

**Guidelines for Doctoral Psychology Programs
Incorporating Cognitive and Behavioral
Education and Training**

**Report of
The Inter-Organizational Task Force on
Cognitive and Behavioral Psychology
Doctoral Education**

Sponsored by the Association for Behavioral and Cognitive Therapies

Task Force Members:

Chair: Robert K. Klepac, Ph.D., ABPP
Co-chair: George F. Ronan, Ph.D., ABPP

<u>Member</u>	<u>Participating Organizations</u>
Frank Andrasik, Ph.D.	Association for Behavioral and Cognitive Therapies
Kevin Arnold, Ph.D., ABPP	Behavioral and Cognitive Psychology Specialty Council
Cynthia Belar, Ph.D., ABPP	American Psychological Association, Education Directorate
Sharon Berry, Ph.D.	Association of Psychology Postdoctoral and Internship Centers
Karen Christoff, Ph.D.	Association for Behavioral and Cognitive Therapies - Academic Training Committee
Linda W. Craighead, Ph.D.	Council of University Directors of Clinical Psychology
Michael J. Dougher, Ph.D.	Association for Behavior Analysis International
E. Thomas Dowd, Ph.D., ABPP	American Board of Cognitive and Behavioral Psychology
James Herbert, Ph.D.	Association for Contextual Behavioral Science
Robert K. Klepac, Ph.D., ABPP	Association for Behavioral and Cognitive Therapies
Lynn McFarr, Ph.D.	Academy for Cognitive Therapy
Shireen Rizvi, Ph.D.	International Society for the Improvement and Teaching of Dialectical Behavior Therapy
George F. Ronan, Ph.D., ABPP	American Board of Professional Psychology & Association for Behavioral and Cognitive Therapies - Committee on Affiliations and Specializations
Eric M. Sauer, Ph.D.	Association of Psychology Training Clinics
Timothy J. Strauman, Ph.D.	Academy of Psychological Clinical Science
Mary Jane Eimer, CAE (ex officio)	Association for Behavioral and Cognitive Therapies

The Inter-Organizational Task Force on Cognitive and Behavioral Psychology Doctoral Education

I. Conference Background

Psychology has progressed from the early days in the late eighteen hundreds to its status as an academic discipline recognized throughout North America and increasingly around the globe. From the mid nineteen hundreds onward there has been a consistent push toward the application of psychological science. For instance, participants at the Boulder Conference in 1949 (see Raimy, 1950) developed a training and education model to advance the application of psychology. Ensuing advances in the application of psychology led to development of alternative training models (e.g., Vail Conference in 1973, see Stricker, 1975), as well as updates to existing training models (e.g., Gainesville Conference in 1990, see Belar & Perry, 1992).

As applied psychology continued to evolve, various specialty areas began to emerge. By the end of 2010 the Council on Specialties in Professional Psychology and the American Psychological Association recognized twelve specialty areas and the American Board of Professional Psychology oversees the board certification of thirteen specialty areas. As specialty training has evolved, additional specialty training models and guidelines have emerged (e.g., Houston Conference in 1997, see Reitan, Homb, Van De Voorde, Stanczak, & Wolfson, 2004).

Cognitive and behavioral psychology (CBP) represents a specialty recognized by the American Psychological Association, the Council of Specialties in Professional Psychology, and the American Board of Professional Psychology. Cognitive and behavioral psychology is one of the few areas of emphasis with an unwavering foundation in the best research tradition of academic psychology. Many doctoral programs have therefore incorporated significant training in cognitive and behavioral psychology. Although, like most specialties, Cognitive and Behavioral Psychology is recognized at the postdoctoral level, there is a growing understanding of the need to consider areas of emphasis at the doctoral level to allow for a consistent focus of training for doctoral, internship, postdoctoral, and board certification.

The Behavioral and Cognitive Psychology Specialty Council provides a useful definition of cognitive and behavioral psychology:

“... Behavioral and Cognitive Psychology emphasizes an experimental-clinical approach to the application of behavioral and cognitive sciences to understanding human behavior and developing interventions to enhance the human condition. The distinct focus of behavioral psychology is twofold: (a) its heavy reliance on an empirical approach; and (b) its theoretical grounding in learning and behavioral analysis theories, broadly defined, including respondent conditioning, operant learning, social learning, cognitive sciences, and information processing models” (Council of Specialties in Professional Psychology, <http://cospp.org/specialties/behavioral-and-cognitive-psychology>).

