Evidence Searching for Evidence-based Psychology Practice

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Abstract

There is an increased awareness of evidence-based methodology among psychologists, but little exists in the literature about how to access the research. Moreover, the prohibitive cost of this information combined with limited time are barriers to the identification of evidence to answer clinical questions. This article presents an example of a question worked though in an evidence-based way. Methods are highlighted, including distinguishing background and foreground questions, breaking down questions into searchable statements, and adapting statements to suit both the question being asked and the resource being searched. A number of free, evidence-based resources are listed. Knowing how and where to access this information will enable practitioners to more easily use an evidence-based approach to their practice.

Keywords

Evidence Based Practice; Computer Searching; Databases; Internet Usage; Information Seeking

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Psychologists are actively engaged in and committed to evidence-based practice but sometimes find navigating the resources in order to evaluate and implement effective practices challenging. This commitment was demonstrated by the American Psychological Association (APA) who in August 2005 adopted as policy a statement on evidence-based practice within the profession of psychology (APA Presidential Task Force on Evidence-Based Practice US, 2006). The APA Presidential Taskforce on Evidence-Based Practice, a diverse group comprised of scientists and practitioners developed the statement. The Taskforce capitalized on the long history within psychology of integrating research and practice, and then stated an explicit commitment to the use of evidence-based practice within all aspects of the profession. The definition of EBBP (Evidence-Based Practice in Psychology) created by the Taskforce is:

> Evidence-based practice in psychology (EBPP) is the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences. (APA Presidential Taskforce, 2006, p.273).

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This definition is an adaptation of the classic evidence-based medicine definition provided by Sackett (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996) that has been widely used and paraphrased since its inception: "Evidence-based practice is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients." (Sackett, 1996, p. 71)

Practicing psychologists are often faced with questions on a regular basis, for which evidence might exist to answer them, but which may not be easily accessible. A recent search of PsycINFo located many articles about psychologists adopting evidence-based practices, but very few about the skills and steps needed to search for evidence. So although psychologists undergo extensive training in research methods, there may be some recent initiatives from the world of library science that may be additionally helpful in locating evidence to answer questions. Many of the techniques outlined will already be familiar, but here they are placed within the context of evidence-based practice (EBP), and they can be supplemented by articles, chapters, books, and websites in quickly and efficiently locating relevant and useful evidence for either research or practice (Eady, Wilczynski, & Haynes, 2008; McGowan, 2008; McKibbon & Wilczynski, 2009).

As a step towards describing, promoting and achieving evidence-based psychological practice, this article will focus on one of the key skills of the evidence-based practice process, that of finding the best available evidence to answer a clinical question. Psychologists, especially those who work in private practice, may find it difficult to access training in this particular proficiency, and the resources and educational aids to acquire these skills are not always obvious. For these reasons, an article is presented on how to engage in the evidence-based searching process for practicing psychologists. This paper will focus on posing an answerable question and then executing a search of the literature to identify evidence-based studies that would be useful to a psychologist. It will also briefly describe the available bibliographic databases and show how to construct simple search strategies with which to retrieve evidence quickly and efficiently, so making optimum use of limited time. As many psychologists do not have free access to some of the more extensively used databases, a partial list of free electronic evidence-based resources is provided. Finally, an example will be used to demonstrate how evidence-based information found electronically might be of help to those interested in engaging in evidence-based psychology practice.

Evidence-based Process

The evidence-based process has been well-documented (Guyatt, Rennie, Meade, & Cook, 2008; Hamilton, 2005; Parkes, Hyde, Deeks, & Milne, 2001; Straus, Richardson, Glasziou, & Haynes, 2005; Weinfeld & Finkelstein, 2005; Wyer et al., 2004) and involves the following steps, of which this paper will concentrate on the first two: (1) Formulate a clear question about patient or research issue; (2) Search the literature to find the best available evidence; (3) Critically appraise the evidence for its validity, accuracy and usefulness; (4) Apply useful findings, integrating them with clinical expertise and patient's characteristics, culture, and preferences; and (5) Evaluate the outcomes and if needed, initiate a refined search. Formulate a clear question about patient or problem.

