study that investigates the effects of an intervention or programme where the assignment of subjects is outside the control of the investigator.

Odds Ratio

It is the ratio between the odds of exposure to a factor among people with a condition or disease (cases) and the odds of exposure to a factor among those who do not have the condition or disease (controls). This ratio is a statistic that quantifies and represents the strength of the association between an exposure and a disease in a case–control study.

Open Source Software

A method for the distribution of software without charge which allows the source code to be modified or developed in the public domain subject to fulfilment of prespecified terms and conditions.

OR

A Boolean operator (see above), that is syntax entered into a search engine or database, that allows for the presence in a single item (e.g. an abstract) of either one concept or an alternative concept or both in order for it to be retrieved (e.g. fruit OR vegetables).

Outcome

The effect of a treatment or drug or technique that can be measured reliably. Within randomized clinical trials, there are generally primary and secondary outcomes.

Pearl Growing

The process of identifying a known highly relevant article (the pearl) as a means to isolate terms on which a search can subsequently be based.

Per-Protocol Analysis

A comparison of interventions that includes only those participants who completed the treatment they were originally allocated.

PerSPECTiF

Mnemonic used to describe the elements of a question articulated to explore a complex intervention: Perspective-Setting-Phenomenon of interest-Environment-Comparison-Timing-Findings.

PICO

Mnemonic used to describe the four elements of well-formulated quantitative review question: Population/Person/Patient/Problem-Intervention-Comparison-Outcome. Compare SPICE: for qualitative review questions.

PICOC

An acronym, coined by Petticrew and Roberts, 2006, to capture a precise review question by specifying the five elements of populationintervention-comparison-outcome-context.

PICOS

An acronym describing an approach to formulating or specifying a review question according to the elements of Population Intervention Comparison Outcome and Study design.

point estimate

A single point or value considered to represent the most likely approximation for a given population of effect sizes (e.g. a mean value). practically significant – a difference observed in a study or review that is considered by professionals to be important enough to be worth achieving.

Power

From a statistical perspective, power is the probability of rejecting the null hypothesis when the null hypothesis is false (correct decision).

Precision

The effect estimate from a particular study may carry a degree of uncertainty and less power to detect a significant result. Therefore, by using a meta-analysis, the pooled effect estimates from similar studies can improve the precision of the treatment effect, which can be determined by the confidence intervals. Wider intervals indicate greater uncertainty (less precision).

Prevalent Knowledge

That knowledge that exists on a topic at a particular point in time.

Primary Study/ies

Original research studies; compare secondary studies which are reviews or syntheses.

Prior Distribution

The specification, in advance of a test or experiment, of the distribution of an uncertain quantity.

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

A standard for the reporting of systematic reviews and meta-analyses in the published journal literature.

PRISMA-S - (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

Extension of PRISMA used for reporting literature searches.

PRISMA-ScR - (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

Extension of PRISMA used for reporting scoping reviews.

Probability Distribution

A statistical function that identifies either the probability of each value of a random variable (when the variable is discrete), or the probability of the value falling within a particular interval (when the variable is continuous).

Programme Theory

An idealised model that shows how programme features interact to influence performance indicators, and produce desired outcomes. It comprises three components; (i) a problem definition; (ii) programme components linked together to create a programme logic, and (iii) a link between the programme logic and programme activities through the use of performance indicators.

Prospective

A prospective study asks a specific study question (usually about how a particular exposure affects an outcome), recruits appropriate participants and looks at the exposures and outcomes of interest in these people over the following months or years.

PROSPERO

An international database of prospectively registered systematic reviews. It is a free online portal that facilitates the publication of the protocol of systematic reviews related to health. The primary aim is to document a priori protocols, avoid duplication of reviews at the developmental stage and provide transparency in the conduct of reviews and aid in the evaluation of reporting bias.

Protocol

A protocol of a systematic review and meta-analysis should be established a priori to describe the purpose, research question and methods of the systematic review in advance of it being conducted. Protocols should be published and made available before, during and after a systematic review is carried out. Protocols of reviews should contain a rationale, a priori methodology, quality assessment and the statistical approach to be adopted during the review.

Proximity

The specification of two search terms to be close to each other e.g. in a phrase or within the same sentence in order for a document to be retrieved from a database.

Publication Bias

Selective distribution of research resulting in the systematic distortion of research findings, with subsequent implications on the quality of available evidence

Qualitative

Adjective relating to the facility by which a phenomenon may be effectively expressed in terms of its (non-numerical) characteristics.