The Inter-organizational Task Force on Cognitive and Behavioral Psychology Doctoral Education was organized to develop guidelines and statements of best practices for integrated education and training in cognitive and behavioral psychology at the doctoral level. A few basic assumptions guided this effort. One major assumption was that, at all levels, education in

cognitive and behavioral psychology is based in science. Training in the science of psychology should extend horizontally, throughout all components of training, and vertically through doctoral training, internship placement, and postdoctoral residencies. Because of a general lack of research on the most effective doctoral education and training for cognitive and behavioral psychology, the goal of the task force was to develop a set of training principles and competencies, as opposed to specific course-based recommendations. Another assumption was that the objective of education in cognitive and behavioral psychology is to train both clinical scientists and practitioners grounded in the discipline of scientific psychology. The overall goal is to train psychologists who have the knowledge, skills and attitudes needed to develop competent doctoral level functioning in academic, applied, or combined settings.

The task force was an inter-organizational working group, led by the Association of Behavioral and Cognitive Therapies (ABCT), and comprised of delegates from psychological associations engaged in training of professional psychologists wherein cognitive and behavioral psychology is a major component. Task force participants were from the following groups: ABCT Academic Training Committee, ABCT Board of Directors, Academy for Cognitive Therapy, Academy of Psychological Clinical Science, American Board of Cognitive and Behavioral Psychology, American Board of Professional Psychology, American Psychological Association Education Directorate, Association for Behavioral Analysis International, Association for Contextual Behavioral Science, Association of Psychology Postdoctoral and Internship Centers, Association of Psychology Training Clinics, Behavioral Psychology Specialty Council, Council of University Clinical Psychology Training Programs, Council of Specialties, and the International Society for the Improvement and Teaching of Dialectical Behavior Therapy. Participation as a member of the Task Force does not imply that the organization they represented endorsed this report. While any organization may or may not opt to endorse the resulting recommendations, simply participating in this process implied no such endorsement. The delegates convened in Las Vegas from March 18 thru 19, 2011, held monthly phone conferences from April 2011 through October of 2011, and culminated with a face-to-face meeting to finalize and approve the recommendations on January 27 thru 28, 2012. This document is the product of their deliberations.

II. Introduction and Overview

A larger context defines the intended use of these guidelines. The American Psychological Association defines specialty as “a defined area of professional psychology practice characterized by a distinctive configuration of competent services for specified problems and populations” (American Psychological Association, 2011, p. 2). Specialties are formally recognized by two organizations, the American Psychological Association and the American Board of Professional Psychology, both of which have formally recognized cognitive and behavioral psychology as a specialty in professional practice. The purpose of this document is to provide guidance on doctoral education and training in cognitive and behavioral psychology for both new and existing doctoral programs in clinical, counseling, and school.

APA has also adopted a taxonomy regarding the use of specific terms when programs provide education and training in specialties (American Psychological Association, 2012, pp. 12-13). The task force intends that the Guidelines for Doctoral Psychology Programs Incorporating Cognitive and Behavioral Education and Training be consistent with the major area of study level; however,

doctoral programs may use these guidelines at other education and training levels (i.e., emphasis, experience, or exposure). The guidelines may also intersect with education and training in other specialties. For example, a clinical psychology program that provides a major area of study in clinical child and adolescent psychology may utilize these guidelines to provide an emphasis in CBP.

The recommendations in this document assume the existence of prior knowledge, skills, and attitudes relevant to doctoral training in psychology as typically reflected in a traditional undergraduate major in psychology or related disciplines. Also assumed is value and respect for science, as well as a desire for research training that involves data collection and analysis.

Assumed structural components implicit in these recommendations include faculty-to-student ratios that permit full immersion in faculty-mentored research activities. In order to provide such experiences, most high quality programs with an emphasis in cognitive and behavioral psychology generally do not exceed full-time faculty-to-student ratios of 1-to-5. Although this ratio is not presented as a firm criterion, it will be difficult for programs that admit significantly more students relative to core, full-time faculty to offer the level of intensive clinical supervision and especially research mentorship described herein. The close mentoring of doctoral students should be reflected in regular meetings with a core faculty member who monitors their development and integration of clinical and research competencies. Furthermore, we assume that a sufficient number of clinical and research experiences exist to ensure the integration of training across both basic and applied domains.

Assumed curricular components are consistent with the broad and general training in psychology identified by the Commission on Accreditation of the American Psychological Association.

The following guidelines describe components specific to integrated doctoral education and training in cognitive and behavioral psychology. These components include scientific and ethical attitudes that permeate all aspects of training, as well as specialized training in research and clinical domains relevant to cognitive and behavioral psychology. Figure 1 was developed to present a visual representation of the interrelationships between knowledge, attitudes, and skills critical to cognitive and behavioral psychology.

