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DAVID H.  
BARLOW



The Oxford Handbook of  
**CLINICAL  
PSYCHOLOGY**

# The Oxford Handbook of Clinical Psychology

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# The Oxford Handbook of Clinical Psychology

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David H. Barlow

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Peter E. Nathan  
Editor-in-Chief  
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## ABOUT THE EDITOR

### **David H. Barlow**

David H. Barlow received his Ph.D. from the University of Vermont in 1969. He is a Professor of Psychology and Psychiatry at Boston University, where he founded the Center for Anxiety and Related Disorders and now serves as the Center's Director Emeritus.

Dr. Barlow is the recipient of the 2000 American Psychological Association (APA) Distinguished Scientific Award for the Applications of Psychology. He is also the recipient of the 2008 Career/Lifetime Achievement Award from the Association for Behavioral and Cognitive Therapies and the 2000 Distinguished Scientific Contribution Award from the Society of Clinical Psychology of the APA.

He is past-president of the Society of Clinical Psychology of the APA and the Association for Behavioral and Cognitive Therapies, past-editor of several journals, and currently Editor-in-Chief of the *Treatments That Work* series for Oxford University Press. He was Chair of the American Psychological Association Task Force of Psychological Intervention Guidelines, and was a member of the DSM-IV Task Force of the American Psychiatric Association. He is also a diplomat in clinical psychology for the American Board of Professional Psychology and maintains a private practice.

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## CONTRIBUTORS

**Jonathan S. Abramowitz**

Department of Psychology  
University of North Carolina  
Chapel Hill, NC

**Lesley A. Allen**

Department of Psychiatry  
University of Medicine and Dentistry of  
New Jersey  
Robert Wood Johnson Medical School  
Piscataway, NJ

**Barbara L. Andersen**

Department of Psychology  
Ohio State University  
Columbus, OH

**Derek R. Anderson**

Department of Psychology  
Ohio State University  
Columbus, OH

**Martin M. Antony**

Department of Psychology  
Ryerson University  
Toronto, ON

**Allison J. Applebaum**

Department of Psychology  
Boston University  
Boston, MA

**Jacques P. Barber**

Department of Psychiatry  
University of Pennsylvania School of  
Medicine  
Philadelphia, PA

**David H. Barlow**

Center for Anxiety and Related  
Disorders  
Department of Psychology  
Boston University  
Boston, MA

**Donald H. Baucom**

Department of Psychology  
University of North Carolina  
Chapel Hill, NC

**Adam Bernstein**

Department of Psychology  
University of California, Los Angeles  
Los Angeles, CA

**James F. Boswell**

Department of Psychology  
Pennsylvania State University  
State College, PA

**Andrea Bradford**

Department of Family and Community  
Medicine  
Baylor College of Medicine  
Houston, TX

**Timothy A. Brown**

Center for Anxiety and Related Disorders  
Boston University  
Boston, MA

**Molly R. Butterworth**

Psychology Department  
University of Utah  
Salt Lake City, UT

**Jenna R. Carl**

Center for Anxiety and Related Disorders  
Department of Psychology  
Boston University  
Boston, MA

**Louis G. Castonguay**

Department of Psychology  
Pennsylvania State University  
State College, PA

**Christine B. Cha**

Department of Psychology  
Harvard University  
Cambridge, MA

**Bruce F. Chorpita**

Department of Psychology  
University of California, Los Angeles  
Los Angeles, CA

**Lillian Comas-Díaz**

Transcultural Mental Health Institute  
Washington, DC

**Jonathan S. Comer**

Department of Psychiatry  
Boston University  
Boston, MA

**Patrick H. DeLeon**

Past President  
American Psychological Association

**David DeMatteo**

Department of Psychology  
Drexel University  
Philadelphia, PA

**Anne DePrince**

Department of Psychology  
University of Denver  
Denver, CO

**Lisa M. Diamond**

Psychology Department  
University of Utah  
Salt Lake City, UT

**Linda A. Dimeff**

Behavioral Tech Research, Inc.  
Seattle, WA

**Halina J. Dour**

Department of Psychology  
Harvard University  
Cambridge, MA

**V. Mark Durand**

Department of Psychology  
University of South Florida, St. Petersburg  
St. Petersburg, FL

**Maryanne Edmundson**

Department of Psychology  
University of Kentucky  
Lexington, KY

**Charles F. Emery**

Department of Psychology  
Ohio State University  
Columbus, OH

**Norman B. Epstein**

Marriage and Family Therapy Program  
University of Maryland  
College Park, MD

**Mariana K. Falconier**

Department of Human Development  
Virginia Tech University  
Blacksburg, VA

**Dolores Gallagher-Thompson**

Stanford University School of Medicine  
Stanford, CA

**Marvin R. Goldfried**

Department of Psychology  
Stony Brook University  
Stony Brook, NY

**Naomi Goldstein**

Department of Psychology  
Drexel University  
Philadelphia, PA

**Leslie S. Greenberg**

Department of Psychology  
York University  
Toronto, ON

**Catherine L. Grus**

American Psychological Association  
Washington, DC

**Leonard J. Haas**

Department of Family & Preventive  
Medicine  
University of Utah School of Medicine  
Salt Lake City, UT

**Allison Hart**

Department of Psychology  
Drexel University  
Philadelphia, PA

**Laurie Heatherington**

Department of Psychology  
Williams College  
Williamstown, MA

**Kirk Heilbrun**

Department of Psychology  
Drexel University  
Philadelphia, PA

**Justin M. Hill**

VA Boston Healthcare System  
Boston, MA

**Jason M. Holland**

VA Palo Alto Health Care System  
Stanford University School of Medicine  
Stanford, CA

**Heather K. Hood**

Department of Psychology  
Ryerson University  
Toronto, ON

**John Hunsley**

Department of Psychology  
University of Ottawa  
Ottawa, ON

**Jonathan D. Huppert**

Department of Psychology  
The Hebrew University of Jerusalem  
Jerusalem, Israel

**Bradley E. Karlin**

Department of Veterans Affairs  
Central Office  
Washington, DC

**Terence M. Keane**

VA National Center for Posttraumatic  
Stress Disorder  
Boston University School of Medicine  
Boston, MA

**Philip C. Kendall**

Department of Psychology  
Temple University  
Philadelphia, PA

**Mary Beth Kenkel**

College of Psychology and Liberal Arts  
Florida Institute of Technology  
Melbourne, FL

**Jennifer S. Kirby**

Department of Psychology  
University of North Carolina  
Chapel Hill, NC

**Phillip M. Kleespies**

VA Boston Healthcare System  
Boston, MA

**Naomi Koerner**

Department of Psychology  
Ryerson University  
Toronto, ON

**Robert F. Krueger**

Department of Psychology  
University of Minnesota  
Twin Cities

**Beth A. Lewis**

School of Kinesiology  
University of Minnesota  
Minneapolis, MN

**Ovsanna Leyfer**

Center for Anxiety and Related Disorders  
Boston University  
Boston, MA

**Andrew K. Littlefield**

Department of Psychological Sciences  
Midwest Alcoholism Research Center  
University of Missouri  
Columbia, MO

**Julie K. Lynch**

Albany Neuropsychological Associates  
Albany, NY

**Brittain L. Mahaffey**

Department of Psychology  
University of North Carolina  
Chapel Hill, NC

**Stephanie Marcello Duva**

University of Medicine and Dentistry  
of New Jersey-University Behavioral  
Health Care  
Division of Schizophrenia Research  
Piscataway, NJ

**Bess H. Marcus**

Program in Public Health  
Brown University  
Providence, RI

**Julia A. Martinez**

Department of Psychological Sciences  
Midwest Alcoholism Research Center  
University of Missouri  
Columbia, MO

**Brian P. Marx**

VA National Center for Posttraumatic  
Stress Disorder  
Boston University School of Medicine  
Boston, MA

**Eric J. Mash**

Department of Psychology  
University of Calgary  
Calgary, AB

**Robert J. McCaffrey**

University at Albany, SUNY  
Albany Neuropsychological Associates  
Albany, NY

**Cindy M. Meston**

Department of Psychology  
University of Texas at Austin  
Austin, TX

**Jeanne Miranda**

Department of Psychiatry and  
Biobehavioral Sciences  
University of California, Los Angeles  
Los Angeles, CA

**Kim T. Mueser**

Department of Psychiatry  
Dartmouth Medical School  
Hanover, NH

**Kelly Neville**

Department of Preventive Medicine  
Feinberg School of Medicine  
Northwestern University  
Evanston, IL

**Matthew K. Nock**

Department of Psychology  
Harvard University  
Cambridge, MA

**Jill M. Oliveira Gray**

I Ola Lahui, Inc.  
Honolulu, HI

**Thomas H. Ollendick**

Child Study Center, Department of  
Psychology  
Virginia Polytechnic Institute and State  
University  
Blacksburg, VA

**Thomas F. Oltmanns**

Department of Psychology  
Washington University  
St. Louis, MO

**Michael W. Otto**

Department of Psychology  
Boston University  
Boston, MA

**Andrew P. Paves**

Behavioral Tech Research, Inc.  
Seattle, WA

**Kenneth S. Pope**

Independent Practice  
Norwalk, CT

**Christina Riggs Romaine**

Department of Psychology  
Drexel University  
Philadelphia, PA

**Donald K. Routh**

Department of Psychology  
University of Miami  
Coral Gables, FL

**Morgan T. Sammons**

California School of Professional  
Psychology  
Alliant International University  
San Francisco, CA

**Ritch C. Savin-Williams**

Department of Human Development  
Cornell University  
Ithaca, NY

**Sanjay Shah**

Department of Psychology  
Drexel University  
Philadelphia, PA

**Brian A. Sharpless**

Department of Psychology  
Drexel University  
Philadelphia, PA

**Kenneth J. Sher**

Department of Psychological Sciences  
Midwest Alcoholism Research Center  
University of Missouri  
Columbia, MO

**Stephen R. Shirk**

Department of Psychology  
University of Denver  
Denver, CO

**Julie M. Skutch**

Behavioral Tech Research, Inc.  
Seattle, WA

**Denise M. Sloan**

VA National Center for Posttraumatic  
Stress Disorder  
Boston University School of Medicine  
Boston, MA

**Susan C. South**

Department of Psychological Sciences  
Purdue University  
West Lafayette, IN

**Bonnie Spring**

Department of Preventive Medicine  
Feinberg School of Medicine  
Northwestern University  
Chicago, IL

**Eric Statt**

School of Kinesiology  
University of Minnesota  
Minneapolis, MN

**Robyn Sysko**

Department of Psychiatry  
Columbia University  
College of Physicians & Surgeons &  
Division of Clinical Therapeutics  
New York State Psychiatric Institute  
New York, NY

**Holly James Westervelt**

Warren Alpert Medical School  
Brown University  
Providence, RI

**Roberta F. White**  
Department of Environmental Health  
Boston University School of Public  
Health  
Boston, MA

**Thomas A. Widiger**  
Department of Psychology  
University of Kentucky  
Lexington, KY

**G. Terence Wilson**  
Graduate School of Applied and  
Professional Psychology  
Rutgers, The State University of  
New Jersey  
Piscataway, NJ

**Eric A. Woodcock**  
Behavioral Tech Research, Inc.  
Seattle, WA

**Robert L. Woolfolk**  
Rutgers University  
Princeton University  
Princeton, NJ

**Antonette M. Zeiss**  
Department of Veterans Affairs  
Central Office  
Washington, DC



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PART 1

Overview and  
Introduction

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# A Prolegomenon to Clinical Psychology: Two 40-year Odysseys

David H. Barlow

## Abstract

In 1969, David Shakow, generally acknowledged as the founding father of modern-day clinical psychology, recounted his 40-year odyssey in the field. He focused on advances in training, diagnosis and assessment, and treatment, and projected trends in these areas in the years to come. The author recounts his own 40-year odyssey, beginning in 1969, and reflects on the remarkable growth of clinical psychology, progress that has occurred in the areas of training, diagnosis and assessment, and treatment, and the extent to which Shakow's vision has been realized.

**Keywords:** Assessment, clinical psychology, diagnosis, psychological treatment, training

In 1969, two events occurred that would ultimately impact this handbook of clinical psychology. First, my career officially commenced with the conferral of a PhD. For me, this was the fulfillment of a dream that had begun in high school when I decided there was nothing else I wanted to be but a clinical psychologist. But a far more significant event caught the attention of most clinical psychologists. David Shakow, widely acclaimed as the father of modern clinical psychology, published a book of his collected papers entitled "Clinical Psychology as Science and Profession: A 40-Year Odyssey" (Shakow, 1969). At the time, Shakow had recently retired as the first chief of the Laboratory of Psychology in the Intramural Research Program of the National Institute of Mental Health (NIMH). Prior to that, his career included stints in both departments of psychiatry and psychology in major universities, as well as key leadership positions in prominent clinical settings, including McLean Hospital in Boston and Worcester State Hospital. Although he had officially retired in 1966, he continued going to work every day, where he would write and supervise research until he died suddenly one morning in his office, in 1981, at the age of 80 (Garmezy & Holzman, 1984).

Shakow is one of only two individuals to be honored by the American Psychological Association (APA) over the course of its history with two of its most prestigious awards: the Distinguished Scientific Contribution Award and the Distinguished Professional Contribution Award. Although he made enormous contributions to our research effort, much of it in the area of schizophrenia, it was Shakow's conceptualization of the role of modern-day clinical psychology that remains his most enduring legacy. He was an early president of the Division (now the Society) of Clinical Psychology of the APA and chaired the very influential Committee on Training in Clinical Psychology that made its report in 1947 defining the Scientist-Practitioner Model of training, a model that was endorsed, broadened, and deepened at the iconic Boulder Conference in 1949 (Raimy, 1950).

It is a coincidence that, as I write this prolegomenon in the summer of 2009, it has been another 40 years since the publication of Shakow's book in 1969, the year my career also commenced, and the field has expanded exponentially. Thus, it seems fitting to reflect on his views and his predictions for the future of the profession as put forth at the end



of his 40-year odyssey and, with all humility, recount my own 40-year odyssey reviewing the major themes articulated by Shakow in 1969, and later elaborated in a major paper in 1976 (Shakow, 1976). These themes include training, diagnosis (by which he meant the broad area of psychological assessment), and therapy. I begin with a look at training.

## Training in 1969

In 1969, Shakow observed:

Present doctoral training . . . calls for a minimum program of four years, one year of which (preferably the third) consists of an internship. On a foundation of basic courses in theoretical clinical and dynamic psychology, practica, clerkships, and internships are organized. The type of training program now generally accepted was initially proposed by the Committee on Training in Clinical Psychology of the APA in its 1947 report, and, in its major outlines, further supported in conferences at Boulder (Raimy, 1950), Stanford (Strother, 1956) and Miami (Roe, Gustad, Moore, Ross, & Skodak, 1959). (A fourth conference was held in the spring of 1965.) The 1947 Report called for centering clinical training in existing university departments, and the integration of field training units and university programs.

(Shakow, 1969, p. 39)

Shakow also recounted what he called the “phenomenal” growth in clinical psychology in the United States. As he noted:

(1) membership in the Division of Clinical Psychology of the APA has risen from 787 in 1948 to 2,883 in 1964; (2) the number of schools fully approved by the Committee on Training in Clinical Psychology of the APA has increased from 30 in 1948 to 55 in 1963; (3) there were an estimated 742 graduate students enrolled in doctoral training in programs in clinical psychology in the academic year 1947–48 compared to 3,340 in 1962–63; (4) the number of clinical psychologists certified by the American Board of Examiners in Professional Psychology has increased from 234 in 1948 to 1,793 in 1963 (of the total, 1,116 are “grandfathers”); (5) 28 states, and four provinces in Canada have established some form of statutory control; 18 states have set up non-statutory control.

(Shakow, 1969, p. 41)

But he noted that this “unusual growth” had not come about without much travail, and that this growth had given rise to a number of questions that

would have to be answered forthrightly in the years to come. Some of these questions were:

1. Can psychology train persons with both professional and scientific goals in mind?
2. How much application can there be in a field where basic knowledge is still so meager?
3. Should not clinical psychologists be devoting more time to research?
4. Should training for research and teaching be separated from training for the applications of psychology? (Shakow, 1969, p. 41)

These questions, of course, reflected the continuing endorsement of the scientist-practitioner model of training of clinical psychologists as conceptualized by Shakow himself, with its emphasis on integration of science and practice, as articulated in various conferences on training sponsored by the APA, most notably the Boulder Conference mentioned earlier. And it is interesting to note that many of these questions raised in the 1960s still remain today, in 2009. But in fact, this philosophy of training psychologists had much deeper roots. Notably, Lightner Witmer, considered the first “clinical psychologist” by most, wrote “the pure and the applied sciences advance in a single front. What retards the progress of one, retards the progress of the other; what fosters one, fosters the other. But in the final analysis the progress of psychology, as of every other science, will be determined by the value and amount of its contributions to the advancement of the human race” (Witmer, 1907/1996, p. 2491; see also Routh, Chapter 2, this volume).

Despite the long history of this model of training for clinical psychology and the substantial amount of time and effort invested in articulating and implementing this model, the desired outcomes proved elusive. For example, in the report of the Boulder Conference itself it was noted, “too often, however, clinical psychologists have been trained in rigorous thinking about nonclinical subject matter and clinical problems have been dismissed as lacking in ‘scientific’ respectability. As a result, many clinicians have been unable to bridge the gap between their formal training and scientific thinking on the one hand, and the demands of practice on the other. As time passes and their skills become more satisfying to themselves and to others, the task of thinking systematically and impartially becomes more difficult” (Raimy, 1950, p. 86). Nevertheless, the Boulder Conference, under Shakow’s influence and leadership, articulated a number of reasons why

joint training in practice and research continued to be desirable:

1. Avoid narrowness of thinking associated with training in just research or practice and foster cross-fertilization by combined training.

2. Lack of dependable knowledge requires that research be a vital part of psychologists skills.

3. Substantial interest in field and the large number of applicants allows for accepting individuals with interests in both science and practice.

4. Direct involvement with clinical practice would highlight important research issues.

5. Effectively delivered service may generate financial support for the initiation and continuation of research and data collection.

It is interesting to reflect on this rationale for training after 60 years. Of course, few would dispute the necessity to avoid narrowness of thinking and to broaden perspectives on both research and practice. Similarly, Point 2 remains an important consideration despite the enormous advances in our understanding of psychopathology and behavior change over the ensuing last 60 years. Nevertheless, this particular point reflects the fact that even today a partnership between frontline clinicians who are actually objectively assessing the effects of their procedures, and clinical researchers responsible for developing and evaluating a variety of psychological procedures is essential if we are to move forward. There is also little question regarding Point 4, that some familiarity with the subject matter at hand through clinical practice greatly enriches the research effort. For Point 3, we are seeing somewhat less than universal agreement that one individual will have substantial and equal interest in both science and practice, nevertheless, this remains a goal of all scientist-practitioner programs that find their graduates either going on to clinical research careers, careers in practice with a more empirical bent, or perhaps some combination. Finally, Point 5 certainly came true with the advent of federal funding for development of psychological procedures that, in turn, provided financial support for training and research. Given the new strategic vision at the NIMH during the last several years (Insel, 2009), some direct connection to the practice effort is seen as a very important link to continued research funding.

As noted earlier, Shakow was a strong advocate of integrating clinical settings fully into doctoral clinical psychology programs. This arrangement was

rare in those early years, since hardly any in-house training clinics existed, and sites for clinical practice were few and far between. And when they could be procured, psychologists were often limited to roles of administering routine psychological testing. Nevertheless, Shakow, in 1976, stipulated again a suggestion he had been making for 20 years. "My suggestion is that the university (or professional school) and the field-center training activities be as completely integrated as possible. Integration does not mean sameness, which results in a loss of vigor that comes with having the same point of view. . . . The fundamental principal of the plan is that theory and practicum must be constantly associated and tied together, whether in the university or the field station, and that both types of activity—theory and practicum—start with the very beginning of the program. I would suggest as axiomatic: *the greater the degree of integration between theory and practice, and between university and field center, the more effective the program*" (Shakow, 1976, p. 556). On this point, it is clear that Shakow's wisdom has been recognized, as clinical psychology programs increasingly conduct training in captive clinics, often referred to as Psychological Service Centers, and increasingly, specialty clinics focusing on specific areas of psychopathology. Nevertheless, the necessity of completing internships in more fully organized clinical settings, still a requirement of all scientist-practitioner programs, is becoming increasingly problematic. There is a decreasing number of internship slots and at the same time a rapidly increasing number of applicants, resulting in a greater number of students each year unable to complete requirements for the PhD degree due to circumstances largely out of their control or that of their clinical psychology doctoral program. Clearly, this is an untenable situation and requires a new look at the admonitions made by Shakow over 40 years ago, recommending control of the entire clinical psychology training experience by the programs with the authority to conduct that training.

So after 40 years, what did Shakow conclude in 1969 about the future of clinical psychology, particularly in the context of training? First, he determined that it was crucial to train for research "... the content of research needs redefinition so it will encompass the most rigorous laboratory research, systematic naturalistic observation, and a serious attitude of inquiry leading to deliberate efforts to obtain answers to questions which arise during clinical operations" (Shakow, 1969, p. 42). This aspiration

reflected, in part, a longstanding difficulty observed by the early leaders of clinical psychology that required research projects in doctoral training programs were conceptualized far too narrowly. That is, most required research efforts in clinical programs were concerned with only the most basic questions, often studying laboratory animals rather than taking advantage of the rich trove of clinical questions that could be addressed more directly in applied settings. Of course, as mentioned, most clinical psychologists in training in those days had little access to these settings.

Second, Shakow argued that clinical psychology training should occur in institutional and community settings, and that “the function of each of the training agencies and the way to integrate their work need careful spelling out” (Shakow, 1969, p. 42). Once again, as articulated earlier, Shakow was a firm believer in the integration of training directly into the clinical settings.

Third, Shakow proposed increased delineation of important areas for clinical research and practice. Toward fulfilling this goal, he suggested that “This calls for much imaginative thinking. New methods of therapy, new methods of diagnosis, and—particularly, preventive methods of education are becoming increasingly important... It is clear that the personnel shortages in the area of mental health will be enormous and far from filled by present-day mental health professionals. Much thought and experimentation must go into making use of a much larger pool of persons, for example, younger persons with the ideals and resourcefulness represented in Peace Corps volunteers” (Shakow, 1969, p. 42). In this aspiration, Shakow correctly anticipated the greatly increased knowledge of the origins and course of psychopathology, the variety of new interventions both psychological and pharmacological that have occurred in the past 40 years, and the enormous upsurge in interest on the proper ways to deliver mental health services (Barlow, 2004; McHugh & Barlow, 2010). If anything, it is this latter area that is attracting the most attention as the reform of our healthcare delivery system in the United States gains traction, and as healthcare delivery in the rest of the developed world becomes more organized, efficient, and evidence-based. I return to this theme below.

Fourth, Shakow considered the proper place to locate training programs in clinical psychology. He underscored that the placement of clinical psychology programs in university settings should be carefully considered, so as to achieve his goals of integration in both the theory and application of

practice, “The nature of the doctoral degree granted to clinical psychologists—with a strictly professional (say a PsyD) or a combined research degree (the PhD)—calls for special discussion. The place and nature of post-doctoral programs, particularly such programs for psychotherapy training should be given equal thought” (Shakow, 1969, p. 42).

In this era, professional degrees (PsyD) had just been conceptualized and were being initiated in a few university settings. Shakow did not seem to have a particular view on this development as long as they aspired to the same principles he outlined for ideal training in the field.

Finally, Shakow made observations on upgrading the standards for committees that evaluate training programs and the competency of individuals to practice psychology, noting in particular the potentially important role of the American Board of Professional Psychology, as well as state licensing and certification boards. In a prescient summary statement, Shakow concluded:

The major problems of clinical psychology continue to lie within the parent field, psychology. Clinical psychology, after a long period spent as part of an academic discipline, has been through the early stages of becoming a profession as well. It is going through the natural disturbances and difficulties which attend a growth process of this kind. However, if it selects its students carefully, for personality as well as intellect; if it trains thoroughly, in spirit as well as letter; if it trains broadly, recognizing that narrowly educated specialists are not true clinical psychologists; if it remains flexible about its training and encourages experimentation; if it does not sacrifice remoter goals to the fulfillment of immediate needs; if it maintains its contact with its scientific background, remaining alert to the importance of theory as well as practice; if it keeps modest in the face of the complexity of its problems, rather than becoming pretentious—in short, if it finds good people and gives them good training—these disturbances and difficulties need not be of serious concern. Its future in society and as a profession is then assured.

(Shakow, 1969, p. 43)

In summary, Shakow’s odyssey led him to conclude that (1) science and practice should be integrated and related parts of training, but (2) that the focus of science in clinical psychology training should be on clinically relevant themes. (3) These training experiences should be firmly grounded in academic psychology, but should be fully integrated into front-line practice settings, with increased attention

to organized methods for evaluating quality and competence. And (4), the field should be on the forefront of exploring new systems for delivering broad-based psychological services.

**Training in 2009**

Earlier in the chapter, Shakow recounted the “phenomenal” growth in clinical psychology, from the years 1948–64, but even he would be stunned by what has happened since then. To update some of the statistics from the early 1960s listed earlier, membership in the Division (Society) of Clinical Psychology (Division 12) has not only increased substantially, but has spawned numerous additional divisions within the APA. These include, but are not limited to, the Division of Psychotherapy (Division 29), the Society of Clinical Child & Adolescent Psychology (Division 52), and the Society of Pediatric Psychology (Division 53). In addition, many other divisions that exist today would have been subsumed under the Division of Clinical Psychology, such as Divisions 38 (Health Psychology), 39 (Psychoanalysis), 42 (Independent Practice), 40 (Clinical Neuropsychology), 49 (Group Psychology & Group Psychotherapy), and several others. The number of schools fully accredited by APA to offer doctoral-level training has grown from 55 in 1963, to 226 in the 2006 academic year (Grus, this volume). From 3,340 graduate students enrolled in doctoral training programs in clinical psychology in 1962–63, the number has jumped to 25,973 as of 2006 (Grus, this volume). In addition, the number of psychologists certified in clinical psychology by the American Board of Professional Psychology has increased from 1,793 in 1963 to 3,348 as of 2009. And, whereas clinical psychology was the only area in which certification was possible from this board in the early ‘60s, there are now 13 specialties (see Table 1.1).

Finally, psychologists are under some form of statutory control in every state and province in North America, up from approximately half of the states and provinces in the 1960s. Much more revealing data on the current status of clinical psychology, along with facts on training and credentialing of clinical psychologists, are available in Chapter 8.

Returning to Shakow’s vision for the future of clinical psychology, particularly in the context of training, we can now evaluate his predictions in the ensuing 40-year period. One remarkable observation we can make is how little has changed in both underlying philosophy and the implementation of his vision for training. This is best exemplified by

Table 1.1 Specialty areas certified by the American Board of Professional Psychology
Clinical Psychology
Clinical Child & Adolescent Psychology
Clinical Health Psychology
Clinical Neuropsychology
Cognitive & Behavioral Psychology
Counseling Psychology
Couple & Family Psychology
Forensic Psychology
Group Psychology
Organizational & Business Psychology
Psychoanalysis in Psychology
Rehabilitation Psychology
School Psychology

the recent adoption of evidence-based practice (EBP) as policy by the APA (2006). Evidence-based practice has been defined by the APA as “the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (2006). This relatively broad definition of science and practice is perfectly in keeping with the spirit of Shakow’s vision that we can now safely say has been realized. In addition, the model he espoused, the Scientist-Practitioner model, is still the most highly valued model for training in the field, despite the appearance of alternative and, in some cases seemingly competing models, as described later. His other recommendations for a greater focus of research on clinical issues, integrating the academy and the clinic, developing new and imaginative ways to deliver services, the location of training programs, and strengthening standards for evaluating competency have all come to pass or are in the process of being realized. We will describe each briefly in turn.

***Integrating Science and Practice***

It is remarkable how well the fundamental principles of the Scientist-Practitioner model have stood the test of time. As Grus (this volume) points out, from the vantage point of the APA, the three core training models that guide clinical psychology education and training programs “...all emphasize the role of science as it relates to practice.” These models

of training include, of course, the Scientist-Practitioner model, with its origins in the late 1940s and still employed by the majority of doctoral programs in clinical psychology today. The Practitioner-Scholar model was formulated at a conference held in Vail, Colorado, in 1973 (Korman, 1976), with the goal of placing greater emphasis on preparation for psychological practice that would, nevertheless, be informed by science. Finally, the Clinical Scientist model, as initially described by McFall (1991), emphasized, as implied in the title, the training of clinical psychologists to be primarily scientists, with a strong focus on mastering principles of the scientific method, discovery of new knowledge, and the critical thinking skills that go along with the process of science. Programs identifying with this model often discourage applicants who are interested, at least exclusively, in clinical practice.

