

Introduction to best available research evidence

Best available research evidence enables researchers, practitioners, and policy-makers to determine whether or not a prevention program, practice, or policy is actually achieving the outcomes it aims to and in the way it intends. The more rigorous a study's research design, the more compelling the research evidence, indicating whether or not a program, practice, or policy is effectively preventing violence.



“You have to go the literature. You want to look for studies. You want to weight studies more heavily if they used rigorous designs, randomized trials, and so forth. The nice thing is, now, there are a number of rating systems. . . and they rate all sorts of programs on whether they’re effective.”

– Daniel Whitaker, PhD, Professor of Public Health Georgia State University

The designation of “best available” research evidence acknowledges the fact that in many areas of violence prevention, the research evidence is still being developed. The more rigorously the data on a strategy's effectiveness is collected (i.e., through randomized control trials or strong quasi-experimental studies), the more compelling the research evidence indicating whether or not a program, practice, or policy is effective. Not all violence prevention strategies meet the highest standards of rigor.

In some situations, randomly assigning participants to a treatment or control group may not be feasible or acceptable. In these cases, quasi-experimental designs may be a more feasible option. Observational studies and qualitative data may also provide useful information, although these methods are less rigorous. The goal remains to seek out evidence with the highest level of rigor possible.

What questions can best available research evidence help to answer?

- How much scientific research has been done on a program, practice, or policy?
- What effects have the program, practice, or policy had on preventing violence?
- How well does the design of the various studies support the validity of the findings?
- What implementation guidance is available, and what does that guidance tell us about resources/processes/capacity needed to successfully implement the program, or practice, or policy?

What makes up the best available research evidence?

The Continuum of Evidence of Effectiveness helps to better understand the strength of evidence and effectiveness of prevention strategies. It includes six domains that are important when considering research evidence.

CONTINUUM *of* EVIDENCE OF EFFECTIVENESS

	Well Supported	Supported	Promising Direction / Emerging / Undetermined More Research Needed			Unsupported	Harmful
Effect	Found to be effective		Some evidence of effectiveness	Expected preventive effect	Effect is undetermined	Ineffective	Practice constitutes risk of harm
Internal validity	True experimental design	Quasi experimental design	Non-experimental design	Sound theory only	No research No sound theory	True or quasi experimental design	Any design with results indicating negative effect
Type of evidence/research design	Randomized control trials and meta-analysis / systematic review	Quasi experimental design	Single group design	Exploratory study	Anecdotal / Needs assessment	Randomized control trials or quasi experimental design	Any design with results indicating negative effect
Independent replication	Program replication with evaluation replication		Program replication without evaluation replication	Partial program replication without evaluation replication		Program replication with evaluation replication	Possible program replication with / without evaluation replication
Implementation guidance	Comprehensive		Partial	None		Comprehensive	Comprehensive / partial
External and ecological validity	Applied studies—different settings (2+)	Applied studies—similar settings (2+)	Real-world informed	Somewhat real-world informed	Not real-world informed	Applied studies—same / different settings	Possible applied studies—similar / different settings

The purpose of the Continuum is to:

- Present a clear set of standards on best available research evidence for the field of violence prevention
- Provide information for decision making in the field of violence prevention on these standards of best available research evidence
- Provide a common language for understanding best available research evidence in the field of violence prevention.

The Continuum is designed to be used as a tool to help researchers, practitioners, and policy-makers better understand best available research evidence, and why this evidence is important.

The Continuum is **NOT** a tool for classifying violence prevention programs (i.e., attaching an overarching label to a program such as “Supported”). For example, a program may have a quasi-experimental research design, but offer no implementation guidance. In this example, the research design and internal validity of this program would be considered “Supported,” but its implementation guidance would be “Undetermined.”

What are the dimensions of the Continuum?

The Continuum is made up of six dimensions, each of which addresses a specific aspect of the best available research evidence. For more information on each of these dimensions and the Continuum, visit the Interactive Continuum and refer to the full Continuum Guide available in the Resource Center.

