

# Definition and Competencies for Evidence-Based Behavioral Practice (EBBP)

Council for Training in Evidence-Based Behavioral Practice \*

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## BACKGROUND

A small number of behavioral risk factors (e.g. tobacco use, poor quality diet, physical inactivity, obesity) now account for a third of the global chronic disease burden and half of all deaths from chronic disease.<sup>1-3</sup> Increasingly, research indicates that mental and physical illnesses often co-occur<sup>4,5</sup> and that their comorbidity increases healthcare burden and costs.<sup>6</sup> Further, there is growing evidence that psychosocial interventions (delivered alone or in conjunction with medical treatments) are effective for preventing and treating a wide range of health problems.<sup>7-9</sup> The implementation of effective behavioral interventions holds the potential to improve public health and lower health care costs. To grow the evidence base for behavioral interventions, improve health service quality, and reduce practice variation, the time is ripe to invest resources in training for evidence-based behavioral practice.

All major health professions now endorse the policy of evidence-based practice.<sup>10-21</sup>

Preconditions are thus established for professionals in the health and social sciences to acquire a shared vocabulary and conceptual foundation that will facilitate collaboration in transdisciplinary research and practice. But the challenges associated with transdisciplinary science and practice are substantial. Behavioral scientists and practitioners in medicine, nursing, social work, psychology, and public health all come from different training backgrounds. As a result, their vocabulary, conceptual frameworks, and research methods often differ greatly. To access, critically appraise, and iteratively apply the evidence generated by each discipline requires a common base of training and tools for knowledge acquisition and translation.

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## **Purpose of the Evidence-Based Behavioral Practice (EBBP) Project**

In 2006, the National Institute of Health's Office of Behavioral and Social Science Research funded contract N01-LM-6-3512 through the National Library of Medicine. The purpose of the contract is to develop Resources for Training in Evidence-Based Behavioral Practice (EBBP).<sup>22</sup> One broad objective of EBBP is to encourage growth of the evidence base for behavioral and psychosocial interventions. Another objective is to enhance the skills of interventionists from a wide range of health care disciplines to find, appraise, and apply evidence in order to improve the health of individuals, families, other groups, and communities.

Specific aims are to:

- Develop a common language and skill set to enhance communication among the major health disciplines.
- Disseminate information about concepts, methods, and tools used in evidence-based practice.
- Provide educators with tools for teaching evidence-based concepts and skills to students, practitioners and researchers.
- Foster translational and practice-based research
- Help interventionists acquire skills to perform evidence-based behavioral interventions and ongoing outcome assessments.

The objectives and aims of the EBBP contract are being accomplished by a Council for Training in Evidence Based Behavioral Practice working under the guidance of a Scientific Advisory Board and Expert Consultants. To guide the development of training materials, the EBBP Council prepared this analysis of competencies needed to engage in the process of evidence based behavioral practice. The Institute of Medicine identifies evidence-based practice as a core competence for health professionals in the 21st century.<sup>10</sup>

## **FRAMEWORK FOR EBBP**

### **Foundations of EBBP**

EBBP rests upon a foundation of professionalism. Practitioners of EBBP possess a curiosity and a sense of inquiry that defines them as life-long learners. They are motivated to continually learn ways to integrate research into practice and to critically evaluate the outcome of their behavioral interventions. They embrace the use of information technology to support the learning process. At the same time, they are open-minded. They recognize and understand the limits of science, their own knowledge, and their own skills. They are critically self-reflective and aware of the personal and cultural biases that each practitioner possesses. They practice in an ethical, responsible manner, consider historical and cultural factors that influence care, communicate well, and work well in multidisciplinary teams. They pay close attention to the environmental

context and systems within which they work, and are sensitive to the many types of interpersonal and community-level differences that exist. They recognize and act upon the understanding that decisions about health need to be made in collaboration with those most directly affected by the decisions. In addition to implementing best evidence-based practices, they engage in continuous quality improvement in their own practices. They disseminate the practice-based research evidence that they generate.