Qualitative Evidence Synthesis

Umbrella term, as promoted by the Cochrane Qualitative and Implementation Methods Group, for methodologies associated with the systematic review of qualitative research, conducted either as a stand-alone review or as part of a review of complex interventions, systems or for guideline development.

Qualitative Study/ies

An approach to research that is concerned with eliciting the subjective experiences of participants. Qualitative research may entail a choice of methodologies such as ethnography, grounded theory, phenomenology and may use a variety of methods of which questionnaire, interview and participant observation are the most common.

Quality Assessment

Evaluation of the methodological quality of a research design within a study report to assess the extent to which the design and conduct of that study might impact on the credibility of the research findings.

Quality Assessment Checklist

A tool used to perform a transparent and explicit evaluation of the methodological quality of a research design, using items, criteria, or prompts.

Quality of Conduct

That attribute of a review that relates to how well its processes and procedures have been carried out.

Quality of Reporting

That attribute of a review that relates to how well its processes and procedures have been documented.

Quantitative

Adjective relating to the facility by which a phenomenon may be effectively expressed in numerical values.

RAMESES

Reporting guidelines for Realist Syntheses and Meta-Narrative reviews (Realist And Meta-narrative Evidence Syntheses: Evolving Standards)

Random Effects Analysis

An analysis using a statistical model that allows for random variation among populations. A random effects analysis therefore provides a more conservative estimate of an effect size and is less likely to overestimate the effect of an intervention.

Randomization

A mandatory step in a randomised clinical trial that provides an equal chance that all selected participants can be allocated to the available intervention groups. It is an accepted method to avoid selection bias.

Randomised Controlled Trial(s) (RCT)

A study design considered to be the most rigorous method of determining whether a cause-effect relationship exists between an intervention and an outcome. As such systematic reviews of randomised controlled trials provide the best available evidence of effectiveness. The strength of the RCT lies in the process of randomisation that should allow both intervention and comparison to be compared on an equal basis when considering the effect of an intervention.

Rapid Evidence Assessment

A tool for obtaining a rapid overview of the available research evidence on a policy issue, as comprehensively as possible, within the constraints of a given timetable. It uses elements of scoping review and mapping review methodologies.

Rapid Review

Form of research synthesis that accelerates the process of conducting a conventional systematic review through streamlining or omitting specific methods to produce evidence for stakeholders in a resource-efficient manner

Rayyan

A free web-tool (Beta) designed to help researchers working on systematic reviews, scoping reviews and other knowledge synthesis projects, by dramatically speeding up the process of screening and selecting studies.

Realist Synthesis

Synthesis of diverse evidence that seeks to identify underlying causal mechanisms and explore how they work under what conditions, going beyond “What works?” to answer the question "What works for whom under what circumstances?". Also known as realist review.

Reference Management

The management of bibliographic references, and sometimes full-text papers, typically through electronic means so that they may be identified, stored, retrieved, and used effectively.

Reflexivity

The examination of a reviewer’s or review team's own beliefs, judgments and practices during the review process and how these may have influenced the conduct and/or interpretation of the review. Typically focuses on interpretive reviews being largely operationalised in a limited way, as conflict of interest, in aggregative reviews.

Refutational Synthesis

A stage of meta-ethnography (q.v.) where the reviewer is involved in a purposive search for phrases, metaphors and themes that refute any emerging patterns that have emerged from included data.

Reliability

The extent to which a particular result measured at a particular point in time accurately captures the likely result of a similar measurement made at another point in time.

Replicability

The extent to which a result or measurement achieved by one researcher or reviewer could be achieved by another researcher or reviewer working independently.

Replicative

The property of causing replication.

Reporting Guideline

Recommended requirements, with accompanying explanation, that seek to improve the reliability and value of reports of particular study designs or research types by promoting transparent and accurate reporting.

Reproducibility

The property of any scientific study by which results obtained from one experiment can be reproduced, either by the same or another investigator, by repeating the method as described. In the context of systematic reviews it refers to the extent to which review methods, if followed as described, would, at least in theory, produce the same results.

Research Question

A precisely stated question that specifically conveys what the researcher will attempt to answer.

Research Synthesis

Process of combining the results of multiple primary research studies that address the same research question. It may apply equally to quantitative or qualitative research in seeking to make findings applicable or transferable. Aims to generate new knowledge by combining and comparing the results of multiple studies, often using a systematic approach.