EFFECT

The effectiveness of a violence prevention strategy is based on the strategy’s ability to reduce violence-related outcomes. The most effective strategies produce preventive effects in the short-term, long-term, or both. Effectiveness is important because it indicates whether a prevention strategy is having an impact on the outcomes of interest.

INTERNAL VALIDITY

Internal validity refers to the extent to which the short-term and/or long-term outcomes of a program, practice, or policy can truly be attributed to it or if these outcomes could have been caused by something else. The higher the internal validity, the more confidently a claim can be made that a program is truly producing the effects.

RESEARCH DESIGN

The components or elements of a research study, such as measures, participant selection, group assignment and outcome assessment over time, are known as the research design. The type of research design used to evaluate a program is important because it determines how well effectiveness is measured. The more rigorous the research design, the higher its internal validity, which means a greater likelihood that outcomes can be attributed to the program, practice, or policy being evaluated.

INDEPENDENT REPLICATION

Independent replication involves duplicating the implementation of a program with another group of participants to determine whether the same effects will be achieved. This replication should be independent (e.g. implemented and evaluated by researchers/practitioners who are unaffiliated with the original program and have no conflicts of interest). Independent replication helps to establish the strength of the program and its preventive effects with multiple participant groups.

IMPLEMENTATION GUIDANCE

Implementation guidance includes any and all services and/or materials that aid in the implementation of a prevention strategy in a different setting such as training, coaching, technical assistance, support materials, organizational/systems change consultation, and manuals/guides. Implementation guidance is important because programs are more likely to be established and administered properly when appropriate guidance and direction are provided.

EXTERNAL AND ECOLOGICAL VALIDITY

External validity refers to whether a program, practice, or policy can demonstrate preventive effects among a wide range of populations and contexts. Ecological validity, on the other hand, refers to whether the program components and procedures approximate the “real life” conditions of a specific setting. On the Continuum, external and ecological validity are defined as the extent to which a program has been implemented in the “real world” and has been shown to work in a variety of different applied settings and populations.

Best available research evidence tells us about:

Strength of the Evidence:

The extent to which the methodology of the research is designed to show that the outcomes credited to the program, practice, or policy can truly be attributed to it and not caused by something else.

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Effectiveness of the Program, Practice, or Policy:

The existence of desirable outcomes, and no undesirable outcomes.

Where can I find best available research evidence?

When looking for strategies based on the best available research evidence, registries of evidence-based programs are the best place to start. Technical Assistance resource centers are another helpful resource for identifying strategies, and searching for key words on journal article databases may also help you find articles on programs that have been researched. In circumstances when there is very little research evidence on effective prevention strategies, technical assistance resource centers can also be very helpful in identifying known risk and protective factors and sound theories of change for your area of violence to guide your programmatic efforts, as well as resources for evaluating them. For more information on sources of best available research evidence specific to your area of violence prevention, visit the Resource Center.

It is important to note that research evidence in the peer-reviewed literature may not provide all the information that may be required to appraise evidence of effectiveness completely. It may also be useful to contact the developers of the strategy and/or sites that implemented to collect descriptive information on the setting, how it was done, and the availability of implementation guidance.

Places to find best available research evidence:

- Registries of Evidence-Based Programs
- Technical Assistance Resource Centers
- Journal Article Databases

APPLYING KEY LEARNING PRINCIPLES:

A Community's Approach to Gathering Best Available Research Evidence

As part of a larger Task Force, an interagency workgroup has been convened to use evidence to make a decision about implementing a new prevention strategy in their community. There are several strategies under consideration.

The “Guide to Community Preventive Services” was an excellent resource for the workgroup to use to gain an understanding of the best available research evidence on effective violence prevention strategies. The website for the community guide included a systematic review of rigorous studies on programs geared towards preventing violence. In addition, the website for the Department of Health and Human Services provided information on more research literature and summarized the evidence of effectiveness for certain violence prevention programs.

By reviewing the research evidence supporting effective prevention strategies, the interagency workgroup was better equipped to make an informed decision about the best prevention strategy for their community.

What's Next?

For more information, please refer to the What's Next report received upon completion of the Lesson Modules. This document contains additional resources relating to experiential evidence and its successful application.