Evidence-based behavioral practitioners acknowledge and respect diversity in all forms of practice. Diversity is expressed as differences among individuals, groups, and populations in age, class, culture, disability, gender, political ideology, race, religion, sexual orientation, or other factors. Diversity permeates the ecological environment in which practice occurs, can influence how different groups experience assessments and interventions, and can be associated with either negative or positive experiences. Negative outcomes in ecological systems include experiences of oppression, marginalization, and alienation.<sup>23</sup> Positive outcomes in ecological systems include experiences of empowerment and pride. Evidence-based behavioral practitioners are trained to understand and control their own personal biases and values as they relate to diverse groups.

## **Ecological Model**

We use an ecological model to organize our presentation of training materials.<sup>24</sup> These models suggest addressing problems at multiple levels and stress the interaction and integration of factors within and across all levels. Intervening solely on the behavior of individuals often is not sufficient to sustain long-term behavior change. Ideally, interventions need also to be directed at changing influences at the interpersonal, organizational, community, and public policy levels. The goal is to create a healthy community environment that provides health-promoting information and social support to enable people to live healthier lifestyles. Ecological models are increasingly viewed as having substantial potential to improve health. They have been applied to a variety of health issues including tobacco, obesity, and cancer screening.<sup>24-26</sup>

## **Definitions**

Behavioral health practice (here abbreviated *behavioral practice*) is a multidisciplinary field that promotes optimal mental and physical health by maximizing biopsychosocial functioning. *Evidence-based behavioral practice* entails making decisions about how to promote healthful behaviors by integrating the best available evidence with practitioner expertise and other resources, and with the characteristics, state, needs, values and preferences of those who will be affected. This is done in a manner that is compatible with the environmental and organizational context. *Evidence* is comprised of research findings derived from the systematic collection of data through observation and experiment and the formulation of questions and testing of hypotheses.

Practitioner expertise and resources pertain to the skills and infrastructure support that are needed to offer behavioral interventions. Resources include physical, technological and financial assets needed to deliver behavioral treatments (e.g., space, time, technological support, insurance reimbursement). Other needed resources may involve institutional endorsement by higher

administration and agreement from other system components. Practitioner expertise entails four categories of skills:

*Assessment skills* pertain to the appraisal of clinical and community characteristics, problems, values and expectations, and environmental context. Competency in assessment also applies to the practitioner’s ability to assess in an unbiased manner his or her own level of expertise to implement behavioral techniques and the outcomes of those techniques once implemented.

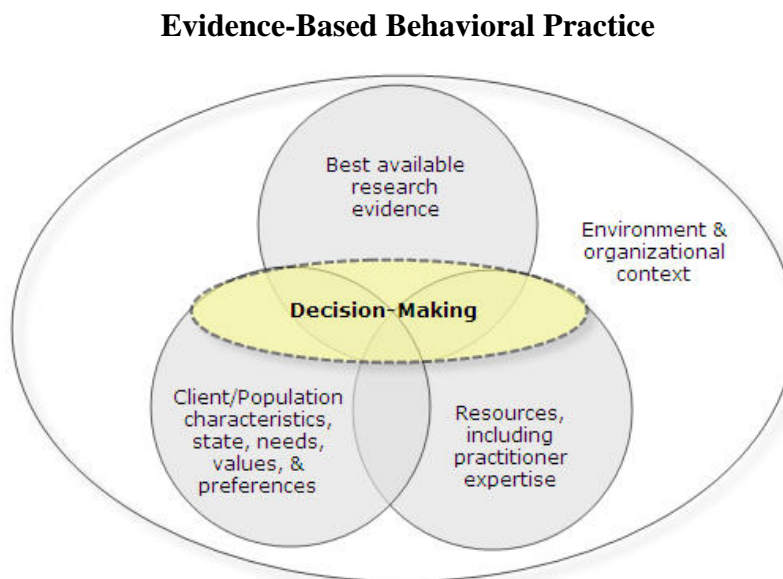
*Evidence-based practice process skills* involve competency at performing the steps of the evidence-based practice process: ask well-formulated questions, acquire best available research evidence, appraise evidence for quality and relevance, apply evidence by engaging in shared decision-making with those who will be affected, analyze change and adjust practice accordingly.

