

4



Research Methods in Clinical Psychology

FOCUS QUESTIONS

1. What are the advantages and limitations of the case study method?
2. What are the advantages and limitations of the correlational method?
3. What are the advantages and limitations of longitudinal studies?
4. What are the basic components of the experimental method?
5. What are the major ethical issues to consider when conducting clinical research?

CHAPTER OUTLINE

Introduction to Research

Methods

Observation

BOX 4-1: *Clinical Applications: What Case Studies Can Tell Us About Phobias and Early Trauma*

BOX 4-2: *Clinical Applications: Generating Hypotheses from Therapy*

Epidemiological Methods

Correlational Methods

Cross-Sectional Versus Longitudinal Approaches

The Experimental Method

BOX 4-3: *Clinical Psychologist Perspective: Scott O. Lilienfeld, Ph.D.*

Single-Case Designs

BOX 4-4: *Clinical Applications: The Treatment of Mixed Anxiety and Depression*

Mixed Designs

Strengths and Weaknesses of Research Methods

Statistical Versus Practical Significance

BOX 4-5: *Graduate Student Perspective: Elizabeth A. Martin*

Research and Ethics

BOX 4-6: *Who Should Be Studied?*

BOX 4-7: *Sample Consent form*

CHAPTER SUMMARY

KEY TERMS

WEB SITES OF INTEREST

When clinical psychologists are depicted on TV, it often seems that the field is based largely on intuition and therapy is similar to an emotional conversation with a close friend. Sometimes old-fashioned approaches to practice, such as dream interpretation, hypnosis, or projective testing are depicted. Although some of these approaches still exist today, contemporary clinical psychology is clearly defined as a science. Our understanding of why individuals develop symptoms, how these symptoms exacerbate or ameliorate, and our practices for best treating psychological symptoms is based on rigorous scientific study and the accumulation of empirical findings over the past several decades. For this reason, the scientist-practitioner and clinical science models remain the pre-eminent philosophy in training clinical psychologists. To be a successful clinical psychologist, most believe that it is essential to be skilled both in research methods and evidenced-based clinical practice skills. Indeed, each of these areas of competency informs one another. Even clinical psychologists who see clients full-time in a private practice must have a knowledge and mastery of research methods. These skills enable them to critically evaluate different approaches to assessment and intervention and ultimately choose the approaches that are most likely to be useful and effective.

In this chapter, we present a brief overview of some of the principal methods, strategies, and issues in clinical research. Specific research questions (e.g., therapy outcome studies) will be addressed at appropriate points later in the book. More comprehensive and technical discussions of research methods in clinical psychology may be found elsewhere (e.g., Kazdin, 2003).

INTRODUCTION TO RESEARCH

Someone once remarked that a major portion of clinical training consists of erasing students' misconceptions about the reasons people behave the way

they do. For example, are the following statements true?

1. If patients talk about suicide, this means that they will not try it.
2. Ridding patients of symptoms without providing insight means that those symptoms will return later in another guise.
3. Projective tests prevent patients from successfully managing the impressions they wish to convey.
4. All a person needs to become a good therapist is a caring, empathic attitude.

All of these are common beliefs once held—and for that matter, still held—by some people, clinicians, and laypeople alike. Are they true? Probably not. Research employing the methods described in this chapter can shed light on these and many other issues. Human behavior is terribly complex—so complex that theories to explain it abound. So many factors affect a given behavior at a given time in a given place that we must be skeptical about explanations that appear simple or inevitable. In fact, a healthy skepticism is a directing force behind the scientist's quest for knowledge or the clinician's search for increasingly effective ways of serving clients.

Because easy, simple, or traditional explanations are so often wrong or incomplete, increasingly sophisticated methods of generating satisfactory explanations for behavior have evolved. We now use better methods to make the kinds of systematic observations about behavior that can be publicly verified. These methods have changed over the years and will continue to change; there are no perfect scientific methods. However, all ideas, hypotheses, or even clinical hunches must be stated clearly and precisely so that they can be tested by other observers. Only ideas that are stated in a manner that offers a clear opportunity for disproof are satisfactory ones.

Research has several purposes. First, it allows us to escape the realm of pure speculation or appeal to authority. For example, we do not just argue whether cognitive-behavior therapy works; we

conduct the kind of research that will demonstrate its effectiveness or lack of it. Questions are settled in the forum of publicly verifiable and objective observation. Over the long haul, such procedures are better vehicles for settling issues than simple appeals to reason. These research procedures enable us to accumulate facts, establish the existence of relationships, identify causes and effects, and generate the principles behind those facts and relationships.

Research also helps us extend and modify our theories as well as establish their parsimony and utility. There is an intimate relationship between theory and research. Theory stimulates and guides the research we do, but theories are also modified by the outcomes of research. For example, Aaron Beck, a pioneer in the study of depression, observed many years ago that depressed patients often exhibit personality features that could be categorized into one of two types: sociotropic (excessively socially dependent) and autonomous (excessively achievement oriented). Initially, Beck proposed that extreme sociotropy or extreme autonomy traits predispose a person to depression. However, subsequent research did not support this proposition. Investigators found that there were individuals who presented with rather extreme sociotropy or extreme autonomy but who were not depressed.

