PRACTITIONER'S GUIDE TO USING RESEARCH FOR EVIDENCE-BASED PRACTICE

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To human service practitioners whose compassion and professionalism spur them to persevere, despite limited support, to seek and critically appraise research evidence so that they can maximize the chances that their efforts will be effective in helping people in need.

Contents

Preface

Helping professionals these days are hearing a great deal about evidence-based practice (EBP) and are experiencing increasing pressure to engage in it. In fact, EBP has become part of the definition of ethical practice.

Accompanying the growth in the popularity of EBP in the human services field is a growing concern about how rarely practitioners engage in the EBP process. Various pragmatic factors have been cited regarding this concern, such as time constraints and lack of agency access to bibliographic databases. Another factor is that practitioners typically do not retain the research knowledge that they learned as students. Many practitioners, therefore, are likely to feel unable to implement the EBP process because they feel incapable of appraising accurately the quality of research studies.

There are various reasons why practitioners may not retain the research knowledge that they learned as a student. One is simply the passage of time. Exacerbating that factor is that in their early careers they are unlikely to experience expectations from superiors that they use the research knowledge they gained in school. Another factor is the way that research courses may have been taught. Typically, the emphasis in teaching research has been more on how to do research in the role of researcher than on appraising and using research in the role of a practitioner who is engaged in EBP. Little wonder, then, that so many students who aspire to be service providers—and not researchers—lack enthusiasm for their research courses and soon forget much of what they learned in them.

Consequently, when service providers attempt to heed the call to engage in EBP by finding and appraising research studies, practitioners are likely to experience difficulty in differentiating between those studies that contain reasonable limitations and those that contain fatal flaws. That is, they are likely to feel unable to judge whether a study's limitations merely imply regarding the study with some caution or disregarding it as too egregiously flawed to be worthy of guiding their practice. Lacking confidence in this judgment, it's easy for practitioners to feel discouraged about engaging in EBP.

This book attempts to alleviate that problem. Rather than discussing research from the standpoint of preparing to do research, it provides a practitioner-oriented guide to appraising and using research as part of the

EBP process. Current and future practitioners can use this book as a user-friendly reference to help them engage in all the steps of the EBP process, including that step in which they must differentiate between acceptable methodological research limitations and fatal flaws and accurately judge the degree of caution warranted in considering whether a study's findings merit guiding practice decisions.

By maintaining a constant focus on explaining in a practitioner-friendly manner how to appraise and use research in the context of the EBP process, this book can help readers feel that they are learning about research concepts relevant to their practice—research concepts that can help them improve their implementation of EBP. In turn, the book attempts to empower and motivate readers to engage in that process.

Although most of the book's contents focus on critically appraising research to answer EBP questions, its final chapter simplifies the process of practitioner use of research methods to evaluate their own practice. That's because the final step in the EBP process requires that practitioners employ research techniques to monitor client progress and evaluate whether their client achieved the desired outcome. However, unlike other texts that emphasize rigor in pursuit of causal inferences in single-case designs, the final chapter of this book is based on the premise that the practitioner is just assessing whether clients appear to be benefiting from an intervention whose probabilistic effectiveness has already been supported in the studies examined by the practitioner in the EBP process of searching for and appraising existing evidence. Thus, the emphasis in the final chapter is on feasibility. In light of the much-researched problem of practitioners eschewing the application of single-case designs in their practice, this book's unique emphasis is intended to increase the extent to which practitioners will use single-case design methods to monitor client progress.

In summary, this book aims to provide human services practitioners what they need to know about various research designs and methods so that when engaging in the EBP process they can:

- Determine which interventions, programs, policies, and assessment tools are supported by the best evidence.
- Find and critically appraise qualitative and quantitative research studies in seeking evidence to answer different kinds of EBP questions.
- Differentiate between acceptable limitations and fatal flaws in judging whether studies at various positions on alternative research hierarchies (depending on the EBP question being asked) merit being used with caution in guiding their practice.
- Assess treatment progress with chosen interventions in a feasible manner as part of the final stage of EBP.

ORGANIZATION

The first part of this book contains three chapters that provide a backdrop for the rest of the book. Chapter 1 shows why it's important for readers to learn about research methods from the standpoint of becoming evidence-based practitioners, briefly reviews the history of EBP, defines EBP, discusses the need to develop an EBP outlook and describes what that outlook means, discusses feasibility constraints practitioners face in trying to engage in the EBP process, and offers suggestions for making the various steps in the process more feasible for them.

Chapter 2 describes the steps of the EBP process—including how to formulate an EBP question and how to search for evidence bearing on that question and to do so feasibly. Overviews are provided of subsequent steps—steps that are discussed in more depth in subsequent chapters. As in other chapters, Chapter 2 ends with a focus on feasibility issues.