Clearly formulated questions (or foreground questions) can be used to devise a search strategy with which to interrogate on-line databases. Foreground questions must be answerable (and therefore searchable). Before getting to this point, however, the searcher needs to ascertain whether they have sufficient knowledge on which to build a foreground question. For example, what makes dialectical behavior therapy different from other modes of behavior therapy, and what is its putative mechanism of action? What is the most sensitive measure for assessing changes in depression? These are known as background

questions because they are general, do not apply specifically to any patient, and so do not deal with unique patient issues such as symptoms, age, gender, ethnicity, co-morbidities and personal preferences. Yet they are important since they address specific information needs that enable greater understanding of a patient's condition and the potential diagnosis and treatment options; moreover they can provide the searcher with terminology and thus a basic list of key words with which to search for foreground questions. For basic information or knowledge which is unlikely to change over time, textbooks can provide answers to background questions; for more detailed or up-to-date information review articles, trusted websites (e.g., APA) or on-line textbooks such as the Medical Measurements Yearbook (usually provided through libraries) may be more appropriate. Practitioners will already have gained sufficient expertise to answer background questions, and will usually be familiar with the most relevant reference materials to answer these questions when needed. What is generally not taught in psychology programs, however, is how to pose a foreground question, and how to locate useful evidence to answer it.

A systematic approach should begin with a focused, foreground question, using the Patient-Intervention-Comparison-Outcome (PICO) formula and then a systematic search of relevant databases. In addition to the elements of the PICO formula, the study design of the question might also be a consideration, both in one's choice of searching terms and selection of database.

The PICO Formula is made up of the following components

P = Population

What are the relevant characteristics for your patient? This should be defined in terms of health condition, age, gender, ethnic background, co-morbidities, and socioeconomic status.

I = Intervention (or exposure)

What is the intervention? Again, this should be as detailed as possible, e.g. dosage, frequency, setting, treatment provider. An intervention might be therapeutic, diagnostic, or administrative. Exposure refers to something which is happening unintentionally, but which is having an effect on health.

C = Comparison

What is the intervention being compared to? If usual care, what is the usual care? Or is the comparison to no treatment, or to placebo, or to a waiting list; considering these different comparators ensures that the chosen comparison is appropriate.

O = Outcome

How is the success of the intervention measured (e.g. reduction of symptoms, and if so, which in particular)?

It is worth formulating a foreground question carefully, as that will help to determine the best study design for the question at hand. For treatment questions the most appropriate type of study would be a systematic review of RCTs or individual RCTs; for prognosis questions, a prospective cohort study might be suitable. The goal is to find the best possible evidence, and while the ideal review or study may not exist, the choice of study design will lead to the best available evidence and will make for a more time-efficient search.

Search the literature to find the best available evidence—Searching the literature is a key component in the evidence-based practice process, but it is one that often presents

logistical and practical problems, even to those adept at locating information. Once learned however, good searching techniques can be applied to any on-line resource; frequent and experienced users will be able to adapt search strategies to a range of databases which may differ greatly in size and appearance.

When it comes to deciding on search terms, the Population and Intervention elements of the PICO formula should at least be represented. A good way of conceptualizing this process is to imagine what the title of a perfect reference article would be and what words would be important in the title and the abstract. However, the choice of search terms will depend on a number of factors. For example, if there is a large body of literature on the topic, choosing very specific terms and include all four elements of the PICO formula might be the best approach. This would also be the case if the database being searched is very large (e.g., MEDLINE) and where the volume of results may be overwhelming from only using one or two search terms. Alternatively, if the topic is very new, or if little research has been conducted, the approach would need to be much broader and include as many synonyms as possible. These principles are illustrated in the worked example later in this paper.

Searching techniques and tools can help to balance search strategies to get an optimal set of results, the aim being to get as many relevant articles as possible with the most efficient strategy. For this reason, the type of database being searched should be borne in mind in terms of what kind of record it provides, how big it is, what functions are available, and what the default search is. For example, most databases assume that typing two words next to one another means that you want to find them together as a phrase, but some others will merely find the two words anywhere within the same article, regardless of whether they appear next to each other or not. Some databases will provide a means of limiting by gender, age, or study design; some will offer the full-text of an article, others only the abstract. Databases might contain very specific records, such as Health and Psychosocial Instruments (HAPI), that only include articles about measurement instruments, whereas others, for instance, ISI Web of Knowledge, contain records from many different disciplines.