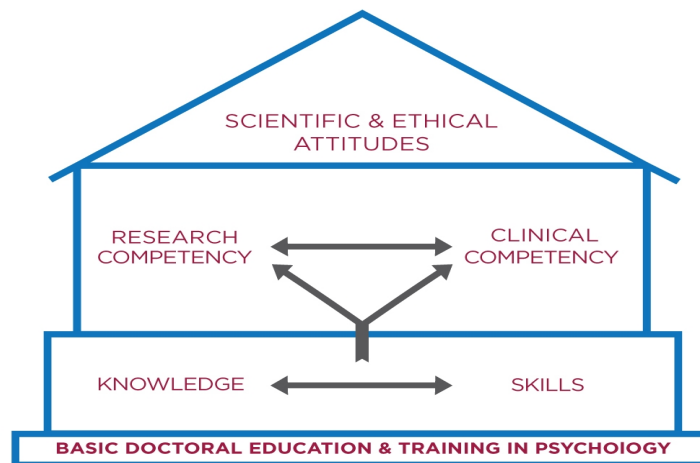


Figure 1 demonstrates that at the doctoral level, an emphasis in cognitive and behavioral psychology rests upon the basic requirements that characterize any doctoral level training program in applied psychology. The first (lower) level indicates that significant exposure to the knowledge base of cognitive and behavioral psychology both in terms of research methodologies and current clinical outcome literature is necessary. The second level indicates that experiences need to be provided to develop and demonstrate competencies in research and in clinical work that reflect substantive areas from within the knowledge base. The third level indicates that both knowledge and skills are taught within an overall mindset that puts the primary emphasis on the valuing of scientific methods as the way cognitive and behavioral psychology self-corrects and adds new knowledge to remain a vital force promoting the most up to date information and training in cognitive and behavioral psychology. Finally, the top level emphasizes the importance of giving specific attention to ethics related to cognitive and behavioral psychology to ensure the appropriate application of research and practice.

III. Components of Training

Over the past few decades, professional psychology has been moving toward a competency-based approach to education and training (Bieschke, Bell, Davis III, Hatcher, Peterson, & Rodolfa, 2009). The present guidelines are consistent with a competency-based approach and are designed to be relevant to all doctoral training models.

These guidelines are designed to identify the competencies (knowledge, skills, and attitudes) more specifically relevant to doctoral training in cognitive and behavioral psychology, recognizing that many of these competencies are also reflected in clinical, counseling, and school psychology programs more generally. Also assumed is value and respect for science, as well as a desire for research training that involves data collection and analysis.

A. Scientific and Ethical Attitudes

Training in science and ethics forms the backbone of education in cognitive and behavioral psychology. As such, this training is integrated horizontally throughout all course work and vertically to ensure the development of more complex understandings of science and ethics as

training proceeds. We have broken down training in science and ethics into two dissectible, but related, propositions.

The first proposition is that doctoral study in cognitive and behavioral psychology includes foundational work in the philosophy of science, with a particular focus on epistemology, including discussion of the major perspectives underlying cognitive and behavioral psychology.

Cognitive and behavioral psychology has become a broad family of theoretical perspectives, methods of inquiry, and technologies that resists ready definition. This pluralism is a strength, but at times can also be a source of confusion. One premise that unites all forms of cognitive and behavioral psychology is an unwavering commitment to empirical science as viewed by contemporary work in the field of psychology as a whole. It is therefore essential that doctoral training in cognitive and behavioral psychology be thoroughly infused with scientific perspectives in order to foster an overall attitude of respect for scientific inquiry as it relates to both research and practice.

At its heart, a commitment to science connotes a particular way of interacting with the world in an effort to yield public knowledge. All scientific activities are rooted in basic philosophical assumptions about the kinds of observations that constitute probative data, models of causation, and the nature of appropriate theoretical accounts. Variations in these assumptions lead to different scientific practices. Such assumptions are pre-analytic, meaning that they are made before the standard work of science begins and, therefore, are not subject to direct empirical test. Certain pre-analytic assumptions may nevertheless prove more useful over time relative to others and, in this way, the philosophy of science itself is evolutionary and progressive.