One of the most controversial and misunderstood aspects of EBP concerns hierarchies for evaluating sources of evidence. Some think that there is only one hierarchy for appraising research and guiding practice. Some believe that unless a study meets all the criteria of the gold standard of randomized clinical trials (RCTs), then it is not worthy of guiding practice. Others are offended by the notion of an EBP research hierarchy and believe it devalues qualitative inquiry and nonexperimental research, such as multivariate correlational studies using cross-sectional, case-control, or longitudinal designs.

Chapter 3 attempts to alleviate this controversy and misunderstanding by discussing the need to conceptualize *multiple* research hierarchies for different types of EBP questions. It explains how and why certain kinds of designs belong at or near the top of one hierarchy yet at or near the bottom of another hierarchy. Thus, the chapter provides examples of EBP research questions for which qualitative studies deserve to be at the top of a research hierarchy for some questions and near the bottom for others and likewise why RCTs belong near the top or bottom of hierarchies depending on the EBP question being asked.

Part II delves into what practitioners need to know so that they can critically appraise studies pertinent to EBP questions about the effectiveness of interventions, programs, or policies. Chapter 4 sets the stage for the remaining four chapters in this section by discussing criteria for inferring effectiveness, including such concepts as internal and external validity, measurement issues, and statistical chance.

Chapter 5 describes the nature and logic of experiments and how to critically appraise them. It does not address the conducting of experiments. Instead, it emphasizes what features to look for in appraising an experiment that might represent minor or fatal flaws despite random assignment. Those features include measurement biases and attrition

biases that can lead to erroneous conclusions that an intervention is effective as well as things like diffusion and resentful demoralization that can lead to erroneous conclusions that an intervention is ineffective.

Chapters 6 and 7 describe the nature and logic of quasi-experiments and how to critically appraise them. These chapters do not delve into how to implement them. Instead, they emphasize what features to look for in appraising a quasi-experiment that might represent minor or fatal flaws or that might be important strengths to help offset the lack of random assignment.

Chapter 6 focuses on critically appraising nonequivalent comparison groups designs. It distinguishes between those designs and pre-experimental pilot studies and discusses how the two sometimes are mistakenly equated. It discusses the potential value of pilot studies to practitioners when more conclusive sources of evidence that apply to their EBP question are not available. It also alerts practitioners to the ways in which authors of pre-experimental studies can mislead readers by discussing their findings as if they offer stronger grounds than is warranted for calling the intervention, program, or policy they studied evidence-based. Practitioner-friendly statistical concepts are discussed at a conceptual level, providing readers what they'll need to know to understand the practical implications of—and not get overwhelmed by—multivariate procedures used to control for possible selectivity biases. Chapter 7 extends the discussion of quasi-experiments by focusing on the critical appraisal of time-series designs and single-case designs.

Chapter 8 discusses how to critically appraise systematic reviews and meta-analyses. It includes content on the advantages of both as well as risks in relying exclusively on them. It also addresses how to find them, key things to look for when critically appraising them, and what distinguishes them from other types of reviews. The meta-analytical statistical concept of effect size is discussed in a practitioner-friendly manner.

Part III turns to the critical appraisal of studies for EBP questions that do not emphasize causality and internal validity. Chapter 9 discusses critically appraising nonexperimental quantitative studies, such as surveys, longitudinal studies, and case-control studies. Chapter 10 then discusses critically appraising qualitative studies. Qualitative studies play an important role in EBP when practitioners seek to gain a deeper understanding of the experiences of people whom they want to help and what those experiences mean to those people. Thus, Chapter 10 includes content on what to look for when critically appraising qualitative observation, qualitative interviewing, qualitative sampling, and grounded theory. Different frameworks for appraising qualitative studies are discussed from the standpoints of empowerment standards, social constructivist standards, and contemporary positivist standards.

The final section of this book, Part IV, contains two chapters that address EBP questions pertaining to assessing clients and monitoring their

progress. Chapter 11 discusses how to critically appraise and select assessment instruments. It covers in greater depth and in a practitioner-friendly manner the following concepts that also are addressed (in less depth) in earlier chapters: reliability, validity, sensitivity, and cultural sensitivity. It also shows how to locate assessment instruments and—as with other chapters—emphasizes practitioner and client feasibility.

