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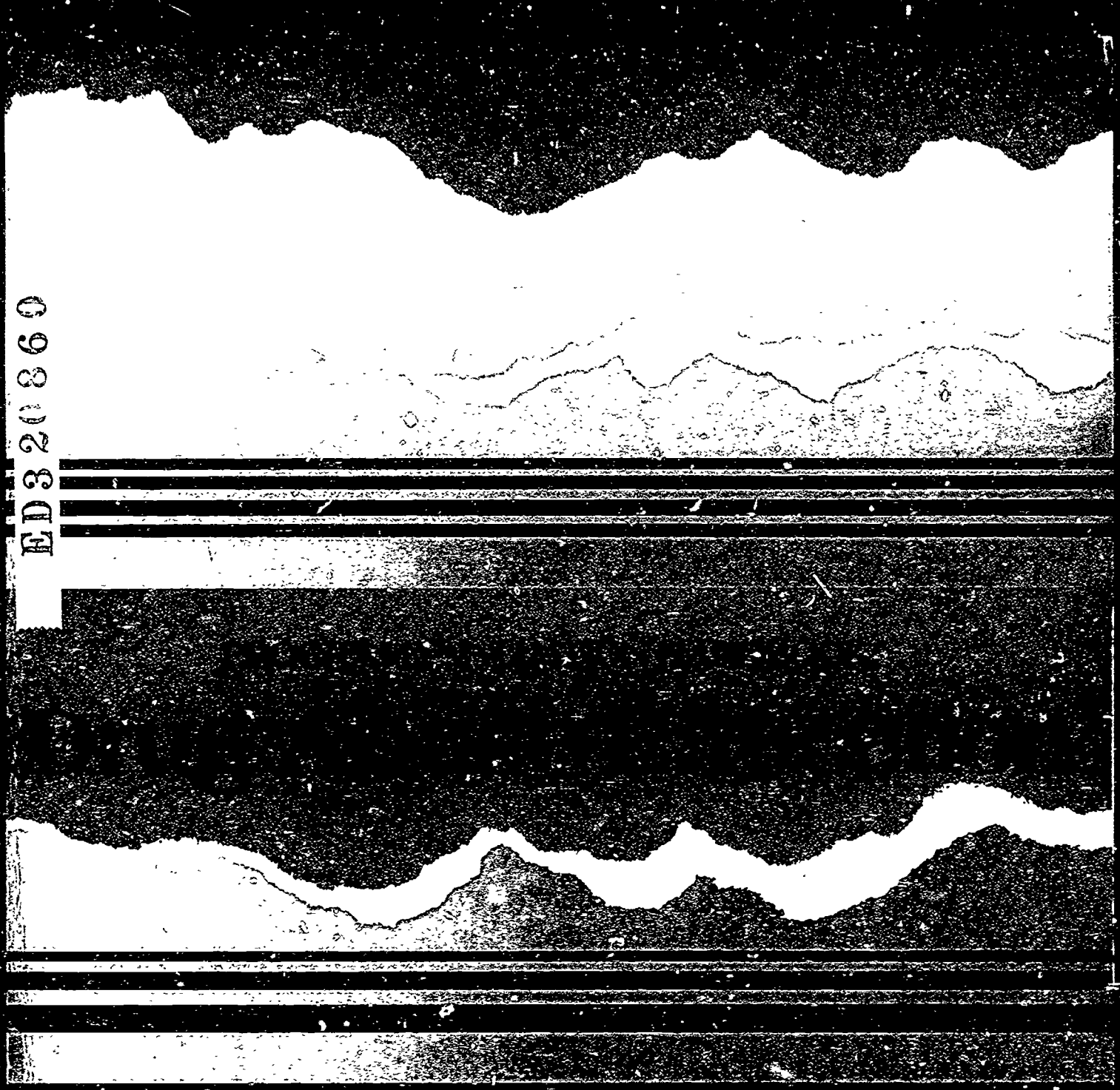
ABSTRACT

Intended as a resource for individuals wishing to evaluate drug abuse education programs, this handbook, one of a series of seven, provides a collection of measuring devices that can improve the quality of such evaluations. Chapter 1 introduces the handbook's contents and outlines evaluation related issues specific to drug abuse education programs. Chapter 2 introduces the key operations involved in program evaluation, emphasizing the role of assessment instruments in the gathering of information needed for defensible evaluations. Chapter 3 contains the measuring tools designed to be used in the evaluation and design of drug abuse education programs. These measures deal with behavior, knowledge, skills, and affective outcomes. Each measure is introduced by a brief description of the purpose of the assessment instrument, as well as procedures for administering, scoring, and analyzing the resulting data. Chapter 4 describes how technical appraisals of the handbook's measures can be carried out. The three appendices contain amplified content descriptors for updating the various measures, an explanation of informed consent procedures, and an annotated bibliography. (JD)



PROGRAM EVALUATION HANDBOOK

DRUG ABUSE EDUCATION

Prepared for

The Center for Health Promotion and Education
United States Centers for Disease Control

The Office of Disease Prevention and Health Promotion
Office of the Assistant Secretary for Health
United States Department of Health and Human Services

by

IOX Assessment Associates
P.O. Box 24095
Los Angeles, CA 90024-0095

1988

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Preface

In recent years, health educators have increasingly recognized that systematic evaluation can help them appraise and improve their programs. For this potential to be realized, however, effective mechanisms for gathering relevant data are required. In the past, critical information about a program's effects was not collected in some instances because suitable measures for gauging those effects were lacking. The purpose of this handbook is to rectify, at least in part, this deficiency in the evaluation of health education programs dealing with drug abuse education.

This book is one of seven health education evaluation handbooks resulting from a project jointly initiated in 1980 by the United States Centers for Disease Control (CDC) and the Office of Disease Prevention and Health Promotion (ODPHP) of the Office of the Assistant Secretary for Health. The handbook is not intended to be prescriptive or all-inclusive. Those who evaluate drug abuse education programs should regard the handbook as only a resource, that is, a collection of assessment tools that may be of use in program evaluation. The extent to which the handbook will actually be useful depends chiefly on the extent to which it contains assessment tools that correspond to the evaluation needs of a particular drug abuse education program.

Handbook Development

This handbook has been created by IOX Assessment Associates (IOX), selected competitively on the basis of responses to a governmentally issued request for proposals. IOX was to collect and develop program evaluation measures for critical behavioral, knowledge, skill, and affective outcomes in the area of drug abuse education. Three panels of experts played prominent roles in the creation of this handbook. A **Handbook-Development Panel**, consisting of six experts familiar with drug abuse education programs or their evaluation, guided the initial development of the handbook. The Handbook-Development Panel identified important outcomes for drug abuse education programs. IOX staff, drawing on the advice of panelists, then developed assessment instruments to assess panel-identified program outcomes. The names and affiliations of the Drug Abuse Education Handbook-Development Panelists are provided on the following page.

Handbook-Development Panel

Dr. Louis Bozzetti
National Committee for the
Prevention of Alchoholism
and Drug Dependency
Washington, D.C.

Dr. Nicholas Braucht
Department of Psychology
University of Denver
Denver, Colorado

Dr. Wells Hively
Central Western Regional
Educational Laboratory
St. Louis, Missouri

Dr. Lee Jessor
Institute of Behavioral
Sciences
University of Colorado
Boulder, Colorado

Dr. Snehendu Kar
School of Public Health
University of California
Los Angeles, California

Dr. Lloyd Kolbe
National Center for Health
Education
San Bruno, California

Dr. Eric Schaps
Pacific Institute for Research
and Evaluation
Lafayette, California

The Handbook-Development Panel met at the beginning of the project in order to isolate the chief outcomes that drug abuse education programs could reasonably be expected to promote. Preliminary statements reflecting these outcomes were identified by the panelists. These preliminary outcome statements were refined by IOX staff and mailed to the panelists and other interested specialists, all of whom rated the importance of each statement. The list of high-priority outcomes that resulted was used to guide the selection and development of the original handbook's measures.

All newly developed measures were mailed to the panelists for review. In addition, all of these measures were tried out with small groups of respondents. The measures were revised based on the informal tryouts and the panelists' review comments. All of the new measures were also reviewed by IOX staff in an effort to eliminate any potential ethnic, gender, religious, or socioeconomic bias.

A completed version of the drug abuse education handbook was delivered to the government in 1983. Several thousand copies of the handbook were released by CDC and ODPHP to health educators throughout the nation.

Handbook Revision

Subsequent to the initial distribution of the handbook, CDC issued, in concert with ODPHP, a second request for proposals which led to the comprehensive revision of the existing drug abuse education handbook. To guide the review and revision of the drug abuse education handbook, a **Handbook-Revision Panel** was constituted. Members of the panel were selected because of their dual expertise in (a) the field of drug abuse education and (b) measurement of the outcomes sought by drug abuse education programs. Members of the Handbook-Revision Panel and their affiliations are listed below:

Handbook-Revision Panel

Dr. Ian Newman
University of Nebraska
Lincoln, Nebraska

Dr. Cheryl Perry
Department of Epidemiology
School of Public Health
University of Minnesota
Minneapolis, Minnesota

Dr. Michael Goodstadt
Educational Research Program
Prevention Studies Department
Addiction Research Foundation
Toronto, Ontario

The Handbook-Revision Panel met on two occasions. In these meetings, panelists reviewed the contents of the initial version of the drug abuse education handbook, particularly its measures, and suggested deletions, modifications, or additions. Panelists also provided guidance regarding ways of making the handbook more usable to practitioners. During both of these meetings, the panelists were attentive to the accuracy of the handbook's contents. Considerable content, in the measures as well as the introductory materials, was revised or deleted on the basis of panelists' suggestions.

Overall Guidance

A third panel, the **Project Advisory Panel**, provided overall guidance to IOX staff during the final three years of the project. These individuals offered technical counsel and strategic advice during the revision of all handbooks. Members and affiliations of the Project Advisory Panel are listed below:

Project Advisory Panel

Dr. Peter A. Cortese
California State University
Long Beach, California

Dr. Lawrence W. Green
Henry J. Kaiser Family Foundation
Menlo Park, California

Dr. William L. Haskell
Stanford University
Stanford, California

Dr. Jonathan E. Fielding
U.S. Corporate Health Management
and University of California
Los Angeles, California

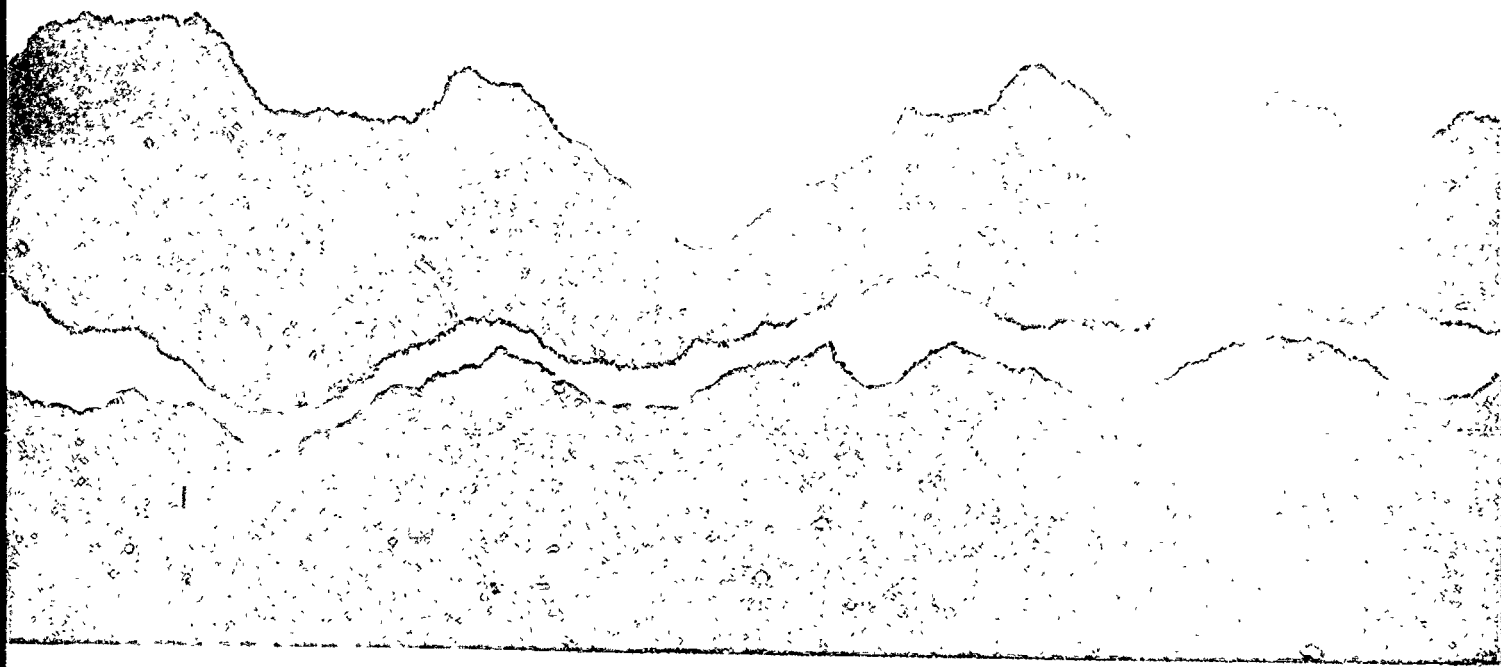
Acknowledgments

The project that led to the creation of this handbook was funded by the CDC and ODPHP. Dr. Walter J. Gunn of CDC conceptualized the project and supplied technical guidance throughout its first phase. During this time, Dr. Diane Orenstein of CDC as well as Dr. Donald Iverson and Dr. Patricia Mullen, both of ODPHP, served as project officers.

During the project's second phase, that is, the revision of the handbook, Dr. Orenstein of CDC continued to serve as project officer along with Dr. Joel Kavet, Dr. Gregory Christenson, and Mr. James Harrell of ODPHP.

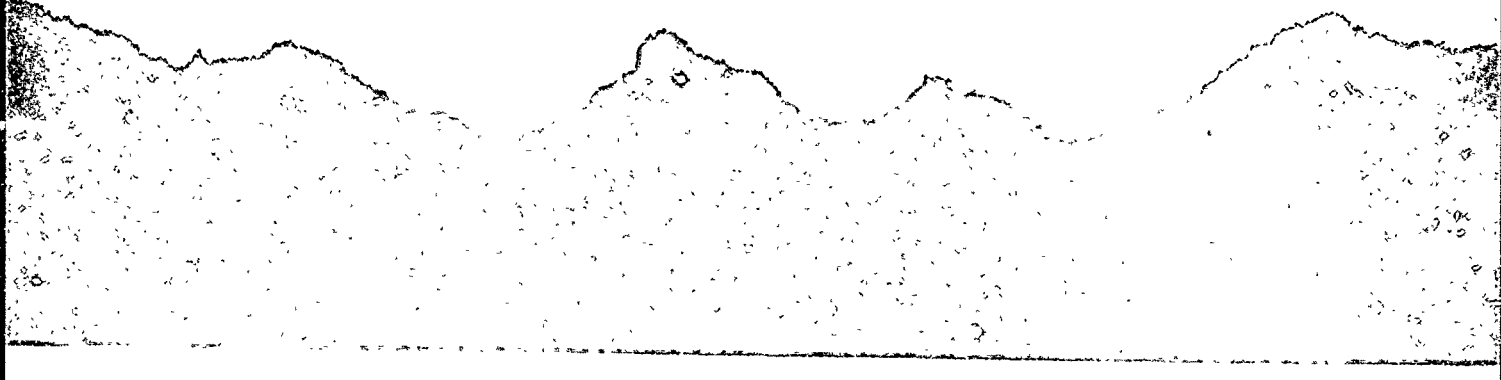
As the handbook progressed, numerous health educators throughout the nation offered their insights regarding the handbook's contents. Without their expert assistance, development of this volume would have been impossible.

IOX Assessment Associates
July, 1988



CHAPTER ONE

A Resource for the Evaluation of Drug Abuse Education Programs



A Resource for the Evaluation of Drug Abuse Education Programs

This handbook is intended to help those individuals who wish to evaluate health education programs dealing with drug abuse. More specifically, the handbook provides a series of measuring devices that, if selected and used judiciously, can improve the quality of such evaluations. As a consequence, not only will the technical quality of the program evaluation be improved, but any program-related decisions based on the evaluation's results are apt to be more defensible.

An Evidence-Oriented Era

In recent years, educators have experienced substantially increased pressures to produce evidence that their programs are functioning effectively. In contrast to an earlier era when it was widely thought that most educational programs were worth the money they cost, today's educators find that they are constantly called on to justify the effectiveness of their programs.

The kinds of evidence that health educators have been required to assemble regarding program effectiveness have, almost without exception, involved the use of various kinds of assessment instruments. Consonant with that requirement, this handbook contains numerous tests and inventories designed to secure the evidence needed to judge the effectiveness of drug abuse education programs. The handbook's measuring instruments were created specifically to assess important goals of the most common types of drug abuse education programs offered for adults (in industrial or clinical settings) and for children (in school-related programs).

The handbook, accordingly, makes available to those who operate drug abuse prevention programs the assessment tools by which the effectiveness of such programs can be determined. The evidence of program effectiveness currently being demanded of drug abuse program personnel can, therefore, be provided by appropriate use of the handbook's assessment instruments. Moreover, as will be indicated shortly, appropriate use of the handbook's numerous assessment devices can substantially improve the *design* of drug abuse prevention programs.

Measurement and Program Design

Historically, assessment devices have been thought of as instruments to be used *after* a program was concluded. Teachers, for example, have traditionally administered tests *after* instruction was over in order to grade students. However, even though assessment instruments have often been post-instruction creations of instructors, such instruments can make important – often overlooked – contributions to the original design of an instructional program. Properly developed assessment tools, in fact, can contribute to program design in two significant ways.

First, because assessment instruments are typically intended to measure outcomes of interest, such assessment instruments provide program personnel with a range of potential

outcomes. An increased range of possible program outcomes generally leads to the *selection of more defensible outcomes* for health education programs. To illustrate, there may be an assessment instrument dealing with an attitudinal dimension that, were it not for the measuring instrument's availability, might have been overlooked by the program staff. Stimulated by the assessment tool's availability, however, the program staff can add the attitudinal dimension to the program's targeted outcomes.

A second program-design dividend of properly constructed assessment tools is that they *clarify intended program outcomes* and, thereby, make possible the provision of more on-target program activities than would have been the case had such clarification not been present. To illustrate, suppose that program personnel intend to feature in their evaluation an assessment device focused on a specific drug education-related skill. By becoming familiar with the composition of that assessment tool, the program staff can be sure to incorporate truly relevant practice sequences in their instructional program. Provision of appropriate instructional practice for participants need not reflect "teaching to the test" in the negative sense that instructors coach students for specific test items. Instead, providing relevant practice so that program participants attain the program's intended outcomes constitutes an efficient and effective, research-supported form of instruction.

To review, then, the measuring instruments provided in this handbook are intended to assist those who design and those who evaluate drug abuse prevention programs. With respect to program evaluation, the measures will yield evidence by which to improve programs as well as determine program effectiveness. With respect to program design, the measures provide a menu of potential program options and, once having been selected, enhanced clarity regarding the nature of the outcome(s) sought.

What the Handbook Contains

There are several key ingredients in this handbook. It should, therefore, prove helpful to readers if the handbook's major sections are presented. Briefly, then, here is a description of the handbook's major components:

Introductory information. In Chapter One, an introduction to the handbook is provided. Because the handbook is intended to be used with drug abuse education programs, the chapter concludes with several issues specific to health education programs dealing with drug abuse prevention.

Program evaluation essentials. Although a number of people who use this handbook will already be familiar with the nature of program evaluation, many handbook users will not be well versed in the conduct of program evaluations. Accordingly, in Chapter Two, an introduction is provided to the key operations involved in program evaluation. Although space limitations preclude a detailed exposition of all aspects of program evaluation, emphasis is given to the role that assessment instruments play in the gathering of information needed for defensible evaluations.

Assessment instruments. Chapter Three contains the handbook's most important components, namely, the measuring tools designed to be used in the evaluation and design of drug abuse prevention programs. These measures deal with behavior, knowledge, skill, and affective outcomes. *Behavior* measures focus on actual behaviors of program

participants. *Knowledge* measures are concerned with participant mastery of a defined set of information. *Skill* measures deal with cognitive, that is, intellectual, competencies to be mastered by program participants. Finally, *affective* measures assess participants' attitudes and values.

Each measure is introduced by a brief description of the purpose of the assessment instrument, as well as procedures for administering, scoring, and analyzing the resulting data. All measures have been provided on detachable pages. At the beginning of Chapter Three, an overview description of the chapter's measures is provided to facilitate the selection of measures.

Local measure apprcisal. Although the measures contained in this handbook have been created with considerable care and were pilot tested in small-scale tryouts, the measures have not yet been subjected to a formal empirical appraisal of their technical adequacy. Thus, in Chapter Four, a description is provided of how such technical appraisals of the handbook's measures can be carried out.

Annotated bibliography. Because evaluators and designers of programs in drug abuse education may wish to consult additional sources regarding program design and evaluation, an annotated bibliography is provided in Appendix C to facilitate the handbook user's selection of such materials.

Amplified content descriptors. The information eligible for inclusion in the knowledge measures is provided in Appendix A as amplified content descriptors. Additional content that can be used for the generation of new items is also presented. These descriptors, however, are not exhaustive accounts of drug abuse education content.

How to Use the Handbook

The particular ways in which the handbook is used will vary from setting to setting and from user to user. For instance, if a handbook user is relatively unfamiliar with the core notions in program evaluation, then a thorough reading of Chapter Two's treatment of program evaluation essentials is warranted. In addition, further reading based on the evaluation-related references included in the annotated bibliography would also seem useful.

For handbook users more familiar with program evaluation, primary attention will probably be focused on Chapter Three's measures. Although use of the measures will vary from situation to situation, a common four-step usage pattern is depicted in Figure 1.1.

Note that in Step 1, the measures are used to represent a range of potential program objectives. Clearly, an expanded range of options can lead to more appropriate decisions regarding what program objectives to pursue. In Step 2, after the measures for possible program evaluation have been reviewed, one or more measures are selected for use in the evaluation of the program. In Step 3, after the program evaluation measures have been selected, the program staff studies the measures intensively to discern if there are program design implications to be drawn from the measures. In Step 4, the measures are administered using one of the evaluative data-gathering designs described in Chapter Two and scored according to the scoring directions in Chapter Three. Finally, interpretations of the results are made.

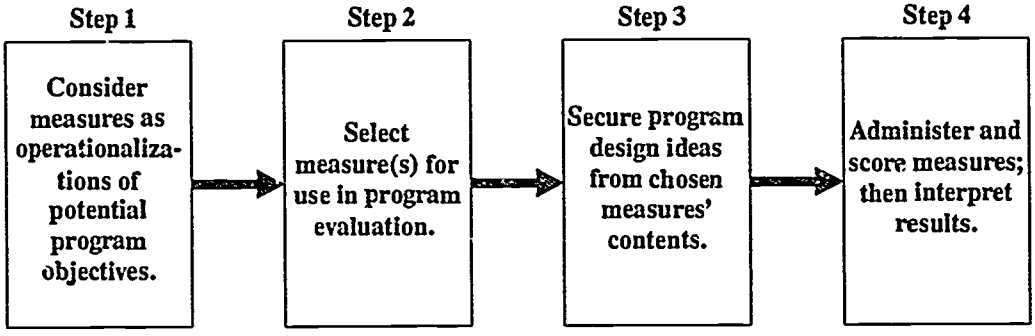


Figure 1.1: A four-step usage pattern of the handbook's measures

It is important to remember that the handbook's measures are to be used for program evaluation, not individual decision making. Thus, if one of the handbook's affective measures was used on a pretest-posttest basis, it is the *aggregation* of scores on the measure that provides us with an indication of the program's effectiveness. The measures were not designed to yield an accurate indication of an *individual* participant's status. Thus, it would be inappropriate to attempt to determine an individual participant's attitudes on the basis of the handbook's measures. The measures are relatively brief instruments designed to be administered without great intrusiveness. When the measures' scores are viewed in the aggregate, the measures can provide data of relevance to program evaluators. The data, however, should *not* be used for determining the status of individuals.

Another point related to use of the handbook's measures concerns the potential *reactivity* of certain measures, that is, the likelihood that if the measure is used *prior* to the program, the experience of completing a measure may cause participants to react differently to the program than had the measure not been administered. Reactivity is more frequently associated with affective measures rather than cognitive measures. Thus, handbook users will need to be alert to the possibility that a given measure, if administered prior to the program, will unduly sensitize participants to an aspect of the program.

To avoid such reactive effects, program personnel may need to divide participants into two subgroups so that only a portion of the participants receive any given potentially reactive measure. Such subgroups would not be given the same reactive measure both before and after the program. Rather, participants should be administered only post-program measures that they had *not* been given prior to the program. Indeed, two potentially reactive measures may be administered simultaneously under the conditions represented in Figure 1.2, where it can be seen that the preprogram performance of certain participants (one-half, for example) serves as a comparison for the postprogram performance of other participants. Although a variety of data-gathering designs will be described in Chapter Two, the evaluator should employ care in using the handbook's measures so that they permit reasonable inferences regarding program effectiveness. Potential reactivity of measures should be examined when considering such designs.

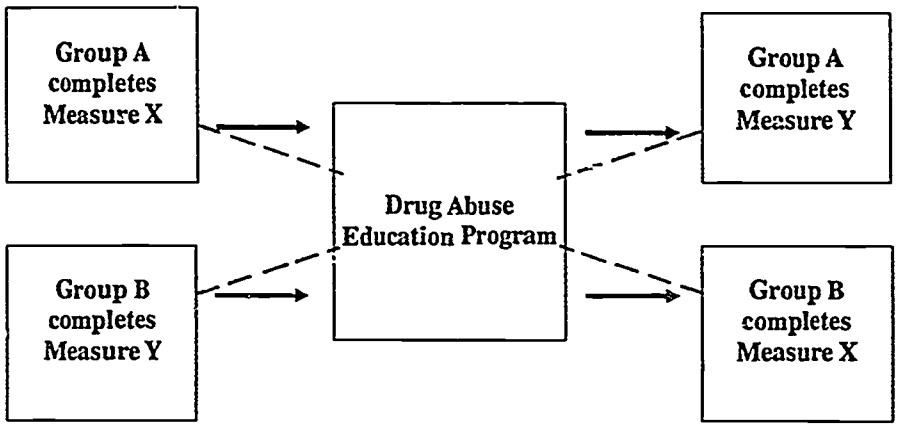


Figure 1.2: Using the handbook's measures to avoid reactive effects (Appropriate Comparisons = – – –)

Technical Quality of the Handbook's Measures

The measuring instruments to be found in Chapter Three were carefully constructed by an experienced test-development agency according to the guidance of prominent experts in the field of drug abuse education. All of Chapter Three's assessment devices were subjected to small-scale tryouts, revised on the basis of those tryouts, and reviewed by drug abuse prevention specialists.

At the outset of this handbook development project, it had been anticipated that all of the handbook's measuring instruments would be subjected to large-scale field tests so that substantial empirical evidence regarding the technical quality of the measures could be made available to handbook users. Unfortunately, that phase of the project could not be completed.

Thus, handbook users should be cautioned that, although the handbook's measures were developed with great care, there is currently no evidence available by which to ascertain the technical quality of the measures. Thus, handbook users must exercise caution in the use of Chapter Three's assessment instruments. In Chapter Four, as indicated earlier, a description is presented of the ways in which users of the handbook's measures, if they wish to do so, can carry out local studies regarding the technical quality of the measures that they find most suitable for their use.

Specific Drug Abuse Education Concerns

Traditionally, attempts at drug abuse prevention have focused on restricting the public's access to drugs, punishing users, and disseminating information about the dangers of drug use. In the last 15 years, however, research on drug abuse has brought into question the effectiveness of prevention techniques used in the past and has resulted in fundamental changes in the approach to drug abuse education. The evaluation instruments in this handbook attempt to reflect the diversity of new prevention models presently in use.

Drug Abuse Prevention Education

Until the 1970s, the information model was predominant in drug abuse prevention education. It was widely believed that if those at risk for drug abuse were made aware of the dangers of abusing drugs, they would make the rational decision not to use drugs (Bell & Battjes, 1985; Swisher & Vicary, 1982). In the mid-1970s, educators and social scientists became aware of the ineffectiveness of the pure knowledge approach to drug education. Indeed, it appeared possible that knowledge-based programs could increase drug consumption by providing certain kinds of knowledge to potential users. During the same period, researchers influenced by theories of social learning (Bandura, 1977; Jessor & Jessor, 1977) began to make significant advances in understanding the causes of substance use. In the view that has emerged, drug use is understood to be a behavior learned through modeling and reinforcement, sharing much in common with other social behaviors.

The implications of this approach are profound, suggesting that prevention of drug use requires the modification of attitudes, beliefs, motivations, and social skills. Most prevention education programs now incorporate elements of this approach into their framework. The measures included in this handbook reflect the influence of psychosocial prevention research. In the paragraphs that follow, the relation of the handbook measures to current theory will be summarized briefly.

Programs that employ a pure information approach are widely seen as ineffective (Botvin & Wills, 1985; Schaps et al., 1981; Swisher & Vicary, 1982). As an element in a prevention program, however, information is of value (Jessor, 1982). Accordingly, three knowledge measures are included in the handbook.

A variety of current prevention approaches offer decision-making skills as one means of providing individuals with the social and personal skills needed to cope effectively. This handbook contains two measures designed to assess an individual's knowledge of systematic decision-making skills.

Much drug abuse prevention research now addresses the psychological and social influences that lead young people to initiate and continue drug use. One well-supported finding is the positive relationship between willingness to use drugs (intention) and actual drug use (e.g., Wolford & Swisher, 1986). Peer and family influences have been the focus of much study and have been found to be critical predictors of drug consumption (Kandel & Andrews, 1987; Lorhmann & Fors, 1986; Sheppard, Goodstadt & Willett, 1987). Finally, some researchers have suggested that drug consumption can be viewed as a health-compromising behavior and is related to other health-compromising behaviors (Jessor, 1982; Perry & Jessor, 1983). Measures in this handbook address each of the areas of research described above.

Handbook focus. This handbook is intended for use in the evaluation of drug abuse education programs. The majority of the instruments were, therefore, designed with the expectation that program participants would have some knowledge of drugs or drug users, but that they would not necessarily be drug users themselves.

If the handbook is used in the evaluation of a drug abuse treatment or control program, certain measures may not appear to address the issue of drug use directly enough, given that

participants are all current or recent drug users. In contrast, prevention programs may contain individuals who have no familiarity with drugs and no willingness to experiment with them. Such persons may feel that certain handbook measures are oriented toward drug users or persons familiar with drug users. Program personnel may wish to consider these issues when determining the most appropriate measures to administer.

Physiologic measures. This handbook relies on self-report instruments to reveal drug-taking behavior. In recent years, however, physiologic tests to detect drug use have been the subject of frequent public debate. While much of this discussion has been concerned with drug detection in the workplace, many of the issues raised will prove relevant to drug abuse education program personnel wishing to learn about drug testing.

The most common method of detection is the analysis of urine samples, although testing blood, saliva, and expired breath may be possible, or necessary, depending on the drug to be detected. Drug testing is too complex an activity to be discussed within the scope of this handbook. If program personnel believe that it is necessary to use a physiologic criterion in order to achieve the desired degree of confidence regarding behavioral data, a variety of issues should be considered. Among them are compliance with legal requirements (see Hoyt et al., 1987), problems in the administration of physiologic measures, cost requirements, and means of obtaining the necessary quality controls.

References

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice Hall.

Bell, C., & Battjes, R.J. (1985). Overview of drug abuse prevention research. In C. Bell & R.J. Battjes (Eds.), *Prevention research: Deterring drug abuse among children and adolescents.* (NIDA Research Monograph 63, pp. 1-7.) (DHHS Publication number (ADM)85-1334.) Washington, DC: U.S. Government Printing Office.

Botvin, J.G., & Wills, T.A. (1985). Personal and social skills training: Cognitive-behavioral approaches to substance abuse prevention. In C. Bell & R.J. Battjes (Eds.), *Prevention research: Deterring drug abuse among children and adolescents.* (NIDA Research Monograph 63, pp. 8-49.) (DHHS Publication number (ADM)85-1334.) Washington, DC: U.S. Government Printing Office.

Hoyt, D.W., Finnegan, R.E., Nee, T., Shults, T.F., & Butler, T.J. (1987). Drug testing in the workplace – are methods legally defensible?: A survey of experts, arbitrators, and testing laboratories. *The Journal of the American Medical Association, 258,* 504.

Jessor, R. (1982). Critical issues on research in adolescent health promotion. In T. Coates, A. Peterson, & C. Perry (Eds.), *Promoting adolescent health: A dialogue on research and practice* (pp.447-465). New York: Academic Press.

Jessor, R., & Jessor, S.L. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth.* New York: Academic Press.

Kandel, D.B., & Andrews, K. (1987). Processes of adolescent socialization by parents and peers. *The International Journal of the Addictions, 22* (4), 319-342.

Lohrmann, D.K., & Fors, S.W. (1986). Can school-based educational programs really be expected to solve the adolescent drug abuse problem? *Journal of Drug Education, 16* (4), 327-339.