Despite the omnipresence and inevitability of pre-analytic scientific assumptions, many psychologists may not be aware of the implicit assumptions that underlie their work, which can lead to considerable confusion and controversy of a sort that impedes progress in the science itself. Different philosophies of science (and especially the epistemologies represented by those philosophical systems) lead not only to different methods of inquiry, but also to different interpretations of data, including at times different interpretations of the very same data. Failure to appreciate differences in pre-analytic assumptions can lead to frustration among scholars and practitioners alike, who become puzzled when their colleagues fail to be convinced of the implications of certain clinical observations or research findings. Lack of awareness of one's philosophical assumptions also precludes critical examination and comparison of alternative philosophies of science. It is therefore imperative that doctoral training in cognitive and behavioral psychology examine the important role played by the nature of philosophy in psychological science and practice.

With respect to cognitive and behavioral psychology in particular, one useful way (although by no means the only useful way) of conceptualizing much current work in the field is with reference to the overarching scientific "world views" described as methodological behaviorism (mechanism) and functional contextualism/constructivism (a type of pragmatism). Although these perspectives share many features, they differ in important ways. For example, the former stresses operationism in defining terms in order to create accurate models of the world, adopts prediction as the fundamental goal of psychological science, tends to embrace "soft"

determinism in causal accounts, and emphasizes nomothetic over idiographic research methods. In contrast, the latter defines its terms as a function of behavior-environment interactions, de-emphasizes ontology, stresses behavior change as the principal goal, and insists on stronger versions of determinism, as reflected in the emphasis on idiographic research methods.

It is important to note that variations exist within each of these perspectives. In addition, there may be alternative philosophies that do not fall neatly into either of these categories, or incorporate elements of each of these perspectives. Although graduate programs may tend to emphasize one perspective over another (or perhaps will emphasize an alternative system), we recommend that both methodological behaviorism and functional contextualism/constructivism be introduced, at least by way of comparison and contrast, given their historical and current prominence in cognitive and behavioral psychology. In addition, the legitimacy of both and the differing implications of each should be acknowledged. Discussion of these two particular systems is in no way meant to exhaust the range of philosophical systems or variations thereof that may be useful to study within the context of cognitive and behavioral psychology.

Among the topics that would be important to address with respect to the philosophy of science within cognitive and behavioral psychology include:

- The role of pre-analytic scientific assumptions
- The history of science (and psychology in particular), and the evolution of scientific philosophies
- Epistemology, particularly truth criteria (e.g., knowledge as discovered vs. constructed)
- Distinctions between the “context of discovery” and the “context of justification” in scientific inquiry
- Models of determinism, free will, and human agency
- Philosophical perspectives on the mind-body problem
- The goals of scientific inquiry
- The question of causal status of thoughts, beliefs, emotions, and other subjective experiences
- Perspectives on the demarcation of science from non-science, pseudoscience, and quackery
- The role of cognitive heuristics in clinical decision-making, including cognitive biases, and ways of addressing such biases (e.g., Dawes, Faust, & Meehl, 1989; Kahneman, Slovic, & Tversky, 1982)
- The relation between philosophical assumptions and research methods

Broad training in basic psychological science allows the cognitive behavioral psychologist to derive theoretically important questions, to frame these questions in a way that supports empirical study, and to synthesize the findings to create and disseminate new knowledge. Such training is also essential to the understanding and application of methods and findings presented in the psychological literature. An appreciation of philosophical assumptions is critical..

The second proposition is that ethical decision-making is fundamental to cognitive and behavioral psychology, and should permeate all aspects of research and practice.

The appreciation of scientific assumptions goes hand-in-hand with appreciation of the nature of ethical scientific and professional conduct. Given the considerable power of many technologies derived within cognitive and behavioral psychology, it is especially important that psychologists develop a healthy respect for their appropriate and problematic applications.

Ethics is fundamentally a way of reasoning, making decisions, and acting in particular contexts, rather than a list of “rules” to be followed blindly. Broadly speaking, ethical practice within cognitive and behavioral psychology is based on the fundamental principle of maximizing collective well-being of all who might be impacted by the psychologist’s work. Ethical dilemmas infuse choices that psychologists must make routinely in various contexts, including research, practice, consultation, teaching, and administrative endeavors. A thorough appreciation of ethical principles, including the conceptual and philosophical assumptions underlying those principles, is essential to addressing novel ethical problems.

Too often, discussions of ethics focus primarily on how to avoid adverse professional consequences of ethical violations with respect to prevailing professional codes of conduct, rather than addressing ethics as a means of enhancing research and clinical practice through a proactive consideration of ethical issues. Although knowledge of specific ethical codes is critical, such knowledge should be supplemented by a deeper appreciation of ethical principles and a proactive focus on enhancing ethical behavior in both research and applied contexts.