Respondent Validation(also Known as Member Checking)

A technique used by researchers to help improve the accuracy, credibility, validity and transferability of a study, Typically the interpretation and report (or a portion of it) is given to members of the sample (respondents/informants) in order to check the authenticity of the work. Feedback from the members of the sample serves as a check on whether the interpretation is viable.

RETREAT (Review Question-Epistemology-Time-Resources-Expertise-Audience & Purpose-Type of Data)

Mnemonic for the seven factors that help you to choose a literature review method and thus determine the scale and complexity of your literature review.

Review Protocol

Document that formally lays out in advance how you will approach each step of your review process. The review protocol serves to protect against bias, set the rules for the conduct of the review and stake your claim to the topic.

Risk of Bias Tool

An instrument developed by the Cochrane Collaboration to assist in the identification and presentation of data on the likelihood of particular types of bias both in an individual study and in a group of studies.

ROBINS-I

A tool developed to assess risk of bias in the results of non-randomized studies that compare effects of two or more interventions.

ROBIS

A tool for assessing the risk of bias in systematic reviews (rather than in primary studies).

SALSA (Search-AppraisaL-Synthesis-Analysis)

Four generic steps, typically in this order, used in undertaking systematic approaches to the literature to produce a research synthesis.

Scope Creep

The tendency for any review to expand the work required without due consideration of the costs and the implications for timely production.

Scoping

The process of identifying the characteristics of a topic and its associate literature in order to determine a feasible strategy for a subsequent review.

Scoping Meta-Review

Seeks to fast-track the scoping review process by working at the level of reviews rather than primary research studies. It shares many objectives of a scoping review in taking stock of the literature, looking for opportunities and identifying gaps and by describing the literature rather than synthesising it.

Scoping Review

Seeks to examine the extent, range and nature of research activity and the extent to which a topic is already addressed by research/systematic reviews; in order to determine the value of undertaking a full systematic review; to summarise and disseminate research findings; to identify uncertainties and to identify research gaps.

Scoping Search

A type of literature search that seeks to determine rapidly and efficiently the scale of a predefined topic to inform the subsequent conduct of a review. Typically, scoping searches do not aim to be fully comprehensive.

Search Filter

A combination of search terms designed to retrieve studies with a particular type of study design. Search filters are typically designed scientifically and then evaluated by selecting terms that uniquely describe the concept of interest and rejecting those that are either not unique or not relevant.

Search Strategy

The process by which searches for studies are conducted to retrieve relevant items. Generically, this includes which databases were searched and which search terms were used. Specifically, relates to exact configuration of search terms and search syntax used within a specific database (e.g. ERIC, PubMed etc)

Selection Bias

A systematic error in choosing subjects for a particular study that results in an uneven comparison whether such subjects represent people (for a primary research study) or papers (for a literature review).

Selective Outcome Reporting Bias

The bias due to the selection of a subset of outcomes among recorded outcomes to be reported. The selective outcome reporting of some outcomes but not others depends on the nature and direction of the results. For example, reporting bias can occur due to the tendency for journals to publish only positive results.

Selective Reporting Bias

The selection, on the basis of the results, of a subset of analyses to be reported.

Sensitivity

A diagnostic term, appropriated by information retrieval, to refer to the capacity of a search strategy to identify all relevant items (i.e. not missing any relevant items) on a particular topic.

Sensitivity Analysis

Analytical approach used to assess the robustness or consistency of review results under different methods, subgroups, definitions, assumptions and so on. Typically, used to explore the implications of including versus excluding studies of poor quality within a review or meta-analysis.

Snowball Sampling

An epidemiological term used to describe the sampling procedure whereby sampling of a small group of subjects (or papers) helps to define an appropriate strategy and sample for further sampling.

Snowballing

Literature-searching technique that involves locating a relevant source paper and then using this paper as a starting point for either working back from its references or for conducting additional citation searches.

Social Validity

In this context, the selection of interventions, programmes or policies on the basis that they are socially acceptable.

Specificity

A diagnostic term, appropriated by information retrieval, to refer to the capacity of a search strategy to identify only relevant items (i.e. not retrieving any irrelevant items) on a particular topic.

SPICE (Setting-Perspective-Interest, phenomenon of-Comparison-Evaluation)

Structured approach to formulation of qualitative questions that builds upon the PICO acronym; the Population component is split into Setting and Perspective and Outcomes is replaced with the more inclusive Evaluation concept to incorporate concepts such as Outputs and Impact.

SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type)

Structured approach to formulation of a mixed methods question where Design, Evaluation and Research type are typically combined with “OR” to retrieve relevant evidence).

Splitting

The action of deciding to undertake a number of narrowly-focused reviews on adjacent topics in preference to a single broad review on the basis of meaningful differences between elements of the population, interventions; and/or outcomes (cf. lumping).

Standardized Mean Difference

Used as a summary statistic in a meta-analysis when the included studies report the same outcomes using different measurements or different scales.

Statistically Significant

A measurable statistical result that is unlikely to have been achieved by chance.

Study Selection

The process of applying inclusion and exclusion criteria to an initial set of documents in order to arrive at a manageable set of includable studies.

Subgroup Analysis

Analytical technique that involves dividing studies into subgroups according to a particular study design feature that might impact on study findings, for example the country in which the study was undertaken, or studies with large and small sample sizes, and exploring how these features might impact on the findings of the review.

Subject Index(es)

Listings, either printed or electronic, that seek to provide retrieval of items in a predefined topic area or discipline.

Summative

An adjective describing those aspects of a review that can only be assessed or evaluated as it approaches its completion.

Synonyms

In literature searching, different words likely to be used by authors or other researchers with a similar meaning to a word that you have selected to describe your own topic e.g. car, motor vehicle and automobile.

Synthesis Strategy

An approach to planning the subsequent synthesis and analysis of a review by attempting to pre-specify review procedures. Typically a synthesis strategy is based on a preliminary assessment of the likely nature of the data and a knowledge of the purpose for which the review is to be used.

Systematic Review

Form of research synthesis that seeks to systematically search for, appraise and synthesis research evidence, using strategies to limit bias often adhering to guidelines on the conduct of a review.

Test for Heterogeneity

A formal statistical test used, prior to metaanalysis, to examine quantitatively the extent of variability or differences between studies in the estimates of effects.

Textwords

Exact words found in the title and/or abstract of an article that can be used to retrieve its details from a bibliographic database. Often called keywords.

Thematic Analysis

A method often used to analyse data and to identify themes in primary qualitative research.

Thematic Synthesis

The use of methods, analogous to thematic analysis in primary qualitative research, in systematic reviews to bring together and integrate the findings of multiple qualitative studies.

Theoretical Saturation

The point within an interpretive review at which all data can be coded into an existing category; new categories are not emerging, and the existing category structure appears stable or secure.

Thesaurus

A list of words showing similarities, differences, dependencies, and other relationships to each other and mapping words used by database users to the actual words utilised by the constructors of that database.

Transferability

The ability to apply results of research in the context of one or more study populations to the context of a target population. Also, the extent to which a review invites its readers to make meaningful connections between elements of the review and their own experiences.

Transparency

The use of a set of policies, practices and procedures to help to make the contents and process of a review accessible, usable, informative and auditable to its readers.

Triangulation

A term from primary qualitative research that refers to the use of two or more methods or sources to collect data on a particular phenomenon. Findings established from multiple sources are more likely to be valid and discrepancies or inconsistencies across sources will merit further investigation. In the specific context of literature reviews triangulation may refer to use of findings from different study types or methods, from quantitative and qualitative research, or from different disciplines or schools of thought.

Truncation

A truncation symbol is a character (determined by the database, such as an asterisk or dollar sign) which can be substituted, when searching databases or search engines, for various endings of the stem of a word (e.g. organi\* for organisation, organization, organised, organized).

Truth Table

A matrix using binary notation to show all possible truth-values for a particular factor, derived from the truth-values of its component studies. It is particularly useful for examining the possible relationships between factors or variables.

Umbrella Review

A type of overview (review of reviews) that only includes other systematic reviews and meta-analyses. Distinguished in this book from other overviews by only including reviews from the same organisation or those using a common manual.

Validity

The degree to which a result (of a study or a review) is likely to be true and free of bias (systematic errors).

Vote-Counting

A (typically derogatory) term for the process by which the likelihood of a review finding being correct is determined simply by the numbers of studies reporting a favourable or unfavourable result.

Weighted Mean Difference

A standard statistic when a meta-analysis is performed to determine the pooled effects of continuous variables. The absolute difference will be computed between the mean values of the intervention and control group. The weight given to each study is determined by the precision of its estimate of effect.

Wildcard

A wildcard character is a character (typically a question mark) that may be substituted, when searching databases or search engines, for any of a defined subset of all possible characters (e.g. wom?n for woman or women).