Assessment of Alcohol Problems: An Overview

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The corpus of formal psychometric instruments, research on these measures, and conceptual frameworks on psychological assessment is extensive. A comprehensive, up-to-date description of the field is provided by G.J. Meyer and colleagues (2001), and the reader of this *Guide* is urged to study that article as background for the broader field of which alcohol assessment is a part.

As in other areas of psychotherapy, accurate patient assessment is fundamental to both treatment of and research on alcohol problems. Although each of these activities is advanced by informed use of psychometric instruments, the needs of professionals in the two endeavors differ. Most notably, the practitioner is primarily concerned with the clinical utility of the measure, particularly how well it identifies the needs of a given client and guides treatment planning. The researcher is likely to explore a broader range of variables that may quantify and explain the overall impact of an intervention (Connors et al. 1994). These variables may or may not be directly related to client care.

Psychometric properties of measures, especially validity and availability of relevant norms, are of considerable interest to the clinician. While such statistical information is not irrelevant to researchers, often it is less critical. In a formal efficacy trial, contrasts usually are between a control group and an experimental group or before versus after treatment functioning in a given group of subjects. Since scores derived from measures with lower validity include a large component of error variance, their use may entail recruitment of larger numbers of subjects or inclusion of additional scales to in some way correct for measurement error. External norms may be a less immediate concern to the researcher.

Although for purposes of research on treatment efficacy and development of a program of treatment all subjects generally receive the same assessment battery, in clinical situations assessment procedures are usually tailored to the needs of the particular individual being served and, hence, the battery may differ somewhat from case to case (G.J. Meyer et al 2001).

Especially in the current environment of stringent controls on health care costs and service utilization, the clinician also is deeply concerned about issues such as ease of administration, scoring, and interpretation of the instrument as well as cost, time, and acceptability of the measure to clients (Allen et al. 1992). In research projects, however, subjects typically are reimbursed for their participation, and sufficient technical resources are usually available for administering measures and quantifying results.

Researchers seem to place a much higher premium on formal assessment than do many practicing clinicians, who appear to rely more heavily on interviews, review of past records

(Nirenberg and Maisto 1990), or clinical impression. While such procedures can provide helpful information, psychometric techniques offer unique and very important advantages. Their standardization permits uniformity in administration and scoring across interviewers with diverse experience, training, and treatment philosophy. The measurement properties of formal assessment procedures, including their strengths and weaknesses, are known.

The large number and variety of formal techniques also allow such measures to respond to a broad range of client management questions. To their credit as well, formal measures are economical in terms of cost, clinician time, and effort required to succinctly and clearly communicate with other clinical staff treating the client. Finally, results thus derived may well have more credibility, and thus influence, with clients than conclusions based on less formal procedures (Allen 1991).

Failure to fully appreciate and employ formal, validated assessment procedures is regrettable in the field of alcohol treatment practice. We continue to believe that "while better assessment of alcoholic patients does not ensure more specific or more effective treatment, chances for successful rehabilitation are clearly enhanced if specific patient needs can be more accurately identified and if treatment can be tailored accordingly." (Allen 1991, p. 183)

As a greater variety of interventions are introduced into the alcoholism treatment system and as we more fully appreciate the treatment implications of differences among subtypes of alcoholics, the role of assessment in clinical practice will further expand. We hope that this *Guide* will enrich the contribution of assessment to alcoholism treatment both by apprising clinicians of the wide array of instruments available and by assisting them to make well-informed decisions about which instruments are most helpful for serving their clients.

In choosing instruments and developing the format for this text, we have tried to keep the needs of both researchers and clinicians in mind.

Elements in Instrument Selection

When choosing an instrument to help determine a client's treatment needs, the primary concern is: Is the instrument appropriate for the client? Several parameters should be considered in answering this question.

Purpose/Clinical Utility

In this *Guide*, instruments are assigned to chapters according to their primary role in informing sequential decisions that direct the course of treatment (i.e., screening, diagnosis, assessment of drinking behavior, treatment planning, treatment and process assessment, and outcome evaluation). Although some of these stages, such as screening and diagnosis, are narrowly defined, measures that assist in treatment planning or that assess the treatment process may answer questions very different from those resolved by other scales within the same domain.