Topics that would be important to address with respect to ethical decision-making include:

- Fundamental principles underlying ethics in psychology (e.g., beneficence and nonmaleficence, fidelity and responsibility, integrity, justice, respect of rights and dignity)
- Resolving tensions inherent in ethical principles (e.g., “do no harm” vs. risk-benefit analyses with respect to the principle of beneficence and nonmaleficence)
- Environmental and psychological factors that impact ethical decision-making (e.g., utilitarian versus incommensurable views)
- Deontological vs. consequentialist perspectives on ethics
- Definitions and measurement of well-being, including addressing situations in which enhancement of one individual or group’s well being may come at the cost of that of another individual or group
- Prioritizing science in ethical decision making

We encourage programs to balance theoretical discussion of these types of issues with consideration of real or hypothetical ethical decisions, with a particular focus on issues that are likely to arise in the context of cognitive and behavioral psychology. We encourage a proactive perspective on enhancing ethical practices.

B. Research Knowledge and Competencies The basic proposition is that doctoral study in cognitive and behavioral psychology includes advanced knowledge and skills in the area of research design and data analysis, and the general process of drawing logically valid inferences from observations. Developing a sufficiently deep understanding of this knowledge and skill requires “hands-on” experience in the research process.

The scientific knowledge that forms the basis of cognitive and behavioral psychology has been amassed over the past 50 years or more and continues to guide the refinement of current approaches, as well as the development of new approaches. Although important questions remain as to the specific amount of engagement in research that is necessary to competently apply cognitive and behavioral psychology, there is agreement that cognitive and behavioral psychology requires knowledge and competency in the science of cognitive and behavioral psychology. The application of cognitive and behavioral psychology is comprised of research-based, data-driven procedures. The data that arise in the development, delivery, and evaluation of cognitive and behavioral psychology are always obtained using scientific methods, the details of which are selected to be contextually appropriate. The working assumption is that competent application of cognitive and behavioral psychology requires adequate training and experiences in producing scientific knowledge, consuming scientific knowledge, and applying this scientific knowledge in clinical settings.

Cognitive and behavioral psychology represents a well-researched approach to psychological intervention. Its efficacy is directly linked, logically as well as pragmatically, with its inherent basis in research, and particularly with findings indicating which specific interventions and general strategies are differentially effective for distinct disorders and behavior problems.

Thus, research knowledge and competency is critical for a cognitive-behavioral psychologist. We acknowledge that knowledge, skills, and attitudes are closely interwoven; however, we present them here in somewhat of an artificial separation to highlight various implications.

- There is a broad knowledge base in behavioral science and related fields that is essential to competent application of cognitive and behavioral psychology. Research experience is relevant to functioning as a CBP researcher for reasons elaborated below, and CBP has benefitted enormously from the large number of well-trained cognitive and behavioral psychologists who generate new knowledge that helps to advance cognitive and behavioral psychology.
- Research experience also is relevant to CBP practice in several ways. For instance, experience conducting research helps to generate a sophisticated understanding of the research endeavor, which helps with the identification and synthesis of findings into practical applications. Research experiences also foster research skills adequate to the challenges of program evaluation that practitioners increasingly face and the knowledge and confidence necessary for valid drawing of inferences from clinical data obtained from one's own practice.
- How much hands-on research experience is minimally necessary and/or optimal remains an open question, and one that research itself will help to answer.

Critical topics:

The major domains of knowledge, skills, and attitudes that are essential to the competent practice of cognitive and behavioral psychology include the following:

- **Knowledge:** Essential ingredients of cognitive and behavioral psychology include understanding principles of causality, understanding the processes that determine behavior maintenance and change, including individual differences, and evaluating

outcomes. The ability to critically evaluate research findings and keep current on the relevant literatures is essential to CBP.

- **Skills:** The application of cognitive and behavioral psychology requires a range of research-related skills including conducting psychometrically valid assessments, collecting data with diverse individuals in diverse settings, choosing and implementing interventions based on the data available, evaluating outcomes, and altering treatment goals and techniques based on continuing outcome monitoring. The well-trained cognitive and behavioral psychologist brings a scientific mindset to her/his practice and to the collaborative relationship with each individual.
- **Attitudes:** Successful application of CBP requires and builds upon the attitude that behavior can be understood and altered using the tools and perspectives of science.

Research knowledge and experience especially relevant to CBP:

We highlight the following training emphases as especially important to the development of competence in cognitive and behavioral psychology.