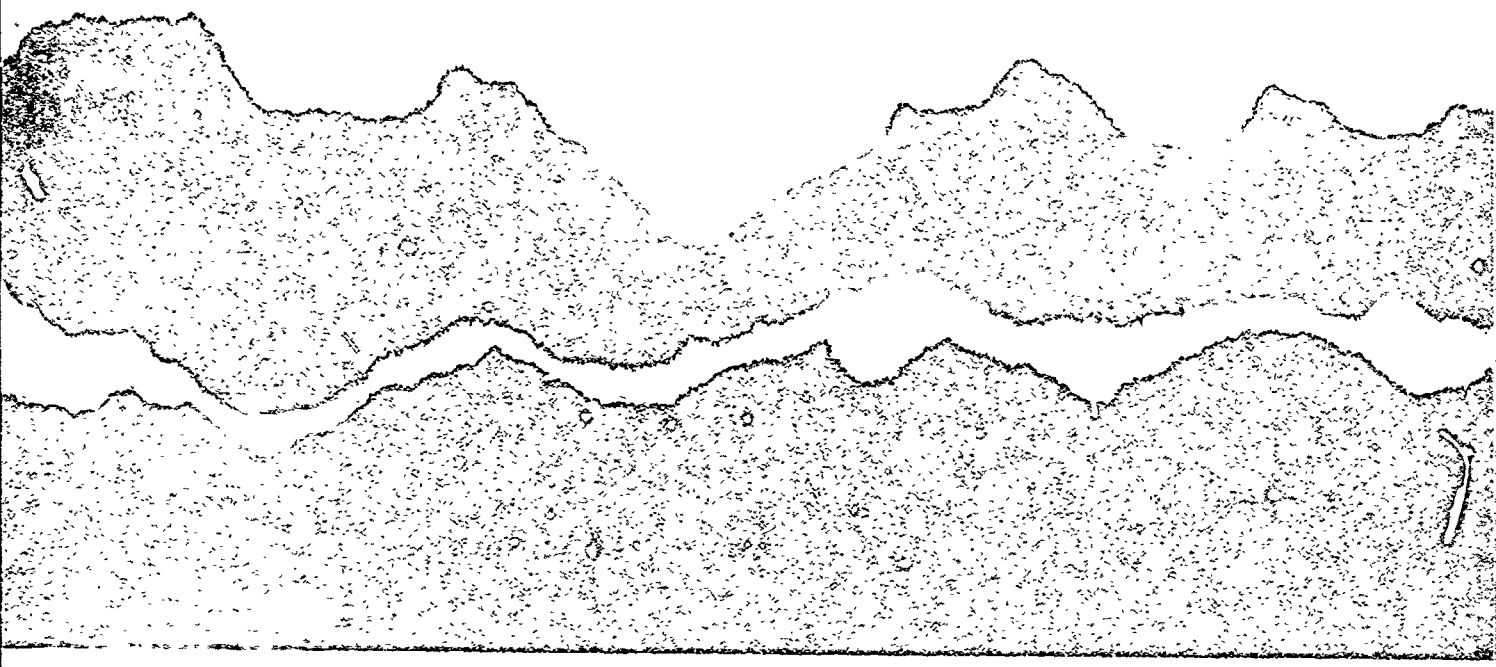
Perry, C.L., & Jessor R. (1983). Doing the cube: Preventing drug abuse through adolescent health promotion. In T.J. Glynn, C.G. Leukefeld, & J.P. Ludford (Eds.), *Preventing adolescent drug abuse: Intervention strategies.* (NIDA Research Monograph 47.) (DHHS publication no. (ADM)83-1280.) Washington, DC: U.S. Government Printing Office.

Schaps, E., DiBartolo, R., Moskowitz, J., Palley, C.S., & Churgin, S. (1981). A review of 127 drug abuse prevention evaluations. *Journal of Drug Issues,* Winter, 17-43.

Sheppard, M.A., Goodstadt, M.S., & Willett, M.M. (1987). Peers or parents: Who has the most influence on cannabis use? *Journal of Drug Education, 17* (2), 123-128.

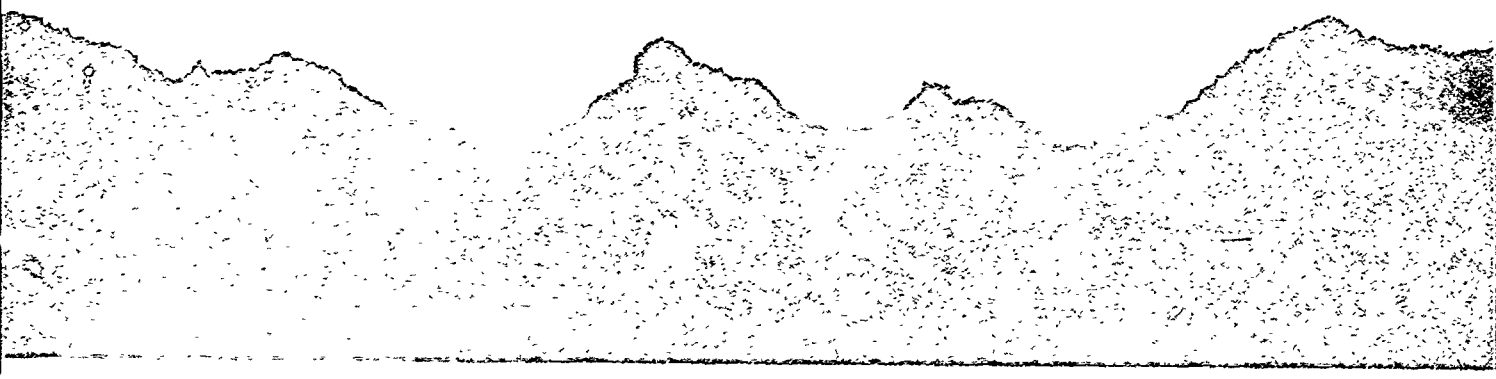
Swisher J.D., & Vicary J.R. (1982). Prevention of alcoholism and drug abuse. In J. Solomon & K. Keeley (Eds.), *Perspectives in alcohol and drug abuse: Similarities and differences.* (pp. 145-178). Boston: John Wright/PSG, Inc.

Wolford, C., & Swisher, J.D. (1986). Behavioral intention as an indicator of drug use. *Journal of Drug Education, 16* (4), 305-326.



CHAPTER TWO

Essentials of Program Evaluation for Health Educators



Essentials of Program Evaluation for Health Educators

Education programs are intended to help people. Public school programs, for example, are intended to help youngsters acquire the skills and knowledge that they will need as adults. Similarly, health education programs are intended to promote participants' adoption of beneficial health-related behaviors. Yet, even though an education program might have been well intentioned, how do we know that the goals of the program were realized? Moreover, if a program is not meeting its goals, how can the program be made more effective?

Such questions constitute the core of program evaluation. In essence, evaluators want to discover whether a program has worked effectively and, if not, how it can be made more effective. When evaluation is used to improve programs, it can make a significant contribution to the well-being of program participants and, potentially, to the community at large.

In this chapter, the nature of program evaluation will be considered as it relates to health education programs. The following topics will be discussed:

- Focusing the Evaluation
- Rights of Participants
- Selecting Appropriate Measures
- When to Administer Measures
- Data-Gathering Design Options
- Sampling Considerations for Data Collection
- Data Analysis
- Reporting Results

The purpose of this chapter is not to promote a particular evaluation model for health education programs. Rather, the chapter deals with considerations central to any evaluation effort. It is hoped that evaluators* of drug abuse education programs will be able to apply the chapter's contents to their endeavors.

Focusing the Evaluation

The results of a program evaluation can be used to improve decisions about programs. Anyone setting out to evaluate a health education program, therefore, should focus the

* Sometimes a program evaluation will be conducted by an individual not affiliated with the program itself – an individual formally designated as a program evaluator. More frequently, however, an evaluation will be carried out by the personnel who are actually operating the program. Whenever the term "evaluator" is used in this handbook, it will refer both to the evaluator-specialist and to the program staff member serving as evaluator.

evaluation on the *decisions* that are likely to be made about the program, either while the program is being implemented or when it is concluded. In other words, if evaluators know what decisions are apt to be faced by those who will use the evaluation's results, then information bearing on those decisions should, if possible, be collected during the evaluation. To determine what these decisions are, an evaluator needs to have a clear understanding of the purpose of the program, the specifics of the program, and the individuals or groups who may use the evaluation's results. Focusing the evaluation involves considerations such as (a) the nature and role in the evaluation of program objectives, (b) the summative and formative functions of evaluation, (c) the cost of the program, (d) the extent to which observed changes in participants will be attributed to the program, and (e) the extent to which program effects will be generalizable to other situations. Each of these considerations is discussed below.

Objectives and evaluation. Health education programs are designed to bring about worthwhile effects. Most health education programs, therefore, are organized around some form of program objectives that focus on such intended effects. In general, the more clearly these objectives are stated, the more useful they will be in carrying out an evaluation.

One way of conducting an evaluation is to determine the extent to which a program's objectives have been achieved. Program designers too frequently describe their objectives in such ambiguous, general ways, however, that it is impossible to tell whether such loosely defined objectives have been attained. It is for this reason that it can be beneficial for evaluators to work with program personnel, prior to program implementation, to create program objectives that clearly describe desired postprogram participant behaviors.

Another potential pitfall when creating program objectives is the tendency to delineate a set of hyper-detailed objectives. Specificity does not automatically yield utility. Instead, decision makers can become overwhelmed by long lists of low-level, albeit behaviorally stated, objectives. For example, a program objective which states that participants be able to identify types of depressant drugs encourages the development of numerous small-scope objectives. Recent thinking regarding instructional objectives suggests that program objectives, *while still measurable,* should focus on larger, more significant types of participant postprogram behaviors. A more significant drug-related objective, for example, might be that participants be able to identify general physical effects of drugs with high abuse potential. Today's health education programs, rather than being organized around 30 miniscule (and, therefore, potentially trivial) objectives, might better be focused on a half-dozen more general, but still measurable, program objectives.

Most evaluators agree, however, that there is substantially more to program evaluation than merely determining whether a program's objectives have been achieved. For example, there may be effects of the program that were not anticipated in the program's stated objectives. Evaluators need to be attentive not only to the effects of a program that were anticipated, but also to any unforeseen program effects.

Summative and formative functions. Summative evaluation addresses the question of whether a program, in its complete and final form, is effective. The decisions associated with the summative evaluation are essentially go/no-go decisions, such as whether to continue a health education program or, perhaps, whether to disseminate the program more widely.

Formative evaluation addresses questions associated with improving a program that is "under development," that is, still modifiable. The decisions associated with formative evaluation focus on ways to improve particular parts of the program. Formative evaluation is an ongoing endeavor conducted as the program is designed, installed, and maintained. Whereas summative evaluation's mission is to provide a final judgment about a program's overall merit, formative evaluation's mission is to bolster a program's quality on a continuing basis. The effective formative evaluator functions less as an external judge and more as a collaborating member of the program team. The formative evaluator's task is to monitor the program so that it can be improved.

Almost all programs are, at least to some degree, modifiable. Hence, only in rare cases do evaluators appraise a health education program in its complete and final form. One such instance might involve a materials-based drug abuse education program. For example, if the program were found to be effective via a summative evaluation, a commercial publisher would distribute the program's materials nationally. In most cases, however, health education programs can be modified and improved. Thus, a formative, improvement-oriented evaluation can be carried out for most health education programs.

Cost-analysis considerations. Program evaluators are often so concerned about detecting the effects of programs that they fail to consider the *costs* of those effects. Yet decision makers need information regarding not only the effects of a program, but also the resources required to achieve those results. For this reason, program evaluators should carefully isolate and communicate the relative costs of programs. For example, information should be collected that can show how much Program A costs to produce a given result compared to the cost of Program B to produce a comparable result. Judgments about a program's impact without considerations regarding its costs are potentially superficial. In recent years, there has been much attention to cost-analysis strategies. Although consideration of those procedures is beyond the scope of this handbook, serious evaluators of health education programs would do well to delve more deeply into cost-analysis procedures.*

Attributing observed changes to the program. Characteristically, an evaluation seeks to determine whether individuals have changed as a result of their participation in a program. The key issue is whether preprogram to postprogram changes in the status of participants are attributable to the program itself or to other extraneous factors. Examples of extraneous factors are participants' maturation, their familiarity with the measures used in the evaluation, or their reactions to nonprogram events such as a health-related mass media campaign. This issue revolves around the evaluator's ability to properly infer that the program itself caused any observed changes in participants. Technically, the degree to which evaluators can validly infer that a program caused a set of observed changes is referred to as the *internal validity* of the evaluation study. Ideally, an evaluation's data-gathering design should help to rule out explanations other than the program itself for observed changes. (Data-gathering design options are discussed later in this chapter.) If evaluators are unable

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* For additional information about cost-analysis approaches, see Annotated Bibliography Nos. 1, 28, and 29.

to attribute observed changes to the program, they will have difficulty in determining program quality.

Generalizing program effects. A related issue is the extent to which the findings of an evaluation study can be generalized to other situations. The issue here is whether the program would be expected to produce similar results with, for example, a different group of participants, slight variations in the program, or changes in program personnel. The degree to which the results of an evaluation study can be generalized elsewhere is technically described as the study's *external validity.*

If evaluations are generalizable, they can provide useful information to (a) program personnel regarding the range of conditions under which the program is effective and (b) other health educators who may wish to adopt an already "evaluated" health education program. A drug abuse education program that works well in one setting may provide helpful guidelines for those wishing to operate other drug abuse education programs. Typically, however, a local evaluation should be conducted once the program has been adopted.

It is important to distinguish between a program's causative power and the program's generalizability, because different information may be required to establish each factor. Procedures that limit the number of extraneous variables in the evaluation (e.g., including only males) increase internal validity but, at the same time, limit generalizability. Evaluators must try to balance the problems associated with threats to internal and external validity by selecting a data-gathering design that best addresses the information needs of program personnel as well as of those external to the program who may be interested in adopting the program elsewhere.*

Rights of Participants

Health education programs are designed to improve individuals' health and well-being. When such programs are evaluated, therefore, the focus is typically on a program's impact on human beings. Some evaluators, however, become so caught up with the importance of appraising a health education program that they overlook the rights of the individuals who take part in the evaluation. Two important rights are those of informed consent and confidentiality.

Informed consent. Evaluators, just as researchers, should be guided by a profound respect for human dignity. Therefore, they should not engage in evaluative activities that in any way demean participants. Prominent among the considerations that should guide evaluators is the concept of *informed consent.* Informed consent requires that an evaluator secure, in advance of the study, permission from the participants in an investigation to gather data from them. This consent is obtained *after* the potential participants have learned about the nature of the investigation and what their role would be, because that information may influence their decision to participate. Informed consent eliminates the possibility of making individuals unknowingly serve as subjects in an evaluation.

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* For additional information about internal and external validity issues, see Annotated Bibliography Nos. 8, 11, 12, and 16.

Two different approaches to securing informed consent have been employed by program evaluators. The first of these, *active informed consent,* obliges an evaluator to obtain, in writing, a statement from each participant indicating that the individual is willing to participate in the evaluation. The significant aspects of the evaluation must be described in the written permission form so that potential participants are fully informed when they give their consent.

An evaluator using the second approach, *passive informed consent*, supplies descriptions of the evaluation's essentials to all program participants and provides them an opportunity to register, in writing, their unwillingness to participate in the study. In other words, when a passive informed consent approach is used, participants return the forms supplied to them only if they are *not* willing to participate in the evaluation study. Of the two approaches, the active informed consent strategy typically results in fewer participants because those individuals who do not provide consent forms must be excluded from the study. Because evaluators who conduct studies involving school-age children are obliged to secure informed consent from underage participants' parents or guardians, a passive informed consent strategy is often adopted due to the difficulty of securing active informed consent from individuals who are not participating in the program themselves.

Examples of forms for both of these approaches to securing informed consent are provided in Appendix B. These forms are for illustrative purposes only. The actual forms to be used in an evaluation would need to be more specifically relevant to the program involved.

Confidentiality. Another consideration when dealing with human subjects is the *confidentiality* of all information gathered during an evaluation. Because the evaluator is not concerned with an appraisal of individual participants but, rather, with gauging the effectiveness of a health education program, ensuring participant confidentiality usually poses no problem. Evaluators must, however, devise protective safeguards, such as anonymous completion of forms and careful handling of data, to ensure both the appearance and reality of confidentiality.*

Selecting Appropriate Measures

Although there are various approaches to program evaluation, almost all share one common feature, namely, the systematic gathering of evidence regarding a program's effects. To secure evidence of program effects, evaluators usually employ measurement instruments. Some instruments, however, are far more suitable for assessing a program's effects than others.

Criterion-referenced measurement. For more than two decades, educational measurement specialists have directed increasing attention toward an emerging form of assessment known as criterion-referenced measurement. In comparison to norm-referenced measurement, which attempts to ascertain an examinee's status in relation to the status of other examinees, criterion-referenced measurement attempts to ascertain an examinee's status in relation to a

* For additional information about the rights of human subjects and the ethics of evaluation, see Annotated Bibliography Nos. 2, 26, and 38.

clearly defined set of behaviors. The essence of a criterion-referenced instrument is the clarity with which its accompanying descriptive materials explain what is being measured. Because norm-referenced instruments emphasize *relative* comparisons among examinees, they often do not provide a clear description of exactly what it is they are assessing. In contrast, criterion-referenced instruments are *absolute* measures, designed to determine exactly what it is that examinees can or cannot do, without reference to the performance of other examinees. Thus, criterion-referenced tests provide a clearer description of what they are measuring.

It is the clarity regarding what is being assessed that renders criterion-referenced measures ideal for the evaluation of health education programs. Consistent with the mission of providing useful information for decision makers, criterion-referenced instruments describe the precise nature of what is being measured. Hence, when criterion-referenced measures are used to gather evidence in program evaluations, decision makers can accurately interpret the evidence being supplied.*

Attributes of well-constructed measures. All instruments, whether norm-referenced or criterion-referenced, should measure what they are measuring with consistency. The consistency with which an instrument measures is known as its *reliability.*** There are several different indices that can be computed to reflect an instrument's reliability. The kind of reliability data needed to appraise a measure for possible use in an evaluation study should be consonant with the way the measure will be used in that study. If a measure is to be used on a test-retest basis, for example, then information about that type of reliability is germane. If alternate forms of a test are to be used, for instance, in a pretest-posttest situation, then evidence should be available regarding alternate-forms reliability so that the evaluator can determine whether or not the two different forms are sufficiently equivalent.

It should be noted that when a health education program is being evaluated, attention should be directed to the impact of the program on a *group* of participants. Thus, the consistency to be sought when measurement instruments are used for program evaluation is consistency for a group of participants' scores. When dealing with individual participants, the measures must yield *individual* or diagnostic consistency.

A second critical attribute of a properly constructed measure is that it yields scores from which valid inferences can be drawn. An instrument is often said to be valid "if it measures what it purports to measure." Such a statement, however, is technically in error. Tests themselves are never valid or invalid. Rather, it is the *interpretations* made from test scores that are valid or invalid.

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* For additional information about the nature and development of criterion-referenced measures, see Annotated Bibliography Nos. 7, 24, and 34.

** For information about determining the reliability of measuring instruments, see Annotated Bibliography Nos. 3, 18, 19, 23, 27, and 34.

There are several types of validity evidence, each yielding somewhat different but conceptually related indications about our ability to make valid inferences from a measure. Evidence of validity is, in the opinion of most measurement specialists, the most important consideration in judging the adequacy of measurement instruments. Program evaluators should make sure they are knowledgeable about methods of securing validity evidence.*

A final consideration in appraising the quality of measures used for program evaluation deals with the presence of *bias* in the assessment devices. During the past decade, measurement specialists have become particularly aware that many educational assessment devices contain items biased against particular subgroups, such as ethnic minorities or women. An example of a biased test item would be a knowledge question that, because of peculiarities in its content or wording, is more difficult for women to understand and answer correctly than it is for men, even though the men and women have an equivalent amount of knowledge regarding the particular concept being tested.

Another type of bias that can adversely influence examinee performance arises when test items are offensive to particular groups of individuals. For example, if a test item includes content that is seen to be derisive to members of particular ethnic groups, then examinees from those groups are not apt to perform at their best on the item. Their warranted agitation over the offensive content is likely to interfere with their responses to that item as well as to subsequent items. There are now available both judgmental and empirical techniques for detecting the presence of biased items. These approaches should be used to identify, then eradicate, bias in a measure's items.**

Finally, it is important to note that any given instrument may not possess all of the qualities discussed above. Often evaluators must choose among measures that embody some but not all of the elements described here, that is, (a) descriptive clarity, (b) reliability, (c) validity, and (d) absence of bias. Another important point is that merely because a measure is *labeled* in a particular way, for example, as criterion-referenced or as nonbiased, that does not automatically indicate that it is of sufficient quality to be used in evaluating a health education program. Scrutiny of all aspects of the measure's quality is requisite.

When to Administer Measures

Decisions regarding when to administer measures depend on the data-gathering design selected. Conceivably, there are four temporal periods during which it may be useful to obtain evaluative information about participants of health education programs. There may also be reasons for repeated measurement during some of these periods. These periods are depicted in Figure 2.1.

Pretests. Often it is useful to have information about participants prior to their starting the program. Such information, typically referred to as pretest data, may be used to identify participant needs so that instruction can be targeted directly at those areas. In addition,

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* For information about obtaining validity evidence regarding measuring instruments, see Annotated Bibliography Nos. 3, 18, 19, 23, 27, and 34.

** For information about methods for avoiding test bias, see Annotated Bibliography Nos. 6 and 33.

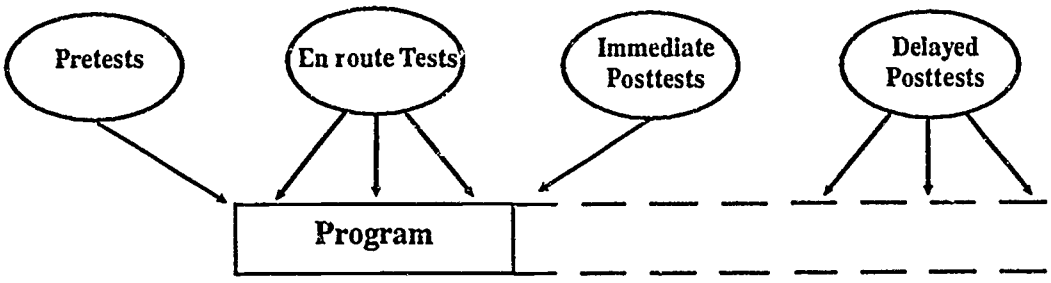

Figure 2.1: Possible measurement times in program evaluation studies

pretest data can be compared with data collected at the end of a program. Such a comparison can provide a measure of program impact.

En route tests. Measures can also be administered during a program to secure current readings on the status of participants. For purposes of formative evaluation, en route data can be used to redirect resources during the program by providing program personnel with ongoing status-checks on participants' progress. Thus, en route tests may be even more useful than tests administered at the end of the program, because en route measurement provides information while there is still time for program personnel to act on it. This type of assessment is most appropriate for programs of long duration (e.g., several months or more).

Immediate posttests. Measures are commonly administered following a program. The data from posttests can be compared with pretest data to examine changes in participants from the beginning to the end of the program. Participants' posttest performance can also be contrasted with posttest scores from participants in other programs. In addition, posttest data provide an indication of the absolute status of participants on the variables of interest at the completion of the program.

Delayed posttests. Data from delayed or follow-up posttests are often as important or more important than immediate posttest data in evaluating a health education program. Delayed posttest data might be secured, for example, several months after a program's conclusion. Far too frequently data collection efforts are limited to those times when measurement is most convenient. Ultimately, however, health educators should be interested in effecting long-term, rather than short-term, behavioral, affective, and cognitive changes. It is nearly impossible to infer such long-term changes on the basis of information gathered solely at the end of a program. As indicated in Chapter One, many of the desired changes in participants of drug abuse education programs represent long-term rather than short-term objectives. For most health education programs, some follow-up measurement is usually warranted.

Clearly, it is not sensible to administer all measures at all time periods. Evaluators, in collaboration with program personnel and other interested parties, need to select a measurement scheme that focuses on the most appropriate times for gathering data. Just as it is desirable to avoid administering an excessive number of different measures, it is also

necessary to avoid an excessive number of administrations. It may be useful to administer certain measures (for example, a brief behavioral self-report measure) on a continuing basis; other more time-consuming measures might be administered less frequently. Decisions about when to administer measures should be guided by common sense, attentiveness to participants' feelings, the efficient use of resources, and any conventional expectations, such as when a delayed posttest is ordinarily given.

Data-Gathering Design Options

It is sometimes thought that program evaluations must include complicated and elaborate data-gathering designs in order to yield decisive and compelling data. This is simply not the case. Program personnel and evaluators should try to conduct evaluation studies and gather data in such a way that the ambiguity of results can be reduced to a minimum. That is, evaluations must attempt to determine whether a program works and what makes it work or what prevents it from working. Data-gathering designs serve as the means to this end by setting forth the procedures to be used in exploring the nature and impact of a program.

The data-gathering design that an evaluator chooses for an evaluation will determine the inferences the evaluator can make about a program's overall impact on participants and the effectiveness of its various components. To select the best designs for evaluation studies, evaluators must have a broad knowledge of the available data-gathering design alternatives and the strengths and weaknesses associated with each. Evaluators must also work closely with program staff to determine what decisions are at issue regarding the program. No evaluation study will be perfect; every evaluation leaves some questions unanswered. Evaluators need to be clear regarding what they have learned about a program and the degree of certainty associated with their findings, and they must convey this information to appropriate audiences.

An important concept related to data-gathering designs is randomization. Randomized selection and assignment are described below, followed by brief descriptions of the most common data-gathering designs available for evaluators of health education programs.

Randomization. One technique that can prove useful to evaluators is *randomization,* which involves the selection or assignment of participants in a nonsystematic manner, such as by using a table of random numbers (found in most statistics texts). A prominent application of randomization in program evaluation is *randomized selection* of subjects. This sort of randomization is particularly important when the evaluator wishes to generalize from the results of a study to a larger population. When the participants taking part in the program to be evaluated have been selected at random from a larger population of potential participants, then the evaluator can be reasonably confident that those involved in the evaluation will be representative of that larger population. There is less likelihood that the participants being studied in the evaluation are atypical, which would make it inappropriate to generalize the evaluation's results to the population at large. Randomized selection of subjects may also be useful when there are more applicants than vacancies for a program.

Another use of randomization is to assign participants to different "treatments" or programs. If an evaluator wishes to compare the effects of different treatments, then the evaluator wants the participants in each treatment to be as equivalent as possible. To this

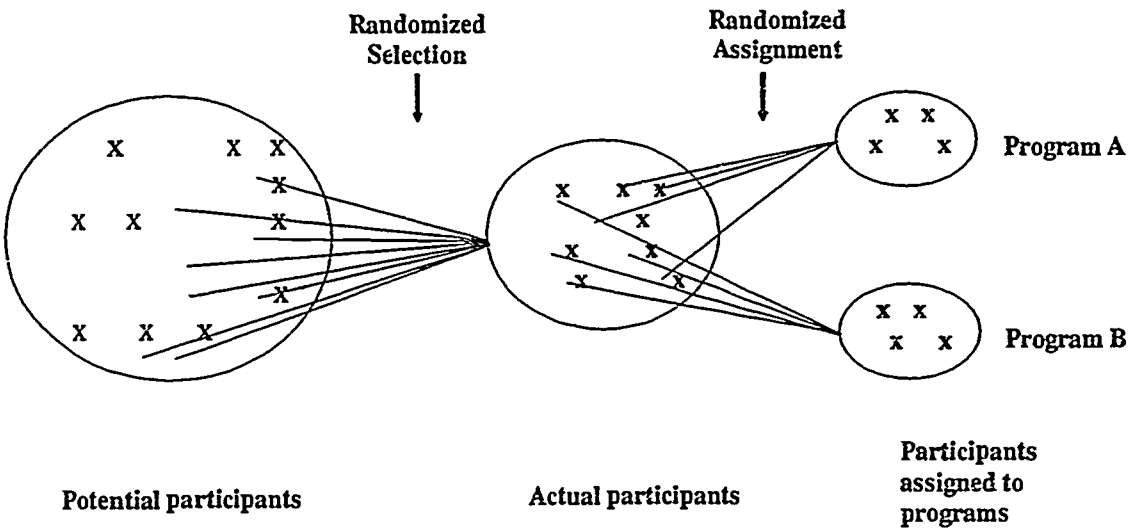

Figure 2.2: Randomized selection of participants from pool of potential participants and randomized assignment of participants to programs

end, evaluators can employ a *randomized assignment* procedure whereby individuals are randomly placed in the treatments or programs to be compared.

The two procedures of randomized selection and randomized assignment are illustrated in Figure 2.2. Note that participants are randomly selected from the pool of potential participants, and then randomly assigned to either Program A or Program B.

The use of randomization techniques does not necessarily create equivalent groups. For example, if an evaluator were to randomly assign 50 potential participants in a company's drug abuse education program to treatment and no-treatment groups, it is still possible that one of the groups would contain individuals who, when pretested, were significantly different in some important aspect from those in the other group. In such instances, evaluators must rely on statistical procedures in an effort to compensate for such disparities. In most cases, however, use of randomization will create groups of sufficient equivalence that such statistical adjustments are not needed.

In practice, program personnel often may not have the luxury of constituting groups via randomized selection or assignment. For example, local school board policies might require that *all* youngsters be provided with any program regarded as potentially beneficial. When randomization is not used, it is especially important to collect and examine descriptive data about participants to determine where preprogram group differences occur and to consider the ways in which such differences may influence postprogram data. Even if randomization

is impossible, attempts to constitute comparison groups with individuals as equivalent as possible can help minimize the influence of preexisting participant differences.*

Seven different data-gathering designs of potential utility for evaluators of health education programs will be presented below. Each data-gathering design will be described and depicted schematically. Some of the major factors involved in the selection of data-gathering designs will be addressed.

The case-study design. Consider a six-month health education program aimed at modifying participants' knowledge about the effects of drug abuse on health. If participants' knowledge were measured only at the close of the program, we could describe the data-gathering approach as a *case-study design* and represent it schematically as shown in Figure 2.3.

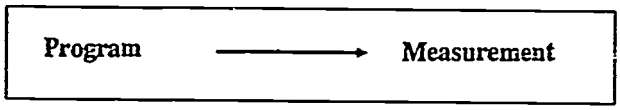

Figure 2.3: Case-Study Design

If this were the design employed in an evaluation, what could an evaluator tell about the program's impact on participants' knowledge? How confident would an evaluator be that participants' knowledge about the effects of drug abuse was attributable to the program?

It would be difficult to attribute, with confidence, any effects to the health education program. The program, indeed, may have been totally ineffectual. In fact, participants' postprogram knowledge might be identical to their knowledge before the program. The participants could be demonstrating knowledge that they brought to the program, not that they acquired during the program. Because we have no measure of participant knowledge prior to the program, we cannot distinguish between preexisting knowledge and knowledge acquired as a result of the program. Hence, with the case-study design, it may be impossible to determine whether the program had any impact on participants.

Even though attributions of causality are often unwarranted, it may be possible to secure useful program evaluation data with such a data-gathering design. Suppose, for example, that a health education program is promoting a body of knowledge so advanced that few, if any, individuals would be familiar with it. In such a setting, one could assume that participants' postprogram knowledge is attributable to the program's impact because participants would almost certainly not have acquired the knowledge without the program. It might not be worth the resources necessary to implement a data-gathering design capable of conclusively demonstrating that participants began the program unfamiliar with the knowledge being promoted.

This example illustrates an important data-gathering consideration, namely, that the chief mission of data-gathering designs is to *rule out plausible rival explanations,* that is, explanations other than the program's impact that might account for the postprogram status

* For additional information about randomization, see Annotated Bibliography Nos. 8 and 25.

of participants. If there is reason to believe that participants' preprogram status may account for their postprogram status, then a data-gathering design should be selected that permits the evaluator to rule out this rival explanation.

The one-group pretest-posttest design. Now suppose that, to avoid the major shortcoming of the case-study design, an evaluator measures participants' behavior both before and after a health education program. This data-gathering approach can be described as a *one-group pretest-posttest design* and can be represented as shown in Figure 2.4.

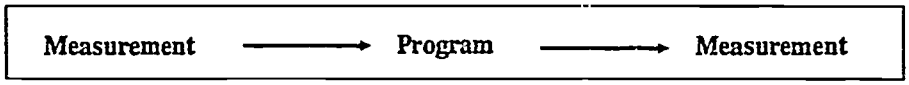

Figure 2.4: One-Group Pretest-Posttest Design

Assume an evaluator uses the one-group pretest-posttest design and that the data reveal a substantial shift toward more desirable behaviors between the initial and the final measurement. Can this change in behaviors be ascribed to the program? Unfortunately, the evaluator cannot be sure. There are many other factors, totally unrelated to the program, that may have influenced participants' behaviors. For instance, if a drug abuse education program emphasized the relationship between drug abuse and mental health, and at the same time a series of drug-related suicides received attention in the national news, such an event may have influenced participants' views regarding drug abuse and suicide. Evaluators of programs that serve children must also consider the possible effects of maturation during the time the program is offered. Participants' increased maturity may cause preprogram to postprogram shifts in behaviors. The program itself may have contributed nothing to the measured shift of behaviors. Such extraneous factors decrease the evaluator's ability to draw defensible conclusions about the program's impact.

