
Assessment To Aid in the Treatment Planning Process

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Assessment of alcohol and other drug (AOD) use problems serves multiple functions (e.g., Shaffer and Kauffman 1985; Jacobson 1989*a*, 1989*b*; Allen and Mattson 1993; Carroll 1995; Donovan 1995; Carey and Teitelbaum 1996; Donovan 1998). The Institute of Medicine (1990) and others (e.g., Carroll 1995) have suggested three stages of a comprehensive assessment for all individuals seeking specialized treatment for alcohol problems: a screening stage, a problem assessment stage, and a personal assessment stage. The first two stages involve screening, case finding, and identification of a substance use disorder; an evaluation of the parameters of drinking behavior, signs, symptoms, and severity of alcohol dependence, and negative consequences of use; and formal diagnosis of alcohol abuse or dependence. Each of these aspects of the assessment process is covered in detail in other chapters in this *Guide*.

Although these drinking-related parameters are important in defining the person's treatment needs, a broader range of factors must be considered in the treatment planning process because alcohol use both affects and is affected by a number of other areas of life function (Donovan 1988; Institute of Medicine 1990; Donovan 1992, 1998). The personal assessment stage recommended by the Institute of Medicine focuses on this broader array of personal problems being experienced by the individual. Carroll (1995) suggested that this stage involves a comprehensive description of the individual and his or her circumstances (e.g., demo-

graphic characteristics, concurrent problems, comorbid psychiatric disorders, family history). The process should focus on clients' strengths as well as weaknesses, problems, and needs. Some of the identified problems may be fairly directly related to alcohol use (contingent problems), while others may not be at all attributable to alcohol use (noncontingent problems). Examples may include psychological, social, and vocational problems, each of which may involve an interactive relationship with drinking. The provision of a comprehensive assessment is consistent with the recommendations derived from a biopsychosocial model of addictions and the process of assessment (Donovan 1988) and is a requirement of a number of accrediting bodies such as the Joint Commission on Accreditation of Healthcare Organizations or the Commission on Accreditation of Rehabilitation Facilities.

Within the clinical context, the primary goal of assessment is to determine those characteristics of the client and his or her life situation that may influence treatment decisions and contribute to the success of treatment (Allen 1991). Additionally, assessment procedures are crucial to the treatment planning process. Treatment planning involves the integration of assessment information concerning the person's drinking behavior, alcohol-related problems, and other areas of psychological and social functioning to assist the client and clinician to develop and prioritize short- and long-term goals for treatment, select the most appropriate interventions

to address the identified problems, determine and address perceived barriers to treatment engagement and compliance, and monitor progress toward the specified goals, which will typically include abstinence and/or harm reduction and improved psychosocial functioning (P.M. Miller and Mastria 1977; L.C. Sobell et al. 1982; Washousky et al. 1984; L.C. Sobell et al. 1988; Bois and Graham 1993).

The assessment and treatment planning process should lead to the individualization of treatment, appropriate client-treatment matching, and the monitoring of goal attainment (Allen and Mattson 1993). The Institute of Medicine (1990) noted that treatment outcomes may be improved significantly by matching individuals to treatments based on variables assessed in the problem assessment and personal assessment stages of the comprehensive assessment process. Although the results of Project MATCH have raised questions about the viability of matching treatments to client attributes (Project MATCH Research Group 1997*a*), there was evidence on a number of variables, including anger, severity of concomitant psychiatric problems, and social support for drinking, that was sufficient to warrant continued attempts to identify potential matches between client characteristics and types of treatment (Project MATCH Research Group 1997*b*, 1998). Similarly, there is evidence that matching therapeutic services to the presence, nature, and severity of problems clients present at treatment entry leads to improved outcomes (McLellan et al. 1997). Assessment at intake will continue to be instrumental in attempting to match clients to the most appropriate available treatment options; however, assessment also should be viewed as a continuous process that allows monitoring of treatment progress, refocusing and reprioritizing of treatment goals and interventions across time, and determination of outcome (Donovan 1988; Institute of Medicine 1990; L.C. Sobell et al. 1994*a*; Donovan 1998).

This chapter reviews a number of instruments that are available to assist the clinician and clinical researcher in the personal assessment stage

and in the development of appropriate treatment plans. This review attempts to provide information that has clinical utility and that can assist in the planning and conduct of treatment in clinical settings. The instruments include those assessing the areas of readiness to change, expectations about alcohol's effects, self-efficacy expectancies, drinking-related locus of control, family history of alcoholism, and extra-treatment social support for abstinence. A number of multidimensional measures and those developed specifically for treatment placement are also reviewed.

Tables 1A and 1B provide descriptive information on these instruments, and table 2 summarizes available information concerning the reliability and validity of these instruments. The information in these tables has been derived primarily from the fact sheets in the appendix and from the published literature. A number of other instruments that may be of assistance to the treatment planning process but that did not meet the inclusion criteria are also discussed in the text. Also, several reviews provide more detailed information about the assessment process in addictive behaviors and about specific assessment instruments and procedures (e.g., Donovan and Marlatt 1988; L.C. Sobell et al. 1988; Jacobson 1989*a*, 1989*b*; Institute of Medicine 1990; Allen 1991; Donovan 1992; Addiction Research Foundation 1993; Allen and Mattson 1993; Connors et al. 1994; Longabaugh et al. 1994; L.C. Sobell et al. 1994*a*, 1994*b*; Carroll 1995; Carey and Teitelbaum 1996; Donovan 1998).

PROBLEM RECOGNITION, MOTIVATION, AND READINESS TO CHANGE

An important construct within the alcoholism field is the degree to which drinkers are aware of the extent of their drinking patterns, such as quantity and frequency of drinking, the negative physical and psychosocial consequences of their drinking, and their perception of these patterns and consequences as problematic. The goal of using screening instruments is, in fact, to increase

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	
					?	Normed groups
F-SMAST/ M-SMAST	To provide a structured measure of mother’s and father’s lifetime alcohol abuse	Aids in determining parental history of alcohol abuse	Adults and adolescents	Non-problem drinkers, problem drinkers, alcoholics	No	NA
ASI	To provide information on recent (past 30 days) and lifetime medical, employment and support, AOD use, legal, family/social, and psychiatric problems related to AOD use	Identifies problem areas in need of targeted intervention; aids in treatment planning and outcome evaluation	Adults	Adults seeking treatment for substance abuse problems; psychiatrically ill, homeless, pregnant, and prisoner populations	Yes	Males and females; alcohol, opiate, and cocaine treatment groups; psychiatrically ill substance users; pregnant substance users; gamblers; homeless persons; probationers; and employee assistance clients
AASE	To measure self-efficacy concerning alcohol abstinence, defined in terms of temptation to drink and confidence about not drinking in high-risk situations	Identifies high-risk situations in which the individual is highly tempted and has low levels of confidence; aids in developing relapse prevention interventions	Adults	Problem drinkers, alcoholics in treatment	Yes	Outpatient substance abusers
ADCQ	To measure perceived costs and benefits associated with changing drinking behavior	Measures relative motivation to change drinking behavior	Adults	Problem drinkers, alcoholics in treatment	?	?

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information (*continued*)

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	Normed groups
ABS	To measure beliefs about the effects of three amounts of alcohol on behavior and the utility of drinking in producing desired behavioral or emotional outcomes	Identifies expectancies about alcohol's effects on different behaviors and feelings, the usefulness of alcohol for different reasons or desired outcomes, and how these expectancies vary with the amount of alcohol	Adults	Non-problem drinkers, problem drinkers, and alcoholic clients in treatment	No	NA
AEQ-S	To provide a brief measure of both positive and negative alcohol-related expectancies	Assesses the effects desired from alcohol	Adults	College student drinkers and alcoholics	?	?
AEQ	To assess positive expectancies adults hold about alcohol's effects	Assesses alcohol's perceived reinforcing effects related to initiation and maintenance of, and relapse to, alcohol	Adults	College student drinkers and alcoholics	Yes	Clinical and nonclinical samples of drinkers
ADRS	To measure level of awareness or minimization of alcohol-related problems	Measures awareness of problems and perceived need or motivation to change drinking behavior	Adults	Alcoholics in treatment	?	Alcoholics in treatment

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information (*continued*)

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	Normed groups
AUI	To provide a multidimensional assessment of alcohol use, styles, patterns, and perceived benefits of drinking	Aids in differential treatment assignment based on drinking patterns and styles	Adults and adolescents > 16 years	Alcoholics in treatment, DWI offenders	Yes	?
AWARE	To measure “warning signs” or high-risk situation potentially predictive of relapse	Identifies potential relapse risk and precipitants	Adults	Alcoholics in treatment	No	Alcoholics in treatment
CDAP	To provide a multidimensional assessment of AOD use history, patterns of use, beliefs and expectancies, symptoms, self-concept, and interpersonal relationships	Provides information in format useful for case conceptualization and treatment planning	Adults and adolescents >16 years	Adults and adolescents with chemical dependency problems	Yes	Alcohol abusers, polydrug abusers, social drinkers
CDP	To provide a multidimensional assessment of drinking history and behavior, motivation for treatment, demographics, and self-efficacy	Provides a systematic and consistent data set at intake for treatment planning	Adults	Adults entering alcohol treatment programs, problem drinkers	Yes	Alcohol abusers, males and females

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information (*continued*)

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	Normed groups
DEQ	To assess positive and negative expectancies about alcohol's effects	Assesses alcohol's perceived reinforcing effects related to assertion, affective change, sexual enhancement, cognitive change, and tension reduction	Adults	Community drinkers, problem drinkers, hospitalized alcoholics	Yes	Adult clinical patients, adult community drinkers, university students
DRSEQ	To provide a multi-dimensional assessment of the strength of self-efficacy to refuse drinking in various situations	Identifies efficacy in drink refusal ability in social pressure, opportunistic, and emotional relief situations, targeting them for interventions	Adults	Adult non-problem drinkers, problem drinkers, alcoholic clients in treatment	Yes	Adult clinical patients, adult community drinkers, university students
DRIE	To provide a multi-dimensional assessment of an individual's perception of locus of control related to drinking behavior	Assesses relative degree of personal control of drinking behavior and for recovery; can be used to target expectancies for intervention	Adults	Problem drinkers, adults entering alcohol treatment programs	No	NA

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information *(continued)*

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	Normed groups
FTQ	To assess history of alcohol problems in first- and second-degree relatives	Aids in determining risk for more serious alcohol problems and relapse vulnerability among those with positive family history	Adults	General population, problem drinkers, alcoholics	NA	NA
IPA	To assess level of social support for sobriety and for continued drinking	Determines relative support from family and friends for sobriety vs. continued drinking	Adults and adolescents	Alcoholics in treatment	Yes	Alcoholics in outpatient and aftercare treatment
IDS	To measure degree of heavy drinking in different situations over the past year	Develops a client profile of those situations having greatest risk of heavy drinking and/or relapse, to aid in planning relapse prevention	Adults	Clients seeking or in treatment for an alcohol problem	Yes	Age groups, males and females
MSAPS	To provide a multi-dimensional measure of problems related to AOD use	Assesses presence and severity of psychological, behavioral, and social problems	Adults	Substance abusers in treatment	No	NA

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information (*continued*)

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	Normed groups
MSQ	To identify problem drinkers' maladaptive patterns that underlie their motivations for drinking alcohol	Identifies clients' concerns in major life areas, their relationship to motivations for drinking, and targets for systematic motivational counseling to change motivational patterns	Adults and adolescents	Substance abusers, cases of work inhibition/burnout, a wide range of counselees	Yes	College students, chemically dependent veterans, alcoholic inpatients, traumatically brain-injured rehabilitation patients
NAEQ	To assess the extent to which immediate, short-term, and long-term negative consequences are expected to occur if one were to drink	Identifies negative expectancies that may serve as a deterrent and represent motivation to stop or restrain drinking	Adults	Problem drinkers about to enter or currently in treatment	Yes	Non-problem abstainers; light, moderate, and heavy social drinkers; posttreatment relapsers and abstainers
PEI-A	To provide a multi-dimensional measure of AOD problem severity and psychosocial problems	Identifies substance abuse patterns and associated psychosocial problems	Adults	Substance abusers in treatment, criminal offenders	Yes	Treatment-seeking and normal community samples

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information (*continued*)