Although a common emphasis on science might seem a stretch for some models, such as the Scholar-Practitioner model, the flexibility in the Scientist-Practitioner model in regard to strategies for integrating science and practice makes this focus very much a part of the type of training offered in at least the leading professional schools. Thus, mental health practitioners may function as scientist-practitioners in one or more of three ways (Barlow, Hayes, & Nelson, 1984; Hayes, Barlow, & Nelson-Gray, 1999). First, they may be consumers of science, in that they keep up with the latest scientific developments in their field and make use of the most current assessment and treatment procedures that would presently be referred to as “evidence-based.” A firm foundation in the scientific aspects of clinical psychology would be necessary to evaluate the literature and keep abreast of these developments. Second, the same practitioners, as part of a responsible practice, may evaluate their own assessments or treatment procedures to assess effectiveness in a process now described as “outcomes assessment.” In this way, they are accountable not only to their own patients, but also to third parties who may be paying for the services. This evaluative activity has also been encoded recently in principles of EBP, adopted by the APA (2006). Third, scientist-practitioners may conduct research in clinics, hospitals, or elsewhere for the purpose of creating new knowledge about treatments, assessment, or the nature of psychopathology. Much of this new knowledge would then find its way into the clinical psychology literature, where empirical reports are published. Thus, under the influence of EBP (discussed further later), at least two of these three distinct ways in

which one could function as a scientist-practitioner are endorsed by leading proponents of all models of training present today in clinical psychology (Barlow et al., 1984; Hayes et al., 1999).

Other evidence on the robustness of this model comes from data collected by Norcross, Karpiak, and Santoro (2005), who conducted one of the periodic surveys of members of the Society of Clinical Psychology that began in the 1960s. Their survey, conducted in late 2003, examined, among other things, the training models followed in clinical psychology graduate programs (restricted in this case to the Scientist-Practitioner or “Boulder” model or the Scholar-Professional or “Vail” model, since the Clinical Scientist model is still relatively new). These models were described rather narrowly, such that the Vail model was represented as focused largely on practice. The data are presented in Table 1.2 (Norcross et al., 2005).

From Table 1.2, one can see that, in 2003, the percentage of Division 12 psychologists hailing from Scientist-Practitioner model programs was slightly over 80%, a number that has remained steady since the 1980s. Looking at the bottom (total percent) row, 65% would prefer the “Boulder” or “Strongly Boulder” model of training if they were “doing over” their training, whereas only 4% would prefer training in a “Vail” or “Strongly Vail” model. In another statistic, only eight of the 463 clinical psychologists trained in Boulder model programs reported that they would prefer a Vail model program if they could do it over again, whereas half of the psychologists trained in the Vail model programs would remain firmly within the Vail model. This is all the more surprising since, as pointed out in Chapter 8, as of 2005, only 40% of the doctorates in clinical psychology earned a PhD, and 53% earned a professional degree, the PsyD. The answer to this discrepancy lies, to some extent, in the conclusion noted earlier, that all training programs these days, under the influence of EBP, are to some degree scientist-practitioner orientated, whether they award the PhD or the PsyD.

### ***Research Focused on Clinically Relevant Themes in Integrated Practice Settings***

Shakow’s multifaceted vision is also clearly evident in the current focus of research training that exists in programs in clinical psychology. In the last 40 years, the focus of research, even for required dissertations, has shifted from the basic, nonapplied arena, to a very clear emphasis on clinical research. To accommodate the research productivity within clinical

**Table 1.2 Model Trained in by Model Preference**

Model trained in	Total %	Model preference (%)				
		SB	B	E	V	SV
Strongly Boulder (SB)	45	65	16	18	1	0
Boulder (B)	38	9	62	26	2	1
Equally Boulder & Vail (E)	13	4	4	87	1	4
Vail (V)	3	0	5	52	32	11
Strongly Vail (SV)	1	14	0	14	14	57
Total %		34	31	31	2	2

Adapted with permission from Norcross, J.C., Karpik, C.P., & Santoro, S.O. (2005). Clinical psychologists across the years: The division of clinical psychology from 1960 to 2003. *Journal of Clinical Psychology*, 61(12), 1467–1483.

programs, including students and faculty, the number of journals publishing applied clinical research has proliferated over the past 40 years, beyond the imagination of leading psychologists from the 1960s, such as Shakow himself. In 1965, five psychological journals were publishing primarily clinical research (psychopathology and intervention). In 2009, most popular citation analyses include 87 journals in the category of clinical psychology. In many cases, this research has taken place in the context of entities set up to promote the integration of clinical work and research, as detailed later. And this kind of effort is taking place in both traditional psychology department–based clinical psychology programs, as well as in many (but certainly not all) of the leading professional schools. To illustrate these trends in part, I will briefly describe the example of one of our own research and training clinics at Boston University, the Center for Anxiety and Related Disorders (CARD), although the choice of this Center for description is based as much on familiarity and convenience as any other factor, since equally vibrant clinical research and training entities exist in other universities around the country.

CARD, originally founded at the State University of New York at Albany, relocated to Boston University in 1996. It is a clinical research and treatment facility, operating fully within the Department of Psychology, whose mission is to advance scientific knowledge on the nature and treatment of anxiety and its disorders, as well as of other emotional disorders as they relate to anxiety, and to disseminate this information widely. To this end, the Center pursues several objectives: it conducts research on the nature and origins of anxiety disorders, and on assessment

and treatment outcomes for these disorders; it maintains a fundamental mission to educate and train doctoral students in clinical psychology; and it operates as a full-service clinic for the purpose of assessing and treating anxiety and related disorders from referrals by community health professionals.

To accomplish these goals, the Center admits between 500 and 600 new patients a year to its adult and child programs. “Admission” means that patients must first pass a phone screen to rule out obvious problems that are not the focus of CARD, such as current substance use or psychotic disorders. Individuals deemed appropriate are administered a full diagnostic and assessment battery before being referred either internally to one of the CARD clinics or treatment programs, or possibly to other community resources if the presenting problems are not within CARD’s realm of expertise. The Center supports approximately 6,000 visits annually from patients receiving care.

The two fundamental goals of CARD are to support clinical training in its doctoral program and clinical research for both trainees and faculty. To accomplish these goals, it was decided at the outset that CARD must provide the best clinical care available. Most individuals would not attend a clinic if they thought that the clinicians were only interested in research and that they would be “guinea pigs” for this research. Rather, they come to alleviate their suffering and restore their functioning, and CARD has developed a reputation for fulfilling these goals. In fact, approximately 60% of patients admitted to CARD enter directly into usual and standard evidence-based clinical care, much of it provided by doctoral students in clinical psychology, but some

provided by psychiatric residents, post-doctoral staff, and faculty. The remaining 40% of the patients (and this number varies considerably, depending on research projects ongoing) are offered the possibility of entering one or another clinical research protocol, in which interventions are evaluated in return for free treatment. CARD also has a clinic for eating disorders, a virtual reality laboratory, and a small program for sleep disorders. New programs are developed and some are discontinued, depending on resources available and the changing interests of faculty members. CARD supports between 30 and 40 full-time staff, including psychologists, psychiatrists, a nurse, and a number of clinic and research technicians. Some of the faculty associated with CARD are on tenure-track lines at the university, but the majority are supported with income generated by CARD through grants or patient fees. Annual income from patient fees and contracts runs between \$500,000 and \$700,000 a year, which is all fed back into the program for salaries or other resources.

In fiscal year 2009, CARD was supported by approximately \$4.5 million in funds, most of it from the National Institutes of Health (NIH), but with some monies from other sources. Among the NIH monies are National Service Research Awards (NRSA), granted to doctoral students who have successfully competed for these funds. Examples of ongoing NRSA awards for doctoral students include a new innovative “summer camp” treatment for young children, aged 4–8, suffering from severe separation anxiety; a study utilizing functional magnetic resonance imaging (fMRI) technology to examine brain functioning during emotional processing among patients with emotional disorders; and a study examining an innovative new cognitive-behavioral treatment for women suffering from perinatal grief. Other funded projects among students include the development of a novel program to promote adjustment and prevent anxiety and depression among newly committed gay couples.

It should be noted that CARD is not the only clinical facility within the Department of Psychology, since the department also supports a more traditional Psychological Services Center that services a broader range of psychopathology, beyond the emotional and related disorders. These clinics work closely together.

Once again, facilities such as these are now widely available in graduate and professional schools across the country and provide the fullest realization

of Shalow’s vision by clearly integrating theory and research with ongoing clinic work and providing a clear opportunity for a focus on clinical subject matter for required research projects. In this context, the imagination of trainees is given free rein and projects range from characterizing psychopathology and its various manifestations, to the full range of treatment development and evaluation.

### ***Assessing Quality and Competence***

Finally, reflecting on the last theme of Shalow’s vision, developing more objective standards for evaluating competence, the field has come a long way. In Chapter 8, Grus describes the “competency initiatives” that are either in place or in development to evaluate training programs or individuals within those programs. Here one finds a decidedly growing emphasis on the measurement of learning outcomes among doctoral students within the framework of identified core competencies. These themes have been in development for a number of years now (Kaslow, 2004; Kaslow et al., 2006). Assessing quality of services through improvements in assessment and the development of “outcomes assessment” will be taken up in the next section. In summary, by 2009 Shalow’s proposal for training in clinical psychology had been realized, or is well on its way to being realized.

### **Psychological Assessment in 1969**

Shalow subsumed most aspects of psychological assessment under the term “diagnosis,” but he makes it clear that, in addition to classification, the process includes descriptive and interpretive data gathered by the psychologists based largely on objective methods in the service of helping to understand both the individual and his or her disorder.

On examination, this diagnostic contribution is found to be of three kinds: (1) The description of what the patient in his various conditions is like in certain relevant psychological functions, that is, *what he is*. (2) The implications that the psychological studies have for therapeutic (education, vocational, personality, etc.) policy, that is, *what to do*. (3) The determination of the effects of whatever therapy may have been used on psychological functions, that is, the evaluation of *what has been done*.

(Shalow, 1969, p. 44)

As one can see, the general functions of psychological assessment outlined by Shalow are still very relevant today. Providing objective and

psychometrically sound descriptions of psychopathology and related psychological functions, including personality and neuropsychological processes, remains an important aim of psychological assessment, as does Shakow's second goal of providing reasonable prognostic information and interventions likely to achieve desired results. But the third goal articulated by Shakow was often overlooked in those days; that is, monitoring the outcomes of interventions.

In fact, Shakow notes that, although the three overarching goals of assessment are distinct, psychologists in that era used essentially the same tests and strategies to collect data in each of the three areas, as reflected in the standard psychological test battery of the day. Typical issues that psychologists were asked to address, particularly in hospital settings, included IQ levels; assessment of cognitive deficits such as amnesia, aphasia, agnosia, etc.; the diagnosis of various types of psychoses; and, of course, the assessment of personality characteristics. Shakow also notes that much of psychological assessment went on in "departments" of psychology in hospitals, to which patients were referred by psychiatric staff. In these cases, patients would often be referred for "psychologicals" and other laboratory testing, with the understanding on the part of psychiatric staff that the results would be used by psychiatrists to make informed decisions on diagnosis and treatment. Shakow remarked that viewing the psychology laboratory as a purely technical service, like, for example "blood work," was a position that "should be discouraged and actively fought" (Shakow, 1969, p. 45). This was an all-too-common perception of the role of psychology in those days and one that the present author experienced (and actually fought) in a hospital setting in the early 1970s. Thus, whereas Shakow differentiated and articulated the goals of assessment in a thoughtful manner, the process of psychological assessment in that era was actually characterized by a largely undifferentiated, standardized battery of psychological tests that varied little from individual to individual and was viewed as just one more set of laboratory results to assist the psychiatrist in case formulation and treatment planning. Interestingly, the nomothetic concept of "diagnosis" as we know it today was an imprecise process widely viewed as providing little value to the case formulation process. This was due to the demonstrated unreliability and lack of validity of the second edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (American Psychiatric Association, 1968).

## Psychological Assessment in 2009

A quick perusal of the table of contents in this handbook reveals several chapters devoted exclusively to specialized psychological assessment. These chapters include discussions of interviewing and case formulation (Chapter 12), diagnosis and personality assessment (Chapter 13), clinical neuropsychology (Chapters 26 and 30), and tailored assessments within a variety of specialized contexts such as forensic and primary care settings (Chapters 27 and 29). But perhaps the most substantial development in recent years has been the extension of evidence-based concepts to the field of assessment, as described in some detail in Chapter 5 (Hunsley & Mash, this volume). Of course, considerable research ensued over the decades since 1969 on specific psychological tests and measures, and psychology became identified with a strong focus on psychometrics, a methodology that has been well worked out over the decades. Even for strategies that might seem less amenable to empirical evaluations, such as projective tests, there is substantial agreement within psychology on the importance of collecting and analyzing appropriate psychometric data, despite the fact that significant disagreements on the interpretation of those data may exist (Barlow, 2005; Exner, 2001; Wood, Nezowski, Garb, & Lilienfeld, 2001). Nevertheless, there was still something missing. What was missing was information and hard data on the usefulness of contemporary assessment practices for effectively formulating cases, planning treatment, or monitoring treatment outcomes. Thus, psychologists could choose psychometrically sound tests or assessment procedures, but there was little research on whether this process was actually contributing to desired outcomes.

This began to change over the past decade due to increased sensitivity to issues of accountability, as well as because of the need to conduct assessment research that is more directly related to treatment provision. All of this occurred, of course, in the context of the movement towards evidence-based health-care practices in general (APA, 2006; Institute of Medicine, 2001). As Hunsley and Mash (this volume) remark:

[Evidence-based assessment (EBA)] . . . is an approach to clinical evaluation that uses research and theory to guide the selection of constructs to be assessed for a specific assessment purpose, the methods and measures to be used in the assessment, and the manner in which the assessment process unfolds. Evidence-based assessment



involves the recognition by the psychologist that, even when data from psychometrically strong measures are available, the assessment process is inherently a decision-making task in which the psychologist must iteratively formulate and test hypotheses by integrating data that may be incomplete or inconsistent. As a result, a truly evidence-based approach to assessment involves an evaluation of the accuracy and usefulness of this complex decision-making task in light of potential errors and biases in data synthesis and interpretation, the costs associated with the assessment process and, ultimately, the impact the assessment had on clinical outcomes for the person(s) being assessed.

In fact, EBP initially focused largely on interventions. But when applied to psychological assessment, EBP highlights two somewhat different issues that shift the focus from the data-based evaluation of assessment instruments using psychometrically sound procedures.

The first issue relates to the greatly increased focus on understanding the nature of various psychopathologies as part of an effort to develop new and more precisely targeted interventions. Thus, assessment procedures and strategies, beginning with newly developed semistructured diagnostic interviews, have now been adapted to assess more thoroughly the intricacies and subtleties of various forms of psychopathology as our understanding of the nature of psychopathology deepens. For example, domains for assessment in the anxiety disorders necessarily differ from domains that might be assessed among individuals with depression, schizophrenia, or personality disorders (Antony & Rowa, 2005; Widiger & Samuel, 2005). Even issues outside of the usual boundaries of psychopathology, at least as defined by DSM, such as couples stress, require a more focused, conceptually based framework for assessment (Snyder, Heyman, & Haynes, 2005). Obviously, this is a substantial departure from simply administering a standardized battery of tests to individuals presenting for treatment, without regard to presenting psychopathology.

The second issue underscores that these strategies are closely linked to existing treatment options, with the expectation that progress will be monitored in each of the crucial domains to the point of outcome. Again, this was a stated goal of assessment from Shakow's perspective in 1969, but because of the commonly accepted standardized battery of tests of that era, this goal was seldom achieved or even pursued. It is worth noting, however, that this emphasis on ongoing outcomes assessment

facilitates an interactive process that will improve treatment outcome, and there is some evidence already that this occurs (Lambert et al., 2003).

In summary, we have progressed from assessment based on a generalized comprehensive battery of tests without regard, for the most part, to presenting issues or problems, to a more evidence-based assessment process highlighting close integration with emerging conceptions of psychopathology. In addition, broad-based, ongoing outcomes assessment systems are increasingly required for EBP on the part of health-care policy makers.

Advances in psychological assessment are also greatly dependent on a broader and deeper understanding of psychopathology or related psychological processes that are the subject of assessment. This broader and deeper understanding is most evident in the radical changes in widely accepted systems of nosology over the decades. In 1980, the third edition of the DSM (DSM III) (APA, 1980) was published, reflecting a more empirical approach to classification of psychopathology. This document was updated in 1987 (DSM III-R, APA), 1994 (DSM-IV, APA), and 2000 (DSM IV-TR, APA), and the fifth edition of the DSM (DSM V) will appear in 2013. It is noteworthy that psychologists have played an increasingly large role in the development of this diagnostic system; for example psychologists comprised approximately half of the membership of the various work groups writing DSM-IV, and four psychologists (including Peter Nathan, editor of the Oxford Library of Psychology, of which this handbook is one volume, as well as the author [David H. Barlow]) were members of the Task Force that made all final decisions (APA, 1994). For DSM V, psychologists have taken the lead in beginning to move the system away from a psychometrically unsatisfactory prototypical categorical approach to a more dimensional approach (Brown & Barlow, 2009; Leyfer & Brown, Chapter 14, this volume; Widiger & Edmundson, Chapter 13, this volume). Although this rather radical revision will not be complete for DSM V, a wide consensus exists that dimensional approaches to nosology represent the future, and that increasingly sophisticated, empirically based psychological approaches to diagnosis and assessment will comprise the major mechanism in achieving this goal.

## Therapy in 1969

Interestingly, the practice of psychotherapy in 1969 was perhaps the most underdeveloped role for psychologists for several reasons (see also Routh,

Chapter 2, this volume). First, very few psychologists were allowed to practice psychotherapy, and when they did, it was often under the direct supervision of a psychiatrist or another physician. This reflected the widely held position at that time that, since one could not separate mind and body (an assumption that has proved increasingly true over the decades), then one must have comprehensive training in both basic biological sciences (e.g., anatomy, biochemistry) as well as psychiatry to practice psychotherapy (an assumption that very few would hold today). A second reason was that very little was known about psychotherapy in terms of the types of problems that would respond to therapy, the psychological techniques and procedures one would use to accomplish therapeutic goals, and the necessary and optimal therapist qualities. Thus, Shakow recognized at that time the well-established social need for psychotherapists, but wondered just what sort of training would be necessary, and if this training should be preferentially associated with one of the mental health professions.

My fundamental position . . . is that the practice of psychotherapy should not be determined by a person's particular discipline. Many years of observation in this area have led me to believe that so far as psychotherapy is concerned, the order of importance of the three factors integrally involved is first, the personal qualities of the therapist; second, the nature of the patient and his problem; and, third, the nature and adequacy of the therapist's training, especially in areas related to human psychology and motivation. Particular professional identification is not necessarily involved in these three.

(Shakow, 1969, p. 64)

He goes on to remark that, upon referring a friend for psychotherapy, he would rely far more on the personal qualities of the therapists than on their professional training, while admitting that it would be hard to define these personal qualities in a standard manner that would be useful for research. Although Shakow stipulated that one very important topic for research by psychologists should be psychotherapy, Shakow's preferred directions for psychotherapy research are perhaps least developed due, of course, to the clear emphasis in that era on the more highly developed area of psychological assessment and the construction of psychological tests. It would be another decade before psychologists were generally afforded the privilege of practicing psychotherapy independently, and even then this was seldom possible in hospital or

other clinical settings, dominated as they were by the medical profession.

Shakow did have some ideas about the ideal training for psychotherapists that would occur in independent institutes, perhaps located within a university or other clinical setting, but he clung to the idea that this institute should be open to all professions with an interest in psychotherapy and that some of the didactic material would come from contributions of the humanities and the biological sciences, as well as the core mental health professions. Although Shakow himself identified with psychoanalytic thinking, as did most mental health professionals in those days, he regarded psychoanalytic institutes as narrowly construed and not an ideal model for training in psychotherapy. Of course, research on the variety of evidence-based psychological procedures that would find their way into the armamentarium of psychologists engaged in treatment was only just beginning.

In fact, results from some of the first research studies of psychotherapy at that time were very discouraging, in that therapy had relatively little effect either positive or negative when results from treatment groups and comparison groups not receiving therapy were examined (Barlow & Hersen, 1984; Bergin, 1966; Bergin & Strupp, 1972). Classic early studies, such as the Cambridge Somerville Youth Study (Powers & Witmer, 1951), which took decades to complete, arrived at this finding, as did other early efforts involving large numbers of patients treated in approximations of randomized, controlled clinical trials (Barron & Leary, 1955). More process-based research conducted on large numbers of outpatients to the point where outcomes were examined came to similar conclusions. The eminent psychotherapy researcher Lester Luborsky and his colleagues (1975) pointed out the lack of specificity of any psychotherapeutic procedures. In this era, Eysenck (1952; 1965) published his famously controversial thesis based on data from crude actuarial tables that outcomes from psychotherapy across a heterogeneous group of patients were no better than rates of "spontaneous" improvement without psychotherapeutic intervention over varying periods of time. Although this conclusion was outrageous to many who were convinced of the power of psychotherapy, in that it seemed to fly in the face of clinical experience, it was enormously impactful since it was difficult to rebut based on the dearth of evidence available.

Thus, advocates of psychotherapy in those early years were faced with a paradox. On the one hand,

many psychologists assumed that training in psychotherapy was important, although as noted by Shakow, there was no consensus on how to do it. On the other hand, psychotherapy research of the day, such as it was, could not substantiate the assumption that psychotherapy had any effect whatsoever, either positive or negative.

This state of affairs began to change in 1966, with the publication of a seminal article by Allen Bergin (1966) in the *Journal of Abnormal Psychology* entitled "Some implications of psychotherapy research for therapeutic practice" (see Barlow, 2010). What Bergin concluded, based on a further analysis of some preliminary data first published in Bergin (1963) was that "Psychotherapy may cause people to become better or worse adjusted than comparable people who do not receive such treatment" (p. 235). Bergin found, as did Eysenck, that "Typically, control subjects improve somewhat with the varying amounts of change clustering around the mean." But, contrary to Eysenck's conclusions, Bergin observed, "On the other hand, experimental subjects are typically dispersed all the way from marked improvement to marked deterioration" (Bergin, 1963). Thus, the data indicated that psychotherapy could make some people considerably better off than comparable untreated patients. This was the first objective evidence against Eysenck's assertion that all changes associated with psychotherapy were due to spontaneous remission. As Bergin noted: "Consistently replicated, this is a direct and unambiguous refutation of the oft-cited Eysenckian position" (p. 237). From a historical perspective, this was a very important conclusion from the point of view of both science and policy, but did little to provide direction to the fledgling endeavor of psychotherapy.

Bergin (1966), in the process of articulating his influential argument, also described the substantial deficits in extant studies of psychotherapy at that time and, in so doing, began to pave the way for marked improvements in psychotherapy research methods to unfold in the coming decades (Barlow, 2010). He observed, for example, that experimental and control groups were often not well matched with differences in initial severity on various measures, a common finding. He also pointed out that individuals assigned to control groups were often subject to substantial nonexperimental influences, including therapeutic intervention of various sorts occurring outside the context of the clinical trial. To account for these influences, he suggested the need to carefully ascertain if control groups were indeed acting as controls and/or to directly measure the

effects of nonexperimental influences that might affect outcomes. He also presented some preliminary data showing that training was an important variable if therapists were indeed to deliver the treatment as intended, contributing to what we now refer to as *treatment integrity* of the intervention under study (Hayes et al., 1999). This issue arose in some earlier studies in which therapists had little or no training, and it was unclear just what they were doing (Powers & Witmer, 1951).

In addition to these critiques of existing studies, Bergin and Strupp, in 1972, went on to suggest more proactive recommendations on the future conduct of psychotherapy research, recommendations that were to have substantial impact. One of the observations focused on the substantial individual differences among patients in these studies, particularly patients with emotional or behavioral disorders. They suggested that attempts to answer basic questions on the effectiveness (or ineffectiveness) of a specific treatment for a specific individual would be impossible when applying broad-based and ill-defined treatments such as *psychotherapy* to a heterogeneous group of clients only vaguely described using such labels as *neurosis*. This heterogeneous approach also characterized meta-analyses in that era (Smith & Glass, 1977). Thus, Bergin's review suggested that asking "Is psychotherapy effective?" was probably the wrong question. Bergin and Strupp (1972) cited Gordon Paul (1967), who suggested that psychotherapy researchers must start defining their interventions more precisely and must ask the question, "What specific treatment is effective with a specific type of client under what circumstances?" (p. 112).

## Therapy in 2009

Although Shakow foresaw EBP, even he would be greatly surprised by the radically different nature of psychotherapy and psychological treatments in 2009, much of it made possible by improvements in the methods of psychotherapy research. In addition to experimental design considerations, methodological improvements included a deeper understanding of psychopathology, allowing for the development of more targeted psychological treatments; a greater specification of psychological treatments, often in the form of flexible manuals to better define ongoing therapeutic operations; and a new emphasis on comparative effectiveness research. What follows is a brief discussion of the development of treatment manuals and clinical practice guidelines, and a growing emphasis on change in the individual versus

average change in the group. To illustrate some of the trends in therapy research over the decades, I also present an account of the development of a new psychological treatment for panic disorder as it occurred over the last 20 years in our Center.

## **Treatment Manuals and Clinical Practice Guidelines**

The initial impetus for the development of treatment manuals came from psychodynamic psychotherapy researchers who, in the early 1960s, began to test broadly the effectiveness of specific treatments in controlled outcome studies. Looking to demonstrate that psychological interventions could withstand rigorous scientific investigation, similar to that of existing pharmacological treatments (Luborsky & DeRubeis, 1984), scientist-practitioners realized that they needed treatment tools that would allow for systematic replication and comparison. Wilson (1996) more specifically pointed out that treatment manuals sought to eliminate any “substantial variability” associated with “clinical judgment” or intuition that might cause one therapist to proceed in a very different manner from another. Thus, to study the effectiveness of these therapies, treatments were condensed into manuals that could then be reviewed and used across studies. Many researchers hoped that by utilizing treatment manuals presented in this fashion, psychological interventions would be able to withstand the methodological constraints of research protocols. More specifically, it was thought, “treatment manuals help support the internal validity of a given study by ensuring that a specific set of treatment procedures exists, that procedures are identifiable, and that they can be repeated in other investigations” (Dobson & Shaw, 1988). This was in contrast to the conduct of treatment outcome research prior to manualization, during which time specific therapeutic techniques were often not explained and thus could not be compared to other treatments or be replicated by other investigative groups, as in early studies already described.

Another push to develop specific treatment manuals came from the founding of the Agency for Health Care Policy and Research in the United States in 1989 (now called the Agency for Health Care Research and Quality). The sole purpose of this Agency was to facilitate the identification of the effectiveness of specific treatment strategies for specific disorders, with the aim of increasing the quality and reducing the cost of health care (Barlow, 1996). One major mechanism of accomplishing this goal was the creation of clinical practice guidelines that

explicitly articulate the optimal strategies for assessing and treating a variety of psychological disorders based on an up-to-date review of evidence. In 1995, the APA promulgated a template for evaluating and setting minimum standards for these guidelines (Barlow, 1996), and these criteria were revised in 2002 (APA, 2002). Interventions recommended in these clinical practice guidelines are typically based on two specific factors as derived from the APA template: (a) *efficacy*, or internal validity of the specific treatment, the determination of which is based on the results of a systematic evaluation of the intervention in a controlled setting; and (b) *effectiveness*, or clinical utility of the treatment, which is based on the feasibility, general relevance, and cost effectiveness of the intervention actually being delivered in a local setting. Based on these equally important and rigorous bases of evidence, the development of treatment manuals that could produce the necessary evidence was encouraged. As a result, manual-based treatments were incorporated in early schemes as one of the major components of evidence-based service delivery (Barlow, 2004).

## **An Emphasis on the Individual**

Although examples of evidenced-based psychological treatments for the full range of psychopathology can be found in appropriate chapters throughout this handbook, one concern frequently expressed focused on the “one size fits all” rigidity seemingly inherent in the administration of manualized treatment. This issue derived directly from the nature of psychotherapy research emphasizing, as it did, the average response of a treated group.

In fact, early on, leaders in psychotherapy research, such as Bergin and Strupp, suggested that a more valid tool for looking at the effects of psychotherapy would involve a more intensive study of the individual. “Among researchers as well as statisticians there is a growing disaffection from traditional experimental designs and statistical procedures which are held inappropriate to the subject matter under study” (Bergin & Strupp, 1972, p. 440). They recommended the individual experimental case study as one of the primary strategies that would move the field of psychotherapy research forward, since changes of clinical significance could be directly observed in the individual under study (followed by replication on additional individuals). In such a way, changes could be clearly and functionally related to specific therapeutic procedures. These ideas contributed to the development of single-case experimental designs for studying behavior change (Barlow, Nock, & Hersen,

2009; Hersen & Barlow, 1976). These designs, then and now, play an important role not only in delineating the positive effects of therapy but also in observing more readily any deleterious effects that may emerge, thus complementing efforts to extract information on individuals from the response of a group in a clinical trial (Kazdin, 2003).