As was true with the case-study design, however, if there are no plausible rival explanations for the posttest results, the one-group pretest-posttest design can be suitable for the task at hand. In fact, this simple yet serviceable design is often used in formative evaluation.

The one-group pretest-posttest design requires measurement before as well as after a program. This points to a commonly accepted but often overlooked principle of effective program evaluation. Evaluation is most effective when it is initiated at the beginning of a program. If evaluators are not called in until the end of a program, they may be hampered in their efforts to design a credible program evaluation.

The nonequivalent control/comparison group design. Program evaluators can eliminate some of the more common rival explanations for changes in participants' behaviors by using data-gathering designs in which either comparison or control groups are employed. The use of a control group (untreated individuals) or a comparison group (individuals receiving a different program) requires two groups that are assumed to be relatively similar (before the program) on all related variables. When using these designs, the evaluator should attempt to secure two groups that are as similar as possible. Because the two groups are not randomly

assigned to the two conditions, however, they cannot be assumed to be *equivalent*, hence the design's designation as a "nonequivalent" control or comparison group design.

In the control-group version of this design, only one of the groups is given the program to be evaluated; the other group is left untreated. This data-gathering design, known as the *nonequivalent control group design,* is illustrated in Figure 2.5.

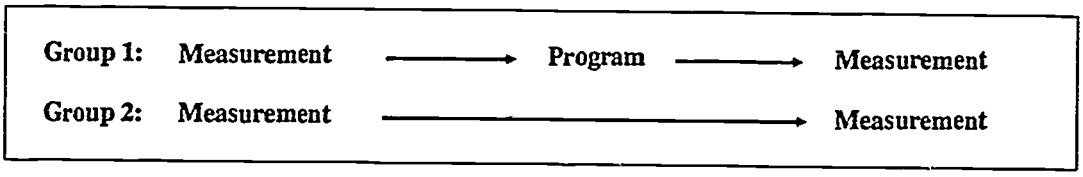

Figure 2.5: Nonequivalent Control Group Design

In this design, a control group (Group 2) is assessed before and after the program, but it never receives the program itself. Assuming that the groups were similar before the program, if the program participants' behaviors change while the behaviors of those in the control group remain the same, the evaluator can be reasonably confident that the program caused the change.

The use of an *untreated* control group may strike some health educators as a particularly unsavory data-gathering ploy. After all, health educators design their programs to benefit participants. To withhold such programs from individuals, even for the important purpose of evaluating the program's effectiveness, seems downright reprehensible. Yet, the individuals from whom the program is withheld, that is, the members of the control group, can be given the program *subsequently*, as soon as the evaluation study has been concluded. Also, in some situations there are more program applicants than can be accommodated, and, therefore, some prospective participants must be denied access to this program under any circumstances. Those who are not admitted to the program could be used as a control group, and admitted to the program the next time it is offered.

A variation of the nonequivalent control group design involves the use of a comparison group, that is, a group receiving a different program or a different treatment. Program evaluators frequently find themselves studying the quality of two or more competing programs. Thus, the evaluator focuses on the relative virtues of two or more different programs rather than on a contrast between a single program and an untreated control group. A schematic depiction of a *nonequivalent comparison group design,* in this instance contrasting two different programs, is presented in Figure 2.6. As indicated above, more than two groups can be employed when using a nonequivalent comparison group design. An evaluator using this design can be fairly certain that, if the groups were similar before the program, any differences in postprogram behaviors are due to the differential impact of the two programs.

There are, however, potential problems with the nonequivalent control/comparison group designs. It may be that the initial measurement was *reactive.* A reactive measurement is one that, by itself or in combination with the program, influences participants' behavior. Attitude inventories and self-report questionnaires about behavioral practices are

notoriously reactive. For example, a questionnaire administered before the program might alert participants to the importance of a desired behavior. This would heighten their attentiveness when the program dealt with content related to that behavior and, as a consequence, influence their performance on the second measurement.

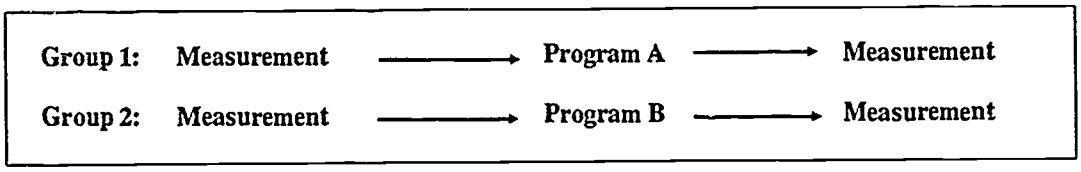

Figure 2.6: Nonequivalent Comparison Group Design

Moreover, measurement is expensive. Measuring the status of control groups requires valuable evaluation resources. Time and money can often be better spent studying the program being evaluated rather than studying a no-treatment control group of little intrinsic interest. Health educators should not ritualistically employ control groups in their designs if the questions at issue can be answered without the use of untreated groups.

The pretest-posttest control/comparison group design. There are two data-gathering designs that are of particular value to program evaluators if randomized assignment is possible. The first of these is the *pretest-posttest control group design*, illustrated in Figure 2.7.

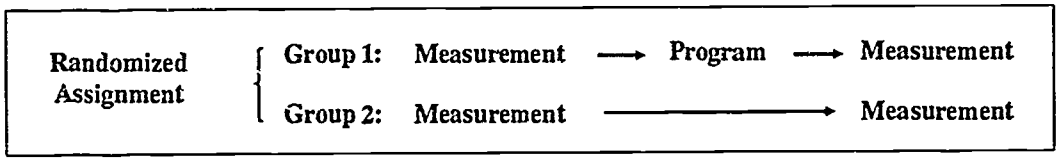

Figure 2.7: Pretest-Posttest Control Group Design

The difference between this design and the previously considered nonequivalent control group design is, of course, the randomized assignment of subjects to the two groups. This feature of the design is a particularly important one, because creation of two or more groups using randomized assignment is an effective way of promoting equivalence between the groups, especially if the number of subjects in each group is large (say, 30 or more). Equivalence of groups at the beginning of the program strengthens the inference that any differences at the conclusion of the program are due to program impact.

By using comparison groups, that is, two or more program groups, instead of an untreated control group, the evaluator would be using a *pretest-posttest comparison group design*, shown in Figure 2.8.

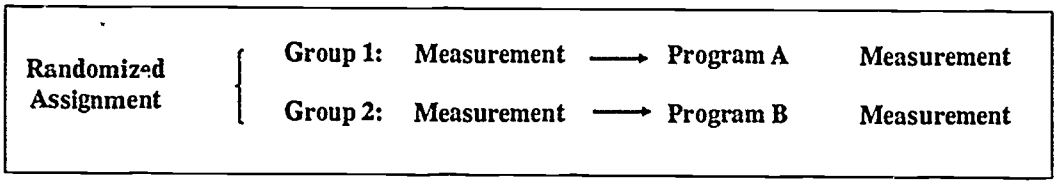

Figure 2.8: Pretest-Posttest Comparison Group Design

Because pretests are used in both of these designs, the possibility of reactive preprogram measures is still present. For situations in which reactivity is of great concern, a different data-gathering design, described next, has much appeal.

The posttest-only control group design. In situations where a measure is likely to be reactive, the evaluator can rely on a clever data-gathering design that effectively dodges the reactivity problem. This *posttest-only control group design* is depicted in Figure 2.9. This design is the same as the pretest-posttest control group design, except that there is no pretest.

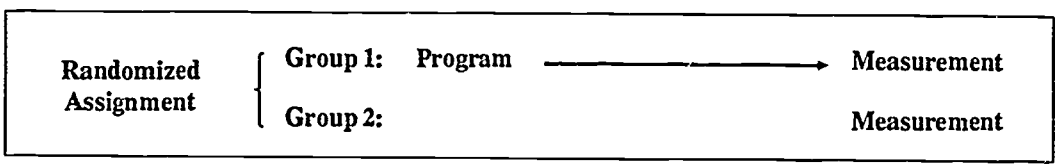

Figure 2.9: Posttest-Only Control Group Design

In this design, neither Group 1 nor Group 2 is pretested, but because of random assignment the groups can be considered equivalent prior to Group 1 receiving the program. Not pretesting Group 1 effectively avoids a pretest's potentially reactive effect on program participants. To assess the impact of the program, it is possible to contrast the *posttest* performances of Groups 1 and 2. As with the other control group designs, the untreated control group could be given the program the next time it is offered.

The basic dividend of the posttest-only control group design is that by measuring an untreated, randomly assigned control group, the evaluator secures an estimate of how program participants would have responded on a pretest, but without introducing the potentially reactive effects of a pretest. Although the diagram for this design suggests that the measurements be made for both groups at the conclusion of the program, it is possible to measure the untreated control group earlier if that seems advisable.

Multiple measures over time. There are certain situations in which health educators may wish to appraise the effects of their programs on the basis of periodic measurements, for example, by using regularly administered questionnaires or data that are routinely recorded. For instance, suppose when evaluating a "supervisor's drug abuse awareness" program, the evaluator was interested in the number of drug abuse-related referrals a company's supervisors make for their employees. Assuming that such information is available from the firm's health records, the evaluator might study records at periodic intervals before, during,

and after the program. By observing the frequency of referrals during different time intervals, the evaluator would have valuable information regarding program effects.

A number of the most commonly used data-gathering designs have been described. There are other, more complex designs than those treated here.* Complexity, however, is rarely an asset if a more straightforward design is appropriate.

Sampling Considerations for Data Collection

The data-gathering requirements of an evaluation can become a burdensome intrusion into an ongoing health education program. Accordingly, evaluators should conduct their data-gathering activities in the least intrusive manner possible. One way to minimize an evaluation's intrusiveness is by relying on sampling techniques, such as person-sampling and item-sampling, each of which is described below.

Person-sampling. To estimate how a large group of people would respond on a particular measure, it is not necessary to administer the measure to all the individuals in the group. Instead, a smaller group can be selected. This smaller group can be either a *simple random sample* or a *stratified random sample,* that is, a sample stratified on the basis of program-relevant factors such as age, sex, and socioeconomic status. Assuming that the sample is randomly selected, the evaluator can estimate the status of the total group based on the responses of the sample.

Suppose, for example, that the evaluator wants to use a measure to determine participants' perceived ability to avoid using illegal drugs. Assuming that there is a reasonably large number of program participants, say 50 or so, the evaluator could randomly select half of the participants and administer the measure to this group only. In essence, this approach allows the evaluator to infer how the total group of participants would score on the measure, even though only half of the participants completed it. Thus, it is possible to estimate total group performance with only half the amount of participant time required for data gathering.

Using a similar sampling procedure, evaluators can administer two or more measures at once in the time it takes to administer one. Suppose that two measures are to be given to program participants. The evaluator can randomly assign one measure to half of the participants and the other measure to the remaining participants. Each participant needs to respond to only one measure, but the evaluator can derive defensible estimates of how all the participants would have responded on both instruments.

Item-sampling. In addition to sampling persons, as in the previous examples, it is also possible to sample items, so that different sets of items from a program evaluation measure are randomly selected to be administered to different persons. Using this approach, the evaluator gives each participant only a sample of the items on any particular measure. For example, suppose a program evaluator wishes to administer a 30-item test. Given 60 participants in the program, the evaluator could divide the test into three sets of 10 items

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* For additional information about evaluation design options, see Annotated Bibliography Nos. 8, 11, 22, 23, and 35.

each and administer each set of 10 items to 20 different participants. In this way, the total group's performance on the whole test can be estimated. This approach to data gathering requires only one-third of the time that would have been required to administer the total 30-item test to all participants.

Sample size. Given the relatively small number of participants in some health education programs, is it really appropriate to sample either persons or items? How large must groups be before these sampling procedures can be sensibly used? Unequivocal answers to these questions do not exist. Some texts on sampling provide rules of thumb for estimating the size of samples needed for detecting group differences in relation to the magnitude of differences sought and the nature of the groups being sampled. At best, though, these rules provide only rough estimates. It is important to recognize that the task of identifying a sufficiently large sample is more difficult than usually thought.

The variability of participants' anticipated performance on the measures is the primary determiner of the necessary sample size. If it is expected that participants' scores on a test will be relatively homogeneous, a smaller number of respondents will be needed than if participants' scores are expected to vary widely. Thus, if on a measure of knowledge about physical consequences of drug abuse, for example, some of the participants are expected to know many consequences and others are expected to know very few, reasonably large numbers of participants (e.g., 20) should respond to any one item.

Intuitively, one recognizes that when working with a very small group of program participants, the use of these sampling techniques is risky. For instance, if there were only 15 participants in a program, few evaluators would try to split these participants into three groups of five each for purposes of taking different sets of items. Even though each group represents one-third of the total population, there is too much likelihood that a sample of five individuals would not properly represent the total group. One or two atypical participants in a five-person group would render the group's average performance unrepresentative of how the larger group would have performed.

It should be noted that when employing procedures such as person-sampling or item-sampling, an evaluator is focusing on a group of participants *in the aggregate*. Because evaluations are typically concerned with the effects of programs on groups of participants, the use of sampling procedures is usually appropriate. If, however, program personnel need individual data on all examinees, then sampling should obviously not be employed.*

Data Analysis

A frequent question asked of an evaluator is whether a study's results are statistically significant. For example, could the observed changes in program participants' knowledge or behavior from pretest to posttest have occurred simply by chance? Statistical tests are used to answer this type of question. Consideration of statistical analysis procedures, however, is beyond the scope of this handbook. Thus, just a few comments will be made here regarding data analysis. Because there are many subtle choice-points in the statistical analysis of

* For additional information about sampling procedures, see Annotated Bibliography Nos. 9 and 10.

evaluation data, evaluators who are not well versed in at least the more common statistical procedures should probably enlist the aid of someone who is.

There are two basic classes of statistics, namely, descriptive statistics, such as the mean, and inferential statistics, such as the *t* test. *Descriptive statistics* help evaluators portray a group's performance on a given measure. For example, an evaluator might describe a set of participants' scores via the mean score (the scores' central tendency) and standard deviation of the scores (the scores' variability). Because the mean and standard deviation are frequently used, program evaluators should know how to calculate and interpret them. Any introductory statistics book for the social sciences will serve as a reference for this information. *Inferential statistics* help evaluators determine whether an observed difference between preprogram and postprogram scores is *statistically significant,* that is, whether such a difference could have occurred because of chance alone. If the probability is small that the results are due to chance, the evaluator can, with reasonable confidence, attribute the results to the program.

Statistical significance, however, does not imply *practical significance.* A small difference between the average scores of two groups can be statistically significant, particularly when large numbers of participants are involved, yet be of no practical consequence whatsoever. Health educators will need to make sensible determinations regarding whether the magnitude of an observed difference, even though statistically significant, is sufficiently important to warrant action. In other words, although evaluators of health education programs should often carry out statistical significance tests, they should not be unduly swayed by the results of such analyses. Common sense must always be applied in interpreting the meaning of a statistically significant result.*

Reporting Results

Reporting the results of an evaluation study is a more difficult undertaking than is usually recognized. Considerable attention must be given to the procedures employed to report the results of health education program evaluations. When reporting evaluation results, as when focusing and planning the evaluation, the evaluator must be responsive to the needs of program decision makers. A few key considerations should be kept in mind when reporting evaluation results.

Evaluators must report their results to decision makers in a timely fashion. It does no good to deliver an evaluation report several weeks after key program decisions had to be made. Evaluators must also be careful to disseminate their findings to all appropriate audiences. If possible, an evaluator should circulate the preliminary draft of a program evaluation report to program personnel so that they can react to its accuracy and objectivity.

The decision makers whom evaluators are assisting may have scant experience with quantitative data. As a consequence, complicated statistical presentations may be of little value to them. Evaluators should select data-presentation procedures that will match the technical sophistication of the decision makers involved. In any evaluation report, there is

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* For additional information about data analysis, see Annotated Bibliography Nos. 25, 36, 39, 43, and 45.

nothing wrong with simple graphs or "percentage correct" tables. The more intuitively comprehensible the data-presentation techniques, the better they are. Program evaluators should provide straightforward presentations of data without fearing that such approaches will be regarded as too elementary. Adequate technical back-up can be appended as necessary to the final report.

Evaluators should not be reluctant to make speculations based upon their knowledge about a program, but these conjectures should be identified as such. Similarly, if any of the evaluation's findings are equivocal, the evaluator should inform concerned audiences of this fact. Honesty and objectivity are the hallmarks of effective evaluation reporting.

In addition, because decision makers are typically busy people, evaluators should strive for reasonable brevity in their reports. The preparation of executive summaries to accompany lengthy reports is a useful practice. Voluminous evaluation reports are almost certainly destined to go unread. Terse, easily read reports are much more likely to make an impact on decision makers.

The whole thrust of the evaluation enterprise is to facilitate better decisions. Decision making will *not* be illuminated by complex, lengthy, or otherwise incomprehensible presentations of evaluation results. The quality of decision making can be enhanced only if an evaluation's results are reported in a way that can be clearly understood.*

Reprise

In this chapter, a number of issues almost certain to be encountered by evaluators of drug abuse education programs were considered. Because this handbook supplies a number of measures to be used in the evaluation process, special attention was given to the role of such measures in program evaluation. Evaluators desiring more detailed treatments of the topics covered in this chapter will find appropriate sources in the Annotated Bibliography.**

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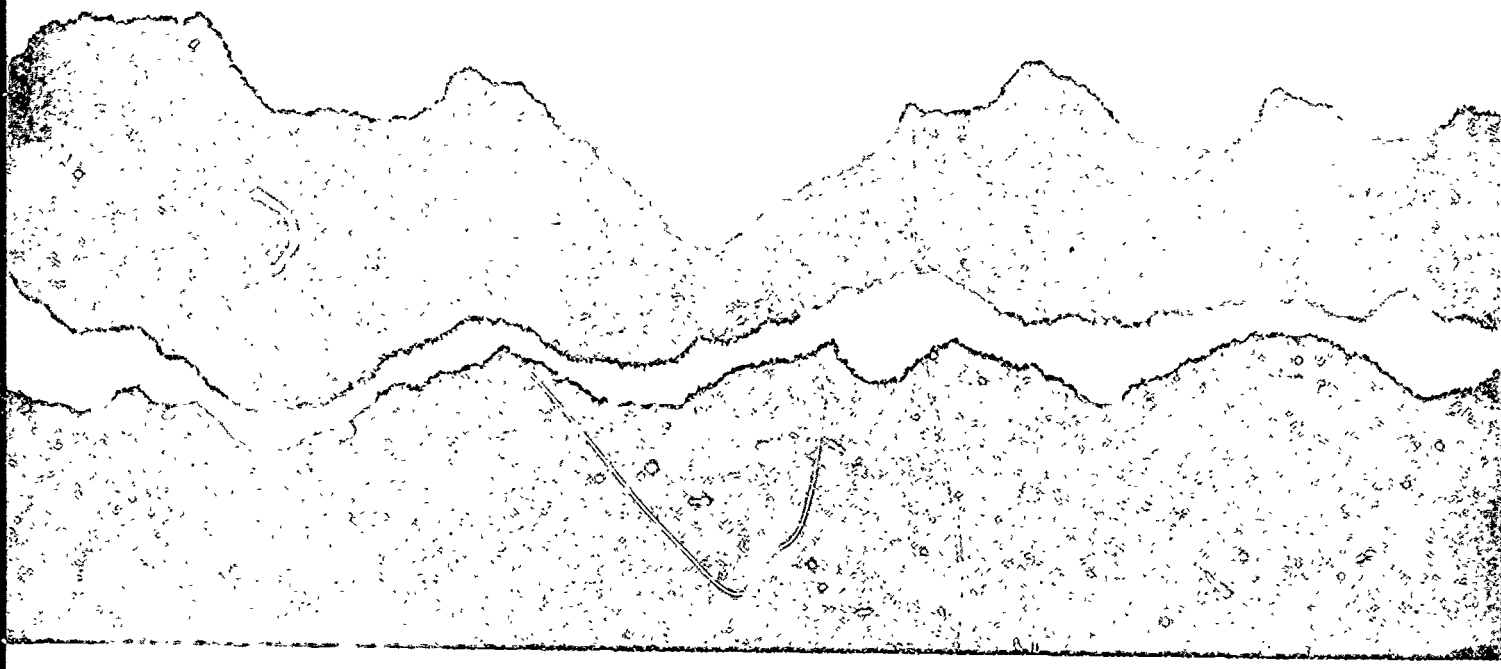
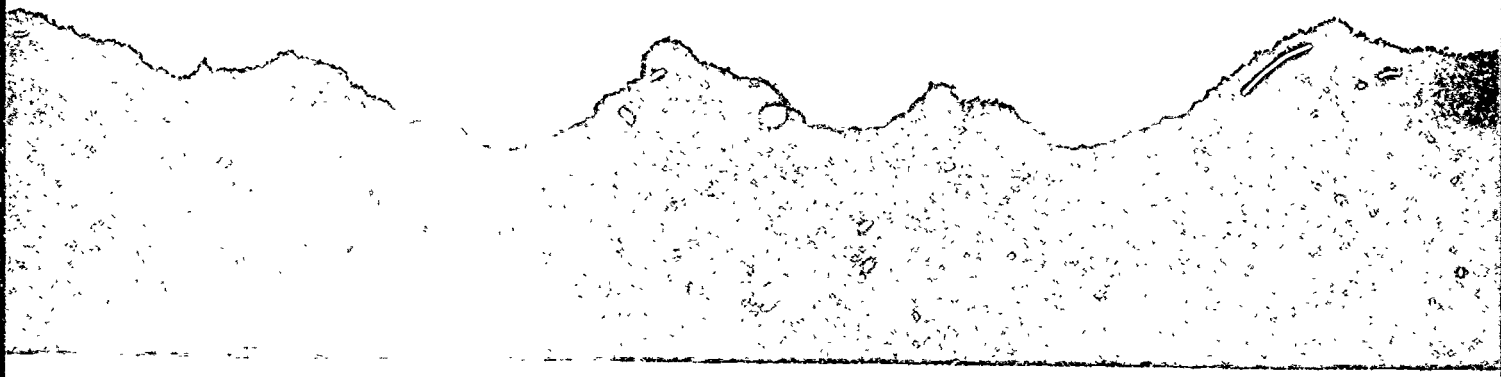
* For additional information about reporting the results of an evaluation, see Annotated Bibliography Nos. 5, 23, 26, and 35.

** For additional information about program evaluation, see Annotated Bibliography Nos. 5, 13, 16, 20, 23, 32, 41, 46, 49, and 51.



CHAPTER THREE

Drug Abuse Education Measures



Overview of Measures

Category	Title	Target Group	Description	Page No.
Behavior	**Drug Survey**	Adults Adolescents Preadolescents	Assesses drugs used in past 12 months and past 30 days.	38
	Your Behavior (1) and Your Behavior (2)	Adults Adolescents	Assesses frequency of personal problems directly related to reported drug use.	45
	Report on Behavior (1) and Report on Behavior (2)	Adults Adolescents	Assesses frequency of personal problems in association with reported drug use.	52
Knowledge*	**Physical Consequences of Drug Use**	Adults Adolescents	Assesses knowledge of the physical, psychological, and emotional results of drug use.	60
	Facts About Drug Use	Preadolescents		66
	Drug Use in America	Adolescents Preadolescents	Assesses knowledge of patterns of drug use by young people in the United States.	70

* The information eligible for inclusion in the knowledge measures is provided in Appendix A as amplified content descriptors.

Category	Title	Target Group	Description	Page No.
Skill	**Systematic Decision Making**	Adults	Assesses knowledge of the steps in a systematic decision-making process.	78
	Make A Decision	Adolescents		86
Affective	**Would You?**	Adults Adolescents Preadolescents	Assesses intention to use drugs in the next 12 months.	93
	Avoiding Drugs	Adults	Assesses participants' confidence that they would avoid taking drugs in various situations.	97
	Would You Avoid Drugs?	Adolescents		104
	Ideas About Drug Use	Adults Adolescents Preadolescents	Assesses beliefs about the effects of using drugs.	111
	Reacting to Situations	Adults	Assesses participants' perceptions of how they would react when offered drugs in various situations.	115
	Making Choices	Adolescents		120
	Parents	Adolescents Preadolescents	Assesses perceptions of parents' attitudes and beliefs regarding drug use.	125

Category	Title	Target Group	Description	Page No.
Affective	**Friends**	Adolescents Preadolescents	Assesses perceptions of friends' attitudes and beliefs regarding drug use.	129
	Friends and Family	Adolescents Preadolescents	Assesses perceived strength of social support network.	133
	Drugs and the Law	Adults Adolescents	Assesses perceived likelihood and seriousness of negative legal consequences resulting from drug use.	137
	Ways of Coping	Adults Adolescents	Assesses preferred means of coping with stressful situations.	142
	Taking Care of Yourself	Adults Adolescents Preadolescents	Assesses willingness to engage in health-enhancing behaviors.	148

DRUG SURVEY

This behavior measure examines the frequency with which participants have used drugs in the past month and the past year. This measure is appropriate for adults, adolescents, and preadolescents.

Use of this measure will allow program personnel to estimate the extent of past and current drug use among participants.

PURPOSE

Information about the extent of participants' drug use in the past 12 months (**Past Use**) and in the past 30 days (**Current Use**) may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. The structure and content of a program may be influenced by knowledge of whether the participants are current drug users. **Drug Survey** can also reveal patterns of drug use among participants. This information can be used to further refine the focus of the program.
- Knowledge of participants' drug consumption patterns can assist in the interpretation of other evaluation measures. For example, reports of severe personal problems from measures such as **Report on Behavior** could be understood more clearly in light of information about participants' drug consumption patterns. Similarly, group responses to affective measures can best be understood in light of information about drug consumption patterns.
- If the program is at least several months long, **Drug Survey** can be administered before and after the program to obtain evidence of behavioral change.

PROCEDURES

In most cases, this instrument should be administered at the beginning of a program. The measure can be administered both before and after the program, but unless the program is several months long, behavioral changes may not be seen. For evidence of program effectiveness, the instrument would ideally be administered as a pretest, then again as a delayed posttest several months to a year following the program.

SCORING AND ANALYSIS

This instrument yields information about two drug consumption patterns: drug use in the past 12 months (**Past Use**) and in the past 30 days (**Current Use**).

Past Use

1. Sum all of the responses (Yes and No responses combined) for the group. Do not count items left blank or items for which the last column ("This drug was prescribed or recommended by my doctor") is marked.
2. Sum the Yes responses for the group. Do not count items for which the last column ("This drug was prescribed or recommended by my doctor") is marked.
3. To determine *the average percentage of drugs listed that participants used in the past year*, divide the total number of Yes responses by the total number of responses (Yes and No responses combined). When interpreting this figure, keep in mind that alcohol, tobacco, and over-the-counter medications account for 20% of the drugs listed.
4. To determine *the average number of drugs that participants used in the past year*, divide the total number of Yes responses by the total number of participants.
5. To determine *the percentage of participants who used a given drug in the past year*, divide the number of Yes responses for that drug by the total number of responses for that drug.

Current Use

6. In the CURRENT USE columns, assign the following points to responses in the frequency columns:

0	times = 1
1-3	times = 2
4-9	times = 3
10-19	times = 4
20+	times = 5

   Do not assign points if the PAST USE column is marked No, or if the last column ("This drug was prescribed or recommended by my doctor") is marked.

7. To determine *the percentage of participants who have used a given drug in the past 30 days*, divide the number who report having used the drug in the past 30 days by the total number of participants.
8. To determine *the average number of times participants used a given drug in the past 30 days*, identify those participants who used the drug. Do not count those who responded **0 times**. Sum the points assigned to the users' responses and divide the total points by the total number of responses from participants who used the drug. Use the information above to translate from points to times of use.

Drug Groups

9. Drugs can be grouped into natural classes for further analysis. For example, all alcoholic beverages or all over-the-counter medications could be grouped and analyzed. Combine the data for the drugs to be analyzed as a group, then perform the analyses as described above.

EXAMPLES:

Past Use

Imagine that there are 10 participants in the program. Imagine that no participant responded to all 26 items on the survey in the PAST USE column.

1. To determine the total number of responses, add all Yes and No responses for all participants (for example, 22 + 25 + 24 + 22 + 24 + 25 + 25 + 25 + 16 + 20 = 228). The total number of responses in the example is therefore 228.
2. To determine the number of Yes responses, add all Yes responses for all participants (for example, 5 + 12 + 10 + 7 + 14 + 2 + 6 + 9 + 4 + 8). The total number of Yes responses in the example is therefore 77.
3. Divide the 77 Yes responses by the 228 total responses to determine that in the last year participants used, on average, 34% of the drugs listed in the survey.
4. Divide the 77 Yes responses by the 10 program participants to determine that in the last year participants used, on average, 7.7 abusable drugs.
5. Concerning marijuana, imagine that seven participants responded Yes to the PAST USE question. Divide the seven positive responses by the 10 program participants to determine that 70% of participants used marijuana in the past year.

Current Use

Concerning marijuana, imagine that six participants marked other than 0 times in the CURRENT USE columns.

6. Imagine that the following points were assigned to the frequency reports of the six participants who indicated use of marijuana in the past 30 days: 2, 2, 4, 2, 3, 5. The sum of the points is 18.
7. Divide the six positive use responses by the 10 total responses to determine that 60% of the participants have used marijuana in the past 30 days.
8. Divide the 18 frequency points by the six users to determine that participants who used marijuana in the past 30 days did so, on average, in the range of four to nine times.

Drug Groups

9. Concerning the consumption of all alcoholic beverages, imagine that all 10 participants answered the three alcohol questions. The total number of alcohol responses is therefore 30.

10. Imagine that the total number of Yes responses for PAST USE of "Hard liquor" is 8, for "Beer" is 10, and for "Wine or wine coolers" is 10. The sum of all Yes responses for alcohol is therefore 28.

    a. Because all 10 participants drank beer and wine, 100% of participants drank some type of alcohol in the past year.

    b. Divide the 28 alcohol use responses by the total number of responses (30) to determine that 93% of participants drank all three kinds of alcohol in the past year.

11. Imagine that in the CURRENT USE column, the following points were assigned to the frequency reports for the three types of alcohol:

Hard liquor:	1, 2, 2, 3, 1, 3, 4, 2, 5, 1
Beer:	2, 3, 2, 3, 3, 4, 5, 5, 3, 4
Wines:	1, 2, 2, 2, 2, 4, 4, 3, 4, 2

    a. Scores of 1 indicate **0 times** of use, therefore 70% drank hard liquor in the past 30 days (7 ÷ 10), 100% drank beer, and 90% drank wine or wine coolers. Given these percentages, it is clear that the average participant drank alcohol in the past 30 days.

    b. Of those participants who drank an alcoholic beverage in the past 30 days, the average frequency point scores were as follows: hard liquor 3.0 (21 points ÷ 7 current users), beer 3.4, and wine 2.8. These scores can be interpreted as frequency ranges. Regarding hard liquor, for example, an average of 3.0 points translates to an average of 4-9 times of use in the past 30 days.

DRUGS RECOMMENDED OR PRESCRIBED BY DOCTORS

The last column allows participants to indicate that they have taken a drug in consultation with their doctor. Clearly, drugs taken while under a doctor's care should not be considered among abused substances. Nevertheless, program personnel may wish to look carefully for patterns among the responses listed under this exception. Abuse of prescriptions is not uncommon, nor is abuse of over-the-counter substances initially recommended by a physician.

DRUG SURVEY

Various drugs are listed below. For each one, put checks in the appropriate columns to show how often, if ever, during the past you have used the drug.

If a drug you used was prescribed or recommended by your doctor, place a check in the last column.

