

---

# 2 The Research Consumer as Detective

## *Investigating Program and Bibliographic Databases*

---

Research consumers in search of evidence-based programs often find themselves faced with the daunting task of finding ones that are effective and pertinent. No single repository of programs exists, and to find appropriate programs and practices, you will need specialized investigative skills.

The first chapter of this book examined the foundations of evaluation research and evidence-based medicine and practice as a first step toward getting evidence that matters about programs and practices. This chapter discusses how to find program databases and establish their quality. It also introduces the research consumer to the **research literature review**, focusing on the identification of online articles databases and other sources of program information. The research review is a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing one or more studies or reports that make up an existing body of completed and recorded work produced by researchers, scholars, and practitioners about programs. It is a relatively new approach that owes a great deal to EBM practitioners.

After reading this chapter you will be able to

- Develop a plan for identifying evidence-based program databases
- Evaluate the quality of evidence-based program databases
- List alternatives to the Web for identifying and evaluating evidence-based programs

*(Continued)*

(Continued)

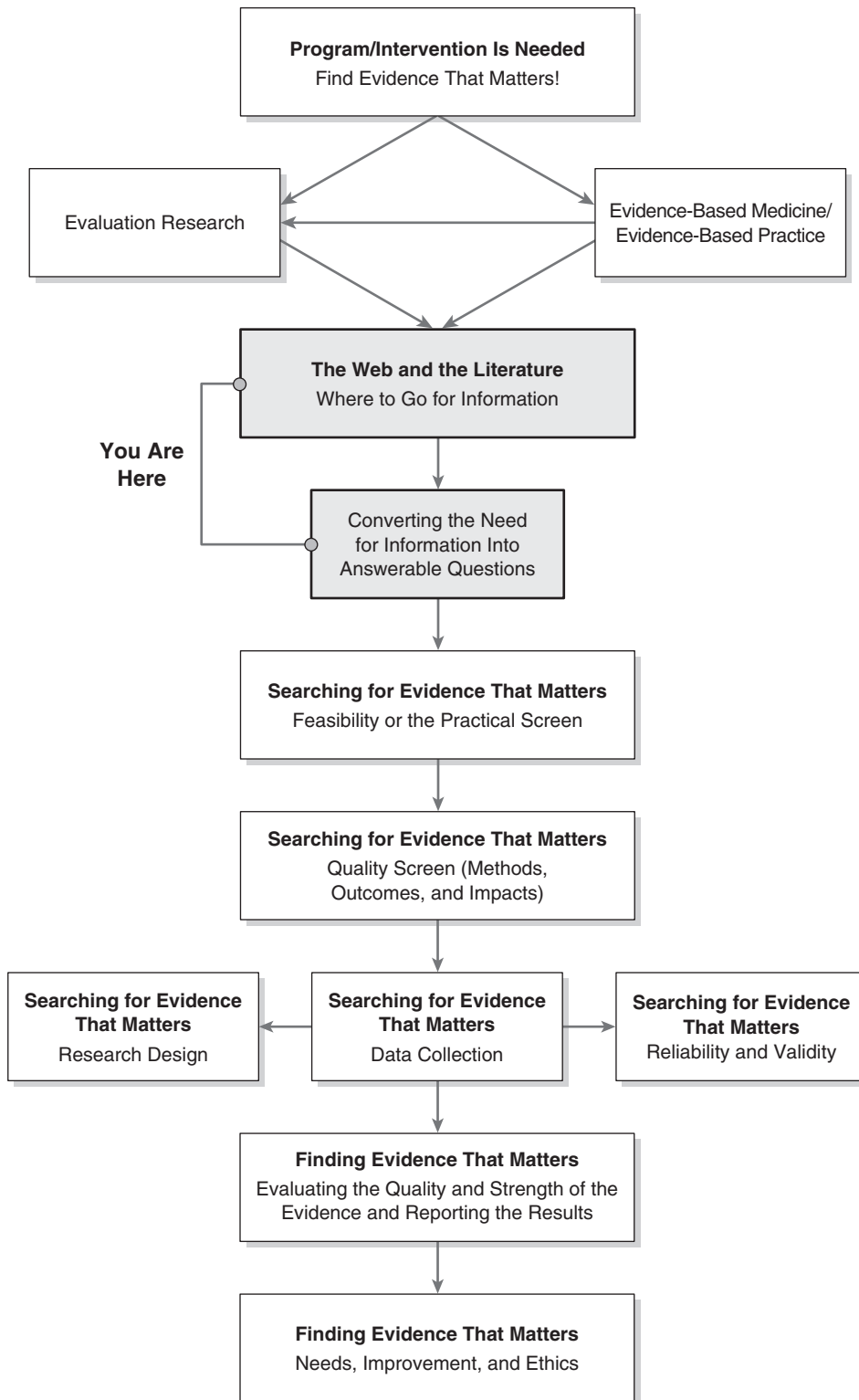
- Learn the eight tasks required in conducting a research literature review
- Choose an online bibliographic database that is likely to result in articles on evaluated programs
- Use the PICO method to formulate questions to focus a literature review search
- Create key words from research questions
- Use Boolean operators (e.g., and, or, not) when searching the research literature
- Learn the characteristics of search terms other than key words including authors, titles, journals, date of publication, etc.
- Identify sources other than the Web and bibliographic databases to learn about evaluated programs and practices

Figure 2.1 shows your location on the way to discovering evidence that matters.

## Looking in All the Right Places: Finding the Evidence

Research consumers often have to do extensive detective work to find appropriate and effective programs and practices. Evaluated programs and practices can be found in the literature and on the Web, and their number is growing daily. Suppose you are looking for research-based programs to prevent family violence. There is no doubt that you can find them, but you will have to search several sites if your aim is to be comprehensive. Once you find the sites, your detective work is still far from complete because the sites may differ in their standards of effectiveness. Cautious research consumers have to be prepared to compare and assess standards across sites. Moreover, it takes a while for Web sites to be updated, so thorough research consumers will need to investigate recently published studies. This means learning to search and evaluate the quality of the literature and the strength of the evidence. Fortunately, thanks to EBM/EBP, consumers are in a better position to do this than ever before.

The difficulty in finding evidence-based programs is compounded by the fact that some practitioners and their funders believe that



**Figure 2.1** Location on the Way to Discovering Evidence That Matters

you risk more waiting to evaluate “commonsense” approaches than you gain from moving forward. Others believe that scarce resources should be spent on services and not on evaluation (or not on “research”). Because their financial supporters require an “evaluation,” they comply by preparing a report, which, in some cases, is hundreds of pages. These detailed reports tend to contain descriptive and anecdotal information, which is of marginal use to consumers who need high quality evaluative information on program performance. As a result, one of the major problems confronted by consumers is how to find evidence-based practices in the face of a shortage of scientifically conducted evaluations.

Considering the debates over effectiveness standards and, in some instances, over the value of evidence-based practices and evaluation research, it is not surprising that much sleuthing becomes necessary if you are to find pertinent evidence-based programs.

Where should wary research consumers begin to look for evidence-based programs? Which criteria should be used in deciding if program evidence has been gathered according to high quality research standards? The answer to the first question about places to look for programs is threefold: the Web, the literature, and your colleagues. The answer to the second question about research standards requires you to acquire basic skills in evaluating research quality so that you can apply your own standards. To learn more about the answers to each of these questions, read on!

## Trolling the Web

---

Although evidence-based programs are still relatively scarce in a number of fields, a growing number of agencies and professional groups are heeding the call to support and disseminate these programs. These groups have formulated evaluation criteria and have hired experts to study programs and make recommendations regarding which ones have scientific evidence of effectiveness. The results are increasingly being made available on the Web. As mentioned before, disagreements over the specific standards of effectiveness exist within and among program compilers and database creators, but their Web sites are definitely good places for the research consumer detective to begin the search for programs.