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	Normed groups
RTCQ	To determine stage of readiness for change among substance abusers	Assesses readiness to change drinking behaviors; may aid in treatment planning	Adults and adolescents; hazardous and harmful drinkers who are not seeking treatment	Outpatients in general medical settings, head trauma and spinal cord injury individuals, psychiatric patients	Yes	Excessive drinkers identified in general medical practice at general hospital
RTCQ-TV	To determine stage of readiness for change among substance abusers seeking or in treatment	Assesses readiness to change drinking behaviors; may aid in treatment planning	Adults and adolescents	Individuals in alcohol treatment	Yes	Alcohol dependents and abusers in treatment
RFDQ	To measure reasons given for returning to drinking after a period of abstinence	Identifies relapse risk and potential relapse precipitants in negative emotions, social pressure, and craving dimensions	Adults	Alcoholics in treatment	No	NA
RAATE-CE and RAATE-QI	To provide a multidimensional assessment of motivation for and resistance to current and long-term treatment, severity of biomedical and psychiatric or psychological problems, and social and environmental support	Aids in assigning individuals to appropriate level of treatment, in making continued stay or transfer decisions during treatment, and in documenting appropriateness of discharge	Adults	Problem drinkers about to enter or currently in treatment	Yes	Ethnic groups; middle-class and lower socioeconomic status groups

TABLE 1A.—Assessment instruments for treatment planning: Descriptive information (*continued*)

Instrument	Purpose	Clinical utility	Target population	Groups used with	Norms avail.?	Normed groups
SCQ	To assess self-efficacy, or how confident an individual is that he or she will be able to resist the urge to drink or drink heavily in potential high-risk situations	Develops a client profile of the degree of confidence in resisting urges to drink in those situations having the greatest risk of heavy drinking and/or relapse, to aid in planning relapse prevention	Adults	Problem drinkers in treatment	Yes	Age and gender
SOCRATES	To assess stage of readiness to change drinking behavior	Identifies stage of readiness to change, helping to determine stage-appropriate interventions	Adults	Alcohol abusers and alcohol-dependent individuals	Yes	Alcoholics in treatment
URICA	To assess stage of readiness to change drinking behavior	Identifies stage of readiness to change, helping to determine stage-appropriate interventions	Adults	Alcohol abusers and alcohol-dependent individuals	Yes	Adult outpatient alcoholism treatment population
YWP	To assess alcohol-related workplace activities, particularly adverse effects of drinking on work performance, support for drinking, and support for abstinence	Determines the level of social support in the workplace that would either facilitate recovery or increase risk of relapse	Adults	Individuals in treatment for alcohol problems; employee assistance programs	Yes	Individuals in alcohol treatment

Note: Instruments are listed in alphabetical order by full name; see the text for the full names. A question mark in a table cell indicates that no information is available. AOD = alcohol and other drug; NA = not applicable.

TABLE 1B.—Assessment instruments for treatment planning: Administrative information

Instrument	No. of items (no. of subscales)	Format options	Time to administer	Training needed?	Time to score/ interpret	Computer scoring avail.?	Fee for use?
F-SMAST/ M-SMAST	13	P&P	5 min	No	5 min	No	No
ASI	~200 (7)	P&P, computer, interview	50–60 min	Yes	5–10 min	Yes	No
AASE	20 Efficacy, 20 Temptation (4)	P&P	10 min	No	5–10 min	No	No
ADCQ	29 (2)	P&P	10–15 min	No	5–10 min	No	?
ABS	48 (7)	P&P	15 min	No	15 min	No	No
AEQ-S	40 (8)	P&P	5–10 min	No	?	No	No
AEQ	120 (90 scored) (6)	P&P, computer	10–15 min	No	?	?	No
ADRS	8	Interview guided by a decision tree	10–15 min	Yes	?	No	?
AUI	228 (24)	P&P, computer	35–60 min	Yes	3–5/10 min	Yes	Yes
AWARE	28 (1)	P&P	10–15 min	No	5–10 min	?	?
CDAP	232 (10)	P&P, computer	45 min	No	5 min	Yes	Yes
CDP	88	Interview	1–2 h	Yes	30 min	Yes	Yes
DEQ	43 (6)	P&P	15 min	No	15–20 min	No	No
DRSEQ	31 (3)	P&P	10 min	No	10 min	No	No
DRIE	25 (3)	P&P	10 min	No	5–10 min	No	No
FTQ	NA	P&P, interview	5 min	No	2–3 min	No	No
IPA	19	Interview	20–30 min	Yes	30 min	No	No
IDS	42 or 100 (8)	P&P, computer	15–20 min	No	5 min	Yes	Yes
MSAPS	37 (3)	Interview	30 min	Yes	15 min	No	?
MSQ	NA	P&P	2–3 h (1 h for the briefer version)	Yes	Highly variable depending on objectives	Yes	Yes
NAEQ	22 or 60 (5)	P&P, computer, interview	15–20 min	No	5 min	Yes	Yes
PEI-A	270	P&P, computer	45 min	No	2 min	Yes	Yes

TABLE 1B.—Assessment instruments for treatment planning: Administrative information (*continued*)

Instrument	No. of items (no. of subscales)	Format options	Time to administer	Training needed?	Time to score/ interpret	Computer scoring avail.?	Fee for use?
RTCQ	12 (3)	P&P	2–3 min	No	1–2 min	No	No
RTCQ-TV	15 (3)	P&P	2–3 min	No	1 min	No	No
RFDQ	16 (3)	P&P	5 min	No	3–5 min	No	?
RAATE-CE and RAATE-QI	35 (5) in CE 94 (5) in QI	Interview (CE), P&P (QI)	20–30 min for CE, 30–45 min for QI	Yes	5 min	No	Yes
SCQ	39 (8)	P&P, computer	8–10 min	No	5 min	Yes	Yes
SOCRATES	19 or 39 (3)	P&P	10–15 min for 39-item version	No	5–10 min	No	No
URICA	28 or 32 (4)	P&P	5–10 min	No	5–10 min	No	No
YWP	13 (3)	P&P	5 min	No	5 min	No	No

Note: Instruments are listed in alphabetical order by full name; see the text for the full names. A question mark in a table cell indicates that no information is available. NA = not applicable; P&P = pencil and paper.

TABLE 2.—Availability of psychometric data on treatment planning measures

Measure	Reliability			Validity		
	Test-Retest	Split-half	Internal consistency	Content	Criterion	Construct
F-SMAST/M-SMAST	•	•	•	•	•	•
ASI	•	•	•	•	•	•
AASE			•		•	•
ADCQ			•		•	•
ABS					•	•
AEQ-S			•		•	•
AEQ	•		•	•	•	•
ADRS			¹	•		•
AUI	•		•	•	•	•
AWARE	•		•		•	•
CDAP	•		•	•		•
CDP	•			•	•	
DEQ	•		•	•	•	•
DRSEQ	•		•	•	•	•
DRIE		•	•		•	•
FTQ	•				•	
IPA			•		•	•
IDS	•		•	•	•	•
MSAPS			•		•	•
MSQ	•		•	•	•	
NAEQ	•	•	•		•	•
PEI-A	•		•	•	•	•
RTCQ	•		•	•	•	•
RTCQ-TV	•		•		•	•
RFDQ			•		•	•
RAATE	•		•	•		•
SCQ	•		•	•	•	•
SOCRATES	•		•		•	•
URICA			•		•	•
YWP			•		•	•

Note: Measures are listed in the same order as in table 1; see the text for the full names.

¹Reliability estimates based on interrater reliability.

the individual's awareness and increase problem recognition. Such awareness is an important step in the process to initiate behavior change and treatment-seeking behavior (Donovan and Rosengren 1999; Tucker and King 1999).

There have been two prominent views about the alcoholic's "inability to recognize" or "lack of awareness" of his or her problems. One view is that this is part of a defensive process of "denial," or the tendency of heavy drinkers to minimize or deny that they have a "drinking problem." This stance, thought to be unconscious and protective of the individual's perception of self, has continued to exert an important influence both in definitions of alcoholism (e.g., Morse and Flavin 1992) and in the development of patient placement criteria (e.g., Mee-Lee et al. 1996).

An alternative model of behavior change presented by Prochaska and DiClemente is applicable to addictive behaviors and has come to serve as the frame of reference for assessing motivation or readiness to change (Prochaska and DiClemente 1986; Prochaska et al. 1992). They suggest that individuals go through a series of stages in this decisionmaking process, ranging from precontemplation to taking positive steps to initiate change. Each stage reflects an increased level of problem recognition and commitment to change the addictive behavior. Many individuals have gone for years without perceiving that they have a problem, seemingly oblivious to the negative consequences that others are able to observe. This behavior, characteristic of the precontemplation phase, has often been thought of as denial. Other individuals have contemplated the need for changing their drinking for some time but have not been sufficiently committed to take action. Others may have attempted action in the past but have since resumed use, raising questions in their minds about the efficacy of treatment and their ability to reach their goals. Others, acknowledging the need to change, may still be influenced by their perceptions of the positive benefits derived from drinking and are unable to make a firm commitment to take action.

Each of these two views of denial and readiness has generated assessment measures and procedures meant to determine "where the client is" with respect to problem recognition and readiness for behavior change. Clinical lore has suggested that one of the most important steps in the counseling and recovery process is to identify and "break through" the individual's denial, often through the use of confrontational therapeutic approaches, so that he or she can take steps necessary to seek treatment. The importance of this task led Goldsmith and Green (1988) to develop the Alcoholism Denial Rating Scale (ADRS). They define alcoholic denial as "the alcoholic's inability to connect his drinking with its resulting consequences" (Breuer and Goldsmith 1995, p. 171). The intent of the scale is to quantify denial, in order to aid counselors in enhancing treatment and its outcome. An 8-point scale is used to define a continuum from denial to awareness. The individual reporting that he or she has no problem at all and has no awareness of alcohol-related problems is at one end of the continuum. The midpoint represents an awareness of some alcohol-related problems but with none of them viewed as being out of control. The other end of the continuum is the individual who indicates that he or she has pervasive alcohol-related problems and that his or her life is out of control because of drinking. These ratings are made by clinicians following an interview with the individual that focuses on AOD use and his or her perception of the use pattern. The rating process is aided by the use of a decision tree model and descriptions of behavior and life circumstances at each of the eight levels.

Preliminary and subsequent reports suggest that the ADRS has a good to relatively high level of interrater reliability, and the level of agreement is increased by using a semi-structured interview format and the decision tree (Goldsmith and Green 1988; Breuer and Goldsmith 1995). Newsome and Ditzler (1993) also found the scale to be useful clinically by providing a heuristic tool that can be used (1) to determine issues, decisions, and prioritization regarding admission to treatment among those seeking treatment; (2) to iden-

tify and intervene preventively with individuals who are at high risk of early discharge; and (3) to assess treatment progress.

Assessment is often the first step in the formal process of treatment for an addictive disorder. Choosing to change one's drinking pattern or give up alcohol or other drugs is not a decision arrived at easily. Individuals vary widely in their readiness to change, being more or less ready to stop drinking or other drug use. The level of motivation for change or for treatment will vary across individuals seeking treatment and will fluctuate within each individual across time. Even presenting for treatment intake does not reliably gauge the client's level or locus (e.g., intrinsic vs. extrinsic) of motivation. One task of the assessment process is to evaluate and attempt to enhance the individual's motivation and readiness to change and to engage in treatment (Donovan 1988; W.R. Miller 1989a; W.R. Miller and Rollnick 1991; Horvath 1993).

Clearly, knowing the stage of readiness to change drinking behavior is an important component in the treatment planning process (Connors et al. 2001). A number of assessment instruments have been developed to assist the clinician in determining the stage of readiness for change among problem drinkers or alcoholics. All are based on Prochaska and DiClemente's stages of change model. The Readiness To Change Questionnaire (RTCQ), developed by Rollnick and colleagues (1992), is a 12-item questionnaire consisting of three subscales that correspond to the precontemplation, contemplation, and action stages as reflected in the factor structure derived from principal components analysis. Each of these scales consists of 4 items presented as 5-point rating scales ranging from strongly agree to strongly disagree. Despite the relative brevity of the scales, Rollnick and colleagues found that Cronbach alpha levels, reflecting their internal consistency, ranged from 0.73 for precontemplation to 0.85 for action in a sample of excessive drinkers (i.e., harmful and hazardous drinkers) identified in a general medical setting. A similar range was found for the test-retest reliability coefficients.

Two methods have been developed to assign drinkers to one of the three stages. The first involves assigning the individual to the stage having the highest raw score; in the event of tied scores, the person is assigned to the more advanced stage. The second method is a pattern or profile analysis of either the raw scale scores or standardized scale scores across the three scales. Both methods have been shown to have predictive validity. The stages to which excessive drinkers identified from general medical wards of a hospital were assigned, using either method, were associated with changes in drinking behavior at 8-week and 6-month followup points; those in the action stage consistently showed the greatest reduction in drinking (Heather et al. 1993). However, some have argued that the RTCQ does not measure distinct stages but rather represents a higher order measure of readiness that can be scaled along a continuum with a high level of internal consistency and predictive power (Budd and Rollnick 1997).