Chapter 12 turns to feasible ways practitioners can implement aspects of single-case design techniques to monitor client progress as part of the final stage of the EBP process. This chapter is distinguished from the way other sources cover this topic by its emphasis on feasibility. Chapter 12 is based on the premise that when practitioners are providing interventions that already have the best evidence, they don't need to pursue elaborate designs that are likely to intimidate them and be unfeasible for them in light of their everyday practice realities. Instead of feeling that they must implement designs that have a high degree of internal validity in isolating the intervention as the cause of the client's improved outcome, they can just monitor progress to check on whether their particular client is achieving a successful outcome or is perhaps among those people who don't benefit from the intervention. This chapter is distinguished from Chapter 7 in that Chapter 7 focuses on appraising published single-case design studies from the standpoint of finding interventions supported by the best evidence. In keeping with its feasibility emphasis, Chapter 12 proposes the B plus (B+) design. It also illustrates some feasible ways in which practitioners can devise their own measures to monitor client progress.

SPECIAL FEATURES

Chapters 4 through 11 end by presenting two synopses of (mainly fictitious) research studies germane to each chapter's purpose. Readers can critically appraise each of these 16 synopses—writing down strengths, reasonable flaws, and fatal flaws and indicating whether and how each could be used to guide decisions about evidence-based practice. Eight appendixes (A through H) at the end of the book provide my brief appraisals of each synopsis to which readers can compare their appraisals. Each of those eight appendixes corresponds to the two synopses in a particular chapter. Appendix A, for example, presents my appraisals of the synopses at the end of Chapter 4, Appendix B corresponds to Chapter 5, and so on.

In addition to the synopses, each chapter also ends with a list of key chapter concepts, some review exercises, and some additional readings pertinent to the chapter contents. Terms that appear in bold in the text are defined in a glossary at the end of the book.

I hope you find this book useful. Any suggestions you have for improving it will be appreciated and can be sent to me at arubin@mail.utexas.edu.

Acknowledgments

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Part I

Overview of Evidence-Based Practice

Chapter 1

INTRODUCTION TO EVIDENCE-BASED PRACTICE

You've started reading a book about research so you must have some free time. But aren't there other things you could do right now that are less onerous than reading about research? You could dust your office. You could make that overdue visit to your dentist. Or maybe listen to a Barry Manilow CD. Okay, okay, not Barry Manilow! But read about research? What compelled you to do that?

Actually, that's a rhetorical question because I think I know the answer, and I'm just trying to connect with you. Start where the reader (i.e., the client) is at, as it were—sort of like building a therapeutic alliance. My hunch is that you're reading this book because there is significant pressure these days on practitioners to engage in **evidence-based practice (EBP),** which implies (in part) using research findings to guide their practice decisions. If you are like most of the practitioners I know, you probably resent that pressure. But it's a reality you must deal with, and perhaps by reading this book you'll be better prepared to deal with it on your terms. That is, by learning more about how to utilize and appraise EBP research, you'll be better equipped to understand, question, or negotiate with others—like managed care companies—who cite EBP as the

reason they think they know better than you do what you should do in your practice.

Although the term *evidence-based practice* has become fashionable only recently, the main ideas behind it are really quite old. As early as 1917, for example, in her classic text on social casework, Mary Richmond discussed the use of research-generated facts to guide the provision of direct clinical services as well as social reform efforts.

Also quite old is the skepticism implicit in EBP about the notion that your practice experience and expertise—that is, your practice wisdom—are a sufficient foundation for effective practice. That skepticism does not imply that your practice experience and expertise are irrelevant and unnecessary—just that they *alone* are not enough.

Perhaps you don't share that skepticism. In fact, it's understandable if you even resent it. Many decades ago, when I first began learning about clinical practice, I was taught that to be an effective practitioner I had to believe in my own effectiveness as well as the effectiveness of the interventions I employed. Chances are that you have learned this, too, either in your training or through your own practice experience. It stands to reason that clients will react differently depending on whether they are being served by practitioners who are skeptical about the effectiveness of the interventions they provide versus practitioners who believe in the effectiveness of the interventions and are enthusiastic about them.

But it's hard to maintain optimism about your effectiveness if influential sources—like research-oriented scholars or managed care companies—express skepticism about the services you provide. I first encountered such skepticism long ago when my professors discussed a notorious research study by Eysenck (1952), which concluded that psychotherapy was not effective (at least not in those days). Although I later encountered various critiques of Eysenck's analysis that supported the effectiveness of psychotherapy, maintaining optimism was not easy in the face of various subsequent research reviews that shared Eysenck's conclusions about different forms of human services (Fischer, 1973; Mullen & Dumpson, 1972). Those reviews in part helped usher in what was then called an *age of accountability*—a precursor of the current EBP era.