*Communication and collaboration skills* entail the ability to convey information clearly and appropriately, and to listen, observe, adjust, and negotiate as appropriate to achieve understanding and agreement on a course of action.

*Engagement and intervention skills* involve proficiency at motivating interest, constructive involvement, and positive change from individuals, groups, organizations, communities, and others who may be affected by health decisions. Behavioral interventions vary in the degree of training and experience required to deliver them competently.

### Three Circles Integrated in EBBP

The diagram below shows three circles containing the elements that need to be integrated in EBBP.<sup>12,17,27-33</sup>



Behavioral interventions are a major focus of EBBP. Behavioral interventions, including psychosocial, rehabilitation and psychological treatments, are non-pharmacological, non-surgical procedures that may be used alone or in conjunction with medical interventions. Included are interventions that aim to improve the healthful behavior, psychosocial functioning, and quality of life of individuals, families, organizations, and communities (e.g., schools, worksites, neighborhoods, states). Interventions range from intensive ones with techniques whose mastery requires considerable professional training (e.g., psychotherapy) to less intensive ones that use simpler procedures (e.g. psychosocial support).

Inherent in EBBP is the process of collaborative decision-making. Those who may be affected by the behavioral health decision (e.g. individuals, families, organizations, and communities) are included in the decision-making process. The interventionist assesses the practitioner expertise, the other resources that are available, the surrounding context, and the characteristics, values, and preferences of relevant stakeholders. The interventionist collaboratively engages relevant stakeholders in the process of making health decisions. Relevant stakeholders who need to be engaged in collaborative decision-making differ depending upon the level of the ecological model at which the behavioral intervention is directed. For behavioral interventions directed towards individuals, collaborative decision-making may chiefly involve the patient/client and perhaps family members. For interventions directed towards producing population level change, collaboration may engage community, institutional or policy leadership.

Behavioral health decision-making about assessment, diagnosis, prevention, treatment, and rehabilitation involves a series of steps. The diagram above may make it appear that integration of the three spheres involved in evidence-based practice could occur simultaneously, but that is not the case. There are five clearly defined steps in evidence-based practice: Ask a question; Acquire the evidence; Appraise the evidence; Apply the evidence; Analyze and Adjust practice. The steps are performed in a specific order. The process begins with posing a relevant, well-formulated question and conducting a search for the best research evidence to answer it.. The “best available research evidence” refers to relevant findings that have been critically appraised (either by systematic reviewers with expertise in critical appraisal and/or by the individual practitioner) using EBP techniques and standards. To find the best evidence to address the target question, the interventionist needs to know which kinds of research evidence best answer different types of questions and how to appraise the quality and applicability of that evidence. After finding and appraising the evidence, the interventionist assesses what resources, including practitioner training and skills, are available to be able to offer what the research shows to be the intervention(s) best supported by evidence. The practitioner also considers any stakeholders’ characteristics and contextual factors that bear on the likely applicability, acceptability and uptake of the intervention(s) best supported by evidence. The practitioner also evaluates relevant stakeholders’ values and preferences and engages appropriate stakeholders in the process of collaborative decision-making. After interventions have been implemented, the EBBP practitioner assesses their impact and engages stakeholders in the process of evaluation and quality improvement. Using an iterative, cyclical process, the practical outcomes of intervention decisions are then used to develop and/or refine local decision-making policies, generate new questions, inform future searches for best evidence, and/or identify needed research.