The RTCQ thus appears to provide a brief assessment instrument that can be used to identify readiness to change, predict subsequent drinking, direct the selection of interventions, and serve as an outcome or process measure to evaluate brief interventions among individuals identified as having drinking problems but who are not actively seeking specialized alcoholism treatment. The scale has been used with a variety of such groups, including outpatients in general medical settings (e.g., Hapke et al. 1998; Samet and O'Connor 1998), head trauma and spinal cord injury individuals (e.g., Bombardier et al. 1997; Bombardier and Rimmele 1998), and psychiatric patients (e.g., Blume and Schmaling 1997; Blume and Marlatt 2000).

The authors emphasize that the RTCQ was developed primarily for use with hazardous or harmful drinkers in general medical settings who are *not* seeking treatment for alcohol problems. Its use with problem drinkers in treatment has led to considerably lower estimates of reliability and different factor structures (Gavin et al. 1998); this was particularly true for the precontemplation ($\alpha = 0.30$) and contemplation ($\alpha = 0.52$)

scales. These low internal consistency estimates raise a question about the utility of the RTCQ in treatment settings (Gavin et al. 1998). This has led to subsequent work to develop measures more appropriate to individuals in treatment. One such measure is the Readiness To Change Questionnaire Treatment Version (RTCQ-TV) (Heather et al. 1999). Through a series of factor analyses a 15-item scale was derived. It includes 5 items each for the precontemplation, contemplation, and action stages. Of these, the internal consistency reliability of the contemplation scale was the lowest ($\alpha = 0.60$), with that of the precontemplation ($\alpha = 0.68$) and action ($\alpha = 0.77$) scales somewhat higher. As an index of concurrent validity the RTCQ-TV scale scores were correlated with those from the University of Rhode Island Change Assessment (URICA) (McConaughy et al. 1983). The RTCQ-TV scales were significantly and most highly correlated with the corresponding scales on the URICA. It was also found that a significantly higher percentage of clients who at followup (an average of 7.4 months after the initial assessment) were classified as having “good” outcomes (either abstinent or drinking below recommended levels) were in the action stage at intake (57 percent), compared with the rate of clients having good outcomes who were in the contemplation stage (35 percent). Although Heather and colleagues indicated that additional research is necessary to determine the psychometric properties of the RTCQ-TV with different populations, they suggested that it is preferable for clinicians dealing with clients in treatment settings to shift from the original RTCQ to the new version specifically developed for use with clinical populations (Heather et al. 1999).

Another relatively new scale focused on use within a clinical setting is the Alcohol and Drug Consequences Questionnaire (ADCQ) (Cunningham et al. 1997). This scale derives from the general theoretical notion, and from related clinical interventions, that represent a form of decisional balance. A number of such measures have been developed previously and have explored the

“pros” and “cons” of continued alcohol use (e.g., Migneault et al. 1999). However, the ADCQ focuses on the costs and benefits of stopping or changing one’s drinking. The ADCQ consists of two subscales. A 14-item subscale asks individuals to endorse those negative consequences or perceived costs involved in choosing to change their substance use pattern. A complementary 15-item subscale asks them to endorse the positive outcomes or perceived benefits derived from making such a change. Each of these subscales has an internal consistency index above 0.90. It was found that individuals who rated the perceived benefits of change higher at intake or those who rated the perceived costs of change as lower at intake were less likely to drink and drank on fewer days during a 1-year followup. Although the ADCQ appears to be a promising measure, further psychometric evaluations, such as those reported by Carey and colleagues (2001), are needed.

Two measures have been increasingly used to determine the readiness for change among problem drinkers who are seeking treatment. The first is the URICA, mentioned earlier in this chapter. This scale was originally developed as part of the evaluation of the change process in psychotherapy (McConaughy et al. 1983). It has become a primary measure used in the context of Prochaska and DiClemente’s stages of change model and has had its greatest application in the area of smoking cessation (e.g., DiClemente et al. 1991). More recently it has been applied in the evaluation of individuals having drinking problems (DiClemente and Hughes 1990) and other drug problems (Abellanas and McLellan 1993). The scale originally consisted of 32 items presented with a 5-point response scale (from strong disagreement to strong agreement). The items are worded so that individuals respond to their perception of a general “problem” that they define themselves; the initial instruction set is used to focus the respondent’s attention to drinking as the problem to be considered.

The URICA scale operationally defines four theoretical stages of change, each assessed by eight items: precontemplation, contemplation,

action, and maintenance. However, subsequent factor analyses with alcoholic subjects in an outpatient treatment program led to a reduction of the items to 28, with 7 per subscale (DiClemente and Hughes 1990). Cluster analysis yielded five patterns of respondents. Those in the precontemplation group view themselves as not having a problem. Those in the ambivalent group appear to be reluctant or ambivalent about changing their behavior. Those in the participation group appear to be highly invested and involved in change. Those in the uninvolved or discouraged group appear to have given up on the prospect of change and are not involved in attempting to do so. Those in the contemplation group appear to be interested in making changes, are thinking about it, but have not yet begun to take action. The subtypes were found to differ significantly with respect to the pattern of alcohol use, the perceived benefits of drinking, and the incidence of negative alcohol-related consequences. The validity of these typologies has been largely corroborated in subsequent cluster analyses of AOD clients seeking treatment (Carney and Kivlahan 1995; el-Bassel et al. 1998).

Willoughby and Edens (1996; Edens and Willoughby 2000) derived and replicated a two-cluster solution on the URICA in evaluating alcohol-dependent veterans in a residential setting. The two clusters appeared to resemble the precontemplation and contemplation/action stages. Their findings suggest that those individuals classified as members of the precontemplation group were less worried about their drinking and were less interested in receiving help than those in the contemplation/action group. Individuals classified as members of the precontemplation group were also found to be less likely to complete treatment (Edens and Willoughby 2000). Carbonari and DiClemente (2000) also found that profiles derived from the URICA, self-efficacy (confidence of remaining abstinent and temptation to drink), and the use of cognitive and behavioral change strategies were related to drinking outcomes in both outpatient and aftercare samples from Project MATCH. This body of results

suggests that the URICA can be used to identify clinically meaningful motivational subtypes of treatment-seeking alcoholics.

The second measure receiving increased attention in the determination of readiness for change among problem drinkers seeking treatment is the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) (W.R. Miller et al. 1990; W.R. Miller and Tonigan 1996). This scale is available in either a 39-item version or an abbreviated 19-item version. Like the RTCQ, but unlike the URICA, the SOCRATES items are worded specifically in reference to changing drinking behavior. These items are responded to along a 5-point Likert scale (from strong agreement to strong disagreement). The measure has been shown to have adequate levels of internal and test-retest reliability as well as construct and criterion validity (W.R. Miller and Tonigan 1996). Conceptually, the SOCRATES assesses the stage of readiness expressed by the individual within the theoretical framework proposed by Prochaska and DiClemente, namely, precontemplation, contemplation, determination or preparation, action, and maintenance. Factor analytic studies by Miller and colleagues, however, indicate three empirically derived scales: Readiness for Change, Taking Steps for Change, and Contemplation (W.R. Miller and Tonigan 1996). Isenhardt (1994) similarly found three factors on the SOCRATES, labeled Determination, Action, and Contemplation. Subsequent factor analyses with heavy-drinking college students (Vik et al. 2000) were generally consistent with the three factors. Also, the results of cluster analyses (Isenhardt 1994) suggest three groups based on the pattern of their factor scores. These were similar in nature to those obtained by DiClemente and Hughes (1990) using the URICA, namely the ambivalent, uninvolved, and active groups. These groups were found to differ significantly with respect to the pattern and styles of drinking and drinking-related consequences as measured by the Alcohol Use Inventory (AUI), which is discussed later in this chapter.

Despite the general consistency in the findings concerning the factor structure of the SOCRATES,

Maisto and colleagues (1999) found only two principal factors among a sample of “at risk” drinkers recruited from primary care medical clinics: a *problem recognition* factor and a *taking action* factor. The first factor was based on a scale that appeared to measure reliably the perceived degree of severity of an existing alcohol problem (nine items, Cronbach alpha = 0.91) using items from Miller and Tonigan’s Ambivalence and Recognition scales; the second factor was based on a scale composed of items that focus on taking action to change or to maintain changes that have already been made (six items, Cronbach alpha = 0.89). These two factors also were found through confirmatory factor analysis to best fit the SOCRATES data when compared with the three-factor solution derived by Miller and Tonigan (1996). At the initial assessment the problem recognition factor was most highly correlated with measures of alcohol problems and symptoms of dependence (e.g., Alcohol Dependence Scale, Alcohol Use Disorders Identification Test, Drinker Inventory of Consequences, Short Michigan Alcoholism Screening Test [SMAST; see the discussion later in this chapter]); while also significantly correlated with these measures, the magnitude of the relationships was considerably lower for the taking action factor. It was also found that the problem recognition factor at baseline significantly predicted the number of drinks, drinks per drinking day, number of heavy-drinking days, and number of negative consequences at a 6-month followup, even after age, gender, race, severity of dependence, baseline measures of each of the outcome criterion variables, and the two SOCRATES baseline factor scores were taken into account. In each case, higher scores on the problem recognition factor were associated with heavier drinking and more negative consequences. The taking action factor at baseline, however, did predict these outcome measures.

Carey and colleagues (2001) found significant correlations between the ADCQ subscales and subscales from the SOCRATES among psychiatric patients. The taking steps factor was negatively associated with the perceived costs of quitting

(−0.28) and positively (0.64) with the anticipated benefits of quitting. The problem recognition factor from the SOCRATES was positively related (0.70) to the anticipated benefits of quitting. The taking steps factor was also found to be negatively related to the perceived benefits of drinking/substance use (−0.45) and positively related to the perceived negative consequences of drinking/use (0.47).

Although the stages of change model has been critiqued on methodological and conceptual grounds (e.g., Sutton 1996; Whitehead 1997; Joseph et al. 1999), the assessed stage of a client’s readiness to change has direct implications for the development of initial interventions meant to enhance the likelihood of the client engaging in and complying with treatment (Annis et al. 1996; Sutton 1996; Connors et al. 2001). Carey and colleagues (1999) provided a thorough review of a number of measures of readiness to change among substance abusers and some comparative information that may help the clinician choose which of these measures to use. The approach taken by the clinician in attempting to accomplish this task will differ depending on the client’s stage of readiness to change (Prochaska and DiClemente 1986; Prochaska et al. 1992; Connors et al. 2001). For example, a client who is in the early stages of the behavior change process, in which he or she is contemplating change and moving toward making a commitment and taking action, will likely benefit most from approaches that increase one’s information and awareness about oneself and the nature of the problem, lead to self-assessment about how one feels and thinks about oneself in light of a problem, increase one’s belief in the ability to change, and reaffirm one’s commitment to take active steps to change (Prochaska et al. 1992; Horvath 1993).

In addition to being consistent with “practice wisdom” and theoretical approaches to change, the proposed focus on such awareness-raising factors for those in the precontemplation and contemplation phases is also consistent with evidence from individuals who had resolved an alcohol problem on their own without the aid of formal treatment. L.C. Sobell and colleagues

(1993) found that over half of the recoveries of such individuals could be characterized by a cognitive evaluation of the pros and cons of continued drinking.

For some individuals, the events that led them to contemplate the need for change or to take steps to seek help may be sufficient for them to stop drinking or modify their alcohol use patterns without more formal treatment (L.C. Sobell et al. 1993; Marlatt et al. 1997; Donovan and Rosengren 1999; Tucker and King 1999). For others, brief interventions based on a comprehensive assessment of their addictive behaviors and related life areas, the provision of feedback and advice to the client, and a focus on increasing motivation for change have been found to increase the likelihood of clients following through on referrals to seek and enter treatment (e.g., Heather 1989; W.R. Miller 1989a; Bien et al. 1993; Wilk et al. 1997).

In a review of measures of readiness to change, Carey and colleagues (1999) indicated that despite their common theoretical background, their high popularity among clinicians, and their heuristic value in working with clients, each measure has psychometric limitations of one sort or another. Because of this they caution that these scales should be viewed as experimental in nature and should not be used in isolation to make important clinical decisions.