Let us start with the Web in the search for effective programs. Suppose you are looking for a program to prevent adolescent violence, aggression, and delinquency. The Center for the Study and

Prevention of Violence at the University of Colorado maintains an excellent and easy to use Web site that contains a compendium of evaluated programs. The Web address is [www.colorado.edu](http://www.colorado.edu). Enter “Blueprints for Violence” into the search area.

Once you are in the site, you will find a list of programs and the criteria for labeling them as a Blueprint model program (meets highest standards) or a Blueprint promising program (meets many of the standards). You will also find a description of the standards. If you want, you can select a program to meet your needs by using drop-down menus to describe the risk factors of concern to you (e.g., family, school), audiences (e.g., special needs), program type (mentoring, community policing), and strength of evidence (model or promising program).

Other emerging program database sites are listed in Table 2.1. The list is not intended to be comprehensive nor can we guarantee the accuracy of the addresses because of the rapidity with which Web addresses are known to disappear. The list is designed to facilitate your sleuthing by showing you the sorts of information that people are gathering about programs and to illustrate the kinds of information that you can reasonably expect as the number of databases available on the Web increases.

The Web is an excellent source of information about programs and practices. You have probably learned quite early on not to trust everything you read just because it is in print or comes from a supposedly authoritative source. Apply the same vigilance to the Web-based data.

**Table 2.1** Evidence-Based Program Databases: A Very Partial List

**The Cochrane Collaboration** ([www.cochrane.org](http://www.cochrane.org)) is an international not-for-profit and independent organization, dedicated to making up-to-date, accurate information about the effects of healthcare readily available worldwide. It produces and disseminates systematic reviews of healthcare interventions and promotes the search for evidence in the form of clinical trials and other studies of interventions. The major product of the Collaboration is the Cochrane Database of Systematic Reviews, which is published quarterly as part of The Cochrane Library. Although designed for health care, research consumers in many fields will find a wealth of information on many diverse topics including HIV/AIDS, tobacco cessation programs, and parent training programs. You can obtain study abstracts for free, but must pay for full reviews unless your institution assumes the costs or you live in certain countries including Denmark, Sweden, Australia, New Zealand, or England.

*(Continued)*

**Table 2.1** (Continued)

**The Promising Practices Network (PPN)** Web site ([www.promisingpractices.org](http://www.promisingpractices.org)) highlights programs for children, youth, and families. PPN states that its target audiences are decision makers and practitioners rather than parents or researchers. The site's program information comes from a range of fields, rather than just one (such as violence, drugs, or education).

**The What Works Clearinghouse** is maintained by the U.S. Department of Education Institute of Education Sciences Web site ([www.w-w-c.org](http://www.w-w-c.org)). The Clearinghouse collects, screens, and identifies studies of the effectiveness of educational interventions (programs, products, practices, and policies) and produces reports on interventions that cover topics like these: elementary school math, middle school math, beginning reading, character education, preventing high school drop out, preschool children's school readiness, elementary school language learning, adult literacy.

**The Campbell Collaboration (C2)** ([www.campbell.org](http://www.campbell.org)) is an international effort whose mission is to prepare, maintain, and make accessible systematic reviews of studies on the effects of interventions. The focus is on education, crime and justice, social welfare, and other behavioral and social arenas. C2 maintains two databases, a Social, Psychological, Education, and Criminological Trials Registry, a prospective register of trials that are underway, and a database covering C2 Reviews of Interventions and Policy Evaluations. The information is collected or produced by international experts within the C2 Education, Social Welfare, Crime, and Justice, and Methods Coordinating Groups.

*Other Databases Include*

**Juvenile Justice Evaluation Center: Evidence-Based Programs**

[www.jrsa.org/jjec/resources/evidence-based.html](http://www.jrsa.org/jjec/resources/evidence-based.html)

**The Center for Evidence-Based Practice: Young Children With Challenging Behavior**

<http://challengingbehavior.fmhi.usf.edu>

**National Center for Mental Health Promotion and Youth Violence**

[www.promoteprevent.org/resources/](http://www.promoteprevent.org/resources/)

**School Dropout Prevention Best Practices**

[www.colorado.gov/bestpractices/schooldropoutprevention/evidence.html](http://www.colorado.gov/bestpractices/schooldropoutprevention/evidence.html)

**Web Resources in the Public Domain for Evidence-Based Social Work . . . Program Evaluation**

[www.lib.umich.edu/socwork/rescue/ebsw.html](http://www.lib.umich.edu/socwork/rescue/ebsw.html)





**Resource Center for Adolescent Pregnancy Prevention's ReCAPP: Evidence-Based Programs**

[www.etr.org/recapp/programs/effectiveprograms.htm](http://www.etr.org/recapp/programs/effectiveprograms.htm)

**SAMHSA Model Programs: Substance Abuse and Mental Health Services Administration's (SAMHSA) National Registry of Evidence-Based Programs and Practices (NREPP)**

[www.modelprograms.gov](http://www.modelprograms.gov)

Here are some cautionary tales:

-  **CAUTION:** The standards of proof—the evidence—in support of any given program frequently differ from one group to another. Most important, they may differ from your standards in significance and quality. Some Web sites do not provide links to the research that provides their evidence. Other sites refer you to unpublished reports that may be difficult to locate. It is extremely important that you check the validity of each program's evidence for yourself.
-  **CAUTION:** New measures of behavior and statistical techniques are constantly being added to the evaluation research inventory. Make sure the studies cited to justify effectiveness are up to date. Have the databases themselves been recently updated?
-  **CAUTION:** Even good Web sites may not cover topics or programs that interest you. Web sites are discontinued without notice, and new ones appear—also without notice. As part of the consumers' detective work, you have to be prepared to search anew each time you plan to adapt or adopt a new program or service.
-  **CAUTION:** Insistence on evidence-based programs is relatively new. Good program evaluations take years. You may have to search more than just the online databases to find them.

Use this checklist when searching the Web for evidence-based programs:

#### Checklist for Web Searches: Finding Evidence-Based Programs

- ✓ Check the date that the database was last updated. If it is more than three years old, use alternative sources of information about programs and practices. Check the literature for newly published research. Check government Web sites for programs still under development.
- ✓ Check the standards of evidence used to evaluate program effectiveness to make sure that they agree with yours.
- ✓ Review the original research articles and reports used to justify the selection of a program or practice as a model. These documents will offer greater insights into the program's characteristics than the summaries provided by most databases.
- ✓ Make sure congruence exists between your highest priorities and the topics and approaches encompassed by programs that appear promising to you.

## Other Places, Other Programs: Expanding the Search \_\_\_\_\_

In addition to the Web, research consumers have many options in their search for programs. They include

- Research institutes and “think-tanks”
- Government agencies
- Public and private nonprofit charitable funds and trusts
- Colleagues at the workplace
- Colleagues at professional organizations
- The literature
- Journal articles
- Reports
- Systematic literature reviews of evaluated programs

Many national and international research institutes evaluate and support evidence-based programs. Among them are the RAND Corporation and the Research Triangle Institute in North Carolina.

Government agencies are also a source of information on programs. A major funder of programs and evaluations in the United States is the National Institutes of Health (NIH). The NIH is comprised of institutes such as the National Cancer Institute, the National Institute of Child Health and Development, the National Institute of Alcohol Abuse and Alcoholism, and the National Institute of Mental Health. The NIH maintains a database of all funded studies called “Computer Retrieval of Information on Scientific Projects” (CRISP), and these can be found at <http://crisp.cit.nih.gov/>. Because the work done by these institutes is world class, you can use their multiple databases to learn about new research methods and tools as well as the principles of learning, health behavior, and social and organizational structure and quality.