This emphasis on individual change of clinical and practical importance contributed to a revision of the ways in which data from large between-group experimental designs (clinical trials) were analyzed (Kazdin, 2003). Specifically, over the ensuing decades, psychotherapy researchers began to move away from exclusive reliance on the overall average group response on measures of change and began highlighting the extent of change (effect sizes and confidence intervals), whether the change was “clinically significant,” and the number or percentage of individuals who actually achieved some kind of satisfactory response (with a passing nod to those who did not do well) (Jacobson & Truax, 1991). Data-analytic techniques also became more sophisticated, powerful, and valid, with a move away from comparison of means among groups to multivariate random effects procedures, such as latent growth curve and multilevel modeling, which evaluate the extent, patterns, and predictors of individual differences in change (Brown, 2007).

In addition to improved delineation and definition of the actual psychotherapeutic procedures undergoing evaluation, as noted earlier, an equally important development was a greater specification of those psychopathological processes that most often comprised the targets of change efforts. Over the ensuing decades, the very nature of psychopathology in its various manifestations became increasingly well understood and defined, based on research in this area. This led to the appearance of nosological conventions through which psychotherapy researchers could begin to reliably agree on what was being treated and how to measure change, as described earlier (Barlow, 1991). Investigators increasingly made use of this information to assess both the process and outcomes of interventions (Elkin et al., 1989). Thus, by the 1980s, the field was now specifying and operationalizing psychotherapeutic procedures, as well as associated therapist, client, and relationship factors, and also specifying and measuring the targets of treatments in the form of identifiable psychopathology in a way that highlighted individual differences in response. By the 1990s, publications of large clinical trials, some begun 10 years prior to publication, rapidly grew in number. In the

clinic, this new emphasis facilitated greater attention to flexibility in the administration of evidenced-based manualized treatments based on case formulation and a move toward individualized treatment modules (Chorpita, Bernstein, & Miranda, Chapter 11, this volume; Spring & Neville, Chapter 7, this volume). These trends and strategies are next profiled in an account of the development of a psychological treatment for panic disorder in our Center (Craske & Barlow, 2008) and the relative efficacy of this treatment.

### **The Development of a Psychological Treatment for Panic Disorder**

In the 1980s, a physical problem—some kind of a brain dysfunction—was thought to cause panic disorder. The best candidate was a “chemical imbalance,” which was believed to cause heightened sensitivity in the brainstem. By the 1990s, research had ruled this out as the sole underlying cause (Barlow, 2002; Gorman et al., 1990), and investigators agreed that an interacting web of biological and psychological factors contributed to the onset of panic disorder (Bouton, Mineka, & Barlow, 2001).

When the cause of panic disorder was thought to be solely biological, drugs were the first choice for treatment. In the 1980s, the most popular drugs for panic disorder were high-potency tranquilizers, known by brand names such as Xanax and Klonopin. These drugs could be effective for panic disorder, but many patients developed dependence, such that attempts to stop taking them produced serious side effects. Because of this problem with dependence and addiction, other drugs, such as selective serotonin reuptake inhibitors (SSRIs), became the preferred drugs for treating panic disorder. These drugs include brand names such as Paxil and Prozac. Approximately 50% of patients with panic disorder respond at least somewhat (and some very well), as long as they continue to take the medication. But relapse rates are high once the medication is stopped (Craske & Barlow, 2008).

Around 1990, my colleague, Michelle Craske, and I developed a psychological treatment for panic disorder that focused directly on the sensitivity of these individuals to their own physical sensations, such as fluctuating heart rate, skin temperature, and dizziness (Barlow & Craske, 2007; Craske & Barlow, 2007). In people who are susceptible, these sensations are very frightening because they come to trigger the next panic attack through the psychological process of learning and association called *conditioning* (Bouton et al., 2001).

Based on this insight, we experimented with a treatment in which individuals with panic disorder were exposed to mild versions of the physical sensations. In the protected setting of our clinic, we had them exercise vigorously to produce fluctuations in heart rate, spin around in a chair to produce slight dizziness, and so forth. We decided which symptoms would be induced based on an assessment of the mix of physical sensations that were closely associated with a particular patient's panic attacks (these vary from one person to another).

In a psychological process called *extinction*, our patients learned, by experiencing these physical sensations repeatedly, that the sensations didn't lead to a terrible outcome, such as a heart attack. Of course, their rational self knew this all along, but the emotional brain, where these fear responses reside, tends to override the rational brain in cases of panic or any emotional disorder. Hence, these specialized treatments to reach the emotional brain.

To assist in strengthening the "rational brain," the patients' basic faulty attitudes and perceptions about the dangerousness of these sensations are also identified and modified. Patients might also be taught calming techniques, such as breathing and meditation, to help them cope with stress and anxiety in general. In a number of subsequent studies, we demonstrated that this treatment, a cognitive-behavioral approach called *panic control treatment* (PCT), is effective for panic disorder (Barlow & Lehman, 1996).

My colleagues and I then tested the hypothesis that combining drugs and psychological treatments might prove more effective than either individual treatment alone. We conducted a large clinical trial and treated 312 patients with panic disorder at four different sites. Two of these sites were known for their expertise with drug treatments, and two were known for their expertise with cognitive-behavioral therapy (CBT). Patients at all sites were administered either the psychological or drug treatment alone, or in combination, along with appropriate comparison conditions such as a drug placebo condition. The experiment was also double-blind, which means that neither the therapists nor the patients knew whether they were getting the actual medication or the placebo (sugar) capsule (Barlow, Gorman, Shear, & Woods, 2000).

We found that both the drug and the psychological treatments were effective, as we expected, with each better than the placebo. But, much to our surprise, the combination treatment was not any better than the individual treatments. Thus, our

hypothesis was not proven, and the widespread practice of administering both treatments simultaneously for panic disorder was called into question. Furthermore, after all treatments were stopped, the psychological treatment was found to be more durable. That is, fewer people relapsed over a period of 6 months after treatment was stopped in those patients who had the psychological treatment either alone, or combined with placebo. In the two conditions in which patients received an active drug (drug alone or drug plus psychological treatment), more people relapsed.

We concluded from this evidence that combining treatments offered no advantages and that, given a choice, the preference would be for the psychological treatment because it was more durable and less intrusive. (Drug treatments are almost always considered more intrusive than psychological treatments due to side effects or drug interactions that could occur.) Of course, some patients prefer to take a drug, or the cognitive-behavioral treatment may not be available, in which case drug treatment is a good alternative.

In a second study (Barlow, 2008), colleagues and I evaluated best strategies for maintaining long-term health after treatment. We began with the working hypothesis that once patients received CBT and were essentially cured, they would not need any further treatment sessions. We based this assumption on the view of most of our therapists that no further intervention was needed if patients had learned all the concepts that the therapists had taught them and had implemented them well in daily life.

But not all of our therapists agreed. Some argued that occasional booster sessions would prove useful in preventing relapse over the long-term in this chronic condition. To test this notion, we treated 256 patients with panic disorder and agoraphobia of varying degrees of severity, using the same CBT that we employed in our first study. Many of these patients (157, or 61.3%) did very well with treatment and were essentially cured. To evaluate the advantage of booster sessions, half of these patients ( $n = 79$ ) went on to receive nine additional sessions, spaced every month for 9 months, and they then were followed for another year with no further treatment. The other half of the patients ( $n = 78$ ) received no further treatment.

When the results were assessed after the 1-year period without any treatment, the majority view was proved wrong. That is, there *was* an advantage to having booster sessions. Among the group that did not have booster sessions, 18.0% had some

relapse or recurrence of panic disorder during the 1-year follow-up and 82.0% stayed well. By contrast, only 2.7% of the group that experienced booster sessions evidenced a relapse or recurrence during that year, and fully 97.3% stayed well. This significant difference demonstrates the value of some continued attention to these patients, who are, after all, suffering from a chronic condition that waxes and wanes.

Of the remaining patients—individuals who did not meet our criteria for “responding” to treatment to the point at which they were essentially cured—some dropped out along the way for a variety of reasons, such as moving away or just feeling they didn’t need treatment anymore. Others finished treatment with varying responses from just missing our criteria for being all but “cured” to having no benefit whatsoever. In this latter group, we evaluated the benefits of then giving them a medication for panic disorder (paroxetine) and, although the results haven’t been fully analyzed yet, sequencing the treatments in this way looks like a promising treatment approach.

Scientific discoveries about the nature of panic disorder led us to develop a specifically tailored psychological treatment. The experiments I’ve described confirm that we have an effective psychological treatment for panic disorder—a treatment that has become a first-line choice based on recommendations from National Health Services around the world. Of course, we still have a long way to go to make our treatments powerful enough to benefit the largest number of people.

Interestingly, our studies also confirm that a number of our assumptions were incorrect. First, we proved ourselves wrong that combining drug and psychological treatments would be better than simply providing patients with one treatment or the other. Second, we now know that individuals who respond to treatment need further attention after treatment has ended to ensure that they have the best chance to stay well. Without close scientific examination of the effects of psychological treatments, we would have been unaware of these important treatment issues, and patients with panic disorder would not be getting the best care possible.

## Conclusion

Clinical psychology was a work in progress in 1969, and it continues to be a work in progress today. I have chosen to recount David Shakow’s vision in three areas—training, assessment, and therapy—since his views of clinical psychology on these issues

circa 1969 make for a fascinating perspective on directions and progress of clinical psychology over the ensuing 40 years. Generally, the accuracy of Shakow’s vision for the future is remarkable and attests to his status as one of the founding fathers of clinical psychology. But, of course, he could not have foreseen the explosive growth of the field and the substantial changes that would evolve in all of their detail despite accurately forecasting the broad outlines of these changes. It is perhaps in the area of training that Shakow has come closest to the mark in that a more fully realized Scientist-Practitioner model of clinical practice dominates the field of training. As I noted, in view of the ascendancy of EBP, it seems that this model of training for clinical practice will become an even more uniform template for the training of clinical psychologists in the years to come. But it should also be noted that this does not mean that psychologists emanating from Scientist-Practitioner programs will necessarily be trained in the intricacies of the scientific method to an extent necessary to become clinical scientists. Continuing to model Shakow, some of my own predictions for the future of our science and profession can be found in Chapter 39, the concluding chapter. There, my coauthor and I hazard what might seem to be some rather radical predictions for the development of training in clinical psychology.

In the area of assessment and diagnosis, a component of EBP, evidence-based assessment, is beginning to exert considerable influence and is very likely the wave of the future. Although Shakow did not envision the enormous influence psychologists would have on creating an empirically based nosology, nor did he necessarily envision the deep and broad increases in our knowledge of the nature of psychopathology and psychological processes, it is clear that his vision of the general function of assessment has stood the test of time. In Chapter 39, we also speculate on future developments to the relationship of the nomothetic process of diagnosis and classification to the more idiographic process of functional assessment. These two processes take us well beyond the status of psychological assessment in 1969, which was largely relegated to the development of psychometrically sound psychological tests, although this remains an extraordinarily important contribution of psychologists to this day.

Finally, the greatest change has occurred in the development of psychological treatments. The example of treating panic disorder described earlier in the chapter is but one of many equally fascinating examples of the development of evidence-based psychological

treatments and was chosen simply because I am most familiar with it. Other excellent examples are found throughout this handbook and represent the most remarkable advances in my own 40-year odyssey. Of course, we are just at the beginning stages of the development of evidence-based psychological interventions. In Chapter 39, the concluding chapter, we also provide some predictions on the further recognition, development, and dissemination of psychological treatments and the kinds of efforts and trends that are likely to occur in service of these goals. To take one example, we suggest that the specific treatment of panic disorder developed in our clinic (“panic control treatment”) is unlikely to be practiced in any kind of a systematic way in 10–15 years time. By that time, new psychological treatments based on our ever-deepening knowledge of psychopathology will likely focus on common therapeutic principles applicable to fundamental psychopathological processes found across the full range of emotional disorders. Similar developments will take place in other broad areas of psychopathology, which will increasingly be conceptualized along dimensions of traits and temperaments, suggesting new, more fundamental targets for treatment.

Of course, many of these developments are relatively new and do not yet characterize in any comprehensive sense the current practice of psychotherapy, which is very heterogeneous indeed. In the meantime, standing on the shoulders of the giants in our field over the past 40 years, the chapters in this handbook represent a breadth and depth of knowledge in the ever-expanding field of clinical psychology that would make David Shakow, and all of our forebears, proud.

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PART 2

History,  
Professional Issues,  
and Emerging  
Approaches to  
Psychopathology  
and Treatment

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## A History of Clinical Psychology

Donald K. Routh

**Abstract**

To be memorable, a history such as this might best be organized under a small number of headings. Accordingly, this chapter is structured around the work of seven pioneers who arguably had the greatest influence on the development of the field. Lightner Witmer is generally considered to have founded clinical psychology in 1896 (McReynolds, 1987, 1997; Routh, 1996; Watson, 1956). Hippocrates was the ancient Greek founder of medicine, always a close professional cousin of clinical psychology and a scientific model for psychology in general. Theodule Ribot led the development of psychology as an academic discipline in 19th-century France, as one primarily focused on clinical issues. Alfred Binet, also in France, devised the first practical “intelligence” test in 1905; administering such tests was among the most common activities of early clinical psychologists. Leta Stetter Hollingworth was an early practitioner who played a large role in the development of organized clinical psychology beginning in 1917 (Routh, 1994). Sigmund Freud founded psychoanalysis, the first influential form of psychotherapy practiced by clinical psychologists, among others. Finally, Hans Eysenck was among the earliest to conceptualize behavior therapy and to promote the use of what have come to be known as evidence-based methods of intervention in clinical psychology.

**Keywords:** Binet, Eysenck, Freud, Hippocrates, Hollingworth, Ribot, Witmer

Clinical psychologists have become familiar figures in America and in many countries around the world (Swierc & Routh, 2003). Indeed, clinical work now seems to be the most common activity of psychologists. They carry out psychotherapy or other interventions with individuals, groups, and families. They engage in various kinds of clinical assessment of the mental and behavioral aspects of health problems. Many collaborate with other health professionals or act as consultants in clinics and hospitals. Clinical psychologists are frequently involved in educational activities, teaching in colleges or universities, and many are also engaged in research. Despite its familiarity, this field had its origins in 1896, not much more than a century ago. This chapter attempts to provide a vivid portrait of its roots.

**Hippocrates**

To speak of “clinical” psychology is to invoke the medical metaphor of care at the bedside of the individual (the Greek word *klinein* refers to a couch or bed). In naming clinical psychology, Lightner Witmer thus alluded to the tradition of Hippocrates. Born on the Greek island of Cos about 460 BCE, Hippocrates is considered to be the founder of medicine. In using the word “clinical,” Witmer implied that it is appropriate for psychology, like medicine, to attempt to help individuals.

Medicine is not only a profession but also a scientific field and, as such, served as a model for psychology in general. In comparing the Hippocratic writings to the previous Greek tradition of the god Asclepias, the most notable characteristic is Hippocrates’ naturalism, the idea that the phenomena

of human illnesses can be understood and explained in scientific terms. A famous example concerns epilepsy, often labeled in ancient Greece as a “sacred” disease. Seizures were thus explained as possession of the body by some invisible spirit. In contrast, Hippocrates and his followers believed that epilepsy was no more divine than any other illness and that its causes could be understood in natural terms (Temkin, 1994).

In addition to the name of Hippocrates, so familiar to accounts of Western medicine, the origins of modern scientific medicine can also be traced to various sources outside Europe, for example, ancient China, India, Egypt, and various smaller indigenous groups. In China, the best known ancient source of medical wisdom is the *Yellow Emperor’s Classic of Internal Medicine*, probably written in the late first century BCE. This book discusses such well-known concepts as yin and yang; the Five Elements; the effects of diet, lifestyle, emotions, and the environment on health; how diseases develop; and the principles of acupuncture (Veith, 2002).

In ancient India, Ayurvedic medicine evolved over several millennia and appeared in writing about 2,000 years ago. The Sanskrit term, *ayur* means “life,” and the term *veda*, “science or knowledge.” The Ayurveda describes the constitution of the body (*prakriti*) and the operation of life forces (*doshas*), made up of the elements ether, air, fire, water, and earth. Ayurvedic treatments rely heavily on the use of herbs and plants (Lodha & Bagga, 2001).

Our knowledge of ancient Egyptian medicine is fragmentary. Examples of well-known sources include the Edwin Smith Papyrus and the Ebers Papyrus. The Edwin Smith Papyrus was written in about the 16th century BCE, based on material from perhaps a thousand years earlier. It outlines a series of 48 traumatic injury cases, including a discussion of the physical examination, treatment, and prognosis of each. Of special interest to psychologists are its descriptions of the cranial sutures, meninges, external surface of the brain, cerebral spinal fluid, and existence of a pulse in cerebral blood vessels (Breasted, 1922). The Ebers Papyrus, written in about 1550 BCE, includes a description of mental disorders, including depression and dementia. Like Hippocrates, the ancient Egyptians seemed to think of mental and physical disorders in much the same terms.

It seems that the culture of just about every human group includes concepts of health and illness, including what psychologists consider to be mental disorders, as well as ideas about how these problems should be managed. The Florida Seminole tribe, to

give a modern example, considers the role of its medicine people an important one, which requires about eight years of intensive training to master and requires extensive knowledge of herbal treatments (West, 1998).

Many of the founders and influential researchers in the modern academic discipline of psychology, including Wilhelm Wundt, William James, Hermann Helmholtz, and Ivan Pavlov, were physicians by education, but they were scientists and scholars rather than practitioners of medicine. Wilhelm Wundt (Witmer’s teacher at the University of Leipzig), who is generally credited with founding the first psychology laboratory in 1879, was medically trained, but not a practicing physician. Wundt carried out research in psychology, edited a journal, wrote books summarizing research in the field, and trained many of the first generation of experimental (or “physiological”) psychologists, including Americans as well as Europeans (Benjamin, Durkin, Link, Vestal, & Accord, 1992). Although he was primarily devoted to basic research in psychology, Wundt maintained an interest in what today might be called mental health issues. Among Wundt’s students and research collaborators was Emil Kraepelin, one of the leading psychiatrists of Germany during the late 19th and early 20th centuries (Kraepelin, 1962). Kraepelin studied manic-depressive disorder and conceptualized “dementia praecox” (the mental disorder now termed schizophrenia). He established psychology laboratories in mental hospitals under his direction, and studied experimentally the effects of alcohol and morphine on human reaction time.

William James, who is considered to be the founder of modern psychology in the United States, was also trained as a physician, but chose not to practice medicine. James spent his career teaching physiology, psychology, and philosophy at Harvard University, and wrote the classic two-volume textbook on *The Principles of Psychology* (James, 1890). Like Wundt, James maintained an academic interest in what we would now call mental health, as manifested by his 1896 Lowell Lectures on Exceptional Mental States (Taylor, 1983).

Another example of the influence of medicine on general psychology is provided by the work of Hermann Helmholtz. Helmholtz was born in Prussia in 1821, and he went on to become a world-recognized figure in several scientific fields, including physics, physiology, medicine, and psychology (Cahan, 1993). In terms of contributions to psychology and what is now called neuroscience, Helmholtz was the first to actually measure the speed of the nerve

impulse in several different species. Some of his best-known scientific work on vision and hearing utilized his background in several areas, including mathematics, physics, physiology, and psychology. What is known as the Young-Helmholtz theory of color vision hypothesized the existence of three separate types of receptors in the retina for light of different wavelengths, corresponding to red, green, and violet. Subsequent research indeed demonstrated three different types of cone cells in the retina, with visual pigments responding to different wavelengths. In terms of the functioning of the auditory system, Helmholtz believed that the cochlea, the main sensory organ of the inner ear, worked something like a piano, with different strings vibrating to different frequency in sounds transmitted to it. Helmholtz also developed a theory of visual perception as an empirical process—in other words, one developed through experience. According to this theory, which continues to be influential, people engage in “unconscious inferences” in order to combine various cues about how far away objects are. During his time as a professor of physiology at the University of Heidelberg, Helmholtz served as supervisor to a younger colleague named Wilhelm Wundt. Thus, in effect, he taught some experimental psychology to the man who later became known as its “founder.”

A final example of the influence of medicine on general psychology is provided by the career of the Russian scientist, Ivan Pavlov, who received the Nobel Prize for Medicine or Physiology in 1904, for his work on digestive processes. Born in 1849, Pavlov attended what was then called the Medical-Surgical Academy in St. Petersburg, the leading medical school of Russia. Rather than going into medical practice, though, Pavlov spent his career as a researcher. He developed a special chronic physiological procedure, isolating a separate pouch within a dog's stomach so that digestive juices could be collected from it. He was thus able to carry out a systematic program of research on the neural control of digestive processes in the dog. His laboratory worked out an arrangement in which about 15 medical students at a time seeking doctoral degrees could be employed as research collaborators, a veritable factory of physiologists (Todes, 2002). By about 1902, even before he received the Nobel Prize, Pavlov had decided to change the overall direction of his research toward work on what became known as “conditioned reflexes.” Thus, he began what the world came to recognize as pioneering research in experimental psychology. Like humans and other animals, dogs do not just salivate when they actually

eat, but as a result of just smelling the food, looking at it in a dish, or the appearance in the room of the person who is about to feed them. Pavlov used salivation to study processes now familiar to all psychologists, including conditioning, extinction, generalization, discrimination, and many others, including the disturbed behaviors called “experimental neuroses” that can be observed in the laboratory setting. His *Lectures on Conditioned Reflexes* were translated into English in 1927, and the concepts of conditioning have been influential throughout the world since that time.

Unquestionably, the psychological research of scientists such as Helmholtz and Pavlov has great “clinical” relevance, for example in ophthalmology and gastroenterology, but these workers are not usually regarded as clinical psychologists, because their work was not directly concerned with mental health, and they were not directly involved in trying to help individuals.

### Theodule Ribot

Although clinical psychology as such did not originate there, France had a central role in the development of both psychiatry and neurology. French psychology, when it did develop under the leadership of Theodule Ribot (1839–1916), had its principal focus on the study of psychopathology (Nicolas & Murray, 1999). The French physician Philippe Pinel is generally considered to be the father of psychiatry as a medical specialty (Riese, 1969). Not long after the French Revolution of 1789, Pinel joined Jean-Baptiste Pussin in removing the chains from the mental patients in the Bicetre and Salpêtrière hospitals in Paris. During the 19th century, the eminent neurologist Jean Charcot also worked at the Salpêtrière Hospital, where he pioneered in the use of hypnosis in the treatment of patients with “hysteria” (Guillain, 1959). Ribot, the founder of French psychology, had Charcot as one of his teachers.

Ribot wrote an influential book about what was happening in psychology in Germany and England, and founded a journal to introduce his French colleagues to the psychological research going on in these countries. In 1881, Ribot published a second book, *Disorders of Memory*. Summarizing the existing research on memory, he developed the generalization now known as “Ribot's Law,” stating that, in retrograde amnesia associated with brain damage, it is the most recent memories that tend to be lost, sparing the older ones. In some of his other writings, Ribot described the phenomenon of *anhedonia*, a loss of pleasure in daily activities, which is typical of

persons experiencing mental depression and schizophrenia. In 1885, Ribot was made professor of psychology at the Sorbonne, and in 1888, he was given a chair in experimental and comparative psychology at the prestigious College de France.

The pattern in France was for any psychologist who wished to provide clinical services to individuals to go to medical school and become a neurologist or psychiatrist. Thus, Pierre Janet did his dissertation in psychology in 1889, under Ribot, and then completed a medical thesis under Charcot in 1892, on the mental states of persons with hysteria. It was Janet who coined the term “dissociation,” and who first described multiple personality disorder. He also described “psychasthenia,” better known today as obsessive-compulsive disorder. In addition, Janet developed a variety of psychotherapy techniques, considered by some to be an important rival of Freud’s psychoanalysis (Janet, 1924).

### Lightner Witmer

The term “clinical psychology” was first used in an article by Lightner Witmer (1867–1956), a psychology professor at the University of Pennsylvania, in the inaugural issue of a new journal he began to publish in 1907, *The Psychological Clinic*. Its 19th-century founders considered the modern discipline of psychology to be a science analogous to physiology; indeed, it was often labeled as “physiological psychology” for that reason. Witmer’s idea was simply that if this new science was worthwhile, it ought to be possible to use its principles to help individuals with various problems. In other words, he thought that psychology should be an area of professional practice, as well as a science, and history has vindicated this concept.

The work of Witmer had some of its roots in France, but not in the work of Ribot or Janet. Witmer was most interested in the attempts of J. R. Pereira and J. M. Itard to teach language to nonverbal children, including the so-called Wild Boy of Aveyron, and the procedures developed by Edouard Seguin to remediate children with intellectual disabilities (Routh, del Barrio, & Carpintero, 1996).

Before going into psychology, Witmer taught English in a Philadelphia preparatory school (McReynolds, 1997). As a teacher, he encountered a student who was progressing poorly in his schoolwork. Witmer tried to help the youngster overcome these academic problems and learned that the boy had specific difficulty with language, including speaking and reading. The boy seemed to benefit from Witmer’s efforts in his behalf.

Like many psychologists of his generation, Witmer went abroad to study and eventually obtained his doctorate under the direction of Wilhelm Wundt at the University of Leipzig. Wundt trained more American doctorate students in psychology than any other individual in the 19th century. When Witmer returned to the United States after his graduate training, he took a position as a faculty member in psychology at the University of Pennsylvania.

In 1896, Witmer founded the first psychology clinic at the University of Pennsylvania. Margaret McGuire, a student in one of his classes, was a schoolteacher with a student who had difficulty in learning to spell. She asked her professor if he could possibly help with this problem. Witmer reasoned that if this new scientific psychology was really worthwhile, it ought to be able to help with such problems. The boy was brought to Witmer and studied intensively, using various available psychological laboratory procedures. Many of these procedures, such as the study of reaction time, taken from Wundt’s work, have not continued to be used clinically. In any case, on this basis, remedial educational strategies were devised and carried out. These seemed to be helpful. Soon, other individuals were brought to the new clinic, most of them children with problems of academic delay or deviant behavior. As the clinic grew, its staff came to involve PhD students in psychology and a social worker. Also, various physicians were asked to consult on the cases, including a neurologist and an ear, nose, and throat specialist. Witmer presented his ideas for the professional application of psychology to his colleagues at the American Psychological Association (APA) in December, 1896 (Witmer, 1897). Their reaction seemed to be lukewarm at best.

Witmer’s graduate students in psychology at the University of Pennsylvania were offered professional training in diverse areas well beyond what might now be considered clinical psychology, branching out to include what is now considered school psychology, speech pathology (Twitmyer & Nathanson, 1932), vocational assessment and guidance (Brottemarkle, 1931), and industrial psychology (Viteles, 1932). His journal, the *Psychological Clinic*, begun in 1907, continued in publication irregularly into the 1930s, for a total of 23 volumes.

It is a historical curiosity that the professional specialty developed by Witmer more closely resembled the modern field of school psychology than what is now thought of as clinical psychology (Fagan, 1996). It is the APA Division of School Psychology, rather than the clinical division, that

has chosen to give an annual Lightner Witmer Award. Witmer worked primarily with children, rather than adults and was more concerned with their academic and cognitive functioning than with their emotional life. He was not much influenced by the French clinical tradition pioneered by Charcot and Janet, and completely rejected the work of Sigmund Freud. Witmer favored educationally oriented interventions rather than psychotherapy or behavior therapy, and the medical procedure he most advocated was the surgical operation of removing a child's adenoids as a way of facilitating normal speech development.

### **Alfred Binet**

Alfred Binet (1857–1911) was originally trained as a lawyer, and taught himself psychology on the basis of his own reading. He was influenced by individuals such as Ribot, the founder of French psychology, and the famous neurologist Charcot. Binet spent most of his career as an experimental psychologist, and founded an annual psychology journal, the first of its kind in France. In 1905, in response to a request from the ministry of education, Binet and his physician colleague Theodore Simon developed what became known as the first practical “intelligence test” for children (Binet & Simon, 1905). All of its items met the criterion of a demonstrated increase with age in the percent of children passing them, and the test thus enabled the examiner to estimate the child's “mental age” or level of intellectual maturity.

Binet's test materials continued to be used in France informally to gauge children's profiles of cognitive performance in different areas (Schneider, 1992). In English-speaking countries, though, the development and interpretation of the test took some different directions. For example, in Britain, its scores were interpreted in terms of Francis Galton's theory of intelligence as a mostly inherited personal characteristic (Galton, 1892). The concept of a ratio of mental age to chronological age, originating with the German psychologist William Stern (1912), was used to generate an “intelligence quotient” or IQ, although subsequently the ratio IQ was replaced by standard scores based on a comparison of the examinee to others the same age. Even before the development of Binet's test, Charles Spearman (1904) had noted the tendency of scores on cognitive test items to correlate with each other (“positive manifold”), and he interpreted their scores as a measure of general ability or “g,” which he hypothesized as a single factor underlying test performance. The American psychologist Henry Goddard had Binet's

test translated into English and validated its ability to diagnose what is now called intellectual disability in children (Zenderland, 1998). Lewis Terman refined and standardized Binet's test in a version that became known as the “Stanford Binet” and provided quantitative norms for it based on a sizable sample of American children (Terman, 1916). Terman's subsequent research followed a group of “gifted” children (with exceptionally high Binet scores) throughout their lives and demonstrated that the test significantly predicted their academic and vocational accomplishments (Terman, 1975).