ALCOHOL-RELATED EXPECTANCIES AND SELF-EFFICACY

Clinicians and clinical researchers have increasingly focused on the role of cognitive factors in decisions to drink and in drinkers' responses to alcohol (Oei and Jones 1986; Young and Oei 1993; Oei and Baldwin 1994; Oei and Burrow 2000; B.T. Jones et al. 2001). Two broad categories of such cognitive factors having implications for the development and maintenance of drinking problems and for potential relapse following treatment are (1) the individual's expectations about drinking and the anticipated effects

of alcohol and (2) the individual's expectations about one's ability to cope adequately with problems (self-efficacy expectations). These categories and related instruments are discussed in the following sections.

Alcohol-Related Expectancy Measures and Reasons for Drinking

Alcohol-related expectancies typically refer to the beliefs or cognitive representations held by the individual concerning the anticipated effects or outcomes expected to occur after consuming alcohol. These expectancies are shaped by an individual's past direct or indirect experience with alcohol and drinking behavior (Connors and Maisto 1988a). To the extent that these representations are activated and accessible to the individual in drinking-related situations, they are hypothesized to determine the anticipated outcomes in using alcohol and to mediate subsequent drinking behavior (Rather and Goldman 1994; Stacy et al. 1994; Palfai and Wood 2001).

It is often presumed that individuals drink in order to achieve or enhance the emotional or behavioral outcomes that they expect; thus, these expectancies are often viewed as being reflective of the individual's possible "reasons for drinking" (Cronin 1997; Galen et al. 2001). Individuals differ with respect to both their experiences with alcohol and drinking and with the resultant beliefs and expectations they hold about alcohol's anticipated effects. To the extent that individuals are found to hold expectancies that serve a functional role in maintaining problematic drinking behavior, they may be assigned to treatment strategies designed to challenge or modify their beliefs about alcohol's effects on mood and behavior and to substitute more adaptive or realistic expectations, with the prediction that decreases in positive expectancies associated with alcohol would be associated with a decrease in drinking behavior (Oei and Jones 1986; S.A. Brown et al. 1988; Connors and Maisto 1988a; Connors et al. 1992; Darkes and Goldman 1993; Oei and Baldwin 1994; Darkes and Goldman 1998).

A number of measures of alcohol-related beliefs and expectancies have been developed and are available to help the clinician determine the nature, strength, and valence of these beliefs. The Alcohol Expectancy Questionnaire (AEQ) (S.A. Brown et al. 1980, 1987a) continues to be the most widely used alcohol expectancy measure in both research and clinical settings. The AEQ is a 90-item self-report form, presented with a forced choice (i.e., agree/disagree) response format that assesses a diverse array of anticipated experiences associated with alcohol use. It was developed empirically by refining a larger pool of verbatim statements of adult men and women ages 15–60 years, with diverse ethnic backgrounds and drinking histories (from nondrinkers to chronic alcoholics). The adult version is designed to assess the domain of alcohol reinforcement expectancies and consists of six factor-analytically derived subscales: positive global changes in experience, sexual enhancement, social and physical pleasure, social assertiveness, relaxation/tension reduction, and arousal/interpersonal power. The scale has been shown to have a high level of internal consistency, test-retest reliability, and concurrent validity.

A recent factor analytic study identified a number of meaningful dimensions derived from the AEQ (Vik et al. 1999). The authors suggested that the AEQ content could be considered to fall along two dimensions, namely the valence of the anticipated alcohol-related effects (positive/negative) and the degree of personal versus more social context of the expected outcomes. The authors described four resultant hypothetical factors: social enhancement, social coping, personal enhancement, and personal coping. The results of a confirmatory factor analysis supported the presence of the hypothesized four factors. These factors were found to have a high degree of concurrent, convergent, and discriminant validity.

The AEQ has been evaluated in clinical and nonclinical populations. As an example in a nonclinical sample, Williams and Ricciardelli (1996) found that scores on the AEQ were related to alcohol dependence symptoms among heavy-drinking young adults. More specifically, high

scores among young men on the social assertiveness, sexual enhancement, and arousal/interpersonal power scales were predictive of higher symptoms of loss of control over drinking. The pattern of findings among females was much more complex. With respect to clinical populations, the AEQ total score and subscale scores have been found to differentiate alcoholic from nonalcoholic respondents and to be predictive of current and future drinking practices, persistence and participation in treatment, and relapse following treatment (S.A. Brown 1985a, 1985b; S.A. Brown et al. 1987a).

Despite the systematization brought to the assessment of alcohol expectancies by the AEQ, investigators and clinicians have noted a number of theoretical and practical limitations in its utility. These include its reliance on a forced-choice response format that does not allow determination of the strength of the expectancies; a confounding of global or general beliefs with personal ones; its focus on positive outcome expectancies without assessing expectancies concerning anticipated negative outcomes; its restriction to a single “dose” or level of alcohol in the instruction set to reference expectancies (e.g., a “few drinks”), thus precluding examination of variation in expectancies over different dose levels; and the lack of a measure of frequency of occurrence or personal importance associated with each of the expectancies (e.g., Southwick et al. 1981; Leigh 1989a, 1989b, 1989c; Collins et al. 1990; Oei et al. 1990; Adams and McNeil 1991; Leigh and Stacy 1991; Connors et al. 1992; Leigh and Stacy 1993). These concerns have led to the development of a number of subsequent expectancy measures, each of which attempts to address one or more of the noted limitations.

The Alcohol Effects Questionnaire-Self (AEQ-S) (Rohsenow 1983), a revision and extension of the AEQ, was developed as a brief method of assessing both the positive and negative effects people expect alcohol to have on them. It was intended to have several advantages over the earlier AEQ. It is briefer (40 true/false items); it assesses undesirable effects of alcohol (impairment and irresponsibility)

as well as positive reinforcing effects; and it assesses only personal beliefs (beliefs about the effects of alcohol on the individual) rather than mixing personal beliefs with general beliefs (beliefs about the effects of alcohol on people in general). The AEQ-S was developed by taking the 5 items that loaded most highly on the six factors of AEQ, adding 2 items assessing verbal aggression and deleting from the arousal/interpersonal power scale 1 item that had loaded on two factors, and adding 5 items assessing cognitive and physical impairment and 4 items assessing carelessness or lack of concern about consequences. All items were then reworded to reflect personal beliefs. The AEQ-S consists of eight rational scales: Global Positive, Social and Physical Pleasure, Sexual Enhancement, Power and Aggression, Social Expressiveness, Relaxation and Tension Reduction, Cognitive and Physical Impairment, and Careless Unconcern. Internal consistency indices across subscales ranged from 0.49 to 0.74 for college student drinkers and from 0.37 to 0.85 among alcoholics in treatment. Factor analysis of the AEQ-S on college students (Rohsenow 1983) largely supported the first six rationally derived factors and combined the two negative scales into one factor. The AEQ-S has been used largely as a research instrument to explain or predict behaviors or responses of individuals in other areas, such as aggression after drinking (Rohsenow and Bachorowski 1984) and cue reactivity (Rohsenow et al. 1992).

George and colleagues (1995) modified and extended the AEQ-S in an attempt to maintain the benefits of this instrument (e.g., brevity and negative expectancies) while shifting the response format to a 6-point rating scale (from strongly agree to strongly disagree) to allow information about strength of endorsement. This measure is called the AEQ-3 (i.e., third revision of the Alcohol Expectancy Questionnaire). The structure derived from confirmatory factor analysis of the AEQ-3 was found to be relatively consistent with that proposed by Rohsenow (1983) and was relatively invariant across gender and ethnic groups.

It appears that neither the AEQ-S nor the AEQ-3 has been used in clinical applications to date,

and neither appears to have been used in recent research.

Another measure of expectancies is the Drinking Expectancy Questionnaire (DEQ) (Young and Knight 1989; Young et al. 1991a). It also attempts to improve on the AEQ by phrasing items consistently in the first person, measuring both positive and negative expectancies, and balancing the valence of items selected for the questionnaire by providing a multiple-response format (Young and Knight 1989). The DEQ consists of 43 items developed using both community and clinical populations. Each item is rated on a 5-point rating scale from strongly disagree to strongly agree. Five subscales, derived from factor analysis, relate to specific alcohol expectancies of assertion, affective change, sexual enhancement, cognitive change, and tension reduction. A sixth factor, dependence, is more general and relates to perceived level of alcohol involvement. Analyses suggest that the alcohol-related beliefs assessed by the DEQ are relatively stable and traitlike, being relatively unaffected by drinking (Young et al. 1989). The total score and the subscale scores of the DEQ have been found to correlate with measures of frequency of drinking, but not quantity consumed, in a community sample (N. Lee and Oei 1993a). As an example, those who expected greater negative affective states when drinking reported that they drank both their usual and maximum amounts of alcohol less often.

The Alcohol Beliefs Scale (ABS) (Connors et al. 1987; Connors and Maisto 1988b; Connors et al. 1992) is a two-part, 48-item questionnaire. It attempts to incorporate information concerning strength of endorsement, dose-related changes in the anticipated effects of alcohol, and the perceived utility of alcohol in inducing a number of emotions or behaviors. On part A of the scale (26 items), subjects indicate the extent to which each of three different amounts of alcohol (one to three standard drinks, four to six standard drinks, and "when drunk") increases or decreases behaviors and feelings such as judgment, problem solving, depression, aggression, stress, and group interaction. The ratings are made on an 11-point

scale ranging from a “strong decrease in behavior or feeling” to a “strong increase in behavior or feeling”; a rating of zero is used to indicate no change in the behavior or feeling as a result of drinking. Four domains have been derived from the items contained in part A: control issues, sensations, capability issues, and social issues. On part B of the scale (22 items), drinkers rate how useful the consumption of each of the three doses of alcohol would be for a variety of reasons (e.g., to relax, to become more popular, to become uninhibited, to relieve depression, and to forget worries). These estimates are also made on an 11-point scale ranging from “not at all useful” to “very useful.” The factors derived from part B have been labeled as useful in feeling better, useful for being in charge, and useful for alleviating aversive states.

Results suggest that alcoholics differ from problem drinkers and non-problem drinkers with respect to the expected effects of alcohol and its anticipated utility. In general, alcoholics anticipated less impairment on the control and capability factors. A dose-response relationship was noted, with all drinkers expecting increased impairment with increasing doses. An interaction between drinker group and dose was found on a number of subscales of part B, suggesting differences in the perceived utility to induce moods and behaviors as a function of severity of drinking problem and amount consumed. As an example, higher doses of alcohol were perceived as increasingly useful in reducing emotional distress, with the magnitude of the increases in this perceived utility being greatest for alcoholics. There also appears to be an interaction with respect to perceived effects and utility across doses as a function of gender and ethnicity (Connors et al. 1988).

Fromme, Stroot, and Kaplan (1993) developed the Comprehensive Effects of Alcohol (CEOA) scale. The scale was developed initially through exploratory factor analysis. This process identified four positive expectancy factors, consisting of 22 items: sociability, tension reduction, “liquid courage,” and sexuality. Three negative expectancy factors were also derived, consisting

of 19 items: cognitive and behavioral impairment, risk and aggression, and self-perception. All items focus on discrete rather than global effects of alcohol and all are worded to focus on the person’s own expectations rather than those of people in general. The scale has two parts. In the first part, the individual indicates the level of agreement with the expectancy statement on a 4-point scale from “disagree” to “agree.” In the second part, the individual is asked to provide a subjective evaluation of the expected effects on a 5-point scale from “bad” through “neutral” to “good.” The latter scale was developed because there is considerable individual difference in the perceived desirability of a given effect of alcohol, and as such it is preferable to assess the person’s evaluation rather than make inferences about it. Individuals are also asked to estimate the number of standard drinks that they would need to consume to experience each of the anticipated effects. The CEOA scale was demonstrated to have adequate levels of internal consistency, temporal stability, and construct validity. The positive and negative expectancy and evaluation scale scores were also related to measures of quantity and frequency of drinking and weekly alcohol consumption among college students.

Guarna and Rosenberg (2000) explored the situational specificity of expectancies measured by the CEOA scale. Driving under the influence (DUI) offenders were asked to complete the scale under a number of different response sets. They were asked to respond as if they had consumed either small or large amounts of alcohol, beer, wine, mixed drinks, or straight liquor. Respondents’ expectancies were found to vary across both the quantity and the beverage categories. The greatest number of negative expectancies was associated with drinking straight liquor, with the highest level of positive expectancies associated with drinking beer. Of interest, consuming a large amount of alcohol was associated with both more positive and more negative expectancies than drinking small amounts.