## CONDUCTING EBBP

### The EBBP Process

Carrying out the EBBP process involves five steps<sup>31</sup> :

- Step 1* **Ask** client-oriented, relevant, answerable questions about the health status and context of individuals, communities, or populations.
- Step 2* **Acquire** the best available evidence to answer the question.
- Step 3* **Appraise** the evidence critically for validity and applicability to the problem at hand.
- Step 4* **Apply** the evidence by engaging in collaborative health decision-making with the affected individual(s) and/or group(s). Implement the health practice. Appropriate decision-making integrates the context, values and preferences of the recipient of the health intervention, as well as available resources, including professional expertise.
- Step 5* **Analyze** the new health practice and **Adjust** practice. Evaluate implications for future decision-making, disseminate the results, and identify new informational needs.

## COMPETENCIES

### **Ask: Asking Questions**

Evidence-based behavioral health practitioners pose important, practice-relevant questions. They:

- Translate information needs into well-formulated, answerable questions
- Distinguish between background (general) and foreground (specific) questions. Formulate foreground questions using a structured framework (e.g. PICO: Patient/Population characteristics, Intervention, Comparison condition, Outcome)
- Prioritize questions by the importance/significance of the problem to the identified patient or population (e.g., impact on function or quality of life; or disease burden, incidence/prevalence, impact on cost of care)
- Distinguish between different types of questions (e.g. assessment, intervention, prognosis, harm, cost-effectiveness)
- Know the best type(s) of evidence to answer each kind of question

### **Acquire: Acquisition of Evidence**

Evidence-based behavioral health practitioners efficiently and effectively search for the best available evidence to answer their practical questions. They:

- Know the difference between primary and secondary (synthesized) research evidence and where to find both kinds of evidence
- Understand how to access guidelines and systematic reviews of research on behavioral health procedures
- Translate questions into efficient search plans and/or know how to communicate their needs to a professional who has expertise in information science.
- Know how to use available technology and information systems to stay up-to-date on research relevant to their question(s).

### **Appraise: *Critical Appraisal***

Evidence-based behavioral health practitioners critically appraise evidence in terms of both its quality and its applicability to the population and circumstances at hand. In evaluating research on behavioral interventions, internal and external validity are both important to appraise. Internal validity reflects whether the research was designed and conducted in a manner that allows behavior change to be attributed causally to the intervention rather than to extraneous influences. External validity refers to whether the characteristics of the research population or intervention context are diverse enough to suggest that the findings would generalize to other populations, interventionists, or circumstances. Applicability refers to the practitioner's judgment about whether the evidence fits the specific situation at hand. The appraisal of relevance is challenging. Applying either overly stringent or overly lax criteria to judge external validity may have adverse consequences. If the body of evidence is seen as having no relevance to diverse populations, the disadvantage is that traditional but ineffective practices may continue to constitute usual care for many understudied and underserved populations. On the other hand, if the same interventions are seen unquestionably as uniformly applicable, the need to adapt the intervention to attain community acceptance and detect differential effectiveness may be ignored

Evidence-based behavioral health practitioners

- Know the strengths and weaknesses of different kinds of research evidence for answering different kinds of behavioral health questions
- Understand the methodologies used in synthesizing research evidence
- Evaluate the quality and strength of evidence in systematic reviews or practice guidelines.
- Evaluate the quality and strength of primary research evidence using available critical appraisal tools that assess study design and/or study execution
- Evaluate the applicability of the evidence for a particular individual or population.
- Note deficiencies in existing behavioral evidence that suggest needed research.

### **Apply: *Decision-Making and Action***

In collaboration with those who will be affected by the decision, evidence-based behavioral practitioners implement action plans by integrating their appraisal of research evidence, available expertise and other resources, with the intended care recipient's characteristics, values, preferences, and context. Special attention is given to the relevance of the evidence to diverse

groups and to the practitioner's ability to communicate effectively to diverse individuals and populations.