Assessment Timeframe

Measures differ according to the period of client functioning that they encompass. For example, certain measures and tests are appropriate when the concern is recent drinking patterns, whereas others reflect long-term, chronic alcohol use. Similarly, screening and diagnostic scales are designed to evaluate either lifetime or current conditions.

Age or Target Populations

In choosing an instrument, it is important to consider its suitability for a given client. Most alcohol measures have been developed for adult populations. Of late, however, several useful adolescent scales have been constructed. This advance in the field is clearly welcome, since alcohol problems in adolescents often are manifested differently and lead to dissimilar consequences than in adults. Our awareness of the importance and unique nature of adolescent assessment has prompted us to include a new chapter in this volume entirely devoted to adolescent concerns. Attention of test developers has recently

focused on needs of more specific subgroups, such as pregnant women and the elderly.

Examples of Groups With Whom the Instrument Has Been Used

The field of alcohol assessment has emphasized development of a wide variety of instruments, to some extent in lieu of efforts to refine existing instruments and to determine their particular applicability to subpopulations of individuals with alcohol problems. When choosing an instrument, it is helpful to consider which types of patients have been successfully evaluated with the instrument.

Availability of Norms

Norms allow the test performance of a given client to be compared with that of a large, relevant group of individuals. While norms are essential to describe a single case of a sample by comparison to a larger group, they are less important, for example, in contrasting pretreatment and post-treatment behavior in an individual.

In other instances, too, norms are not of key concern. For example, screening measures are judged primarily on their ability to predict diagnosis irrespective of how an index case compares with others on the scale. In short, while some measures are interpreted *normatively*, others are interpreted *ipsatively*. In ipsative analyses, individuals are actually compared with themselves, such as their functioning before and after treatment or the relative strengths of various expectancies that the individual maintains for effects of drinking. Although normative instruments may often be interpreted in an ipsative manner, the converse is rarely true.

In determining the importance of normative information, the clinician should be concerned about whether norms are available that would assist in making clinical decisions in a particular case. Phrased differently, would the demographic characteristics of a client affect interpretation of the score and influence choice of treatment?

As with other psychological measures (Sackett and Wilk 1994), few scales in the alcohol field have ethnic-specific norms. Separate norms for males and females, however, are available for some alcohol measures. Insofar as problem drinking and alcohol dependence are experienced somewhat differently in men and women, gender-based norming of measures for screening, alcohol use, and adverse consequences of drinking is generally desirable. It remains to be seen, however, if gender-based norming would significantly augment the utility of treatment planning measures, which are often ipsative in nature. The more challenging issue may be whether or not the fundamental dimensions differ so greatly that different measures, rather than separate norms, are needed for various subgroups. Research on this topic remains in an early stage.

Administrative Options

An active area of investigation in instrument development has been alternative ways of administering the measure. These include written ("pencil and paper"), interview, computer, and collateral inquiry formats. Alternative administration procedures may decrease clinician time, more effectively engage clients in the assessment process, and heighten accuracy of responding. Although most of this research has been on screening and measuring alcohol consumption rather than on variables associated with treatment planning, in general, results from computerized assessments seem similar to those of face-to-face administration (Bernadt et al. 1989; Malcolm et al. 1990; Gavin et al. 1992; Daeppen et al. 2000).

The topic of collateral interviews for screening and measuring alcohol consumption has been reviewed by Maisto and Connors (1992). In at least one instance, alcoholism screening was successfully performed by interviewing the spouse rather than the client (Davis and Morse 1987). Several projects also suggest that spouses can provide meaningful information on whether a client has been drinking, although their judgments of specific level of consumption and frequency of drinking usually are less reliable.

Training Required for Administration

While procedures for administering many scales in the *Guide* are straightforward, extensive training is required for others (e.g., the Addiction Severity Index, the Alcohol Timeline Followback, and several diagnostic scales). Beyond adequate preparation in administration, training in interpretation of results is essential. This requires at least a basic academic foundation in psychometric principles (Moreland et al. 1995) as well as familiarity with research on the specific instruments used. To help satisfy this latter need, the fact sheets included in this *Guide* provide some key references for each measure. Other citations for research may be obtained by searching computerized reference databases such as PsycINFO, ETOH, and MEDLINE.