Leigh (Critchlow 1987; Leigh 1987, 1989*b*, 1989*c*) developed the Effects of Drinking Alcohol

(EDA) scale as a measure of both expectations about the consequences of drinking and subjective evaluations of the relative desirability of these consequences as part of a utility analysis of drinking behavior. The utility of a behavior is viewed as a function of the perceived probability of its occurrence and the desirability of the anticipated consequences if the behavior does occur. This general principle guided the development of this questionnaire, which lists 20 possible effects of alcohol, both positive and negative. Individuals are asked to rate the probability of experiencing each of the effects on a 5-point rating scale from "very unlikely" to "very likely." They are instructed to use as a reference for their ratings the consumption of enough alcohol to "be under the influence." Individuals are also asked to evaluate each effect based on their personal experience along a 5-point scale from "very good" to "very bad." Utility scores have been found to be positively related to drinking; this appears to be particularly due to the increased expectations of positive consequences of drinking and more positive evaluation of all consequences by heavier drinkers (Critchlow 1987; Leigh 1987). Also, individuals tend to believe that alcohol effects, particularly for socially undesirable behaviors, are more likely to happen to others than to themselves (Leigh 1987). The EDA scale has been found to be comparable to the AEQ in its ability to predict drinking behavior among college students (Leigh 1989a). The EDA scale has recently served as one of the criterion measures used to determine the convergent and divergent validity of the newly derived four-factor subscales of the AEQ (Vik et al. 1999).

Leigh and Stacy (1993) subsequently developed another measure of expectancies through a series of factor and structural equation analytic techniques. The resultant untitled 34-item scale consists of two broad categories of positive and negative alcohol effects. The positive effects category has four subscales: social facilitation, fun, sexual enhancement, and tension reduction/negative reinforcement. The negative effects category also has four subscales: social, emotional, physical, and cognitive/performance. Using a 5-point

scale from "no chance/very unlikely" to "certain to happen," individuals are asked to rate the likelihood that each of the consequences would happen to them if they drank. The structural equation modeling suggested that although negative expectancy was significantly related to alcohol use, positive expectancy was a stronger predictor of drinking behavior, and as such may represent a more powerful motivator of drinking.

One of the expectancy measures that has been used the most over the recent past is the Negative Alcohol Expectancy Questionnaire (NAEQ) (B.T. Jones and McMahon 1992, 1993; McMahon and Jones 1993a, 1993b). Unlike the AEQ, which focused exclusively on anticipated positive effects of alcohol, the NAEQ assesses the extent to which an individual expects negative consequences to occur if he or she were to drink. There is no specification in the instruction set to indicate the amount of alcohol that is to serve as a reference for judging the likely occurrence of these negative consequences. The expected negative consequences may serve as a behavioral deterrent and represent motivation to stop or restrain drinking (rather than motivation to drink, as expected positive consequences might measure) (McMahon and Jones 1993b). The potential negative consequences are measured over three consecutive time contexts: on the same day as the drinking, the next day following drinking, and continued drinking at the current level over a prolonged period. Each item consists of a statement about a negative consequence of drinking alcohol that could conceivably occur; responses are measured in terms of how likely each consequence would be expected to occur, on a 5-point scale from "highly unlikely" to "highly likely." The standard NAEQ has a total of 60 items; a short version (22 items) is also available. Five subscales have been developed. The first three correspond to the three timeframes (same day, next day, and long term); proximal (same day) and distal (next day + long term) subscales are also included.

In a study comparing the NAEQ and the AEQ assessed at intake to a nonresidential alcohol treatment program, the NAEQ was found to predict

time to first drink following treatment; positive expectancies, as measured by the AEQ, were not predictive (B.T. Jones and McMahon 1994a). The total score of the NAEQ was predictive of alcohol consumption at a 3-month followup; the total score of the AEQ was not predictive (B.T. Jones and McMahon 1994b). However, the positive global changes subscale of the AEQ was found to be positively related to posttreatment drinking, while the distal subscale of the NAEQ (reflecting expected negative consequences with continued long-term drinking) was negatively related to posttreatment drinking.

These results reflect the differential motivational factors represented by positive and negative expectancies in relationship to drinking behavior (McMahon and Jones 1993c). N.K. Lee and colleagues (1999), in a general community sample, found that negative expectancies were most prominently associated with the frequency of drinking and positive expectancies were associated primarily with the quantity of alcohol consumed. Also, both the NAEQ and the RTCQ were found to predict time to first drink following treatment. However, the RTCQ and NAEQ were uncorrelated, suggesting that they measure different aspects of client motivation (McMahon and Jones 1996).

Devine and Rosenberg (2000) evaluated the relative contribution of both negative expectancies, measured by the NAEQ, and positive expectancies, measured by the AEQ, on self-reported alcohol use among DUI offenders. Baseline measures of expectancies were related to the self-reported number of drinking days at a 3-month followup assessment. They also looked at subgroups that were defined by being either high or low on the two expectancy measures. What was of note was that those in the low positive/high negative group drank considerably less frequently than those in the high positive/high negative group. The authors suggest that the apparent inhibition of drinking previously found associated with high levels of negative expectancies may be lessened when the person also has high levels of positive expectancies.

Clearly, there is a wide variety of measures of alcohol-related expectancies from which to choose, many with a number of features in common as well as common variance in assessing aspects of the expectancy domain (Leigh 1989b; B.T. Jones et al. 2001). From a clinical perspective, an important limitation of many of the scales is that they have been used more with college students and/or general population samples than with alcoholics in treatment. The decision of which of these scales to use in a clinical or research setting should thus be guided by the empirically determined or hypothesized relationship between a particular measure of beliefs and the prediction of specific drinking behaviors or treatment outcomes. The evolution of the available expectancy scales, however, suggests that it is important to consider both positive and negative consequences, to ask about both the likelihood of occurrence of these consequences and the subjective appraisal of the relative desirability of each if it does occur, and to assess changes in these expectancies as a function of differing levels of alcohol intake.

Leigh and Stacy (1994) suggested that there may be an important artifact involved in the many alcohol expectancy scales that have been developed to date. That is, by providing the individual with a structured questionnaire that provides a listing of a number of possible consequences, the individual's responses are likely to be cued. As such, these responses actually may not be representative of those expected effects that are the most salient for the person. They suggest and demonstrate the potential benefit of eliciting expectancy responses from an open-ended questionnaire. Individuals were asked to "list all the good or pleasant things that might happen to you as a result of drinking alcohol." A similar method was used to elicit a listing of bad or unpleasant outcomes. Although the resultant categories of responses appear consistent with those obtained using more structured questionnaires, the percentage of responses in each category differed considerably across subgroups of drinkers. Thus, it may be important to consider the benefits derived from both the more structured questionnaire and the

more open-ended approaches in attempting to assess both a broad range of and more personally salient alcohol-related expectancies.

Cox and Klinger (1988) proposed a motivational model of drinking behavior that has led to the development of an assessment of individuals' expectancies in relationship to a number of treatment-relevant goals using a mixed ideographic and nomothetic method (Klinger 1987). People who drink alcohol excessively are assumed to do so because drinking serves some function in their lives (Cox and Klinger 1988, 1990). Although a wide range of biological, psychological, and social factors may influence drinking, the final common pathway to alcohol use is motivational in nature. An individual is assumed to choose to take a drink or not based on the belief that the anticipated positive affective consequences of drinking outweigh those of not drinking. An important factor in this balance is the individual's current incentives. To the extent that individuals do not have other non-alcohol-related sources of satisfaction, are not making progress toward reaching positive goals, or are burdened by a number of negative life activities, the greater the likelihood of expecting that alcohol will counteract negative emotions and lead to or enhance positive emotions.

This motivational model of drinking provides the framework within which the Motivational Structure Questionnaire (MSQ) (Klinger and Cox 1985, 1986) was developed. The MSQ identifies those maladaptive motivational patterns that underlie the consumption of alcohol by problem drinkers. It is a self-administered semi-structured questionnaire that requires approximately 2–3 hours to complete; a briefer version is also available, requiring about 1 hour to complete (Cox et al. 1991a). Individuals are asked to identify their current concerns in major life areas such as their interests, activities that they are engaged in, problems, general and specific concerns, goals, joys, disappointments, hopes, and fears. They then are asked to make judgments about the pursuit of goals associated with each area of concern along dimensions that will reveal the structure of their motivation. These judgments include factors such as the

degree of commitment to pursuing each goal; the amount of positive affect expected by achieving a particular goal and the amount of negative affect associated with not attaining it; the perceived probability of success and time urgency associated with pursuing a goal; and the perceived impact of continued alcohol use on attaining the goal. A computer program scores the MSQ and generates quantitative indices that include the value, perceived accessibility, and imminence of the alcoholic's goals; the pattern of commitment to these goals; and the nature of the individual's desires and roles regarding them (Cox et al. 1991b). A motivational profile is then derived to depict the significant features of the individual's motivational structure and to identify problematic motivational patterns. Thus, the MSQ can be used at the beginning of treatment to identify and specify patients' motivational problems and their impact on the motivation to drink alcohol. The information derived from the MSQ can also provide the basis for initiating Systematic Motivational Counseling (Cox et al. 1991b), an approach developed to facilitate changing drinkers' maladaptive motivational patterns. A detailed manual to guide the counseling technique is available (Cox et al. 1993).

Recently Cox and colleagues (2000) explored the relationship between the MSQ and a measure of readiness to change in a group of alcoholics entering inpatient treatment. Factor analysis derived two factors on the MSQ, adaptive motivation and maladaptive motivation. The nature of patients' motivational structure was related to readiness to change. High scores on the adaptive motivation factor, reflecting a commitment to pursue goals having emotionally satisfying outcomes, were positively related to determination to change and negatively related to denial of one's alcohol problem.

Drinking Relapse Risk and Self-Efficacy

A second major cognitive factor to be incorporated into the assessment of alcohol abusers is that of self-efficacy (DiClemente 1986; Wilson 1987a, 1987b). While this construct plays a prominent role in cognitive-behavioral models of problem

drinking, considerably less research attention has been focused on its assessment and its relationship to drinking behavior than has been given to alcohol-related outcome expectancies (Young et al. 1991*b*; Oei and Baldwin 1994). The concept of self-efficacy, originally developed by Bandura (1977, 1986), has been adapted and expanded to be applied in the area of addictive behaviors (Rollnick and Heather 1982; Baer and Lichtenstein 1988). Within the context of alcohol problems, this construct has been defined in terms of the beliefs that individuals hold or their level of confidence concerning their ability to resist engaging in drinking behavior (Young et al. 1991*b*; Oei and Baldwin 1994). The adaptation of the self-efficacy construct to the addictions has also led to modifications in its assessment (Young et al. 1991*b*). Strength of self-efficacy is typically defined as the mean self-efficacy ratings across situations, and generality of self-efficacy is usually estimated as the variability of these ratings across situations. Additionally, Sitharthan and Kavanagh (1991) recommended a measure of the level of self-efficacy, defined as the number of situations in which the individual had the maximum rating of confidence about not drinking.

The cognitive-behavioral model of relapse developed by Marlatt and colleagues (Marlatt and Gordon 1980, 1985) has served as a heuristic framework to guide the development of measures of self-efficacy in substance abuse. Although there have been challenges to the reliability and validity of Marlatt's original taxonomy of relapse precipitants (Marlatt and Gordon 1980; Zywiak et al. 1996), this taxonomy has led to the generation of categories of situations having high relapse potential. Implicit in the operational definition of self-efficacy, and explicit in Marlatt's model of relapse, is the assumption that the strength of efficacy is dependent on the availability and accessibility of emotional and behavioral skills necessary to cope with situations that are appraised as a challenge to one's perception of control and which, therefore, may precipitate a relapse. It is assumed that the greater the individual's available repertoire of coping skills, the greater the strength

of self-efficacy, and the lower the probability of relapse or drinking in a given situation.

The instruments developed by Annis and colleagues are probably the most widely used methods to date for assessing self-efficacy in relationship to drinking (e.g., Annis and Davis 1988*a*, 1988*b*, 1991). Two parallel measures, administered either as self-report forms or via computer, are typically used in combination in the assessment process. Each scale takes approximately 15–20 minutes to complete. The first is the Inventory of Drinking Situations (IDS) (Annis 1982; Annis et al. 1987). The original version of the IDS was a 100-item self-report questionnaire designed to assess situations in which the client drank heavily over the past year. A 42-item version is also available (Isenhardt 1991, 1993). Eight general categories of drinking situations, based on Marlatt's classification system (Marlatt and Gordon 1980, 1985), are assessed: unpleasant emotions, physical discomfort, pleasant emotions, testing personal control, urges and temptations, conflict with others, social pressure to drink, and pleasant times with others. Clients are instructed to rate on a 4-point rating scale (from "never" to "almost always") their frequency of heavy drinking in each of 100 situations during the past year. Clients define "heavy drinking" in terms of their own consumption pattern and their perception of what constitutes "heavy" for them. M.B. Sobell and Sobell (1993) suggested that at the start of the questionnaire clinicians might ask clients to note the number of standard drinks they would consider to constitute "drinking heavily" as a way to provide a reference point for their responses to the IDS.