The U.S. Department of Education also maintains a Web site ([www.ed.gov](http://www.ed.gov)) that has links to other related sites including the Institute of Educational Sciences and the National Center for Educational Statistics. Table 2.2 contains examples of the U.S. Department of Education’s services that may be of assistance.

Almost all U.S. states have extensive links to evidence-based resources. The New York State Office of Mental Health ([www.omh.state.ny.us](http://www.omh.state.ny.us)), for example, offers links to sites such as

- Evidence-Based Practices and Quality Improvements for Organizations
- Evidence Based Practices Resource and Information Centers
- Evidence-Based Practices Resources for Personal Digital Assistants (PDAs)



**Table 2.2** A Government Agency's Assistance With Programs

- 
- National Center for Education Evaluation and Regional Assistance (NCEE)  
An overview of the National Center for Education Evaluation and Regional Assistance. NCEE is responsible for conducting rigorous evaluations of the impact of federal programs, synthesizing and disseminating information from evaluation and research, and providing technical assistance to improve student achievement. <http://ies.ed.gov/ncee/>
  - Policy and Program Studies Services (PPSS)  
Overview of Policy and Program Studies Service. PPSS analyzes policy, directs policy development for legislative proposals and program reauthorizations, conducts program evaluations, and provides technical expertise in formula development, modeling, forecasting, and trends analysis. <http://www.ed.gov/about/offices/list/opepd/ppss/index.html>
  - New Directions for Program Evaluation at the U.S. Department of Education (April 2002)  
Describes effort to shift ED program evaluation away from compliance toward research and evaluation focused on results and the effectiveness of specific interventions. <http://www.ed.gov/news/pressreleases/2002/04/evaluation.html>
- 

- Government Agencies: Federal, State, Local
- Practice Guidelines
- Searching the Evidence-Based Practices Literature
- Cultural Competency and Evidence-Based Practices
- National Recipient and Family Resource
- Specific Evidence-Based Practices Web Resources
  - Home-Based Crisis Intervention
  - Post Traumatic Stress Disorder Treatment

Where else can a consumer go to find evidence-based practices and programs? Every professional society (such as the American Educational Research Association or the American Sociological Association) has a Web site with lists of officers and other participants. Contact these people and ask for assistance in finding good programs and practices. These organizations also publish papers as do research organizations like RAND and CRESST. Ask for the papers and conference reports (if they are not immediately available on the Web). Also, contact the main charitable foundations or trusts in your region. Some may sponsor the development and evaluation of programs or know of other foundations that do.

An excellent Web site for best practices (and many other things as well) is the Utica Public Library: [www.uticapubliclibrary.org/non-profit/outcomes.html](http://www.uticapubliclibrary.org/non-profit/outcomes.html). At that site (accessed in August 2007), you will find additional sites to consults including

Best Practices for Nonprofits: Whatcom Council of Nonprofits  
<http://www.wcnwebsite.org/practices/index.htm>

Contentbank Best Practices <http://www.contentbank.org>

Federal Resources for Educational Excellence <http://www.ed.gov/free/index.html>

UPS Best Volunteer Practices <http://www.community.ups.com/philanthropy/toolbox.html>

National Governors Association Center for Best Practice <http://www.nga.org/center/>

Effective Practices for Service Programs <http://www.nationalserviceresources.org/epicenter/>

America Connects Consortium: Sustaining, Capacity Building, Program Design and Evaluation links <http://www.americconnects.net/resources/>

Benton Foundation Library <http://www.benton.org/library>

Community Information Best Practices <http://www.si.umich.edu/helpseek/BestPractices/index.html>



**CAUTION:** Relying on search engines to identify collections of evaluated programs is probably a waste of time. Search engines produce pages of information of variable quality that must be sorted through. If none of the above resources works (or the one that looks good has disappeared by the time you read this), contact appropriate departments in school districts, universities, social agencies, and research institutes for information. Search engines should be used to locate databases only when all else fails. Program databases may be unavailable in some fields.

One of the most important resources for information on programs is the literature. The literature includes published and unpublished reports and studies. Consumers use the literature in at least two ways. The first is to identify reports of new programs. A second use is to verify that programs found on the Web or recommended by individuals or agencies are pertinent and valid. The consumer, you recall,

is supposed to have a high index of suspicion—like a good detective. Even if you trust the recommending source, you should be prepared to check on the primary source.

More on the uses and contents of the literature is yet to come. Read on!

## **The Literature: The Research Consumer's Support**

The foundation of evidence-based practice is scientifically obtained evidence about effectiveness. Most research consumers simply do not have the time or the resources to do their own evaluation research. Instead they rely on published and unpublished evaluation reports—the **research literature**—to guide them in program selection.

Because you are unlikely to conduct your own research and will rely upon studies conducted by others, you must become armed with the skills to evaluate the quality of these studies and the strength of their evidence. There is nothing new in telling you that you cannot always believe what you read. What is new is that, as someone who is responsible in whole or in part for selecting programs, you must be able to support the likelihood that they will work. This support will often come from the research literature.

A **review of the research literature** is different from a thorough reading of a journal article. It is a highly systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing one or more studies or reports about programs, studies that make up the existing body of completed and recorded work produced by researchers, scholars, and practitioners. Research literature reviews are often called **systematic reviews**.

Most consumers of research-based programs tend to focus on reviews of the literature in their own fields. This is often a mistake. There are few really well-done evaluation studies in any single discipline on any single topic. Why miss out on insights from other fields? A comprehensive search is usually better than a restrictive one.

Research literature reviews can be contrasted with more subjective examinations of recorded information. When doing a research review, you systematically examine all sources and describe and justify what you have done. This enables someone else to duplicate your methods and to determine objectively whether or not to accept the results of the review. That way, when you state, “This program is

effective and here are the reasons,” someone else will be able to follow the logic of your selection.

In contrast to research reviews, **narrative literature reviews** are often idiosyncratic. Narrative reviewers tend to choose articles and reports without giving reasons for the selection, and they may give equal credence to good and poor studies. The results of narrative reviews are often based on a partial examination of the available literature, and their findings may be inaccurate or even false.

## The Consumer as Reviewer: Eight Literature Reviewing Tasks

---

A research literature review follows a very specific protocol and can be divided into eight tasks:

1. *Learning about bibliographic and article databases, Web sites, and other sources.* A bibliographic database is an online collection of articles, books, and reports. The bibliographic databases of interest in research reviews contain full reports of original studies.

2. *Framing research questions.* A research question is a precisely stated question that guides the review. You need to be precise in order to focus the search.

3. *Selecting databases, Web sites, and other sources.* Once the research consumer has identified the question, the next step is to select the sources of information that are likely to provide the most accurate answers.

4. *Choosing a search strategy.* A search strategy relies on the words and phrases that you use to get appropriate articles, books, and reports. These descriptors come from the words and concepts that make up the research questions, and you use a particular grammar and logic to conduct the search.

5. *Applying practical screening criteria.* Preliminary literature searches always yield many articles, but only a few are relevant. You screen the literature to get at the relevant articles by setting criteria for inclusion into and exclusion from the review. Practical screening criteria include factors such as the language in which the article is printed, the setting of a study, and its funding source, as well as whether the study is likely to provide information about the programs you need for the population you are serving. We will discuss

this literature review activity as well as steps 5 through 8 in subsequent chapters.