The main idea behind this so-called *age* was the need to evaluate the effectiveness of all human services. It was believed that doing so would help the public learn "what bang it was getting for its buck" and in turn lead to discontinued funding for ineffective programs and continued funding for effective ones. Thus, this era was also known as the *program evaluation movement.* It eventually became apparent, however, that many of the ensuing evaluations lacked credibility due to fatal flaws in their research designs and methods—flaws that often stemmed from biases connected to the vested interests of program stakeholders. Nevertheless, many scientif-

ically rigorous evaluations were conducted, and many had encouraging results supporting the effectiveness of certain types of interventions.

In addition to studies supporting the effectiveness of particular intervention modalities, perhaps most encouraging to clinicians were studies that found that one of the most important factors influencing service effectiveness is the quality of the practitioner-client relationship. Some studies even concluded that the quality of practitioners' clinical relationship skills has more influence on treatment outcome than the choices practitioners make about what particular interventions to employ. Although that conclusion continues to be debated, as the twenty-first century dawned, mounting scientific evidence showed that practitioner effectiveness is influenced by both the type of intervention employed and relationship factors (Nathan, 2004).

EMERGENCE OF EVIDENCE-BASED PRACTICE

The accumulation of scientifically rigorous studies showing that some interventions appear to be more effective than others helped spawn the EBP movement. In simple terms, the EBP movement encourages and expects practitioners to make practice decisions—especially about the interventions they provide—in light of the best scientific evidence available. In other words, practitioners might be expected to provide interventions whose effectiveness has been most supported by rigorous research and to eschew interventions that lack such support—even if the latter interventions are the ones with which they have the most experience and skills.

In the preceding paragraph, I used the words *in light of* the best scientific evidence, instead of implying that the decisions had to be dictated by that evidence. That distinction is noteworthy because some mistakenly view EBP in an overly simplistic cookbook fashion that seems to disregard practitioner expertise and practitioner understanding of client values and preferences. For example, EBP is commonly misconstrued to be a cost-cutting tool used by third-party payers that uses a rigid decision-tree approach to making intervention choices irrespective of practitioner judgment. Perhaps you have encountered that view of EBP in your own practice when dealing with managed care companies that have rigid rules about what interventions you must employ as well as the maximum number of sessions that will be reimbursed. If so, you might fervently resent the EBP concept, and who could blame you! Many practitioners share that resentment.

Managed care companies that interpret EBP in such overly simplistic terms can pressure you to do things that your professional expertise leads you to believe are not in your clients' best interests. Moreover, in a seeming

disregard for the scientific evidence about the importance of relationship factors, managed care companies can foster self-doubt about your own practice effectiveness when you do not mechanically provide the interventions on their list of what they might call "evidence-based practices." Such doubt can hinder your belief in what you are doing and in turn hinder the more generic relationship factors that can influence client progress as much as the interventions you employ.

DEFINING EVIDENCE-BASED PRACTICE

The foregoing, overly simplistic view of EBP probably emanated from the way it was defined originally in medicine in the 1980s (Barber, in press; Rosenthal, 2006). Fortunately, the revised definition of EBP now prominent in the professional medical literature (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000) as well as the human service professions literature (Rubin & Babbie, 2008) incorporates practitioner judgment and client values and preferences. The more current and widely accepted definition shows that managed care companies or other influential sources are distorting EBP when they define it as merely a list of what intervention to use automatically for what diagnosis, regardless of your professional expertise and special understanding of idiosyncratic client characteristics and circumstances.

The current definition of EBP incorporates two overarching perspectives:

1. EBP is a *process* that includes locating and appraising credible evidence as a part of practice decisions.
2. EBP is a way to designate certain *interventions* as empirically supported under certain conditions.

Although a comprehensive definition of EBP combines these two perspectives, various influential sources define EBP in terms of only one of the two perspectives. For example, as noted previously, some managed care companies or government agencies define EBP solely in terms of the intervention perspective—that is, they will call your practice *evidence based* only if you are providing a specific intervention that appears on their list of interventions whose effectiveness has been supported by a sufficient number of rigorous experimental outcome evaluations to merit their "seal of approval" as an evidence-based intervention. In addition, a recent survey found a great deal of disparity among faculty members as to whether they define EBP solely in terms of the process perspective, solely in terms of the intervention perspective, or (more correctly) in terms of a combination of the two perspectives (Rubin & Parrish, 2007).

Incorporating practitioner expertise and patient values in the revised definition signifies that EBP is more than a static list of interventions that have a "seal of approval" and thus should be provided by clinicians even when clinician knowledge about client idiosyncrasies suggests that an approved intervention appears to be contraindicated. The revised definition also is more consistent with the scientific method, which holds that all knowledge is provisional and subject to refutation. The older, more mechanistic view of EBP solely in terms of a list of approved interventions conflicts with the view that, in science, knowledge is constantly evolving. Indeed, at any moment a new study might appear that debunks current perceptions that a particular intervention has the best empirical support. Rather than feel compelled to adhere to a list of approved interventions that predates such a new study, practitioners should be free to engage in an EBP *process* that enables them to critically appraise and be guided by *emerging* scientific evidence.