Soon, the most common activity for practitioners of the newly emerging profession of clinical psychologists in America came to be the administration of individual Binet tests, mostly to children, in clinics, schools, and hospitals. In 1908, the first formal psychology internship program began at the Vineland School, a New Jersey institution for those with intellectual disabilities (Routh, 2000).

### **Leta Stetter Hollingworth**

On December 28, 1917, Leta Stetter Hollingworth, J. E. Wallace Wallin, and others founded a new professional organization, the American Association of Clinical Psychologists (AACP) (Routh, 1994). It was the first clinical psychology organization, and a direct ancestor of the present-day Society of Clinical Psychology (Division 12 of the APA). On a global level, clinical psychology shares representation as a division of the International Association of Applied Psychology, founded in 1920. Although Wallin was the president of the AACP in the United States and Hollingworth only the secretary, her name is better remembered today. Hollingworth (1886–1939) suggested in 1918 the possibility of a distinct professional degree for practitioners, which she labeled the PsD, or Doctor of Psychology. This suggestion foreshadowed the PsyD degree, now perhaps the most common type of training for clinical psychologists in the United States, and the DClinPsy degree for clinical psychologists in the United Kingdom, now offered by Oxford University, among other academic institutions. Hollingworth also argued for the legitimacy of clinical psychologists as expert witnesses in court.

The AACP only lasted for 2 years as an organization. In 1919, it was assimilated by the APA as its “Clinical Section,” and met annually as part of the APA conventions. For a time, the APA tried to set up a procedure for certifying “consulting psychologists,” but this did not work out very well and was soon discontinued. The APA Clinical Section



dissolved itself in 1937, becoming one of the several sections of the new American Association for Applied Psychology. This group continued until 1945, when the AAAP and the APA were consolidated into a new version of the American Psychological Association, which kept the name of the old APA but adopted the structure of the AAAP. The Clinical Section of the AAAP thus became Division 12 of the APA, where it remains today, as the Society of Clinical Psychology. Other national organizations of clinical psychologists, such as that in Britain, mostly did not emerge until after World War II.

Leta Stetter Hollingworth is also remembered today as a pioneer advocate of women's rights. In her day, in the early 1900s, most of the clinical psychologists were men, but now most of them are women. A diary kept by Leta's mother reported her father's reaction to her birth in 1886: "I'd give a thousand dollars if it was a boy" (quoted in Klein, 2002, p. 17). Despite this unpromising reception, Leta Stetter was so precocious that she taught herself to read before she entered school. She became a freshman at the University of Nebraska at age 16, and graduated Phi Beta Kappa 4 years later, an occasion for which she was asked to write the class poem. She became a high school teacher and assistant principal. After her marriage to Harry Hollingworth, she moved to New York City, where he entered a PhD program in psychology at Columbia University. Her application for a job as a high school teacher was turned down because the New York City Board of Education had a rule against hiring married women as teachers. She began to take some graduate classes at Columbia, but was turned down for a fellowship because she was a woman. It is thus quite understandable that Leta Hollingworth then became active in the New York Suffrage Party, seeking the vote for women. Harry Hollingworth received his PhD in psychology in 1909, and began teaching at Barnard College, the women's branch of Columbia University. He was hired in 1911 by the Coca Cola Company to carry out research using double-blind procedures on the behavioral effects of caffeine. He hired Leta as assistant director of this project, thus initiating her scientific career in psychology. The funds from the Coca Cola project ultimately allowed Leta to enroll as a graduate student in psychology at Teachers College, Columbia University, where she later studied under Edward L. Thorndike. After receiving her master's degree, she took a part-time job administering Binet tests, an experience that introduced her to clinical psychology. Leta's research in this PhD program showed no relationship between women's

menstrual status and their performance on tasks in the psychology laboratory. It also failed to support the hypothesis, then a popular one, that women's intellectual performance is more variable than that of men. After receiving her PhD, she moved on to a career as a professor at Teachers College, Columbia University, where she became a pioneer in the education of gifted schoolchildren (Klein, 2002).

The original rationale for the AACP organization centered on the role of clinical psychologists in administering and interpreting intelligence tests. Once Binet's test was translated into English, it came into wide use in the United States. Wallace Wallin and others argued that this test should only be used by persons who had both academic training in psychology and relevant supervised experience, not by schoolteachers untrained in psychology or by experimental psychologists with no practicum training. The hope was that the new organization would be able to certify and regulate these and other types of "consulting psychologists." The APA attempted for a time to set up such a professional certification procedure, but this did not work. It was not until 1977 that all U.S. states provided statutory licensing for psychologists.

Despite Lightner Witmer's initial emphasis on the importance of intervention and remediation, clinical psychologists during the era before World War II were primarily involved in assessment activities, using not only the Binet and other such intelligence tests, but also in the broader domain of personality. Lewis M. Terman, one of the original members of the AACP and a certified "consulting psychologist," did research further developing the Binet test. He refined and expanded the pool of Binet items, had them administered in a more standardized way, and collected systematic normative data on the performance of children of different ages, producing the "Stanford Binet" test in 1916, which came into common use internationally. Terman initiated important longitudinal research concerning the stability of such test scores and their value in predicting educational, vocational, and other outcomes throughout the lifespan (Terman, 1916, 1975).

## **Sigmund Freud**

Sigmund Freud (1856–1939) did not originally intend to invent the new discipline he would label as "psychoanalysis," but arrived at it by a circuitous route. After a preliminary education including exposure to the Greek and Latin classics, he entered medical school. His goal was an academic career in the field presently called neuroscience. His prospects for

ultimate employment in a university were thwarted, however, in part by Viennese prejudices against Jews. He went into medical practice instead, as a neurologist, so that he could afford to get married (Gay, 1988). To prepare for going into practice, he was awarded a fellowship to go to Paris to study under the most famous neurologist of the time, Jean Charcot. Thus, Freud began to use some of the techniques of hypnotism in treating patients with “hysterical” symptoms, but experience with an early patient led him to discontinue the use of hypnosis. Instead, he had patients “free associate,” saying whatever came to mind, and he used the material produced in this way to try to reconstruct the origins of the presenting symptoms. He theorized that such an analysis could alleviate the patient’s problems by detecting unconscious material and bringing it to conscious awareness, allowing the patient to cope with it rationally, hence the saying, “where id was, there shall ego be.” An important aspect of treatment was the phenomenon of “transference,” in which patients became unduly dependent upon their therapists; this was also the subject of the analyst’s comments. In 1900, Freud published his famous book on the analysis of dreams as the “royal road to the unconscious” in psychoanalysis, marking the formal announcement of this new discipline.

Freud came to the United States only once, in 1909, at the invitation of psychologist G. Stanley Hall, to speak at the celebration of the 20th anniversary of the founding of Clark University in Worcester, Massachusetts. Although Freud did not particularly like the United States, it proved to be the country in which psychoanalysis achieved its greatest early recognition. The American Psychoanalytic Association was founded in 1911. As the Boston physician Morton Prince said afterward:

Freudian psychology had flooded the field like a full rising tide and the rest of us were left submerged like clams in the sands at low water.

(quoted by Hale, 1971, p. 434)

The standard method of educating new psychoanalysts, as it developed during the 1920s, came to consist of three parts: didactic instruction in basic principles, a personal psychoanalysis, and experience carrying out the psychoanalysis of patients under supervision. In Europe, the candidates accepted for such training were not necessarily physicians. In fact, no particular professional prerequisites were enforced, and thus a number of psychologists received psychoanalytic training. The European psychologist Theodore Reik, who worked as a psychoanalyst after

emerging from such training, was taken to court on charges of practicing medicine without a license. Freud, on the witness stand, testified that psychoanalysis was actually a part of psychology rather than of medicine, and thus Reik’s use of psychoanalysis with his patients was legitimate. Reik won his case (Freud, 1927). Nevertheless, in 1938, the American Psychoanalytic Association began to enforce the rule that only physicians might be trained for the practice of psychoanalysis. Because Freud was struggling to leave Vienna in 1938 to escape the Nazis and died in London in 1939, he was hardly in any position to intervene personally in this American dispute. The controversial rule was not overturned until 50 years later, in 1988, when the case of *Welch v. American Psychoanalytic Association* (1985) was settled out of court. Now, psychologists may be accepted as candidates for psychoanalytic training in the United States, just as they always had been in other countries. By then, however, the use of psychoanalysis began to wane in the United States.

Before World War II, very few American psychologists worked as psychotherapists, psychoanalytic or otherwise. The same was true of U.S. psychiatrists, whose activities centered on the administration of mental hospitals and the care of psychotic or demented individuals. The war changed all that. For one thing, large numbers of European immigrants, including many psychoanalysts, arrived in the United States, fleeing Hitler. These European analysts formed a cadre for training others in this country. American psychiatrists were able to receive such training through the American Psychoanalytic Association, and psychologists wanting this kind of training were often able to obtain it in irregular ways, including via Theodor Reik’s National Psychological Association for Psychoanalysis, in New York.

In addition, the U.S. Armed Forces required many clinicians to deal with the mental health problems that often accompany a war, including what is now labeled post-traumatic stress disorder. Not enough psychiatrists were available to carry out these duties, and thus many doctoral psychologists were brought into mental health–related work. The chief psychiatrist of the U.S. Army during World War II was Brigadier General William C. Menninger, a man strongly identified with psychoanalysis. After the war, the mental health problems of military veterans loomed large. The U.S. Veterans Administration began a massive program of financial support of training in all mental health fields, including psychiatry, psychology, social work, and nursing. The Department of Veterans’ Affairs, as it is now known,

is still the largest single employer of clinical psychologists in this country. At the same time, a new federal agency, the National Institute of Mental Health (NIMH) was organized as part of the National Institutes of Health, with responsibilities for supporting both research and training in mental health fields. In response to these federal initiatives, a conference on graduate training in clinical psychology was held in Boulder, Colorado, in 1949. The Boulder Conference (as described by Raimy, 1950) yielded the “scientist-practitioner” model for training clinical psychologists. The recommended curriculum closely followed the model elaborated by psychologist David Shakow, the first chief clinical psychologist at NIMH. Shakow’s career was exemplary in its blend of scientific experimental psychology and a psychoanalytic orientation to clinical work. The Boulder Conference formed the basis of a system of graduate programs and internships operating under a new program of accreditation offered by the APA. Many of these new PhD programs in clinical psychology, for example the one at the University of Michigan, incorporated the psychoanalytic training model relatively fully, including didactic instruction, encouragement of personal psychoanalysis, and the supervision of psychotherapy by qualified psychoanalysts.

Meanwhile, clinical psychology was emerging as a discipline in several other countries. After World War II, the United Kingdom, the Scandinavian countries, and others were setting up government-supported national health services (rather than government-supported care for veterans alone). In each of these national health services, clinical psychologists became a mainstay of mental health care, and the psychoanalytic model was as influential in these places as it was in the United States at this time.

Psychoanalysis seems to have reached the peak of its influence in the United States in the mid-1960s. By that time, a large number of the departments of psychiatry in U.S. medical schools had hired psychoanalysts as chairs. After that, Freudian influences in mental health care appeared to wane. One factor in this decline was the reluctance of the psychoanalytic community to subject its treatments to rigorous research concerning their efficacy and effectiveness. A second factor was the cost of treatment, especially of the classical Freudian paradigm, in which patients were seen 5 days a week, sometimes for years on end. Third, by the 1950s, a number of lower-cost, more demonstrably effective pharmacological treatments were emerging for mental health problems, including neuroleptics for managing psychotic behavior,

antidepressants, mood stabilizers, anxiolytics, and others. Finally, alternative psychological treatments began to emerge, including the cognitive and behavioral therapies discussed under the next heading.

## **Hans Eysenck**

Hans Eysenck (1916–1997) was important to clinical psychology as one of the founders of behavior therapy. The cognitive and behavioral therapies emerged during the latter half of the 20th century as credible alternatives to psychoanalysis. Eysenck was a German who was a firm opponent of the Nazis and soon emigrated to Great Britain. He received his PhD from the University of London, in psychometrics and experimental psychology, under Cyril Burt and was recruited by the prominent psychiatrist Aubrey Lewis to the Institute of Psychiatry at the Maudsley Hospital in London, to start a program in clinical psychology. Eysenck assumed at first that clinical psychologists should occupy themselves only with research and assessment activities, rather than treatment. He was a researcher, himself. In his work, he preferred to collect and analyze data and write articles and books, rather than deal directly with patients as a clinician. In 1949, Eysenck journeyed to the United States (to the University of Pennsylvania), where he began to realize and to agree with the commitment of the post-war generation of clinical psychologists to treatment, and not just assessment (Eysenck, 1949). However, he had no use for the psychoanalytic approaches in which so many of them were interested. He soon scandalized both psychiatrists and psychologists by publishing an article questioning the positive effects of psychotherapy (Eysenck, 1952). In his article, Eysenck described insurance company data that permitted a comparison between the outcomes of persons with neurotic problems who received psychotherapy and others who did not. He pointed out that the success rate of psychotherapy did not exceed the rate of “spontaneous remission” of the patients’ difficulties without therapy. Although not a controlled study including random assignment of patients, it did point out the flaw in therapists’ previous reasoning that if patients improved after treatment, the treatment must have been responsible.

Eysenck thought that psychological interventions should be based not on Freudian notions, but on ideas compatible with the theories and quantitative, experimental findings of the type of behavioral psychology that was typical of the academic psychology of his day. In his new Department of Psychology at the Institute of Psychiatry, he hired behaviorally

oriented colleagues such as Gwynne Jones and began to train students like Stanley Rachman. Psychiatrist Aubrey Lewis objected to the direction being taken by Eysenck's program, but academic officials at the University of London supported the autonomy of the Psychology Department at the Institute of Psychiatry.

## The Modern Era

What do these developments imply for the status of psychoanalysis? It is clear that Sigmund Freud was a powerful and persuasive writer, and that the cultural influence of his works to this day may be broader than that of any other individual in psychology. Freud's continuing influence within clinical psychology is also considerable. Yet Freud depended largely on the evidence of case histories, never did a psychological experiment, did not make use of quantitative methods, and generally ignored the research literature of nonpsychoanalytic psychology. Many of Freud's medical and psychological colleagues were critical of his approach from the beginning, a fact that is curiously portrayed in histories of psychoanalysis as an example of unconsciously motivated "resistance." Eysenck and his behavioral colleagues simply had the boldness to call the Freudians to account and to engage in much-needed critical thinking about the relevant evidence.

Meanwhile, support for the behavior therapy movement quickly appeared. A behavior modification conference was held in Charlottesville, Virginia, in 1962, and the first behavior therapy journal, *Behaviour Research and Therapy*, began publication in 1963. The interdisciplinary Association for the Advancement of Behavior Therapy first met in 1967, in Washington, D.C., and its name was changed in 2005 to the Association for Behavioral and Cognitive Therapies. Behavioral principles had a profound influence on research and the practice of therapy. In terms of research, pioneering work was carried out by physician Joseph Wolpe of South Africa, described in his 1958 book, *Psychotherapy by Reciprocal Inhibition*. A pioneer in the area of cognitive therapy was psychiatrist Aaron T. Beck (e.g., Beck, 1967). The Skinnerian version of intervention for behavioral problems is known as *applied behavior analysis* and has been particularly valuable in working with persons with intellectual and developmental disabilities, including those with autism (Baer, Wolf, & Risley, 1968).

By the 1980s, the larger scientific community finally began to realize the need for formal randomized clinical trials to evaluate the effectiveness of

treatments for psychopathology. Elkin et al. (1989) reported the results of the NIMH Treatment of Depression Collaborative Research Program. Participants in this research were outpatients between the ages of 21 and 60 who met the current Research Diagnostic Criteria for major depressive disorder with specified scores on the Hamilton Depression Rating Scale. Those with other major psychiatric disorders, concurrent psychiatric treatment, or certain medical conditions were excluded, as were actively suicidal individuals. Of 250 potential subjects, 239 entered treatment, of whom 162 completed treatment. They were randomly assigned to either interpersonal psychotherapy, cognitive behavior therapy, imipramine plus clinical management, or pill placebo plus clinical management (medication was administered on a double-blind basis). The psychological treatments were carried out by 13 different therapists, in accordance with detailed treatment manuals. The results showed that the antidepressant medication and the two types of psychological treatment were all significantly more effective than pill placebo but were essentially equivalent to each other in their effects on depression. Critics of such research were quick to point out the additional need for studies on the "effectiveness," not just the "efficacy" of such treatments. In other words, the clinical trials with their formal manuals of procedure were not representative of typical clinical management, and the exclusion conditions made the patients studied also unrepresentative of the broad population of depressed patients. Nevertheless, it is clear that with the NIMH Collaborative Research and similar studies, a new era had arrived. The subsequent emphasis has been on the need for all therapists, when possible, to use "evidence-based" treatments of psychopathology, rather than procedures that have not been tested in a rigorous way. Similarly, the training of all mental health personnel should give priority to teaching treatments that are firmly grounded in the research literature. This is not to deny, however, that clinicians are constantly experiencing variations in the pictures presented by patients' problems, thus requiring a flexible adaptation of established principles.

## Conclusion

This chapter has dealt with a number of strands in the development of Clinical Psychology with a "large C," including its psychoanalytic and cognitive-behavioral aspects. Many psychologists who deliver human services in the United States are specialists in other fields, and are thus identifiable as clinicians "with a small c," so to speak. Among these

areas are clinical child and adolescent psychology, clinical health psychology, clinical neuropsychology, counseling psychology, rehabilitation psychology, couple and family psychology, clinical geropsychology, school psychology, and in some jurisdictions, clinical psychopharmacology. Early on, in some cases, clinical psychology and school psychology were the same field, but later branched into distinct ones. The history of how each of these special areas developed would require many additional chapters. In many countries in Europe, Latin America, and in many other parts of the world, the patterns of training seen in psychology in the U.S. and the U.K. is not typical. Instead, university psychology graduates receive a diploma or licentiate degree, which is in itself legally sufficient for them to engage in the practice of psychology, although many supplement this by informal training in areas such as psychotherapy. In such countries, master's and doctoral degrees are considered to be preparation for an academic career, not for practice.

My largest effort toward studying the history of clinical psychology is the 1994 book on the history of the organization presently known as the Society of Clinical Psychology, a division of the APA. It was subtitled: "Science, Practice, and Organization," so perhaps these categories will serve in discussing the history of clinical psychology as a larger entity. Clinical psychologists seem to be well accepted as contributors to the scientific study of psychopathology, assessment, and treatment. Their progress in this respect can perhaps be tracked through the volumes of the *Annual Review of Clinical Psychology*, which began publication in 2005.

In terms of practice, doctoral-level clinical psychologists are prominent in the public sector, practicing in Veterans Affairs Hospitals and clinics in the United States and, the in national health services of Great Britain, the nations of the British Commonwealth, and Western Europe. Employment in private-sector mental health is highly competitive in such countries. Psychiatry, once the leading profession in this domain, has lost much of its turf to primary care physicians (and advanced practice nurses), who now write most of the prescriptions for psychotropic medications. Moreover, psychiatry has also lost professional turf to various kinds of nonmedical psychotherapists, including not only doctoral-level psychologists but also master's-level psychologists, social workers, mental health counselors, and many others. Current research does not support the idea that therapists with such different types and levels of professional preparation differ in

their effectiveness in treating mental illness. And yet, despite all this professional activity, the mental health needs of the public still do not appear to be very well served. A study by Pratt and Brody (2008) of "depression in the United States household population, 2005–2006," might be taken as a snapshot of the status quo a few years before the beginning of the current world economic recession. A sample of about 5,000 persons representing the adult, civilian, noninstitutionalized U.S. population were given standardized interviews (National Health and Nutrition Examination Survey). Only 29% of those people considered to suffer from depression reported contacting a mental health professional (such as a psychologist, psychiatrist, psychiatric nurse, or clinical social worker) in the past year; of those with severe depression, only 39% reported such contact. Depression is considered a highly treatable condition, yet most people with depression in the United States were not treated. It is clear from such data that clinical psychologists and other mental health professionals have a long way to go to meet their goal of actually helping people even to a minimal extent.

Finally, in terms of organization, clinical psychologists in the United States have been represented by some kind of professional organization since 1917. Similar organizations began to appear in Great Britain, British Commonwealth countries, and in Western Europe, especially after the end of World War II. However, so far, international clinical psychology has not yet gone very far toward dealing with the kaleidoscope of world cultures in existence or achieving any kind of a coherent, organized voice. These remain as issues for the future.

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## Emerging Policy Issues for Psychology: A Key to the Future of the Profession

Patrick H. DeLeon, Mary Beth Kenkel, Jill M. Oliveira Gray, and Morgan T. Sammons

### Abstract

Involvement in the public policy process is essential to the continued growth of the profession of psychology. The authors posit that five dimensions of involvement in the policy process are fundamental to ensuring the success of advocacy efforts: patience, persistence, the establishment of effective partnerships, emphasizing interpersonal relationships in the policy process, and the adoption of a long-term perspective. These key mediators are described in the context of current major public policy issues affecting psychology: mental health legislation in general, prescriptive authority, provision of psychological services in community health centers, expansion of the available treatments for autistic spectrum disorders, and recasting psychology as a primary health-care delivery profession. The authors suggest that policy makers will value the contributions of psychology only insofar as they are convinced of the profession's ability to improve the public weal.

**Keywords:** Autism interventions, community health centers, mental health legislation, prescriptive authority, public policy

Those of us who have been personally involved in the public policy process over the years have learned the critical importance of five key mediators of success: patience, persistence, partnerships, personal relationships, and a long-term perspective for the field (DeLeon, in press; DeLeon, Loftis, Ball, & Sullivan, 2006). In this chapter, we provide examples illustrating each of these factors and their contribution to recent policy initiatives affecting psychology. Sometimes one factor, such as the creation of strategic partnerships, is most important in effecting change in public policy. More commonly, however, significant change results from a combination of all these variables.

An immediate example of effective engagement in the public policy process is afforded by large professional advocacy organizations, such as the American Psychological Association (APA). APA has worked over a number of decades to have psychology's voice and expertise heard by those who establish

our nation's domestic and foreign policies, and it can be justly proud of its role in successful passage of landmark legislation, such as the mental health parity bill enacted during the closing hours of the 110th Congress (discussed later). Such success has perhaps been one inspiration for the growing number of psychologists willing to run for elected office at both the local and national level (Sullivan, Groveman, Heldring, DeLeon, & Beauchamp, 1998; Sullivan & Reedy, 2005). Others have been appointed to high-level administrative positions, where they have the ability effectively bring the profession's data-based perspective to addressing society's most pressing needs. In spite of these successes, it remains true that very few, if any, of our current psychology training programs provide the type of "hands-on" exposure to the public policy world necessary to establish the foundation for our next generation of clinicians, educators, and scientists becoming effectively engaged in visionary legislative change (DeLeon, 2002; Kenkel,

DeLeon, Mantell, & Steep, 2005). It is also true that very few of our colleagues appreciate the historical roles that psychologists have had in shaping public policy; for example, that psychologist John Gardner served as Secretary of the then-Department of Health, Education, and Welfare (HEW) during the Great Society era of President Lyndon Johnson and had a major influence on the direction of health-care services. Psychology is a maturing profession, and it is critically important that our field appreciates its own history. Only through that lens we can see both what we have been capable of and the opportunities we have missed. We must find ways to educate current and future psychologists on both this history and in methods of effective engagement. We have no more potent mechanism for the profession to share its expertise for the betterment of society and the advancement of the field.

### **Learning About the Public Policy Process**

Psychologists and most other health-care providers approach their professional lives from fundamentally different perspectives than do those who establish and implement our nation's health and education policies (DeLeon, Dubanoski, & Oliveira-Berry, 2005). Reflecting upon his year on Capitol Hill, former APA Congressional Science Fellow Neil Kirschner noted that:

More often than not, research findings in the legislative arena are only valued if consistent with conclusions based upon the more salient political decision factors. Thus, within the legislative setting, research data are not used to drive decision-making decisions, but more frequently are used to support decisions made based upon other factors. As psychologists, we need to be aware of this basic difference between the role of research in science settings and the legislative world. It makes the role of the researcher who wants to put "into play" available research results into a public policy deliberation more complex. Data need to be introduced, explained, or framed in a matter cognizant of the political exigencies. Furthermore, it emphasizes the importance of efforts to educate our legislators on the importance and long-term effectiveness of basing decisions on quality research data . . . If I've learned anything on the Hill, it is the importance of political advocacy if you desire a change in public policy.

*(Kirschner, 2003)*

Psychologists involved in the public policy process also must appreciate the structural interrelationships between various congressional committees,

their staffs and the personal interests of Congressmembers, and learn to look across federal agencies to systematically explore the range of federal involvement in matters pertaining to the science and profession of psychology. For example, why should the Secretary of the U.S. Department of Agriculture be supportive of investing in programs targeted toward encouraging women to become involved in science, technology, engineering, and math (STEM) initiatives (DeLeon, Eckert, & Wilkins, 2001)? This goal initially seems unrelated to agricultural concerns; however, those familiar with the jurisdiction of the Department of Agriculture would know that it has a broad mission to increase the quality of life for rural America, and historically has done so via funding of educational initiatives through Land Grant institutions. Broadening the focus to include much-needed STEM degrees is a reasonable extension, but it would only be obvious to those familiar with the Department's mission, jurisdiction, and priorities.

Educators, clinicians, and researchers in the field have never operated in a societal vacuum. And yet, very few psychology graduate programs have systematically exposed their students to the rich history of our involvement in such major health-care policy changes such as the community mental health center movement. Few programs have addressed the history and mission of the Centers for Medicare and Medicaid Services (CMS) and how it differs in orientation and programmatic priorities from the Health Resources and Services Administration (HRSA) and the Centers for Disease Control and Prevention (CDC). Very few of psychology's educators are aware of these agencies' different institutional personalities or their institutional affiliations within the Department of Health and Human Services (HHS). Similarly, we would rhetorically ask: How can our graduate students be expected to appreciate how today's health psychology and integrated-care movements actually rest upon an important public health foundation envisioned by the Minister of National Health and Welfare of Canada in 1974 and President Carter's Surgeon General? (keen readers and students of history may find the answer on page 46)

As a maturing health-care profession, psychology's training programs have an institutional responsibility to educate our next generation regarding the public policy and public health context in which they will someday practice. It is equally important that the next generation of psychologists come to appreciate the public policy implications of the reality that the federal government has a long history of ensuring that those health-care practitioners for



whom it provides training support will be appropriately recognized under each of its health service delivery programs. Perhaps, we would suggest, this vacuum will eventually be filled by psychology's professional schools, which seem to have a broad and global perspective on psychology's future and its potential clinical domain (DeLeon, Kenkel, & Belar, 2007; Kenkel, DeLeon, Albino, & Porter, 2003).

One of the most successful ways for psychologists to learn about the public policy process has been through congressional fellowship programs. The 2008–2009 Fellowship year marked the beginning of the 35th year of the APA Congressional Fellowship Program, with an incoming class of three fellows. APA senior policy advisor Ellen Garrison, also a previous congressional fellow, indicated that a number of psychologists, including herself and Ruby Takanishi (president of the Foundation for Child Development), obtained their Capitol Hill experience under the auspices of the Society for Research in Child Development (SRCD; Ellen Garrison, personal communication, October 23, 2008). A recent APA Fellow and current director of the Fellowship Program, Diane Elmore stated that:

The APA Congressional Fellowship Program provides psychologists with an invaluable public policy learning experience, contributes to the more effective use of psychological knowledge in government, and broadens awareness about the value of psychology–government interaction among psychologists and within the federal government. As part of the larger Science and Technology Policy Fellowship Program at the American Association for the Advancement of Science (AAAS), APA Congressional Fellows benefit from the distinguished network of organizations dedicated to issues surrounding federal science and technology policy. Since 1974, APA has sponsored 107 Congressional Fellows who have represented the field with excellence and integrity. Participants in the program have gone on to make significant contributions to the field of psychology through clinical practice, research activities, work in the policy arena, and involvement in APA governance.

