

Methodological Briefs on Evidence Synthesis Brief 8: Glossary

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This series of eight briefs, produced by the UNICEF Office of Research – Innocenti, is intended to provide guidance on how to undertake, commission and manage evidence synthesis products such as systematic reviews, rapid evidence assessments and evidence gap maps. Evidence synthesis can play an important role in UNICEF's knowledge management and evidence translation efforts by collating knowledge from multiple studies on what interventions work, and why and how they work. It makes research more accessible and therefore can contribute to evidence-informed programming and policy decisions. The primary audience for these briefs is professionals, including UNICEF staff, who conduct, commission or interpret research and evaluation findings in development contexts to make decisions about policy, programming and advocacy. These briefs cover topics including:

- What is evidence synthesis? What kinds of questions can evidence synthesis products help to answer and how can they contribute to decision-making?
- How to design and undertake a systematic review, a rapid evidence assessment or an evidence gap map
- How to commission and manage an evidence synthesis product
- The future of evidence synthesis and key innovations for making the process faster and more efficient

These briefs have been written by Shivit Bakrania with input from some of the world's leading evidence synthesis experts. The other briefs in this series can be accessed at www.unicef-irc.org.

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The Office of Research – Innocenti is UNICEF's dedicated research centre. It undertakes research on emerging or current issues in order to inform the strategic direction, policies and programmes of UNICEF and its partners, shape global debates on child rights and development, and inform the global research and policy agenda for all children, and particularly for the most vulnerable.

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UNICEF OFFICE OF RESEARCH – INNOCENTI METHODOLOGICAL BRIEFS

UNICEF Office of Research – Innocenti Methodological Briefs are intended to share contemporary research practice, methods, designs and recommendations from renowned researchers and evaluators. The primary audience is UNICEF staff who conduct, commission or interpret research and evaluation findings to make decisions about programming, policy and advocacy.

This brief has undergone an internal and external peer review. The text has not been edited to official publication standards and UNICEF accepts no responsibility for errors.

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To consult and download the Methodological Briefs on Evidence Synthesis and a glossary of key terms, visit the website <www.unicef-irc.org>.

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FURTHER GUIDANCE ON EVIDENCE SYNTHESIS

This series of methodological briefs is part of broader efforts by UNICEF Innocenti to support UNICEF staff to appraise, commission, generate, communicate and use research to drive change for children.

For further guidance on evidence synthesis, or to ask about anything covered in these methodological briefs, please contact the author, Shivit Bakrania, or Kerry Albright, Chief of Research Facilitation and Knowledge Management, at <research@unicef.org>.

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GLOSSARY

Citizen science: The collection and analysis of data by members of the general public as part of a collaborative project with professional scientists or researchers.

Conceptual framework: An organizing device or an analytical tool used in research, which helps answer the research question, purpose or aims. In evidence synthesis products, a conceptual framework could consist of a series of intervention types and outcomes, organized into categories and subcategories.

Critical appraisal: This is conducted because all studies are subject to a range of biases arising from their design, conduct or analysis, which can affect their validity and generalizability. Therefore, it is necessary to assess the methodological quality of the included studies and ascertain how much the quality of the included studies influences the overall body of evidence. An assessment of methodological quality is often conducted using a range of scales and checklists.

Crowdsourcing: The practice of obtaining information for or input into a project by enlisting the services of a large number of people, typically via the internet or through a dedicated application.

Data extraction (coding): Systematically collecting data from studies or categorizing the studies. The data to be extracted should be planned in advance and defined in the study protocol.

Effect size: A way of quantifying the difference in the size of an effect of an intervention between two groups, usually the group receiving the intervention and another group receiving no intervention or a different intervention.

Evidence (or knowledge) brokering: A process to facilitate an exchange among and between the producers and users of knowledge, such as researchers and policymakers. As part of this process, knowledge and evidence are translated into a form that is accessible to and easily understandable for readers regardless of their background.

Evidence synthesis: The process of bringing together information and knowledge from a range of sources to inform debates and decisions on specific issues. Systematic reviews, rapid evidence assessments and evidence gap maps are all examples of evidence synthesis products.

Experimental design (randomized controlled trials): An experimental form of impact evaluation in which the population receiving the policy or programme intervention is chosen at random from the eligible population and a control group is also chosen at random from the same eligible population. It tests the extent to which specific, planned impacts are being achieved. The distinguishing feature of a randomized controlled trial is the random assignment of units (e.g., people, schools, villages) to the intervention or control group.

Framework synthesis: A transparent and structured approach to tabulating and analysing data where an initial framework, informed by background material and discussions with potential users, evolves as understanding grows during the course of the review.