A frequent criticism of EBBP is that once an evidence-based intervention is found, practitioners may not have the knowledge or skill needed to implement the intervention. Accordingly, for effective implementation to occur, practitioners need to know how to search for training tools and resources. Resources are now readily available on many internet sites. For example, the Substance Abuse and Mental Health Services Administration (SAMHSA) and its Center for Mental Health Services (CMHS) provides six Evidence-Based Practice Implementation Resource Kits to encourage the use of evidence-based practices in mental health.<sup>34</sup>

Evidence-based behavioral practitioners:

- Evaluate how available expertise and other resources influence decisional options and planning. This step may include self-assessment of whether skills are adequate to implement behavioral assessments and interventions.
- Evaluate characteristics, preferences, and values of the client-system (individual patient, client, or community), as these bear upon a choice of action. Particular attention is given to issues of diversity and difference throughout this appraisal.
- Engage the individual or community affected by the decision to participate collaboratively in choosing and implementing an action plan
- Integrate research evidence, expertise, and client characteristics/preferences to prioritize best evidence-based courses of action to achieve most important and culturally relevant outcomes
- Locate training resources, learn new interventions, and update skills as needed

### **Analyze and Adjust: *Evaluation, Dissemination, and Follow-Up***

Practitioners of evidence-based behavioral health engage in practice-based continuous quality improvement.<sup>10,33</sup> After an evidence-based intervention is applied, change is analyzed, and practice is adjusted accordingly. Three domains of change are measured: 1) primary outcomes (intended individual, community or population change in behavior or health); 2) process (action steps taken to implement the intervention or other practice change); and 3) systems change (intended and/or unintended revision in infrastructure, context, resources, or surrounding environment<sup>35-37</sup>). Those change measures constitute local practice-based evidence that needs to be evaluated and compared to intervention goals and to the published evidence base. Observed variation in outcome between the nomothetic and the local evidence bases may raise additional questions and require new evidence to be acquired and appraised. Adjustment or adaptation of an intervention with reassessment and comparison of new outcomes may suggest revision of interventions for continued work with the patient/client as well as for future decisional policies. Lessons learned are shared with others.



Evidence-based behavioral practitioners:

- Identify and use best available assessment methods to evaluate target outcomes.
- Enlist participation of the client/patient or community in designing and carrying out an evaluation and quality improvement plan
- Conduct a baseline assessment of the health status, characteristics and preferences of the individual and/or community, and relevant context and resources
- Re-assess relevant outcomes after the intervention has been implemented.
- Evaluate unintended consequences (or risk) of change in practice
- Analyze and interpret outcome data to evaluate whether implementation of evidence-based practice met initial intervention goals and to compare outcome to published results
- Adjust behavioral practice as needed and then reassess outcomes in an ongoing, iterative process
- Summarize outcome information in a way that is accessible and meaningful to the stakeholders
- Disseminate lessons learned and new informational needs with a variety of stakeholders including researchers, community members and policy makers
- Assess barriers to implementation of evidence-based practices and develop action plan to overcome patient, provider or system barriers.

## CONCLUSION

Engaging in EBBP entails a process of lifelong learning as the evidence about best practices continues to evolve. It is assumed that attaining competence or mastery of skills to perform the EBBP process is indeed a process and not an event with an endpoint. The complexities of real world practice, the proliferation of the research evidence base, the changing sociocultural and healthcare contexts, and rapidly evolving health information technologies require ongoing engagement in the EBBP process.<sup>38,39</sup> Although EBBP can be carried out by individual practitioners, EBBP is perhaps most feasible when implemented by interdisciplinary teams because of the broad set of skills needed. When EBBP is implemented by interdisciplinary teams, the differing competencies and skills of individual team members can be combined synergistically, enhancing the feasibility and effectiveness of this form of practice. Much is to be gained from engagement of the behavioral research and practice communities in the evidence-based practice process. Ultimately, the goal of evidence-based practice is the provision of best-tested, most appropriate care to the public in a manner that reflects shared decision-making and mutual involvement in continuing to enrich the evidence base.

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