Primary versus evidence-based databases—Since the advent of evidence-based practice, databases can be divided into two categories – those consisting of evidence-based studies, and those containing records of the results of primary studies. Evidence-based databases were developed in response to the need of practitioners in busy working environments to easily access research evidence to inform their practice. There are now some extremely valuable resources available, many of which are free (or inexpensive), and do not require expertise in search techniques, nor in research methodology. Although the full details of research may still be only available in journals that require a subscription, a summary can often be found through publicly accessible internet databases in the form of digests, commentaries of major research studies, and freely available abstracts. Furthermore, many publicly funded bodies and organizations involved in evidence-based health care make information freely available. The Agency for Healthcare Quality and Research (AHRQ), for example, makes their Evidence Reports available on their website (http://www.ahrq.gov/clinic/epcix.htm) and the Substance Abuse and Mental Health Services Administration (SAMHSA) has the National Registry of Evidence-based Programs and Practices (NREPP) on their website (http://www.nrepp.samhsa.gov/index.asp). Finding a report or article in one of these products may prove to be the only search needed.

Evidence-based databases are much smaller than primary study based databases, and they contain relatively new studies. Most importantly, they only contain studies that are based on empirical research, that are clinically relevant, and that have been appraised for methodology, accuracy of results and applicability. The Cochrane Library, ACP Journal Club[1] and Clinical Evidence are all examples of evidence-based databases. There are also

several evidence-based journals such as Evidence-Based Mental Health and Bandolier. These publications select clinically relevant and methodologically rigorous studies, and an expert in both the field and in methodology then critically appraises each study and gives it a structured and succinct summary. Bandolier also uses this single study approach, but also prepares digests where the evidence is gathered and appraised for a particular topic.

In comparison, databases containing primary studies, that is, reports of individual research projects such as a clinical trial or the validation of an assessment tool will also have reviews, comments, and editorials. Although primary studies provide raw evidence, it is up to the reader to decide how valid they are, whether the results and conclusions can be relied upon, and how clinically relevant they are. The most relevant of the primary databases for the psychologist is PsycINFO, as it specifically indexes psychological and psychiatric journals. Two of the other major healthcare databases are MEDLINE and CINAHL. These comprehensive databases, containing many years of articles, often lend themselves to sophisticated searches. Reading some of these studies can be time-consuming, though, even if the full-text is available.

Given the value of evidence-based resources, it makes sense to check these first; finding an appraised article or a synopsis of evidence on the topic in question may give the answer needed without any further searching. However, these databases are not comprehensive and exploring the primary databases may be necessary, in which case more advanced searching skills will be required. Moreover, evidence-based databases are not aimed at any one professional group. Although they will contain information about psychological interventions, they will be unlikely to answer all questions, and so PsycINFO will almost always be the first of the primary databases of choice.

When considering which database to search, the kind of question being asked should be established first (i.e., a question related to diagnosis, therapy, prognosis, or etiology) followed by the kind of study being sought (e.g. randomized controlled trial, cohort study, validation study). Sources that summarize all available evidence might be a good place to start. If the topic is not represented in one of these, then for most questions, systematic reviews are the best level of evidence. They examine all available single studies and assess for the validity of the methods in each, and then if the populations, interventions and outcomes are similar enough, a meta-analysis of the results. Systematic reviews thus give an objective, comprehensive and more accurate assessment of an intervention than single studies might, given that single studies may give differing estimates of efficacy. As such, systematic reviews give the practitioner a more informed view of the evidence when it comes to deciding what treatments to use[2].

The Cochrane Collaboration produces high quality systematic reviews which are published monthly in the Cochrane Database of Systematic Reviews (CDSR), one of a suite of databases known collectively as the Cochrane Library. The Cochrane Library also includes the DARE database, which indexes all other non-Cochrane reviews. CDSR abstracts are also freely available on the Cochrane Collaboration website (www.cochrane.org). Given that these databases only contain systematic reviews, it is not necessary to search for the condition and interventions of interest.