1. *Research design knowledge:* We recommend a strong emphasis on the “big picture” – building upon the pieces of knowledge that are standard in research training but also exposing trainees to a systematic overview of how research design permeates assessment, intervention, and outcome evaluation in cognitive and behavioral psychology. Examples of research elements and research-related content areas that are especially pertinent to cognitive and behavioral psychology include:

- Single-case and small N experimental designs
- Functional analysis
- Repeated-measures designs
- Base rates, sensitivity, specificity, and related diagnostic and assessment concepts
- Clinical replication series
- Knowledge of basic psychometric properties of self-report measures and the differences between prospective versus retrospective collection of data
- Reliability issues in behavioral observation; triple response modality issues; multiple measures across multiple domains
- Drawing inferences from different types of designs: how to interpret data from the most uncontrolled through the most highly controlled studies
- Construction and operationalization in research studies and interventions
- The limits of clinical judgment and the effective use of statistical techniques in clinical decision-making
- Analyzing, synthesizing, and summarizing a research literature and applying it in a scientifically valid manner in a particular context
- Getting “one’s hands on data:” collecting data, coding, analyzing, describing, summarizing, and drawing inferences
- The distinctions between, and respective characteristics of, outcome vs. process research
- Ongoing assessment of short-term, intermediate, and longer-term outcomes as part of the treatment process itself
- Using data to generate clinical hypotheses and to test them as part of what makes the application of CBP efficacious
- Program evaluation and community-based assessment and intervention

- Dissemination, transfer of knowledge, and implementation science

2. *Early research experiences:* We strongly endorse the value of positive and constructive research experiences from the very beginning of cognitive and behavioral psychology training to help students to acquire both a positive attitude toward scientific methods and a sense of self-efficacy in the research domain. One method for helping to integrate students into the clinical research community is the availability of relatively small faculty-student research groups that socialize students into how research is done and used, and help them gain confidence in their ability to think as scientists and to produce science on their own. To the extent that the research topics to which students are exposed are connected to the etiology, assessment, treatment, and/or prevention of behavioral disorders, the research experiences are likely to be even more helpful. There is a small but growing empirical literature that describes the characteristics of a good research-training environment (e.g., Gelso & Lent, 2000). Systematic review of published data on what variables predict research productivity within and beyond graduate training would be useful.

3. *Selecting students who are compatible with the empirical focus and basis of CBP:* While it certainly is not necessary that every student who seeks training in cognitive and behavioral psychology desire or pursue a career as a researcher, our assumption is that cognitive and behavioral psychologists need to value and respect science, be comfortable with all aspects of data collection and analysis, stay current on relevant research literature, and use the range of available empirical sources to guide their interventions. Students who have some research interests and experience prior to cognitive and behavioral psychology training and who have both curiosity about human nature and a strong desire to learn are therefore most likely to thrive in a training program that emphasizes cognitive and behavioral psychology.

C. Clinical Knowledge and Competencies

The basic proposition is that doctoral study in cognitive and behavioral psychology includes advanced knowledge and skills in a wide range of evidence-based intervention strategies, as well as an understanding of the established principles upon which the procedures are based. Supervised experience applying these procedures results in the competent application of critical elements of each procedure.

Cognitive and behavioral psychologists utilize an overall framework for their clinical work that reflects their research training and commitment to evidence-based practice. The empirical literature serves as the basis for a continual evolution of clinical procedures that are considered the core training needed for a cognitive and behavioral psychologist at any given time. Thus, the ability to find and evaluate current relevant literature serves as the basis for clinical work and recommendations from the literature are the first step a clinician considers for treatment options. However, cognitive and behavioral psychologists are also trained to approach the assessment and treatment of individual cases from the scientist mindset and are prepared to deal with individual variability in presentation and a range of comorbid problems and contextual variables. Cognitive and behavioral psychologists understand the benefits and limitations of standardized protocols/manuals, and understand the principles behind clinical procedures so they can implement procedures wisely, flexibly and in the context of attending to relevant relationship variables.

Training for clinical work necessarily includes supervised experience with individual data collection, analysis, and review/adjustment of strategies with a view towards promoting generalization of behavior change, relapse prevention, and an appreciation for follow-up assessment. Cognitive and behavioral psychologists are trained to utilize their clinical experiences to inform research questions in order to maintain a reciprocal relationship between research and clinical work that facilitates clinically meaningful and maximally useful research. They are also committed to dissemination of research findings and provision of training so there will be maximum availability to the public of empirically informed treatment options.