*(Diane Elmore, personal communication, October 19, 2008)*

Some psychologists have gained a first-hand education in the public policy process by serving as members of Congress. At present, three psychologists are serving in the US Congress, including Rep Tim Murphy of Pennsylvania, Rep Brian Baird of Washington, and Rep Judy Chu of California (Congresswoman Chu also has the distinction of being the first Chinese-American female elected to

the US Congress). At the beginning of every session of Congress, the Library of Congress Congressional Research Service develops an in-depth profile of the elected members. Recently, Congress (like the field of psychology) has become increasingly female and more ethnically diverse in its composition. Over the past three Congresses, a record number of women have served, and the 109th Congress also had an unprecedented number of African American members. The average age of the members of both houses is 57—among the oldest of any Congress in history. The overwhelming majority of elected officials have a college education, with 22 members of the House having doctoral degrees, and 13 members of the House and four Senators holding medical degrees. The dominant profession remains law, followed by public service/politics, and business. Of the 540 elected members of the 110th Congress, there were also ten health professionals (Library of Congress, 2008). Ted Strickland, the first psychologist to ever serve in the Congress, has now been elected governor of Ohio; again, being the first psychologist to serve in that capacity. Peter Newbould of the APA Practice Directorate reported that, during the 110th Congress (2007–2008), 14 psychologists were serving in various state House and Senate seats (Newbould, 2007). Given the fundamentally different ways in which members of the health professions and those with law and business professional backgrounds tend to address problems and conceptualize their personal priorities, it is especially important that a significant number of our next generation of psychologists be trained to understand the specific nuances of the legislative process and its highly unique culture, as expressed in its rules, language, and customs, if, as members of society's educated elite, we ever collectively decide to accept our societal responsibility to have a significant role in shaping our nation's priorities (DeLeon, 1986).

In addition to the fellowship program, psychologists and psychologists-in-training also have gained knowledge of the public policy process through advocacy training sponsored by APA and other national and state psychological associations. Each year, during the Educational Leadership Conference sponsored by the Education Directorate and the State Leadership Conference sponsored by the Practice Directorate, participants receive advocacy training and updates on legislative issues relevant to psychologists. They then travel over to Capitol Hill for scheduled appointments with legislators and aides, in order to establish crucial personal connections to better represent the meaning and potential effects of proposed

legislation for society, psychologists, and the people we serve. These psychologists quickly learn that their advocacy efforts are most effective when legislators and staff are shown how proposed legislation will affect real people—clients, students, and the public at large—and how proposed changes will address persisting societal problems. Although research data are useful, a legislator's attention is more fully captured by actual accounts of people who have been helped or could be helped by a new bill or funded program. Psychologists' personal contacts with legislators expand these legislators' knowledge of the critical societal needs by showing them the world that psychologists experience daily—the struggles of individuals and their families, and the impact on individuals and communities from unmet social needs. Psychologists' personal contacts with legislators have been effectively increased through a number of public policy networks affiliated with APA, such as the Federal Educational Advocacy Coordinators (FEDAC) and the Public Policy Advocacy Network (PPAN), through which psychologists are mobilized to contact their legislators at times of important votes.

Although few in number, several academic programs and training councils have begun to highlight the importance of advocacy in their clinical psychology programs (Lating, Barnett, & Horowitz, 2009; Martin, 2006) and provide advocacy experiences for students. By doing so, students learn early on the importance of being involved in the public policy process for the good of their clients and their profession. By observing their professors and clinical supervisors involved in advocacy activities, students learn that advocacy is an important component of their professional roles. They also can become involved in advocacy activities through the APA Graduate Students' (APAGS) Advocacy Coordinating Team (ACT) (see their website, [www.apa.org/apags/advocacy/act.html](http://www.apa.org/apags/advocacy/act.html), for more information). Advocacy training materials with important information on the legislative process and effective communication as an advocate are available at the APA website: <http://www.apa.org/ppo/ppan/guides.html>.

### **Patience and Mental Health Parity Legislation**

Perhaps one of the most taxing lessons to learn about public policy making is how long it takes to implement significant change, even if highly beneficial. The recently enacted, far-reaching mental health parity legislation (the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of

2008; P.L. 110-343), took over a decade to come to fruition. It was back in April, 1996, when Senator Domenici told his Senate colleagues that “now is the time” to pass legislation requiring insurance companies to cover mental illness just as they did any other medical conditions, yet it took until 2008 for political forces and societal issues to come together to garner broad support for the legislation. Given his daughter's mental health diagnosis, this legislation also provides insight into how “the business of politics can be intensely personal” (Lueck, 2008). APA's senior legislative liaison, Marilyn Richmond, has been working diligently on this critical legislation since 1996, when the initial, albeit limited, federal mental health parity legislation was enacted.

Patience in the public policy process implies a commitment to long-term involvement. Just as psychologists must be lifelong learners to remain effective in their work, so must they have a lifelong presence in public policy processes to have a substantial effect on societal well-being. Patience, however, may be misconstrued as a more passive level of involvement, a “standing on the sidelines” approach. To ensure effective advocacy, patience must be combined with the next important factor—persistence. We illustrate the intersection of these two factors by describing one of psychology's major public policy initiatives of the past two decades: prescriptive authority for appropriately trained practitioners.

### **Persistence and Prescriptive Authority *The Prescriptive Authority (RxP) Agenda***

From a public policy perspective, one of the fundamental health-care responsibilities of government is to test out promising and innovative models of health-care delivery, including exploring evolving roles for a range of health-care professionals (e.g., physician assistants and dental extenders). Without question, this has been the case for psychology's prescriptive authority initiative. Psychologists' quest for prescriptive authority vividly demonstrates the value of persistence in the public policy process.

In November 1984, U.S. Senator Daniel K. Inouye urged the membership of the Hawaii Psychological Association (HPA) to seek prescriptive authority (RxP) to improve the availability of comprehensive, quality mental health care. At that time, optometrists were authorized to utilize diagnostic drugs in 39 states (four states allowed therapeutic use), nurse practitioners in 18 states, and the contributions of clinical pharmacists were hardly ever considered (Burns, DeLeon, Chemtob, Welch, & Samuels, 1988; DeLeon, Fox, & Graham, 1991).

In 1991, at the request of the Congress, the Department of Defense (DoD) established a pilot training program at the Walter Reed Army Medical Center, under the auspices of the Uniformed Services University of the Health Sciences (USUHS). In June 1994, then-APA President Bob Resnick attended the graduation ceremonies for the first two DoD prescribing psychologists, including one of the current authors. Over the years, this particular program had been carefully evaluated and demonstrated for both psychology and for our nation's health policy experts that psychologists can be cost-effectively trained to provide high-quality, comprehensive psychopharmacological care (DeLeon, Dunivin, & Newman, 2002; Dunivin & Orabona, 1999; Newman, Phelps, Sammons, Dunivin, & Cullen, 2000). Ultimately, despite ferocious opposition, this program graduated ten prescribing psychologists until political maneuvering by organized medicine eliminated congressional funding in 1997. This program became the model upon which similar training programs in the civilian sector were established.

Notwithstanding objective findings, numerous arguments continue to be marshaled (largely by the psychiatric profession) in the policy process against prescriptive authority for psychologists. These arguments rest mainly on two assertions: that the training of psychologists is insufficient to allow them to provide psychopharmacological services, and that such providers would represent a "public health hazard" who will affirmatively harm their patients. Such arguments represent an extension of the reasoning that the medical profession has traditionally employed when any nonphysician health-care provider group seeks to expand its scope of practice into areas that were previously the exclusive domain of medical doctors: that patients will suffer if care is provided by non-medically trained personnel. This argument, however, has been repeatedly repudiated, as groups as diverse as nurses, podiatrists, dentists, and optometrists have rapidly expanded their professional scopes of practice to procedures including the administration of systemic drugs and surgery (Fox, DeLeon, Newman, Sammons, Dunivin & Baker, 2009; Sammons, 2003).

From an initial Board of Professional Affairs retreat in 1989 and the August 1990 Council of Representatives vote to establish a special task force, the various APA governance elements have intensively deliberated upon all aspects of psychology obtaining prescriptive authority (DeLeon, 2003). In 1995, the APA Council of Representatives voted overwhelmingly to endorse prescriptive authority for

appropriately trained psychologists, as representing APA policy. Today, a number of programs within the civilian sector provide relevant training that meets the APA recommended standards, the majority of which are located within a university-based setting and grant a master's degree upon completion. To date, appropriately 190 post-doctoral graduates have taken the APA Psychopharmacology Examination for Psychologists (PEP exam), which has a passing rate of approximately 71% for first-time test takers (J. Ciuccio, personal communication, October 7, 2008).

The move to acquire prescriptive authority comes in the context of a dramatically altered landscape for all health professions. Optometrists and advance nurse practitioners have acquired prescriptive authority in all states, and clinical pharmacists, under varying conditions, in more than 40 states. Psychology has obtained prescriptive authority in New Mexico (2002) and Louisiana (2004); with Indiana (1993) and Guam (1998) enacting, but not implementing, relevant RxP statutes. Deborah Baker of the APA Practice Directorate reported that, every year, an increasing number of state psychological associations have introduced legislation (Deborah Baker, personal communications, Fall, 2008). In 2007, the Hawaii Psychological Association (HPA) passed such legislation; it was, however, ultimately vetoed by their governor. For 2008, there were a total of eight RxP-related bills, including two sponsored by major labor unions in California. In January 2009, the Hawaii Primary Care Association will sponsor the Hawaii RxP bill and launch their legislative agenda with prescriptive authority for psychologists as one of their top three initiatives. The Florida Psychological Association initiative was modified to become a request for a formal study, with the legislature's Joint Legislative Auditing Committee voting 7–3 to conduct such a study on whether there is a need and/or benefit for granting prescription privileges for psychologists. Historically, 70% of approved proposals from this group eventually become public law. Practice patterns in the jurisdictions that have passed enabling legislation for psychologists suggest that these laws work to expand public health services and do not endanger patients. As of early 2009, 48 medical psychologists have certificates of prescriptive authority in Louisiana. Psychologists have filled positions long left vacant by shortages of psychiatrists, and it is estimated that they have written more than 200,000 prescriptions. The Louisiana State Board of Examiners of Psychologists has not had a single complaint against a medical psychologist in the three years since the

statute was implemented (Glenn Ally, personal communication, October 7, 2008).

The essence of psychology's prescriptive authority agenda rests on the assumption that psychopharmacological service provision from a nonpsychiatric perspective conveys unique benefits. In this "psychological model of pharmacologic service provision" medications are viewed almost always as adjunctive, with the ongoing relationship between therapist and patient assuming primacy. Because psychologists have a wide range of behavioral and psychosocially based interventions in addition to pharmacotherapy, it has also been posited that this integrated approach will lead to better patient outcomes (Sammons, 2001). Former APA Practice Directorate Executive Director and now Provost of Alliant International University Russ Newman predicted: "Prescribing psychologists will use medication in a qualitatively different manner than psychiatrists. They will use pharmacotherapy based on a psychological model of treatment, in contrast to a medical model. The implications of this difference may be profound. The psychological model of treatment can be described as a systems-oriented, holistic, integrative approach. . . . When other treatments are available, with a psychological model, the power to prescribe is also the power to un prescribe" (Newman, 2000, p. 45).

With persistence, psychologists have been able to gain prescriptive authority through an innovative program in the DoD, as well as in several states. That persistence was fueled by certitude that psychologists would be able to provide more efficacious and needed services with the ability to prescribe. This argument has convinced not only many critics within psychology but also policy-makers seeking to improve mental health services for their constituents. Continued persistence will be necessary to overcome the objections of organized psychiatry and enact prescriptive authority legislation in all the states.

Just as with prescriptive authority, over the past decade, significant progress has been made in ensuring that appropriately trained psychologists throughout the federal system have been able to effectively utilize their clinical skills, whether employed by the DoD, Indian Health Service, U.S. Public Health Service, or Department of Veterans Affairs. Interestingly, it has been our observation that, just as with prescriptive authority, the greatest obstacles this evolution has faced have been within the field of psychology itself; in this case, the institutional reticence on behalf of senior psychologists. Change is always unsettling and frequently takes more time than one might initially

expect (DeLeon, Brown, & Kupchella, 2003). Accordingly, interested students of the public policy process should probably not be surprised or discouraged by how persistent one must be and how long it is taking to fully implement psychology's vision of comprehensive, psychologically based health care (DeLeon, 1988; Kenkel et al., 2005).

### **Partnerships and Psychological Service Provision in Community Health Centers** *Enhancing Psychological Service Provision in Community Health Centers*

Today's societal problems are complex and multifaceted. Very few can be addressed comprehensively by only one profession, field, or strategy. Yet professional education rarely emphasizes collaborative skills or interdisciplinary approaches. Instead, educational silos exist (O'Neil, 2008) in which professionals become extremely knowledgeable about their own disciplines but have little idea how to talk with, much less work with, others from other professions.

Some psychologist educators, however, such as former Robert Wood Johnson Health Policy Fellow and now Kent State University Provost, Bob Frank, have come to appreciate, undoubtedly through their own personal experiences (i.e., by serving on Capitol Hill), the truly interdisciplinary nature of the public policy process, specifically the health policy process. Dr Frank has been instrumental in establishing health administration and public health training opportunities, so that psychology's graduate students and those of the other health professions have a viable vehicle for being exposed to the nuances and history of our nation's health-care system and the critical need for interdisciplinary cooperation.

More than 25 years ago, there were calls for more cooperation between health and general health providers. It was noted that primary care providers, even then, were charged with providing over 60% of care for those with discernible mental health disorders and that enhanced diagnosis, counseling, better-informed drug prescribing, and referral were key to ensuring high-quality services (Hamburg, Elliott, & Parron, 1982). Those authors also noted that primary care providers required training in discussing mental health issues with patients and called for alternative mechanisms for providing behavioral health-care services in primary care settings. Over 25 years later many of the deficiencies noted by Hamburg, Elliott, and Parron have yet to be addressed and, until recently, there have been few initiatives to promote greater partnerships between

clinical psychologists and primary care providers. There are, however, some encouraging new partnerships, such as those being developed in community health centers (CHCs; DeLeon, Giesting, & Kenkel, 2003). At least four psychology training programs (three in Hawaii; one in Tennessee) are known to provide full-time, and/or, rotations, in pre- and/or post-doctoral training in CHCs (i.e., I Ola Lāhui Rural Hawaii Behavioral Health Training Program, Cherokee Health Systems, Tripler Army Medical Center (TAMC), and Waianae Coast Comprehensive Health Center). All are Association of Psychology Postdoctorate and Internship Centers (APPIC) members, with two being APA accredited (Cherokee Health Systems and TAMC) and one in the process of applying for APA accreditation (I Ola Lāhui). It is possible that this number is an *underestimate* given that other non-APA accredited programs may exist; there may be other CHC-based training programs with APPIC membership only; or, other training programs may have rotations in CHCs but are difficult to locate through existing search lists. In fact, a category specific to CHCs as a program setting is absent from the available list of APA or APPIC programs, which is hopefully something that will change in the near future as more CHC-based psychology training programs evolve.

From a training standpoint, CHCs offer a richness of diversity and complexity of patient populations. Mental health services are offered within the context of primary care, largely to medically underserved individuals. This imbues such sites with the capacity to create culturally competent, innovative, and resourceful psychologists capable of working collaboratively with general health providers and committed to serving the underserved, reducing health disparities, and advocating to reduce stigma and increase psychology's place as a front-line health-care profession (DeLeon, Giesting, & Kenkel, 2003). The challenge is that, at present the training programs that do exist are few and are difficult to develop given the harsh fiscal realities of many state health-care budgets. There is a significant need to establish creative and resourceful means to sustain psychological services and training initiatives in these settings, as well as to continue to develop within APA's framework the support and recognition necessary to expand, sustain, and validate training initiatives within CHCs.

Why should we emphasize the potential of CHCs? These federally qualified community health centers have been in existence serving our nation's most geographically isolated and medically underserved

populations for more than 40 years (National Association of Community Health Centers, 2008). Between 1995 and 2004, the numbers of patients served in CHCs increased by more than 50%, from 8.6 to 15 million (Agency for Healthcare Research and Quality Conference Center [AHRQCC], 2005), and the number of uninsured individuals who received care rose from 2.2 to 4 million (DeLeon, Giesting, & Kenkel, 2003). In 2004, the Bureau of Primary Health Care reported that 70.5% of CHC patients were at or below the 100% federal poverty level, 85.3% were uninsured (40.1%) or received some form of public assistance (Medicaid, Medicare), and 63.5% were of a particular ethnic minority group. In addition, as one looks at various states where unique demographics and socioeconomic conditions exist, other medically underserved groups may become more prevalent, such as the homeless, immigrant, and/or migrant populations (Hawaii Primary Care Association, 2006).

Community health centers exist in all 50 states within the United States and are located in high-need communities in order to "provide comprehensive preventive and primary health services to all residents in the service area regardless of [their insurance status or] ability to pay" (AHRQCC, 2005, p. 3). Through this mission, CHCs accomplish impressive tasks to improve access to a range of medical and behavioral health-care services, and reduce health disparities in our nation's most medically underserved populations, including the unmet needs of our rural residents (DeLeon, Wakefield, & Hagglund, 2003). The most common diagnoses seen in CHCs include hypertension, diabetes mellitus, heart disease, asthma, depression, other mood disorders, all mental health, and substance abuse (NACHC, 2005). Approximately 72% and 48% of all health centers provide mental health and substance abuse treatment, respectively. Psychology definitely has multiple roles to play in the administrative, clinical, research, and program development aspects within the CHC model of health-care delivery and should continue to advocate for its role in this clinical setting, in order to provide integrative, whole-person health care for a significant majority of medically underserved populations across the nation.

Initiatives at the national and state levels have reinforced the relevance, benefits, involvement, and sustainability of psychologists in CHCs. The following excerpt, written more than a decade ago, from the Institute of Medicine's "Primary Care: American's Health in a New Era" (1996) speaks to the need for a profession such as psychology to expand beyond

its traditional boundaries and definitions of practice and join with other health-care providers in attempts to improve the status quo of our nation's health-care system:

Psychiatry itself, in its recent preoccupation with brain biology and psychopharmacology, has evolved in a way that is rather unhelpful to generalists. This is not to minimize the enormous value of this orientation, but to point out the vacuum that it has created. Primary care clinicians have lost a theoretical framework for understanding the human predicament and giving meaning to symptoms. Today, there is no coherent medical psychology that is taught in every medical school. With certain important exceptions, psychiatrists are most often called into service to prescribe or monitor psychotropic drugs or to make difficult diagnostic decisions about seriously disturbed patients. This leaves the primary care clinician without support when she or he is trying to understand and deal with the "ordinary" mental distress, disorders, and illnesses encountered in the daily practice of primary care. (Institute of Medicine, 1996, p. 299)

#### **PSYCHOLOGISTS IN COMMUNITY HEALTH CENTERS**

Psychologists who work in CHCs should be able to provide general, broad-based assessment and treatment services, as well as specialty care in the areas of health psychology, behavioral medicine, and psychopharmacology, in order to function effectively and efficiently (Garcia-Shelton & Vogel, 2002). As in other primary care settings, working in a CHC requires psychologists to possess skill sets that facilitate integrative and collaborative practice within a primary health care team often consisting of medical doctors, nurse practitioners, physician assistants, medical assistants, psychiatrists, social workers, and community outreach workers, as well as administrative, fiscal, and billing staff. A sizable literature on primary care psychology and integrated behavioral health care informs the practice of psychologists who work in CHCs (American Psychological Association, 1998; see special section reviews in *Professional Psychology: Research and Practice*, 2003, 2005; McDaniel, Belar, Schroeder, Hargrove, & Freeman, 2002; O'Donohue, Byrd, Cummings, & Henderson, 2005; Pruitt, Klapow, Epping-Jordan, & Dresselhaus, 1998; Robinson, 1998). A difference that may be unique to CHCs, however, is the focus on serving medically underserved populations who typically live in rural areas. Community health centers face multiple challenges, including but not

limited to high turnover rates of providers, reduced access to specialty medical care, and patient populations that may be broadly compromised across a variety of health, cultural, and socioeconomic indices. Using Hawaii as an example, the Hawaii Primary Care Association (HPCA, 2006) described their CHC patient profile as: 29% Native Hawaiian, 20% Asian, 25% Caucasian, 14% other Pacific Islander. Fifteen percent of these patients needed interpreters when seeking care, 71% had incomes below federal poverty levels, 74% were rural, 30% were uninsured, and 40% were underinsured (Medicaid or QUEST); 10,700 of these patients were homeless. Anxiety, depression, and adjustment disorders—often in conjunction with domestic violence, substance abuse, homelessness, and chronic diseases—remain among the top mental/behavioral health problems treated. In 2005, the HPCA reported that 70% of Hawaii's CHC patients were in need of behavioral health interventions; however, only 11% actually received these services (demographic and clinical statistics across all 14 CHCs in Hawaii can be found at <http://www.hawaiipca.net/chcs>). Thus, although the knowledge and skills of psychologists working in primary care apply to CHCs, service planning and practice in such settings brings forth distinct challenges.

Behavioral health program objectives, service delivery, and integration models within Hawaii's CHCs are described in this section. These descriptions reveal that, although foundational elements exist to inform the services provided across CHCs, services provided in each CHC must be adapted to meet specific community needs. A saying made popular among those who have been involved in this expansion work is, "one size fits... only one size." Examples of specific foundational CHC/behavioral health program objectives have included the following: (a) to improve access to medical and behavioral health care, (b) to provide culturally appropriate services and, (c) to reduce health disparities in medically underserved populations. To carry out these objectives, behavioral health service delivery models strive to be evidence-based, accessible, and responsive to community and clinic needs. In most cases, service delivery models evolve over time as a psychologist "works in" to the clinic setting, conducts needs assessments, finds common interests, and builds and eventually assembles the behavioral health service delivery model into the most responsive, relevant, and reliable it can be for that particular CHC.

In general, Hawaiian CHCs have a combined primary behavioral model and colocated specialty

model (Strosahl, 2005), given the “see all comers” and “from cradle to grave” philosophies that comprise CHC patient care. Typically, psychologists have had to begin with the colocated specialty model to initiate behavioral health services in order to generate revenue through traditional third-party reimbursements and then work in a primary behavioral

model as CHC resources for behavioral health (namely, to hire more providers or trainees) increase. Ideally, a CHC should have one full-time equivalent (FTE) traditional psychologist and one FTE primary care psychologist per clinic (i.e., Adult, Women’s, Pediatrics) within a small to moderate-sized health center (i.e., serving 1,500–3,000 patients per year).

### **A Week in the Life of a CHC psychologist**

The following is an account of an actual week in the life of psychologists at the Waimanalo Health Center (WHC) in Hawaii (general information about WHC and the Integrated Behavioral Health [IBH] program can be found at <http://www.waimanalohealth.com>). According to the most recent Uniformed Data Services (UDS, 2008) report, 3,305 total patients were served at WHC (representing a 5% increase from 2007) by medical and behavioral health staff. Medical staff positions include family physicians (2.34 FTE), pediatrician (1.00), nurses (1.50), nurse practitioner (0.04), and other medical personnel (7.16). In addition, there is a nutritionist (0.42 FTE), case manager (1.01), patient community education specialist (0.97), outreach workers (1.51), and eligibility assistance workers (1.01). Of the patients served, 39.7% were male and 60.3% were female (report year January 1, 2008–December 31, 2008). WHC patients by race included, 47% Native Hawaiian, 20% White, 15% other Pacific Islander, 12% Asian, and 6% other. With regard to insurance status, 33% of the WHC patients served in 2008 were uninsured, 43% received Medicaid, 6% received Medicare, and 18% had private commercial insurance. There was a 12% increase in uninsured patients served compared to 2007. The most common medical diagnosis by encounter was for diabetes mellitus, followed by hypertension, asthma, and heart disease. Depression and/or other mood disorders was the primary mental health diagnosis by encounter, followed by anxiety (including post-traumatic stress disorder [PTSD]), and attention deficit-hyperactivity disorder (ADHD). There were 2,121 behavioral health clinical encounters for a total of 338 patients.

In IBH, there are two part-time staff psychologists (.6 FTE each), and one or two practicum students, one or two interns, and one or two post-doctoral fellows at any given point in time. Psychologists are colocated within the health center in a clinic that has a waiting area, an office manager, three individual offices, and one group conference room. This space allows psychologists to see patients for traditional appointments consisting of 30- to 45-minute sessions, while at the same time being steps away from the other primary care clinics (Adult, Women’s, Pediatrics) to receive same-day, warm hand-off referrals. In addition, one psychologist or trainee is assigned to the three primary care clinics for 4-hour time blocks, which means that traditional therapy appointments are not made during this time, in order to have a behavioral health provider available to primary care physicians at all times throughout the week. The psychologist or trainee who is scheduled for primary care will not only be the first contact for a warm hand-off referral, but is also present in the primary care clinic to follow-up on all behavioral health screenings (i.e., depression, tobacco use), as well as chronic disease management initiatives that have identified behavioral health as an important part of the patient’s care (i.e., diabetes, hypertension).

### **Clinical Care**

As with any clinical practice, seeing patients is of utmost priority. WHC psychologists strive to see at least eight patients per day to provide general behavioral health service delivery, including traditional individual therapy, group interventions, and child and family interventions for mental health concerns, as well as primary care behavioral health including chronic disease management, smoking cessation, weight management, chronic pain management, psychopharmacology consultation, and medication monitoring. Collaborating and communicating with other primary care providers (namely, physicians, nurses, medical assistants, and outreach workers) happens frequently throughout the day (both in person and through the electronic medical record system) to support patient care in the form of bidirectional referrals, consultations, and following-up regarding important aspects of treatment. On average, primary care providers refer approximately two to four patients to IBH a day. During primary care blocks of time, psychologists

conduct screening for depression and tobacco use, and undertake brief psychological interventions for either mental health or chronic disease management in conjunction with the patient's primary care visit. The screening and intervention focuses on identifying individuals in need who do not ordinarily access behavioral health services, utilizing motivational interviewing strategies to engage them in treatment in a way that circumvents the stigma of mental health services, providing early intervention to prevent the need for more intensive services, and keeping difficult-to-engage/treat individuals in needed behavioral health services until short- and/or long-term treatment goals are met. Depending on the patient's situation, ongoing visits can either occur in primary care exclusively or patients may schedule for follow-up appointments with the psychologist in behavioral health. One of the important benefits of providing this type of primary care intervention is the support it offers to primary care physicians who otherwise have to manage health care for individuals with complex psychosocial issues on their own. In this way, the integrated behavioral health intervention helps not only the patient, but also prevents primary care provider burnout.

### **Training and Supervision**

The WHC has established memorandum of agreements with two local training programs, I Ola Lāhui and TAMC. Thus, WHC psychologists engage in both training and supervision of psychology trainees on a daily basis. As stated earlier, there are currently one to three trainees present on any given day, except Fridays. Psychologists share training and supervision responsibilities, and together will provide a total of 5 hours per week of direct supervision. Training often takes place in vivo, as there is not much time to set aside didactic training in addition to direct supervision in the primary care setting. Thus, trainees will observe psychologists conducting therapy with patients as needed, cofacilitating groups, and participating with psychologists in clinic/staff meetings.

Productivity data taken after the first year of I Ola Lāhui trainees alone (6-month, 3-day/week rotation at WHC) indicated services provided to over 274 individuals and families, with 1,080 total patient encounters. On average, patients attended an average of 3.9 sessions with trainees across all ethnic groups. Interestingly, although the research literature in this area would suggest that ethnic minority group members have higher attrition from behavioral health services, Native Hawaiian patients using these behavioral health services stayed for an average of 4.2 sessions. Trainees have also been well received by the WHC administration and clinical staff, who greatly value the work they perform and have been very supportive of continuing this training component for the past 8 years.

### **Clinical Research**

Blocks of time are not scheduled for research only. However, because psychologists are invested in program development and evaluation, they do gather and track patient outcome data on a regular basis. These data are used both to inform clinical practice and to describe IBH productivity and patient outcomes.

### **Administration**

Psychologists attend monthly staff meetings, provider meetings, provider huddles, and clinic huddles, which are all interdisciplinary and designed to enable discussions among providers and administrative staff regarding multiple topics, including clinic operations (i.e., policy and procedures), program development initiatives, health center updates, financial reports, quality improvement/quality assurance, and general announcements.

Thus, psychologists at WHC spend the majority of their week engaged in clinical patient care, 50% of which takes place within the primary care clinics, mainly Adult Medicine and Women's Health. To maximize work volume and maintain a workforce development training capacity, psychologists also supervise psychology trainees from two local psychology training programs on a weekly basis (totaling 4 days/week). Administrative responsibilities also assume dedicated blocks of time whereby psychologists engage with other health-center staff and providers to support daily center operations, as well as facilitate positive and productive working relationships. Finally, program development and evaluation is the type of research that characterizes this aspect of professional practice in the life of a CHC psychologist.