For practitioners curious about what treatments are the best for their patient, guidelines may be a good starting point. The National Guidelines Clearinghouse, the main U.S. repository,

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[1]ACP Journal Club is a database produced by the American College of Physicians
[2]It should be noted that a meta-analysis is simply the statistical technique used to combine study results and is not therefore, the same as a systematic review.

has a very useful feature which allows a side by side comparison of guidelines. It is important to distinguish between evidence-based guidelines and consensus statements based on opinion only. Good guidelines will have an explicit explanation of how the evidence was obtained and graded and how recommendations were reached based on that evidence (American Psychological Association, 2002). It should be borne in mind that evidence-based guidelines aimed specifically at psychologists are not numerous, given their relatively recent appearance in the literature, and guidelines from other professional bodies may have a different focus in diagnosis and treatment recommendations. Nevertheless, they can provide a useful snapshot of the body of evidence, along with indications of the relative strengths and weaknesses of that evidence. Appendices 1 to 4 give a summary of the databases discussed here.

A suggested search order is presented in Table 1—If a more structured search for any kind of study design is being attempted on PsycINFO or the full version of MEDLINE, for example, the approach would be to combine subject headings, free text terms and a simple methodology filter such as "randomized controlled trial" as a publication type. This can be a very effective method of obtaining high quality, relevant search results. The Clinical Queries feature on PubMed[6] has built-in filters for etiology, diagnosis, therapy, prognosis questions as well as systematic reviews and clinical prediction guides.

An Applied Example

The PICO question formation process can be illustrated by working through the following example.

A recent article in the New York Times (Akam, 2009) raised the issue of the number of returning veterans from the conflicts in Iraq and Afghanistan and the difficulties they face upon returning to civilian life. The article refers to a RAND Corporation study (Burnam, Meredith, Tanielian, & Jaycox, 2009), that estimated that 18.5% of returning veterans are showing symptoms consistent with post-traumatic stress disorder (as well as depression). Given the numbers involved (approximately 300,000), it seems timely to ask the question, "What is the right way to treat post-traumatic stress disorder (PTSD)?" This, however, is not a searchable question, because it is unlikely that a study could be found that could answer this with any degree of certainty. Knowing the two therapies most commonly used to treat PTSD, a searchable question might then be: "In people with PTSD, is eye movement desensitization and reprocessing (EMDR) more effective than cognitive behavioral therapy (CBT) to improve symptoms and prevent recurrence?" Such a specific question is unlikely to be fully addressed in standard textbooks (some touch on this, but not in sufficient detail), and recently constructed evidence-based databases are now available to obtain an answer. This is a particularly good example to use, as controversy is still rife (Russell, 2008) about the validity of EMDR and there are many articles that debate this issue (Cahill, Carrigan, & Frueh, 1999; Herbert et al., 2000; Lohr, Lilienfeld, Tolin, & Herbert, 1999; Shapiro, 1996). This example will illustrate how searching evidence-based databases can screen out opinion-based pieces and give information based on empirical papers.

It is good practice to summarize a question into one succinct sentence. The foreground question is a key step in beginning a search. While not all of this information is necessarily going to be included in the search strategy, being specific can help to narrow down a search should the first attempt retrieve too many studies, and also aids in choosing the most relevant papers from the search results.

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[6]PubMed is the premier biomedical database. It contains the MEDLINE database as well as records from other sources.

Our question, "In people with PTSD, is eye movement desensitization and reprocessing (EMDR) more effective than cognitive behavioral therapy (CBT) to improve symptoms and prevent recurrence?" would therefore translate into the following PICO:

Population = People with PTSD

Intervention = Eye movement desensitization and reprocessing

Comparison = Cognitive behavioral therapy

Outcome = Improvement in symptoms and prevention of disorder recurrence (general); examples might be nightmares, concentration, irritability, sadness (specific)

Using this example, some of the relevant databases can be used to show they can be searched effectively. When choosing which terms to search it is a good idea to list all relevant terms and phrases for each of the PICO elements. The population terms would include: Post-traumatic stress (disorder), PTSD, shell-shock; intervention: Eye movement desensitization; EMDR; comparison: Cognitive behavioral therapy, CBT; outcome: nightmares, sleep, anger, guilt, concentration, irritability, sadness, helpless(ness), etc. A basic search might be: PTSD AND EMDR. This search would find articles in which both abbreviations are present. A search where a specific outcome is being sought might be: PTSD AND EMDR AND (sleep OR nightmares). This search would retrieve papers, again with both abbreviations but also with either the term sleep or nightmares. There are many articles and on-line tutorials which provide more detailed information on the mechanics of database searching (American Psychological Association, 2010; Psychology Research Tutorial: Literature,") and every database has a Help section which provides information pertinent to that specific product.