Inclusion criteria: These define which studies are eligible and which are not (i.e., whether studies respond to the research question or the theme or topic addressed by the evidence synthesis product). During the screening stage of an evidence synthesis product, decisions to include or exclude documents are based on the inclusion criteria.

Intervention: A project, programme or policy that is implemented to have some kind of desired effect on an outcome.

Machine learning: An application of artificial intelligence that provides systems with the ability to learn and improve from experience without being programmed to do so.

Meta-analysis: This quantitative form of synthesis, is a statistical method for combining numerical evidence from multiple experimental and quasi-experimental studies that address similar interventions in similar populations to produce an overall summary of knowledge on a given topic. In this process, the results of independent studies are converted into metrics called 'effect sizes', which are then combined to produce an overall average effect size.

Meta-ethnography: A qualitative form of synthesis that entails systematically examining key concepts within and between studies, comparing these to highlight similarities and differences, and then organizing them into conceptual categories to develop a conceptual framework.

Natural language processing: A form of artificial intelligence that makes it possible for computers to read and interpret text and human speech.

Observational studies: A non-experimental and non-randomized research design in which the researcher is the observer of an action (such as an intervention). Observational studies may be concerned with the effect of an intervention but there is no deliberate manipulation of the intervention and there is no random assignment to treatment or control groups. They can use quantitative or qualitative methods to collect data. Examples of observational studies include longitudinal and cross-sectional designs, and surveys with large samples.

Outcome: The measurable change caused by an intervention.

PICOCS (or PICO): A mnemonic that is used for structuring a research question and inclusion criteria for evidence synthesis products. Making decisions about each component helps to define the scope and boundaries of the product. The PICOCS acronym stands for: population; intervention; comparison; outcomes; context; and study design. It is an extended version of PICO, which stands for: population; intervention; comparison; and outcomes.

Primary study: A primary study reports on research that was conducted by the researcher to produce new data.

Protocol: The research protocol is a vital part of the review process for an evidence synthesis product and should be completed by the research team prior to beginning the collation stage. It should include sufficient information to enable the independent replication of the methods by another research team.

Publication bias: When an outcome of a study influences the decision whether or not to publish it.

Quasi-experimental design: Quasi-experimental research designs, like experimental designs, test causal hypotheses. Quasi-experimental designs identify a comparison group that is not randomly selected but rather identified to have baseline (pre-intervention) characteristics that are as similar as possible to the intervention group. The comparison group captures what would have been the outcomes had the policy/programme not been implemented (i.e., the counterfactual). The key difference between an experimental and quasi-experimental design is that the latter lacks random assignment.

Realist synthesis: A qualitative form of synthesis that is used for generating theory or synthesizing theories (such as theories of change) that underlie interventions. Realist synthesis focuses on the causal mechanisms underpinning why an intervention may or may not work and explores how these mechanisms work under what conditions. It involves searching for relevant theories in the literature and then grouping, categorizing or synthesizing these theories.

Research uptake: All the activities that facilitate the use of research evidence by policymakers, practitioners and other development actors. In addition to enhancing supply elements, uptake activities also support the use of/demand for research by building the capacity and commitment of research users to access, evaluate, synthesize and use research evidence.

Rigour: The quality of being thorough and accurate when conducting research.

Scoping: A design process that entails background research to help determine the research question, thematic scope and conceptual framework of an evidence synthesis product. This can range from ad hoc and informal background literature searches to more formal and systematic approaches.

Screening: Following the systematic searches, the references (results) then need to be screened to determine whether or not the studies are eligible. This is done by comparing each study to the inclusion criteria and making decisions to include or exclude. This is usually conducted in two or three stages: by title and abstract (when available); and then by full text.

Search strategy: The method used to systematically search for studies. It includes search terms organized into search strings for electronic searching, a list of databases where the searches will be conducted, snowball searching, and a list of experts to be consulted for recommendations.

Search strings: Search strings are when key search terms are combined using Boolean search terms (AND, OR, NOT, ADJ, NEAR or others) and search syntax, which is a form of language used by databases to help specify searches.

Snowball searching: This entails searching the reference lists of studies included after screening for new relevant studies to include (known as backward snowballing). It can also entail searching for where included studies are cited in other studies (known as forward snowballing).

Systematic approach: A standard set of stages for producing evidence synthesis products that are explicit, transparent and replicable. The stages include systematic searches, screening, quality appraisal and data extraction (coding).

Systematic search: When the search strategy is applied to a series of databases by the research team to generate results. The strategy usually needs to be adapted for different databases according to search functionality.

Thematic synthesis: A qualitative form of synthesis that involves a process of constant comparison between studies to draw out key themes and then the arrangement of these themes into a theory.

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