From the client's responses on the IDS, a problem index score, ranging from 1 to 100, can be calculated for each of the eight categories of drinking situations. By plotting the eight problem index scores, a client profile can be constructed to show the client's areas of greatest risk for heavy drinking and to help target and guide interventions. Profiles that show variability across situations, or differentiated profiles, are more helpful in the identification of specific intervention targets than are generalized or flat profiles that have little variation across situations. Evidence also suggests

that clients with differentiated profiles may have better outcomes in relapse prevention treatment than those with generalized profiles (Annis and Davis 1991).

Annis and Graham (1995) also described the use of a profile method in which clients are categorized into one of four categories based on their responses on the IDS: high negative profile, high positive profile, low physical discomfort profile, and low-testing personal control profile. Differences were found across the profiles on a number of measures. Clients with high negative profiles, compared with those with high positive profiles, tended to drink alone, to have high levels of alcohol dependence, and to be women. Those with high positive profiles, compared with clients having low physical discomfort profiles, appeared to have less serious or chronic alcohol problems.

Studies of the psychometric properties of the IDS suggest that the 42-item version has adequate levels of reliability and is comparable with the 100-item version (Cannon et al. 1990; Isenhardt 1991, 1993; Victorio et al. 1996; Carrigan et al. 1998; Breslin et al. 2000; Stewart et al. 2000). However, initial factor analyses of the 100-item version at the item level failed to support the presence of the eight rationally derived Marlatt drinking relapse categories. Rather, a smaller number of factors were obtained. On the 100-item IDS, Cannon et al. (1990) found three primary factors representing categories of situations in which alcoholics are likely to drink: negative affective states, positive affective states combined with social cues to drink, and attempts to test one's ability to control one's drinking. Isenhardt (1991) found five factors, having some conceptual overlap with those obtained by Cannon et al.: negative emotions, social pressure, testing personal control, physical distress, and positive emotions. An item-level principal components analysis replicated this factor structure with the 42-item version of the IDS, although a second-order principal components analysis at the scale level suggested a single-factor solution (Isenhardt 1993). More recent factor analytic investigations of the IDS have fairly consistently found three higher order factors corresponding to positively

reinforcing situations, negatively reinforcing situations, and temptation or testing personal control, with a number of lower order factors corresponding to the more specific relapse situations (Victorio et al. 1996; Carrigan et al. 1998; Stewart et al. 2000). The level of specificity in the drinking categories used will vary based on clinical needs; however, Annis and colleagues (1987) recommended the use of the full IDS-100 and the eight relapse risk categories of the original scale for maximal utility in treatment planning and intervention targeting.

The second instrument developed by Annis and colleagues is the Situational Confidence Questionnaire (SCQ, or SCQ-39) (Annis 1987; Annis and Graham 1988). This is a 39-item self-report questionnaire designed to assess the concept of self-efficacy for alcohol-related situations. Whereas the IDS attempts to determine the relative cue strength for drinking in each of the situations, the SCQ attempts to determine the individual's current level of confidence or strength of self-efficacy that he or she can encounter each of these situations without drinking heavily. Clients are asked to imagine themselves in the same set of drinking situations as presented in the IDS and for each situation to rate on a 6-point scale how confident (ranging from "not at all confident" to "very confident") they are that they will be able to resist the urge to drink heavily in each situation.

As was found with the IDS, it appears that there are fewer than eight meaningful categories of drinking situations assessed by the SCQ based on the results of factor analysis. Sandahl, Linberg, and Ronnberg (1990), for instance, found four factors at the item level of analysis. As would be expected, these factors parallel those that have been found on the IDS: unpleasant emotions, social pressure, testing personal control, and positive emotions.

Higher levels of drinking and/or severity of alcohol dependence appear to be inversely related to an individual's level of drinking-related self-efficacy; further, lower levels of self-efficacy are associated with greater expectancies about the

potential positive benefits of drinking (e.g., belief that drinking will improve social involvement and reduce depression and tension) (Skutle 1999).

An individual may be at the lowest level of self-efficacy when he or she enters treatment. A client's responses on the SCQ-39 can be used to monitor the development of the client's self-efficacy in relation to coping with specific drinking situations (identified and prioritized by use of the IDS) over the course of treatment or with increasing sobriety. It would be expected that self-efficacy would increase across treatment, and this appears to be the case (e.g., Burling et al. 1989; P.J. Miller et al. 1989; Sitharthan and Kavanagh 1991; Rychtarik et al. 1992; S.A. Brown et al. 1998; Long et al. 1999). Burling et al. (1989), for example, found that self-efficacy increased during the course of inpatient treatment and was higher for those individuals who were abstainers at a 6-month followup than for those who had relapsed. Presumably, one would expect a relative increase in efficacy in those situations that have been the focus of intervention (Annis and Davis 1988*b*). Also, S.A. Brown et al. (1998) found not only that self-efficacy increased across the course of treatment but also that positive drinking-related outcome expectancies decreased. The greatest decrease in positive expectancies about the anticipated effects of alcohol was among patients who entered treatment with less confidence to resist drinking when compared with those having higher initial levels of self-efficacy. The assumption that higher levels of self-efficacy would be associated with lower levels of relapse or posttreatment drinking has also been supported (e.g., Solomon and Annis 1990; Sitharthan and Kavanagh 1991; Rychtarik et al. 1992), although this has not been a universal result (e.g., Mayer and Koeningsmark 1992). Greenfield and colleagues (2000) found that a cutoff score of 45 on the SCQ during inpatient treatment quite accurately differentiated alcoholics who relapsed early and drank more heavily at a 12-month followup than those having scores less than 45. Those with scores less than 45 had a median of 30 days to relapse following treatment compared with the 135 days to relapse for those with scores above 45. However, the level of effi-

cacy at the beginning or end of treatment has not been consistently related to outcome (e.g., Langenbucher et al. 1996).

DiClemente et al. (1994) noted that the SCQ may not be an appropriate measure to use when attempting to assess self-efficacy in abstinence-oriented treatment programs. The SCQ focuses on measuring the individual's ability to resist the urge to drink heavily, not necessarily to refrain from drinking completely. They suggested that the goals of treatment (e.g., abstinence or harm reduction) should correspond to the type of efficacy being assessed. As such, they expressed some concern that the efficacy to avoid drinking heavily as manifested on the SCQ may miss some important aspects of the efficacy to remain abstinent. To this end, DiClemente et al. (1983, 1994) developed a measure that focuses on the individual's efficacy or confidence to abstain from alcohol across a range of situations also derived from Marlatt's eight primary relapse categories and from surveys of drinkers in treatment.

The resultant scale, the Alcohol Abstinence Self-Efficacy (AASE) Scale, consisted of 49 items. Each item was rated on two separate 5-point rating scales (from "not at all" to "extremely") to reflect both the temptation to drink and the confidence or efficacy to abstain in each of the situations. The AASE Scale has been used in conjunction with the evaluation of treatment for alcohol-dependent individuals (Ito et al. 1988). Following an inpatient hospitalization, individuals involved in a relapse prevention aftercare group showed a significant decrease in their level of temptation and an increased level of self-efficacy over the 8-week course of aftercare. However, subjects involved in an interpersonally based aftercare group therapy program demonstrated no significant changes in either temptation or confidence across the corresponding 8-week treatment phase. DiClemente and Hughes (1990) also found that alcoholics entering outpatient treatment who were discouraged, less motivated, and less ready to engage in behavior change activities demonstrated the highest level of temp-

tation and the lowest level of confidence compared with those closer to action.

The original AASE Scale was shortened through a series of empirical steps to 20 items in an attempt to increase its ease of inclusion in assessment batteries and to improve on its psychometric properties (DiClemente et al. 1994). Based on a sample of alcoholics involved in outpatient treatment, 9 of the original 49 items were initially eliminated due to poor item statistics in preliminary analyses; the remaining 40-item self-efficacy (confidence) scale was subjected to an oblique factor analysis. A four-factor solution was chosen as the best fit for the data. A large negative affect factor included items that measured both intrapersonal (“When I am feeling depressed”) and interpersonal (“When I feel like blowing up because of frustration”) negative affect. Items from these two potential subscales were highly correlated, producing a single first factor. Social situations (“When I am being offered a drink in a social situation”) and the use of alcohol to enhance positive states (“When I am excited or celebrating with others”) represented a social/positive emotion factor. The third factor, physical and other concerns, consisted of varied items representing physical discomfort or pain (“When I am experiencing some physical pain or injury”), concerns about others (“When I am concerned about someone”), and dreams about drinking (“When I dream about taking a drink”). The final factor, withdrawal and urges, represented withdrawal (“When I am in agony because of stopping or withdrawing from alcohol use”), craving (“When I am feeling a physical need or craving for alcohol”), and testing willpower (“When I want to test my willpower over drinking”). These four factors have been replicated among drug-abusing probationers (Hiller et al. 2000).

Those five items having the highest and clearest factor loading on each of the four factors were then assessed for internal consistency. The Cronbach alpha coefficients ranged from 0.81 for the withdrawal and urges factor to 0.88 for the negative affect factor; the total scale had an alpha of 0.92. A similar pattern of results was found in

subsequent analyses of the temptation items. The Cronbach alphas ranged from 0.60 for the physical and other concerns factor to 0.99 for the negative affect factor. A moderate inverse relationship was found between temptation and efficacy scales. That is, temptation appears to be a separate construct but related to efficacy, with higher levels of efficacy associated with less temptation). There was evidence of construct validity, convergent validity, and divergent validity when examining the relationships of the self-efficacy scales and measures of motivation and of alcohol use patterns on the AUI. There were no apparent differences in self-efficacy between men and women (DiClemente et al. 1994).

Carbonari and DiClemente (2000) investigated the utility of client profiles based on the combination of the stage of readiness to change and self-efficacy. The derived profiles differentiated among both aftercare and outpatient clients with respect to both their 1-year posttreatment drinking categories (i.e., abstinent, moderate, and heavier drinking) and their use of cognitive and behavioral change processes.

The Drinking Refusal Self-Efficacy Questionnaire (DRSEQ) (Young et al. 1991*b*) is a self-report questionnaire developed initially on a sample of predominantly female young adults from colleges and a community youth group; it was subsequently evaluated in a general adult sample from a large government agency. It assesses the individual's confidence that he or she will not drink in a number of situations. An initial item pool was developed from other self-efficacy questionnaires, from Marlatt's interpersonal and intrapersonal precipitants of relapse, and from interviews with young problem drinkers. Individuals were to rate each item on a 6-point scale ranging from “I am very sure I would drink” to “I am very sure I would not drink.” The 31 items that met final inclusion criteria were subjected to principal axis factor analysis. Three factors were derived: self-efficacy in situations of social pressure (“When friends are drinking”), self-efficacy in situations of opportunistic drinking (“When you are listening to music or reading”), and self-efficacy in situations character-

ized by a need for emotional relief (“When you feel frustrated”). High degrees of internal consistency and test-retest reliability were found for each of these three subscales.

In the college sample, the measures of self-efficacy were found to contribute significantly to the prediction of alcohol consumption (particularly self-efficacy in social pressure situations) and to the discrimination of problem drinkers from non-problem drinkers (all three subscales were significant discriminators). However, self-efficacy did not emerge as a significant predictor of alcohol consumption in an independent sample of individuals manifesting alcohol-related problems. In the adult sample of government employees, a single self-efficacy summary score accounted for the greatest amount of variance (26.3 percent) in the prediction of alcohol consumption, even when other variables such as age, gender, alcohol-related expectancies (the DEQ), and alcohol problems (the Michigan Alcoholism Screening Test [see the chapter by Connors in this *Guide*]) were included in the regression analysis. Recent studies have explored the relationship between drink refusal self-efficacy and alcohol-related expectancies in predicting drinking behavior in general and clinical populations (Oei et al. 1998; Connor et al. 2000; Oei and Burrow 2000; Young and Oei 2000).

Litman and colleagues developed the Relapse Precipitants Inventory (RPI), the Coping Behaviours Inventory (CBI), and the Effectiveness of Coping Behaviours Inventory (ECBI) (Litman et al. 1977, 1979, 1983a, 1983b, 1984; Litman 1986). Although not used extensively since their introduction in the literature, these scales have been used in clinical research and have potential utility in the assessment of relapse risk.