Availability of Computerized Scoring or Administration

Some of the instruments noted in the *Guide* can be administered or scored by computer, and this is noted on the fact sheets.

Foreign Language Availability and References

The last decade has witnessed impressive growth in the number of instruments to assess alcohol use and treatment-related issues (L.C. Sobell et al. 1994; Allen and Columbus 1995). Unfortunately, the majority of measures are available only in English, although there are a few exceptions (e.g., Babor et al. 1994; Room et al. 1996; Üstün et al. 1997; L.C. Sobell et al. 2001). Development of cross-culturally valid instruments for assessment of mental disorders has been one of the goals of the World Health Organization/National Institutes of Health (WHO/NIH) Joint Project on Diagnosis and Classification of Mental Disorders, Alcohol- and Drug-Related Problems (Room et al. 1996; Üstün et al. 1997). Those in the WHO/NIH project have argued that reliable and valid instruments are essential for making accurate substance-related diagnosis and evaluations (Üstün et al. 1997).

The demographic composition of the United States is changing rapidly (Sleek 1998) such that by the year 2050 the exponential growth of minority groups (i.e., Black, not Hispanic; American Indian, Eskimo, and Aleut; Hispanic; Asian and Pacific Islander) is projected by the U.S. Bureau of the Census to make them a combined numerical majority (U.S. Bureau of the Census 2000). The ethical guidelines of the American Psychological Association (1993) assert that psychologists should only use assessment instruments that are culturally valid. The guidelines also require that psychologists be aware of the test's reference population and possible limitations of such instruments with other populations. For psychologists as well as for other health care professionals, test selection should be based on cross-cultural validity of content, translations should be performed on the specific cultural group being tested, and norms for that group should be available. Using assessment instruments, drinking or otherwise, that are not cross-culturally valid might result in serious errors in interpretation. Clearly, more work should be done on development and norming of alcohol-related instruments in languages besides English.

Reliability and Validity

Evaluation of how alternative measures fare on validity and reliability, the two primary psychometric characteristics of an assessment instrument, can assist in choosing one scale over another. Several different types of reliability and validity may be considered. They vary in importance depending on the nature of the measure and its intended application.

Reliability deals with generalizability of the instrument across different times, settings, scale versions, evaluators, and so forth. Reliability may be seen as a particular type of validity in which the relationship of performance on the measure with itself is evaluated. Measures low in reliability (i.e., those that cannot even predict themselves well) must of necessity also be low in other types of validity where the test is attempting to predict other performance. On the other hand, while a necessary

condition, reliability is not a sufficient cause of validity. Measures may be consistent while not accurately measuring what the author intended.

Stability (*test-retest reliability*) refers to similarity of scores for administration of the measure at two points in time. As a rule, the interval between tests needs to be long enough that similarity in responses at the repeat administration is not largely due to the client simply remembering earlier answers. One would expect high stability on measures that tap stable client characteristics, such as family history of alcoholism, age of onset of problem drinking, and general expectancies of alcohol effects. Scales for more transient client characteristics, such as craving and treatment motivation, would be expected to have lower test-retest reliability.

Internal consistency reliability, including *split-half reliability*, reflects agreement of content coverage within the scale itself. Internal consistency assesses how well responses on individual items correlate with those of other items of the scale. For instruments designed to measure a single phenomenon, such as severity of the alcohol dependence syndrome, these correlational coefficients should be high. The relationship between degree of internal consistency and clinical significance has been discussed by Cicchetti (1994).

Parallel forms reliability refers to two sets of questions that address the same issues and produce comparable results. While equivalent forms of tests are useful—for example, to allow pretreatment and posttreatment functioning to be compared without risk of the potential confounding effect of client memory—for the most part, equivalent forms for alcoholism measures have yet to be developed.

The three common types of validity are content, criterion, and construct. *Content validity* refers to the degree to which items comprehensively and appropriately sample the domain of interest. For example, a checklist of alcohol consequences should comprise the multiplicity of adverse effects of drinking rather than singling out certain negative consequences to the minimization or exclusion of others that are equally damaging. Content validity is not quantified. Rather, it must be built into the test by careful construction and selection of test items (Nunnally 1978).