Overall framework for clinical training:

A program that maintains a cognitive and behavioral emphasis specifically incorporates a scientific perspective that maintains sensitivity to similarities and differences between behavioral observations, subjective reports, and inferred constructs. The topics below highlight overarching concepts that are considered important for training in the application of cognitive and behavioral psychology.

- Assessment (e.g., structured interviews, clinician rating scales, self-report, collateral reports, topographical descriptions, direct behavioral observation)
- Data collection (e.g., baseline, ongoing, and outcome evaluation)
- Functional analysis of behavior (e.g., contextual assessment, determination of contingency operations, motivational hypotheses, design of experiments varying contextual factors and/or rewards)
- Case conceptualization process based on cognitive and behavioral principles (e.g., initial, ongoing trouble-shooting, reconceptualization)
- Treatment planning and organization of treatment targets (e.g., hierarchy of treatment targets, consideration of individual characteristics and values)
- Psychoeducation (e.g., presentation of a theoretical model and the rationale for treatment)
- Emphasis on the role of homework in promoting change and generalization
- Consultation with other professionals, including attention to clinician well-being and self-care
- Utilization of models of supervision theoretically consistent with cognitive and behavioral principles
- The relevance of risk management and ethical issues for cognitive and behavioral interventions

Knowledge base for clinical competency:

Didactic coursework should include exposure to most, if not all, of the following topics, with an understanding that the list should be continually revised and updated to remain current with new developments. An attitude of openness to disconfirmation of prior conclusions and extension beyond the initial theories and applications is critical and reflects the higher order commitment to the scientific method.

- Overview of the history of cognitive and behavioral psychology
- Basic understanding of affect/behavior/cognition interactions (e.g., the bio/psycho/social model)
- Applications of learning theory to clinical change

- Substantial exposure to the current primary sources of cognitive and behavioral intervention research as well as review sources (e.g., Cochrane reviews) that would include comparisons of cognitive and behavioral interventions to treatment-as-usual and various control conditions, comparisons among different CBP options for similar problems, and comparisons between CBP and therapy approaches based on other theoretical models
- Knowledge of critical issues to consider when evaluating the quality of intervention research (e.g., sample selection, comorbidity, power, treatment fidelity)
- Principles relevant to evaluation of clinical work (e.g., program level evaluation, quality control, quality improvement, therapist drift)
- Relevant empirical research on the therapeutic relationship, particularly as approached within cognitive and behavioral interventions (e.g., cognitive and behavioral analysis system of psychotherapy, dialectical behavior therapy, functional analytic psychotherapy enhanced-cognitive and behavioral therapy)
- Research on cognition/neuroscience as it applies to cognitive and behavioral psychology

Development of clinical competencies:

In addition to the didactics described above, training in cognitive and behavioral psychology requires theoretically consistent and practice-informed face-to-face supervised clinical experiences. Other supervisory modalities may be used as appropriate including modeling, roleplaying, co-therapy, bug in the ear/eye, and video/audiotape review/feedback. The emphasis is on providing a range of experiences using relevant case conceptualization and evidence-based procedures. However, doctoral training is not expected to include experience with the full range of cognitive and behavioral interventions. Internship and postdoctoral work will serve to broaden the training in cognitive and behavioral psychology, and a commitment to lifelong learning serves to modify and expand the repertoire of clinical skills over time. Rather than providing a definitive set of clinical skills needed, below we provide examples of well-supported interventions characterizing cognitive and behavioral psychology at this point in time. Evidence-based interventions typically include a number of procedures. Because procedures may be applied to many problem behaviors, the focus is on training in the basic principles behind interventions. Some protocols are fairly broad or have variations adapted for different problems and populations, whereas others are very specific to a particular problem.

- Contingency management
- Stimulus control
- Shaping of complex chains of behavior
- Self-management including self-monitoring/habit reversal
- Arousal reduction strategies (e.g., relaxation training, biofeedback, hypnosis, meditation)
- Distress tolerance
- Emotion regulation
- Extinction/exposure strategies
- Behavioral activation
- Interpersonal skills training (e.g., assertion training, interpersonal problem-solving, validation)
- Modifying cognitive processes (e.g., reappraisal, reframing, restructuring)
- Modification of core cognitive beliefs/tacit knowledge structures
- Defusion/distancing

- Enhancing psychological acceptance
- Motivational strategies
- Values clarification
- Crisis management/strategies to assess suicidality

Broad Issues relating to the application of clinical skills:

Cognitive and behavioral psychology has been successfully applied at a variety of levels across a number of settings. Although there is no expectation that a cognitive and behavioral psychology program could provide detailed training in all possible areas of application, high quality programs are expected to provide exposure to the flexible application of the principles underlying cognitive and behavioral psychology across levels and settings. The following lists novel and/or emerging examples of the effective application of cognitive and behavioral psychology.