### *Hawaii CHC Initiatives*

In the late 1990s, Hawaii's community health-care leaders and psychologists from the TAMC Department of Psychology, convened to discuss innovative ways that would combine federal and state resources to enable greater health-care access for Native Hawaiians in rural communities (Oliveira, Austin, Miyamoto, Kaholokula, Yano, & Lunasco, 2006). Native Hawaiians continue to suffer significant health disparities compared to other ethnic groups in Hawaii, largely due to risk factors that include acculturative stress and access to care challenges (Blaisdell, 1993; Braun, Yee, Browne, Mokuau, 2004; Hope & Hope, 2003; Johnson, Oyama, LeMarchand, & Wilkens, 2004). Native Hawaiians have high prevalence rates of certain chronic diseases such as obesity, diabetes, and cardiovascular disease; higher health risk behaviors such as tobacco and/or illicit drug use; and are overrepresented in the under- and uninsured, poverty, and homelessness groups, as well as in rural, medically underserved areas (Banks, Buki, Gallardo, & Yee, 2007; Oliveira et al., 2006). In 2000, the civilian post-doctoral psychology training program began at TAMC with the express interest of increasing access to culturally appropriate behavioral health care for Native Hawaiians in rural, medically underserved areas in order to enhance the existing health-care system and reduce significant health-care disparities that have plagued the indigenous population of Hawaii for decades (Hope & Hope, 2003).

Partnerships established between TAMC, Hawaii's CHCs, and Native Hawaiian Health Care System clinics (NHHCS) have led to successful outcomes from both service delivery and training perspectives. In terms of service delivery, psychologists have either started or expanded existing behavioral health services in 11 of the 14 CHCs and in one of the five NHHCS clinics. In 2009, 12 psychologists were employed in either a part- or full-time basis, and 13 psychologists in training were present. The TAMC training model was instrumental in the development of two additional full-time training programs in medically underserved communities via colocation and integration within CHCs and NHHCS: I Ola Lāhui Rural Hawaii Behavioral Health Program, and the Waianae Coast Comprehensive Health Center Psychology Training Program. Both programs are members of APPIC in good standing; the former also seeks APA accreditation and is currently in the accreditation process. One of the current authors is a faculty member of the I Ola Lāhui Rural Hawaii Behavioral Health Program and will thus further

describe this training program to highlight an example of a nontraditional psychology training program that aims to be part of the systematic change necessary to address pressing cultural, economic, societal, and political issues that impact our nation's poorest and most vulnerable populations.

### *I Ola Lāhui Rural Hawaii Behavioral Health Program*

I Ola Lāhui is a Hawaiian phrase that means, "So that the people will live and thrive." I Ola Lāhui is a clinical psychology training program whose mission is to provide culturally minded evidence-based behavioral health care that is responsive to the needs of medically underserved and predominantly Native Hawaiian rural communities. In recognition of Hawaii's urgent need for more quality behavioral/mental health care, I Ola Lāhui is committed not only to providing services but also to evaluating the effectiveness of the services provided and training future providers, with the hope of making a substantial contribution to the health and well-being of our *Lāhui* (people). I Ola Lāhui was incorporated in June 2007, and received its nonprofit 501(c)3 designation status on July 11, 2007. During the first year of internship training, I Ola Lāhui participated as a site in the APA accredited Argosy University/Honolulu Internship Consortium, and applied for its own APPIC membership in 2007. Official membership status was granted on November 27, 2007. Intake of the first cohort of interns as an independent training site occurred in June 2008 for the 2008–2009 training year. I Ola Lāhui sees the vital importance of offering training experiences for future psychologists that incorporate the domains expressed in this chapter, such as advocacy and public policy, interdisciplinary/primary care psychology, integrated behavioral health care, and prescriptive authority for psychologists. I Ola Lāhui is nontraditional in that it serves as both administrative and training functions, without being housed within a larger institutional setting. It is among the first of its kind to take psychology training beyond the proverbial four walls in order to answer the societal call to improve health provider shortages, access issues, and health disparities.

### **Personal Relationships**

#### ***Advocating for Effective Treatment: Autistic Spectrum Disorders***

Building personal relationships is critically important in the public policy process. This includes forming relationships with legislators and their staff,

with directors and staff at federal and state agencies, with professionals with related goals, and with individuals who are looking for solutions to pressing problems. This skill should be easily acquired by clinical psychologists who are experts at building rapport, empathic listening, and establishing bonds with others.

What is the value of these relationships? First, they allow psychologists to learn about issues that are of concern to planners and recipients of health-care services. The psychologist has the opportunity to broaden a legislator's (who may have a personal interest, such as a family member or constituent struggling with mental illness) understanding of the issue and its impact on the people the legislator is trying to serve. The personal relationships also allow the psychologist to join in proposing and working on solutions on a more informal basis. Early involvement in the problem solution helps to ensure the consideration of factors important to psychology, such as the impact of proposed legislation/programs on different minority or disenfranchised groups. Personal contacts also allow the psychologist to gain credibility as a professional with information and expertise in areas of concern and one interested in assisting in the complex, rough-and-tumble, and sometimes frustrating process of public policy. Over time, through these personal contacts, psychologists can become known as reliable and informative advisors; as they acquire referent authority, they can have more influence when there are particular issues for which psychologists are advocating.

A network of personal relationships and professional contacts is key to getting things done, particularly in major initiatives involving large-scale shifts in policy or large budgets. This became exceedingly evident to one of the authors as she developed a center to provide autism services and research. Autism spectrum disorders (ASD) are neurodevelopmental disorders commonly diagnosed before the age of 3, now estimated to affect one in 110 children in the United States (Centers for Disease Control [CDC], 2009). The major characteristics of ASDs are impaired social and language skills and a restricted repertoire of activities and interests. In addition, many individuals with autism have mental retardation and may exhibit self-injurious, stereotypical, and/or aggressive behaviors. Because of the recent exceedingly rapid increase in the incidence of autism (CDC, 2007) many families, schools, health facilities, and social service agencies are increasingly overwhelmed by the treatment needs of this population. In general, such agencies have few resources to

provide the intensive behavioral treatments and other interventions that have been shown to be the most efficacious with the disorder.

Clearly a need existed, and with a doctoral program in clinical psychology and a large master's program in applied behavior analysis (ABA), the School of Psychology at Florida Institute of Technology had a wealth of faculty and student resources that could be utilized to address significant needs of individuals with ASDs and those who care for them. It took an assemblage of many people working together—many with long-term personal relationships—to establish a center that would bring these resources to affected families. These included a trustee of the university and his wife, who had encountered the struggles of finding treatment for their son with ASD and who provided major funding for the center; the district's congressman, a physician committed to helping children with ASD who was made aware of the university's capabilities in this area and worked to secure Health Resources Services Administration (HRSA) funding for the center; a dedicated community advisory group, made up of parents and professionals caring for children with ASD, who helped develop the mission and vision of the center and build community awareness and support; school teachers, administrators, and other health-care professionals who flocked to training programs given by the center and provided vocal support for its establishment; and local media, who assisted the center in bringing information about autism to their readers/audiences and described the center as a valuable community asset.

With key input from the community it aimed to serve, the center developed a mission that was broader than it might have been if developed only by the university's school of psychology. There was a call for a "one-stop" center, which would include multidisciplinary services and a seamless transition among services—attributes that the public also are calling for in their general health-care settings.

The center has the benefit of being a major treatment center under the direction and control of a psychology program, with a priority on providing behavioral and psychological services, as opposed to more typically encountered programs housed in medical settings. This provides high visibility to the field of psychology as the primary profession for autism treatment, training, and applied research. This type of self-determinism is a hallmark of professions (Abbott, 1988; Larson, 1977) and is growing evidence of psychology's rising prominence as a "health" profession.

The center provides training to clinical psychology and behavior analysis students, and by doing so hopes to address the significant manpower shortage of professionals able to deliver autism services. The center also allows complete control of the training experiences provided to the students. This permits rapid adoption of new evidence-based treatment methods and the capability of developing and evaluating new programs to deal with this complex disorder.

Ongoing operation of the center requires a sustainable funding source. With this in mind, the school has been involved in recent legislative initiatives to require private insurance companies pay for autism services, specifically ABA interventions. With the strong backing of the advocacy group, *Autism Speaks*, by May 2010, these efforts have been successful in 19 states, including Florida (Autism Speaks, 2010). Through these advocacy efforts, stable funding is available not only for the Center but also for the services that the graduates of the school will provide in the future.

The autism center is an example of how psychology can be involved in multiple ways in the public policy process. A pressing societal need was identified; psychological resources were available and willing to be used to address it; a workable proposal was developed by the university and those affected by autism; contact with legislators informed them of the problem and possible solutions; community support was gathered and used to secure private and federal funding; partnerships with like-minded groups increased advocacy for support for autism services; and state and federal initiatives were obtained to develop and sustain the center. The network of personal relationships among the people involved in the center's development was critical to garnering support and action. It also required persistence and passion—and the next factor to be discussed: a long-term perspective for developing the center.

### **Long-term Perspectives: Moving Toward a Primary Health-care Profession**

As previously stated, effective involvement in the policy process requires a long-term perspective. The profession must determine its long-term goals and plan and carry out the strategies to reach them. What is clinical psychology's long-term goal? There probably is no single answer that would be unanimously adopted by all in the field, but certain elements of a future vision would probably be agreed upon by many: being recognized as the most qualified behavioral health provider, having the resources to conduct psychological research and implement

psychological services, and inclusion as essential professionals in the solution of society's pressing problems. The more unified clinical psychology can be in the delineation of these long-term goals, the more effective the profession will be as a partner in the policy process.

We offer this long-term goal: that psychology be recognized as a front-line, primary health profession (DeLeon, Brown, & Kupchella, 2003). Such a perspective indicates that psychology be recognized as contributing not only to better mental health care, but also to better general health care, and it would be seen as an essential resource in efforts to improve healthy functioning. This perspective is not new, but has yet to be fully integrated into public policy.

Over 35 years ago, the government of Canada recognized the importance of good health for quality of life and the value of a broadened conceptualization of health care:

Good health is the bedrock on which social progress is built. A nation of healthy people can do those things that make life worthwhile, and as the level of health increases so does the potential for happiness. The Governments of the Provinces and of Canada have long recognized that good physical and mental health are necessary for the quality of life to which everyone aspires. Accordingly, they have developed a health care system which, though short of perfection, is the equal of any in the world. For these environmental and behavioural threats to health, the organized health care system can do little more than serve as a catchment net for the victims. Physicians, surgeons, nurses and hospitals together spend much of their time in treating ills caused by adverse environmental factors and behavioural risks. . . . It is therefore necessary for Canadians themselves to be concerned with the gravity of environmental and behavioural risks before any real progress can be made. . . . The Government of Canada now intends to give human biology, the environment, and lifestyle as much attention as it has to the financing of the health care organization so that all four avenues to improved health are pursued with equal vigour. Its goal will continue to be not only to add years to our life but life to our years, so that all can enjoy the opportunities offered by increased economic and social justice. (Lalonde, 1974, pp. 5-6).

Similar sentiments were expressed a few years later by the U.S. government:

(L)et us make no mistake about the significance of this document. It represents an emerging

consensus among scientists and the health community that the Nation's health strategy must be dramatically recast to emphasize the prevention of disease. . . . But we are a long, long way from the kind of national commitment to good personal health habits that will be necessary to change drastically the statistics about chronic disease in America. . . . (U.S. Dept. of Health, Education, and Welfare [HEW], 1979, pp. vii, ix).

Prevention is an idea whose time has come. We have the scientific knowledge to begin to formulate recommendations for improved health. . . . (O)f the ten leading causes of death in the United States, at least seven could be substantially reduced if persons at risk improved just five habits: diet, smoking, lack of exercise, alcohol abuse, and use of antihypertensive medication. . . . (A)lthough people can take many actions to reduce risk of disease and injury through changes in personal behavior, the health consequences are seldom visible in the short run. . . . To imply, therefore, that personal behavior choices are entirely within the power of the individual is misleading. . . . (HEW, 1979, pp. 7, 14, 18).

Beginning in early childhood and throughout life, each of us makes decisions affecting our health. They are made, for the most part, without regard to, or contact with, the health care system. Yet their cumulative impact has a greater effect on the length and quality of life than all the efforts of medical care combined (HEW, 1979, p. 119).

Challenge To The Nation. Americans are becoming healthier people—but more can be achieved. This report has described and documented the potential for better health at each stage of life. It has set forth specific goals to be attained over the next decade, and a full agenda of possible actions to be taken. To reach these goals will require a national effort and the commitment of people extending far beyond what we traditionally consider the health sector. No single segment of society can accomplish them alone. Unnecessary death and disability can be prevented—and better health can be maintained—only through a partnership that involves the serious commitment of individual citizens, the communities in which they live, the employers for whom they work, voluntary agencies, and health professionals. Government agencies at all levels must encourage and bolster their efforts. How to move expeditiously toward the goals of prevention is the challenge for the years to come (HEW, 1979, p. 141).

The Institute of Medicine (IOM) was established in 1970 by the National Academy of Sciences to enlist distinguished members of the appropriate professions in the examination of policy matters pertaining to the health of the public. Acting as a health policy advisor to the federal government, it has recently issued a series of reports calling for major and unprecedented changes in both the structure and focus of our nation's health-care system.

The heaviest burdens of illness in the United States today are related to aspects of individual behavior, especially long-term patterns of behavior often referred to as 'lifestyle.' As much as 50% of mortality from the ten leading causes of death in the United States can be traced to lifestyle. Regardless of the health-risky behavior or the disease, treatment and prevention should be major research issues for the biobehavioral sciences. Attention is being given to methods of altering the burden of illness by changing behavior. This requires first that changes in behavior can be shown to result in improved health and second that effective methods be found to help large numbers of people to make such changes. Much remains to be learned, but the existing research base provides strong evidence that the biobehavioral sciences can make substantial and unique contributions to dealing with much of the disease that now constitutes the main burden of illness in this country.

(Hamburg *et al.* 1982, p.p. 3,16).

Psychology appears ready to respond to this broadened perspective on health care, as reflected in these statements by former APA President Ron Levant, formerly Dean of the Buchtel College of Arts and Sciences at the University of Akron:

Mind-Body dualism, is, in a word, bankrupt. We need to transform our biomedical health care system to one based on the biopsychosocial model, which will emphasize *collaboration* between medical and behavioral healthcare providers, and the *integration* of psychology into the very heart of health care. In order to reform the U.S. health-care system along these lines we must appeal directly to the public and to decision-makers, not alone, but in collaboration with other like-minded physician, provider, consumer, and policy groups. We need to articulate the public's dissatisfaction with the biomedical health-care system that results in their care provider not having time to listen to all of their concerns or offering what amounts to limited care. We need to put forth a vision of integrated care, a care system

that offers Health Care for the Whole Person. This was the second of my initiatives as President of APA. It is one very concrete example of how psychology can address urgent public needs and make psychology a household word. (Levant, 2006, pp. 387–388).

The 21st century will be an era of educated consumers utilizing the most up-to-date technology to ensure that they and their loved ones will have timely access to data-based, objective standards of care, provided by technology-literate, interdisciplinary-oriented health-care providers. A recent report from the IOM concluded that not only is the health-care system in its current configuration incapable of engaging in effective future planning, inasmuch as we devote most of our energy toward the management, not the prevention of chronic disease. The lack of integration across provider groups and delivery settings was also seen as a significant impediment in the development of effective and economical health-care systems. The IOM saw behavioral interventions regarding diet, exercise, and substance abuse as key in a new mindset of prevention. Interdisciplinary coordination, using providers skilled in the latest in medical informatics to efficiently share information, track interventions and outcomes, and manage costs was also seen as essential (IOM, 2003a, 2003b).

Each year, more than 33 million Americans use health-care services for their mental health problems or conditions resulting from their use of alcohol, inappropriate use of prescription medications, or, less often, illegal drugs. In 2006, *Improving the Quality of Health Care for Mental and Substance-Use Conditions: Quality Chasm Series* was released, in which the IOM concluded that their Quality Chasm framework is, in fact, applicable to health care for mental and substance-use conditions. This newest report noted that these conditions are the leading cause of combined disability and death for women and the second highest for men. “Effective treatments exist and continually improve. However, as with general health care, deficiencies in care delivery prevent many from receiving appropriate treatments. That situation has serious consequences—for people who have the conditions; for their loved ones; for the workplace; for the education, welfare, and justice systems; and for our nation as a whole” (IOM, 2006, p. 1). Five psychologists served on the committee issuing this report, and the assistance of Jalie Tucker, then-Chair of the APA Board of Professional Affairs, was expressly noted.

Supporting this perspective, the President of the IOM declared: “As the Committee has concluded, improving our nation’s general health, and the quality problems of our general health care system, depends upon equally attending to the quality problems in health care for mental and substance-use conditions. . . . Dealing equally with health care for mental, substance-use, and general health conditions requires a fundamental change in how we as a society and health-care system think about and respond to these problems and illnesses. Mental and substance-use problems and illnesses should not be viewed as separate from and unrelated to overall health and general health care. Building on this integrated concept, this report offers valuable guidance on how all can help to achieve higher-quality health care for people with mental or substance-use problems and illnesses. To this end, the Institute of Medicine will itself seek to incorporate attention to issues in health care for mental and substance-use problems and illnesses into its program of general health studies” (IOM, 2006, p. x).

Becoming front-line primary health professionals is our long-term perspective for the field. As just seen, voices from outside the profession are articulating the same need for such a front-line behavioral health professional. The time seems ripe for taking strides to achieve this vision. Many opportunities will exist for doing so as a new administration undertakes long-overdue structural changes in the American health-care system. Psychology must forcefully articulate its vital role in health care and what it can do to meet the current and future health-care challenges of the populace. Only by doing so can the profession be seen as an integral component of a new health-care delivery system.

## Conclusion

The challenge for psychology’s training and service delivery leaders in the 21st century will be designing clinical initiatives and training opportunities that are responsive to the unprecedented challenges that society at large will be facing. To do so effectively, psychologists must become more involved in the public policy process. As we have suggested, an important element of this role will be to ensure that those who establish our nation’s health and educational policies become intimately aware of psychology’s potential contributions to their underlying mission. Over the years, there have always been a number of specific legislative and administrative initiatives (e.g., inclusion in the Department of Defense CHAMPUS and later TRICARE reimbursement

programs, the ability to bill under Medicare [most recently the expanded ability to bill for Evaluation and Management codes], Graduate Medical Education, and the federal Criminal Justice program) of definite and concrete interest to professional psychology. In addition to focusing on these specific programs, we would suggest that even more important in the long run for every health-care profession is building an institutional appreciation and capacity for understanding how government leaders (and increasingly those of the private sector) systematically seek to address society's most pressing needs. Such knowledge reveals past strategies and indicates how new initiatives could be designed. Participation in this decision-making process requires proactive leadership on the part of psychologists. And what better way to learn where proactive leadership is necessary than by studying the lessons of the past from our public health colleagues (DeLeon & Pallak, 1982)?

Clinical psychology can have a larger and stronger influence on public policy if such a role is embraced by the profession. As we have illustrated in this chapter, it will require patience while being persistent, forging partnerships and building personal relationships, and most importantly maintaining the long-term perspective of what clinical psychology can be and can contribute to society. It is a long-term commitment. The time to renew that commitment is now.

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# Research Methods in Clinical Psychology

Philip C. Kendall *and* Jonathan S. Comer

## Abstract

This chapter describes methodological and design considerations central to the scientific evaluation of treatment efficacy and effectiveness. Matters of design, procedure, measurement, data analysis, and reporting are examined and discussed. The authors consider key concepts of controlled comparisons, random assignment, the use of treatment manuals, integrity and adherence checks, sample and setting selection, treatment transportability, handling missing data, assessing clinical significance, identifying mechanisms of change, and consolidated standards for communicating study findings to the scientific community. Examples from the treatment outcome literature are offered, and guidelines are suggested for conducting treatment evaluations that maximize both scientific rigor and clinical relevance.

**Keywords:** Measurement, random assignment, randomized clinical trial (RCT), treatment evaluation, treatment outcome

Central to research in clinical psychology is the evaluation of treatment outcomes. Research evaluations of the efficacy and effectiveness of therapeutic interventions have evolved from single-subject case histories to complex multimethod experimental investigations of carefully defined treatments applied to genuine clinical samples. The evolution is to be applauded.

In this chapter, we focus on how best to arrange these latter complex evaluations in a manner that maximizes both scientific rigor and clinical relevance. Although all of the ideals are rarely achieved in a single study, our discussions provide exemplars nonetheless. We encourage consistent attempts to incorporate these ideals into research designs, although we recognize that ethical and logistical constraints may compromise components of methodological rigor. We organize our chapter around the things that matter: (a) matters of design, (b) matters of procedure, (c) matters of measurement, (d) matters of data analysis, and (e) matters of reporting.

## Matters of Design

To adequately assess the causal impact of a therapeutic intervention, clinical researchers use control procedures derived from experimental science. The objective is to separate the effects of the intervention from changes that result from other factors, which may include the passage of time, patient expectancies of change, therapist attention, repeated assessments, and simply regression to the mean. These extraneous factors must be “controlled” in order to have confidence that the intervention (i.e., the experimental manipulation) is responsible for any observed changes. To elaborate, we turn our attention to the selection of control conditions, random assignment, evaluation of response across time, and comparison of multiple treatments.

## Selecting Control Condition(s)

Comparisons of persons randomly assigned to different treatment conditions are required to control for factors other than the treatment. In a “controlled”

treatment evaluation, comparable persons are randomly placed into either the treatment condition (composed of those who receive the intervention) or the control condition (composed of those who do not receive the intervention), and by comparing the changes evidenced by the members of both conditions the efficacy of therapy over and above the outcome produced by extraneous factor (e.g., passage of time) can be determined. However, deciding the nature of the control condition (e.g., no-treatment, wait list, attention-placebo, standard treatment-as-usual) is not simple (see Table 4.1 for recent examples).

When comparison clients are assigned to a *no-treatment* control condition, they are administered

the assessments on repeated occasions, separated by an interval of time equal in length to the therapy provided to those in the treatment condition. Any changes seen in the treated clients are compared to changes seen in the nontreated clients. When treated clients evidence significant improvements over nontreated clients, the treatment is credited with producing the changes. This no-treatment procedure eliminates several rival hypotheses (e.g., maturation, spontaneous remission, historical effects, regression to the mean). However, a no-treatment control condition does not guard against other potentially confounding factors, including client anticipation of treatment, client expectancy for change, and the act of seeing a therapist—independent of what specific

**Table 4.1** Types of control conditions in treatment outcome research

Control condition	Definition	Recent example in literature	
		Description	Reference
No-treatment control	Control clients are administered assessments on repeated occasions, separated by an interval of time equal to the length of treatment.	Refugees in Uganda diagnosed with PTSD were randomly assigned to active trauma-focused treatments or a control condition. Individuals in the control condition received no treatment but were assessed on repeated occasions.	Neuner et al. (2008)
Waitlist control	Control clients are assessed before and after a designated duration of time, but receive the treatment following the waiting period. They may anticipate change due to therapy.	Anxious children and their parents were randomly assigned to group treatment, bibliotherapy, or a 12-week waitlist control condition.	Rapee et al. (2006)
Attention-placebo/ nonspecific control	Control clients receive a treatment that involves nonspecific factors (e.g., attention, contact with a therapist)	Children with anxiety disorders were randomly assigned to cognitive-behavioral treatments or a control condition in which they received weekly attention and psychoeducation.	Kendall et al. (2008)
Standard treatment/routine care control	Control clients receive an intervention that is the current practice for treatment of the problem under study.	Families were randomly assigned to either a parent-management training or a regular services comparison group.	Ogden & Hagen (2008)

treatment the therapist actually provided. Although a no-treatment control condition is sometimes useful in the earlier stages of evaluating a treatment, other control procedures are preferred.

Utilizing a *waitlist condition*—a variant of the no-treatment condition—provides some additional control. Clients in the waitlist condition expect that after a specified period of time they will be receiving treatment, and accordingly may anticipate changes due to this treatment, which may in turn affect the course of their symptoms. The changes that occur for wait-listed clients are evaluated at regular intervals, as are those of the clients who received therapy. If we assume the clients in the waitlist and treatment conditions are comparable (e.g., gender, age, ethnicity, severity of presenting problem, and motivation), then we can make inferences that the changes in the treated clients over and above those also manifested by the waitlist clients are likely due to the intervention rather than to any extraneous factors that were operative for both the treated and the waitlist conditions (e.g., expectations of change). The important demographic data are gathered so that statistical comparisons can be conducted to determine condition comparability. Waitlist conditions, like no-treatment conditions, are of less value for treatments that have already been examined versus somewhat “inactive” comparisons.

There are potential limitations associated with waitlist controls. First, a waitlist client might experience a life crisis that requires immediate professional attention. For ethical purposes, the status of control clients should be monitored to ensure that they are safely able to tolerate the treatment delay. In the event of an emergency, the provision of professional services will compromise the integrity of the waitlist condition. Second, it is preferable that the duration of the control condition be the same as the duration of the treatment condition(s). Comparable durations help to ensure that any differential changes between the conditions would not be due to the differential passage of time. However, suppose an 18-session treatment takes 4–5 months to provide—is it ethical to withhold treatment for 4–5 months as a wait period (see Bersoff & Bersoff, 1999)? With long waitlist durations, the probability of differential attrition arises, a situation that could have a compromising effect on study results. If rates of attrition from a waitlist condition are high, the sample in the control condition may be sufficiently different from the sample in the treatment condition, and no longer representative of the larger group (e.g., the

smaller waitlist group at the end of the study now only represents clients who could tolerate and withstand a prolonged period without treatment).

No-treatment or waitlist controls provide initial evidence of treatment efficacy but are less important once a treatment has, in several evaluations, been found to be more effective than “inactive” control conditions. *Attention-placebo* (or nonspecific treatment) control conditions are an alternative to the waitlist control that rule out some threats to internal validity, and control for the effects that might be due simply to meeting with and getting the attention of a therapist. In addition, these participants receive a description of a treatment rationale (an explanation of the treatment procedures offered at the beginning of the intervention). The rationale provided to attention-placebo clients mobilizes an *expectancy* of positive gains. (For discussion of treatment elements separate from the proposed active components see Hollon & DeRubeis, 1981; Jacobson & Hollon, 1996a, 1996b).

Attention-placebo conditions enable clinical researchers to identify the changes produced by specific therapeutic strategies over and above nonspecific strategies. For example, in a recent randomized clinical trial (RCT) (Kendall et al., 2008), children with anxiety disorders received cognitive-behavioral treatment (CBT; either individual or family CBT) or a manualized family education, support, and attention (i.e., FESA) condition. Individual and family-based CBT was found to be superior to FESA in reducing the children's principal anxiety disorder. Given the nature of the FESA condition one was able to infer that the gains associated with receiving CBT are not likely attributed to “common therapy factors” such as learning about anxiety/emotions, experience with an understanding therapist, attention to and opportunities to discuss anxiety.

Despite the advantages of attention-placebo controls, they are not without limitations (Parloff, 1986). Attention placebos must be devoid of therapeutic techniques hypothesized to be effective, while at the same time instilling positive expectations in clients and providing professional contact. To offer such an intervention in the guise of effective therapy is acceptable when clients are fully informed in advance and sign informed consent forms acknowledging their willingness to take a chance on receiving either a psychosocial placebo condition. Even then, an attention-placebo condition may be difficult for the therapist to accomplish.

Methodologically, it is difficult to ensure that therapists who conduct attention-placebo conditions have the same degree of positive expectancy for client gains as do therapists conducting specific interventions (Kendall, Holmbeck, & Verduin, 2002; O'Leary & Borkovec, 1978). "Demand characteristics" would suggest that when therapists predict a favorable outcome, clients will tend to improve accordingly (Kazdin, 2003). Thus, therapist expectancies may not be equal for active and placebo conditions, reducing the interpretability of the findings. Similarly, clients in an attention-placebo condition may have high expectations at the start, but may grow disenchanted when no specific changes are emerging. If study results suggest that a therapy condition evidenced significantly better outcomes than a attention-placebo control condition, it is important that the researcher evaluate clients' perceptions of the credibility of the treatment and their expectations for change to confirm that clients in the attention-placebo condition perceived the treatment to be credible and expected to improve.

The use of a *standard treatment* (treatment-as-usual) as a comparison condition allows the researcher to evaluate an experimental treatment relative to the intervention that is currently available and being applied (i.e., an existing standard of care). When the standard care intervention and the therapy under study have comparable durations of treatment and client and therapist expectancies, the researcher can test the relative efficacy of the interventions. For example, in a recent RCT (Mufson et al., 2004), depressed adolescents were randomly assigned to interpersonal psychotherapy modified for depressed adolescents (IPT-A) or to "treatment-as-usual" in school-based mental health clinics. Adolescents treated with IPT-A compared to treatment-as-usual showed greater symptom reduction and improvement in overall functioning. Given the nature of their comparison group it can be inferred that the gains associated with IPT-A outperformed the existing standard of care for depressed adolescents in the community.

In standard treatment comparisons, it is important to ensure that both the standard (routine) treatment and the new treatment are implemented in a high-quality fashion (Kendall & Hollon, 1983). Using a standard treatment condition presents advantages over other conditions. Ethical concerns about no-treatment conditions are quelled, given that care is provided to all participants. Additionally, attrition is likely to be minimized and nonspecific factors are likely to be equated (Kazdin, 2003).