Findings from search results

The question posed as an example was to find out whether EMDR is effective in the treatment of PTSD in comparison to CBT, and using the search techniques and evidence-based databases outlined above, one would find a range of results including guidelines (American Psychiatric Association, 2004), a Cochrane systematic review (Bisson & Andrew, 2007), an appraised systematic review (Seidler & Wagner, 2006), a meta-analysis (Alto, 2001), and randomized controlled trials (Ahmad, Larsson, & Sundelin-Wahlsten, 2007; Rogers et al., 1999). The results of these studies indicate that CBT and EMDR are both efficacious and that neither one shows a greater benefit than the other, but that caution is urged because the evidence is not conclusive. Not only are there study limitations in the primary studies upon which the evidence is based, but in some cases, methodological flaws are present in the reviews of these studies. It is not uncommon for research findings to disagree, so it is important to look at the details, as systematic reviews may begin with different questions, have different methods, be based on more recent research, or have different inclusion criteria. When reviews disagree, a careful scrutiny of the methods is needed to make sense of it.

As noted at the beginning of this paper, research evidence must be used in context and in line with practitioners' own clinical knowledge and expertise. Moreover, the practitioner must remember that the findings of evidence-based treatment research cannot be blindly applied to every individual or setting, as these findings can sometimes conflict with the needs of the individual patient. Thus, the challenge is to interpret treatment research findings in a manner that respects and is sensitive to the diversity of human needs as they occur within a broad spectrum of social contexts. As noted in the World Health Report, "Failure to deal with the whole person in their specific familial and community contexts misses out on

important aspects of health that do not immediately fit into disease categories"(World Health Organization, 2008). In contrast, as Hartzband and Groopman (2009) point out, interpreting the findings of research on treatments within a more holistic context of care can improve the responsiveness of the medical system.

Next steps

One of the frustrations of database searching is that despite finding some promising titles, the full-text may not be freely available, and occasionally some references do not even have abstracts. While those working in or attached to major academic institutions would be able to obtain most of the papers in full-text, those with limited or no library access would have to pay, with costs running into hundreds, if not thousands, of dollars. The now mandatory submission of NIH (National Institutes of Health) funded research studies to the PubMed Central database (www.pubmedcentral.nih.gov) is easing this situation to some degree by guaranteeing that the findings will be made freely and publicly available at some point after their publication. Members of APA also have discounted access to resources including PsycINFO, full-text journal articles and book chapters (http://www.apa.org/pubs/databases/individuals/members.aspx, 2010). Even for those privileged enough to be able to obtain all of the above papers, however, the time to read and assess them may be burdensome, especially given the time constraints facing psychologists either in training, practice or academia. Added to this is the requirement of some level of knowledge of research methodology to assess primary papers.

The good news is that, with the adoption of a policy advocating evidence-based practice within the profession of psychology by the American Psychological Association, and to address the lack of training and resources which may be barriers to the conduct of EBBP, this paper has shown that there are both tools and products which use the evidence accumulated by psychologists to better inform our practice. There are several tools and products which are either free or inexpensive, which have already been appraised by content and methodology experts, and which provide plain language summaries for psychologists at all stages of their career. In some instances, these summaries may be as much information as is needed. In the example presented here, the search produced an appraised systematic review (DARE (Seidler & Wagner, 2006)), and a Cochrane systematic review (Bisson & Andrew, 2007) that has evaluated all of the available trials, making it unnecessary to look at the primary studies. If the searcher decides to look at the primary studies, he or she will need to examine the methods used and decide whether the results and conclusions can be relied on before using the findings to inform their decision making. One resource which can help with this process and which complements what has been presented here, is the Evidence-Based Behavioral Practice (EBBP) website. The EBBP.org (EBBP Project, 2007) project states, "creates training resources to help bridge the gap between behavioral health research and practice" and offers training modules on searching for evidence, appraising systematic reviews, and beginning a systematic review. The EBBP Project is sponsored by the Office of Behavioral and Social Sciences Research, National Institutes of Health and is available at: www.ebbp.org.