The RPI consists of 25 items, reflecting a variety of drinking situations. The individual is asked to rate the extent to which each situation is “dangerous to staying off drink” using a 4-point scale from “very dangerous” to “not at all.” Initial factor analyses suggested a four-factor solution; a subsequent set of analyses on a new sample suggested three factors: unpleasant mood states,

external events/euphoria, and decreased cognitive vigilance. In a retrospective analysis comparing individuals who were either relapsers or survivors, relapse was associated with more situations overall being rated as dangerous as well as with higher scores on the unpleasant mood states and external events/euphoria factors. The same pattern of findings was obtained in a prospective study, with the total number of relapse precipitants and these two factors differentiating between relapsers and survivors at followups from 6 to 15 months post-treatment.

The CBI and the ECBI assess the behavioral and emotional coping strategies the individual uses to avoid relapse and the perceived effectiveness of these strategies. The CBI consists of 36 items reflecting ways in which individuals may try to avoid drinking when they are tempted to start drinking again. The individual rates each item on a 4-point scale reflecting the frequency of attempting each strategy, from “usually” to “never.” The ECBI uses the same 36 items but asks the individual to rate how well each of the coping strategies has worked for them. The CBI has been found to have four factors: positive thinking, negative thinking, distraction/substitution, and seeking social supports. The same factor structure was found for the ECBI.

While no differences were found between relapsers and survivors in a prospective study on the frequency of using different coping strategies, differences were found on the ECBI in the pattern of perceived effectiveness of these strategies. At the beginning of treatment, individuals who were more likely to maintain posttreatment abstinence tended to perceive themselves as having more effective coping strategies overall and as rating positive thinking and avoidance as more effective than those who would relapse during followup. Similarly, Ito et al. (1988) found that alcoholics evidenced an increased frequency of use of both cognitive and behavioral coping strategies across 8 weeks of aftercare treatment. Cognitive coping assessed by the CBI at intake contributed significantly to the discrimination between those who relapsed and those who abstained over a 6-month followup

period even after demographic measures and indices of chronicity of alcohol problems were entered first into the discriminant function analysis (Ito and Donovan 1990). Patients abstinent for the entire 6-month period had fewer years of problem drinking, had fewer prior alcohol treatments, and used more cognitive coping strategies than did those who relapsed. The CBI has also been used as part of the assessment battery in the exploration of the validity of Marlatt's relapse taxonomy (Maisto et al. 1996) and in the comparison of individuals having a cocaine-only addiction versus those with a cocaine-alcohol comorbidity (Schmitz et al. 1997).

Two relatively new scales may prove useful in future attempts to assess relapse risk. The first is the Reasons for Drinking Questionnaire (RFDQ) (Zywiak et al. 1996). This 16-item scale is an adaptation for use with alcohol of a scale originally developed by Heather, Stallard, and Tebbutt (1991) for use with heroin addicts. Individuals are asked to rate how important each of the 16 reasons were to their resuming drinking along a 10-point scale (0 = not at all important, 10 = very important). Three factors were derived. The first and most prominent was negative emotions, the second involved social pressure and positive emotion, and the third was an amalgam of physical withdrawal, wanting to get high, testing personal control, and urges to drink. High scores on the negative emotions scale were associated with high levels of anger, depression, and alcohol dependence and were predictive of blood alcohol concentration on the first day of a relapse, the duration of the relapse, and the likelihood of a second relapse.

The second relatively new scale is a measure based on Gorski's post-acute withdrawal model of relapse (Gorski 1990). W.R. Miller and Harris (2000) compiled an initial list of 37 relapse-related warning signs, the Assessment of Warning-Signs of Relapse (AWARE). Each individual rates the extent to which each statement applies to him or her along a 7-point Likert scale (1 = never, 7 = always). Responses of alcoholics in treatment were subjected to factor analysis. It was found that 28 of the initial 37 items defined a single factor, which had a Cronbach alpha coefficient greater than 0.90. The

scale had a test-retest reliability of 0.80 over a 2-month followup interval. Further, individuals with high scores on the AWARE had significantly higher relapse rates than those with lower AWARE scores.

L.C. Sobell and colleagues have offered a number of important caveats concerning the assessment of relapse risk and self-efficacy; although their comments were directed specifically at the IDS and the SCQ, they apply equally well to the evaluation of the other questionnaire measures of self-efficacy reviewed above. L.C. Sobell et al. (1994a) noted that the situations identified by measures such as the IDS as potentially risky have only been *associated with* heavy drinking; therefore, one cannot presume a causal link between the types of situations endorsed, drinking behavior, and relapse probability. A number of other factors, such as coping skills deficits, may represent a common third factor that may moderate this relationship. Second, while using such scales to assess temptation, confidence, and coping can be useful clinically in the treatment planning process, these scales only identify generic situations or general problem areas. Also, an important fact arising from the investigation of Marlatt's relapse taxonomy is that the high-risk situation associated with one's most recent relapse has a very low probability of being the situation predictive of the next relapse in the future (Maisto et al. 1996). Sobell et al. (1994a) indicated that it is important to explore in more depth the unique and personally relevant high-risk situations or areas where the client lacks self-confidence for resisting drinking. One might choose to expand more fully on those situations associated with frequent heavy drinking, high temptation ratings, and/or low levels of perceived confidence on the structured questionnaires. Sobell et al. (1994a) also recommended that clinicians ask clients to describe in detail their three highest risk situations for drinking over the past year.

The last recommendation is consistent with the development and use of semi-structured, individualized approaches to the assessment of self-efficacy. K.J. Miller and colleagues (1994), for example, examined the usefulness of an individu-

alized approach to the assessment of self-efficacy in an outpatient alcohol treatment program. An Individualized Self-Efficacy Survey (ISS) was developed for each client. This survey was derived by (1) administering a questionnaire about drinking patterns to identify important problem areas for the individual (e.g., work, children, marital problems) and specific drinking antecedents and (2) constructing a 15-item scale using each drinker's most important drinking cues. The method of having clients choose their own high-risk drinking cues appeared to be clinically useful. Ratings on the ISS were reflective of changes in perceived efficacy over the course of treatment, and ISS scores at the end of treatment were predictive of subsequent relapse.

A second example of an ideographic approach to assessment is the Substance Abuse Relapse Assessment (SARA) developed by Schonfeld and colleagues (Schonfeld et al. 1989; Peters and Schonfeld 1993; Schonfeld et al. 1993). The SARA is a semi-structured interview protocol that was developed to assist clinical staff in developing relapse prevention goals by identifying high-risk situations and deficits in coping skills. It assesses AOD use patterns, antecedents or precipitants of drinking and drug use, and positive and negative consequences of drinking. Although the focus of the assessment is on a "typical drinking day" over a 30-day period, the interview could also quite easily be adapted to focus on single or multiple relapse episodes. In addition to being asked about the parameters of their use patterns, such as the number of days of use and number of days of intoxication, clients are also asked to classify their use patterns as steady, periodic or binge, weekend use, or infrequent. The interview focuses on situations, thoughts, feelings, cues, and urges as related to drinking and/or other drug use; each of these is assessed as an independent category that is probed for occasions of drinking or other drug use. To provide additional structure to the assessment of emotions as a possible antecedent of drinking, clients are provided with a list of 28 positive and negative emotions and are asked to choose that feeling most prominent immediately before drink-

ing, to explain what that emotion means to them, and to continue doing this until they have rank-ordered the five most notable emotions experienced prior to use. In addition, clients are asked how they dealt with these thoughts and feelings on days when they experienced them but did not drink. They are also asked about their responses to prior "slips." Information derived from the 45- to 60-minute interview is used by the clinician to complete relapse prevention planning forms that provide an overview of the individual's substance abuse behavior chain, the current level of necessary coping skills to avoid relapse, the level of confidence the client has in his or her ability to avoid relapse, and a set of goals for relapse prevention interventions targeted on those situations, thoughts, feelings, cues, and urges identified as having a high risk for relapse.

While measures of self-efficacy, whether self-report questionnaires or interviews, appear to have a number of potential clinical and research applications, questions remain concerning their use. The first question is which measure(s) to use. Selection of a measure depends on the treatment goal (abstinence or harm reduction), the amount of time available, and the availability of staff for interviews versus self-report approaches. Second, how can one best use these measures in some meaningful combination? For example, the AASE Scale has both confidence and temptation ratings; the IDS and SCQ are often presented together; and the RPI and CBI or ECBI are used in conjunction. However, each often appears to be analyzed separately. DiClemente and colleagues (1994) noted that temptation scores reflect the cue strength of each situation in terms of its ability to precipitate alcohol consumption. This level of temptation may be relatively independent of rated confidence in each situation. Thus, temptation to drink in one situation can be low while efficacy to abstain is quite high. Or, as is more often likely to be the case during the early stages of the treatment and recovery process, the individual may experience high temptation but have only moderate to high levels of efficacy to abstain based on skills and commitment. Similarly, the individual may

report high frequencies of heavy drinking in a situation on the IDS, suggesting high cue strength, yet may have a high level of confidence on the SCQ. Conversely, a situation may occur relatively infrequently but is one in which the person expresses very little efficacy. A similar set of patterns could be described for the relationship between the rated danger of potential relapse situations and coping on the RPI and CBI. Complicating the picture even more is the potential situation in which an individual may report frequently using a given coping strategy when confronted with a high-risk situation yet perceiving this strategy as relatively ineffective.

The point of this discussion is to note that in a clinical context it is important to integrate the information derived from these various sources in order to determine an accurate estimate of relapse risk and to develop an appropriate intervention. Litman (1986) began to explore the relationship between relapse risk and coping styles. DiClemente et al. (1994) suggested that the relationship between efficacy and temptation presents an important area for future research. It appears that the difference between the temptation and efficacy scores of the AASE Scale, as well as their correlations, provides important and potentially useful information related to stages of behavior change for alcohol-dependent clients (DiClemente and Hughes 1990).

Relationship Between Alcohol-Related Outcome Expectancies and Self-Efficacy Expectancies

Research is needed on the relationship between alcohol-related outcome expectancies and self-efficacy expectancies. Young and colleagues have noted that self-efficacy is an important construct in understanding relapse or treatment success; however, the precise role that outcome expectancies play in relapse and how such expectancies relate to self-efficacy have received relatively little direct evaluation (Young et al. 1991*b*; Young and Oei 1993; Oei et al. 1998; Oei and Burrow 2000; Young and Oei 2000). Oei and Baldwin (1994)

suggested that these two expectancy constructs play different but complementary roles. Alcohol-related outcome expectancies appear to operate in a “weighing up” process in which the individual assesses the relative anticipated positive and negative consequences associated with taking a drink. To the extent that the individual believes that a consequence will occur and that desirable consequences are more likely to occur than undesirable ones, then the likelihood of drinking is high. Self-efficacy expectancies, on the other hand, do not contribute to this weighing-up process. Rather, they are hypothesized to intervene between the weighing up and the behavioral response.

N. Lee and Oei (1993*b*) investigated the relationship of these two constructs, as operationalized by the DEQ and the DRSEQ, to drinking behavior among a general population sample. It was found that they had differing predictive utilities depending on the parameter of drinking being considered. Low levels of self-efficacy in general, and more specifically in those situations where there was an opportunity to drink, were related to a higher frequency of usual alcohol consumption and larger maximum quantities consumed on any one drinking occasion. The alcohol-related outcome expectancies were related to frequency of drinking but not to quantity of alcohol consumed. Those individuals who expected greater negative affective states while drinking drank their usual and maximum amounts less often, while those who had higher expectations of poor control over drinking drank their usual and maximum amounts more often. The complexity of these relationships, as well as similar ones found in a college sample (Baldwin et al. 1993), likely reflects the nature of the interactions between self-efficacy and alcohol expectancies and their influence on drinking behavior. It is clear that this area warrants further investigation.

PERCEIVED LOCUS OF CONTROL OF DRINKING BEHAVIOR

A final set of cognitions that have played a role in some cognitive-behavioral models of problem

drinking and alcoholism is the individual's perception of control (e.g., Donovan and O'Leary 1983; Carlisle 1991). The concept of locus of control, originally developed by Rotter (1966, 1975), refers to the extent to which an individual believes that the outcomes of important life events are under personal control (internal locus of control) or under the influence of chance, fate, or powerful others (external locus of control). Rotter suggested that the predictive utility of the locus of control construct is increased by using measures directly related to the behavior under consideration rather than ones assessing a more generalized perception of control.

To this end, Keyson and Janda (1972) developed a locus of control scale that measures control expectancies related to drinking behavior. This scale, which was subsequently reproduced as the Drinking-Related Locus of Control Scale (Lettieri et al. 1985) and is also known as the Drinking-Related Internal-External Locus of Control Scale (DRIE), assesses the specific beliefs the individual holds concerning his or her perceptions of control with respect to alcohol, drinking behavior, and recovery. It is a 25-item self-report questionnaire adapted from Rotter's conceptual model and assessment method. In a forced-choice format, individuals are asked to choose which of two response options best matches their beliefs. These response options include an internal ("I have control over my drinking") and an external ("I feel completely helpless when it comes to resisting a drink") alternative. The scale is scored in the direction of increasing externality.