## ***Random Assignment***

After comparison conditions have been selected, procedures for assigning participants to conditions must be chosen. *Random assignment* ensures that every participant has an equal chance of being assigned to the active treatment condition or the control condition(s). Random assignment of participants to the active therapy or control conditions and random assignment to study therapists are essential steps toward achieving initial comparability between conditions. However, note that random assignment does not guarantee comparability across treatment conditions—one resultant group may be different on key variables (e.g., age, wealth, impairment) simply due to chance. Appropriate statistical tests can be applied to examine the comparability of participants across treatment conditions.

Problems can arise when random assignment is not applied. Consider a situation in which participants do not have an equal chance of being assigned to the active and control condition. Suppose a researcher were to allow depressed participants to decide for themselves whether to participate in the active treatment or in a waitlist condition. If participants in the active treatment condition subsequently evidenced greater symptom reductions than waitlist participants, one would be unable to rule out the possibility that symptom differences could have resulted from pre-study differences between the participants (e.g., selection bias). Waitlist participants who elected to delay treatment may be individuals not ready to initiate work on their depression symptoms.

Random assignment does not absolutely assure comparability of conditions on all measures, but it does maximize the likelihood of comparability. An alternative procedure, randomized blocks assignment, or assignment by stratified blocks, involves matching prospective clients in subgroups that (a) contain clients that are highly comparable on key dimensions (e.g., initial severity) and (b) contain the same number of clients as the number of conditions. For example, if the study requires two conditions (a standard treatment and a new treatment), clients can be paired off so that each pair is highly comparable. The members in each pair are then randomly assigned to either condition, thus increasing the likelihood that each condition will contain relatively mirror-image participants while retaining the randomization factor. When feasible, randomized blocks assignment of clients to conditions can be a wise research strategy.

## ***Evaluating Response Across Time***

To evaluate the effect of a treatment, it is essential to first evaluate the level of each client's functioning on the dependent variables before the intervention begins. Such pretreatment (or "baseline") assessments provide key data to inform whether clients are comparable at the beginning of treatment (i.e., between-groups comparisons), and whether clients' pretreatment levels of functioning differ significantly from functioning assessed at subsequent assessment points (i.e., within-groups comparisons).

Post-treatment assessments of clients are essential to examine the comparative efficacy of treatment versus control conditions. However, evidence of treatment efficacy immediately upon therapy completion may not be indicative of long-term success (maintenance). Treatment outcome may be appreciable at post-treatment but fail to exhibit maintenance of the effects at a follow-up assessment. It is highly recommended, and increasingly expected (Chambless & Hollon, 1998), that treatment outcome studies include a follow-up assessment. Follow-up assessments (e.g., 6 months, 1 year) are key to demonstrations of treatment efficacy and are a signpost of methodological rigor. For evidence of maintenance, the treatment must have produced results at the follow-up assessment that are comparable to those evident at post-treatment (i.e., improvements from pretreatment and an absence of detrimental change since post-treatment).

Follow-up evaluations can help to identify differential treatment effects. For example, the effects of two treatments may be comparable at the end of treatment, but one may be more effective in the prevention of relapse (see Greenhouse, Stangl, & Bromberg, 1989, for discussion of survival analysis). When two treatments are comparable at post-treatment, yet one has a higher relapse rate, the knowledge gained from the follow-up evaluation is a valuable rationale for selecting one treatment over another. For example, Brown and colleagues (1997) reported on a comparison of CBT and relaxation training as treatments for depression in alcoholism. Using the average (mean) days abstinent and drinks per day as dependent variables, measured at pretreatment and at 3 and 6 months post-treatment, the authors established that, although both treatments produced comparable initial gains, the cognitive-behavioral treatment was superior to relaxation training in maintaining gains.

Follow-up evaluations may also detect continued improvement—the benefits of some interventions may accumulate over time, and possibly expand to

other domains of functioning. Researchers and policy-makers have become increasingly interested in expanding intervention research to consider potential indirect effects on the prevention of secondary problems. We followed-up individuals treated with a cognitive-behavioral treatment for childhood anxiety disorders roughly 7 years later (Kendall, Safford, Flannery-Schroeder & Webb, 2002). These data indicated that a meaningful percentage of treated participants had maintained improvements in anxiety and that positive responders, as compared with less-positive responders, had a reduced amount of substance-use involvement at long-term follow-up (see also Kendall & Kessler, 2002). It is important to note that gains identified at follow-up are best only attributed to the initial treatment after one determines that the participants did not seek or receive additional treatments during the follow-up interval.

As we learn more about the outcomes of treatment, we are intrigued by speculations about the process that takes place in achieving these outcomes. Some researchers are considering therapy process and outcome as intertwined and are assessing change during the course of treatment (i.e., intratreatment) as well as post-treatment and follow-up (e.g., Kazdin, Marciano, & Whitley, 2005; Kendall & Ollendick, 2004; Shirk, Gudmundsen, Kaplinski, & McMakin, 2008; Taft & Murphy, 2007). Repeated assessment of client symptoms and functional change suggests that the first several sessions of treatment constitute the period of most rapid positive change (Howard, Lueger, Maling, & Martiovich, 1993). However, change across several domains of functioning may be phasic and may require more extended treatment. Intratreatment assessments (see Lambert, Hansen, & Finch, 2001) not only permit a fine-grained mapping of the course of change in therapy, but also provide important clues (e.g., Jaycox, Foa, & Morral, 1998) to identify mediators (discussed later in this chapter) of positive or adverse outcomes.

## ***Multiple Treatment Comparisons***

To determine comparative (or relative) efficacy and effectiveness of therapeutic interventions, researchers use between-groups designs with more than one active treatment condition. Between-groups designs are more direct comparisons of one treatment with one or more alternative treatments. Note that sample size considerations are influenced by whether the comparison is between a treatment and a control condition or one treatment versus

another known to be effective treatment (see Kazdin & Bass, 1989).

In multiple treatment comparisons, it is optimal when each client is randomly assigned to receive one and only one kind of therapy. The assignment of clients to conditions should result in the initial comparability of the clients receiving each intervention. As previously mentioned, a randomized block procedure, with participants blocked on an important variable (e.g., pretreatment severity), can be used. It is always wise to check the comparability of the clients in the different treatment conditions on other important variables (e.g., sociodemographic variables, prior therapy experience, treatment expectancies/preferences) before continuing with the evaluation of the intervention. If not all participants are available at the outset of treatment, such as when participants come from consecutive clinic admissions, then the comparability of conditions can be checked at several intervals as the therapy outcome study progresses toward completion.

Comparability across therapists administering the different treatments is essential. Therapists conducting each type of treatment should be comparable in (a) training, (b) professional and clinical experience, (c) expertise in the intervention, (d) allegiance with the treatment, and (e) expectation that the intervention will be effective. One method to control for therapist effects has each therapist conduct each type of intervention with at least one client per intervention. Another viable option is *stratified blocking*, which assures that each intervention is conducted by several comparable therapists. The first method has random assignment of therapists, but is preferred only when therapists are equally expert and positively disposed toward each intervention. For example, it would probably not be a valid test to ask a group of psychodynamic therapists to conduct both a CBT (in which their expertise is low) and a psychodynamic therapy (in which their expertise is high). As is often the case, it is wise to gather data on therapist variables (e.g., expertise, allegiance) and examine their relationships to outcomes.

Comparing alternative treatments requires that the intervention procedures across treatments be equated for salient variables such as (a) duration; (b) length, intensity, and frequency of contacts with clients; (c) credibility of the treatment rationale; (d) setting in which treatment is to be provided; and (e) degree of involvement of persons significant to the client. In some cases, these factors may be the basis for two alternative therapies (e.g., conjoint

vs. individual marital therapy; or child- vs. family-based treatment). In such cases, the variable is the experimental contrast rather than a matter for control.

What is the best method of measuring change when two alternative treatments are being compared? Clearly, measures should not be differentially sensitive to one or the other treatment. The measures should (a) cover the range of functioning that is a target for change, (b) tap the costs and possible negative side effects, and (c) be unbiased with respect to the alternate interventions. Comparisons of therapies may be misleading if the assessments are not equally sensitive to the types of changes that are most likely caused by each type of intervention.

When comparing alternative treatments, the “expected efficacy” of each therapy based on prior studies requires consideration. Consider, for example, that two treatments are compared and that therapy A is found to be superior to therapy B. The question can then arise, was therapy A superior, or did therapy B fail to be efficacious in this instance? It would be desirable in demonstrating the efficacy of therapy A if the results due to therapy B reflected the level of efficacy typically found in earlier demonstrations of therapy B’s efficacy. Interpretations of the results of comparative studies are dependent on the level of efficacy of each therapy in relation to its expected (or standard) efficacy. Effect sizes are useful in making these comparisons and in reaching sound conclusions.

Although the issues discussed apply, comparisons of psychological and psychopharmacological treatments (e.g., Dobson et al., 2008; Marcus et al., 2007; MTA Cooperative Group, 1999; Pediatric OCD Treatment Study Team, 2004; Walkup et al., 2008) present special issues. For example, how and when should placebo medications be used in comparison to or with psychological therapy? How should expectancy effects be addressed? How should differential attrition be handled? How is it best to handle intrinsic differences in professional contact across psychological and pharmacologic interventions? Follow-ups become especially important after the active treatments are discontinued. The question is especially pertinent given that psychological treatment effects may persist after treatment, whereas the effects of medications may not persist when the medications are discontinued. (Readers interested in discussions of these issues are referred to Hollon, 1996; Hollon & DeRubeis, 1981; Jacobson & Hollon, 1996a, 1996b).

## Matters of Procedure

We now consider procedural matters related to (a) defining the independent variable (the use of manual-based treatments), (b) checking the integrity of the independent variable (treatment fidelity checks), (c) selecting a sample, and (d) considering the research setting and the transportability of treatment.

### *Defining the Independent Variable: Manual-based Treatments*

It is essential that a treatment be adequately described and detailed in order to replicate an evaluation of the treatment, or to be able to show and teach others how to conduct the treatment. Accordingly, there is the need for the use of treatment manuals. Treatment manuals enhance internal validity and treatment integrity, and afford comparison of treatments across contexts and formats, while reducing confounds (e.g., differences in the amount of contact, type and amount of training, time between sessions). Therapist manuals facilitate training and contribute meaningfully to replication (Dobson & Hamilton, 2002; Dobson & Shaw, 1988).

Not all agree on the merits of manuals. Debate has ensued regarding the use of manual-based treatments versus a more variable approach typically found in practice (see Addis, Cardemil, Duncan, & Miller, 2006; Addis & Krasnow, 2000; Westen, Novotny, & Thompson-Brenner, 2004). Some argue that manuals limit therapist creativity and place restrictions on the individualization that the therapists use (see also Waltz, Addis, Koerner, & Jacobson, 1993; Wilson, 1995). Some treatment manuals appear “cook-bookish,” and some lack attention to the necessary clinical sensitivities needed for proper individualization and implementation, but our experience suggests that this is not the norm. An empirical evaluation from our laboratory found that the use of a manual-based treatment for child anxiety disorders (Kendall & Hedtke, 2006) did not restrict therapist flexibility (Kendall & Chu, 1999). Although it is not the goal of manual-based treatments to have practitioners perform treatment in a rigid manner, this misperception has influenced some practitioners’ openness to the use of manual-based interventions (Addis & Krasnow, 2000).

The proper use of manual-based therapy requires interactive training, flexible application, and ongoing supervision (Kendall & Beidas, 2007). Professionals cannot become proficient in the administration of therapy simply by reading a manual. As Barlow

(1989) noted, effective use of manual-based treatments must be preceded by adequate training.

Several contemporary treatment manuals allow the therapist to attend to each client’s specific needs, concerns, and comorbid conditions without deviating from the treatment strategies detailed in the manual. The goal is to include provisions for standardized implementation of therapy while utilizing a personalized case formulation (Suveg, Comer, Furr, & Kendall, 2006). Importantly, using manual-based treatments does not eliminate the potential for differential therapist effects. Within the context of manual-based treatments, researchers are examining therapist variables (e.g., warmth, therapeutic relationship-building behaviors) that might be related to treatment outcome (Creed & Kendall, 2005; Karver et al., 2008; Shirk et al., 2008).

### *Checking the Integrity of the Independent Variable: Treatment Fidelity Checks*

Quality experimental research includes checking the manipulated variable. In therapy outcome evaluations, the manipulated variable is typically treatment or a characteristic of treatment. By design, all clients are not treated the same. However, just because the study has been so designed does not guarantee that the independent variable (treatment) has been implemented as intended. In the course of a study—whether due to therapist variables, incomplete manual specification, poor therapist training, insufficient therapist monitoring, client demand characteristics, or simply error variance—the treatment that was assigned may not in fact be the treatment that was provided (see also Perepletchikova & Kazdin, 2005).

To help ensure that the treatments are indeed implemented as intended, it is wise to require that a treatment plan be followed, that therapists are trained carefully, and that sufficient supervision is available throughout. The researcher should conduct an independent check on the manipulation. For example, therapy sessions are audio- or videotaped, so that an independent rater can listen to/watch the tapes and conduct a manipulation check. Quantifiable judgments regarding key characteristics of the treatment provide the necessary check that the described treatment was indeed provided. Digital videotapes and audiotapes are inexpensive, can be used for subsequent training, and can be analyzed to answer other research questions. Tape recordings of the therapy sessions evaluated by outcome studies not only provide a check on the treatment within each separate study but also allow

for a check on the comparability of treatments provided across studies. That is, the therapy provided as CBT in one clinician's study could be checked to determine its comparability to other clinician-researchers' CBT.

Procedures from a recently completed clinical trial from our research program comparing two active treatment conditions for child anxiety disorders against an active attention control condition (Kendall et al., 2008) can illustrate integrity checks. First, we developed a checklist of the content/strategies called for in each session by the respective manuals. A panel of expert clinicians serve as independent raters who used the checklists to rate randomly selected videotape segments from 20% of randomly selected cases. The panel of raters was trained on nonstudy cases until they reached an inter-rater reliability of .85 (Cohen's  $\kappa$ ). Once reliable, the panel used the checklists to indicate whether the appropriate content was covered for randomly selected segments that were representative of all sessions, conditions, and therapists. A ratio was computed for each coded session: the number of checklist items covered by the therapist relative to the total number of items that should have been included. Results indicated that across the conditions, 85%–92% of intended content was in fact covered.

It is critical to also evaluate the *quality* of the treatment provided. A therapist may strictly adhere to the manual and yet fail to administer the therapy in an otherwise competent manner, or he or she may competently administer therapy while significantly deviating from the manual. In both cases, the operational definition of the independent variable (i.e., the treatment manual) has been violated, treatment integrity impaired, and replication rendered impossible (Dobson & Shaw, 1988). When a treatment fails to demonstrate expected gains, one can examine the adequacy with which the treatment was implemented (see Hollon, Garber, & Shelton, 2005). It is also of interest to study potential variations in treatment outcome that may be associated with differences in the *quality* of the treatment provided (Garfield, 1998; Kendall & Hollon, 1983). Expert judges are needed to make determinations of differential quality prior to the examination of differential outcomes for high- versus low-quality therapy implementation (see Waltz et al., 1993).

### **Sampling Issues**

Choosing a sample to best represent the clinical population about which you are interested in

making inferences requires consideration. Debate exists over the preferred samples for treatment outcome research. A *selected sample* refers to a sample of participants who may need service but who may otherwise only approximate clinically disordered individuals. Randomized controlled trials, by contrast, apply and evaluate treatments with actual clients who are seeking services. Consider a study investigating the effects of treatment X on depression. The researcher could use (a) a sample of clinically depressed clients diagnosed via structured interviews (*genuine clinical sample*), (b) a sample consisting of a group of adults who self-report dysphoric mood (an *analogue sample*), or (c) a sample of depressed persons after excluding cases with suicidal intent, economic stress, and family conflict (*highly select sample*). This last sample may meet diagnostic criteria for depression but are nevertheless highly selected.

The benefits of using analogue or select samples may include a greater ability to control various conditions and minimize threats to internal validity, and from a practical standpoint researchers may find it easier to recruit these samples over genuine clinical samples. On the other hand, select and analogue samples compromise external validity—these are not the same people seen in typical clinical practice. With respect to depression, for instance, many question whether depression in genuine clinical populations compares meaningfully to self-reported dysphoria in adults (e.g., Coyne, 1994; Krupnick, Shea, & Elkin, 1986; Tennen, Hall, & Affleck, 1995; see also Ruscio & Ruscio, 2002, 2008). Researchers consider how the study results will be interpreted and generalized when deciding whether to use clinical, analogue, or select samples.

Researchers consider *client diversity* when deciding which samples to study. Historically, research supporting the efficacy of psychological treatments was conducted with predominantly European American samples—although this is rapidly changing (see Huey & Polo, 2008). One can question the extent to which efficacy findings from European American samples can be generalized to ethnic minority samples (Bernal, Bonilla, & Bellido, 1995; Bernal & Scharron-Del-Rio, 2001; Hall, 2001; Sue, 1998). Investigations have also addressed the potential for bias in diagnoses and in the provision of mental health services to ethnic minority patients (e.g., Flaherty & Meaer, 1980; Homma-True, Green, Lopez, & Trimble, 1993; Lopez, 1989; Snowden, 2003).

A simple rule is that the research sample should reflect the population to which the results will be



generalized. To generalize to a minority/diverse population, one must study a minority/diverse sample. Any barriers to care must be reduced and outreach efforts employed to inform minorities of available services (see Sweeney, Robins, Ruberu, & Jones, 2005; Yeh, McCabe, Hough, Dupuis, & Hazen, 2003). Walders and Drotar (2000) provide guidelines for recruiting and working with ethnically diverse samples.

Once sample diversity is accomplished, statistical analyses can examine potential differential outcomes (see Arnold et al., 2003; Treadwell, Flannery-Schroeder, & Kendall, 1994). Grouping and analyzing research participants by ethnic status is one approach. However, this approach is simplistic because it fails to address variations in individual client's degree of ethnic identity. It is often the degree to which an individual identifies with an ethnocultural group or community, and not simply his or her ethnicity itself, that may potentially moderate treatment outcome.

### **Setting**

Research determines treatment efficacy, but it is not sufficient to demonstrate efficacy within a narrowly defined sample in a highly selective setting. The question of whether the treatment can be transported to other settings requires independent evaluation (Southam-Gerow, Ringeisen, & Sherrill, 2006). Treatment outcome studies conducted in some settings (settings in which clients may differ on important variables) may not generalize to other settings. Some have questioned whether the outcomes found at select research centers will transport to clinical practice settings. One should study, rather than assume, that a treatment found to be efficacious within a research clinical setting will be efficacious in a clinical service setting (see Hoagwood, 2002; Silverman, Kurtines, & Hoagwood, 2004; Southam-Gerow et al., 2006; Weisz, Donenberg, Han, & Weiss, 1995; Weisz, Weiss, & Donenberg, 1992).

Closing the gap between clinical research and practice requires transporting effective treatments (getting "what works" into practice) and identifying additional research into those factors (e.g., client, therapist, researcher, service delivery setting; see Kendall & Southam-Gerow, 1995; Silverman et al., 2004) that may be involved in successful transportation. Fishman (2000) suggested that an electronic journal of case studies be assembled so that patient, therapy, and environmental variables can be collected/compiled from within naturalistic therapy settings. Although the methodology has flaws (Stricker,

2000), information technology-based approaches may facilitate more seamless integration of research and practice and foster new waves of outcome research.

### **Matters of Measurement**

#### ***Assessing the Dependent Variable(s)***

No single measure serves as the sole indicator of clients' treatment-related gains. Rather, a variety of methods, measures, data sources, and sampling domains (e.g., symptomatic distress, functional impairment, quality of life) are used to assess therapy outcomes. A contemporary and rigorous study of the effects of therapy may use assessments of client self-report; client test/task performance; therapist judgments and ratings; archival or documentary records (e.g., health-care visit and costs, work and school records); observations by trained, unbiased, blinded observers; rating by significant people in the client's life; and independent judgments by professionals. Outcomes have more compelling impact when seen by independent (blind) evaluators than when based solely on the therapist's opinion or the client's self-reports.

The *multi-informant strategy*, in which data on variables of interest are collected from multiple reporters (e.g., client, family members, peers) can be particularly important when assessing children and adolescents. Features of cognitive development may compromise youth self-reports, and children may offer what they believe to be the desired responses. Thus, in RCTs with youth, collecting additional data from key adults in children's lives who observe them across different contexts (e.g., parents, teachers) is valued. However, because emotions and mood are partially internal phenomena, some symptoms may be less known to parents and teachers, and some observable symptoms may occur in situations outside the home or school.

An inherent concern with multi-informant assessment is that discrepancies among informants are to be expected (Comer & Kendall, 2004; Edelbrock, Costello, Dulcan, Conover, & Kalas, 1986). Research indicates low to moderate concordance rates among informants in the assessment of children and adolescents (Achenbach, McConaughy, & Howell, 1987; De Los Reyes & Kazdin, 2005). For example, cross-informant agreement in the assessment of childhood mood/anxiety can be low (Comer & Kendall, 2004; Grills & Ollendick, 2003).

A *multimodal strategy* relies on multiple inquiries to evaluate an underlying construct of interest. For example, assessing family functioning may include

family members completing self-report forms on their perceptions of family relationships, as well as conducting structured behavioral observations of family members interacting (to later be coded by independent raters). Statistical packages can integrate data obtained from multimodal assessment strategies. The increasing availability of handheld communication devices and personal digital assistants allows researchers to incorporate experience sampling methodology (ESM), in which people report on their emotions and behavior in the actual situation (*in situ*). These ESM data provide naturalistic information on patterns in day-to-day functioning.

Treatment evaluations use multiple targets of assessment. For example, one can measure overall psychological adjustment, specific interpersonal skills, the presence of a diagnosis, self-report mood, cognitive functioning, life environment, vocational status, and the quality of interpersonal relationships. No one target captures all, and using multiple targets facilitates an examination of therapeutic changes when changes occur, and the absence of change when interventions are less beneficial.

Broadly speaking, evaluation of therapy-induced change can be appraised on two levels: the specifying level and the impact level (Kendall, Pellegrini, & Urbain, 1981). The *specifying level* refers to the exact skills, cognitive or emotional processes, or behaviors that have been modified during treatment (e.g., examining the number of positive spousal statements generated during a specific marital relationship task). In contrast, the *impact level* refers to the general level of functioning of the client (e.g., absence of a diagnosis, functional status of the client). A compelling demonstration of beneficial treatment would include change that occurs at both the level of specific discrete skills and behaviors, and the impact level of generalized functioning in which the client interacts differently within the larger environmental context.

Assessing *multiple domains* of functioning provides a comprehensive evaluation of treatment, but it is rarely the case that a treatment produces uniform effects across the domains assessed. Suppose treatment A, relative to a control condition, improves depressed clients' level of depression, but not their overall psychological well-being. In an RCT designed to evaluate improved level of depression and psychological well-being, should treatment A be deemed efficacious if only one of two measures found gains? De Los Reyes and Kazdin (2006) propose the Range of Possible Changes model, which calls for a multidimensional conceptualization of intervention

change. In this spirit, we recommend that researchers conducting RCTs be explicit about the domains of functioning expected to change and the relative magnitude of such expected changes. We also caution consumers of the treatment outcome literature against simplistic dichotomous appraisals of treatments as efficacious or not.

## Matters of Data Analysis

Contrary to popular misguided perceptions, data do not "speak" for themselves. *Data analysis* is an active process in which we extract useful information from the data we have collected in ways that allow us to make statistical inferences about the larger population that a given sample was selected to represent. Although a comprehensive statistical discussion is beyond the present scope (the interested reader is referred to Jaccard & Guilamo-Ramos, 2002a, 2002b; Kraemer & Kupfer, 2006; Kraemer, Wilson, Fairburn, & Agras, 2002) in this section, we discuss four areas that merit consideration in the context of research methods in clinical psychology: (a) handling missing data and attrition, (b) assessing clinical significance (i.e., the persuasiveness of outcomes), (c) mechanisms of change (i.e., mediators and moderators), and (d) cumulative outcome analyses.

### *Handling Missing Data and Attrition*

Given the time-intensive and ongoing nature of RCTs, not all clients who are assigned to treatment actually complete their participation in the study. A loss of research participants (*attrition*) may occur just after randomization, prior to post-treatment evaluation, or during the follow-up interval. Increasingly, clinical scientists are analyzing attrition and its predictors and correlates to elucidate the nature of treatment dropout, understand treatment tolerability, and to enhance the sustainability mental health services in the community (Kendall & Sugarman, 1997; Reis & Brown, 2006; Venable, Carey, Carey, & Maisto, 2002). However, from a research methods standpoint, attrition can be problematic for data analysis, such as when there are large numbers of noncompleters or when attrition varies across conditions (Leon et al., 2006; Molenberghs et al., 2004).

No matter how diligently researchers work to prevent attrition, data will likely be lost. Although attrition rates vary across studies, Mason (1999) estimated that most researchers can expect nearly 20% of their sample to withdraw or be removed from a study before it is completed. To address this

matter, researchers can conduct and report two sets of analyses: (a) analyses of outcomes for the treatment completers and (b) analyses of outcomes for all clients who were included at the time of randomization (i.e., the *intent-to-treat sample*). An analysis of completers involves the evaluation of only those who completed treatment and examines what the effects of treatment are when someone completes its full course. Treatment dropouts, treatment refusers, and clients who fail to adhere to treatment schedules would not be included in these outcome analyses. In such cases, reports of treatment outcome may be somewhat high because they represent the results for only those who adhered to and completed the treatment. Intent-to-treat analyses, a more conservative approach to addressing missing data, require the evaluation of outcomes for all participants involved at the point of randomization. Proponents of intent-to-treatment analyses will say, “once randomized, always analyzed.”

When conducting intent-to-treat analyses, the method used to handle missing endpoint data requires consideration, because different methods can produce different outcomes. Delucchi and Bostrom (1999) summarized the effects of missing data on a range of statistical analyses. Researchers address missing endpoint data via one of several ways: (a) *last observation carried forward* (LOCF), (b) substituting pretreatment scores for post-treatment scores, (c) multiple imputation methods, and (d) mixed-effects models.

The following example illustrates these different methods. Suppose a researcher conducts a smoking cessation trial comparing a 12-week active treatment (treatment A) to a 12-week waitlist control condition, with mean number of daily cigarettes used over the course of the previous week as the dependent variable, and with four assessment points: pretreatment, week 4, week 8, and post-treatment. A LOCF analysis assumes that participants who attrit remain constant on the outcome variable from their last assessed point through the post-treatment evaluation. If a participant drops out at week 9, the data from the week 8 assessment would be substituted for their missing post-treatment assessment data. A LOCF approach can be problematic however, as the last data collected may not be representative of the dropout participant’s ultimate progress or lack of progress at post-treatment, given that participants may change after dropping out of treatment (e.g., cigarette use may abruptly rise upon dropout, reversing initially assessed gains). The use of pretreatment data as post-treatment data (a conservative and not

recommended method) simply inserts pretreatment scores for cases of attrition as post-treatment scores, assuming that participants who attrit make no change from their initial baseline state.

Critics of the LOCF and the pretreatment data substitution methods argue that these crude methods introduce systematic bias and fail to take into account the uncertainty of post-treatment functioning (see Leon et al., 2006). Increasingly, journals are calling for missing data imputation methods to be grounded in statistical theory and to incorporate the uncertainty regarding the true value of the missing data. *Multiple imputation methods* impute a range of values for the missing data (incorporating the uncertainty of the true values of missing data), generating a number of nonidentical datasets (typically five is considered sufficient; Little & Rubin, 2002). After the researcher conducts analyses on the nonidentical datasets, the results are pooled and the resulting variability addresses the uncertainty of the true value of the missing data. Moreover, *mixed-effects modeling*, which relies on linear and/or logistic regression to address missing data in the context of random (e.g., participant) and fixed effects (e.g., treatment, age, sex) (see Hedeker & Gibbons, 1994, 1997; Laird & Ware, 1982), can be used (see Neuner et al., 2008 for an example). Mixed-effects modeling may be particularly useful in addressing missing data if numerous assessments are collected throughout a treatment trial (e.g., weekly symptom ratings).

Given a lack of consensus regarding the most appropriate way to address missing data in RCTs, we encourage researchers—if it is possible for non-completing participants to be contacted and evaluated at the time when the treatment protocol would have ended—to contact and reassess participants. This method controls for the passage of time, because both dropouts and treatment completers are evaluated over time periods of the same duration. If this method is used, however, it is important to determine whether dropouts sought and/or received alternative treatments in the interim.

### ***Clinical Significance: Assessing the Persuasiveness of Outcomes***

The data produced by research projects designed to evaluate the efficacy of therapy are submitted to statistical tests of significance. The mean scores for participants in each condition are compared, the within-group and between-group variability is considered, and the analysis produces a numerical figure, which is then checked against critical values. An outcome achieves *statistical* significance if the

magnitude of the mean difference is beyond what could have resulted by chance alone (typically defined by convention as  $p < .05$ ). Statistical analyses and statistical significance are essential for therapy evaluation because they inform us that the degree of change was likely not due to chance. However, statistical tests alone do not provide evidence of *clinical significance*.