Please do *not* put your name on this survey. Your answers will be kept *strictly confidential.*

	PAST USE		CURRENT USE					
	Have you used this drug during the past 12 months?		On how many occasions in the past 30 days have you used this drug?					This drug was prescribed or recommended by my doctor.
Drug	Yes	No	0	1-3	4-9	10-19	20+	
Marijuana ("grass," "pot," hashish, hash oil)	( )	( )	( )	( )	( )	( )	( )	(NA)
Hard liquor (such as whiskey or vodka)	( )	( )	( )	( )	( )	( )	( )	(NA)
Beer	( )	( )	( )	( )	( )	( )	( )	(NA)
Wine or wine coolers	( )	( )	( )	( )	( )	( )	( )	(NA)
Cocaine ("coke" or "crack")	( )	( )	( )	( )	( )	( )	( )	(NA)
Tobacco (such as cigarettes or cigars)	( )	( )	( )	( )	( )	( )	( )	(NA)
Chewing tobacco or snuff (such as Mail Pouch® or Copenhagen™)	( )	( )	( )	( )	( )	( )	( )	(NA)

Drug	PAST USE: Have you used this drug during the past 12 months? Yes	No	CURRENT USE: On how many occasions in the past 30 days have you used this drug? 0	1-3	4-9	10-19	20+	This drug was prescribed or recommended by my doctor.
Amphetamines ("speed," "uppers")	( )	( )	( )	( )	( )	( )	( )	( )
Nonprescription pep pills or stay-awake pills (such as Nodoz® or Vivarin®)	( )	( )	( )	( )	( )	( )	( )	( )
Diet pills (such as Dexatrim®)	( )	( )	( )	( )	( )	( )	( )	( )
Laxatives	( )	( )	( )	( )	( )	( )	( )	( )
Barbiturates ("downers," "reds")	( )	( )	( )	( )	( )	( )	( )	( )
Nonprescription sleeping pills (such as Sominex® or Nytol®)	( )	( )	( )	( )	( )	( )	( )	( )
Tranquilizers (such as Valium®)	( )	( )	( )	( )	( )	( )	( )	( )
Codeine (in pain killers or some cough syrups)	( )	( )	( )	( )	( )	( )	( )	( )
Other narcotic cough or pain medicines (such as Percodan®, Demerol®, or Dilaudid®)	( )	( )	( )	( )	( )	( )	( )	( )

Drug	PAST USE: Have you used this drug during the past 12 months? Yes	No	CURRENT USE: On how many occasions in the past 30 days have you used this drug? 0	1-3	4-9	10-19	20+	This drug was prescribed or recommended by my doctor.
Aspirin or other analgesics (such as Tylenol® or ibuprofen)	( )	( )	( )	( )	( )	( )	( )	( )
LSD ("acid") or other psychedelics (such as psyllicibin, "mushrooms," peyote, or mescaline)	( )	( )	( )	( )	( )	( )	( )	(NA)
Motion sickness pills (such as Dramamine®)	( )	( )	( )	( )	( )	( )	( )	( )
PCP ("angel dust")	( )	( )	( )	( )	( )	( )	( )	(NA)
Inhalants (such as glue, paint, gasoline, or propellants)	( )	( )	( )	( )	( )	( )	( )	(NA)
Heroin ("smack," "horse")	( )	( )	( )	( )	( )	( )	( )	(NA)
Nitrates (such as amyl nitrate, "poppers," or butyl nitrate, "locker room")	( )	( )	( )	( )	( )	( )	( )	( )
Nitrous oxide ("laughing gas")	( )	( )	( )	( )	( )	( )	( )	(NA)
Methaqualone (such as Quaaludes®, "ludes")	( )	( )	( )	( )	( )	( )	( )	( )

YOUR BEHAVIOR (1)
and
YOUR BEHAVIOR (2)

These behavior measures examine the frequency with which program participants have recently experienced negative life events, engaged in antisocial behaviors, or felt emotional or psychological stress as a direct result of illegal drug use. **Your Behavior (1)** is appropriate for individuals in the work force; **Your Behavior (2)** is appropriate for students.

Your Behavior (1) or **(2)** should be administered in conjunction with **Drug Survey**, which assesses participants' past drug consumption at 30-day and one-year intervals. Reports of personal problems from the **Your Behavior** measures can be understood more clearly in light of information about participants' drug consumption patterns provided by **Drug Survey**.

If these measures seem useful, you may wish to consider administering **Report on Behavior (1)** or **Report on Behavior (2)**, measures that provide indirect evidence of behavioral problems related to drug use. These measures do not require program participants to admit to drug-related problems and, hence, may be more appropriate in a variety of situations.

PURPOSE

Information about participants' personal problems that are directly related to drug use may be valuable for the following reasons:

- Administration of these measures at the beginning of a program may provide needs assessment information. For example, the results of these measures may indicate numerous personal problems relating to drug abuse. Administration of **Drug Survey** permits program personnel to determine the extent of drug consumption associated with reported drug-related problems.
- If the program is at least several months long, **Your Behavior (1)** or **(2)** can be administered before and after the program to obtain evidence of behavioral changes.

PROCEDURES

In most cases, the instrument selected should be administered at the beginning of a program. The measure can be administered both before and after the program, but unless the program is several months long, behavioral changes may not be seen. For evidence of program effectiveness, the instrument would ideally be administered as a pretest, then again as a delayed posttest, that is, several months to a year following the program.

SCORING AND ANALYSIS

1. Divide the completed instruments into two groups: those responding Yes to the first question (drug use in the past 30 days) and those responding No (no drug use in the past 30 days). Those responding Yes can be called current users; those responding No can be called nonusers.

   a. To determine *the percentage of program participants who are current users*, divide the number of current users by the total number of program participants.

2. Count the number of current users who report behavioral problems related to drug use. Consider a current user to have behavioral problems if, for any problem, any column other than **0 times** is marked.

   a. To determine *the percentage of current users who are having personal problems as a direct consequence of drug use*, divide the number of current users with a behavioral problem by the total number of current users.

   b. To determine *the percentage of total program participants who are having personal problems as a direct consequence of drug use*, divide the number of current users with a behavioral problem by the total number of program participants.

3. Total the number of behavioral problems reported by the group of drug users. This total represents the number of instances in which any response other than **0 times** was reported for any behavioral problem by the group of drug users.

   a. To determine *the average number of personal problems participants have experienced in the past 30 days as a direct consequence of drug use*, divide the total number of behavioral problems by the total number of current users.

4. For current drug users only, assign points to responses in the frequency columns as follows:

0	times = 1
1-2	times = 2
3-5	times = 3
6-9	times = 4
10 or more	times = 5

   For each item, sum the points for the group of current users. Do not count any items left blank.

   a. To determine *the average number of times each personal problem was experienced by the group of current users*, divide the total number of points for that behavioral problem by the total number of current users who responded to that item. Use the information above to translate the resulting score from points to frequency of experiencing the behavioral problem.

EXAMPLES:

1. Imagine that there are 10 individuals in your program and that eight indicate they have used drugs in the past 30 days.

   a. Divide the eight current users by the 10 program participants to determine that 80% of participants are current users.

2. Of the eight current users, four mark other than **0 times** in response to at least one of the behavior problems. These participants can be referred to as problem users.

   a. Divide the four problem users by the eight current users to determine that 50% of current users have personal problems related to drug use.

   b. Divide the four problem users by the 10 participants to determine that 40% of the program participants have personal problems related to drug abuse.

3. A summary of the number of personal problems reported by the four current users is below:

Participant A	7	reported problems
Participant B	2	reported problems
Participant C	13	reported problems
Participant D	9	reported problems

   The total number of personal problems is therefore 31.

   a. Divide the 31 problems by the four problem users (31 ÷ 4) to determine that in the past 30 days, problem users experienced an average of 7.75 personal problems directly related to drug use.

4. Below are the points assigned to one of the items selected by at least one of the four problem users:

   Item 22. ...tried to avoid seeing someone...

	Range Selected	Points Assigned
Participant A	6-9 times	4
Participant B	0 times	1
Participant C	10 + times	5
Participant D	6-9 times	4

   The total number of points is therefore 14.

   a. Divide the 14 points by the four problem users (14 ÷ 4) to determine that of participants who report drug-related problems, each one tried to avoid seeing someone as a consequence of drug use an average of 3-5 times in the past 30 days. This procedure should be repeated for each reported problem behavior.

The information gained in these analyses can be compared with the responses from column two of Drug Survey, which will suggest the extent of recent drug use among the respondents.

YOUR BEHAVIOR (1)

> Below is a list of questions about your behavior in the past 30 days. Please follow the directions, putting a check in the appropriate column. Answer the questions as honestly as you can. Please do *not* put your name on this survey. Your responses will be kept *strictly confidential.*

Have you used any illegal drugs in the *past 30 days* including: marijuana ("pot," "grass"), hashish, cocaine ("coke" or "crack"), amphetamines ("uppers"), barbiturates ("downers"), LSD ("acid"), PCP ("angel dust"), tranquilizers, or inhalants (such as glue, paint thinner, gasoline, or propellants)?

☐ YES. Go to Question A.

☐ NO. Go to Question B.

A. *As a result of illegal drugs,* how many times in the *past 30 days* have you:

B. How many times in the *past 30 days* have you:

	0 times	1-2 times	3-5 times	6-9 times	10 or more times
1. behaved in ways that you later regretted?	( )	( )	( )	( )	( )
2. [illegible] your relationship with your spouse, girlfriend, or boyfriend?	( )	( )	( )	( )	( )
3. had a problem over money?	( )	( )	( )	( )	( )
4. told a lie to someone important in your life?	( )	( )	( )	( )	( )
5. hurt your performance at work?	( )	( )	( )	( )	( )
6. felt emotionally unstable?	( )	( )	( )	( )	( )
7. had trouble remembering your actions?	( )	( )	( )	( )	( )

A. *As a result of illegal drugs*, how many times in the *past 30 days* have you:	B. How many times in the *past 30 days* have you:				
	0 times	1-2 times	3-5 times	6-9 times	10 or more times
8. become physically ill?	( )	( )	( )	( )	( )
9. been unable to think clearly?					
10. gotten into trouble with the police?	( )	( )	( )	( )	( )
11. been fired from a job?	( )	( )	( )	( )	( )
12. changed your circle of friends?	( )	( )	( )	( )	( )
13. worried about using drugs?	( )	( )	( )	( )	( )
14. had an argument with a spouse, relative, friend, or co-worker?	( )	( )	( )	( )	( )
15. felt tired or lazy?	( )	( )	( )	( )	( )
16. considered suicide?	( )	( )	( )	( )	( )
17. lost control of your emotions?	( )	( )	( )	( )	( )
18. felt anxiety?	( )	( )	( )	( )	( )
19. missed work?	( )	( )	( )	( )	( )
20. behaved aggressively towards friends or family?	( )	( )	( )	( )	( )
21. robbed someone or stolen something?	( )	( )	( )	( )	( )
22. carried a weapon for protection?	( )	( )	( )	( )	( )
23. tried to avoid seeing someone at work or home?	( )	( )	( )	( )	( )
24. been in a car accident while driving? (I do not drive. [ ])	( )	( )	( )	( )	( )
25. been warned by your superiors?	( )	( )	( )	( )	( )

YOUR BEHAVIOR (2)

Below is a list of questions about your behavior in the past 30 days. Please follow the directions, putting a check in the appropriate column. Answer the questions as honestly as you can. Please do *not* put your name on this survey. Your responses will be kept *strictly confidential.*

Have you used any illegal drugs in the *past 30 days* including: marijuana ("pot," "grass"), hashish, cocaine ("coke" or "crack"), amphetamines ("uppers"), barbiturates ("downers"), LSD ("acid"), PCP ("angel dust"), tranquilizers, or inhalants (such as glue, paint thinner, gasoline, or propellants)?

☐ YES. Go to Question A.

☐ NO. Go to Question B.

A. **_As a result of illegal drugs_, how many times in the _past 30 days_ have you:**

B. **How many times in the _past 30 days_ have you:**

	0 times	1-2 times	3-5 times	6-9 times	10 or more times
1. behaved in ways that you later regretted?	( )	( )	( )	( )	( )
2. hurt your relationship with a close friend?	( )	( )	( )	( )	( )
3. had a problem over money?	( )	( )	( )	( )	( )
4. told a lie to someone important in your life?	( )	( )	( )	( )	( )
5. hurt your grades in school?	( )	( )	( )	( )	( )
6. felt emotionally unstable?	( )	( )	( )	( )	( )
7. had trouble remembering your actions?	( )	( )	( )	( )	( )

A.	*As a result of illegal drugs*, how many times in the *past 30 days* have you:	B. How many times in the *past 30 days* have you:				
		0 times	1-2 times	3-5 times	6-9 times	10 or more times
8.	become physically ill?	( )	( )	( )	( )	( )
9.	been unable to think clearly?					
10.	gotten into trouble with the police?	( )	( )	( )	( )	( )
11.	been suspended from school?	( )	( )	( )	( )	( )
12.	changed your circle of friends?	( )	( )	( )	( )	( )
13.	had an argument with a parent, relative, or friend?	( )	( )	( )	( )	( )
14.	felt tired or lazy?	( )	( )	( )	( )	( )
15.	become extremely depressed?	( )	( )	( )	( )	( )
16.	lost control of your emotions?	( )	( )	( )	( )	( )
17.	felt anxiety?	( )	( )	( )	( )	( )
18.	missed school?	( )	( )	( )	( )	( )
19.	behaved aggressively towards friends or family?	( )	( )	( )	( )	( )
20.	robbed someone or stolen something?	( )	( )	( )	( )	( )
21.	carried a weapon for protection?	( )	( )	( )	( )	( )
22.	tried to avoid seeing someone at school, work, or home?	( )	( )	( )	( )	( )
23.	worried about using drugs?	( )	( )	( )	( )	( )
24.	gotten in trouble at your job? (I do not have a job. [ ])	( )	( )	( )	( )	( )
25.	been in a car accident while driving? (I do not drive. [ ])	( )	( )	( )	( )	( )

REPORT ON BEHAVIOR (1)
and
REPORT ON BEHAVIOR (2)

These behavior measures can be used to examine the relationship between (a) the frequency with which program participants have experienced negative life events, engaged in antisocial behaviors, or felt emotional or psychological stress, and (b) recent illegal drug use. **Report on Behavior (1)** is appropriate for individuals in the work force; **Report on Behavior (2)** is appropriate for students.

Report on Behavior (1) or **(2)** should be administered in conjunction with **Drug Survey**, which assesses participants' past drug consumption at 30-day and one-year intervals. Reports of personal problems from the **Report on Behavior** measures can be understood more clearly in light of information about participants' drug consumption patterns provided by **Drug Survey.**

If these measures seem useful, you may wish to consider administering **Your Behavior (1)** or **Your Behavior (2).** These behavior measures attempt to provide direct evidence of personal problems caused by drug use.

PURPOSE

These measures are designed to examine the relationship between participants' personal problems and drug use. They are designed to be used in situations in which it may not be possible to ask individuals directly about their drug-related personal problems. For example, those seeking evidence of the need for a drug education intervention program may find it more feasible to gather indirect evidence of drug-related problems than to ask sensitive questions directly, as is done in the measures **Your Behavior (1)** and **(2).**

Information obtained from these measures may be valuable for the following reasons:

- Administration of these measures may provide needs assessment information. For example, the results of these measures may indicate extensive personal problems among individuals who are current drug users.
- If a program is at least several months long, **Report on Behavior (1)** or **Report on Behavior (2)** can be administered before and after the program to obtain evidence of behavioral change.

PROCEDURES

In most cases, the instrument selected should be administered at the beginning of a program. The measure can be administered both before and after the program, but unless the program is several months long, behavioral changes may not be seen. For evidence of program effectiveness, the instrument would ideally be administered as a pretest, then again as a delayed posttest, that is, several months to a year following the program.

SCORING AND ANALYSIS

1. Divide the completed instruments into two groups: those responding Yes to question 26 (current drug users) and those responding No (no drug use in the past 30 days). Those responding Yes can be called current users; those responding No can be called nonusers.

   a. To determine *the percentage of program participants who are current drug users*, divide the number of participants who reported current drug use by the total number of program participants.

2. Count the number of current drug users who report behavioral problems. Consider a current user to have behavioral problems if, for any problem, any column other than **0 times** is marked.

   a. To determine *the percentage of current drug users who are having personal problems*, divide the number of current users with at least one behavioral problem by the total number of current users.

   b. To determine *the percentage of program participants who are currently using drugs and who are also experiencing personal problems*, divide the number of current users with at least one behavioral problem by the total number of program participants.

3. Repeat the procedures in 2 and 2a using the nonuser population.

4. Total the number of behavioral problems reported by the group of current drug users. This total should be the number of instances in which any response other than **0 times** was reported for any behavioral problem by the group of current drug users.

   a. To determine *the average number of personal problems experienced in the past 30 days by individuals who are currently using drugs*, divide the total number of reported behavioral problems for the group of current users by the total number of current users.

5. Repeat the procedures in 4 and 4a using the nonuser population.

6. For current drug users only, assign points to the responses in the frequency columns as follows:

0 times	= 1
1-2 times	= 2
3-5 times	= 3
6-9 times	= 4
10 or more times	= 5

For each item, sum the points for the group of current users. Do not count any items left blank.

a. To determine *the average number of times a given personal problem was experienced by the group of current users*, divide the total number of points for that behavioral problem by the total number of current users who responded to that item. Use the information above to translate the resulting score from points to frequency of experiencing the behavioral problem.

b. Repeat the procedures in 6a for the nonuser population.

EXAMPLES:

1. Imagine that your program has 10 participants and that three participants report no current drug use, while seven report current drug use.
   a. Divide the seven current users by the 10 participants in the program to determine that 70% of the program participants are current drug users.
2. Imagine that all seven current drug users mark other than **0 times** in response to at least one behavioral problem.
   a. Divide the seven users experiencing problems by the seven current users to determine that 100% of the current users experienced behavioral problems in the last 30 days, during which time they were also taking drugs.
   b. Divide the seven users experiencing problems by the 10 program participants to determine that 70% of the program participants experienced personal problems in the last 30 days, during which time they were also taking drugs.
3. Of the current nonusers, two participants mark other than **0 times** in response to at least one behavioral problem.
   a. Divide the two nonusers experiencing problems by the three nonusers to determine that 66% of the nonusers experienced behavioral problems in the last 30 days, during which time they were not taking drugs.
4. Recall from 2 that all seven current users reported experiencing personal problems. Here are the numbers of personal problems reported by the current users: 8, 6, 10, 9, 3, 15, 4.
   a. Add these problems together to determine that the seven current users reported a total of 55 problems. Therefore, the average (55 problems ÷ 7 current users) number of problems reported by the current users over the past 30 days is 7.85.
5. The three nonusers reported the following numbers of personal problems: 1, 3, 0.

a. Add these problems together to determine that the three nonusers reported a total of four problems. Therefore, the average (4 problems ÷ 3 nonusers) number of personal problems reported by nonusers over the past 30 days is 1.3.

6. Below are the points assigned to the responses of the current users and nonusers on one of the items:

   Item 22. ...tried to avoid seeing someone...

   Current users: 2, 1, 4, 2, 3, 5, 2
   Nonusers: 1, 2, 1

   a. Current users: A total of 18 points divided by seven participants yields 2.6 points, which translates to roughly two times per month. Therefore, current users tried to avoid seeing someone an average of about two times in the past 30 days.

   b. Nonusers: A total of four points divided by three participants yields 1.3 points, which translates to roughly zero times per month. Therefore, nonusers, on average, did not try to avoid seeing someone in the past 30 days.

This procedure should be repeated for each behavior listed on the measures.

Because these measures do not link drug use and personal problems directly, it is not possible to know precisely how many of the drug users' personal problems are related to drug use. One way to estimate this is to compare the various scores for nonusers and users. By using nonusers' scores as a baseline indicator of personal problems, it may be possible to estimate the proportion of personal problems being experienced by drug users that are drug related. See Chapter Four for a discussion of issues relating to the validity and reliability of inferences drawn from the use of this and other handbook measures.

REPORT ON BEHAVIOR (1)

Below is a list of questions about your behavior in the past 30 days. Read each question carefully, then put a check in the appropriate column. Please answer honestly. Do *not* put your name on this survey. Your responses will be kept *strictly confidential.*

How many times in the *past 30 days* have you:	**0 times**	**1-2 times**	**3-5 times**	**6-9 times**	**10 or more times**
1. behaved in ways that you later regretted?	( )	( )	( )	( )	( )
2. hurt your relationship with your spouse, girlfriend, or boyfriend?	( )	( )	( )	( )	( )
3. had a problem over money?	( )	( )	( )	( )	( )
4. told a lie to someone important in your life?	( )	( )	( )	( )	( )
5. hurt your performance at work?	( )	( )	( )	( )	( )
6. felt emotionally unstable?	( )	( )	( )	( )	( )
7. had trouble remembering your actions?	( )	( )	( )	( )	( )
8. become physically ill?	( )	( )	( )	( )	( )
9. been unable to think clearly?	( )	( )	( )	( )	( )
10. gotten into trouble with the police?	( )	( )	( )	( )	( )
11. been fired from a job?	( )	( )	( )	( )	( )
12. changed your circle of friends?	( )	( )	( )	( )	( )
13. worried about using drugs?	( )	( )	( )	( )	( )
14. had an argument with a spouse, relative, friend, or co-worker?	( )	( )	( )	( )	( )
15. felt tired or lazy?	( )	( )	( )	( )	( )
16. considered suicide?	( )	( )	( )	( )	( )

How many times in the *past 30 days* have you:	0 times	1-2 times	3-5 times	6-9 times	10 or more times
17. lost control of your emotions?	( )	( )	( )	( )	( )
18. felt anxiety?	( )	( )	( )	( )	( )
19. missed work?	( )	( )	( )	( )	( )
20. behaved aggressively towards friends or family?	( )	( )	( )	( )	( )
21. robbed someone or stolen something?	( )	( )	( )	( )	( )
22. carried a weapon for protection?	( )	( )	( )	( )	( )
23. tried to avoid seeing someone at work or home?	( )	( )	( )	( )	( )
24. been in a car accident while driving? (I do not drive. ☐)	( )	( )	( )	( )	( )
25. been warned by your superiors?	( )	( )	( )	( )	( )

26. Have you used any illegal drugs in the *past 30 days* including: marijuana ("pot," "grass"), hashish, cocaine ("coke" or "crack"), amphetamines ("uppers"), barbiturates ("downers"), LSD ("acid"), PCP ("angel dust"), tranquilizers, or inhalants (such as glue, paint thinner, gasoline, or propellants)?

☐ Yes, I have used one or more of these drugs in the *past 30 days*.

☐ No, I have not used any of these drugs in the *past 30 days*.

REPORT ON BEHAVIOR (2)

Below is a list of questions about your behavior in the past 30 days. Read each question carefully, then put a check in the appropriate column. Please answer honestly. Do *not* put your name on this survey. Your responses will be kept *strictly confidential.*

How many times in the *past 30 days* have you:	**0 times**	**1-2 times**	**3-5 times**	**6-9 times**	**10 or more times**
1. behaved in ways that you later regretted?	( )	( )	( )	( )	( )
2. hurt your relationship with a close friend?	( )	( )	( )	( )	( )
3. had a problem over money?	( )	( )	( )	( )	( )
4. told a lie to someone important in your life?	( )	( )	( )	( )	( )
5. hurt your grades in school?	( )	( )	( )	( )	( )
6. felt emotionally unstable?	( )	( )	( )	( )	( )
7. had trouble remembering your actions?	( )	( )	( )	( )	( )
8. become physically ill?	( )	( )	( )	( )	( )
9. been unable to think clearly?	( )	( )	( )	( )	( )
10. gotten into trouble with the police?	( )	( )	( )	( )	( )
11. been suspended from school?	( )	( )	( )	( )	( )
12. changed your circle of friends?	( )	( )	( )	( )	( )
13. had an argument with a parent, relative, or friend?	( )	( )	( )	( )	( )
14. felt tired or lazy?	( )	( )	( )	( )	( )
15. become extremely depressed?	( )	( )	( )	( )	( )
16. lost control of your emotions?	( )	( )	( )	( )	( )

How many times in the *past 30 days* have you:	0 times	1-2 times	3-5 times	6-9 times	10 or more times
17. felt anxiety?	( )	( )	( )	( )	( )
18. missed school?	( )	( )	( )	( )	( )
19. behaved aggressively towards friends or family?	( )	( )	( )	( )	( )
20. robbed someone or stolen something?	( )	( )	( )	( )	( )
21. carried a weapon for protection?	( )	( )	( )	( )	( )
22. tried to avoid seeing someone at school, work, or home?	( )	( )	( )	( )	( )
23. worried about using drugs?	( )	( )	( )	( )	( )
24. gotten into trouble at your job? (I do not have a job. ☐)	( )	( )	( )	( )	( )
25. been in a car accident while driving? (I do not drive. ☐)	( )	( )	( )	( )	( )

26. Have you used any illegal drugs in the *past 30 days* including: marijuana ("pot," "grass"), hashish, cocaine ("coke" or "crack"), amphetamines ("uppers"), barbiturates ("downers"), LSD ("acid"), PCP ("angel dust"), tranquilizers, or inhalants (such as glue, paint thinner, gasoline, or propellants)?

☐ Yes, I have used one or more of these drugs in the *past 30 days*.

☐ No, I have not used any of these drugs in the *past 30 days*.

PHYSICAL CONSEQUENCES OF DRUG USE
(FORMS A & B)

This knowledge measure examines what participants know about the physical consequences of drug abuse. This measure is appropriate for adults and adolescents.

PURPOSE

Information regarding participants' knowledge of the physical consequences of abusing drugs may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, the results may be used to assess what participants know prior to program participation. Information about participants' knowledge base may be useful when allocating instructional time.
- When the measure is administered prior to and following a program, it is possible to evaluate changes in participants' knowledge.

PROCEDURES

Because the equidifficulty of the forms has not been established, it is best not to give all participants Form A as a pretest and Form B as a posttest. Instead, choose either of the following methods.

- Review Forms A and B and select one. Give all participants the selected form both before and after the program. Alternatively, select 15 items from the two forms and construct a measure most consistent with your program emphasis. Then administer the "new" form both before and after the program.
- Give Form A to half of the incoming participants and Form B to the remaining half. To distribute the forms randomly, order them "ABABAB" and hand them out. Following the program, give each participant the form not previously taken. For example, if a participant was given Form B before the program, then that participant should be given Form A following the program. This approach eliminates the possibility that examinees will be sensitized to the specific facts to be learned from the program.

SCORING AND ANALYSIS

The answer keys for the two forms are provided below:

Item No.	Form A	Form B
1	T	T
2	F	F
3	T	T
4	T	F
5	F	F
6	F	T
7	T	F
8	F	F
9	T	T
10	T	F
11	F	F
12	T	T
13	F	T
14	F	T
15	T	F

This measure should be scored by counting the number of correct answers for each participant. Items marked "Don't Know" or left blank should be scored as incorrect. Next, add up the total number of correct answers for the entire group and divide by the number of participants in the group. The mean number of correct answers and the standard deviation can be used to summarize participant performance on the measure. Means and standard deviations from measures administered prior to and following the program can be compared to determine changes in participants' knowledge.

PHYSICAL CONSEQUENCES OF DRUG USE

Form A

This test consists of 15 statements about the consequences of drug use. Put a check to show whether you think each statement is TRUE or FALSE. If you don't know whether a statement is true or false, put a check under DON'T KNOW.

True	False	Don't Know	
( )	( )	( )	1. Cocaine ("coke" or "crack") can produce feelings of extreme anxiety.
( )	( )	( )	2. Smoking marijuana ("pot," "grass") does not usually interfere with a person's ability to drive a car.
( )	( )	( )	3. Over time, marijuana ("pot," "grass") users must often smoke more and more marijuana in order to get high to the same degree.
( )	( )	( )	4. Using a lot of cocaine ("coke" or "crack") over a short period of time can lead to depression.
( )	( )	( )	5. Smoking "crack" (cocaine) cannot produce symptoms of cocaine addiction.
( )	( )	( )	6. A person must take barbiturates ("downers," "reds") for a long period of time before needing to take a greater quantity of the drug in order to feel the desired effect.
( )	( )	( )	7. One reaction to smoking marijuana ("pot," "grass") is a feeling of panic.
( )	( )	( )	8. Heavy marijuana ("pot," "grass") use has no negative effects on the throat or lungs.
( )	( )	( )	9. Regular, low-dose amphetamine ("uppers," "speed") users can develop a psychological need for the drug.
( )	( )	( )	10. People who smoke cigarettes inhale about 1500 chemicals into their lungs.

True	False	Don't Know	
( )	( )	( )	11. It is easy for a person to control the effects of PCP ("angel dust").
( )	( )	( )	12. Sharing drug needles is a common way to get the AIDS virus.
( )	( )	( )	13. In small doses, alcohol stimulates the brain.
( )	( )	( )	14. Methaqualone ("quaaludes," "ludes") is safer than other barbiturate drugs ("downers,"reds") because a person cannot become dependent upon it.
( )	( )	( )	15. Using shared needles to inject drugs can result in serious blood disease.

PHYSICAL CONSEQUENCES OF DRUG USE

Form B

This test consists of 15 statements about the consequences of drug use. Put a check to show whether you think each statement is TRUE or FALSE. If you don't know whether a statement is true or false, put a check under DON'T KNOW.

True	False	Don't Know	
( )	( )	( )	1. One reaction to smoking marijuana ("pot," "grass") is a feeling of anxiety.
( )	( )	( )	2. Smoking "crack" cannot produce the symptoms of cocaine ("coke") addiction.
( )	( )	( )	3. Alcohol-related car crashes are the leading cause of death among high school students.
( )	( )	( )	4. Over a long period of time, a person who smokes marijuana ("pot," "grass") can get the same degree of high with less and less of the drug.
( )	( )	( )	5. Regular snorting of cocaine ("coke") rarely causes any physical damage to a person.
( )	( )	( )	6. Physical dependence on barbiturates is as serious and severe as physical dependence on heroin.
( )	( )	( )	7. Methaqualone ("quaaludes," "ludes") can be taken safely with alcohol.
( )	( )	( )	8. A pregnant woman cannot harm her unborn child by smoking cigarettes.
( )	( )	( )	9. Regular use of amphetamines ("uppers," "speed") can lead to nutritional problems.
( )	( )	( )	10. Smoking marijuana ("pot," "grass") can actually improve a person's ability to drive a car.
( )	( )	( )	11. People who inject drugs have only a small chance of getting the AIDS virus.

True	False	Don't Know		
( )	( )	( )	12.	A person can easily overdose by using barbiturates ("downers," "reds") along with alcohol.
( )	( )	( )	13.	Cocaine ("coke," "crack") can produce feelings of paranoia.
( )	( )	( )	14.	PCP ("angel dust") can interfere with a person's ability to feel pain.
( )	( )	( )	15.	Marijuana smoke contains less cancer-causing chemicals than tobacco smoke.

FACTS ABOUT DRUG USE
(FORMS A & B)

This knowledge measure examines what participants know about the physical consequences of drug abuse. This measure is appropriate for preadolescents.

PURPOSE

Information regarding participants' knowledge of the physical consequences of abusing drugs may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, the results may be used to assess what participants know prior to program participation. Information about participants' knowledge base may be useful when allocating instructional time.
- When the measure is administered prior to and following a program, it is possible to evaluate changes in participants' knowledge.

PROCEDURES

Because the equidifficulty of the forms has not been established, it is best not to give all participants Form A as a pretest and Form B as a posttest. Instead, choose either of the following methods.

- Review Forms A and B and select one. Give all participants the selected form both before and after the program. Alternatively, select 10 items from the two forms and construct a measure most consistent with your program emphasis. Then administer the "new" form both before and after the program.

- Give Form A to half of the incoming participants and Form B to the remaining half. To distribute the forms randomly, order them "ABABAB" and hand them out. Following the program, give each participant the form not previously taken. For example, if a participant was given Form B before the program, then that participant should be given Form A following the program. This approach eliminates the possibility that examinees will be sensitized to the specific facts to be learned from the program.

SCORING AND ANALYSIS

The answer keys for the two forms are provided below:

Item No.	Form A	Form B
1	T	F
2	F	T
3	T	T
4	T	T
5	F	F
6	F	T
7	T	F
8	T	F
9	F	T
10	F	F

This measure should be scored by counting the number of correct answers for each participant. Items marked "Don't Know" or left blank should be scored as incorrect. Next, add up the total number of correct answers for the entire group and divide by the number of participants in the group. The mean number of correct answers and the standard deviation can be used to summarize participant performance on the measure. Means and standard deviations from measures administered prior to and following the program can be compared to determine changes in participants' knowledge.

FACTS ABOUT DRUG USE

Form A

This test contains 10 statements about drugs. Put a check to show whether you think each statement is TRUE or FALSE. If you don't know whether a statement is true or false, put a check under DON'T KNOW.

True	False	Don't Know	
( )	( )	( )	1. People who often drink a lot of alcohol may begin to need alcohol to feel well.
( )	( )	( )	2. Marijuana ("pot," "grass") makes it easier for a person to remember things.
( )	( )	( )	3. The effect of marijuana ("pot," "grass") on people who are growing is still not known.
( )	( )	( )	4. Regular, heavy use of inhalants (like glue or paint) may damage a person's brain.
( )	( )	( )	5. People who use barbiturates ("downers") regularly can stop taking them without any effect.
( )	( )	( )	6. When the effects of cocaine ("coke" or "crack") wear off, a person usually feels quite happy.
( )	( )	( )	7. Marijuana ("pot," "grass") can make a person feel scared.
( )	( )	( )	8. Sharing drug needles makes a person more likely to get the AIDS virus.
( )	( )	( )	9. Cocaine ("coke" or "crack") can't really harm a person's body.
( )	( )	( )	10. Smoking "crack" is safer than snorting cocaine ("coke").

FACTS ABOUT DRUG USE

Form B

This test contains 10 statements about drugs. Put a check to show whether you think each statement is TRUE or FALSE. If you don't know whether a statement is true or false, put a check under DON'T KNOW.

True	False	Don't Know		
( )	( )	( )	1.	Drinking alcohol a lot cannot make a person need to drink more.
( )	( )	( )	2.	Marijuana ("pot," "grass") can damage a person's memory.
( )	( )	( )	3.	People who sniff inhalants (like glue or paint) may have trouble keeping their balance.
( )	( )	( )	4.	Sharing drug needles can result in serious blood diseases.
( )	( )	( )	5.	Stimulants (like "speed") make people feel hungry.
( )	( )	( )	6.	A person who often uses cocaine ("coke" or "crack") needs more and more of the drug to feel its effects.
( )	( )	( )	7.	A person cannot develop a physical need to smoke "crack."
( )	( )	( )	8.	Marijuana ("pot," "grass") will always make a person feel happy.
( )	( )	( )	9.	A person who uses a lot of cocaine ("coke" or "crack") can become aggressive.
( )	( )	( )	10.	The more often a person smokes marijuana ("pot," "grass"), the less of the drug it takes to get high.

DRUG USE IN AMERICA

(FORMS A & B)

This knowledge measure examines what participants know about patterns of drug use among young people in the United States. This measure is most appropriate for adolescents, although some programs may wish to use it with preadolescents as well.