6. *Applying methodological and special study screening criteria.* These include standards for evaluating scientific quality, the adequacy of a study's coverage, and its ethical integrity.

7. *Doing the review.* Reliable and valid reviews involve using a standardized method, often a printed or online form, for abstracting data from articles, training reviewers (if more than one) to do the abstraction, monitoring the quality of the review, and pilot testing the process to be sure it works.

8. *Synthesizing the results.* Research literature review results may be synthesized qualitatively or quantitatively. Qualitative syntheses present the review's findings by examining effect sizes and trends across several studies and relying upon the reviewers' experience and the quality and contents of the available literature to produce evidence that matters. A special type of quantitative synthesis—a meta-analysis—involves the use of statistical methods to combine the results of two or more studies.

## Choosing an Online Bibliographic Database

Reviews of the literature depend upon data from five main sources: online public (PubMed) and private (NexisLexis, CINAHL, and EMBASE) bibliographic databases; specialized bibliographic databases (Cochrane database of systematic reviews, government reports, and collections maintained by professionals in law, business, and the environment); manual or hand searches of the references in articles; and expert guidance. Remember: The databases that are relevant to literature reviews are those that contain articles or studies. They are called **bibliographic or article databases**.

Everyone with an Internet connection has free access to much of the world's scientific, social scientific, technological, artistic, and medical literature—thanks to the U.S. government that supports it, the scientific community that produces it, and the schools and public and private libraries that purchase access to bibliographic databases and other sources of information. The U.S. National Library of Medicine at the National Institutes of Health, for example, maintains the best site for published medical research. This site is called MEDLINE/PubMed, and access is free from any electronic device with an Internet connection. All original studies include structured abstracts of each study's objectives,

design, and conclusions; many studies are also available in their entirety. To get to MEDLINE, go to [www.nlm.nih.gov](http://www.nlm.nih.gov) and click on "Health Information." Another option is to go to the U.S. government's Web site: [www.FirstGov.gov](http://www.FirstGov.gov). This site also directs you to other databases including ERIC (Educational Resources Information Center). The National Library of Education ([www.ed.gov/NLE](http://www.ed.gov/NLE)) maintains ERIC ([www.eric.ed.gov](http://www.eric.ed.gov)). If you forget these Web addresses, go to any search engine and enter PubMed, MEDLINE or ERIC.

University and other libraries, including public libraries, usually provide free access to hundreds of government, nongovernment, and private bibliographic databases.

A very small list of available databases is given in Table 2.3 to give you an idea of the range that is available.

How does the reviewer determine which online databases may be relevant in reviewing a particular research topic? Some, like PsycINFO or MEDLINE have names that describe their content (psychology and medicine, respectively). Other articles databases like TOXLINE (studies of air pollution and the biological and adverse effects of drugs among other things), EMBASE (pharmaceutical

**Table 2.3** Online Bibliographic Databases: A Small Sample

AGELINE	JSTOR
Anthropology Plus	LexisNexis Academic
ArticleFirst	LexisNexis Congressional
BIOSIS Previews	Los Angeles Times (current; 1985–)
CANCERLIT	MathSciNet
Chicano	MLA Bibliography
CINAHL	New York Times (current; 1999–)
Contemporary Women's Issues	NLM Gateway
Dissertation Abstracts International	PapersFirst
EMBASE	PsycINFO
ERIC via Cambridge Scientific Abstracts	PubMed
ERIC via FirstSearch/OCLC	Science Citation Expanded Index
Ethnic NewsWatch	SciFinder Scholar
GenderWatch	Social Sciences Citation Index
GeoRef	Social Services Abstracts
Government Printing Office	Sociological Abstracts
Handbook of Latin American Studies	TOXLINE
History of Science, Technology, and Medicine	Wall Street Journal (current; 1985–)
	Web of Science

literature), and CINAHL (nursing and allied health) have names that are not obvious. You need to check out the databases whose names are not familiar to you.

Each library usually has a list of databases by subject area such as psychology or medicine. If you are unsure about the contents of a specific database, ask your librarian for information, or go directly to the site to find out what topics and resources it includes.

How do you select among bibliographic databases? It all depends upon your topic and study questions. For example, if you are interested in finding out what the literature has to say about the best way to teach reading to young children, then a database listing research in education, such as ERIC, is clearly an appropriate place to start. However, if you are interested in finding out about interactive reading programs, then a computer and information technology database may also be relevant. It helps to be precise about what you want and need to know, so you can choose all relevant databases.

---

## A Note on Online or Electronic Journals

An increasing number of journals are appearing online without a print version. For example, the Public Library of Science (PLOS) is a nonprofit organization of scientists and physicians committed to making the world's scientific and medical literature a freely available public resource. Everything this group publishes is freely available online for reading, downloading, copying, distributing, and using (with attribution) any way you want. The American Educational Research Association (AERA) has a special interest group that maintains a site with links to journals that are freely accessible and available in many languages (<http://aera-cr.asu.edu/ejournals/>).

---

## What Are Your Questions?

Did you ever use a search engine or bibliographic database to get information on a specific topic only to find that the results included hundreds of pages and thousands of nonsensical entries? If so, you are definitely not alone. Why does this happen? One reason can be traced to the methods used by the search engine's administrators to create and organize the listings. These methods are proprietary and not usually available for review by the public. But another important reason is that most people lack the special skills needed to perform efficient searches. Even though many search engines and most bibliographic databases are fairly user-friendly, most searches tend to be

extremely broad, so the results include a great deal of related and unrelated information. Because the consumer will inevitably need to search the literature for evidence-based programs and practices, searching skills are an essential part of the job.

Searching skills begin with a request for information. This request is often referred to as a research question. For this purpose, a research question contains four components: the population or problem of concern; the intervention, practice, or program you hope to find; a comparison program; and the hoped-for outcomes. This formulation is derived from evidence-based medicine practices and is called **PICO**:

P = Problem/People targeted

I = Intervention (another term for practice or program)

C = Comparison intervention

O = Outcome

Examine these examples (Example 2.1) of three relatively nonspecific and specific questions using the PICO formulation.

### Example 2.1 Specific and Nonspecific Questions and the Use of PICO

#### Topic 1: Care for Diabetic Patients

*Less specific*

**Research Question A:** How can we improve care for diabetic patients?

*More specific*

**Research Question B:** How well does interactive computer technology compare to written educational materials in improving quality of life when used as part of a comprehensive treatment plan for primary care patients with Type 2 diabetes?

*Comment*

Question B is more specific than A because it specifies the population (patients with Type 2 diabetes), type of program being sought (interactive computer technology), a comparison program (written educational materials), and the desired outcomes (improved quality of life).

P = Primary care patients with Type 2 diabetes

I = Interactive computer technology

C = Written educational materials

O = Improved quality of life



**Topic 2: Preventing School Drop Out**

*Less specific*

**Research Question A:** Which programs successfully prevent students from dropping out of school?

*More specific*

**Research Question B:** When compared with one another, which drop out prevention programs prevent high school students from dropping out of school before they graduate?

*Comment*

Question B is more specific because it specifies the persons for whom a program is sought (high school students), describes the type of program being sought (drop out prevention), contains a comparison (programs are compared to one another), and specifies the hoped-for outcome (graduation).

P = High school students

I = Drop out prevention

C = Programs are compared to one another (the nature of the programs is not specified)

O = Graduation

**Topic 3: Alcohol Use and Health**

*Less specific*

**Research Question A:** What programs are available to reduce the risks of alcohol-related problems in older adults?

*More specific*

**Research Question B:** When compared to physician education, how does patient education compare in reducing the risks of alcohol-related problems in persons 65 years of age and older?