To follow up on the information presented here, one idea is to contact a librarian; they will be able to guide psychologists to the resources they are interested in and outline what level of access they can provide. Practitioners in the field who have hospital privileges may be able to gain access to these sources through hospital library services. Alternately, for practitioners in a group practice, sharing the cost of access to selected databases can make them more affordable. Outside of the subscription databases, there also is a wealth of information freely available in the resources listed here.

In addition to exploring the resources here, readers who are not already familiar with them, can also look at areas of the APA website such as the Librarian's Resource Center which has online tutorials, search guides and search lessons (http://www.apa.org/pubs/librarians/index.aspx).

Conclusion

This article has tried to provide a service to professional psychologists in outlining how to access research, especially when time is limited. An example has been used to work through a question in an evidence-based way. Methods have been highlighted such as distinguishing background and foreground questions, breaking down a question into searchable statements, adapting statements to suit the specifics of a question, and the resource selected for interrogation. Psychologists wishing to find which treatments might be effective in their practice can use the PICO formula both to define the population, intervention, outcome(s) and comparison of interest and also to screen for the most relevant results. Combining this technique with the knowledge of the databases which provide reliable summaries of research studies can guide the searcher to which treatments have been shown to be efficacious, thus enabling the practitioner to hone in on the best evidence for their question. While decisions will still need to be made by employing experience and expertise and taking the specific patient wishes and needs into account, having the best available evidence at hand can be made less time consuming than it was in the past. The growing number of free, evidence-based resources on the web have been presented, some of which may not be familiar to the psychology audience. Knowing how and where to access this information will enhance psychologists' skills and enable them to practice in more evidence-based way.

Acknowledgments

References

Ahmad, A.; Larsson, B.; Sundelin-Wahlsten, V. EMDR treatment for children with PTSD: Results of a randomized controlled trial; Nordic Journal of Psychiatry. 2007. p. 349-354.doi: http://dx.doi.org/10.1080/08039480701643464

Akam S. Back Home, And In Need of Support. The New York Times. 2009 July 8.

Alto, C. Meta-analysis of Eye Movement Desensitization and Reprocessing efficacy studies in the treatment of PTSD. Alto, Caroline: Seton Hall U, Coll Education And Human Services, US. PsycINFO database; 2001.

American Psychiatric Association. Practice guideline for the treatment of patients with acute stress disorder and posttraumatic stress disorder. Arlington (VA): American Psychiatric Association; 2004. p. 57

American Psychological Association. Criteria for evaluating treatment guidelines. American Psychologist. 2002; 57(12):1052–1059. [PubMed: 12617064]

American Psychological Association. Comprehensive Search Guide: PsycINFO® search fields on PsycNET®. 2010. Retrieved July 6, 2010, from http://psycinfo.apa.org/help/search/comprehensive/

APA Presidential Task Force on Evidence-Based Practice US. Evidence-Based Practice in Psychology. American Psychologist. 2006; 61(4):271–285. [PubMed: 16719673]

Bisson J, Andrew M. Psychological treatment of post-traumatic stress disorder (PTSD). Cochrane Database of Systematic Reviews. 2007; (3):CD003388. 10.1002/14651858.CD003388.pub3[doi].

Burnam MA, Meredith LS, Tanielian T, Jaycox LH. Mental health care for Iraq and Afghanistan War Veterans. Health Affairs (Millwood). 2009; 28(3):771–782. 28/3/771 [pii]. 10.1377/hlthaff. 28.3.771. [doi].

Cahill SP, Carrigan MH, Frueh BC. Does EMDR work? And if so, why?: a critical review of controlled outcome and dismantling research. Journal of Anxiety Disorders. 1999; 13(1–2):5–33. S0887-6185(98)00039-5. [pii]. [PubMed: 10225499]

Eady AM, Wilczynski NL, Haynes RB. PsycINFO search strategies identified methodologically sound therapy studies and review articles for use by clinicians and researchers. Journal of Cclinical Epidemiology. 2008; 61(1):34–40. 10.1016/j.jclinepi.2006.09.016.