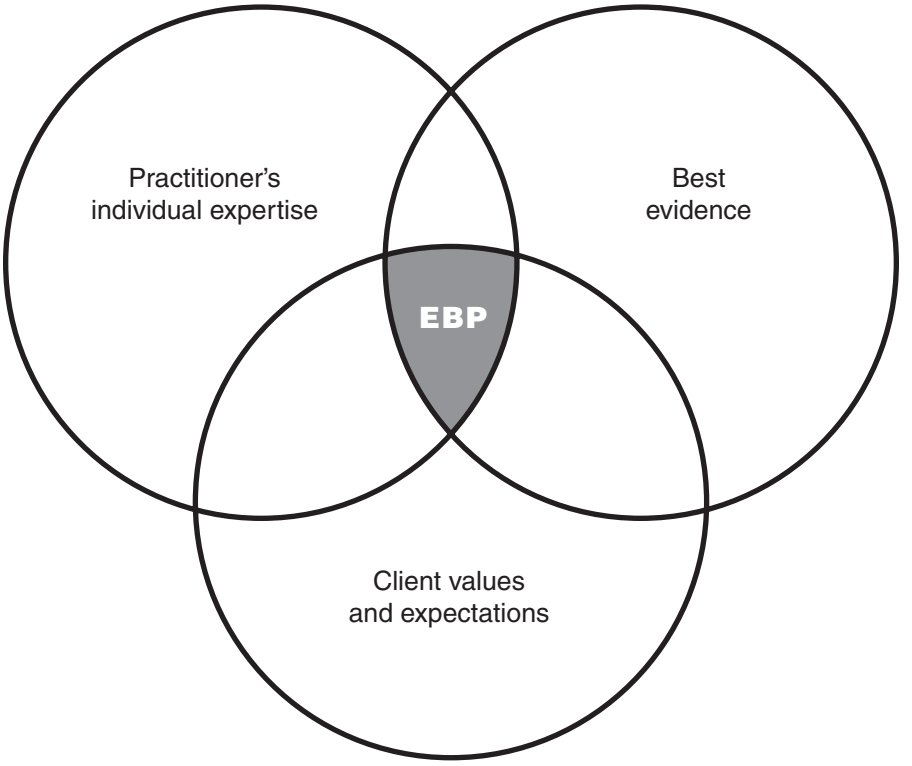
A comprehensive definition of EBP—one that is more consistent with definitions that are prominent in the current human service professions literature—is:

> EBP is a process for making practice decisions in which practitioners integrate the best research evidence available with their practice expertise and with client attributes, values, preferences, and circumstances. When those decisions involve selecting an intervention to provide, practitioners will attempt to maximize the likelihood that their clients will receive the most effective intervention possible in light of the following:
>
> - The most rigorous scientific evidence available;
> - Practitioner expertise;
> - Client attributes, values, preferences, and circumstances;
> - Assessing for each case whether the chosen intervention is achieving the desired outcome; and
> - If the intervention is not achieving the desired outcome, repeating the process of choosing and evaluating alternative interventions.

Figure 1.1 shows the original EBP model, illustrating the integration of current best evidence, practitioner expertise, and client values and expectations. Unlike misconceptions of EBP that characterize it as requiring practitioners to mechanically apply interventions that have the best research evidence, Figure 1.1 shows EBP residing in the shaded area, where practice decisions are made based on the intersection of the best evidence, practitioner expertise, and client values and expectations. In discussing this diagram, Shlonsky and Gibbs (2004) observe:

> None of the three core elements can stand alone; they work in concert by using practitioner skills to develop a client-sensitive case plan that utilizes