*Comment*

Question B is more specific because it defines the people being considered (persons 65 years of age and older), the type of program being sought (patient education), a comparison program (physician education), and the hoped-for outcome (reduction in risks of alcohol-related problems).

P = Primary care patients who are 65 years of age and older

I = Patient education

C = Physician education

O = Reduction in risks of alcohol-related problems

## Research Questions and Descriptors and Key Words \_\_\_\_\_

When you go to an online bibliographic database, you should be armed with a research question. When stated precisely, a research question has the benefit of containing the words the reviewer needs to begin an online search. These words or search terms are often referred to as **key words, descriptors, or identifiers**.

Consider this question (Research Question 3B on page 49): When compared to physician education, how does patient education compare in reducing the risks of alcohol-related problems in persons 65 years of age and older?

From the question, you can see that the important words—key words—include *physician education, patient education, risks of alcohol-related problems 65 years of age and older*.

What key words are suggested based on the wording of Questions 1B and 2B (page 48)?

1. *Primary care patients with Type 2 diabetes, interactive computer technology, written educational materials, quality of life*
2. *High school students, drop out prevention, graduation*

Just knowing the basic key words is a start and a good one, but it is not always enough, unfortunately. For instance, suppose you are reviewing drop out prevention programs in order to find out which after-school programs work best to prevent high school students from dropping out before they graduate. You decide to use PsycINFO for your review because it is an online bibliographic database dealing with subjects in education and psychology. You also search the database using the exact phrase “drop out prevention” and are given a list of 210 articles. You find that the articles contain data on “graduation,” but not all pertain to high school students. To narrow your search and reduce the number of irrelevant studies, you decide to combine “drop out prevention” with “high school graduation,” and you find that your reviewing task is reduced to 36 articles. However, on further investigation, you find that not all of the 36 articles include data on effectiveness. So, you decide to further narrow the search by adding a new term “evaluation.” Then you find that the reviewing task is reduced to a mere 13 articles. This seems like a manageable number of articles to review. This story has a point: As you proceed with your search, you may have to do some refining.

But consider this: Fewer articles are not always optimal. If your search is very narrow, you may miss out on some important ideas!

Your search may be overly restricted because you chose the key words based on your research question, but others who are interested in the same topic may have a different vocabulary.

One way to make sure you have covered all the bases is to check your key words or search terms with those used by authors of articles you trust and in articles of relevance. Did you include all the terms in your search that they included? The good news is that you can find out by checking the citations because all online citations include search terms.

Let's consider programs to prevent elder abuse. The research question is "When compared to one another, which programs have been shown to be effective in preventing elder abuse as indicated by fewer reports of abuse to county social services?" (P = Elderly people; I = All preventive programs; C = Compare all programs with each other; O = Fewer reports to country social services).

Example 2.2 illustrates a modified citation for articles on elder abuse programs from a search of Social Services Abstracts. Descriptors are terms used by Social Services Abstracts as part of its bibliographic indexing system or thesaurus.

### Example 2.2 Social Services Abstracts: Descriptors to Enhance Search for Programs to Prevent Elder Abuse

The screenshot shows a search results page with the following content:

Logout Quick Search Advanced Search Search Tools Browse 0 Marked Records | Search History | Alerts

Results Edit Search Help & Support

5 results found for: KW=(elder abuse) and KW=programs and KW=prevent in CSA Social Services Abstracts

Published Works 5 Scholars 4 Web Sites 0

All Publication Types 5 Journals 5 Peer-Reviewed Journals 4

Mark or Clear all on page | Update Marked List | Save, Print, Email Sort by: Most Recent First Go

« Previous 1 Next » Record # [ ] Go

1.  **Japanese Older People's Perceptions of "Elder Abuse"**  
 Tsukada, Noriko; Saito, Yasuhiko; Tataru, Toshio  
**Journal of Elder Abuse and Neglect, 2001, 13, 1, 71-89**  
 ... proportion of Japanese older people who have heard of **elder abuse** & their perceptions of it, using data collected from a nationally representative sample of 4,000+ respondents (Rs) in 1999. Approximately 50% of the Rs had heard of **elder** ...  
 View Record | UC-eLinks

Database: CSA Social Services Abstracts  
 Descriptors: \*Elderly | \*Elder Abuse | \*Knowledge | \*Japan | \*Victimization | \*Social Problems

2.  **National Law Enforcement Programs to Prevent, Detect, Investigate and Prosecute Elder Abuse and Neglect in Health Care Facilities**  
 Hodge, Paul D.  
**Journal of Elder Abuse and Neglect, 1998, 9, 4, 23-41**  
 ... effort to chronicle the magnitude of institutional **elder** & vulnerable individual **abuse** in US health care facilities & the scope of state law enforcement initiatives & prosecutions of such crimes was undertaken by the National ...  
 View Record | Cited by 3 | UC-eLinks

Database: CSA Social Services Abstracts  
 Descriptors: \*Elder Abuse | \*Adult Care Services | \*Nursing Homes | \*Patients | \*Investigations (Law Enforcement) | \*United States of America | \*Mur...

3.  **Reaching 30 Million People to Prevent Abuse and Neglect of the Elderly: AARP's Strategy for Public Self-Education**  
 Douglass, Richard L.  
**Journal of Elder Abuse and Neglect, 1991, 3, 4, 73-85**  
 ... here are the development, field testing, & theoretical context of a "synergical" exercise that helps adult learners understand the issues of domestic **abuse** & neglect of the elderly. 1 Table. 3 References. Adapted from the source document.  
 View Record | UC-eLinks

Database: CSA Social Services Abstracts  
 Descriptors: \*Elder Abuse | \*Prevention | \*Intervention | \*Educational Programs | \*Public Opinion | \*Family Violence

4.  **The Prevention of Elder Abuse: An Educational Model**  
 Gold, Deborah T.; Gwyther, Lisa P.  
**Family Relations, 1989, 38, 1, Jan., 8-14**

Database: CSA Social Services Abstracts  
 Descriptors: \*Elder Abuse | \*Prevention |

Additional search terms that may be added to your original search—based on the descriptors given in the search results—include *family violence*, *nursing homes*, *educational programs*, and so on.

## Even More Search Terms: Authors, Titles, Title Words, and Journals and Then Some—Limiting the Search

You can search for programs and studies by asking for specific authors, titles of articles, words that you expect to be in the title (perhaps you forgot the exact title), and journals. Sometimes this is a useful way to identify key words and descriptors.

Searching by specifics—authors and titles—also limits or narrows your search. Narrowing your search can be especially useful if you are not doing an inclusive review. Other methods of narrowing the search include specifying the type of research design (e.g., clinical trials or randomized trials—more about these later), age groups (e.g., preschool child 2–5 years, child 6–12 years, or adolescent 13–18 years), language, date of publication, and whether the subjects of the study are male or female.