These results challenged Beck's initial theory and led to a reformulation of how personality and depression may be related. The revised theory, labeled the congruency hypothesis, proposes that it is the interaction between personality style (sociotropic or autonomous) and the experience of thematically related negative life events that leads to depression (Beck, 1983). Specifically, this theory predicts that a highly sociotropic person who experiences relationship failures (negative events quite salient to a highly dependent person) will become depressed, whereas this is not necessarily true for a highly autonomous person (for whom these particular kinds of negative events are less relevant). In other words, negative life events must be *congruent* with one's personality style for depression to develop. In general, research results have been more supportive of Beck's revised theory

(e.g., Bartelstone & Trull, 1995; Husky, Mazure, Maciejewski, & Swendsen, 2007; C. J. Robins, 1990).

This example illustrates how research can inform our theories in a type of feedback-loop system. Of course, the ultimate reason for research is the enhancement of our ability to predict and understand the behavior, feelings, and thoughts of the people served by clinical psychologists. In the final analysis, only better research will enable us to intervene wisely and effectively on their behalf.

METHODS

As noted earlier, there are many methods of research, each with its own advantages and limitations. Therefore, no method by itself will answer every question definitively. But together, a variety of methods can significantly extend our ability to understand and predict. We begin with an overview of the many forms of observation used by clinical scientists. We then summarize epidemiological and correlational approaches, longitudinal versus cross-sectional approaches, the classic experimental method, single-case designs, and finally, mixed designs.

Observation

The most basic and pervasive of all research methods is observation. Experimental, case study, and naturalistic approaches all involve making observations of what someone is doing or has done.

Unsystematic Observation. Casual observation does little by itself to establish a strong base of knowledge. In fact, unsystematic observation can lead people to erroneous conclusions. However, it is through such observation that we develop hypotheses that can eventually be tested more systematically. For example, suppose a clinician notes on several different occasions that when a patient struggles or has difficulty with a specific item on an achievement test, the effect seems to carry over to the next item and adversely affect performance. This observation leads the clinician to formulate

the hypothesis that performance might be enhanced by making sure each failure item is followed by an easy item on which the patient will likely succeed. This should help build the patient's confidence and thus improve performance. To test this prediction, the clinician might administer an experimental version of the achievement test in which difficult items are followed by easy items. It would then be relatively easy to develop a study that would test this hypothesis in a representative sample of clients.

Naturalistic Observation. Although carried out in real-life settings, *naturalistic observation* is more systematic and rigorous than unsystematic observation. It is neither casual nor freewheeling but is carefully planned in advance. However, there is no real control exerted by the observer, who is pretty much at the mercy of freely flowing events. Frequently, observations are limited to a relatively few individuals or situations. Thus, it may be uncertain how far one can generalize to other people or other situations. It is also possible that in the midst of observing or recording responses, the observer

may unwittingly interfere with or influence the events under study.

An example of a study using the naturalistic observation method might be an investigation of children's playground behavior to understand the association between aggression and friendship. Trained observers would stand unobtrusively on a playground watching youth whose parents have consented to be part of a research study. At regular time intervals (e.g., every 90 seconds), the observer would locate a specific child and record the type of play that the child engages in, the number of children with whom the child is interacting, and whether the child is engaging in any type of aggressive behavior. Over multiple observations, perhaps every week over an entire academic year, data will be available to understanding whether children who behave aggressively with their peers evidence a declining number of peer interactions over time. This observational study might yield interesting data about the association between aggression and friendship. But with only a few child patients from this particular playground, can wide generalizations



Bill Aron/PhotoEdit

Observation is the most basic of all research methods.

be made? Are these children's behaviors similar to those in other communities or schools where the overall atmosphere may be very different? Or were the children aware of the observer's presence, and could they have altered their play behavior to somehow "impress" the observer?

Investigators committed to more rigorous experimental methods sometimes condemn naturalistic observation as too uncontrolled. However, this judgment may be too harsh. As with unsystematic observation, this method can serve as a rich source of hypotheses that can be subjected to careful scrutiny later. Naturalistic observations do bring investigators closer to the real phenomena that interest them. Such observations avoid the artificiality and contrived nature of many experimental settings. For example, regardless of psychologists' feelings about psychodynamic theory, most acknowledge that Freud's clinical observation skills were extraordinary. Freud used his own powers of observation to construct one of the most influential and sweeping theories in the history of clinical psychology. It is important to recall that Freud had

available no objective tests, no computer printouts, and no sophisticated experimental methods. What he did possess was the ability to observe, interpret, and generalize in an impressive fashion.

Controlled Observation. To deal in part with the foregoing criticisms of unsystematic and naturalistic observation, some clinical investigators employ *controlled observation*. While the research may be carried out in the field or in relatively natural settings, the investigator exerts some degree of control over the events. Controlled observation has a long history in clinical psychology. For example, it is one thing to have patients tell clinicians about their fears or check off items on a questionnaire. However, observing the ability of a flight-phobic client to successively approach and ultimately board and fly on an airplane under controlled conditions provides a rich, more complete assessment of the extent of the fear. This controlled observation would allow a clinician to gain some real insight into the nature of the client's emotions and behavior.



Michael Newman/PhotoEdit

Controlled observation can be used to assess behavior in infrequently encountered circumstances.