Figure 1.1 Original EBP Model

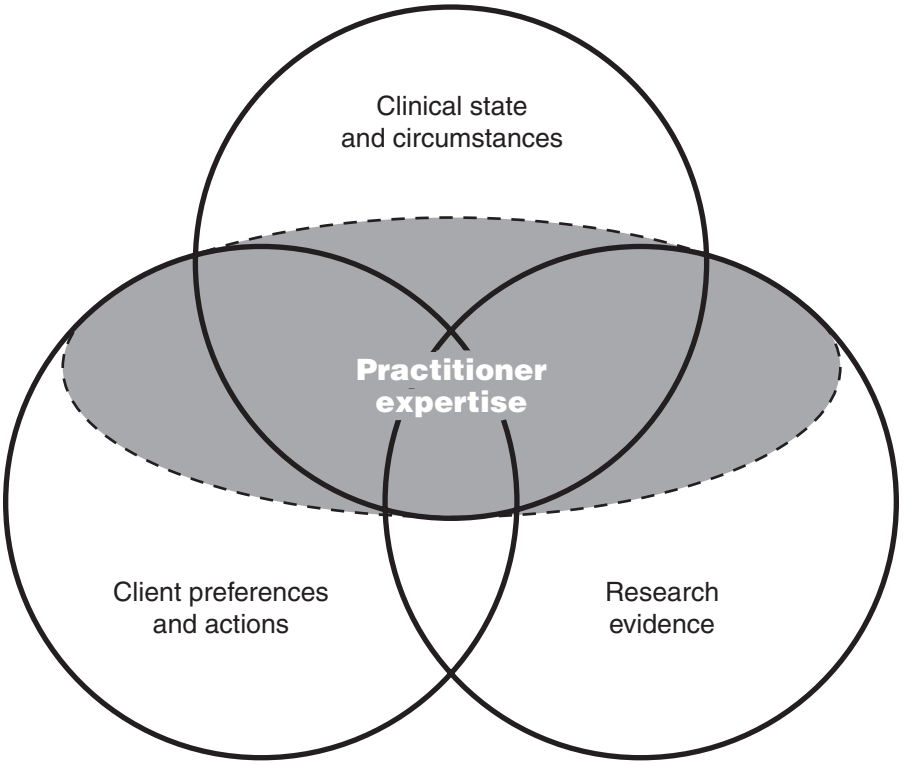


> interventions with a history of effectiveness. In the absence of relevant evidence, the other two elements are weighted more heavily, whereas in the presence of overwhelming evidence the best-evidence component might be weighted more heavily. (p. 138)

Figure 1.2 represents a newer, more sophisticated diagram of the EBP model (Haynes, Devereaux, & Guyatt, 2002). In this diagram, practitioner expertise is shown not to exist as a separate entity. Instead, it is based on and combines knowledge of the client's clinical state and circumstances, the client's preferences and actions, and the research evidence applicable to the client. As in the original model, the practitioner skillfully blends all of the elements at the intersection of all the circles, and practice decisions are made in collaboration with the client based on that intersection.

Figure 1.3 illustrates how the diagram in Figure 1.2 is implemented sequentially as a cyclical process with an individual client, not as a one-time application of an "approved" intervention (Mullen, Shlonsky, Bledsoe, &, Bellamy, 2005). The practitioner's knowledge of current best evidence is