Most bibliographic databases facilitate your work by providing menus and drop-down lists of commonly used terms. For example, suppose you want to review the literature on programs to prevent alcohol misuse in adolescents. MEDLINE will let you “limit” the search by providing you with options for type of study design you want to review, in what languages, and for which ages or gender. Example 2.3 illustrates how this search appears in MEDLINE, while

### Example 2.3 Search for Programs to Prevent Alcohol Use in Adolescents: PubMed

The screenshot shows the PubMed search interface. At the top, the search query is "programs AND alcohol AND prevention". Below the search bar, there are options for "Limits", "Preview/Index", "History", "Clipboard", and "Details". The search results are displayed in a list format, with the following details:

**Limit: Adolescent: 13-18 years, only items with links to free full text, English, Randomized Controlled Trial**

Display: Summary | Show: 5 | Sort by: | Send to: | All: 9 | Review: 0 | Items 1 - 5 of 9 | Page: 1 of 2 | Next

- 1: **Kaljee LM, Grnberg BL, Minh TT, Tho LH, Thea JT, Stanton B.** Alcohol use and HIV risk behaviors among rural adolescents in Khanh Hoa Province Viet Nam. *Health Educ Res.* 2005 Feb;20(1):71-80. Epub 2004 Jun 15. PMID: 15198997 [PubMed - indexed for MEDLINE]
- 2: **Ellickson PL, McCaffrey DF, Ghosh-Dastidar B, Longshore DL.** New inroads in preventing adolescent drug use: results from a large-scale trial of project ALERT in middle schools. *Am J Public Health.* 2003 Nov;93(11):1830-6. PMID: 14680049 [PubMed - indexed for MEDLINE]
- 3: **Beekeloo RO, Robbin MP, Lee WJ, Worrell KD, Hamburger EK, Russak-Cohen E.** Effect of patient priming and primary care provider prompting on adolescent-provider communication about alcohol. *Arch Pediatr Adolesc Med.* 2003 May;157(5):433-9. PMID: 12742878 [PubMed - indexed for MEDLINE]
- 4: **Worch CE, Owen DM, Catson DM, D'Clémentis CC, Edgemon P, Moore M.** One-year follow-up results of the STARS for Families alcohol prevention program. *Health Educ Res.* 2003 Feb;18(1):74-87. PMID: 12608683 [PubMed - indexed for MEDLINE]
- 5: **Perry CL, Komo KA, Veblen-Mertensson S, Bosma LM, Farakhs K, Munson KA, Stigler MH, Lytle LA.** A randomized controlled trial of the middle and junior high school D.A.R.E. and D.A.R.E. Plus programs. *Arch Pediatr Adolesc Med.* 2003 Feb;157(2):178-84. PMID: 12580689 [PubMed - indexed for MEDLINE]

Display: Summary | Show: 5 | Sort by: | Send to: | Items 1 - 5 of 9 | Page: 1 of 2 | Next

Example 2.4 illustrates how the same search appears in another database, PsycINFO. For the MEDLINE search, we added these limits: “Adolescent: 13-18 years, only items with links to free full text, English, Randomized Controlled Trial.”

### Example 2.4 Search for Programs to Prevent Alcohol Use in Adolescents: PsycINFO

The screenshot shows a PsycINFO search results page. At the top, it indicates 51 results found for the search terms: KW=programs and KW=alcohol and KW=prevention in PsycINFO. The page is divided into sections for 'Published Works 51' and 'Web Sites 50'. Below this, there are filters for 'All Publication Types 51', 'Journals 51', 'Peer-Reviewed Journals 51', and 'Conferences 2'. A 'Sort by:' dropdown menu is set to 'Most Recent First'. The results are displayed in a list format, with each entry including a checkbox, a title, authors, journal information, and a brief abstract. Three results are visible:

- Inhalant Use Among Indiana School Children, 1991-2004**  
Ding, Kela<sup>1</sup>; Torabi, Mohammad R<sup>2</sup>; Perera, Elisha<sup>3</sup>; Jun, Mi Kyung<sup>4</sup>; Jones-McKyer, E. Lisa<sup>5</sup>  
*American Journal of Health Behavior*. Vol 31(1), Jan-Feb 2007, pp. 24-34  
... among Indiana public school students. Methods: The *Alcohol*, Tobacco, and Other Drug Use among Indiana Children and Adolescents surveys conducted annually between 1991 and 2004 were reanalyzed using 2-way moving average, Poisson regression, ...  
[View Record](#) | [References](#) | [UC-eLinks](#)
- Substance Use, Suicidality, and Adolescent-Onset Schizophrenia: An Israeli 10-Year Retrospective Study**  
Shoval, Gal<sup>1</sup>; Sever, Jonathan<sup>1</sup>; Sher, Leo<sup>2</sup>; Diller, Robyn<sup>3</sup>; Apter, Alan<sup>3</sup>; Weizman, Abraham<sup>1</sup>; Zalsman, Gil<sup>1</sup>  
*Journal of Child and Adolescent Psychopharmacology*. Vol 16(6), Dec 2006, pp. 767-775  
... of inhalants and lysergic acid diethylamide (LSD). *Alcohol* and methylene-dioxy-methylamphetamine (MDMA) were also used significantly more by this group. However, no differences were found in the usage of cannabis, amphetamines, cocaine, ...  
[View Record](#) | [References](#) | [UC-eLinks](#)
- Characteristics of suicide from 1998-2001 in a metropolitan area**  
Shen, Yun<sup>1</sup>; Hackworth, Jodi<sup>1</sup>; McCabe, Heather<sup>1</sup>; Lovett, Lori<sup>1</sup>; Aumage, John<sup>1</sup>; O'Neil, Joseph<sup>1</sup>; Bull, Marilyn<sup>1</sup>  
*Death Studies*. Vol 30(9), Nov 2006, pp. 859-871  
In order to establish effective suicide preventive *programs*, it is important to know the etiologic factors and causal relationships between suicide and behavior. Coroner data was analyzed for the 468 suicides that occurred in Indianapolis, ...  
[View Record](#) | [References](#) | [UC-eLinks](#)

Notice that the two databases produce different articles, although if you continue on to look at the entire set of results, no doubt you will find some overlaps. It is critical, therefore, if you want to be comprehensive in your search for programs, to rely on more than one database.

## How Do You Ask for Information? Searching With Boolean Operators

Literature review searches often mean combining key words and other terms with words such as AND, OR, NOT. These three words are called **Boolean operators**.

Look at these three examples of the use of Boolean logic (Example 2.5).

### Example 2.5 Examples of Boolean Logic

#### 1: AND

depression AND medication: Use AND to retrieve a set of citations in which each citation contains all search terms. The terms can appear in any order—"medication" may appear before "depression."

#### 2: OR

medication OR counseling: Use OR to retrieve citations that contain at least one of the specified terms.

#### 3: NOT

depression NOT children: Use NOT to exclude terms from your search. This search finds all citations containing the search term "depression" and then excludes from these citations all that contain the word "children."

Be careful when using NOT because you may inadvertently eliminate important articles. In Example 2.6, number 3, articles about children and depression are eliminated, but so are studies that include the word *children* as part of a general discussion about depression. If children are mentioned at all, the study is omitted.

An advanced method of using AND, OR, and NOT involves enclosing an individual concept in parenthesis; the terms inside the parentheses, terms that are connected using the Boolean operators, will be processed as a unit (Example 2.6).