PURPOSE

Information regarding participants' knowledge of patterns of drug use among youth may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, the results may be used to assess what participants know prior to program participation. Information about participants' knowledge base may be useful when allocating instructional time.
- When the measure is administered prior to and following a program it is possible to evaluate changes in participants' knowledge.

PROCEDURES

Because the equidifficulty of the forms has not been established, it is best not to give all participants Form A as a pretest and Form B as a posttest. Instead, choose either of the following methods.

- Review Forms A and B and select one. Give all participants the selected form both before and after the program. Alternatively, select 10 items from the two forms and construct a measure most consistent with your program emphasis. Then administer the "new" form both before and after the program.
- Give Form A to half of the incoming participants and Form B to the remaining half. To distribute the forms randomly, order them "ABABAB" and hand them out. Following the program, give each participant the form not previously taken. For example, if a participant was given Form B before the program, then that participant should be given Form A following the program. This approach eliminates the possibility that examinees will be sensitized to the specific facts to be learned from the program.

SCORING AND ANALYSIS

The answer keys for the two forms are provided below:

Item No.	Form A	Form B
1	C	C
2	B	B
3	A	A
4	B	B
5	C	B
6	A	C
7	B	A
8	C	C
9	B	A
10	A	B

This measure should be scored by counting the number of correct answers for each participant. Items marked "Don't Know" or left blank should be scored as incorrect. Next, add up the total number of correct answers for the entire group and divide by the number of participants in the group. The mean number of correct answers and the standard deviation can be used to summarize participant performance on the measure. Means and standard deviations from measures administered prior to and following the program can be compared to determine changes in participants' knowledge.

DRUG USE IN AMERICA

Form A

This test contains 10 questions about drug use among young people in the United States. Read each question, then circle the answer that you believe is correct. If you don't know the answer, circle choice D, I DON'T KNOW.

1. About what percentage of people 12-17 years old have tried cocaine ("coke" or "crack")?

   A. about 45%

   B. about 25%

   C. about 5%

   D. I don't know.

2. About what percentage of high school seniors report using marijuana ("pot," "grass") on a daily basis?

   A. about 10%

   B. about 5%

   C. about 25%

   D. I don't know.

3. How has the reported use of methaqualone ("quaaludes," "sopers") among high school seniors changed in the last five years?

   A. Use of methaqualone has fallen to less than half of the level reported five years ago.

   B. Use of methaqualone has changed very little in the past five years.

   C. Use of methaqualone has more than doubled from the level reported five years ago.

   D. I don't know.

4. About what percentage of people 12-17 years old would say they had used alcohol in the past month?

   A. about 25%

   B. about 33%

   C. about 50%

   D. I don't know.

5. About what percentage of high school seniors say that most or all of their friends smoke marijuana?

   A. about 10%

   B. about 40%

   C. about 20%

   D. I don't know.

6. About what percentage of people 12-17 years old would say they had smoked cigarettes in the past month?

   A. about 15%

   B. about 25%

   C. about 50%

   D. I don't know.

7. About what percentage of high school seniors say they would disapprove of their friends trying marijuana?

   A. about 25%

   B. about 50%

   C. about 75%

   D. I don't know.

8. Which of the following drugs is most commonly involved in the deaths of young people?

   A. heroin

   B. cocaine

   C. alcohol

   D. I don't know.

9. Which of the following statements is true about "downers," LSD, PCP, and heroin?

   A. The use of these drugs is growing more rapidly than the use of marijuana among 12-to 17-year-olds.

   B. Less than 5% of 12-to 17-year-olds have ever tried these drugs.

   C. Most 12-to 17-year-olds believe that these drugs should be legal for private use.

   D. I don't know.

10. How do alcohol-related deaths rank as a cause of death among teenagers?

    A. They are the number one cause of death.

    B. They are the number two cause of death.

    C. They are the number three cause of death.

    D. I don't know.

DRUG USE IN AMERICA

Form B

This test contains 10 questions about drug use among young people in the United States. Read each question, then circle the answer that you believe is correct. If you don't know the answer, circle choice D, I DON'T KNOW.

1. About what percentage of high school seniors say that their friends would disapprove if they tried amphetamines ("speed") once or twice?

   A. about 30%

   B. about 50%

   C. about 80%

   D. I don't know.

2. About what percentage of 12-to 17-year-olds have ever tried smoking cigarettes?

   A. about 25%

   B. about 45%

   C. about 75%

   D. I don't know.

3. About what percentage of people 12-17 years old have tried marijuana ("pot," "grass") at any time in their lives?

   A. almost 25%

   B. almost 50%

   C. almost 75%

   D. I don't know.

4. About what percentage of people 12-17 years old have *never* had a drink of alcohol?
   A. almost 25%
   B. almost 45%
   C. almost 65%
   D. I don't know.

5. What age group of people report using the most illegal drugs?
   A. people 12-17 years old
   B. people 18-25 years old
   C. people 26 or more years old
   D. I don't know.

6. Which of the following drugs is abused most often by people 12-17 years old?
   A. tranquilizers (Valium®, etc.)
   B. cocaine (including "crack")
   C. inhalants (such as glue, gasoline, and paint thinner)
   D. I don't know.

7. About what percentage of high school seniors say that they would *not* use marijuana *even if it were legal?*
   A. about 60%
   B. about 45%
   C. about 25%
   D. I don't know.

8. About what percentage of high school seniors say that their friends would disapprove of them smoking a pack of cigarettes a day?

   A. about 35%

   B. about 55%

   C. about 75%

   D. I don't know.

9. Of the automobile crashes each year in which someone dies, about what percentage involve alcohol?

   A. about 55%

   B. about 35%

   C. about 25%

   D. I don't know.

10. Which of the following is true about cocaine use by people 12-17 years old?

    A. Regular cocaine use among 12-to 17-year-olds is increasing by 25% each year.

    B. About 2% of 12-to 17-year-olds are current cocaine users.

    C. Among 12-to 17-year-olds, cocaine leads to more deaths than any other drug.

    D. I don't know.

SYSTEMATIC DECISION MAKING
(FORMS A & B)

This skill measure assesses participants' ability to identify the steps in a systematic decision-making process. This measure is appropriate for adults.

Decision making has been conceptualized in many ways. This measure assumes decision making to be a systematic process involving five steps: (1) identifying/clarifying the decision to be made, (2) identifying possible decision options, (3) gathering/processing information, (4) making/implementing the decision, and (5) evaluating the decision. The decision-making instruments in this handbook evaluate only this decision-making model and should not be used to evaluate general decision-making ability.

PURPOSE

Information regarding participants' knowledge of systematic decision-making processes may be useful for the following reasons:

- If a program intends to offer instruction in systematic decision making, this measure can be administered prior to and following the program to evaluate changes in participants' knowledge.

Because this instrument assesses a particular model of decision making, it is unlikely that a pretest will yield information of value. It should not be assumed that low pretest scores on this measure correlate with a lack of general decision-making ability.

PROCEDURES

Because the equidifficulty of the forms has not been established, it is best not to give all participants Form A as a pretest and Form B as a posttest. Instead, choose either of the following methods.

- Review Forms A and B and select one. Give all participants the selected form both before and after the program. Alternatively, select five items from the two forms and construct a single measure. Then administer the "new" form both before and after the program.
- Give Form A to half of the incoming participants and Form B to the remaining half. To distribute the forms randomly, order them "ABABAB" and hand them out. Following the program, give each participant the form not previously taken. For example, if a participant was given Form B before the program, then that participant should be given Form A following the program. This approach eliminates the possibility that examinees will be sensitized to the specific facts to be learned from the program.

SCORING AND ANALYSIS

The answer keys for question A are as follows:

Item No.	Form A	Form B
1	No	No
2	No	Yes
3	Yes	No
4	No	No
5	No	No

Assign one point for correct answers.

In question B, participants are asked to identify the steps in the decision-making process that are missing or incorrectly implemented. For those items in which the decision-making process is not complete, participants should describe the step that is missing or incorrectly implemented. The keys below describe the errors, if any, in each decision-making process.

Item No.	Nature of Error	Step Containing Error
	Form A	
1	step skipped	evaluates the decision
2	incorrect implementation	makes/implements the decision
3	no error	
4	incorrect implementation	gathers/processes information
5	step skipped	gathers/processes information
	Form B	
1	step skipped	gathers/processes information
2	no error	
3	incorrect implementation	identifies possible decision options
4	step skipped	evaluates the decision
5	incorrect implementation	makes/implements the decision

Assign one point for answers in which the participant correctly describes the step that is missing or incorrectly implemented, or correctly notes that the decision-making process is complete.

Sum the points for all participants on question A. Divide this sum by the total number of responses to question A by all participants. The result is the average percent correct on question A. A high score on this question indicates that participants can identify whether or not a systematic decision-making process is complete.

Sum the points for all participants on question B. Divide that sum by the total number of responses to question B by all participants. The result is the average percent correct on question B. A high score on this question indicates that participants can identify the individual steps in a systematic decision-making process.

SYSTEMATIC DECISION MAKING

Form A

This test presents descriptions of people who are making decisions that may affect their health or the health of others. Each person has either completed the entire decision-making *process* correctly or has made one mistake in this process.

Read each item. Circle Yes or No to indicate whether the person correctly completed each step in the decision-making process. If you circle No, briefly describe what the person did wrong.

1. William started smoking many years ago, before the dangers of cigarette smoking were known. Now he recognizes that cigarette smoking is bad for his health, and he wants to quit.

   William knows that there are many ways to stop smoking. He realizes that he must choose the way that is right for him. He thinks of some different ways to stop smoking. He then discusses his ideas with a friend who has already quit smoking. He also gets his doctor's advice on the matter.

   William chooses one of the approaches and begins to try to stop smoking. After a few weeks William's friend tells William how proud he is that William is trying to stop smoking.

   A. Did William correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did William do wrong?

   _____

   _____

   _____

   _____

2. Katherine is slightly overweight and wants to go on a diet. Although she has tried many diets before, she has never had much success with them. Now Katherine realizes she must choose a diet that isn't too difficult so that she will stick with it.

   She talks to a friend about finding a suitable diet. Together they identify several different diet plans that may be useful for Katherine. Katherine thinks about how she feels about dieting. She then discusses the different diets with her family doctor, who points out the positive and negative features of each. They discuss what Katherine will have to do in order to stick with each diet plan. Katherine knows that the decision is difficult, so she has the doctor pick one of the diets for her.

   She starts the diet the next week, but has a hard time staying on it. Katherine realizes that she's not happy with the diet and that she should stop it and find a better one.

   A. Did Katherine correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Katherine do wrong?

   _____

   _____

   _____

   _____

3. Phil works in a very busy office. He has a great deal of work to do and sometimes he is unable to complete it on time. Phil realizes that he is under stress at work and that he should decide on a way to reduce his stress. He discusses the situation with his boss. He then makes a list of all the ways that he could reduce stress at work. He gets information about the ideas on his list from the company doctor.

   After thinking about his decision, Phil picks one of the choices. He decides to sit quietly for a short time each day. He does this and finds that he is more relaxed and productive at work. He thinks about his decision and realizes that he has made the right choice.

   A. Did Phil correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Phil do wrong?

   _____

   _____

   _____

   _____

4. Mary wants to take her son to be immunized at a local clinic. The clinic is very busy. Her child can have an appointment only on a day when Mary has other plans. She is a salesperson at the Bishop Company and should attend a sales meeting that day.

   Mary has a doctor's appointment for her child's routine checkup, but it is two months away. Mary realizes that she can either take her child to the clinic or wait and have her child immunized at the doctor's office. Mary thinks about the possibilities that are available to her. She gets some information from a co-worker on the importance of the meeting and the risk involved in delaying her son's immunization.

   Mary takes her son to the clinic. Later, she considers her decision and realizes that she's happy with the way everything worked out.

   A. Did Mary correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Mary do wrong?

   _____

   _____

   _____

   _____

5. Joe drinks a great deal of alcohol. He always has quite a few drinks when he gets home from work. Joe knows that he has a drinking problem. He recognizes that he must decide what to do about it.

   Joe discusses the situation with a close friend. They make a list of the different things Joe could do to deal with the problem. Joe could: (1) get professional help, (2) try on his own to reduce the amount he drinks, or (3) do nothing about the problem.

   Joe decides to try on his own to limit the amount he drinks. He will have no more than two drinks when he gets home from work.

   Joe begins this new program, but he finds it more difficult than he expected. He thinks that he may not have made the right choice and reconsiders his decision.

   A. Did Joe correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Joe do wrong?

   _____

   _____

   _____

   _____

SYSTEMATIC DECISION MAKING

Form B

This test presents descriptions of people who are making decisions that may affect their health or the health of others. Each person has either completed the entire decision-making *process* correctly or has made one mistake in this process.

Read each item. Circle Yes or No to indicate whether the person correctly completed each step in the decision-making process. If you circle No, briefly describe what the person did wrong.

1. Cindy has been invited to a party where other people will probably be smoking marijuana. Although Cindy has never smoked marijuana, she is curious about it.

   Cindy realizes that she must decide whether she will smoke marijuana if she is offered some at the party. She makes a list of her available options.

   Cindy decides not to smoke at the party. While at the party, she is offered marijuana several times but turns down the offers. Later, Cindy thinks about how she felt at the party and realizes that she's happy with her decision not to smoke.

   A. Did Cindy correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Cindy do wrong?

   _____

   _____

   _____

   _____

2. Margaret wants to stop smoking. She knows that there are many ways to quit and that she should choose the best way for her. She discusses the matter with a friend. They come up with two plans: (1) Margaret could stop smoking completely on a certain day, or (2) Margaret could slowly reduce the number of cigarettes she smokes each day until she gives them up completely. Margaret calls her doctor to ask her doctor's opinion. She also talks to other people who have already quit smoking.

   Margaret decides to stop smoking gradually. At the start of every week she reduces the number of cigarettes she smokes each day that week. Unfortunately, Margaret isn't too happy with her program and she has trouble keeping track of the number of cigarettes she smokes. She thinks again about her decision to stop smoking gradually.

   A. Did Margaret correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Margaret do wrong?

   _____

   _____

   _____

   _____

3. Martin would like to start exercising regularly. He realizes that he must decide on an exercise program that is best for him.

   Some of Martin's co-workers jog together every day after work. Martin thinks that jogging with them is the only way that he will exercise regularly. He talks to his co-workers about it. He then asks his doctor for advice about jogging.

   Martin decides to jog after work with his co-workers. He starts jogging the next day. After several weeks, Martin thinks about his decision to jog. He's pleased because he is feeling good and looking fit.

   A. Did Martin correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Martin do wrong?

   _____

   _____

   _____

   _____

4. Gary visits the doctor once a year for a checkup. At one checkup the doctor discovers that Gary's blood pressure is slightly higher than it should be. He wants Gary to use deep relaxation because that may lower Gary's blood pressure. If it doesn't, Gary may have to take medication.

   Gary recognizes that he must decide whether or not to use deep relaxation. He wants to follow his doctor's advice, but Gary understands that using relaxation may not lower his blood pressure. Gary thinks about his possible choices and the consequences. He discusses the matter with the doctor. He also talks to his family about his decision.

   Gary decides that he will follow his doctor's advice and use deep relaxation. He starts learning relaxation the following week. Gary's doctor calls him six weeks later to see how Gary is doing.

   A. Did Gary correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Gary do wrong?

   _____

   _____

   _____

   _____

5. Bob is quite heavy. He wants to lose weight and realizes that he must decide how he's going to do it. He discusses the situation with his wife. Together they identify several plans. Bob will either have to go on a diet, start exercising regularly, or do both. Bob then calls his doctor who points out that regular exercise can reduce a person's appetite. The doctor suggests that it may be easier for Bob to stay on a diet if he exercises regularly.

   Bob asks his wife to decide which plan he should use. She tells Bob that he should diet, but not exercise. Bob tries to diet for three weeks. He's unhappy because he's not losing much weight and is often hungry. He thinks about whether he's satisfied with the decision to lose weight by dieting.

   A. Did Bob correctly complete each of the steps in the decision-making process?

   Circle one: Yes No

   B. If No, what did Bob do wrong?

   _____

   _____

   _____

   _____

MAKE A DECISION

(FORMS A & B)

This skill measure assesses participants' ability to identify the steps in a systematic decision-making process and place them in the correct order. This measure is appropriate for adolescents.

Decision making has been conceptualized in many ways. This measure assumes decision making to be a systematic process involving five steps, carried out in the following order: (1) identifying/clarifying the decision to be made, (2) identifying possible decision options, (3) gathering/processing information, (4) making/implementing the decision, and (5) evaluating the decision. The decision-making measures in this handbook are designed to assess participants' ability to use this particular decision-making model.

PURPOSE

Information regarding participants' ability to apply systematic decision-making processes may be useful for the following reasons:

- If a program intends to offer instruction in systematic decision making, this measure can be administered prior to and following the program to evaluate changes in participants' knowledge.

PROCEDURES

Because the equidifficulty of the forms has not been established, it is best not to give all participants Form A as a pretest and Form B as a posttest. Instead, choose either of the following methods.

- Review Forms A and B and select one. Give all participants the selected form both before and after the program. Alternatively, select five items from the two forms and construct a single measure. Then administer the "new" form both before and after the program.
- Give Form A to half of the incoming participants and Form B to the remaining half. To distribute the forms randomly, order them "ABABAB" and hand them out. Following the program, give each participant the form not previously taken. For example, if a participant was given Form B before the program, then that participant should be given Form A following the program. This approach eliminates the possibility that examinees will be sensitized to the specific facts to be learned from the program.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

- Assign one point for a response that correctly identifies the next step of the decision-making process. (Refer to the answer key below.) If the last step described in the stimulus is either "identifies possible decision options" or "gathers/thinks about information," one point for a correct response can be awarded for continuation of that step. Repetition of early steps can only be correct if the respondent provides a rationale that would justify returning to an earlier step. Participants may identify a step by providing the title or label of the step or by providing an example of the step.
- Assign no points for any response that is not acceptable according to the above guidelines.

Appropriate next steps by item are indicated below:

FORM A

Item No.	Appropriate Next Step
1	identifies possible decision options
2	identifies the decision to be made
3	gathers/thinks about the information
4	makes/carries out the decision
5	evaluates the decision

FORM B

Item No.	Appropriate Next Step
1	makes/carries out the decision
2	identifies the decision to be made
3	evaluates the decision
4	gathers/thinks about information
5	identifies possible decision options

To determine participants' average percentage of correct or justifiable answers on the measure, sum the points for all participants and divide this sum by the total number of participant responses. Do not count items left blank. A high percentage indicates that participants can identify the elements of a systematic decision-making process and can place them in the correct order.

MAKE A DECISION

Form A

This test is about young people who are trying to make decisions. Read each story, then write what the person should do *next* in order to be making a decision in the best way.

1. Ken is unhappy because he is heavy. He needs to lose weight and understands that there are many different ways to do it. Ken knows that he must decide on a way to lose weight that is best for him.

   What should Ken do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

2. Katie has been going swimming with her best friend every day after school. Katie enjoys it very much. Now Katie's music teacher wants Katie to be in the school band. Band practice is held after school every afternoon from 3:30 - 5:00. The pool where Katie swims is only open from 3:00 to 5:00.

   What should Katie do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

3. Karen has diabetes and should not eat sweet foods. She is invited to her friend Anne's birthday party. There will be cake and ice cream at the party. Karen wants to go but she thinks that it might be hard not to eat any of the sweets. Karen knows that she must decide what she should do about the party.

   She talks to her mother about the problem. Together they make a list of things that Karen could do: (1) Karen could go to the party after the other children finish eating, (2) Karen could eat some sweets at the party, or (3) Karen could eat something besides cake and ice cream at the party.

   What should Karen do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

4. Joe and his family have just moved to a new city. Joe will be starting at a new school soon. Joe is feeling nervous because of all the changes and wants to find a way to feel better.

   He talks to his older brother about his problem. They think of several different things Joe could do to feel less nervous. Joe could swim at the neighborhood pool after school or spend a little time each day sitting quietly.

   Joe calls to find out what time the pool is open. He talks to his family about whether he could have a room to himself for quiet time. Joe also thinks about what might make him feel best.

   What should Joe do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

5. Harold wants to begin playing a team sport. He knows that there are many different sports to choose from. He wants to decide on a sport that he can be good at and will enjoy.

   Harold talks to his father about his idea. Together they make a list of all the different team sports that Harold might like to play. Then Harold talks to his physical education teacher to see which sports on the list he thinks Harold might be good at. Harold also thinks about which sport he should pick.

   Harold decides that he would like to play basketball. He signs up for the team and starts practicing every day after school.

   What should Harold do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

MAKE A DECISION

Form B

This test is about young people who are trying to make decisions. Read each story, then write what the person should do *next* in order to be making a decision in the best way.

1. Margaret has been invited to a party. She thinks that some of the kids might have marijuana at the party. Margaret has never smoked marijuana, but she thinks that she might be asked to try some.

   Margaret knows that she must decide what she will do if someone at the party offers her marijuana. She thinks about whether or not she will smoke it at the party. She goes to the school library to get some information about marijuana. Margaret also thinks about what her friends will think if she smokes marijuana.

   What should Margaret do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

2. Mike has been invited to spend the night with his friend Phil next Friday. Phil tells Mike that his parents will be out that evening and that he has some cigarettes they can smoke. Although some of Mike's friends have started smoking, Mike has never smoked a cigarette before.

   What should Mike do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

3. Tom goes to the park almost every afternoon to play basketball. Some of his friends have started drinking beer at the park. One of them told Tom that he could try a little beer the next time they have some. Tom has never had any beer, but he has wondered what it's like.

   Tom knows that he must decide whether or not he wants to drink any beer. He thinks about the different things he might do. He asks some questions in his health class about drinking. He also thinks about how his parents would feel if they found out. He decides to try some beer because he doesn't want his friends to think he's scared.

   The next time Tom is in the park, he drinks beer with his friends.

   What should Tom do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

4. Carol just went to her doctor. The doctor told Carol and her mother that Carol is too heavy and needs to go on a diet. Carol thinks that a diet will be good for her.

   Carol understands that there are many diets she might choose. She knows that she needs to pick the diet that is best for her.

   Carol and her mother talk about different diets and make a list of them.

   What should Carol do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

5. Donna is upset about a big test she must take next week. Although she has been studying, she still feels nervous about the test.

   Donna's teacher has told her that there are many things a person can do to feel less nervous. Donna wants to find something that she can do to feel better about the test.

   What should Donna do *next* in order to be making a decision in the best way?

   _____

   _____

   _____

   _____

WOULD YOU?

This affective measure assesses participants' intention to use drugs during the next 12 months. This measure is appropriate for adults, adolescents, and preadolescents.

PURPOSE

Information about participants' intention to use drugs may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants are willing to use drugs if they are available. In response, a program may wish to foster participants' desire to resist drug use.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' intention to use drugs.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' program status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Definitely Yes	=	1
Probably Yes	=	2
Maybe	=	3
Probably No	=	4
Definitely No	=	5

This measure should be scored by adding the point values of the responses from all participants. Items left blank should not be counted in the total number of responses. Divide this point total by the total number of responses for the entire group. The result is the average intention of the group to use drugs in general. To determine intention to use a particular drug, add the point values for all participants on that drug only, then divide by the total number of responses to that drug. Scores can range from 1 to 5. The maximum attainable score of 5 points indicates a strong intention to avoid drug use. A minimum score of 1 indicates a strong intention to use drugs.

WOULD YOU?

Various substances are listed below. For each substance, put a check in the column that describes whether you would use the drug if you had the opportunity to use it in the next twelve months.

Please *do not* put your name on this survey. Your answers are *strictly confidential*.

If you had the opportunity in the next 12 months, would you use . . .	Definitely Yes	Probably Yes	Maybe	Probably No	Definitely No
1. beer?	( )	( )	( )	( )	( )
2. wine or wine coolers?	( )	( )	( )	( )	( )
3. hard liquor (such as vodka, gin, or whiskey)?	( )	( )	( )	( )	( )
4. marijuana ("pot," "grass,"), hashish, or hash oil?	( )	( )	( )	( )	( )
5. psychedelics (such as LSD, psycillibin, "mushrooms," "acid," or peyote)?	( )	( )	( )	( )	( )
6. amphetamines ("speed," "reds," or "bennies")?	( )	( )	( )	( )	( )
7. barbiturates ("downers," "reds," or sleeping pills)?	( )	( )	( )	( )	( )
8. cocaine ("coke" or "crack")?	( )	( )	( )	( )	( )
9. opiates (such as opium, morphine, or methadone)?	( )	( )	( )	( )	( )
10. PCP ("angel dust")?	( )	( )	( )	( )	( )
11. tobacco (such as cigarettes, cigars, chewing tobacco, or snuff)?	( )	( )	( )	( )	( )
12. inhalants (such as glue, paint, gasoline, or propellants)?	( )	( )	( )	( )	( )

If you had the opportunity in the next 12 months, would you use . . .	Definitely Yes	Probably Yes	Maybe	Probably No	Definitely No
13. heroin ("smack," "horse")?	( )	( )	( )	( )	( )
14. nitrates (such as amyl nitrate, "poppers," or butyl nitrate, "locker room")?	( )	( )	( )	( )	( )
15. tranquilizers (such as Valium®)?	( )	( )	( )	( )	( )
16. nitrous oxide ("laughing gas")?	( )	( )	( )	( )	( )
17. methaqualone (such as quaaludes, "ludes")?	( )	( )	( )	( )	( )

AVOIDING DRUGS

This affective measure assesses participants' belief in their ability to avoid drug use. This measure is appropriate for adults.

PURPOSE

Information about participants' belief in their ability to avoid drug use may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants lack confidence in their ability to avoid taking drugs in some social situations. In response, a program may wish to emphasize resistance skills or alternative lifestyle strategies for avoiding drug use.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' beliefs about their ability to avoid using drugs.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Very Confident	=	5
Confident	=	4
Somewhat Confident	=	3
Not Very Confident	=	2
Not Confident At All	=	1

This inventory can be scored by adding the point values of the responses from all participants. Items left blank should not be counted in the total number of responses. Divide this point total by the total number of responses for the entire group. The result is the average perceived ability of the group to avoid drug use in general. To determine perceived ability to avoid drug use in a specific situation, add the point values for all participants on that item only, then divide by the total number of responses to that item. The maximum attainable score of 5 points indicates a strong perceived ability to avoid using drugs. A minimum score of 1 indicates little or no perceived ability to avoid using drugs.

AVOIDING DRUGS

Below are 20 situations involving drugs. Read each situation, then put a check in the column that best describes how confident you are that you would avoid using drugs in the situation described.

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
1. You have a regular lunch date with a friend. One day this person offers you some cocaine ("coke," "crack"). How confident are you that you would avoid using it?	( )	( )	( )	( )	( )
2. After a very long day you meet some co-workers in a coffee shop. They order coffee and start smoking cigarettes. Someone offers you a cigarette. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
3. You are sitting with a group of your friends and one lights some marijuana. After a few people have smoked, the marijuana is passed to you. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
4. A friend who you respect says that taking barbiturates ("downers," "reds") is fun and offers to take them with you. How confident are you that you would avoid taking them?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
5. You must give a presentation at an important meeting. You are very nervous. Your best friend offers you a tranquilizer (like Valium®) to calm you down. How confident are you that you would avoid taking it?	( )	( )	( )	( )	( )
6. You are invited to a friend's house for the weekend. When you arrive, your friend offers you some wine. How confident are you that you would avoid drinking some?	( )	( )	( )	( )	( )
7. Some friends decide to smoke marijuana before a long night of overtime work. You are worried about getting done on time, but your friends say that getting stoned will make the work easier. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
8. A party is held at your company for an employee who is leaving after many years. A co-worker suggests that you have a few drinks. How confident are you that you would avoid having the drinks?	( )	( )	( )	( )	( )
9. You are at a party and begin to feel very tired. Someone at the party offers you some "speed" (amphetamine). How confident are you that you would avoid taking it?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
10. You have successfully completed an important project at work and decide to celebrate. One of your friends says that using cocaine would be the best way to really party. How confident are you that you would avoid using it?	( )	( )	( )	( )	( )
11. A friend says he knows where to get "crack" (cocaine) and offers to smoke it with you. You think of this friend as a trustworthy person. How confident are you that you would avoid using it?	( )	( )	( )	( )	( )
12. You have injured your back and are in pain. A friend has some prescription painkillers from a similar injury and offers them to you. How confident are you that you would avoid taking them?	( )	( )	( )	( )	( )
13. A friend who has begun to smoke marijuana seems to be developing a new set of friends. Someone suggests that if you smoked marijuana too, you might get to spend more time with your friend. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
14. You feel pressured by the amount of work you are responsible for. Someone suggests that having a couple of beers at lunch might relieve the pressure. How confident are you that you would avoid drinking them?	( )	( )	( )	( )	( )
15. During lunch, you happen to meet some friends who are smoking marijuana. They invite you to smoke, too. Your afternoon does not look too challenging. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
16. At an outdoor concert, the people next to you begin to use various drugs. They offer each drug to you. They are very nice to you and seem to be having a great time. How confident are you that you would avoid using the drugs?	( )	( )	( )	( )	( )
17. An old friend comes to visit for a few days. One night after dinner, he suggests smoking marijuana before going to a movie. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
18. On your annual vacation, you travel to visit some relatives. One evening in a motel, you meet some other travelers. They offer you some cocaine. How confident are you that you would avoid using it?	( )	( )	( )	( )	( )
19. One day after work, you are talking with a co-worker. This person says that smoking marijuana is relaxing, and invites you to smoke before going home. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
20. You mention to a friend that you have been having trouble sleeping at night. Your friend gives you some tranquilizers to take before bedtime. How confident are you that you would avoid taking them?	( )	( )	( )	( )	( )

WOULD YOU AVOID DRUGS?

This affective measure assesses participants' belief in their ability to avoid drug use. This measure is appropriate for adolescents.

PURPOSE

Information about participants' belief in their ability to avoid drug use may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants lack confidence in their ability to avoid taking drugs in some social situations. In response, a program may wish to emphasize resistance skills or alternative lifestyle strategies for avoiding drug use.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' beliefs about their ability to avoid using drugs.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Very Confident	=	5
Confident	=	4
Somewhat Confident	=	3
Not Very Confident	=	2
Not Confident At All	=	1

This inventory can be scored by adding the point values of the responses from all participants. Items left blank should not be counted in the total number of responses. Divide this point total by the total number of responses for the entire group. The result is the average perceived ability of the group to avoid drug use in general. To determine perceived ability to avoid drug use in a specific situation, add the point values for all participants on that item only, then divide by the total number of responses to that item. The maximum attainable score of 5 points indicates a strong perceived ability to avoid using drugs. A minimum score of 1 indicates little or no perceived ability to avoid using drugs.

WOULD YOU AVOID DRUGS?

Below are 20 situations involving drugs. Read each situation, then put a check in the column that best describes how confident you are that you would avoid using drugs in the situation described.

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
1. You have recently begun to go out with someone you like very much. One evening this person suggests that you smoke some marijuana. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
2. One weekend you get together with some friends. Soon, one friend begins passing around a bottle of whiskey. How confident are you that you would avoid drinking some?	( )	( )	( )	( )	( )
3. You are sitting with a group of your friends, and one lights some marijuana. After a few people have smoked, the marijuana is passed to you. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
4. You successfully finish an important school project and decide to celebrate. One of your friends has cocaine and says that snorting it is a great way to party. How confident are you that you would avoid using it?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
5. A friend who you have a lot of respect for suggests that you try marijuana and offers to smoke it with you. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
6. You are feeling very depressed about school. You remember that a friend gave you some amphetamines ("uppers," "speed"). How confident are you that you would avoid taking them?	( )	( )	( )	( )	( )
7. You must give a presentation in one of your classes. You are very nervous. Your best friend can get a mild tranquilizer (like Valium®) that would calm you down. How confident are you that you would avoid taking it?	( )	( )	( )	( )	( )
8. You go to an amusement park one weekend. In the parking lot, one of your friends suggests that it would be fun to drink a bottle of wine before going in. How confident are you that you would avoid drinking some?	( )	( )	( )	( )	( )
9. Several of your friends decide to smoke marijuana before an evening study session. They say that smoking marijuana will make studying easier. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
10. A friend of yours knows where to get cocaine and offers to use it with you. You think of this friend as a trustworthy person. How confident are you that you would avoid using it?	( )	( )	( )	( )	( )
11. Your parents are out for the evening. Your cousin has some marijuana and offers to smoke with you. You know that your parents won't be home for hours. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
12. You have sprained your ankle and are in pain. A friend has some prescription pain killers from a similar injury and offers them to you. How confident are you that you would avoid taking them?	( )	( )	( )	( )	( )
13. A friend who has begun to smoke marijuana seems to be developing a new set of friends and spending much less time with you. Someone suggests that if you smoked marijuana too, you might get to spend more time with your friend. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
14. You discover some Valium® (tranquilizers) in a drawer at home. No one is around and you are bored. How confident are you that you would avoid taking them?	( )	( )	( )	( )	( )
15. You feel pressured by the amount of homework you are being assigned. You wonder if having a couple of beers might relieve the pressure. How confident are you that you would avoid drinking them?	( )	( )	( )	( )	( )
16. During lunch, a friend introduces you to some people who are smoking cigarettes. Your friend decides to have a cigarette and offers you one. How confident are you that you would avoid smoking it?	( )	( )	( )	( )	( )
17. You go to a sports event one weekend. One of your friends brings some vodka and passes it around. How confident are you that you would avoid drinking some?	( )	( )	( )	( )	( )
18. At a rock concert, the people next to you begin to use various drugs. They offer each drug to you. They are very nice to you and seem to be having a great time. How confident are you that you would avoid using the drugs?	( )	( )	( )	( )	( )

	Very Confident	Confident	Somewhat Confident	Not Very Confident	Not Confident At All
19. You are at a party but you're feeling bored. Someone offers you some barbiturates ("downers," "reds"). How confident are you that you would avoid taking them?	( )	( )	( )	( )	( )
20. You go to a dance club. You meet some people from school who are going outside to use cocaine. They invite you along. How confident are you that you would avoid using it?	( )	( )	( )	( )	( )

IDEAS ABOUT DRUGS USE

This affective measure assesses participants' beliefs about the social and physical effects of using illegal drugs. This measure is appropriate for adults, adolescents, and preadolescents.