Criterion validity deals with how well scores on a measure relate to important, relevant nontest (real world) behaviors, such as initial motivation for treatment and long-term maintenance of sobriety. Criterion validity is a major concern in evaluating screening tests and is gauged by the extent to which individuals who score positive on them actually receive a diagnosis of alcoholism and, conversely, the extent to which those who score negative on the screen do not meet diagnostic criteria. Predictive, concurrent, and "postdictive" validity are all types of criterion validity. The distinctions among them reflect the temporal relationship between the test results and the phenomenon of interest.

Finally, *construct validity* refers to the degree to which a measure actually taps a meaningful hypothetical construct and a nondirectly observable, underlying causal or explanatory dimension of behavior. Scales purporting to measure hypothetical constructs in the alcoholism field, such as "craving," "loss of control," "denial," and "high-risk drinking situation," should yield high levels of construct validity. Scores on these measures should correlate well with other manifestations of the construct. At the same time, they should correlate only minimally or not at all with scores on scales that measure constructs distinct from them.

Benefits of Assessment

From the clinician's perspective, the primary benefit of assessment is to accurately and efficiently determine the treatment needs of an alcoholic client. Carefully selected assessment procedures can quickly and validly evaluate severity of dependence, adverse consequences resulting from problematic drinking, contributing roles of other emotional and behavioral problems to drinking, cognitive and environmental stimuli for drinking, and so forth. These variables all have major significance in suggesting the intensity and nature of intervention needed.

Assessment, however, also yields valuable secondary clinical benefits (Allen and Mattson

1993). For example, giving clients individualized feedback based on test results may enhance their motivation for change and help them formulate personal goals for improvement. Also, research indicates that clients themselves highly value assessment (L.C. Sobell 1993) and that programs with formal assessment procedures are better able to retain clients in treatment (Institute of Medicine 1990).

If a core battery of assessment instruments is administered to all clients, the database of results can be periodically analyzed to determine, at a program level, needs for additional services, types of clients served, and so on. This information can target efforts to modify the programmatic treatment regimen to more specifically address needs of the clientele. These positive benefits of formal assessment can be fully realized only if the scales are properly administered, interpreted, and utilized by the clinician.

Setting, Timing, and Sequencing of Formal Assessment

This *Guide* is largely organized according to a framework of sequencing of care for clients. The physical settings for assessment also likely reflect this sequencing. Screening is generally performed in a primary health care unit, diagnosis and triage in a general inpatient or outpatient medical facility, and specific treatment planning assessment within a facility or by a provider offering alcohol-specific services.

More research needs to be done to determine optimal timing for alcohol assessment. For the tests to be maximally useful, they need to be conducted soon enough after treatment entry that results from them can help shape the individualized treatment plan. At the same time, it should be borne in mind that following recent heavy alcohol usage, clients may be so impaired in neuropsychological and emotional functioning that they are unable to give an accurate picture of themselves (Goldman et al. 1983; Grant 1987; Nathan 1991).

Although various guidelines have been offered for time following admission necessary for valid psychological testing (e.g., Sherer et al. 1984; Nathan 1991), insufficient research has been done on this critical issue to offer firm guidance. Time guidelines may be specific to the nature of the measure (e.g., tests requiring a high level of neuropsychological functioning may need to be delayed longer than trait-focused personality measures). Common practice and clinical judgment suggest that, to the extent practicable, most tests should be deferred at least until the client has stabilized following alcohol withdrawal.

Granted the large number of measures available to clinicians, but also considering limitations in time and resources available, the strategy of assessment must be clearly thought through.

The underlying assumption is that "more is better." However, such a comprehensive approach may not be feasible because of the constraints often experienced within many clinical settings. Furthermore, Morganstern (1976) suggested that such an approach may not be appropriate and presents a somewhat more limited perspective: "The answer to the question 'What do I need to know about the client?' should be: 'Everything that is relevant to the development of effective, efficient, and durable treatment interventions.'" (p. 52)

Finally, it is important not to regard assessment as a single activity performed at a single point in time. Assessment should be seen as ongoing because it supports clinical decisionmaking throughout the course of treatment (Donovan 1988).