### Example 2.6 Searching PubMed for Articles on Depression and Counseling and Depression and Medication


The screenshot shows the PubMed search results for the query "depression AND (counseling or medication)". The search bar at the top contains the query, and the results are displayed in a list format. The first five results are:

- 1: Dist CJ, Nunez AC, Flores M, Acosta HD, Archondo T. [Haemostatic and inflammation markers in acute coronary syndromes and its relationship with adverse cardiovascular events] *Arch Cardiol Mex.* 2006 Oct-Dec;76(4):366-75. Spanish. PMID: 17315612 [PubMed - in process]
- 2: Wongpakaran N, van Reekum R, Wongpakaran T, Clarke D. Selective serotonin reuptake inhibitor use associates with apathy among depressed elderly: a case-control study. *Ann Gen Psychiatry.* 2007 Feb 21;6(1):7 [Epub ahead of print] PMID: 17315684 [PubMed - as supplied by publisher]
- 3: Schutte T, Harris S, Levin R, Zvewig R, Katz M, Lipton R. The relation between cognitive functioning and self-reported sleep complaints in nondemented older adults: results from the Bronx aging study. *Behav Sleep Med.* 2007;3(1):39-56. PMID: 17313323 [PubMed - in process]
- 4: Yamamoto K, Onishi Y, Abe T, Kato S. [Case report of an elderly woman who developed a pain disorder following her husband's death] *Seishin Shinkeigaku Zasshi.* 2006;108(1):1142-50. Japanese. PMID: 17313061 [PubMed - in process]
- 5: Eibi T, Sponer D, Voggenrefer J, Nicca D, Simcock M, Bucher HC, Sprig R, Battegay M. Swiss HIV Cohort Study. A smoking cessation programme in HIV-infected individuals: a pilot study. *Antivir Ther.* 2006;11(6):787-95. PMID: 17310823 [PubMed - in process]

Example 2.6 presents an efficient method of searching that is called nesting. The computer will search for any articles on depression AND counseling as well as for any articles on depression AND medication. If both counseling and medication are studied in a single article about depression, the computer will be able to identify it.

Not all bibliographic databases require you to capitalize AND, OR, and NOT. Check the “advance search” function to make certain you are using the correct syntax and punctuation. Each search engine has its own peculiarities. Also, many have other functions that are helpful in making a search more efficient. One such function, a “wildcard” (often \*), is used to shorten the number of words with a common root. For example, the term “agoraphob\*” can be used to search for “agoraphobic” or “agoraphobia,” while the term “\*therapy” can be used to locate research dealing with “psychotherapy” or “pharmacotherapy.”

 **CAUTION:** Initial key-word searches can lead to hundreds of articles. In all probability, you will need to review the titles and abstracts of each article that you identify in this first pass to assess their potential relevance. Use the key words displayed in relevant articles to continue your search. Some bibliographic databases provide links to other articles. Some of these may be pertinent and may offer clues to other key words.

 **CAUTION:** Limit your use of key words to two or three at a time. Use the bibliographic databases’ advanced functions to restrict your initial search by language (e.g., English only), by type of journal (e.g., clinical journal), and by publication date (e.g., within the last year).

---

## Pausing During the Search

When your search is no longer fruitful, review your collection of literature. Check the entire list for quality and comprehensiveness. Get assistance from someone who is interested in the topic or has worked in the field. Ask questions: Are all important investigators or writers included on the list? Have any major studies been excluded?

### Supplementing the Online Search

Is the following statement true or false?

An experienced literature reviewer only needs access to the Internet to do a comprehensive literature review.

The answer is “false.” Experienced literature reviewers must know how to locate databases and use the correct language and syntax to identify key words, subjects, titles, and so on to identify pertinent studies. However, search processes are far from uniform or perfect, the databases and study authors may not use search terms uniformly (especially true with new topics), and even the most proficient reviewers may neglect to find one or more studies regardless of how careful they are. Additionally, a reviewer may, in actuality, have access to just a few databases. Also, some studies may be in progress and not yet ready for publication. Finally, some potentially important studies may never get published.

The following checklist summarizes the main reasons for supplementing computer searches of the literature with searches using other data sources.

#### Checklist: Reasons to Supplement Electronic Searches

---

- ✓ Indication that many important studies are in progress or complete but not published
- ✓ Few acceptable studies are available
- ✓ Lack of uniformity across databases and fields in terminology
- ✓ Reason to believe that your electronic search is not comprehensive because you do not have access to all databases

Where do you go when being online is insufficient? Consider the following supplemental sources:

- Review the reference lists in high quality studies
- Talk to colleagues and other experts (including authors of articles that interest you)
- Review major government, university, and foundation Web sites

## Reviewing References

---

After many, many hours of searching, you may fail to uncover all there is to know about a topic. This can easily happen if you rely on just one or two databases. Compare the results from MEDLINE and PsycINFO in Examples 2.3 and 2.4. As you can see, each provides a different array of articles.

One way to avoid missing out on important studies is to review the references in noteworthy articles. Noteworthy articles are those that are standard in your field or done by a researcher you trust. You do not necessarily need to retrieve the article to do this because some



databases (like PsycINFO and Sociological Abstracts) provide a list of searchable references as part of the citation (if you ask for it).

Listen in on this conversation between a frustrated reviewer and a more experienced colleague to get a feeling for how references in articles can help provide coverage for a literature review.

### **Searching the References: A Conversation Between an Experienced and a Frustrated Reviewer**

*Experienced Reviewer (ER):* I have been reviewing your list of references and notice that you do not include any reference to the CONSUMER program, which teaches young adults how to be better consumers.

*Frustrated Reviewer (FR):* I did a search of ten databases and asked specifically for CONSUMER. How did I miss that program?

*ER:* Very simple. CONSUMER is a new program, and its evaluation hasn't been published anywhere.

*FR:* If nothing about it is published, how can I be expected to find it?

*ER:* If you had reviewed the references in my study of the young adult consumer, you would have found it. I knew about the study, and I asked the principal investigator to tell me about it. Although no paper has been published, the U.S. government funded the evaluation, and so I was able to get a copy of the final report. You can download the final report from [www.nixx.cdd.gov](http://www.nixx.cdd.gov).

*FR:* I wonder how many other studies I may have missed because I didn't study the references.

*ER:* I wonder too.

## **Is Everything Worthwhile Published?**

Unpublished literature has two basic formats. The first consists of documents (final reports that are required by funding agencies, for example) that are written and available in print or online—with some detective work—from governments and foundations. The evaluation report discussed in the conversation between the experienced and frustrated reviewer (immediately above) is an example. But some studies do not get published at all.

Although some unpublished studies are most certainly terrible or are the products of lazy researchers, some important ones are neither.

These studies are not published because their conclusions are unremarkable or even negative, and journals tend to publish research with positive and interesting findings.

Much has been written about the effects of failing to publish studies with negative findings. The fear is that, because only exciting studies with positive results are published and less provocative studies with negative or contrary findings are not published, some programs look more effective than they really are. That is, if Reading Program A has one positive study and two negative ones, but we only get to know about the positive one, then program A will appear to be effective, although it may not be. This phenomenon—publication of positive findings only—is called publication bias.

The general rule in estimating the extent of publication bias is to consider that, if the available data uncovered by the review are from high quality studies and reasonably consistent in direction, then the number of opposite findings will have to be extremely large to overturn the results.

## Calling All Experts

“Experts” are individuals who are knowledgeable about the main topic addressed in the literature search. You can find experts by examining the literature to determine who has published extensively on the topic and who is cited often. You can also ask one set of experts to nominate another. Experts can help guide you to unpublished studies and work in progress.

They may also help interpret and expand upon your review’s findings. They help answer questions like these: Do my literature review findings apply to everyone or just a particular group of people? How confident can I be in the strength of the evidence? What are the practical or clinical implications of the findings? The research consumer should consider techniques such as the Delphi, nominal group, focus group, and RAND/UCLA Appropriateness Method in bringing experts together to assist in the identification and evaluation of studies, articles, and evidence. You will encounter these techniques in greater detail in Chapter 8.

Example 2.7 contains a selection from a review of the literature on interventions to identify and treat women who experience interpersonal violence.