PURPOSE

Information concerning participants' beliefs about drug use may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants have misconceptions about the social value of using drugs. In response, a program may wish to familiarize participants with the negative social consequences of drug use.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' beliefs about the social and physical effects of drug use.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Item No.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1	5	4	3	2	1
2	5	4	3	2	1
3	1	2	3	4	5
4	1	2	3	4	5
5	1	2	3	4	5
6	5	4	3	2	1
7	5	4	3	2	1
8	1	2	3	4	5
9	1	2	3	4	5
10	1	2	3	4	5
11	1	2	3	4	5
12	5	4	3	2	1
13	5	4	3	2	1
14	1	2	3	4	5
15	1	2	3	4	5
16	5	4	3	2	1
17	5	4	3	2	1
18	1	2	3	4	5
19	5	4	3	2	1
20	1	2	3	4	5

This inventory should be scored by adding the point values of the responses from all participants. Divide this total by the total number of responses for all participants. Items left blank should not be counted in the number of responses. The maximum attainable score of 5 points indicates that participants believe that using illegal drugs is detrimental to one's social, emotional, and physical well-being. A minimum score of 1 indicates that participants believe that using illegal drugs can enhance one's social, emotional, and physical well-being.

IDEAS ABOUT DRUG USE

This survey consists of 20 statements about how people might be affected by using illegal drugs. Read each statement, then put a check in the column that best describes the way you feel about the statement.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. Using drugs every day can lead to dependence on them.	( )	( )	( )	( )	( )
2. Drug users usually have money problems.	( )	( )	( )	( )	( )
3. People can use large amounts of marijuana without it hurting their families.	( )	( )	( )	( )	( )
4. Cocaine users have more friends than other people.	( )	( )	( )	( )	( )
5. People who regularly smoke marijuana don't really hurt anyone.	( )	( )	( )	( )	( )
6. Using drugs causes people to lose self-control.	( )	( )	( )	( )	( )
7. Regular marijuana users damage their health.	( )	( )	( )	( )	( )
8. Using drugs makes people more creative.	( )	( )	( )	( )	( )
9. Smoking marijuana is a good way to relax.	( )	( )	( )	( )	( )
10. Using drugs helps people overcome boredom.	( )	( )	( )	( )	( )
11. Cocaine improves one's ability to do one's job.	( )	( )	( )	( )	( )

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
12. Regular drug users get into trouble with the law.	( )	( )	( )	( )	( )
13. Regular drug users have a hard time keeping friends.	( )	( )	( )	( )	( )
14. People who use sleeping pills rarely become dependent upon them.	( )	( )	( )	( )	( )
15. Using marijuana helps people understand themselves better.	( )	( )	( )	( )	( )
16. Heavy alcohol use hurts family relationships.	( )	( )	( )	( )	( )
17. Smoking cigarettes ages a person more quickly.	( )	( )	( )	( )	( )
18. People can stay perfectly healthy even if they regularly use illegal drugs.	( )	( )	( )	( )	( )
19. People who use illegal drugs have difficulty carrying out daily tasks.	( )	( )	( )	( )	( )
20. Smoking cigarettes helps control emotions like anger and frustration.	( )	( )	( )	( )	( )

REACTING TO SITUATIONS

This affective measure assesses participants' perceptions of their ability to resist using drugs in various social situations. This measure is appropriate for adults.

PURPOSE

Information regarding participants' perceptions of their resistance skills when confronted with the opportunity to take drugs may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants feel unable to resist using drugs offered in certain circumstances. In response, a program may wish to focus on developing participants' resistance skills.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' perceptions of their ability to resist drug use.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

This measure assumes that numerous strategies could be used to avoid drug use. An individual's choice of a means by which to avoid drug use will vary depending on training, circumstance, personality, and other factors.

For each item, three of the answer choices entail avoiding drug use, one entails using drugs. The answer that entails using drugs should be considered wrong; the other three are correct. It should be noted, however, that there are more and less effective ways to avoid drug use. Ideally, participants will perceive themselves able to avoid drugs in socially positive ways. Program personnel may wish to study responses to this measure to determine if participants perceive themselves as using deceptive or aggressive means of avoiding drug use, in contrast to direct refusal.

Below is a key to the answer choices that entail using drugs. For each of these selected, assign no points. For any other response selected, assign one point. Sum the participants' scores and divide their total score by the sum of the items answered by all participants. Do not count items left blank. The score can range from 0 to 10.

Item No.	Drug Use Response
1	D
2	A
3	B
4	C
5	D
6	B
7	C
8	C
9	A
10	B

A maximum score of 10 indicates that participants believe strongly that they will not take drugs if offered. A minimum score of 0 indicates that participants believe strongly that they will take drugs if offered.

REACTING TO SITUATIONS

Below are 10 situations involving drugs. Read each situation, then circle the letter next to the action that you would be most likely to take.

1. During lunch, a friend claims that "everyone" should smoke marijuana, just to find out what it is like. This friend offers to get you high. What would you be most likely to do in this situation?

   A. Tell your friend that you don't care what getting high is like.

   B. Avoid the subject by asking if anyone would like to go to a movie later.

   C. Point out to your friend that you know enough about marijuana to know that it's no good.

   D. Accept your friend's offer to try marijuana.

2. You are at a large party. You meet some people who are snorting cocaine. They invite you to sit down and "do some coke." What would you be most likely to do in this situation?

   A. Sit down and snort the cocaine.

   B. Turn and leave without speaking.

   C. Sit down, but say, "Not right now" to the offer of cocaine.

   D. Explain that you don't use cocaine.

3. The actions of a close relative have made you extremely upset. When you discuss this with a friend, he offers you some tranquilizers to calm you down. What would you be most likely to do in this situation?

   A. Accept the pills from your friend, but throw them away once your friend leaves.

   B. Accept the tranquilizers and take them.

   C. Refuse the pills and ask your friend to leave.

   D. Thank your friend for the offer, but refuse the pills.

4. You go out for the evening with a new friend who you like very much. On your way to dinner, your friend asks if you would like to smoke some very good hashish. You can tell that your friend is trying to do something special for you. What would you be most likely to do in this situation?

   A. End the evening right then and go home.

   B. Tell your friend that you're not ready to try smoking hashish yet.

   C. Smoke the hashish and make your friend happy.

   D. Decline the hashish and hope that you don't hurt your friend's feelings.

5. You must work many hours without rest to finish a project. A person working with you offers you some "speed" (amphetamines) to help you stay awake. What would you be most likely to do in this situation?

   A. Say that you are concerned that taking "speed" would make you less able to do your work.

   B. Accept the pills, but throw them away when you go to get a glass of water.

   C. Say that you would rather keep drinking coffee to try to stay awake.

   D. Accept the "speed," and take it.

6. A long-time friend asks you to try LSD. Your friend has never taken LSD and wants to find out what it is like. Your friend wants the two of you to take it together. What would you be most likely to do in this situation?

   A. Tell your friend to take the LSD alone or with someone else.

   B. Take LSD with your friend, as long as you can find a safe time and place to do it.

   C. Suggest that the two of you find something safer to do than take LSD.

   D. Tell your friend that you might take LSD, but then hope that your offer is forgotten.

7. You are having dinner with several friends who are cigarette smokers. When the coffee is served, most of them light up. One offers you a cigarette. What would you be most likely to do in this situation?

   A. Say that you don't smoke.

   B. Decline the offer, saying that you want to wait awhile.

   C. Have a cigarette.

   D. Tell the person that you can't smoke because you have a chest cold.

8. Your new neighbors invite you over for dinner. After dinner, one of them says that they sometimes smoke marijuana in the evening. They invite you to smoke with them. What would you be most likely to do in this situation?

   A. Decline the offer and go home.

   B. Decline the marijuana, but stay and talk.

   C. Smoke the marijuana.

   D. Tell them that you would rather smoke it some other time.

9. You are under great pressure at work. You feel nervous all the time and have begun to lose sleep. A good friend suggests that you take some Valium® (tranquilizers) until the pressure eases off. Your friend has a prescription for the drug and can easily give you the pills. What would you be most likely to do in this situation?

   A. Try the pills to see if they help.

   B. Accept the pills, but throw them away.

   C. Refuse your friend's offer.

   D. Tell your friend that you would like to think about it.

10. You attend a party of people from work. To your surprise, several of your co-workers are snorting cocaine ("coke") together. It is apparent that they have done this before, and they encourage you to join them. These are people you work with every day, and you like them. What would you be most likely to do in this situation?

    A. Tell the group that your ride is leaving, so you don't have time to use the cocaine.

    B. Snort the cocaine.

    C. Tell the group that you don't use drugs.

    D. Refuse the offer by saying that you're not in the mood to snort cocaine.

MAKING CHOICES

This affective measure assesses participants' perceptions of their ability to resist using drugs in various social situations. This measure is appropriate for adolescents.

PURPOSE

Information regarding participants' perceptions of their resistance skills when confronted with the opportunity to take drugs may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants feel unable to resist using drugs offered in certain circumstances. In response, a program may wish to focus on developing participants' resistance skills.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' perceptions of their ability to resist drug use.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

This measure assumes that numerous strategies could be used to avoid drug use. An individual's choice of a means by which to avoid drug use will vary depending on training, circumstance, personality, and other factors.

For each item, three of the answer choices entail avoiding drug use, one entails using drugs. The answer that entails using drugs should be considered wrong; the other three are correct. It should be noted, however, that there are more and less effective ways to avoid drug use. Ideally, participants will perceive themselves able to avoid drugs in socially positive ways. Program personnel may wish to study responses to this measure to determine if participants perceive themselves as using deceptive or aggressive means of avoiding drug use, in contrast to direct refusal.

Below is a key to the answer choices that entail using drugs. For each of these selected, assign no points. For any other response selected, assign one point. Sum the participants' scores and divide their total score by the sum of the items answered by participants. Do not count items left blank. The score can range from 0 to 10.

Item No.	Drug Use Response
1	B
2	C
3	C
4	D
5	C
6	A
7	B
8	D
9	D
10	A

A maximum score of 10 indicates that participants believe strongly that they will not take drugs if offered. A minimum score of 0 indicates that participants believe strongly that they will take drugs if offered.

MAKING CHOICES

Below are 10 situations in which you might be offered drugs. Read each situation, then circle the letter next to the action that you would be most likely to take.

1. You are at a rock concert with some friends, who begin to smoke a joint of marijuana. Soon the joint will be passed to you. What would you be most likely to do in this situation?

   A. Pass the joint to the next person without smoking it.

   B. Take the joint and smoke it.

   C. Say you want to get a soda, then leave until the marijuana is gone.

   D. Tell the person passing the joint that you don't want to smoke because a security guard is too near.

2. During your lunch break at school, several friends are smoking cigarettes. One person offers you a cigarette. What would you be most likely to do in this situation?

   A. Say that you don't have time for a cigarette, then leave.

   B. Decline the offer, explaining that you don't smoke.

   C. Have a cigarette.

   D. Urge your friends to give up smoking.

3. You are going to a school basketball game in a friend's family car. On the way, one person suggests that everyone smoke marijuana. Several people start to smoke. What would you be most likely to do in this situation?

   A. Say to your best friend, "I'm not going to smoke it, are you?"

   B. Pass the marijuana without smoking it.

   C. Smoke the marijuana.

   D. Refuse the marijuana and find another ride home.

4. During lunch on campus, a couple of friends offer you some "speed" (amphetamines). They say that the drug will improve your performance in gym class and will wear off in a couple of hours. What would you be most likely to do in this situation?

   A. Refuse the speed.

   B. Accept the speed, but don't take it. Later, tell your friends that you didn't like it.

   C. Tell your friends you don't need "speed" to improve your performance in gym class.

   D. Use the speed and play as hard as you can in gym class.

5. You go on a first date with someone you are very attracted to. On your way to a movie, your date asks if you would like to smoke some very good hashish. You can tell that your date is trying to do something special for you. What would you be most likely to do in this situation?

   A. End the date right then and go home.

   B. Tell your date that you haven't decided whether you want to try smoking hashish.

   C. Smoke the hashish and make your date happy.

   D. Decline the hashish and hope that you don't hurt your date's feelings.

6. Saturday night you are with some new friends. They begin to smoke PCP and want you to join in. They start daring you to smoke it. What would you be most likely to do in this situation?

   A. Smoke the PCP with your new friends.

   B. Tell your friends that you don't like their attitude, and you won't smoke the PCP.

   C. Try to change the subject by saying that you feel like going to the movies.

   D. Say that you have no interest in smoking PCP.

7. Your older brother has begun smoking "crack" (cocaine) on weekends. One weekend, he invites you to smoke some "crack" with him. What would you be most likely to do in this situation?

   A. Tell your parents about your brother's behavior.

   B. Smoke the "crack" with your brother.

   C. Avoid smoking the "crack" by saying that you have to meet your friends in a short while.

   D. Tell your brother that you want him to stop smoking crack.

8. A close friend asks you to try LSD. Your friend has never taken LSD and wants to take it with you for the first time. Your friend insists that taking LSD is a good idea. What would you be most likely to do in this situation?

   A. Tell your friend to find someone else to take the LSD with.

   B. Say that you might take LSD, but then avoid your friend for a while and hope the subject is forgotten.

   C. Suggest that the two of you find something safer to do than take LSD.

   D. Take LSD with your friend at a safe time and place.

9. One evening a friend claims that "everyone" should smoke marijuana a few times to find out what it is like. Your friend offers to get you high. What would you be most likely to do in this situation?

   A. Tell your friend that you don't care what smoking marijuana is like.

   B. Avoid the subject by asking if your friend would like to get a pizza.

   C. Tell your friend that you know enough about marijuana to know that it's no good.

   D. Accept your friend's offer and try marijuana.

10. A friend of yours is using pep pills to have more energy. When you express concern about the pills, your friend suggests that you try them before you criticize. What would you be most likely to do in this situation?

    A. Try the pills so that you will know what your friend has been experiencing.

    B. Tell your friend that you have no desire to try the pills.

    C. Promise to take the pills later, then throw them away once you're alone.

    D. Tell your friend that it's obvious that the pills are bad, even without taking them.

PARENTS

This affective measure assesses participants' perceptions of their parents' attitudes towards drug use. This measure is appropriate for adolescents and preadolescents.

PURPOSE

Information about participants' perceptions of their parents' attitudes towards drug use may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants are unaware of their parents' attitudes towards drug use. In response, a program may wish to assist participants to develop better communication with their parents.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' perceptions of their parents' attitudes towards drug use.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Item No.	Definitely Yes	Probably Yes	Uncertain	Probably No	Definitely No
1	1	2	3	4	5
2	5	4	3	2	1
3	5	4	3	2	1
4	1	2	3	4	5
5	5	4	3	2	1
6	1	2	3	4	5
7	5	4	3	2	1
8	1	2	3	4	5
9	1	2	3	4	5
10	5	4	3	2	1
11	1	2	3	4	5
12	1	2	3	4	5
13	5	4	3	2	1
14	5	4	3	2	1
15	5	4	3	2	1

This inventory should be scored by adding the point values of the responses from all participants. Divide this total by the total number of responses for all participants. Items left blank should not be counted in the number of responses. The maximum attainable score of 5 points indicates that participants perceive their parents to be opposed to illegal or irresponsible drug use. A minimum score of 1 suggests that participants perceive their parents to be accepting of illegal or irresponsible drug use.

PARENTS

This survey is concerned with how your parents feel about drugs and drug use. Read each statement carefully, then put a check in the appropriate column. Please do not put your name on this survey. Your responses are *strictly confidential.*

	Definitely Yes	Probably Yes	Uncertain	Probably No	Definitely No
1. Do your parents believe that it is O.K. for people your age to drink alcohol on weekends?	( )	( )	( )	( )	( )
2. Do your parents believe that smoking pot (marijuana) is dangerous?	( )	( )	( )	( )	( )
3. Would your parents disapprove of you having friends who occasionally use drugs?	( )	( )	( )	( )	( )
4. Do your parents expect that most kids will try cocaine at least once in their lives?	( )	( )	( )	( )	( )
5. Would your parents strongly discourage you from smoking cigarettes?	( )	( )	( )	( )	( )
6. Do your parents think that smoking marijuana ("pot," "grass") once in a while is all right?	( )	( )	( )	( )	( )
7. Would your parents be upset to discover that you had tried marijuana?	( )	( )	( )	( )	( )
8. Do your parents think that it is all right for adults to use drugs for pleasure?	( )	( )	( )	( )	( )

	Definitely Yes	Probably Yes	Uncertain	Probably No	Definitely No
9. Would your parents think that it was O.K. for you to use diet pills if you wanted to lose weight?	( )	( )	( )	( )	( )
10. Would your parents be concerned if you took a tranquilizer (like Valium®) because you were very nervous about a test?	( )	( )	( )	( )	( )
11. Do your parents think that getting drunk once in a while is acceptable for adults?	( )	( )	( )	( )	( )
12. Do your parents think that regularly having a few drinks after work is acceptable for adults?	( )	( )	( )	( )	( )
13. Would your parents punish you if you took some drugs so that you would fit in better with your friends?	( )	( )	( )	( )	( )
14. Would your parents be upset if you rode in a car driven by someone who had been drinking alcohol?	( )	( )	( )	( )	( )
15. Would your parents be upset if you got drunk on a special occasion, like graduation day or New Year's Eve?	( )	( )	( )	( )	( )

FRIENDS

This affective measure assesses participants' perceptions of their friends' attitudes towards drug use. This measure is appropriate for adolescents and preadolescents.

PURPOSE

Information about participants' perceptions of their friends' attitudes towards drug use may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants perceive an acceptance of drug-taking behavior among their friends. In response, a program may wish to develop resistance skills among participants.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' perceptions of friends' attitudes towards drug use.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Item No.	All of My Friends	Most of My Friends	Some of My Friends	A Few of My Friends	None of My Friends
1	5	4	3	2	1
2	1	2	3	4	5
3	1	2	3	4	5
4	5	4	3	2	1
5	5	4	3	2	1
6	5	4	3	2	1
7	1	2	3	4	5
8	5	4	3	2	1
9	5	4	3	2	1
10	5	4	3	2	1
11	1	2	3	4	5
12	5	4	3	2	1
13	1	2	3	4	5
14	1	2	3	4	5
15	1	2	3	4	5

This inventory should be scored by adding the point values of the responses from all participants. Divide this total by the total number of responses for all participants. Items left blank should not be counted in the number of responses. The maximum attainable score of 5 points indicates that participants perceive their friends to be opposed to illegal or irresponsible drug use. A minimum score of 1 suggests that participants perceive their friends to be accepting or encouraging of illegal or irresponsible drug use.

FRIENDS

This survey deals with how your friends feel about drug use. Read each statement carefully, then put a check in the most appropriate column. Please do not put your name on this survey. Your responses are *strictly confidential.*

	All of My Friends	Most of My Friends	Some of My Friends	A Few of My Friends	None of My Friends
1. How many of your friends would be upset if you took them to a party where drugs were being used?	( )	( )	( )	( )	( )
2. How many of your friends would support you if you told them that you wanted to try cocaine ("coke" or "crack")?	( )	( )	( )	( )	( )
3. How many of your friends would think that it was all right for you to use diet pills if you wanted to lose weight?	( )	( )	( )	( )	( )
4. How many of your friends would be angry if you used marijuana, even if it was the first time you'd tried it?	( )	( )	( )	( )	( )
5. How many of your friends would be upset if you tried cocaine ("coke" or "crack") just once, to see what it is like?	( )	( )	( )	( )	( )
6. How many of your friends would disapprove of you having other friends who occasionally use drugs?	( )	( )	( )	( )	( )

	All of My Friends	Most of My Friends	Some of My Friends	A Few of My Friends	None of My Friends
7. How many of your friends would understand if you took a tranquilizer (like Valium®) because you were very nervous about a test?	( )	( )	( )	( )	( )
8. How many of your friends would be concerned if adults they know regularly had a few drinks after work?	( )	( )	( )	( )	( )
9. How many of your friends would be upset if you rode in a car driven by someone who had been drinking alcohol?	( )	( )	( )	( )	( )
10. How many of your friends would be angry if you got drunk on an important occasion, like a graduation party or New Year's Eve?	( )	( )	( )	( )	( )
11. How many of your friends would understand if you took some drugs so that other people would think you were cool?	( )	( )	( )	( )	( )
12. How many of your friends would discourage you from smoking cigarettes?	( )	( )	( )	( )	( )
13. How many of your friends consider it normal for students to experiment with drugs?	( )	( )	( )	( )	( )
14. How many of your friends would encourage you to drink alcohol on weekends?	( )	( )	( )	( )	( )
15. How many of your friends would take LSD ("acid") with you, if you asked them?	( )	( )	( )	( )	( )

FRIENDS AND FAMILY

This affective measure assesses participants' perceived support and assistance from people around them. This measure is appropriate for adolescents and preadolescents.

PURPOSE

Information about participants' perceived support from friends and family may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants need assistance in strengthening their support networks.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' perceived social support networks.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Item No.	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1	5	4	3	2	1
2	5	4	3	2	1
3	5	4	3	2	1
4	1	2	3	4	5
5	1	2	3	4	5
6	5	4	3	2	1
7	1	2	3	4	5
8	5	4	3	2	1
9	5	4	3	2	1
10	5	4	3	2	1
11	5	4	3	2	1
12	5	4	3	2	1
13	1	2	3	4	5
14	1	2	3	4	5
15	5	4	3	2	1
16	5	4	3	2	1
17	1	2	3	4	5
18	1	2	3	4	5
19	5	4	3	2	1
20	5	4	3	2	1

This inventory should be scored by adding the point values of the responses from all participants. Divide this total by the total number of responses for all participants. Items left blank should not be counted in the number of responses. The maximum attainable score of 5 points indicates a high level of perceived social support from friends and family. A minimum score of 1 suggests a perception of very little social support from friends and family.

FRIENDS AND FAMILY

This survey contains a group of statements about your friends and family. Read each statement carefully, then put a check in the column that best expresses how you feel about the statement.

Do you agree or disagree with these statements?	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. My friends accept me as I am.	( )	( )	( )	( )	( )
2. If I were having a serious personal problem, I could count on someone in my family to help me.	( )	( )	( )	( )	( )
3. I can trust my closest friends to listen to my problems.	( )	( )	( )	( )	( )
4. Sometimes, when I'm with my friends, I do things I would not normally do.	( )	( )	( )	( )	( )
5. Sometimes I think my friends might call me 'chicken' if I don't do what they are doing.	( )	( )	( )	( )	( )
6. My best friend and I share our real feelings about things that are important to us.	( )	( )	( )	( )	( )
7. When I'm with friends who are getting "high," I feel like I should get "high" too.	( )	( )	( )	( )	( )
8. If I had an argument with my close friends, I believe that we would still be friends afterwards.	( )	( )	( )	( )	( )
9. I think of my parents as my friends.	( )	( )	( )	( )	( )
10. I can always say 'no' to smoking marijuana when I'm with my friends.	( )	( )	( )	( )	( )

Do you agree or disagree with these statements?	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
11. If I thought my best friend was using too much alcohol, it would be easy for me to tell my friend.	( )	( )	( )	( )	( )
12. My friends respect my ideas.	( )	( )	( )	( )	( )
13. Sometimes I feel as if I don't have a real friend.	( )	( )	( )	( )	( )
14. My friends don't know me very well.	( )	( )	( )	( )	( )
15. I feel I could talk to my parents about illegal drugs.	( )	( )	( )	( )	( )
16. The last time something bad happened to me, my friends really helped me out.	( )	( )	( )	( )	( )
17. If I decided never to drink alcohol, my friends would be upset.	( )	( )	( )	( )	( )
18. If I decided to smoke marijuana, my friends would support my decision.	( )	( )	( )	( )	( )
19. When I have a problem, I can discuss it with my parents.	( )	( )	( )	( )	( )
20. Even if my parents and I argue, we will still be able to talk with each other.	( )	( )	( )	( )	( )

DRUGS AND THE LAW

This affective measure assesses participants' perceptions of the legal consequences of drug use. The first part of the measure assesses participants' perceptions of the likelihood that drug use will lead to negative legal consequences. The second part of the measure assesses participants' perceptions of the seriousness of these legal consequences. This measure is appropriate for adults and adolescents.

PURPOSE

Information about participants' perceptions of the potential legal consequences arising from drug use may be useful for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants do not regard the potential legal consequences of drug use to be serious. In response, a program may wish to familiarize participants with the negative legal consequences that could result from drug involvement.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' perceptions of the likelihood and seriousness of potential legal consequences arising from drug use.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

There are two parts to this measure, the Likelihood Scale and the Seriousness Scale. Score each separately.

Part 1 - The Likelihood Scale

Point values are assigned to responses as follows:

Very Likely	=	5
Likely	=	4
Not Sure	=	3
Unlikely	=	2
Very Unlikely	=	1

Add the point values of all responses from all participants. Divide this total by the total number of responses for all participants. Items left blank should not be counted in the number of responses. The maximum attainable score of 5 points indicates that participants perceive a high likelihood that negative legal consequences could result from illegal drug use. A minimum score of 1 suggests that participants perceive a low likelihood that negative legal consequences could result from illegal drug use.

Part 2 - The Seriousness Scale

Point values are assigned to responses as follows:

Very Serious	=	5
Serious	=	4
Not Sure	=	3
Somewhat Serious	=	2
Not Serious	=	1

Add the point values of the responses from all participants. Divide this total by the total number of responses for all participants. Items left blank should not be counted in the number of responses. The maximum attainable score of 5 points indicates that participants perceive the potential consequences of illegal drug use to be very serious. A minimum score of 1 suggests that participants perceive the potential consequences of illegal drug use to be not serious at all.

DRUGS AND THE LAW

This survey has two parts. Both parts contain statements about possible consequences of being involved with illegal drugs.

In the first part, mark the column that best describes how likely you think it is that the consequence described would occur.

In the second part, mark the column that best describes how serious you think it would be if the consequence described occurred.

PART 1

	Very Likely	Likely	Not Sure	Unlikely	Very Unlikely
1. If you were arrested with cocaine in your possession, how likely is it that you would serve a jail sentence?	( )	( )	( )	( )	( )
2. If you were convicted of a drug-related felony, how likely would you be to lose the right to vote?	( )	( )	( )	( )	( )
3. If you had an arrest record for possession of a small amount of drugs, how likely would it be to harm your career?	( )	( )	( )	( )	( )
4. If you were with friends when they were arrested for having drugs, how likely is it that you would be arrested as well?	( )	( )	( )	( )	( )
5. If you were convicted of a drug-related felony, how likely would you be to lose the right to travel outside the United States?	( )	( )	( )	( )	( )

	Very Likely	Likely	Not Sure	Unlikely	Very Unlikely
6. When you are with people who are using drugs, how likely are you to get arrested?	( )	( )	( )	( )	( )
7. If you regularly used illegal drugs, how likely would you be to eventually end up in legal trouble?	( )	( )	( )	( )	( )
8. If you were put on probation for a drug offense, how likely would it be to cause serious problems in your life?	( )	( )	( )	( )	( )
9. If you were taken to court for a drug offense, how likely would you be to lose most of your friends?	( )	( )	( )	( )	( )
10. If you were arrested for a drug offense, how likely would you be to lose your job, even if you were not convicted?	( )	( )	( )	( )	( )

PART 2

	Very Serious	Serious	Not Sure	Somewhat Serious	Not Serious
11. If you were convicted of possession of marijuana and given a fine and probation, how serious would it be?	( )	( )	( )	( )	( )
12. If you were given a one-year jail sentence as the result of a drug conviction, how serious would it be?	( )	( )	( )	( )	( )

	Very Serious	Serious	Not Sure	Somewhat Serious	Not Serious
13. If you lost your right to vote as a consequence of a felony drug conviction, how serious would it be?	( )	( )	( )	( )	( )
14. If you were questioned by police or school authorities about drug activities, how serious would it be?	( )	( )	( )	( )	( )
15. If you lost the right to travel outside the United States as a consequence of a felony drug conviction, how serious would it be?	( )	( )	( )	( )	( )
16. If you had to reveal a conviction for cocaine possession on job applications, how serious would it be?	( )	( )	( )	( )	( )
17. If you were prevented from getting a civil service job because of a drug conviction, how serious would it be?	( )	( )	( )	( )	( )
18. If police told your parents or spouse that you were associating with drug users, how serious would it be?	( )	( )	( )	( )	( )
19. If a member of your family had to get you out of jail following a drug arrest, how serious would it be?	( )	( )	( )	( )	( )
20. If the police came to your house to ask about drug activities among your friends, how serious would it be?	( )	( )	( )	( )	( )

WAYS OF COPING

This affective measure examines participants' preferences regarding activities they could engage in to deal with various difficult situations. The measure is appropriate for adults and adolescents.

PURPOSE

Information about participants' preferences regarding coping behaviors may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants express a preference for coping strategies that involve drug use. In response, a program may wish to assist participants in finding coping strategies that do not involve drug use.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' preferences regarding coping activities.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to a program causes participants to react differently to the program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Each item includes seven options for coping with a difficult situation. Of the seven, three involve the use of drugs, alcohol, or tobacco. Sum all drug-involved selections across all participants. Divide this sum by the number of participants, then divide that result by the number of situations on the measure to determine the average number of drug-related coping strategies selected per situation.

Alternatively, divide the total number of drug-involved selections by the total number of responses across all participants to obtain the average percentage of drug-involved coping strategies selected.

Examples:

1. Imagine that 15 program participants select a total of 136 drug-related responses.

   a. Divide the 136 responses by the 15 participants to determine that there were approximately nine drug-related responses selected per participant.

   b. Divide the nine drug responses per participant by the 10 situations to determine that there was slightly less than one drug-related coping strategy selected per situation. In other words, of activities that participants would "like to do" in order to cope with difficult situations, on average, at least one would be drug-related. This score could range from 0 to 3.

2. Now imagine that the same 15 participants had selected a total of 431 activities, 136 of which were drug-related.

   a. Dividing the 136 drug-related activities by the 431 total activities selected reveals that approximately 31.5% of all activities selected were drug-related. This score could range from 0% to 100%.

Program personnel may find it useful to perform these analyses separately for tobacco, alcohol, and illegal drugs. Cigarette smokers, for example, may smoke in response to almost every stressful situation. Thus, having many smokers in a program may inflate estimates of participants' desire to use illicit drugs as a coping strategy. Further, if the program is not focused on smoking abatement, smoking behavior is unlikely to change and may therefore mask changes in behavior related to the program's focus.

WAYS OF COPING

This questionnaire describes various situations and different ways that people might deal with each one. Place a check next to any of the activities that you would like to do in order to deal with the situation. For each question, you may check any number of choices, or none at all.

1. You come home after a busy and frustrating day. You feel very tense. Which, if any, of the following activities would you like to do in order to relax?
   - ( ) read a newspaper or magazine
   - ( ) take a walk
   - ( ) drink an alcoholic beverage
   - ( ) listen to music
   - ( ) take a tranquilizer
   - ( ) watch television
   - ( ) smoke a cigarette

2. You are by yourself facing a boring weekend at home. You feel very lonely. Which, if any, of the following activities would you like to do in order to overcome your feeling of loneliness?
   - ( ) go out shopping
   - ( ) smoke some marijuana
   - ( ) drink an alcoholic beverage
   - ( ) watch television
   - ( ) smoke a cigarette
   - ( ) take a short trip
   - ( ) call one of your friends

3. You are at a party where you know very few people. You are feeling uncomfortable. Which, if any, of the following activities would you like to do in order to feel more comfortable?

   ( ) use some cocaine

   ( ) smoke a cigarette

   ( ) introduce yourself to a stranger

   ( ) talk to someone you know

   ( ) have something to eat

   ( ) drink an alcoholic beverage

   ( ) leave the party briefly to take a walk

4. You are feeling particularly discouraged because of a series of recent setbacks. Which, if any, of the following activities would you like to do in order to overcome your discouragement?

   ( ) become involved in volunteer work

) see a therapist or counselor

   ( ) smoke a cigarette

   ( ) drink an alcoholic beverage

   ( ) sleep more than usual

   ( ) go to a sports event

   ( ) take some tranquilizers

5. You feel tense because you are under pressure to become more productive at work or school. Which, if any, of the following activities would you like to do in order to reduce your tension?

   ( ) begin a regular exercise routine

   ( ) work harder so that you become more productive

   ( ) use some pep pills so you can work longer hours

   ( ) smoke a cigarette

   ( ) have a few alcoholic drinks

   ( ) spend time with close friends or family

   ( ) take a short trip to "get away from it all"

6. You are feeling quite anxious about an upcoming event which will affect your future. Which, if any, of the following activities would you like to do in order to reduce your anxiety?