Sole reliance on statistical significance can lead to perceiving differences (i.e., treatment gains) as potent when in fact they may not be clinically significant. For example, imagine that the results of a treatment outcome study demonstrate that mean Beck Depression Inventory (BDI) scores are significantly lower at post-treatment than pretreatment. An examination of the means, however, reveals only a small but reliable shift from a mean of 29 to a mean of 24. Given large sample sizes, this difference may well achieve statistical significance at the  $p < .05$  level (i.e., over 95% chance that the finding is not due to chance alone), yet perhaps be of limited practical significance. At both pre- and post-treatment, the scores are within the range considered indicative of clinical levels of depressive distress (Kendall, Hollon, Beck, Hammen, & Ingram, 1987), and such a magnitude of change may have little effect on a person's perceived quality of life (Gladis, Gosch, Dishuk, & Crits-Christoph, 1990). Moreover, statistically meager results may disguise meaningful changes in client functioning. As Kazdin (1999) put it, sometimes a little can mean a lot, and vice versa.

*Clinical significance* refers to the meaningfulness or persuasiveness of the magnitude of change (Kendall, 1999). Whereas tests of statistical significance address the question "Were there treatment-related changes?" tests of clinical significance address the question "Were the treatment-related changes convincing and meaningful?" In the treatment of a depressive disorder, for example, clinically significant changes would have to be of the magnitude that, after therapy, the person no longer suffered from debilitating depression. Specifically, this can be made operational as changes on a measure of the presenting problem (e.g., depressive symptoms) that result in the client's being returned to within normal limits on that same measure. Several approaches for measuring clinically significant change have been developed, two of which are *normative sample comparison* and *reliable change index*.

#### **NORMATIVE COMPARISONS**

Clinically significant improvement can be identified using normative comparisons (Kendall & Grove,

1988), a method for operationalizing clinical significance testing. Normative comparisons (Kendall & Grove, 1988; Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999) can be conducted in several steps. First, the researcher selects a normative group for post-treatment comparison. Given that several well-established measures provide normative data (e.g., the Beck Depression Inventory, the Child Behavior Checklist), investigators may choose to rely on these preexisting normative samples. However, when normative data do not exist, or when the treatment sample is qualitatively different on key factors (e.g., age, socioeconomic status), it may be necessary to collect one's own normative data.

In typical research, when using statistical tests to compare groups, the investigator assumes that the groups are equivalent (null hypothesis) and wishes to find that they are not (alternate hypothesis). However, when the goal is to show that treated individuals are equivalent to "normal" individuals on some factor (i.e., are indistinguishable from normative comparisons), traditional hypothesis-testing methods are inadequate. To circumvent this problem, one uses an equivalency testing method (Kendall, Marrs-Garcia, et al., 1999) that examines whether the difference between the treatment and normative groups is within some predetermined range. Used in conjunction with traditional hypothesis testing, this approach allows for conclusions about the equivalency of groups (see e.g., Jarrett, Vittengl, Doyle, & Clark, 2007; Kendall et al., 2008; Pelham et al., 2000; Westbrook & Kirk, 2007; for examples of normative comparisons), thus testing that post-treatment case are within a normative range on the measure of interest.

#### **THE RELIABLE CHANGE INDEX**

Another method to the examining clinically significant change is the Reliable Change Index (RCI; Jacobson, Follette, & Revenstorf, 1984; Jacobson & Traux, 1991). The RCI involves calculating the number of clients moving from a dysfunctional to a normative range. The RCI is a calculation of a difference score (post- minus pre-treatment) divided by the standard error of measurement (calculated based on the reliability of the measure). The RCI is influenced by the magnitude of change and the reliability of the measure (for a reconsideration of the interpretation of RCI, see Hsu, 1996). The RCI has been used in clinical psychological research, although its originators point out that it has at times been misapplied (Jacobson, Roberts, Berns, & McGlinchey, 1999). When used in conjunction

with reliable measures and appropriate cutoff scores, it can be a valuable tool for assessing clinical significance.

## CONCLUDING COMMENTS ON CLINICAL SIGNIFICANCE

Although progress has been made regarding the operationalization of clinical significance, some debate exists over how to improve its measurement (see Beutler & Moleiro, 2001; Blanton & Jaccard, 2006; Jensen, 2001). Whereas some researchers propose more advanced methods of normative comparison and analysis (e.g., using multiple normative samples), others suggest that clinical significance remain as a simple, client-focused, and practical adjunct to statistical significance results (Follette & Callaghan, 1996; Martinovich, Saunders, & Howard, 1996; Tingey, Lambert, Burlingame & Hansen, 1996).

Evaluations of statistical and clinical significance are most informative when used in conjunction with one another, and it is becoming more common for reports of RCTs to include evaluations of both. Statistically significant improvements are not equivalent to “cures,” and clinical significance is a complementary, not a substitute, evaluative strategy. Statistical significance is required to document that changes were beyond those that could be expected due to chance alone—yet, it is also useful to consider if the changes returned dysfunctional clients to within normative limits on the measures of interest.

## *Evaluating Mechanisms of Change: Mediators and Moderators of Treatment Response*

When evaluating treatment efficacy, it is of interest to identify (a) the conditions that dictate when a treatment is more or less effective, and (b) the processes through which a treatment produces change. Addressing such issues necessitates the specification of *moderator* and *mediator* variables (Baron & Kenny, 1986; Holmbeck, 1997; Kraemer et al., 2002; Shadish & Sweeney, 1991). A moderator is a variable that delineates the conditions under which a given treatment is related to an outcome. Conceptually, moderators identify *on whom* and *under what circumstances* treatments have different effects (Kraemer et al., 2002). Functionally, a moderator is a variable that influences either the direction or the strength of a relationship between an independent variable (treatment) and a dependent variable (outcome). For example, if a given treatment were found to be more effective with women than with

men, gender would be considered a moderator of the association between treatment and outcome. A mediator, on the other hand, is a variable that serves to explain the process by which a treatment impacts on an outcome. Conceptually, mediators identify *how* and *why* treatments have effects (Kraemer et al., 2002). If an effective treatment for child conduct problems was found to impact on the parenting behavior of mothers and fathers, which in turn were found to have a significant impact on child problem behavior, then parent behavior would be considered to mediate the treat-to-outcome relationship (provided certain statistical criteria were met; see Holmbeck, 1997). Let's take a closer look at each of these notions.

## MODERATORS

Treatment moderators help clarify for clinicians (and other consumers of the treatment outcome literature) which clients might be most responsive to a particular treatment (and for which clients alternative treatment might be sought). They have historically received more attention in the research literature than mediators of effectiveness. Moderator variables that have received the most attention include client age, client ethnicity, client gender, problem type, problem severity, therapist training, mode of delivery (e.g., individual, group, family), setting, and type and source of outcome measure (e.g., Dimidjian et al., 2006; Kolko, Brent, Baugher, Bridge, & Birmaher, 2000; McBride, Atkinson, Quilty, & Bagby, 2006; Owens et al., 2003; Shadish & Sweeney, 1991; Weisz, Weiss, Han, Granger, & Morton, 1995).

How does one test for the presence of a moderator effect? A moderator effect is an interaction effect (Holmbeck, 1997) and can be evaluated using multiple regression analyses or analyses of variance (ANOVA). When using multiple regression, the predictor (e.g., treatment vs. no treatment) and proposed moderator (e.g., age of client) are main effects and are entered into the regression equation first, followed by the interaction of the predictor and the moderator. Alternatively, if one is *only* interested in testing the significance of the interaction effect, all of these terms can be entered simultaneously (see Aiken & West, 1991). If one is using ANOVA, the significance of the interaction between two main effects is tested in an analogous manner: a moderator, like an interaction effect, documents that the effects of one variable (e.g., treatment) are different across different levels of another variable (i.e., the moderator).

The presence of a significant interaction tells us that there is significant moderation (i.e., that the association between the treatment variable and the outcome variable differs significantly across different levels of the moderator). Unfortunately, it tells us little about the specific conditions that dictate whether or not the treatment is significantly related to the outcome. For example, if a treatment-by-age interaction effect is significant in predicting treatment-related change, we know that the effect of the treatment for older clients differs from the effect of the treatment for younger clients, but we do not know whether the treatment effect is statistically significant for either age group. One would not yet know, based on the initial significant interaction effect, whether the relationship between treatment and outcome was significant for the older group, the younger group, or both groups.

Thus, when testing for moderation of treatment effects, statistically significant interactions must be further scrutinized. One such *post-hoc probing* approach is to plot and test the significance of simple slopes of regression lines for high and low values of the moderator variable (Aiken & West, 1991; Kraemer et al., 2002). Alternatively, one can test the significance of simple main effects via ANOVA procedures when the predictor (e.g., treatment vs. no treatment) and moderator (e.g., gender) are both categorical variables.

## MEDIATORS

A *mediator* is that variable that specifies the process through which a particular outcome is produced. The mediator effect elucidates the mechanism by which the independent variable (e.g., treatment) is related to outcome (e.g., treatment-related changes). Thus, mediational models are inherently causal models, and in the context of an experimental design (i.e., random assignment), significant mediational pathways are suggestive of causal relationships. As noted by Collins, Maccoby, Steinberg, Hetherington, and Bornstein (2000), studies of parenting interventions inform us not only about the effectiveness (or lack thereof) of such interventions, but also about causal relations between potential parenting mediators and child outcomes. For example, Forgatch and DeGarmo (1999) administered a parent training treatment to a sample of recently divorced mothers (as well as controls) and found that treatment was associated with positive (or less-negative) changes in parenting behavior—and that changes in parenting behavior were linked with

changes in child behavior. This work not only provides preliminary evidence for the utility of a particular treatment approach, but also demonstrates that a prospective (and perhaps causal) link exists in the direction of parenting impacting on child outcome.

When testing for mediational effects, the researcher is usually interested in whether a variable “mediates” the association between a treatment and an outcome, such that the mediator accounts for (i.e., attenuates) part or all of this association. To test for mediation, one examines whether the following are significant: (1) the association between the predictor (e.g., treatment) and the outcome, (2) the association between the predictor and the mediator, and (3) the association between the mediator and the outcome, after controlling for the effect of the predictor. If these three conditions are first met, one then examines (4) whether the predictor-to-outcome effect is less after controlling for the mediator. A corollary of the first condition is that there initially should be a significant relationship between the treatment and the outcome for a mediator to serve its mediating role. If the treatment and outcome are not significantly associated, there is no effect to mediate. Such a bivariate association between treatment and outcome is not required for moderated effects.

The three prerequisite conditions for testing mediational effects can be tested with three multiple regression analyses (Baron & Kenny, 1986). The significance of the treatment-to-outcome path (condition 1 above) is examined in the first regression. The significance of the treatment-to-mediator path (condition 2) is examined in the second regression. Finally, the treatment and mediator variable are simultaneously employed as predictors (via simultaneous entry) in the third equation, where the outcome is the dependent variable. Baron and Kenny (1986) recommend using simultaneous entry (rather than hierarchical entry) in this third equation, so that the effect of the mediator on the outcome is examined after controlling for the treatment and the effect of the treatment on the outcome is examined after controlling for the mediator (borrowing from path analytic methodology; Cohen & Cohen, 1983). The significance of the mediator-to-outcome path in this third equation is a test of condition 3. The relative effect of the treatment on the outcome in this equation (when the mediator is controlled) in comparison to the effect of the treatment on the outcome in the first equation (when the mediator is

not controlled) is the test of the fourth condition. Specifically, the treatment should be less associated with the outcome in the third equation than was the case in the first equation (i.e., the association between treatment and the dependent variable is attenuated in the presence of the proposed mediator variable).

Consider the following example: Within a cognitive-behavioral treatment for childhood anxiety disorders, what changes within the clients mediate the identified positive outcomes? To test for mediation, Kendall and Treadwell (2007) computed three regression equations for each dependent variable. In the first, it was established that treatment condition (CBT) predicted the dependent variable (e.g., change on an established anxiety measure). The second equation established that treatment condition predicted the proposed mediator (i.e., changes in children's self-statements during the trial). In the third equation, it was established that changes in children's self-statements (i.e., the proposed mediator) independently predicted the dependent variable. Finally, the mediational hypothesis was confirmed when the independent variable (treatment) no longer significantly predicted the dependent variable when change in self-statements was entered into the equation. This study (Kendall & Treadwell, 2007) provided support that change in children's self-talk mediates the effects of cognitive-behavior treatment for childhood anxiety.

How much reduction in the total effect is necessary to support the presence of mediation? Some researchers have reported whether the treatment-to-outcome effect drops from significance (e.g.,  $p < .05$ ) to nonsignificance (e.g.,  $p > .05$ ) after the mediator is introduced into the model. This strategy may be flawed, however, because a drop from significance to nonsignificance may occur, for example, when a regression coefficient drops from .28 to .27, but may not occur when it drops from .75 to .35. In other words, it is possible that significant mediation *has not* occurred when the test of the treatment-to-outcome effect drops from significance to nonsignificance after taking the mediator into account. On the other hand, it is also possible that significant mediation *has* occurred even when statistical test of the treatment-to-outcome effect continues to be significant after taking the mediator into account. Thus, it has been recommended when reporting mediational tests to also include a significance test that examines whether the drop in the treatment-to-outcome effect achieves statistical significance when accounting for the impact of the proposed

mediator (see MacKinnon & Dwyer, 1993; Sobel, 1988 for details).

### ***Cumulative Outcome Analyses: From Qualitative Reviews to Meta-Analytic Evaluations***

The literature examining the outcomes of diverse therapies is vast, and there is a need to integrate that which we have learned in a systematic, coherent, and meaningful manner. Several major cumulative analyses have undertaken the challenging task of reviewing and reaching conclusions with regard to the effects of psychological therapy. Some of the reviews are strictly qualitative and are based on subjective conclusions, whereas others have used tabulations of the number of studies favoring one type of intervention versus that of competing interventions (e.g., Beutler, 1979; Luborsky, Singer, & Luborsky, 1975). This approach uses a "box score" summary of the findings, and reviewers would compare rates of treatment success to draw conclusions about outcomes. Still other reviewers have used multidimensional analyses of the impact of potential causal factors on therapy outcome: *meta-analysis* (Smith & Glass, 1977).

Meta-analytic procedures provide a quantitative, accepted, and respected approach to the synthesis of a body of empirical literature. Literature reviews are increasingly moving away from the qualitative summary of studies to the quantitative analysis of the reported findings of the studies (e.g., Cooper & Hedges, 1994; Cooper & Rosenthal, 1980; Durlak, 1999; Rosenthal, 1984). By summarizing the magnitude of overall relationships found across studies, determining factors associated with variations in the magnitude of such relationships, and establishing relationships by aggregate analysis, meta-analytic procedures provide more systematic, exhaustive, objective, and representative conclusions than do qualitative reviews (Rosenthal, 1984). To understand the effects of psychological treatments, as well as the factors associated with variations in these effects, meta-analysis is a preferred tool with which to inform funding decisions, service delivery, and public policy.

Meta-analytic techniques are highly informative because they synthesize findings across multiple studies by converting the results of each investigation into a common metric (e.g., the effect size). The outcomes of different types of treatments can then be compared with respect to the aggregate magnitude of change reflected in such statistics across studies. The effect size is typically derived by

computing the difference between the reported means of the treatment group and control group at post-treatment, then dividing this difference by the pooled standard deviation of the two groups (Durlak, 1995). The more rigorous scientific journals now require authors to include effect sizes in their reports.

Assuming that one has decided to conduct a meta-analytic review, what are the steps involved in conducting a meta-analysis? After determining that a particular research area has matured to the point at which a meta-analysis is possible and the results of such an analysis would be of interest to the field, one conducts a literature search. Multiple methods of searching are often used (e.g., computer database searches, reviews of reference sections from relevant article, sending a table of studies to be included to known experts in the area to review for potential missing citations). A word of advice to the meta-analyzer: Do not rely solely on computer searches, because they routinely omit several important studies.

A decision that often arises at this point is whether studies of varying quality should be included (Kendall, Flannery-Schroeder, & Ford, 1999; Kendall & Maruyama, 1985). On the one hand, one could argue that studies of poor quality should not be included in the review, since such studies would not ordinarily be used to draw conclusions about the effectiveness of a given psychological therapy. On the other hand, decisions concerning whether a study is of poor versus good quality are often not straightforward. A study may have certain exemplary features and other less desirable features. By including studies that vary in quality, one can examine whether certain “quality” variables (e.g., select vs. genuine clinical cases) are associated with differential outcomes. For example, in a recent meta-analysis (Furr, Comer, Edmunds, & Kendall, 2008), studies were rated in terms of their methodological rigor: one point for addressing missing data, one point for including appropriate comparison groups, one point for using psychometrically sound measures, etc. The research can then examine the extent to which methodological quality is related to results.

Coding the results of specific studies is an important part of a meta-analysis. Decisions need to be made regarding what types of variables will be coded and how inter-rater reliability among coders will be assessed. For example, in a study that examined the outcomes of a psychological therapy, one might code the nature of the intervention, whether the

treatment was conducted in clinically representative conditions (Shadish, Matt, Navarro, & Phillips, 2000), the number of sessions, the types of participants, the diagnoses of the participants, the age range, the gender distribution, the therapy administration method (e.g., group vs. individual), the qualifications of the therapists, the various features of the research design, and types of outcomes. Once variables such as these have been coded, the effect sizes are then computed. The methods employed to compute effect sizes should be specified. Another consideration is whether effect sizes will be weighted (for example, based on the sample sizes of the studies reviewed, methodological rigor of studies, etc.). Using sample size to weight study findings has historically been employed in meta-analyses as a way to approximate the reliability of findings (i.e., larger samples would expectedly yield more reliable estimates than smaller samples). However, researchers are increasingly weighting studies by inverse variance weights (i.e.,  $1/(SE)^2$ , where SE = standard error), rather than sample size, as this provides a more direct weighting of study findings by reliability. By weighting by inverse variance weights, the researcher is weighting by precision—the smaller the SE, the more precise the effect size, and consequently the greater you want to represent that effect size when aggregating it with other effect sizes.

After computing the effect sizes and inverse variance weights across studies, and then computing an overall *weighted mean effect size* (and confidence interval) based on the inverse variance weights associated with each effect size, the researcher evaluates the adequacy of the mean effect size in representing the entire distribution of effects via homogeneity testing (i.e., homogeneity statistic,  $Q$ ). This consists of comparing the observed variability in the effect size values with the estimate of variance that is expected from subject-level sampling error alone (Lipsey & Wilson, 2000). A stem-and-leaf plot can also be useful in determining the distribution of effect sizes. Often a researcher will specifically hypothesize that effect sizes will be significantly heterogeneous, given that multiple factors (e.g., sample characteristics, study methodology, etc.) can systematically exert influences on documented treatment effects. If the distribution is not found to be homogeneous, the studies likely estimate different population mean effect sizes, and alternative procedures are required that are beyond the scope of this chapter (see Lipsey & Wilson, 2000).

The merits of integration and summation of the results of related outcome studies are recognized,



yet some cautions must be exercised in any meta-analysis. As noted earlier, one must check on the quality of the studies, eliminating those that cannot contribute meaningful findings due to basic inadequacies (Kraemer, Gardner, Brooks, & Yesavage, 1998). Consider the following: Would you accept the recommendation that one treatment approach is superior to another if the recommendation was based on inadequate research? Probably not. If the research evidence is methodologically unsound, it is insufficient evidence for a recommendation; it remains inadequate as a basis for either supporting or refuting treatment recommendations, and therefore it should not be included in cumulative analyses. If a study is methodologically sound, then regardless of the outcome, it must be included.

Caution is paramount in meta-analyses in which various studies are said to provide evidence that treatment is superior to controls. The exact nature of the control condition in each specific study must be examined, especially in the case of attention-placebo control conditions. This caution arises from the indefinite definition of attention-placebo control conditions. As has been noted, one researcher's attention-placebo control condition may be serving as another researcher's therapy condition! Meta-analyzers cannot tabulate the number of studies in which treatment was found to be efficacious in relation to controls without examining the nature of the control condition.

Currently, major efforts are being made to identify and examine those psychological treatments that can be considered empirically supported. These efforts take a set of "criteria" that have been proposed as required for a treatment to be considered empirically supported and review the reported research literature in search of studies that can be used to meet the criteria. Such reviews (e.g., Baucom, Shoham, Mueser, Daiuto, & Stickle, 1998; Compas, Haaga, Keefe, Leitenberg, & Williams, 1998; DeRubeis & Crits-Christoph, 1998; Kazdin & Weisz, 1998; Weisz, Jensen-Doss, & Hawley, 2006; Weisz, McCarty, & Valeri, 2006) and reactions to the approach (e.g., Beutler, 1998; Borkovec & Castonguay, 1998; Garfield, 1998; Goldfried & Wolfe, 1998) document not only that this approach is being applied, but also that there are treatments that meet the criteria of having been supported by empirical research.

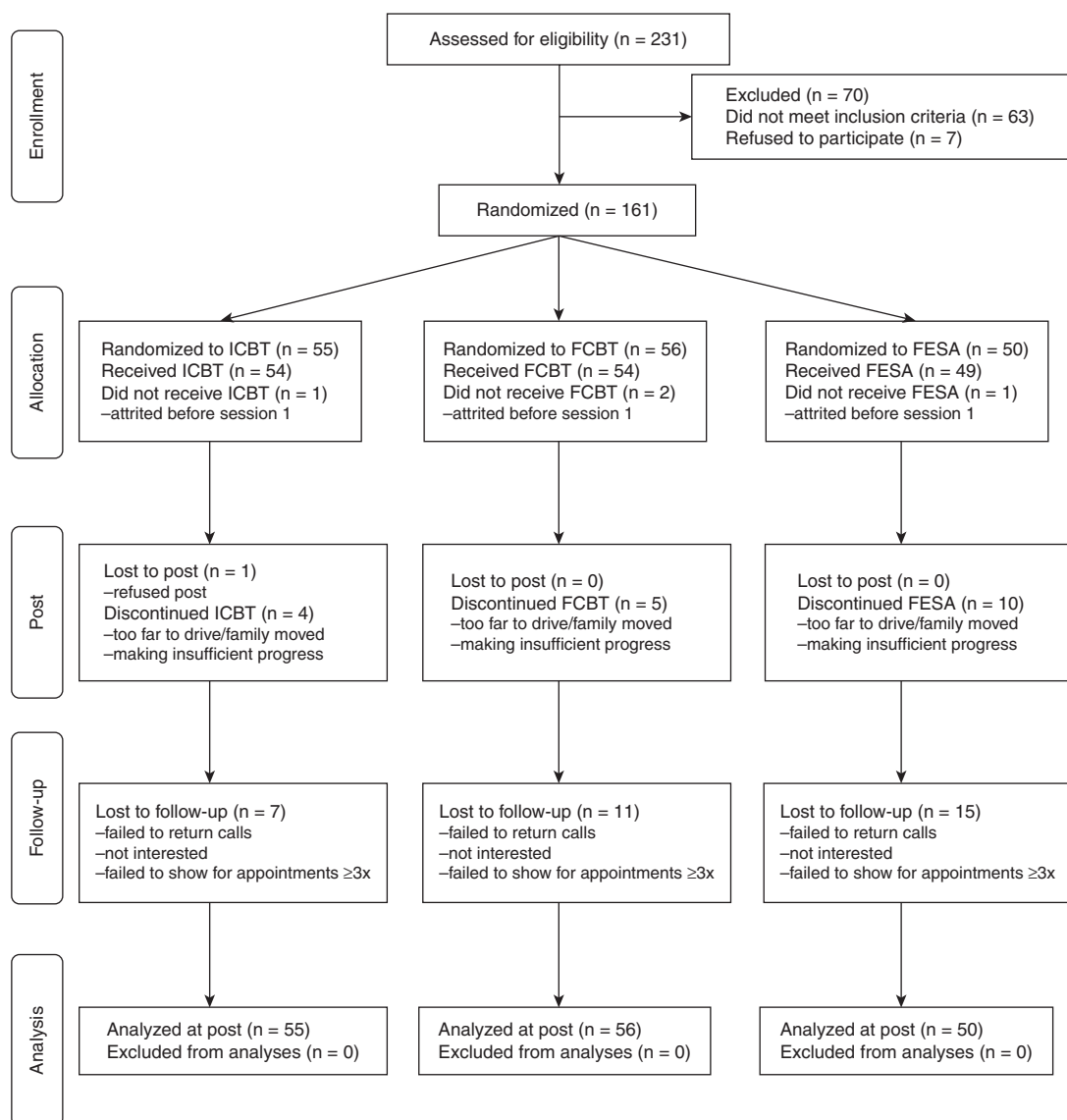
## Matters of Reporting

Communicating study findings to the scientific community is the final stage of conducting an

evaluation of treatment. A well-constructed and quality report will discuss findings in the context of previous related work (e.g., discussing how the findings build on and support previous work; discussing the ways in which findings are discrepant from previous work and why this may be the case), as well as consider limitations and shortcomings that can direct future theory and empirical efforts in the area.

When preparing a quality report, the researcher provides all of the relative information for the reader to critically appraise, interpret, and/or replicate study findings. Historically, there have been some inadequacies in the reporting of RCTs (see Westen et al., 2004 for a critique of past practices). In fact, inadequacies in the reporting of RCTs can result in bias in estimating the effectiveness of interventions (Moher, Schulz, & Altman, 2001; Schulz, Chalmers, Hayes, & Altman, 1995). To maximize transparency in the reporting of RCTs, an international group of epidemiologists, statisticians, and journal editors developed a set of consolidated standards of reporting trials (i.e., CONSORT; see Begg et al., 1996), consisting of a 22-item checklist of study features that can bias estimates of treatment effects, or that are critical to judging the reliability or relevance of study findings, and consequently should be included in a comprehensive research report. A quality report will address each of these 22 items. For example, the title and abstract are to include how participants were allocated to interventions (e.g., randomly assigned), the methods must clearly detail eligibility criteria (i.e., inclusion/exclusion criteria) and how the sample size was determined, the procedures must indicate whether or not evaluators were blind to treatment assignment, and baseline demographic characteristics must be included for all participants. Importantly, participant flow must be characterized at each stage. The researcher reports the specific numbers of participants randomly assigned to each treatment condition, who received treatments as assigned, who participated in post-treatment evaluations, and who participated in follow-up evaluations (see Figure 4.1 for an example from Kendall et al., 2008). It has become standard practice for scientific journals to require a CONSORT flow diagram.

When the researcher has prepared a quality report that he or she deems is ready to be communicated to the academic community, the next decision is where to submit the report. When communicating the results of a clinical evaluation to the scientific community, the researcher should only consider submitting the report of their findings to a peer-reviewed journal.



**Figure 4.1** Example of flow diagram used in reporting to depict participant flow at each stage of a study. From Kendall, P. C., Hudson, J.L., Gosch, E., Flannery-Schroeder, E., & Suveg, C. (2008). Cognitive-behavioral therapy for anxiety disordered youth: A randomized clinical trial evaluating child and family modalities. *Journal of Consulting and Clinical Psychology*, 76, 282–297. Reprinted with permission of the publisher, the American Psychological Association (APA).

Publishing the outcomes of a study in a refereed journal (i.e., one that employs the peer-review process) signals that the work has been accepted and approved for publication by a panel of qualified and impartial reviewers (i.e., independent scientists knowledgeable in the area but not involved with the study). Consumers should be highly cautious of studies published in journals that do not place manuscript submissions through a rigorous peer-review process.

Although the peer-review process slows down the speed with which one is able to communicate study results (much to the chagrin of the excited researcher who just completed an investigation), it is nonetheless one of the indispensable safeguards that we have to ensure that our collective knowledge base is drawn from studies meeting acceptable standards. Typically, the review process is “blind,” meaning that the authors of the article do not know the identities of the peer-reviewers who are considering

their manuscript. Many journals employ a double-blind peer-review process, in which the identities of study authors are also not known to the peer-reviewers.

## Conclusion

Having reviewed matters of design, procedure, measurement, data analysis, and reporting that are pertinent, one recognizes that no one single study, even with optimal design and procedures, can answer the relevant questions about the efficacy and effectiveness of therapy. Rather, a series and collection of studies, with varying approaches, is necessary. The criteria for determining empirically supported treatments have been proposed, and the quest for identification of such treatments continues. The goal is for the research to be rigorous, with the end goal being that the most promising procedures serve professional practice and those in need of services.

Therapy outcome research plays a vital role in facilitating a dialogue between scientist-practitioners and the public and private sector (e.g., Department of Health and Human Services, insurance payers, policy-makers). Outcome research is increasingly being examined by both managed care organizations and professional associations with the intent of formulating practice guidelines for cost-effective psychological care that provides maximal service to those in need. There is the risk that psychological science and practice will be co-opted and exploited in the service only of cost-containment and profitability: Therapy outcome research must retain scientific rigor while enhancing the ability of practitioners to deliver effective procedures to individuals in need.

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