Figure 1.2 Newer EBP Model

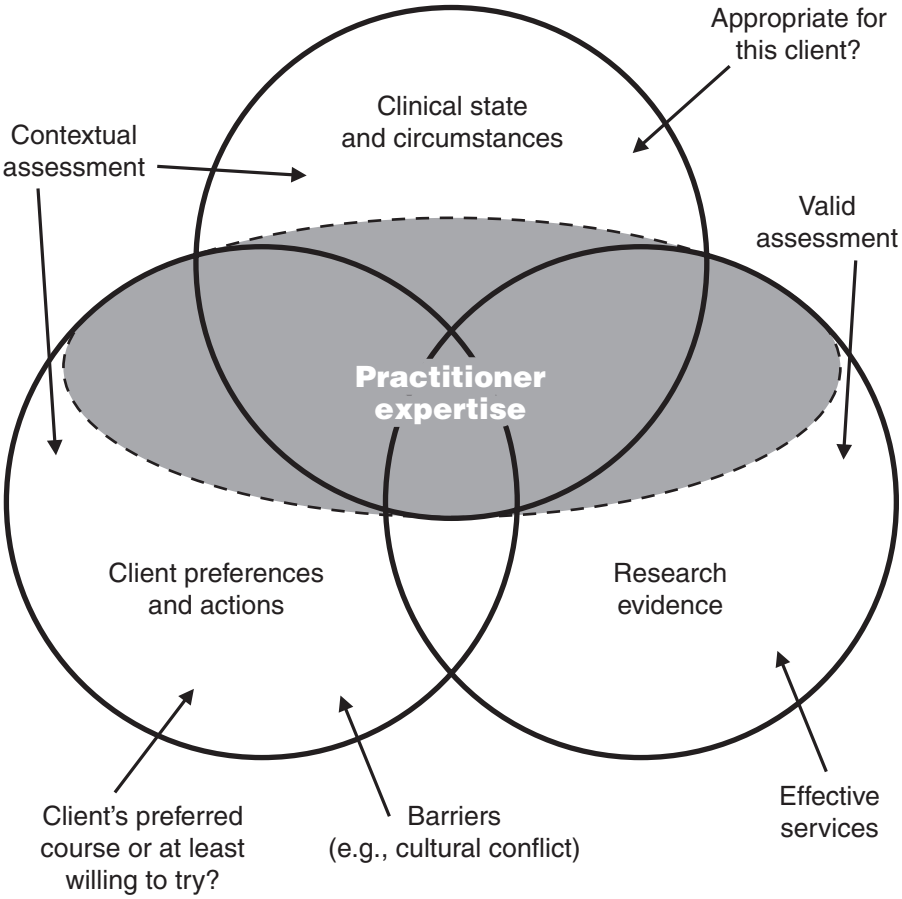


Source: "Physicians' and Patients' Choice in Evidence-Based Practice," by R. Haynes, P. Devereaux, and G. Guyatt, 2002, *British Medical Journal, 324,* p. 1350. Reprinted with permission.

the start of the cycle. Two types of evidence are relevant: (1) evidence about the best (most valid) tools for assessing client problems and needs, and (2) evidence about the most effective services pertaining to those problems and needs. The practitioner then draws on his or her practice expertise in integrating that evidence with information from the other two circles. Moving clockwise, the practitioner decides whether a particular course of action would be appropriate for the particular client, and if not, the cycle begins anew.

The cyclical process of EBP can be conceptualized as involving the following five steps: (1) question formulation, (2) searching for the best evidence to answer the question, (3) critically appraising the evidence, (4) selecting an intervention based on a critical appraisal of the evidence and integrating that appraisal with practitioner expertise and awareness of the client's preferences and clinical state and circumstances, and (5) monitoring client progress. Depending on the outcome observed in the fifth step, the cycle may need to go back to an earlier step to seek an intervention that

Figure 1.3 The Cycle of EBP



Adapted from "From Concept to Implementation: Challenges Facing Evidence-Based Social Work," by E. J. Mullen and A. Shlonsky, 2004, Setember, Paper presented at Faculty Research and Insights: A Series Featuring CUSSW Faculty Research, New York, NY. Retrieved December 15, 2006, from www.columbia.edu/cu/musher/EBP%20Resources.htm.

might work better for the particular client, perhaps one that has less evidence to support it but which might nevertheless prove to be more effective for the particular client in light of the client's needs, strengths, values, and circumstances. Chapter 2 examines each of these five steps in more detail.

As is implicit in the previous definition and model, EBP decisions are not necessarily limited to questions about the effectiveness of specific interventions. Practitioners might want to seek evidence to answer many other types of practice questions. For example, they might seek evidence about client needs, what measures to use in assessment and diagnosis, when inpatient treatment or discharge is appropriate, understanding cultural influences on clients, determining whether a child should be placed in foster care, and so on.

EVIDENCE-BASED PRACTICE IS NOT RESTRICTED TO CLINICAL DECISIONS

Much of the literature on EBP focuses on the clinical level of practice. However, EBP pertains to decisions made at other levels of practice, as well, such as decisions about community interventions, administrative matters, and policy. Much of the EBP literature focuses on health care policy. An excellent book on that topic, by Muir Gray (2001), is *Evidence-Based Healthcare: How to Make Health Policy and Management Decisions.*

For example, one common area of inquiry regarding evidence-based health care policy pertains to the impact of *managed care*—a term referring to various approaches that try to control the costs of health care. The main idea is for a large organization (such as a health insurance company or a health maintenance organization) to contract with service providers who agree to provide health care at reduced costs. Health care providers are willing to meet the reduced cost demands so that more clients covered under the managed care plan will use their services.

Managed care companies also attempt to reduce costs by agreeing to pay only for the type and amount of services that they consider necessary and effective. Consequently, health care providers may feel pressured to provide briefer and less costly forms of treatment. Trujillo (2004, p. 116), for example, reviewed research on the EBP question: "Do for-profit health plans restrict access to high-cost procedures?" He found no evidence to indicate that patients covered by for-profit managed care plans are less likely to be treated with high-cost procedures than patients covered by nonprofit managed care plans.

Countless hours could be spent trying to list every possible EBP-related question. For now, however, let's focus primarily on EBP decisions about selecting and evaluating interventions in our efforts to maximize treatment effectiveness. Those decisions are most prominent in the EBP literature and in dealing with managed care companies. In later chapters, we examine how to utilize research to answer some of the other types of practice questions.