Approaching the Client

Regardless of the setting for psychometric evaluation, it is important to establish rapport with the client by adopting an empathic approach. The client should also be assured of confidentiality, and any institution-mandated limitations on confidentiality should be clearly articulated.

In introducing measures, it is important to elicit clients' full cooperation by explaining that they will receive feedback on results and that this information will assist in developing a treatment plan maximally helpful to them. The tenor for the assessment enterprise should be characterized as collaborative, with the assessor and client jointly committed to discovering those client features that

will contribute to important decisions about future clinical management.

Also, to increase the likelihood that test results will be valid, particularly as regards level of alcohol consumption, it is important to assure that the client is not currently under the influence of alcohol (L.C. Sobell and Sobell 1990). A hand-held Breathalyzer can provide such confirmation.

Giving Clients Feedback

Research suggests that feedback on results of assessment can reinforce commitment for behavior change. Although little research has been done on how feedback process variables specifically influence its motivational impact, some general guidelines can be offered on how to give feedback (Miller and Rollnick 1991; Allen and Mattson 1993). Both rapport and objectivity should characterize the feedback process. Providing feedback should be a positive experience for both the client and the clinician. Clients are intensely interested in what tests can tell them about themselves, a topic of considerable interest to most people. As in the testing activity itself, the process of giving feedback should be seen as collaborative. The clinician is professionally and objectively sharing the findings, the client is sizing up the implications of these results, and together they will use this information to design an optimal treatment program.

Clients may be overwhelmed by test findings. Therefore, it is important that feedback be given in a clear, concrete, and organized fashion. Often, showing clients their standing on relevant dimensions by using visual displays such as plots or graphs can be informative. Review results slowly to assure that clients fully understand them. Periodically during the feedback session, clients may be asked to summarize test findings in their own words and to reflect on the meaning they ascribe to them. Asking clients to give concrete examples to illustrate the findings may also deepen their understanding of the information.

Often, test results are not totally positive. While remaining fully honest with them, help clients understand that, with abstinence and behavior change, many of the negative findings should improve. If clients are treated for an extended time, the measures can be periodically repeated so that they can recognize positive changes in scores as well as identify areas in which further improvement is needed.

Finally, in reviewing test results with clients, it is important to show them how the findings influence development of treatment plans. Recognizing the coherence of treatment with their own personal needs should further motivate them to actively participate in treatment.

Assessment of Other Problems

The first edition of *Assessing Alcohol Problems: A Guide for Clinicians and Researchers* (Allen and Columbus 1995) and this newly revised version primarily focus on assessment instruments to evaluate alcohol use and abuse. We do recognize, however, that the literature clearly shows that individuals with alcohol problems have other co-occurring clinical problems and disorders (e.g., drug abuse, smoking, gambling, eating disorders, and other psychiatric problems). There are many compelling reasons for assessing other clinical problems; some of the more salient are as follows:

- Since 80 to 90 percent of alcohol abusers smoke cigarettes, assessment of nicotine use should be a part of the assessment and treatment planning process because it appears that continued smoking may serve as a trigger for relapse (M.B. Sobell et al. 1995) and because consumption of alcohol may interfere with smoking cessation attempts or even serve as a trigger for relapse (Fertig and Allen 1995; Stuyt 1997).
- For alcohol abusers who use or abuse other drugs, it is important to gather a profile of their psychoactive substance use and consequences, not only at assessment, but also over the course of treatment as substance use patterns may change (e.g., decreased alcohol use, increased smoking; decreased alcohol use, increased cannabis use).

- The prevalence of psychiatric disorders among alcohol abusers in treatment is high (7 to 75 percent) compared with rates in population studies (Institute of Medicine 1990; Milby et al. 1997; National Institute on Alcohol Abuse and Alcoholism 1996; Onken et al. 1997); in this regard, there are several treatment implications for alcohol abusers with a comorbid disorder compared with those with only an alcohol dependence or abuse diagnosis (e.g., the former may need more intensive or longer treatment, are more disabled and prone to suicide, have higher rates of homelessness and more legal and medical problems and longer hospital stays, and have higher rates of relapse and poorer treatment outcomes) (Rounsaville et al. 1987; R.E. Meyer and Kranzler 1988).