   ( ) use a drug that has a calming effect

   ( ) smoke a cigarette

   ( ) sleep more than usual

   ( ) plan an outing with family or friends

   ( ) spend some time exercising

   ( ) drink an alcoholic beverage

   ( ) talk to someone about your feelings

7. You are feeling angry and frustrated as the result of an argument with a close friend. Which, if any, of the following activities would you like to do in order to calm yourself down?

   ( ) release your anger through vigorous activity

   ( ) drink an alcoholic beverage

   ( ) go for a long walk by yourself

   ( ) visit a friend

   ( ) smoke a cigarette

   ( ) sit quietly and think through your feelings

   ( ) smoke some marijuana

8. Someone close to you is seriously ill. You are feeling very upset. Which, if any, of the following activities would you like to do in order to relieve your anxiety?

   ( ) drink an alcoholic beverage

   ( ) talk with a close friend

   ( ) listen to your favorite music

   ( ) smoke some marijuana

   ( ) go out to dinner

   ( ) work on a project or hobby

   ( ) smoke a cigarette

9. You have learned that your work is up for review in a few days. You are very nervous about the outcome. Which, if any, of the following activities would you like to do in order to decrease your nervousness?

   ( ) occupy yourself with some routine activity

   ( ) practice yoga or some stretching exercises

   ( ) smoke a cigarette

   ( ) go to a play or a concert

   ( ) take a drug with a tranquilizing effect

   ( ) take a long walk in a quiet area

   ( ) drink an alcoholic beverage

10. You must make a presentation to a large group of people in a few days. You feel uneasy about speaking in front of a group. Which, if any, of the following activities would you like to do in order to overcome your uneasiness?

   ( ) smoke some marijuana

   ( ) have dinner with some friends

   ( ) have someone help you practice your presentation

   ( ) read some "self-help" literature

   ( ) drink one or two alcoholic beverages

   ( ) work on improving your physical appearance

   ( ) smoke a cigarette

TAKING CARE OF YOURSELF

This affective measure assesses participants' willingness to engage in health-enhancing behaviors, including avoidance of drugs. This measure is appropriate for adults, adolescents, and preadolescents.

PURPOSE

Information about participants' willingness to engage in healthy behaviors may be valuable for the following reasons:

- Administration of this measure at the beginning of a program may provide needs assessment information. For example, results of this measure may indicate that participants express a general willingness to live a healthy lifestyle. In response, a program could encourage participants to view avoiding drugs as one component of a healthy lifestyle.
- When this measure is administered prior to and following a program, it is possible to evaluate changes in participants' willingness to engage in health-enhancing behaviors, including avoidance of drugs.

PROCEDURES

This instrument can be administered both at the beginning and at the end of a program. However, handbook users should be alert to concerns regarding the potential reactivity of affective measures. A measure is considered *reactive* if the experience of completing the measure prior to the program causes participants to react differently to a program. Handbook users should, therefore, carefully review each affective measure that they wish to use to determine its potential for making participants unduly sensitive to aspects of the program. If a measure is determined to be reactive, then program personnel should *not* administer that measure to *all* participants as a pretest and posttest. Instead, the measure could be administered to half of the program participants prior to program participation to determine participants' preprogram status. The measure could then be administered to the other half of the participants after program participation to assess participants' postprogram status.

SCORING AND ANALYSIS

Point values are assigned to responses as follows:

Certainly Yes	=	5
Probably Yes	=	4
Maybe	=	3
Probably No	=	2
Certainly No	=	1

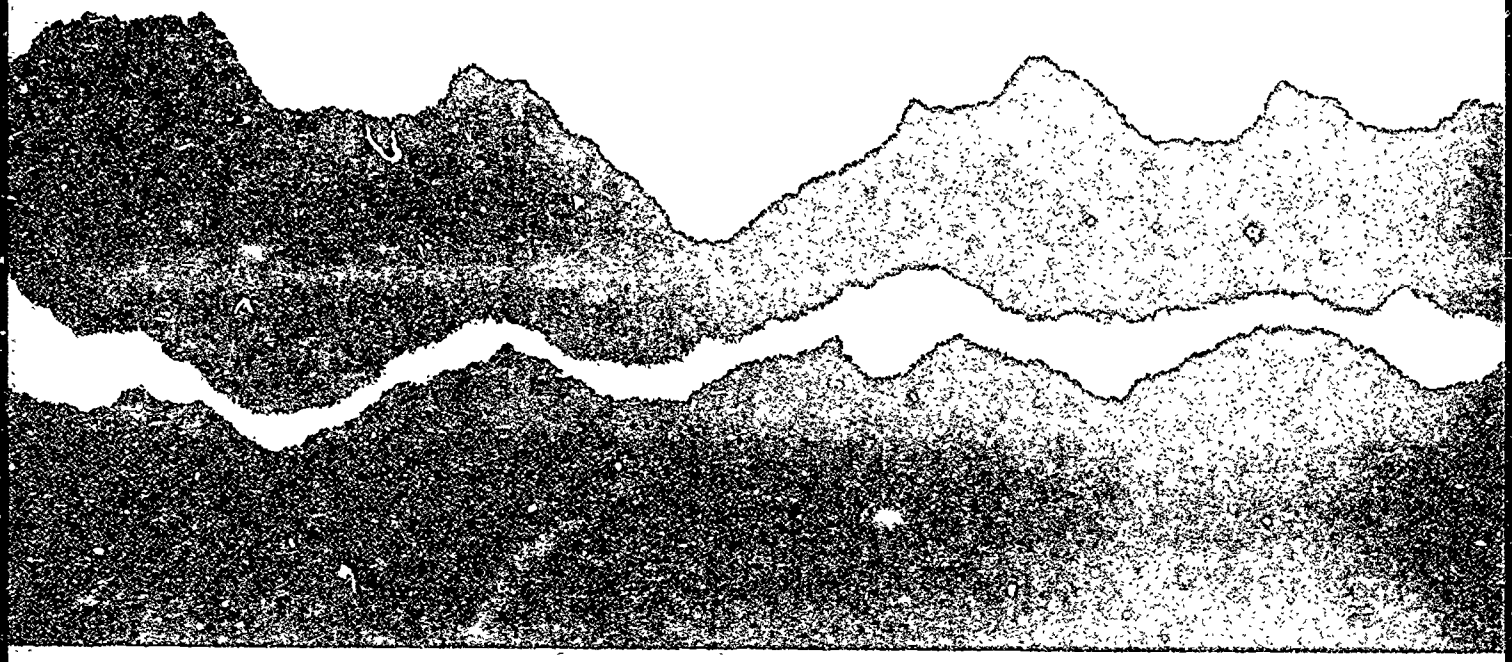
This inventory can be scored by adding the point values of the responses from all participants and dividing this total by the total number of responses. Items left blank should not be counted in the number of responses. The maximum attainable score of 5 points indicates a strong willingness to engage in health-enhancing behaviors. A minimum score of 1 indicates a little or no willingness to engage in health-enhancing behaviors.

TAKING CARE OF YOURSELF

Below is a series of behaviors that help ensure good health. Read each one, then put a check in the column that best describes whether you are willing to engage in that behavior.

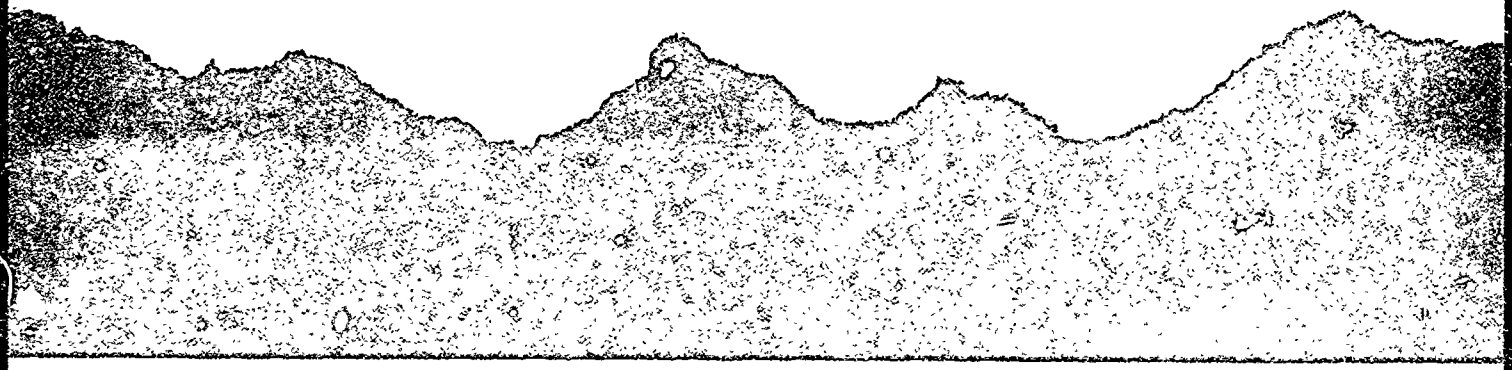
In order to take care of yourself, are you willing to . . .	Certainly Yes	Probably Yes	Maybe	Probably No	Certainly No
1. eat a nutritious breakfast every day?	( )	( )	( )	( )	( )
2. avoid drinking large amounts of alcohol?	( )	( )	( )	( )	( )
3. avoid stressful situations?	( )	( )	( )	( )	( )
4. avoid smoking marijuana ("pot," "grass") or hashish?	( )	( )	( )	( )	( )
5. exercise several times each week?	( )	( )	( )	( )	( )
6. eat whole grains, fresh fruits, and vegetables regularly?	( )	( )	( )	( )	( )
7. avoid using cocaine ("coke" or "crack")?	( )	( )	( )	( )	( )
8. get eight hours of sleep each night?	( )	( )	( )	( )	( )
9. maintain a healthy body weight?	( )	( )	( )	( )	( )
10. avoid smoking cigarettes?	( )	( )	( )	( )	( )
11. avoid eating foods that are high in fat?	( )	( )	( )	( )	( )
12. avoid taking psychedelics, like LSD ("acid")?	( )	( )	( )	( )	( )

In order to take care of yourself, are you willing to ...	Certainly Yes	Probably Yes	Maybe	Probably No	Certainly No
13. avoid riding in a car if the driver has been drinking alcohol?	( )	( )	( )	( )	( )
14. have regular dental checkups?	( )	( )	( )	( )	( )
15. always wear a seatbelt when in a car?	( )	( )	( )	( )	( )
16. avoid taking amphetamines ("speed") without a doctor's orders?	( )	( )	( )	( )	( )
17. avoid drinking if you must drive?	( )	( )	( )	( )	( )
18. avoid taking tranquilizers without a doctor's orders?	( )	( )	( )	( )	( )
19. avoid using nonprescription drugs, except as intended?	( )	( )	( )	( )	( )
20. avoid taking barbiturates ("downers," "reds") without a doctor's orders?	( )	( )	( )	( )	( )
21. avoid eating foods that are high in sugar?	( )	( )	( )	( )	( )
22. avoid eating foods that are high in salt?	( )	( )	( )	( )	( )
23. eat fast food only on occasion, not as a regular part of your diet?	( )	( )	( )	( )	( )



CHAPTER FOUR

Locally Conducted Psychometric Studies



Locally Conducted Psychometric Studies

As described in Chapter One, the first step in using the newly developed handbook measures to examine program effectiveness is to select those measures that match program goals. However, evaluators cannot assume that a measure that appears to assess a desired program outcome will produce valid data about that outcome. When evaluators use a measure, they first want to determine the technical quality of that measure to ensure that any conclusions drawn about a program's effects are warranted. The purpose of this chapter is to assist evaluators in conducting validation studies for those handbook measures chosen for use in program evaluation.

Determining the Technical Quality of Measuring Devices

The degree to which a measuring instrument yields scores from which one can make legitimate inferences is referred to as validity. Tests are not valid or invalid. Rather, it is the inferences made, based on test results, that are valid or invalid. It is, therefore, technically accurate to focus on the *validity of score-based inferences* rather than the validity of a particular measuring device.

The concept of validity is highly dependent on the particular way in which a measuring instrument will be used. For example, a measure of the use of resistance skills to avoid drug use may permit a valid inference regarding the *number* of different skills that program participants use, but may yield invalid inferences regarding the *frequency* with which participants use each skill. Furthermore, a test may yield valid inferences for a particular purpose with one population but invalid inferences for the same purpose with a different population. Thus, because validity varies on the basis of purpose and population, it is most appropriate to examine validity in the setting in which a measure will be used.

A second factor in determining the technical quality of a measurement instrument deals with the extent to which the instrument produces reliable, that is, consistent, results. Because the newly developed handbook measures have been subjected only to small-scale field tests, no reliability data are currently available. It is hoped that handbook users will conduct their own reliability studies and share those results with the Centers for Disease Control. In this way, results can be compiled over time and, subsequently, provided to handbook users. Procedures for evaluating the reliability of the handbook measures will be presented following a discussion of local validation approaches.

Categories of Validity Evidence

There are three major types of evidence regarding validity. These include content-related evidence of validity, criterion-related evidence of validity, and construct-related evidence of validity. The procedures for securing each type of validity evidence will be described below.

Content-related evidence of validity. Content-related evidence of validity involves the careful review of a measure's content by individuals identified as experts in the content area being assessed. This type of validity evidence is particularly important for measures designed to assess examinees' knowledge and skills. To secure positive content-related

validity, the measure must include only those items that correspond to the content area being assessed and its items must address all important facets of that content area. The systematic, expertise-rooted procedures used to develop the handbook's instruments helped to ensure that appropriate content was built into the measures. Subsequent reviews by external experts confirmed that the measures are, indeed, focused on suitable content. These development procedures and the role of expert advisors in the project are described in the handbook's preface.

If there are questions regarding the suitability of the content in any of the handbook's measures, content-related validity can be examined by assembling a panel of experts who can judge the suitability of a measure's content for the specific program evaluation purpose for which the measure is to be used. A panel of approximately 10 knowledgeable individuals can be asked to review the measuring instrument's items, one by one, and render independent yes/no judgments regarding the appropriateness of each item's content (in relationship to the inference that the program evaluators wish to make on the basis of the measure). In addition, panelists can be asked to determine whether any important content has been omitted from the measure. For example, if a knowledge measure such as **Facts About Drug Use** is being reviewed, panelists might be asked first to think of all the important facts about drug use that program participants must know, and then to indicate the percentage of those facts that are present in the measure being reviewed. This straightforward indication of a measure's content representativeness, when coupled with judgments regarding the content appropriateness of a measure's items, can yield important content-related evidence of validity for a measure.*

Criterion-related evidence of validity. Criterion-related evidence of validity requires that a measure be checked against an independent criterion. The independent criterion or standard should be one that the measure would be expected to predict. Criterion-related validity is most important for the handbook measures in the areas of behavior and intention. In the area of behavioral self-reports, for example, criterion-related validity would focus on the degree to which the self-reports reflect actual behavior. So, for example, criterion-related validity for a self-report instrument designed to measure the extent of negative behaviors related to drug use would be secured by correlating responses on this instrument with observations (by others) of the extent to which such behaviors *actually* occurred.

External criterion measures, such as observations, while often more accurate measures of behavior than self-reports, are extremely costly and time consuming to use. Further, in light of the illegality of nearly all drug abuse, organizing the observation and reporting of drug-taking activity raises potentially serious legal and ethical issues. Thus, although it may be possible to use such criterion measures in a one-time validity study, self-report

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* For additional information about how to conduct content-related validation studies, see Annotated Bibliography Nos. 18, 23, 27, and 34.

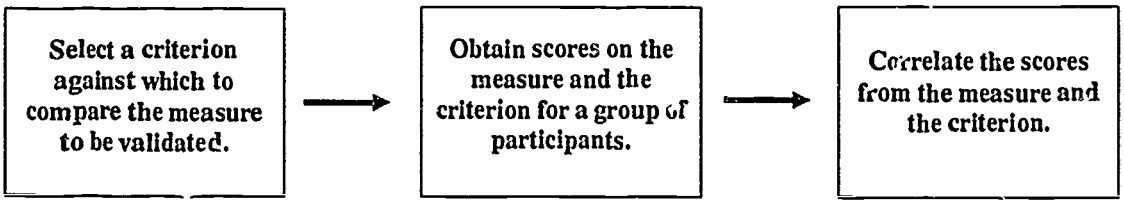

Figure 4.1: Procedure for conducting criterion-related validity studies

instruments are less problematic in evaluations of drug programs. The general procedure for conducting a criterion-related validity study is shown in Figure 4.1.

A correlation of approximately .50 or higher between the measure and criterion would indicate that the new measure is predictive of the external criterion measure and, therefore, is measuring what it is intended to measure. A low correlation would call into question the self-report instrument as a measure of the behavior of interest.

Each criterion-related validity study must be specifically designed for the particular measure being examined and the purpose for which it will be used. For example, imagine that an evaluator wanted to examine the criterion-related evidence of validity for the handbook's measure entitled Would You? The evaluator must first identify an appropriate criterion measure. How is a program evaluator likely to use an intention measure? The most likely use would be to employ it as a proxy measure foreshadowing a program's effect on the future behavior of participants. That is, will program participants continue to avoid using drugs in the future? Thus, an appropriate criterion measure might be the reported use of drugs several months following the program.

To assemble criterion-related evidence of validity for the intention measure, a program evaluator could administer the intention measure at the end of the program to a group of at least 30 participants (or repeat this process each session until responses from at least 30 participants are obtained) and obtain completed self-report surveys several months later regarding participants' use of drugs. Once both measures are collected for every individual, a correlation could be computed between the strength of intention to avoid using drugs and whether drugs were being used following the program. Thus, the criterion-related validity study would examine whether the intention measure was, in fact, predictive of later behavior. A measure that can serve as a meaningful proxy for participants' future behavior can prove highly useful in the evaluation of a program's impact on participants.*

Construct-related evidence of validity. The final type of validity evidence to be reviewed, construct-related evidence of validity, is particularly important for those handbook measures that do not have a clear criterion against which they can be evaluated. Such

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* For additional information about the design and analysis of criterion-related validity studies, see Annotated Bibliography Nos. 18, 23, 27, and 34.

measures include the attitudinal and affective measures such as **Would You Avoid Drugs?**, a measure that examines an individual's perceived ability to avoid drug use in various situations. Construct-related validity involves the gradual accumulation of data regarding what a test measures. Three strategies are customarily used to secure construct-related evidence of validity for a measure. First, in the *related-measures strategy,* predictions can be tested about the extent to which the measure of interest is correlated with other measures. For example, perceived ability to avoid drugs should be positively related to other measures aimed at assessing a similar attribute but should show reduced correlations with measures tapping different attitudinal dimensions. Thus, other existing measures can be correlated with the measure of interest to help clarify what is being measured.

If the correlations are consistent with the prior predictions, then construct-related evidence of validity has been obtained to support the defensibility of inferences based on the measure's use. Figure 4.2 illustrates the anticipated correlations between the measure of interest and other similar and dissimilar measures.

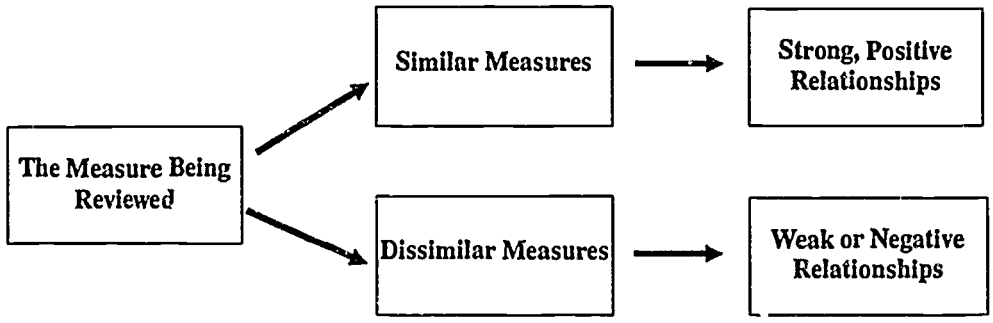

Figure 4.2: Correlations between measures assessing similar/dissimilar attitudinal dimensions

A second approach to examining construct-related validity involves predictions about group differences and is referred to as a *differential-populations strategy.* For this procedure, two or more groups are identified that are expected, based on other characteristics, to perform differently on the measure of interest. For example, the two groups might consist of individuals who currently use drugs and individuals who currently do not. If the anticipated performance difference between the two groups is not obtained, it would raise the question as to whether the test was measuring what it was thought to measure.

A third strategy for securing construct-related evidence of validity is referred to as an *intervention strategy* because it involves the use of interventions such as training programs. For instance, a measure examined via this strategy could be administered to a group of participants before and after a "proven" drug avoidance training program. If a difference in participants' scores on the measure is not observed, then the construct-related evidence of validity regarding the measure being reviewed is not supportive of the measure's use.

Construct-related evidence of validity is never based on a single study. Instead, consideration of a variety of studies, employing multiple validation strategies such as those described here, will help provide greater clarification regarding the appropriateness of using a given measuring instrument.*

Types of Reliability

A second characteristic of a defensible measurement instrument is the reliability or consistency with which it measures. The reliability of a test can be examined in three distinct ways. These include test-retest reliability, alternate-forms reliability, and internal consistency. Each of these approaches will be described below.

Test-retest reliability. Test-retest reliability (also referred to as *stability* reliability) examines the extent to which a measurement instrument is consistent over testing occasions. That is, will an individual who received a particular score on one testing occasion receive a similar score on a different testing occasion? Typically, to secure test-retest reliability information, an instrument is administered once to a group of individuals (30 or more). The same instrument is then administered again under similar conditions to the same group of individuals approximately two to four weeks later. Individuals' scores from the two administrations are then correlated. The higher the correlation, the greater the stability of measurement over time. Short tests, or other tests that are likely to be easily remembered, may result in an overestimate of reliability if participants recall their answers and, hence, respond similarly on the second testing occasion.

Alternate-forms reliability. The knowledge and skill measures in this handbook have two forms that may be used for a pretest to posttest comparison. The administration of one form for the pretest and the other form for the posttest is desirable because the pretest may sensitize participants to pay more attention to those issues included on the pretest than to other equally important issues. However, to draw defensible conclusions based on the use of two different forms at pretest and posttest, the forms must be equivalent.

To examine alternate-forms reliability, it is necessary to administer both forms to the same group of individuals. The scores from the two forms can then be correlated. High correlations indicate that the same conclusions would be drawn about an individual or group of participants regardless of which of the two forms had been used. Thus, there would be reliable or consistent measurement across alternate forms. A high alternate-forms reliability coefficient does not guarantee that the forms are perfectly equidifficult. If the two forms are not of equal difficulty, that is, participants perform consistently better on one form than the other, it would still be possible to obtain high between-forms correlations. Thus, it is important to be attentive to mean scores on the two test forms. It is also permissible to use p-values (the percentage of examinees getting each item correct) to reassign items to forms

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* For additional information about how to conduct construct-related validity studies, see Annotated Bibliography Nos. 18, 23, 27, and 34.

so that they are more equidifficult. After the redistribution of items, a second alternate-forms reliability study should be conducted.

Handbook users should not assume equivalence or equidifficulty for the multiple forms provided in this handbook. Until alternate-forms reliability and test difficulty are examined, the measures should be used in a design such that half of the participants take Form A as a pretest and Form B as a posttest while the other half take Form B as a pretest and Form A as a posttest. This counterbalancing technique eliminates the possible influence of one form being more difficult than the other.

Internal consistency. Internal consistency examines the extent to which the instrument measures a single or related set of constructs. The higher the internal consistency, the greater the homogeneity of items on the test. A test thought to measure a single attitudinal dimension should have relatively high internal consistency reliability. Procedures for calculating internal consistency measures include split-half reliability, Kuder-Richardson formulas, and Cronbach's Alpha. The split-half reliability coefficient is calculated by administering the test to a group of at least 30 participants and then correlating scores from the odd versus the even items. A correction for test length must then be made using the Spearman-Brown formula. The split-half procedure is very similar to alternate-forms reliability in that two "forms" are correlated by separating the odd and even items. Kuder-Richardson formulas for internal consistency provide an estimate of the average of all possible split-halves. These formulas, like Spearman-Brown, require that test items be binary-scored, that is, able to be scored as right or wrong. Cronbach's Alpha is identical to Kuder-Richardson for binary-scored items but can also be used for items that yield responses to which several points can be assigned, such as the items on **Would You Avoid Drugs?**

Not all forms of reliability need to be computed for every test. For example, alternate-forms reliability would be computed only for those measures that have two forms. Internal consistency estimates are less appropriate for multidimensional measures. Test-retest reliability is appropriate for most measures, but often presents pragmatic problems due to the need to retest the same individuals.*

Groups and Individuals

The validity and reliability procedures reviewed here were originally developed to examine the quality of tests used for *individual* assessment purposes. In contrast, the recommended use of the handbook measures is to perform *group* analyses for program evaluation. Thus, the appropriate reliability issue is whether scores for a group of individuals are relatively consistent. Similarly, the validity issue is whether changes in scores for a group of individuals are reflective of changes in the group's knowledge, skills, affect, or behavior. Because group scores are more stable than individual scores, the procedures outlined above

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* For additional information about how to examine the reliability of measurement instruments, see Annotated Bibliography Nos. 3, 18, 19, 23, 27, and 34.

are likely to underestimate the reliability and validity of the measures when used for program evaluation. Practically speaking, a measurement instrument with a lower reliability or validity coefficient would be acceptable when used for group rather than individual diagnosis. For example, Salvia and Ysseldyke (1981, p. 98) have recommended the following minimum standards for alternate-forms reliability:

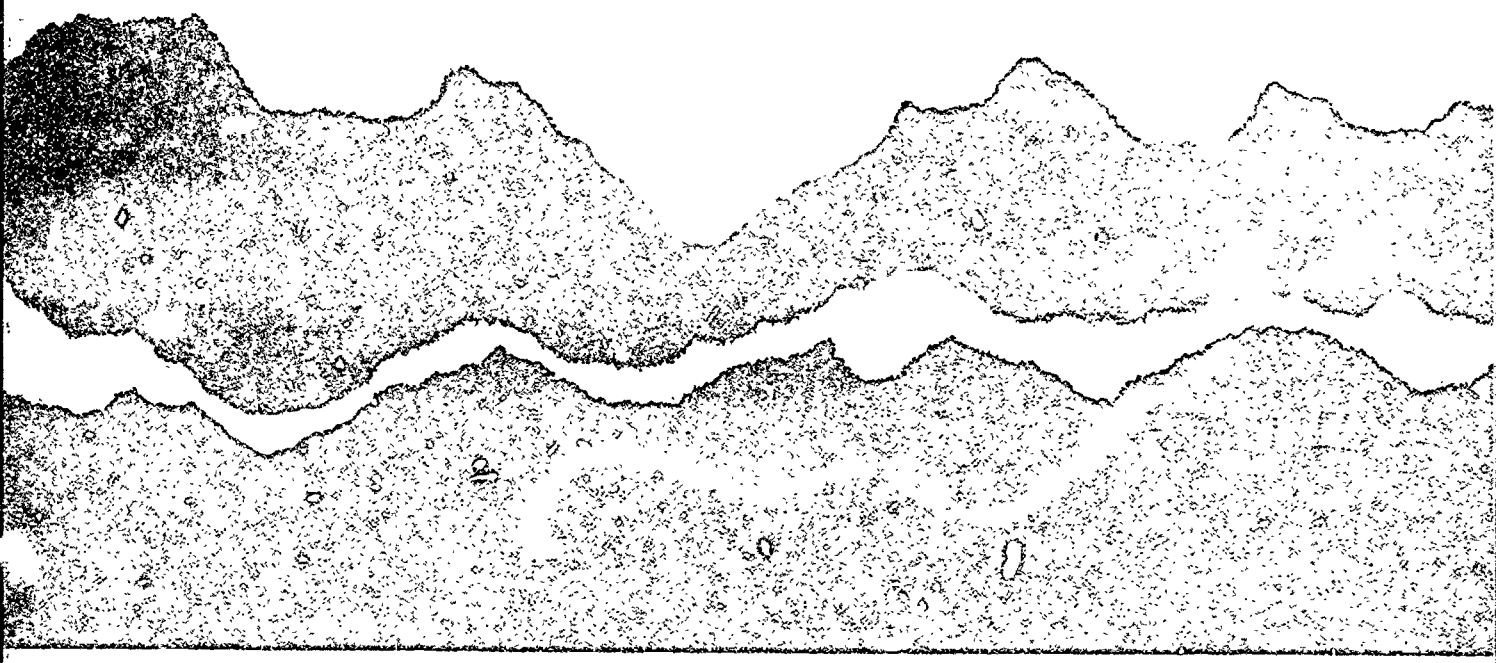
.60 - when scores are reported for groups

.80 - when scores are used for individual screening

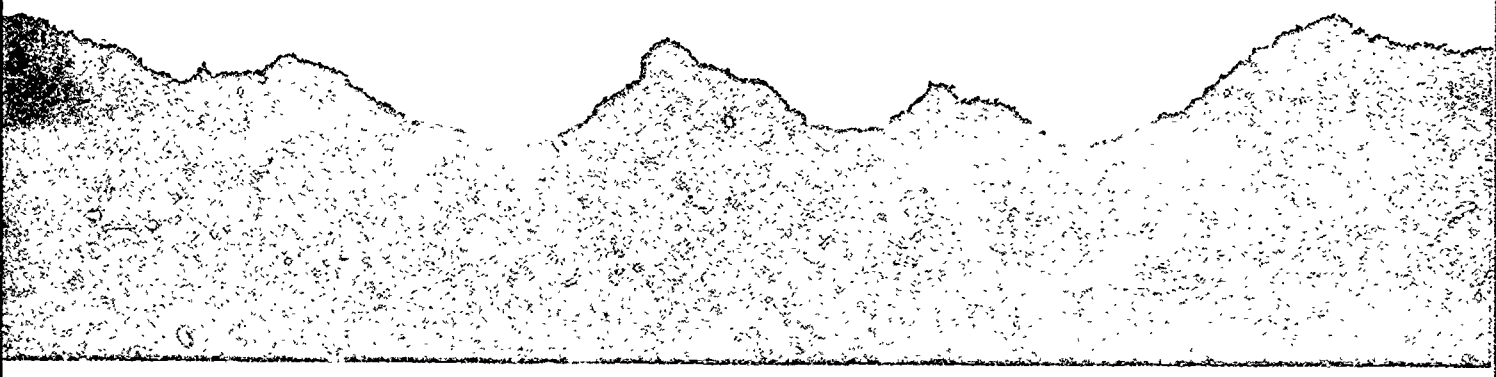
.90 - when scores are used for important educational decisions for individuals

Thus, standards for acceptable reliability and validity vary depending on the purpose for using a particular measure. However, minimal levels for each are critical for making sound decisions about a program. With a little creativity and effort, studies of reliability and validity can often be integrated into the ongoing operation of a program.

In addition to providing a brief overview, the major purpose of this chapter was to encourage handbook users to conduct local reliability and validity studies and to consider the involvement of a measurement specialist or the use of appropriate references in designing such studies. As suggested at the outset of the chapter, if such local studies are carried out, results should be forwarded to the Centers for Disease Control (Attention: Dr. Diane Orenstein, Project Officer, Center for Health Promotion and Education, Centers for Disease Control, 1600 Clifton Road N.E., Atlanta, GA 30333). This information will be shared with future handbook users.



Appendices



Appendix A

AMPLIFIED CONTENT DESCRIPTORS*

CONSEQUENCES OF DRUG USE
(Adult/Adolescent Measure)

FACTS ABOUT DRUG USE
(Preadolescent Measure)

MARIJUANA

1. Marijuana and hashish are made from the Indian hemp plant, cannabis sativa.
2. The main chemical in marijuana and hashish that causes intoxication is tetrahydrocannabinol (THC).
3. Except for certain experimental medical uses, marijuana is illegal. There are no legal uses for hashish.
4. The effects of hashish are similar to, but more powerful than, the effects of marijuana.
5. The physical effects of marijuana use include rapid heartbeat, lowered body temperature, and reddening of the eyes.
6. Frequent marijuana use may cause bronchitis, constant coughing, and lung problems.
7. There are more cancer-causing chemicals in marijuana smoke than in tobacco smoke.
8. A person's reaction time, control over hands and body, hearing, and ability to concentrate are all negatively affected by marijuana use.
9. A driver under the influence of marijuana makes driving errors due to decreased attention, decreased ability to judge distance, and delayed recovery from the glare of car headlights.
10. Though marijuana's effects on growth are still unknown, some studies show changes in the sex hormones of users.
11. Occasional, low-dose marijuana use does not cause permanent physical damage.

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* The amplified content descriptors that follow are not exhaustive accounts of drug abuse education content.

12. Tolerance to the desired effects of marijuana occurs in some regular, heavy users. Tolerance can also develop to the physiological side effects, such as impaired motor function and rapid heartbeat.
13. Reverse tolerance, in which the marijuana user experiences the desired effects at lower doses with each administration, can occur over a few days. Regular users, however, lose reverse tolerance and generally develop some tolerance to the effects of the drug.
14. Regular use of marijuana is likely to result in psychological dependence on the drug; regular, high-dose use of marijuana may result in mild physical dependence.
15. Small to moderate doses of marijuana may temporarily increase one's sense of well-being; change one's sense of touch, sight, smell, taste or sound; decrease memory; produce feelings of mental and/or physical laziness, giddiness, or anxiety; and alter one's sense of time.
16. A large dose of marijuana can cause the user to temporarily lose a sense of personal identity and experience hallucinations.
17. Feelings of anxiety or mild panic occur in some users, even at low to moderate doses.
18. Chronic, heavy marijuana use has been associated with an amotivational syndrome characterized by apathy, disinterest in one's environment, passivity, loss of effectiveness, diminished frustration tolerance, and other symptoms.
19. The effects of marijuana vary with the amount and strength of the dose used.
20. The social setting in which marijuana is used, and a user's expectations, will influence the user's reactions to the drug.
21. The effects of marijuana are stronger when it is smoked than when it is eaten.