DEVELOPING AN EVIDENCE-BASED PRACTICE PROCESS OUTLOOK

Becoming an evidence-based practitioner does not begin just by implementing the phases of the EBP process, phases that we examine more thoroughly in Chapter 2. To implement the process successfully, practitioners might have to change the way they have been influenced to think about practice knowledge. For example, relatively inexperienced practitioners typically work in settings where more experienced practitioners

and supervisors generally do not value research evidence as a basis for making practice decisions. In their own practice as well as in their influences on newer practitioners, older and more experienced practitioners are likely to resist notions that they should be influenced by such evidence to change the way they intervene (Sanderson, 2002). These practitioners—including many who provide practicum training in professional education—may have been trained and feel proficient in only a small number of treatment approaches—approaches that may not be supported by the best evidence. Not only might they be dogmatically wedded to those approaches, research evidence might have little credibility in influencing them to reconsider what they do. Instead, they might be much more predisposed to value the testimonials of esteemed practitioner colleagues or luminaries renowned for their practice expertise (Bilsker & Goldner, 2004; Chwalisz, 2003; Dulcan, 2005; Sanderson, 2002).

Critical Thinking

Gambrill (1999), for example, contrasts EBP with *authority-based practice.* Rather than rely on testimonials from esteemed practitioner authorities, EBP requires *critical thinking.* Doing so means being vigilant in trying to recognize testimonials and traditions that are based on unfounded beliefs and assumptions—no matter how prestigious the source of such testimonials and no matter how long the traditions have been in vogue in a practice setting. Although it is advisable for practitioners—especially inexperienced ones—to respect the "practice wisdom" of their superiors, if they are critical thinkers engaged in EBP, they will not just blindly accept and blindly conform to what esteemed others tell them about practice and how to intervene—solely on the basis of authority or tradition.

In addition to questioning the logic and evidentiary grounds for what luminaries might promulgate as practice wisdom, critical thinkers engaged in EBP will want to be guided in their practice decisions by the best scientific evidence available. If that evidence supports the wisdom of authorities, then the critical thinkers will be more predisposed to be guided by that wisdom. Otherwise, they will be more skeptical about that wisdom and more likely to be guided by the best evidence. By emphasizing the importance of evidence in guiding practice, practitioners are thus being more scientific and less authority based in their practice.

A couple of critical thinking experiences in my practice career illustrate these points. When I was first trained in family therapy many decades ago, I was instructed to treat all individual mental health problems as symptomatic of dysfunctional family dynamics and to try to help families see the problems as a reflection of sick families, not sick individuals. This instruction came from several esteemed psychiatrists in a prestigious psychiatric training institute and from the readings and films they provided—readings

and films depicting the ideas and practice of other notable family therapists. When I asked one prestigious trainer what evidence existed as to the effectiveness of the intervention approaches being espoused, he had none to offer. Instead, he just rubbed his beard and wondered aloud about what personal dynamics might be prompting me to need such certainty.

As a green trainee, his reaction intimidated me, and I said no more. However, shortly after concluding my training, various scientifically rigorous studies emerged showing that taking the approach espoused in my training is actually harmful to people suffering from schizophrenia, as well as to their families. Telling families that schizophrenia is not an individual (and largely biological) illness, but rather a reflection of dysfunctional family dynamics, makes things worse. It makes family members feel culpable for causing their loved one's illness. In addition to the emotional pain induced in family members, this sense of culpability exacerbates the negatively charged emotional intensity expressed in the family. People suffering from schizophrenia have difficulty tolerating this increased negative emotional intensity and are more likely to experience a relapse as a result of it. Thus, the authorities guiding my training were wrong in their generalizations about treating *all* mental health problems as a reflection of sick families.

Much later in my career, after many years of teaching research, I decided to try my hand at practice again by volunteering in my spare time as a therapist at a child guidance center, working with traumatized children. The long-standing tradition at the center was to emphasize nondirective play therapy. Being new to play therapy, I began reading about it and learned that there were directive approaches to it as well. I then asked one of the center's psychologists about her perspective on directive play therapy. She responded as if I had asked for her opinion on the merits of spanking clients. "We never take a directive approach here!" she said with an admonishing tone in her voice and rather snobby facial expression. Once again, I was intimidated. But I kept searching the literature for studies on play therapy and found several studies supporting the superior effectiveness of directive approaches for traumatized children. Although more research in this area is needed, what I found showed me that there was no basis for the psychologist's intimidating reaction to my question. Instead, there was a good scientific basis for the center to question its long-standing tradition, at least in regard to treating traumatized clients.

Evidence-Based Practice as a Client-Centered, Compassionate Means, Not an End unto Itself

My experiences illustrated that being scientific is not an end unto itself in EBP. More importantly, it is a means. That is, proponents of EBP don't urge practitioners to engage in the EBP process just because they want