- Sensitivity and responsiveness to environmental, cultural, and socioeconomic factors with respect to service delivery and individual characteristics
- Understanding the role of consent to treatment (within clinical research as well as general clinical work), the individual's right to understand the current evidence base as well as the treatment options available
- Awareness of issues involved in translating nomothetic research to individual cases as well as the limitations of unstructured clinical judgment
- Skills to negotiate the process of therapy which may involve readjustment of strategies, modifying to changing to other CBP procedures, consideration of changing to or referring a client for compatible adjunctive interventions, and consideration of referral for non-cognitive and behavioral interventions
- Skills to systematically monitor individual outcomes
- Intersection with systems theories as applied within cognitive and behavioral psychology (e.g., couples, family, parent training, community intervention)
- Recognition of the continuum for intervention (e.g., prevention, remediation, wellness)
- Relationship to other approaches/professions
- Intersection of cognitive and behavioral psychology with pharmacotherapy (combination treatment: indications, limitations, contraindications)
- Intersection of cognitive and behavioral psychology with medical issues and neuroscience

IV. Conclusion & Recommendations

Historically, the development or refinement of education and training models for professional psychology has resulted in considerable controversy. Debate continues over implications emanating from the 1949 Boulder Model, and the results of the 1997 Houston Conference have continued to be more aspirational than probative. The general position of task force members was that the field of cognitive and behavioral psychology has in many ways progressed past the exclusive or even primary focus on models of education and training. Competencies to be achieved by education and training are of primary concern to consumers and the public, and the focus here is on the specification of knowledge, skills, and attitudes that ultimately result in high-level competencies. Strong doctoral education and training in cognitive and behavioral psychology can take place in the context of psychology programs emphasizing scientist-practitioner, clinical scientist, or clinician-scholar training models. The principles and guidelines

described herein apply to all programs, regardless of the specific training model. Although these guidelines can and should be implemented differently across programs, these recommendations should not be ignored or de-emphasized on the grounds that the guidelines are perceived to be incompatible with a given training model.

Task force members worked diligently to develop guidelines that reflects the state-of-the-art for cognitive and behavioral psychology doctoral training. When disagreements arose, taskforce members sought resolution by relying first on the available published research evidence. When data were scarce or nonexistent, task force members relied on well-reasoned extrapolations. Task force members were in unanimous agreement regarding the following recommendations:

1. Doctoral programs that offer education and training in cognitive and behavioral psychology expose students to the philosophy of psychology, with particular emphasis on epistemology and the role of pre-analytic assumptions in defining the scope and methods of science and practice.
2. Scientific and ethical attitudes permeate all aspects of training in cognitive and behavioral psychology. Programs should be able to articulate ways in which scientific and ethical attitudes are integrated across all aspects of training.
3. Doctoral programs that offer education and training in cognitive and behavioral psychology offer specific academic content reflecting current research methodology and exposure to current theoretical developments and clinical outcome literature.
4. Doctoral programs that offer education and training in cognitive and behavioral psychology offer a sequence of mentored research activities that involve data collection, analysis, write up and presentation of results.
5. Doctoral programs that offer education and training in cognitive and behavioral psychology ensure adequate faculty-to-student ratios in order to provide close supervision in research training by faculty members who themselves demonstrate currently, and/or who have a strong history of, research productivity in areas relevant to cognitive and behavioral psychology. This requires that programs carefully consider the size of their study body, and avoid admitting more students than they can train in hands-on research contexts.
6. Doctoral programs that offer education and training in cognitive and behavioral psychology offer supervised clinical experiences reflecting state-of-the-art evidence-based practices that prioritize the current scientific literature.
7. We recommend these guidelines be used to increase consistency across academic coursework and clinical training in doctoral programs that offer education and training in cognitive and behavioral psychology.

8. We recommend the American Psychological Association accredited doctoral programs in professional psychology use this document as a guideline for training in cognitive and behavioral psychology.
9. We recommend this document be disseminated widely to all doctoral training programs, relevant professional associations, the American Psychological Association, including its Board of Educational Affairs and its Commission on Accreditation, the Council of Specialties in Professional Psychology, the American Board of Professional Psychology, and other associations deemed relevant to education and training of doctoral level psychologists.
10. Post this document on websites used by students in the pursuit of doctoral education and training in cognitive and behavioral psychology.

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