HALLUCINOGENS

22. Hallucinogens cause temporary changes in one's perception of physical sensations and psychological states.
23. Hallucinogens are not physically addicting.
24. Common types of hallucinogens include peyote, mescaline, psilocybin ("magic mushrooms"), LSD ("acid"), STP, and PCP ("angel dust").
25. Physical reactions to hallucinogens may include numbness, nausea, feeling cold, lack of appetite, shaking hands and feet, enlarged pupils, increased heart rate, increased body temperature, high blood pressure, and high blood sugar.
26. Experts do not know if LSD damages blood cells, chromosomes, or a developing fetus.
27. An individual using a hallucinogen may be confused about what is real; a user may "see" sounds and "hear" colors, hallucinate, experience strong but opposite feelings at the same time, and experience an altered sense of time, space, and self.
28. The effects of hallucinogens can differ each time they are taken.

29. The effects of a hallucinogenic drug are strongly influenced by a user's thoughts and environment, and by the people who are with the user when the drug is taken.
30. Users of hallucinogens may panic or become terrified and harm themselves or others.
31. Hallucinogen users may relive experiences that happened under the influence of the drug.
32. Pure samples of most hallucinogens are rare; most substances sold as hallucinogens contain combinations of more common, and potentially more dangerous, substances.

PCP

33. PCP is a powerful and dangerous drug; it has no medical or legal uses.
34. The effects of PCP use are unpredictable and may cause the user to behave in strange or violent ways.
35. PCP use is known to cause extreme psychiatric traumas, including psychosis and acute schizophrenia.
36. PCP can interfere with sensory and muscular control, causing many users to die in accidents.

DEPRESSANT DRUGS

37. Depressant drugs depress the functions of the central nervous system.
38. Depressant drugs include barbiturates, nonbarbiturate substitutes, and tranquilizers.
39. Depressant drugs relax the body's muscles, relieve feelings of anxiety and tension, and bring on sleep.
40. Regular use of a particular depressant drug creates a physical tolerance to that drug and to other depressant drugs.
41. Depressant drugs taken in higher-than-prescribed doses cause psychological and physical dependence.
42. Large doses of depressant drugs often produce unsound judgment, slurred speech, and a loss of motor coordination.
43. Untreated withdrawal from physical addiction to depressant drugs can cause convulsions and death.
44. Some people inject depressant drugs with a needle, which can lead to serious diseases, including AIDS.
45. The dose of depressant drugs that will be fatal is considerably lower when the drug is taken with alcohol or other drugs.
46. Although depressant drugs are used to remedy sleeplessness, they do not bring on "normal" sleep.

Barbiturates

47. Barbiturates are frequently prescribed by doctors to bring on sleep and reduce tension.
48. Barbiturate drugs are effective for different periods of time, ranging from 2-12 hours.
49. Commonly used barbiturates include Seconal®, Nembutal®, Tuinal®, Amytal®, Butisol®, and Luminal®.
50. Negative side effects such as delirium, nausea, nervousness, and "hangovers" can result from short-term use; long-term use can result in decreased respiratory function and sleep disorders.
51. For heavy barbiturate users, there may be a relatively small margin of safety between pleasure-producing levels of barbiturates and the levels that produce serious overdose and death.
52. In the United States, barbiturates are the drugs most commonly used for suicide.
53. Physical dependence on barbiturates is as severe as dependence on heroin.

Nonbarbiturate Depressant Drugs

54. Commonly used nonbarbiturate depressant drugs include Doriden® (glutethimide), Quaalude® (methaqualone), Parest® (methaqualone), and Sopor® (methaqualone).
55. Use of nonbarbiturate depressant drugs can result in tolerance and physical and psychological dependence.

Tranquilizers

56. Tranquilizers are divided into two groups, major tranquilizers and minor tranquilizers.
57. Major tranquilizers are used to treat acute and chronic mental and emotional disorders, alcoholic psychosis, and severe anxiety.
58. Commonly used major tranquilizers include Thorazine®, Compazine®, and Stelazine®.
59. Minor tranquilizers are used to relieve anxiety, tension, and muscle spasms without changing the ability to think clearly, and to ease withdrawal from alcoholic dependency.
60. Commonly used minor tranquilizers include Librium®, Valium®, Serax®, Dalmane®, Tranxene®, and Ativan®.
61. Minor tranquilizers are among the most prescribed drugs in the world.
62. Users of minor tranquilizers commonly abuse them.
63. Large doses of minor tranquilizers taken over long periods will produce tolerance and physical and psychological dependence.

STIMULANT DRUGS

64. Stimulant drugs increase alertness, activity, and excitement by speeding up the body's central nervous system.
65. The most common stimulants are amphetamines, cocaine, nicotine, and caffeine.
66. Many people use stimulant drugs to help control weight, increase physical performance, and increase mental performance and alertness.
67. Some people inject stimulants such as cocaine and amphetamines with a needle, which can lead to serious disease, including AIDS.

Nicotine and Tobacco

68. The nicotine contained in tobacco can make a person feel better.
69. According to the Surgeon General of the United States, nicotine is addictive.
70. Nicotine increases the heart rate and blood pressure.
71. Tobacco smoke contains over 1500 chemicals.
72. Heavy smoking during pregnancy can cause the baby to be born with a low birth-weight, a condition that is associated with numerous health problems.
73. Smoking tobacco decreases the amount of oxygen that is absorbed through the lungs into the bloodstream.

Caffeine

74. Caffeine is found in coffee, tea, chocolate, and some soft drinks.
75. Caffeine is the most common stimulant.
76. Caffeine can provide temporary relief from physical tiredness.
77. Frequent side effects of too much caffeine are anxiety and loss of concentration.

Cocaine

78. Regular cocaine users can develop a physical dependence on the drug.
79. Regular cocaine users often develop a strong psychological dependence on the drug after a relatively short period of use.
80. Withdrawal from cocaine use can result in moderate to severe depression.
81. Cocaine use increases pulse and breathing rates, raises body temperature and blood pressure, causes a loss of appetite, constricts blood vessels, and enlarges the pupils.
82. Regular cocaine use can damage nasal passages and the throat, cause a deviated septum, and result in respiratory problems.
83. Psychological effects that may be experienced by cocaine users include feelings of happiness and excitement but, paradoxically, can include anxiety, panic, and paranoia.

84. "Crack" and "freebase" are forms of cocaine that have been further refined into a product that can be smoked.
85. All the effects of cocaine are intensified when it is used in the form of "crack."
86. "Crack" users rapidly develop extreme psychological dependence on the drug and show signs of physical dependence as well.

Amphetamines

87. Common prescription amphetamines contain Benzedrine® or Dexedrin®, but most amphetamines sold "on the street" are manufactured in illegal laboratories.
88. Amphetamines are often known as "speed."
89. Amphetamine use constricts blood vessels, increases heart rate, raises blood pressure, enlarges pupils, increases blood sugar, and depresses appetite.
90. Amphetamine users may experience slight heart problems, dry mouth, sweating, headache, and diarrhea as side effects of the drug.
91. The psychological effects of amphetamines include feelings of alertness and happiness, and a sense of having increased mental and physical powers.
92. Amphetamines are prescribed for appetite control and narcolepsy, and to counteract the effects of other drugs and alcohol.
93. People who use amphetamines for weight control often become psychologically dependent on the drugs because of the feelings they produce.
94. Because amphetamines mask feelings of tiredness, users may perform a task longer than is safe.
95. Although amphetamines help fight drowsiness, they are likely to lead to loss of accuracy, judgment, and problem-solving ability.
96. Regular users of amphetamines are likely to feel extremely tired, angry, and hostile.
97. Sudden withdrawal from heavy amphetamine use can cause severe depression.
98. Regular amphetamine use often results in a poor state of health, including poor nutrition and lowered resistance to disease.
99. Physical and psychological dependence on amphetamines can occur, as can tolerance to their desired effects; psychological dependence can occur among regular, low-dose users.

NARCOTIC DRUGS

100. Narcotic drugs are made from the opium poppy; they include opium, heroin, morphine, and codeine.
101. Cocaine and marijuana are classified legally, but not chemically, as narcotic drugs.
102. Narcotic drugs depress the central nervous system.
103. Medically, narcotic drugs are used to relieve pain and to bring on sleep.

104. The physical effects of narcotics may include decreased breathing rate, impaired vision, constipation, nausea, and vomiting.

105. The psychological effects of narcotics may include a temporary sense of well-being, and feelings of contentment and safety.

106. People often inject narcotics with a needle, which can lead to serious disease, including AIDS.

Heroin

107. Regular heroin use causes tolerance, as well as psychological and physical dependence on the drug.

108. Most of the dangers of heroin use are caused not by the physical effects of the drug itself, but by uncertain dose levels, the use of dirty needles, and the mixing of heroin with more dangerous substances.

109. Since heroin addicts tend to think only about getting and taking heroin, they often neglect themselves and suffer from poor nutrition, infections, and untreated diseases.

110. If a woman is addicted to heroin while pregnant, her baby will be born addicted and will have to be treated for withdrawal symptoms.

111. Because of sharing drug needles, many heroin users are contracting the AIDS virus.

ALCOHOL

112. Beverage alcohol, called ethyl alcohol or ethanol, is one of the most widely consumed drugs in the world.

113. Only ethyl alcohol can be consumed; methyl alcohol and isopropyl alcohol are highly toxic if consumed.

114. Alcohol depresses many nervous system functions, causing drinkers to feel uninhibited, followed by loss of perceptual ability, motor functions, and even cognitive abilities and memory.

115. Regular consumption of alcohol can result in tolerance to its desired effects.

116. Regular consumption of alcohol can result in severe psychological and physical dependence.

117. Regular, heavy abuse of alcohol causes numerous physical problems, including stomach and liver disease, heart ailments, and certain cancers.

Bibliography

Brecher, E.M., & the Editors of Consumer Reports. (1972). *Licit and illicit drugs*. Boston: Little, Brown.

Cox, T.C. et. al. (1983). *Drugs and drug abuse: A reference text*. Toronto Canada: Alcoholism and Drug Addiction Research Foundation.

Dusek, D., & Girdano, D. (1980). *Drugs: A factual account* (3rd ed.). Reading, MA: Addison-Wesley.

National Institute on Drug Abuse. (1980). *Let's talk about drug abuse*. (DHHS Publication No. (ADM) 80-706). Washington, D.C.: Author.

National Institute on Drug Abuse. (1980). *Facts about drugs and drug abuse*. (U.S. Government Printing Office Publication No. 1980 0-326-870). Washington, DC: U.S. Government Printing Office.

National Institute on Drug Abuse. (1980). *For parents only: What you need to know about marijuana*. U.S. Department of Health and Human Services Publication No. (ADM) 80-909. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1988). *Health consequences of smoking: Nicotine addiction. A report of the Surgeon General* (DHHS Publication No. CDC 88-8406). Washington, DC: U.S. Department of Health and Human Services.

U.S. Department of Health, Education and Welfare. (1969). *Narcotics, amphetamines, barbiturates, LSD, marijuana: Some questions and answers*. Washington, DC: Author.

DRUG USE IN AMERICA

(Adolescent/Preadolescent Measure)

Marijuana

1. Approximately 4% of high school seniors report daily use of marijuana.*
2. Approximately 18.2% of high school seniors report that most or all of their friends smoke marijuana.
3. Approximately 54.6% of high school seniors report that they would disapprove of their friends trying marijuana once or twice.
4. Approximately 24% of 12- to 17-year-olds report having tried marijuana at any time in their lives.
5. Approximately 62.4% of high school seniors report that they would not try marijuana even if it were legal and available.

Alcohol

6. Approximately 32% of 12- to 17-year-olds report current use (used in the last 30 days) of alcohol.
7. Alcohol-related auto crashes are the number one cause of death among teenagers.
8. Over half of all teen deaths are due to auto crashes in which alcohol was involved.
9. Approximately 57% of 12- to 17-year-olds report having tried a drink of alcohol.
10. Approximately 55% of all fatal auto crashes involve alcohol.

Cigarettes

11. Approximately 16% of 12- to 17-year-olds report that they currently use cigarettes.
12. Current use of cigarettes among 12- to 17-year-olds has fallen from approximately 25% in 1974 to approximately 15.6% in the most current survey available.
13. Approximately 18.7% of high school seniors report daily use of cigarettes.

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* At the time this document was prepared, the most current statistical information available had been gathered in 1985-86 and was published between 1986 and 1988. You may be able to update these descriptors by referring to more recent editions of the documents cited in the bibliography.

Cocaine

14. Approximately 5% of 12- to 17-year-olds report having ever used cocaine.
15. Approximately 80.2% of high school seniors report that they would disapprove of their friends trying cocaine once or twice.
16. Approximately 2% of 12- to 17-year-olds currently use cocaine.

Other Drugs

17. Approximately 9% of 12- to 17-year-olds report having ever tried using inhalants and 4% report having used inhalants within the past 30 days; therefore, 12- to 17-year-olds abuse inhalants more than any other drugs except cigarettes, alcohol, and marijuana.
18. Reported lifetime use of methaqualone among high school seniors has fallen from 10.6% in 1981 to 5.2% in the latest survey available.
19. Approximately 4% of 12- to 17-year-olds report ever having tried barbiturates.
20. Approximately 1% of 12- to 17-year-olds report ever having tried hallucinogens.
21. Less than one-half of 1% of 12- to 17-year-olds report ever having tried heroin.
22. In all categories of drugs, 18- to 25-year-olds report the highest frequency of current use and lifetime use.

Bibliography

National Institute of Drug Abuse. (1986). *Highlights of the 1985 national household survey on drug abuse.* Washington, DC: U.S. Government Printing Office.

National Institute of Drug Abuse. (1987). *High school senior drug use 1975-1986.* Washington, DC: U.S. Government Printing Office.

Office of Disease Prevention and Health Promotion. (1980). *Disease prevention/health promotion: The facts.* Palo Alto, CA: Bull Publishing.

Appendix B

INFORMED CONSENT PROCEDURES

Prior to administering measures to participants, program personnel should inform participants about the content covered by the measures and the purpose of the program's evaluation study. Program personnel may also wish to provide the opportunity for participants to indicate whether or not they consent to participate in the study and complete the selected measures. Informed consent is obtained by presenting all information pertinent to the study and asking the participant to affix a signature indicating that the information has been read and that consent is given to participate.

If the decision is made to obtain informed consent, program personnel have the choice of employing a "passive" consent procedure or an "active" consent procedure. *Passive informed consent* consists of asking participants to sign and return a consent form only *if they do not wish to participate* in the study. Participants who do not return the consent form are considered eligible to participate in the study.

Active informed consent requires participants to sign and return the consent form *if they wish to participate.* Only those participants who return a signed form can be included in the study. Consequently, the participation rate resulting from an active consent procedure is generally lower than that obtained from a passive consent procedure.

To construct an informed consent form, program personnel should consider including the following items:

1. A general statement of the program goals and objectives.
2. A brief explanation of the study procedures and measures.
3. An indication that the participant is free to withdraw consent and to discontinue participation at any time.
4. An explanation of the procedures to be taken to ensure anonymity and confidentiality of responses.
5. An indication that participants are free not to answer specific items or questions.
6. A place for the participants to affix their signatures under a statement indicating that the participant agrees to participate (active consent) or does not agree to participate (passive consent) in the study. If appropriate, a date for the return of the consent form should be specified.

Appendix C

ANNOTATED EVALUATION BIBLIOGRAPHY

1. Alkin, M.C., & Solmon, L.C. (Eds.). (1983). *The costs of evaluation*. Beverly Hills, CA: Sage.

   In this collection of essays both theoretical and practical issues relevant to cost-focused program evaluations are presented.

2. American Psychological Association. (1973). *Ethical principles in the conduct of research with human participants*. Washington, DC: Author.

   This treatise focuses on the appropriateness of carrying out various types of research investigations with human subjects. Because the American Psychological Association has had a long-standing concern about ethical issues in the conduct of research investigations, this publication will be of interest to numerous evaluators of health education programs.

3. American Psychological Association, American Educational Research Association, National Council on Measurement in Education. (1985). *Standards for educational and psychological tests*. Washington, DC: Author.

   This volume presents the most widely used set of standards for psychological and educational tests. Frequently cited by users of educational tests, the standards have recently been employed in numerous judicial deliberations. Relatively brief, the standards should be consulted by health educators who employ assessment devices regularly.

4. Anderson, L.W. (1981). *Assessing affective characteristics in the schools*. Boston: Allyn and Bacon.

   Anderson provides an excellent set of practical suggestions for the creation of affective assessment instruments. He includes one of the most easily understood expositions of various scaling procedures including Likert, Thurstone, and Guttman scales.

5. Bausell, R.B. (Ed.). *Evaluation and the health professions*. Newbury Park, CA: Sage.

   This quarterly publication deals with a variety of evaluation-relevant issues of interest to health educators.

6. Berk, R.A. (Ed.). (1982). *Handbook of methods for detecting test bias*. Baltimore: The Johns Hopkins University Press.

   This collection of individual essays offers the reader a comprehensive depiction of methods currently available to detect the presence of bias in tests.

7. Berk, R.A. (Ed.). (1984) *A guide to criterion-referenced test construction*. Baltimore: The Johns Hopkins University Press.

This collection of essays consists of papers presented at the first Johns Hopkins University National Symposium on Educational Research. In addition, a number of more recently written chapters have been included in this revision of a 1980 text. The authors address many of the important problems, both conceptual and technical, facing developers and users of criterion-referenced measures.

8. Campbell, D.T., & Stanley, J.C. (1966). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.

This volume, originally a chapter in a larger volume, has had substantial impact on the fields of research and evaluation. Evaluators of health education programs will wish to consider this truly classic treatment of data-gathering designs suitable for experimental and quasi-experimental settings.

9. Churchill, G.A., Jr. (1979). *Marketing research: Methodological foundations* (2nd ed.). Hinsdale, IL: The Dryden Press.

Although written in the context of marketing research, this textbook covers several topics of vital importance in evaluation. Topics such as research design, data collection, sampling, and data analysis are covered in a readily understandable yet accurate way. An excellent resource.

10. Cohen, J. (1977). *Statistical power analysis for the behavioral sciences* (rev. ed.). New York: Academic Press.

Cohen offers a useful treatment of factors which should be considered when one draws samples for use in research or evaluation activities. Of special interest is the set of easy-to-use guidelines he offers for determining the estimated sample size necessary to detect differences between groups.

11. Cook, T.D., & Campbell, D.T. (1976). The design and conduct of quasi-experiments and true experiments in field settings. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*. Chicago: Rand McNally.

This is an updated version of the famous exposition of quasi-experimental and experimental data-gathering designs by Donald T. Campbell and Julian C. Stanley (see Reference No. 8). An excellent discussion of four types of validity is featured in this essay.

12. Cook, T.D., & Campbell, D.T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago: Rand McNally.

This widely cited volume provides a comprehensive treatment of quasi-experimental investigations in settings of substantial relevance to the concerns of health educators. There are excellent discussions of internal and external validity, including the various threats to both types of validity. A systematic consideration of the commonly used data-gathering designs is offered, including an extended appraisal of interrupted time-series designs.

13. Cordray, D.S., Bloom, H.S., & Light, R.J. (Eds.). (1987, Summer). *Evaluation practice in review* (New Directions for Program Evaluation, No. 34). San Francisco: Jossey-Bass.

This volume contains a set of thought-provoking chapters dealing with what has been learned about the practice of evaluation during the past decade. The chapters on evaluation politics by Eleanor Chelimsky and on naturalistic evaluation by Egon Guba would be of particular interest to evaluators of health education programs.

14. Cronbach, L.J. (1963). Course improvement through evaluation. *Teachers College Record, 64*, 672-683.

This article is an early piece, presenting the virtues of what would later be termed "formative" evaluation. It rings as true today as it did more than two decades ago, and it applies as much to evaluation in health education as it does to more traditional evaluation. Emphasizing the role of evaluation in gathering information that can improve programs, this article is well worth reading.

15. Cronbach, L.J. (1977). *Analysis of covariance in nonrandomized experiments: Parameters affecting bias.* Unpublished occasional paper, Stanford Evaluation Consortium, Stanford University.

A highly technical piece on the complications associated with using analysis of covariance, this article is recommended only for those prepared to handle a critical data-analysis problem in a sophisticated way.

16. Cronbach, L.J., Ambron, S.R., Dornbusch, S.M., Hess, R.D., Hornik, R.C., Phillips, D.C., Walker, D.F., & Weiner, S.S. (1980). *Toward reform of program evaluation.* San Francisco: Jossey-Bass.

This important book considers the function of evaluation in a pluralistic society and presents 95 theses on the role of evaluators and evaluations. In addition to providing a contemporary conception of evaluation, it provides a historical and multidisciplinary perspective of the field. This volume will be of considerable interest to those evaluating health education programs.

17. Cronbach, L.J., & Furby, L. (1970). How should we measure 'change' – or should we? *Psychological Bulletin, 74*, 68-80.

A technical treatise on the dangers associated with using gain scores. A very significant piece, but recommended only for those with some psychometric training.

18. Cunningham, G.K. (1986). *Educational and psychological measurement.* New York: Macmillan.

This is a standard introductory text focusing on the major topics associated with measurement as it applies to such tasks as program evaluation.

19. Ebel, R.L. (1979). *Essentials of educational measurement* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

This is a standard, easily read introductory text, covering important topics in the field of educational testing. Ebel, a prominent leader of traditional educational testing practices, provides a lucid treatment of a wide range of measurement topics.

20. Fetterman, D.M., & Pitman, M.A. (Eds.). (1986). *Educational evaluation: Ethnography in theory, practice, and politics*. Beverly Hills, CA: Sage.

This collection of essays touches on ethnographically oriented evaluation of educational programs. Health educators wishing to learn about this recently emphasized approach to educational evaluation will find this volume of interest.

21. Green, L.W. (1979). Research methods translatable to the practice setting: From rigor to reality and back. In S.J. Cohen (Ed.), *New directions in patient compliance* (pp.141-151). Lexington, MA: Lexington Books.

Green attends to a practical dilemma facing those who evaluate health education programs, namely, the necessity to make trade-offs between validity and feasibility in field settings. Six strategies for coping with evaluation under adverse circumstances are described.

22. Green, L.W., & Figa-Talamanca, I. (1974). Suggested designs for evaluation of patient education programs. *Health Education Monographs, 2* (1), 54-71.

In this essay Green and Figa-Talamanca suggest data-gathering designs for conducting evaluations of patient education programs. The authors also explore several issues related to evaluations of this variety.

23. Green, L.W., & Lewis, F.M. (1986). *Measurement and evaluation in health education and health promotion*. Palo Alto, CA: Mayfield.

This volume is an excellent resource for health educators concerned with the evaluation of their programs. Green and Lewis provide a series of useful explanations of topics in both measurement and health evaluation. Their expositions are peppered with practical examples drawn from health education and health promotion.

24. Hambleton, R.K., Swaminathan, H., Algina, J., & Coulson, D.B. (1978). Criterion-referenced testing and measurement: A review of technical issues and development. *Review of Educational Research, 48* (1), 1-48.

This is a comprehensive review of the field of criterion-referenced testing. Hambleton and his colleagues do a masterful job of isolating the key issues in criterion-referenced testing and describing results of research investigations bearing on those issues. Somewhat technical at times, this review is one of the more widely cited essays dealing with criterion-referenced testing.

25. Hays, W.L. (1973). *Statistics for the social sciences*. New York: Holt, Rinehart, and Winston.

This comprehensive text handles basic and advanced statistical considerations. Somewhat technical at points, Hays nonetheless provides an excellent set of step-by-step guidelines to statistical practice.

26. Joint Committee on Standards for Educational Evaluation. (1981). *Standards for evaluations of educational programs, projects, and materials*. New York: McGraw-Hill.

The development of these evaluation standards was spearheaded by a joint committee of the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education. Thirty standards are presented, addressing issues related to deciding whether to evaluate, defining the evaluation problem, designing the evaluation, budgeting for the evaluation, collecting and analyzing data, and reporting the evaluation. Intended for both consumers of evaluation and individuals conducting evaluations, this reference may be of most use to evaluators who are relatively new to the field.

27. Kubiszyn, T., & Borich, G. (1987). *Educational testing and measurement: Classroom application and practice* (2nd ed.). Glenview, IL: Scott-Foresman.

Another introductory text dealing with the nuts and bolts of measurement, this book will provide health educators with a good overview of educational measurement.

28. Levin, H.M. (1975). Cost-effectiveness analysis in evaluation research. In M. Guttentag & E.L. Struening (Eds.), *Handbook of evaluation research* (Vol. 2, pp. 89-122). Beverly Hills, CA: Sage.

This essay probes the important considerations involved in determining cost-effectiveness of programs in the context of educational evaluations. Theoretical as well as practical guidelines are provided.

29. Levin, H.M. (1983). *Cost-effectiveness: A primer* (New Perspectives in Evaluation, Vol. 4). Beverly Hills, CA: Sage.

This text is a splendid introduction to the fundamental concepts of cost analysis on program evaluation. Levin provides succinct descriptions along with advantages and disadvantages for cost-feasibility, cost-effectiveness, cost-benefit, and cost-utility analyses.

30. Linn, R.L., & Slinde, J.A. (1977). The determination of the significance of change between pre- and posttesting periods. *Review of Educational Research, 47*, 121-150.

This article reviews many of the major issues in the measurement of change from pretesting to posttesting periods and suggests possible alternatives. These authors share the general sentiment of many others in the field that "more is expected from gain scores than they can reasonably be expected to provide."

31. Lord, F.H. (1963). Elementary models for measuring change. In C.W. Harris (Ed.), *Problems in measuring change* (pp. 21-38). Madison: Wisconsin Press.

This is an early treatise on the problems associated with measuring change. Although this chapter rapidly becomes very technical, the early sections provide an intuitive explanation of the difficulties with using gain scores.

32. Mark, M.M., & Shotland, R.L. (Eds.). (1987, Fall). *Multiple methods in program evaluation* (New Directions for Program Evaluation, No. 35). San Francisco: Jossey-Bass.

Decrying the infrequency with which multiple methods are used in program evaluation, six chapters are offered in this volume, not only advocating multiple methods, but also describing how such program evaluations can be conducted.

33. Oakland, T. (Ed.). (1977). *Psychological and educational assessment of minority children.* New York: Brunner/Mazel.

This collection of essays provides a series of useful suggestions for those who are more sensitive to the possible bias present in educational tests.

34. Popham, W.J. (1981). *Modern educational measurement.* Englewood Cliffs, NJ: Prentice-Hall.

Varied topics in the field of educational measurement are introduced in this text. Norm-referenced measurement and criterion-referenced measurement are both considered, with the special applications of criterion-referenced assessment emphasized. Chapters on the relationship of testing to teaching and the measurement of affect will be of special interest to health educators.

35. Popham, W.J. (1988). *Educational evaluation.* Englewood Cliffs, NJ: Prentice-Hall.

This is an introductory text, written in fairly nontechnical language, about the field of educational evaluation. Evaluators of health education programs will find it simple to translate the book's contents to their own specialties.

36. Popham, W.J., & Sirotnik, K.A. (1973). *Educational statistics: Use and interpretation* (2nd ed.). New York: Harper and Row.

This easily read introductory text deals with the fundamental types of statistical considerations needed by program evaluators. It is intended for those who are not particularly comfortable with mathematical approaches to statistics.

37. Riecken, H.W., & Boruch, R.F. (1971). *Social experimentation: A method for planning and evaluating social intervention.* New York: Academic Press.

This is a significant contribution to our thinking about large-scale social interventions, their design and appraisal. It provides a useful analysis of the ways that the experimental method can be defensibly employed in connection with major social programs.

38. Rivlin, A.M., & Timpane, P.M. (Eds.). (1975). *Ethical and legal issues in social experimentation.* Washington, DC: Brookings Institution.

Rivlin and Timpane explore the sorts of legal and ethical issues to which evaluators of health education programs must attend.

39. *SPSS-X User's Guide* (3rd ed.). (1988). Chicago: SPSS Inc.

This is a widely used, well-organized set of "canned" computer analysis programs for use in the social sciences. Health educators who have occasion to use computer analyses will find the SPSS manual most helpful.

40. Salvia, J., & Ysseldyke, J.E. (1981). *Assessment in special and remedial education* (2nd ed.). Boston: Houghton Mifflin.

This text, intended for individuals who must apply assessment to special education and remedial education, provides measurement insights for health educators who deal with such populations of learners.

41. Scriven, M. (1967). The methodology of evaluation. In R.W. Tyler, R.M. Gagné, & M. Scriven (Eds.). *Perspectives of curriculum evaluation* (pp. 39-83). Chicago: Rand McNally.

This seminal article was the first essay in which Scriven distinguished between the now commonly accepted formative and summative roles of evaluators. Scriven addresses a wide variety of topics, emphasizing the importance of comparative appraisals of two or more programs' merits.

42. Scriven, M. (1972). Prose and cons about goal-free evaluation. *Evaluation Comment, 3*, 1-4.

In this essay Scriven offers goal-free evaluation as an antidote to excessive preoccupation with the program staff's expressed objectives. Scriven argues that evaluators should attend to the results produced by a program, not the rhetoric of its program goals.

43. Siegel, S. (1956). *Nonparametric statistics for the behavioral sciences.* New York: McGraw-Hill.

This is the classic treatment of nonparametric statistical techniques. Although a bit out of date these days, Siegel's text offers the most easily understood treatment of nonparametric statistical procedures. Because of the author's admitted zealousness in support of nonparametric techniques, those using Siegel's text should also consult a critique of it by Robert Savage, *Journal of American Statistical Association*, 1957, *52*, 331-344.

44. Suchman, E.A. (1967). *Evaluative research: Principles and practice in public service and social action programs.* New York: Russell Sage Foundation.

In this volume, Suchman provides extensive coverage of the application of the experimental research model in conducting evaluations. Although evaluation has come a long way since this book was written, the volume provides a clear description of the predominant conceptualization of evaluation in the past decade.

45. Tukey, J.W. (1977). *Exploratory data analyses.* Reading, MA: Addison-Wesley.

Creative approaches to displaying and understanding data are provided by Tukey in this excellent demystification of data analysis.

46. Walberg, H.J., Postlethwaite, T.N., Creemers, B.P.M., & de Court, E. (Eds.). (1987). Educational evaluation: The state of the field. *International Journal of Educational Research, 11* (1).

This special issue, as its title suggests, presents comprehensive review of field of program evaluation from authors based in the U.S. and abroad.

47. Webb, E.J., Campbell, D.T., Schwartz, R.D., Sechrest, L., & Grove, J.B. (1981). *Nonreactive measures in the social sciences* (2nd ed.). Dallas: Houghton Mifflin.

This charming volume provides readers with a series of powerful and clever tactics to secure data, particularly of an affective nature, without sensitizing respondents to the evaluator's purposes.

48. Weiss, C.H. (1972). *Evaluation research: Methods of assessing program effectiveness.* Englewood Cliffs, NJ. Prentice-Hall.

Weiss offers a pithy overview of prominent program evaluation considerations including the formulation of questions to be addressed, the design of the evaluation study, and the utilization of evaluation results. A paperback, this brief book (160 pp.) offers an excellent introduction to what Weiss refers to as "evaluation research."

49. Windsor, R.A., Baranowski, T., Clark, N., & Cutter, G. (1984). *Evaluation of health promotion and education programs.* Palo Alto, CA: Mayfield.

This text is a useful introduction to the evaluation of health education programs. Windsor et al. have provided readers with a series of health relevant examples to illustrate their explorations.

50. Worthen, B.R., & Sanders, J.R. (Eds.). (1973). *Educational evaluation: Theory and practice.* Worthington, OH: C.A. Jones.

This volume was one of the earliest compilations of various program evaluation models applied to education. Evaluation theorists whose views are presented in this book include Stake, Cronbach, Scriven, Tyler and others. Worthen and Sanders have authored sections of the book and have included a series of original chapters by a number of evaluation specialists. While focused on educational evaluation in general, the volume is of substantial relevance to program evaluation of health education programs.

51. Worthen, B.R., & Sanders, J.R. (1987). *Educational evaluation: Alternative approaches and practical guidelines.* New York: Longman.

This introductory text is organized around a series of alternative approaches to educational evaluation, including the "objectives-oriented" and "advisory-oriented" approaches.

52. Worthen, B.R., & White, K.R. (1987). *Evaluating educational and social programs: Guidelines for proposal review, onsite evaluation, evaluation contracts, and technical assistance.* Boston: Kluwer-Nijhoff.

This volume provides a first-rate series of practical guidelines dealing with varied aspects of proposal review, onsite evaluation, evaluation contracts, and technical assistance.

53. Zdep, S.M., & Rhodes, I.N. (1977). Making the randomized response technique work. *The Public Opinion Quarterly, 40,* 531-537.

This easily read essay describes the randomized response technique, a procedure used to obtain sensitive information from respondents more accurately than if respondents were directly asked about sensitive informatic...