Guyatt, G.; Rennie, D.; Meade, M.; Cook, D., editors. Users' guides to the medical literature: A manual for evidence-based clinical practice. 2. New York, NY: McGraw Hill Professional; 2008.

Hamilton J. The Answerable Question and a Hierarchy of Evidence. Journal of the American Academy of Child & Adolescent Psychiatry. 2005; 44(6):596–600. [PubMed: 15908843]

Herbert JD, Lilienfeld SO, Lohr JM, Montgomery RW, O'Donohue WT, Rosen GM. Science and pseudoscience in the development of eye movement desensitization and reprocessing: implications for clinical psychology. Clinical Psychology Review. 2000; 20(8):945–971. S0272-7358(99)00017-3. [pii]. [PubMed: 11098395]

Lohr JM, Lilienfeld SO, Tolin DF, Herbert JD. Eye Movement Desensitization and Reprocessing: an analysis of specific versus nonspecific treatment factors. Journal of Anxiety Disorders. 1999; 13(1–2):185–207. S0887-6185(98)00047-4. [pii]. [PubMed: 10225508]

McGowan J. Searching PsycINFO just got easier. Journal of Clinical Epidemiology. 2008; 61(1):6. 10.1016/j.jclinepi.2007.08.007. [PubMed: 18083457]

McKibbon, AK.; Wilczynski, NL. PDQ Evidence-Based Principles & Practice. 2. Shelton, CT: People's Medical Publishing House; 2009.

Parkes, J.; Hyde, C.; Deeks, J.; Milne, R. Teaching critical appraisal skills in health care settings; Cochrane Database of Systematic Reviews. 2001. p. CD001270Psychology Research Tutorial: Literature. From http://www.lib.unc.edu/instruct/psychology/literature/

Rogers, S.; Silver, SM.; Goss, J.; Obenchain, J.; Willis, A.; Whitney, RL. A single session, group study of exposure and Eye Movement Desensitization and Reprocessing in treating posttraumatic stress disorder among Vietnam War veterans: Preliminary data; Journal of Anxiety Disorders. 1999. p. 119-130.doi: http://dx.doi.org/10.1016/S0887-6185%2898%2900043-7

Russell MC. Scientific resistance to research, training and utilization of eye movement desensitization and reprocessing (EMDR) therapy in treating post-war disorders. Social Science and Medicine. 2008; 67(11):1737–1746. S0277-9536(08)00479-6 [pii]. 10.1016/j.socscimed.2008.09.025. [doi]. [PubMed: 18950925]

Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. BMJ. 1996; 312(7023):71–72. [PubMed: 8555924]

Seidler, GH.; Wagner, FE. Comparing the efficacy of EMDR and trauma-focused cognitive-behavioral therapy in the treatment of PTSD: a meta-analytic study (Structured abstract); Psychological Medicine. 2006. p. 1515-1522.Retrieved from http://www.mrw.interscience.wiley.com/cochrane/cldare/articles/DARE-12006009069/frame.html

Shapiro F. Errors of context and review of eye movement desensitization and reprocessing research. Journal of Behavioral Therapy & Experimental Psychiatry. 1996; 27(3):313–317. S0005-7916(96)00035-3. [pii].

Straus, SE.; Richardson, WS.; Glasziou, P.; Haynes, RB. Evidence-based medicine: How to practice and teach EBM. 3. London: Churchill Livingstone; 2005.

Weinfeld JM, Finkelstein K. How to answer your clinical questions more efficiently. Family Practice Management. 2005; 12(7):37–41. [PubMed: 16144225]

World Health Organization. The world health report 2008: primary health care now more than ever. Geneva, Switzerland: World Health Organization; 2008. p. 148

Wyer PC, Keitz S, Hatala R, Hayward R, Barratt A, Montori V. Tips for learning and teaching evidence-based medicine: Introduction to the series. Canadian Medical Association Journal. 2004; 171(4):347–348. [PubMed: 15313994]