This *Guide* contains several instruments to assess usage of drugs other than alcohol. Readers who would like to select instruments for assessing other co-occurring clinical problems or disorders are referred to two excellent references that have carefully reviewed and evaluated instruments for their psychometric and clinical utility. The first is the *Handbook of Psychiatric Measures* by the American Psychiatric Association (2000), which includes a section discussing each instrument as well as in many cases the actual instrument in the text and on a CD-ROM. Instruments are included in over two dozen clinical domains, for both adolescents and adults. A second reference that reviews drug use instruments has been published by the National Institute on Drug Abuse (1999). Readers will also find the *Psychologists' Desk Reference* (Koocher et al. 1998) very useful; it provides advice about selecting assessment instruments for a variety of clinical problems.

Other types of psychometric measures that are not specific to alcohol and other drugs can also play a helpful role in clinical management of alcoholics. Considering the frequency of comorbidity of psychiatric problems in alcoholics in treatment (National Institute on Alcohol Abuse and Alcoholism 2000) and the implications of such conditions for treatment of alcoholism (Litten and Allen 1995), assessment of collateral psychopathology may be useful.

General personality measures may also assist in treatment planning (Allen 1991). Traits such as impulsivity, need for social support, insight, and so forth have important implications for choosing interventions and helping the clinician relate most effectively to the client.

A variety of treatment process measures, including scales to assess client satisfaction and treatment atmosphere, may provide guidance for periodic redesign of the treatment program.

Research Needs

Although substantial progress over the past decade has produced a rich array of assessment instruments to inform alcoholism treatment, several areas remain inadequately explored and warrant further research. Foremost among these is development of computerized adaptive testing algorithms. Given the variety of available instruments, a computerized assessment program tailored to the needs of the individual client would greatly facilitate and economize the assessment process. Such a program would capitalize on advances in decision tree technology.

Expert systems, such as those used in other areas of medical diagnostics, could be modified for alcoholism assessment programs. Computerized technology would offer the clear advantage of allowing easy, automated scoring and would permit comparability within and across individuals and treatment settings. Such a system could satisfy the dual needs of providing the busy clinician with information relevant to individual client treatment planning as well as providing data for subsequent program evaluation and modification. In addition, computerized testing may yield significant advantages in eliciting more accurate information from younger clients who are not threatened by the technology and might well prefer the computer to a therapist's interview (Leccese and Waldron 1994).

A critical concern for treatment providers and researchers alike is establishing appropriate timing for administration of assessment instruments.

Demands for quick turnaround to aid in triage and treatment planning compete with the clients' ability to provide accurate and reliable information after detoxification. Drastic reductions in clients' length of stay imposed by managed care decisions further complicate the dilemma. Applied research to identify the optimal times for test administration is much needed. Objective indicators that document client readiness for administration of different tests must be operationalized in terms of client functioning.

Construction of subpopulation norms for individual assessment instruments also merits further research. A related, but often ignored, issue concerns the degree to which response surfaces and underlying factor structures for tests differ for women and various subpopulations. For example, does the construct of alcohol consequences fundamentally differ in men and women? Women typically score very low on alcohol consequence inventories that include such items as violence and physical spousal abuse. Does this suggest that a scoring adjustment should be made or that a different set of items should be queried for women in evaluating the adverse effects of drinking?

While certain treatment-related issues are measured well by existing scales, other important dimensions are not. For example, assessing clients' motivation for treatment in general and specific treatment preferences has proved to be difficult for clinicians and alcoholism treatment researchers. The frequently invoked construct of craving remains elusive, despite numerous attempts to operationalize it. Various scales purporting to measure craving often elicit conflicting and unresolvable information with little reliability or face validity.

CONCLUSION

As suggested by the sheer volume of instruments covered in this *Guide*, clinicians and researchers now have available a variety of choices to assist in planning alcoholism treatment and better understanding the nature of the problem. In order to take full advantage of this resource, clinicians and researchers must clearly understand the nature of the questions they must answer and the strengths and weaknesses of the various psychometric instruments that can assist them. It is hoped that this overview, the excellent chapters by subject matter experts, and the fact sheets for the instruments will assist this important venture.

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