**Example 2.7** A Portion of a Literature Review of Interventions for Violence Against Women

This article systematically reviews the available evidence for strategies applicable in the primary care setting to identify and treat women who experience interpersonal violence (IPV). For this review, IPV was defined as physical and psychological abuse of women by their male partners, including sexual abuse and abuse during pregnancy. The systematic review focused on the effectiveness of interventions to prevent IPV, including all comparative studies evaluating interventions to which a primary care clinician could refer a patient. These studies included interventions for women, batterers, and/or couples. The type of comparison group could be a no intervention control, a usual care control, or a group receiving an alternate intervention for study purposes. In the case of physical, sexual, and emotional violence, the primary health outcomes (i.e., changes in disease morbidity or mortality) are those related to physical and psychological morbidity of abuse; however, these data often are not available. Thus, self-reported incidence of abuse is often used as the primary outcome in these studies.

**Data Sources**

MEDLINE, PsycINFO, CINAHL, HealthStar, and Sociological Abstracts were searched from the respective database start dates to March 2001 using appropriate database-specific key words such as *domestic violence*, *spouse abuse*, *sexual abuse*, *partner abuse*, *shelters*, and *battered women*, among others. The reference lists of key articles were hand searched. Both primary authors reviewed all titles and abstracts according to the study selection criteria (see "Study Selection" below) to arrive at a final pool of articles for review. Also included were relevant articles from after the search end date and those articles identified by external reviewers.

**Comment**

This review relies on 5 online databases and a hand search of the reference lists of key articles. The investigators also reviewed articles that were relevant even if they appeared after the end date of their search. Finally, "experts," that is, external reviewers, were also relied upon for articles. The key words empirically related to the consequences of intimate partner violence. The research question for this review is

P = Women in the primary care setting who experience intimate partner violence (IPV)

I = Interventions for women, batterers, and/or couples

C = No intervention control, usual care control, or a group receiving an alternate intervention for study purposes

O = Self-reported incidence of abuse

SOURCE: Wathen and MacMillan (2003).

## Summary of Chapter 2: The Research Consumer as Detective

---

### Words to Remember

Boolean operator, descriptor, identifier, key word, narrative literature review, online bibliographic or article databases, online or electronic journals, PICO, research literature review

Research consumers often have to do extensive detective work to find appropriate and effective programs and practices. Evidence-based programs are still relatively scarce in a number of fields, but a growing number of agencies and professional groups are heeding the call to support and disseminate these programs. These groups have formulated evaluation criteria and have hired experts to study programs and make recommendations regarding which ones have scientific evidence of effectiveness. The results are increasingly being made available on the Web.

When consulting online program databases, be sure to check the date that the database was last updated. If it is more than three years old, you should probably supplement your search with a review of the literature and government sites that support evaluation research. Also, check the standards of evidence used to evaluate program effectiveness to make sure that they agree with yours. Next, review the original evaluation articles and reports used to justify program choices. Make sure congruence exists between your highest priorities and the topics and approaches encompassed.

In addition to the Web, research consumers have many options in their search for programs. They include

- Research Institutes and “Think-Tanks”
- Government Agencies
- Public and Private Nonprofit Charitable Funds and Trusts
- Colleagues at the Workplace
- Colleagues at Professional Organizations
- The Literature

A **research literature review** is a highly systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing one or more studies or reports that make up the existing body of completed and recorded work about programs, work produced by researchers, scholars, and practitioners. In contrast to research reviews, **narrative**

**literature reviews** tend to be idiosyncratic. Narrative reviewers are inclined to choose articles and reports without justifying why they are selected, and they may give equal credence to good and poor studies.

**Systematic literature reviews** involve eight key steps: (1) learning about the available bibliographic or article databases, Web sites, and other sources; (2) framing the research question to focus the review; (3) selecting databases; (4) developing a search strategy; (5) applying practical screening criteria; (6) applying methodological and nonmethodological screening criteria; (7) doing the review, which means abstracting preselected information in a reliable way; and (8) synthesizing the results.

Searching skills begin with a request for information. This request is often referred to as a “research” question. For this purpose, a research question contains four components: the population or problem of concern; the intervention, practice, or program you hope to find; a comparison program; and the hoped-for outcomes. This formulation is called **PICO**:

**P** = Problem/People targeted

**I** = Intervention (another term for practice or program)

**C** = Comparison intervention

**O** = Outcome

When you go to an online bibliographic database, you should be armed with a research question. When stated precisely, a research question has the benefit of containing the words the reviewer needs to begin an online search. These words or search terms are often referred to as **key words**, **descriptors**, or **identifiers**. Literature review searches often mean combining key words and other terms with words such as **AND**, **OR**, and **NOT**. These three words are called **Boolean operators**.

---

## The Next Chapters

The next chapters examine how to sort through the research literature. **Chapter 3** discusses the practical screen through which you put articles and reports to make sure that they are available to you and, if they are, that they are usable because they are pertinent to your client’s needs. The remainder of the chapter discusses how to evaluate the quality of the literature and summarize the findings.

## Exercises

---

1. You have been asked to find research-based programs to teach reading, and your colleague has been asked to do the same for programs to prevent high school drop out. You and your colleague decide to see if there are any existing evidence-based program databases to help you find both types of programs. How would you go about finding the databases?
2. A research consumer at a social service agency has discovered a database that specializes in evidence-based programs to prevent elder abuse, a topic of special importance to the agency. The consumer notes that the database is updated yearly, and the standards of evidence used to evaluate program effectiveness appear convincing. Before recommending any of the programs to the agency, the consumer wants to be certain that the programs have been rigorously evaluated. Unfortunately, no links to the original evaluations can be found, although the site provides an extensive bibliography. When the consumer goes to check the sources online, she finds that she does not have free access to them, and the agency cannot afford to buy the access. What should the consumer do?
3. Which of the following are typical research literature review tasks?
  - a. Applying practical screening criteria
  - b. Submitting a detailed protocol to an ethics committee
  - c. Summarizing the findings in a protocol
  - d. Evaluating the scientific quality of the review
4. Read the list of topics below and name at least one article or bibliographic database that might provide you with information on that topic.

Topics:

  - a. Reducing risky health behaviors in adolescents
  - b. Improving science education in elementary schools
  - c. Reducing symptoms of anxiety in older adults confined to wheelchairs
  - d. Promoting health literacy
5. Frame questions for a literature review using the PICO method for each of the following topics.
  - a. Preventing accidents in the home  
P = Older adults  
I = Web-based instruction

- C = Printed materials  
O = Fewer home-based falls
- b. Fostering parenting skills  
P = First-time parents  
I = Small group sessions every week for ten weeks  
C = Once a month home visits by a social worker for five weeks  
O = Better parenting skills (e.g., playing with child; learning what to do if child cries often)
- c. Enhancing community involvement in school activities  
P = Community leaders  
I = Ads on local television stations  
C = Electronic newsletter to community leaders  
O = Significant increase in membership in Parent-School Organization (PSO)
- d. Improving health literacy  
P = People 75 years of age and older  
I = Pharmacist  
C = Clinic Health Educator  
O = Knowledge of name, dosage, and purpose of medications
6. Using each research question that you just created, select key words that can be used to guide a literature search.
7. Use Boolean operators to conduct a search for literature to answer these research questions.
- a. How does an online educational program compare to printed materials in reducing the number of home-based falls in older adults?  
*Key words:* Web; aged 65 +; printed materials; education; falls; program; evaluation; evaluation research; English
- b. How do home visits and small group sessions compare in fostering parenting skills in first-time parents?  
*Key words:* home visits; small groups; parenting; program evaluation; evaluation research; English
8. In addition to key words, what other terms can be used to guide a literature search?
9. Name three sources of information about programs and practices NOT including databases of articles or bibliographic citations and other Web databases.



## Further Reading

In addition to PICO, readers may find two other systems useful in guiding the formulation of questions to focus a literature search. These include POET (Patient-Oriented Evidence That Matters) and COPES (Client-Oriented, Practical Evidence Search).