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Table 1

Suggested Database Searching Order

Type of question	Type of study	Example of resource
All questions	Evidence digests	Clinical Evidence, Bandolier, National Guidelines Clearinghouse
Therapy	Evidence digests	Clinical Evidence, Bandolier, National Guidelines Clearinghouse
	Systematic reviews/meta-analyses	The Cochrane Library (CDSR, DARE)
	Appraised primary studies	ACP Journal Club, EBP journals[3]
	Primary studies	CENTRAL, PubMed Clinical Queries, PsycINFO
Diagnosis, prognosis and etiology	Systematic reviews/meta- analyses Appraised primary studies	DARE ACP Journal Club, EBP journals
Cost studies	Health Technology Assessment (HTA) reports	HTA[4], NHS EED[5]

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[3]EBP journal examples include Evidence-Based Medicine and Evidence-Based Mental Health, both BMJ Publishing

[4]HTA is the Health Technology Database produced by the Centre for Reviews and Dissemination

[5]NHS EED is the NHS Economic Evaluation Database produced by the Centre for Reviews and Dissemination.

Appendix 1

Free Resources, Evidence-Based

Resource	Comments *	URL
Bandolier	Ab, Rev/Dig, Com/Ap	www.medicine.ox.ac.uk/bandolier
Evidence Updates	RaAb	http://plus.mcmaster.ca/EvidenceUpdates/
Cochrane Abstracts	Ab, SR/MA	www.cochrane.org/reviews
DARE	SR/MA, Com/Ap	www.crd.york.ac.uk/crdweb/
The EBBP.org Project		www.ebbp.org
HTA Database	SR/MA	www.crd.york.ac.uk/crdweb/
National Guidelines Clearing House		www.guideline.gov
NHS EED	Com/Ap	www.crd.york.ac.uk/crdweb/
SUMSearch		http://sumsearch.uthscsa.edu
TRIP (Turning Research Into Practice)	Ab, RaAb, Rev/Dig/SR/MA, Com/Ap	www.tripdatabase.com

Comments: Ab = Abstracts; 2 = RaAb = Rated abstracts; Rev/Dig= Review/digest;

SR/MA= Systematic review/meta-analysis; COM/Ap= Commentary/appraisal

Appendix 2

Free Resources, Primary

Resource	Comments *	URL
LILACs Latin American and Caribbean Health Sciences	Ab	http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online
Open Access Journals		www.biomedcentral.com/home www.plos.org
PubMed	Ab, SR/MA	www.pubmed.gov
PubMed Central		www.pubmedcentral.nih.gov

Comments: Ab = Abstracts; 2 = RaAb = Rated abstracts; Rev/Dig= Review/digest;

SR/MA= Systematic review/meta-analysis; COM/Ap= Commentary/appraisal

Appendix 3

Subscribed Resources, Evidence-Based

Resource	Comments *	URL
Cochrane Database of Systematic Reviews	SR/MA	www.thecochranelibrary.com
CENTRAL	Ab	www.thecochranelibrary.com
www.thecochranelibrary.com	SR/MA, Com/Ap	www.thecochranelibrary.com
Evidence-Based Mental Health	Com/Ap	http://ebmh.bmj.com
HTA Database	SR/MA	www.thecochranelibrary.com
NHS EED	Com/Ap	www.thecochranelibrary.com
ACP Journal Club	Com/Ap	www.acpjc.org
BMJ Clinical Evidence	Rev/Dig	www.clinicalevidence.bmj.com
Essential Evidence Plus	Com/Ap	www.essentialevidenceplus.com
UpToDate	Rev/Dig	www.uptodate.com

Comments: Ab = Abstracts; 2 = RaAb = Rated abstracts; Rev/Dig= Review/digest;

SR/MA= Systematic review/meta-analysis; COM/Ap= Commentary/appraisal

Appendix 4

Subscribed Resources, Primary

Name of Resource	Comment	URL
PsycINFO	Ab	www.apa.org/psycinfo
CINAHL	Ab	www.ebscohost.com/cinahl/
ISI Web of Knowledge	Ab	http://wokinfo.com/

Comments: Ab = Abstracts; 2 = RaAb = Rated abstracts; Rev/Dig= Review/digest;

SR/MA= Systematic review/meta-analysis; COM/Ap= Commentary/appraisal