Donovan and O'Leary (1978) found that the DRIE has a high degree of reliability; is multidimensional, having empirically defined factors assessing perceived control over interpersonal factors, intrapersonal factors, and general factors associated with drinking; and differentiates between alcohol-dependent individuals (more external scores) and nondependent drinkers. They also found that an external locus of control was associated with more physical, social, and psychological impairment from drinking. Hartmann (1999) found a similar factor structure among

alcoholics; however, female alcoholics had a more elaborated sociability dimension than did male alcoholics. In contrast, Hirsch and colleagues (1997) failed to replicate the three-factor structure found previously by others. Instead they found a single factor that seemed to tap into a dimension of perceived helplessness and inability to abstain from alcohol.

Clements et al. (1995) found that being an adult child of an alcoholic was associated with a more external perception of control on the DRIE. Further, those who were both alcoholic and had an alcoholic parent had considerably higher scores on the DRIE than those with either one of these two conditions. Collins et al. (2000) found that the Cognitive and Emotional Preoccupation subscale from the Temptation and Restraint Inventory (TRI) was strongly and positively associated with the DRIE, while the Cognitive and Behavioral Control subscale was positively and moderately correlated with the DRIE. The DRIE has been found to differentiate between drinking groups with varying histories of drinking problems and sobriety or with varying degrees of commitment to change, with more internal scores being associated with longer periods of sobriety or more advanced action in the recovery process (Mariano et al. 1989; Strom and Barone 1993). Consistent with this pattern, the perception of control appears to become more internal over the course of alcohol treatment; individuals with more external perceptions are also more likely to drop out of treatment prematurely (J.W. Jones 1985; Prasadarao and Mishra 1992). There appears to be a complex interactive relationship between the primary reasons alcoholics give for their pretreatment drinking and their drinking-related locus of control in predicting posttreatment relapse (Kivlahan et al. 1983), suggesting possible avenues of treatment matching within a relapse prevention framework. Following treatment, alcoholics having an internal drinking-related locus of control were less likely to relapse, drank less and were less likely to have a more prolonged drinking episode if they did relapse, and had a better

overall drinking-related outcome than alcoholics with an external DRIE score (Koski-Jannes 1994).

The DRIE represents an additional measure to consider in the assessment of those cognitions that may be related to the maintenance of, cessation of, and relapse to drinking behavior. Its relationship with the other cognitive constructs discussed in this chapter, namely alcohol-related outcome expectancies and self-efficacy expectancies, needs to be pursued further.

MEASURES OF FAMILY HISTORY OF ALCOHOL PROBLEMS

Shiffman (1989) indicated that in addition to assessing factors that are relatively proximal in time to a relapse episode (e.g., temptation and confidence levels), a comprehensive assessment should also measure factors in the individual's life that are more distal, both in time and influence, on drinking. These more distant, often relatively enduring and unchanging personal characteristics may provide the background context that predisposes individuals toward involvement with alcohol, differing patterns of drinking, and potentially increased risk of relapse. From a clinical perspective, focusing on such distal background factors may help to predict who will relapse, but not when they will relapse (Shiffman 1989). A potentially important background characteristic in this regard is a positive family history of alcoholism, which may represent such a predisposing variable (e.g., Schuckit 1991; Tarter 1991). This variable may influence the nature and strength of alcohol-related expectancies and have an interactive effect on drinking behavior among young adults (e.g., S.A. Brown et al. 1987*b*; L.M. Mann et al. 1987; Sher et al. 1991), as noted above in the discussion of the role of parental alcohol problems on drinking-related locus of control (Clements et al. 1995). Positive family history may also be a contributing factor to an alcoholic subtype having a significantly different developmental course, different patterns of drinking and related problems, and poorer treatment prognosis (Babor et al. 1992*a*, 1992*b*; Litt et al. 1992).

Determination of the presence or absence of a family history of alcoholism has been based primarily on individuals' self-reports concerning the drinking behavior and consequences of their parents or first-degree relatives. In some cases, this has involved the use of structured diagnostic interview protocols, such as the Family History–Research Diagnostic Criteria (FH-RDC) (Endicott et al. 1975; Merikangas et al. 1998), in which the individual is interviewed with a focus on parental drinking behavior and other psychiatric disorders to determine whether the diagnostic criteria of alcohol abuse or dependence are met.

A number of relatively brief and reliable self-report forms have been developed to assist in the assessment of familial alcohol problems. One such measure is the Family Tree Questionnaire for Assessing Family History of Alcohol Problems (FTQ) (R.E. Mann et al. 1985). The FTQ is a brief, easily administered questionnaire that provides subjects with a consistent set of cues for identifying blood relatives with alcohol problems. Subjects are given a family tree diagram that includes first-degree (parents and siblings) and second-degree (grandparents, aunts, and uncles) relatives. To assure comparability in the frame of reference used in classifying relatives with respect to their drinking, individuals are provided with a set of descriptions for each of four possible drinker categories. They are asked to classify their blood relatives on their mother's side and father's side of the family into one of the following categories: (1) never drank (a person who never consumed alcoholic beverages); (2) social drinker (a person who drinks moderately and is not known to have or have had an alcohol problem); (3) possible problem drinker (a person who the individual believes or was told might have [had] an alcohol problem but where there is a lack of certainty); and (4) definite problem drinker (only those persons either known to have received treatment for an alcohol problem or who have experienced several alcohol-related consequences).

The FTQ has been shown to have satisfactory reliability with alcohol abusers and normal drinkers. The reliability of subjects' classification

of paternal and maternal first-degree and second-degree relatives of alcoholic and non-alcoholic subjects was examined. Results indicated that both alcoholics and non-alcoholic subjects reliably classified their relatives as alcoholics or problem drinkers over a 2-week test-retest interval (R.E. Mann et al. 1985). Similar high levels of test-retest reliability were found in classification of family members even over an approximately 4-month interval (Vogel-Sprott et al. 1985). Using liberal criteria (e.g., relative known to be a problem drinker) provided a more sensitive basis for the diagnosis of relatives' alcohol problems than more stringent criteria (e.g., relative definitely an alcoholic with reported consequences or prior treatment) (R.E. Mann et al. 1985). Evidence for this questionnaire's validity derives from the fact that alcohol abusers had a higher number of family history-positive relatives than non-alcohol-abusing subjects. Alcoholics in treatment with a positive family history of alcoholism, as assessed by the FTQ, had an earlier onset of drinking, higher indices of quantity and frequency of drinking, a greater preoccupation with drinking, a more sustained drinking pattern, more serious negative psychosocial consequences from drinking, and a greater reliance on alcohol to manage their moods than those alcoholics without a history of familial alcoholism (Worobec et al. 1990).

A second set of measures of familial alcohol problems is based on an adaptation of the Short Michigan Alcoholism Screening Test (Selzer et al. 1975). These scales, the Adapted Short Michigan Alcoholism Screening Test for Fathers (F-SMAST) and Mothers (M-SMAST), were developed by Sher and Descutner (1986). The individual is asked to respond to each of the 13 items of the SMAST with respect to either father's or mother's drinking behavior or alcohol-related negative consequences, with a dichotomous response format (yes/no). Separate forms are provided for the assessment of each parent with appropriate modifications in the wording. Individuals are also asked to make a global judgment concerning whether they think their father or mother is (was) an alcoholic.

Overall, there was a relatively high level of reliability as defined as the extent of agreement between the responses on each item between sibling pairs who rated each parent. Agreement was higher for those items asking about specific behavioral acts or consequences (e.g., seeking help, being arrested); lower levels of agreement were found on items that required the individual to make an inference (e.g., the presence or absence of guilt about drinking, what others thought about the parent's drinking). Reliability also appeared to be higher for ratings of fathers' drinking than for mothers' drinking. Crews and Sher (1992) replicated this finding with a larger sample. They also replicated the previous finding that a cutoff score of 5 to define parental alcoholism was best in terms of maintaining a high level of intersibling agreement.

In an extension of their previous work, Crews and Sher (1992) found that these scales had a high degree of test-retest stability and internal consistency, that there is a high level of agreement in the diagnosis of parental alcoholism derived from the F-SMAST or M-SMAST and from the individual's responses to the FH-RDC about each parent's drinking, and that there is a high correlation between the individual's scores on the F-SMAST and M-SMAST for each parent and the parents' actual scores when taking the SMAST about their own drinking behavior. Parental history of alcoholism, as measured by these adapted SMAST scales, appears to serve as an increased risk factor in the subsequent diagnosis of alcohol disorders (Kushner and Sher 1993) and to interact with personality factors to define different subtypes of drinking disorders among young adults (Martin and Sher 1994).

EXTRA-TREATMENT SOCIAL SUPPORT

An important area to consider as part of the assessment process is the extent and nature of the individual's social support system. Perceived social support may serve as a moderator of the relationship between a positive family history of

alcoholism and the development of alcohol problems (Ohannessian and Hesselbrock 1993). Litman (1986) noted that the ability to access social support was one of the main methods of coping in an attempt to avoid relapse as assessed by the CBI. Also, social skills training programs, often incorporated into the treatment for alcoholism, are thought to operate in part by enhancing the client's social support for sobriety and providing more appropriate alternatives for coping with interpersonal stress than drinking (Monti et al. 1994). The nature of social support and the level of the individual's investment in it also appear to interact with different types of treatment to affect differential outcomes, suggesting the possibility of using the domain of social support for the purposes of treatment matching (Longabaugh et al. 1995a).

Much research has examined the role of general social support in the recovery process. However, a number of authors have questioned whether this is the most appropriate focus (e.g., Havassy et al. 1991; Beattie et al. 1993). Rather, there is an increasing awareness that a more critical variable to assess is the degree of support the social network provides specifically for abstinence versus continued drinking. Beattie et al. (1993) suggested that general social support is most likely to affect the individual's sense of subjective well-being, whereas alcohol-relevant social support is more directly related to alcohol involvement. Havassy et al. (1991) noted that both social integration and abstinence-specific functional support are important in predicting relapse.

Longabaugh and colleagues have developed a family of measures that are designed to assess different areas of alcohol-specific social support. They have separated the influence of individuals in the client's work environment (if he or she is working) from the support provided by family and friends. The measure derived to assess the former is Your Workplace (YWP) (Beattie et al. 1992). The YWP is a 13-item self-report measure that can be administered either as an interview or a self-administered scale. It was developed from the responses of alcoholics in treatment. The scale has

been found to have three factor-analytically derived subscales: Adverse Effects of Drinking on Work Performance, Cues and Support for Consumption, and Support for Abstinence.

The reliability indices of these three subscales ranged from 0.61 to 0.78. The YWP subscales were unrelated to measures of general workplace support as measured by the Work Environment Scale (Billings and Moos 1982), while the YWP subscales assessing adverse effects of drinking on work performance and support for consumption were related to concurrent measures of drinking behavior. Supporting the relative importance of alcohol-specific measures of support, the YWP subscale assessing support for consumption was related to higher numbers of drinks per drinking day and the number of heavy drinking days during months 7–12 following treatment, while the Support for Abstinence subscale was related to lower levels drinking on drinking days. However, none of the indices of general workplace support predicted drinking behavior following treatment.

Rice, Longabaugh, and Stout (1997) reported on an extensive psychometric evaluation of YWP using the large sample of participants in Project MATCH. Confirmatory factor analysis supported the original three-factor solution obtained by Beattie et al. (1992). These subscales appear to be relatively independent, sharing less than 20 percent of variance, suggesting that each assesses a different component of support. Further, the internal consistency estimates for these three subscales were in the same range as those previously obtained. Correlation analyses indicate, as would be expected, that the Adverse Effects subscale was positively related and the Support for Abstinence subscale was negatively related to measures of drinking. It should be noted that support for abstinence from the YWP was not correlated with a measure of general social support from friends and family (Rice and Longabaugh 1996). However, these indices of general and alcohol-specific social support have a complex relationship in which each appears to add uniquely to subsequent drinking by alcoholics in treatment (Beattie and Longabaugh 1999). The alcohol-related measure was consistently more highly related to

outcome than the measure of general support; both were related to percentage of days abstinent at 3 months posttreatment; but only the alcohol-specific measure was significantly related to percentage of days abstinent at the 15-month followup.

The Important People and Activities (IPA) instrument was developed to assess alcohol-specific social support from family and friends (Clifford et al. 1992; Beattie et al. 1993; Clifford and Longabaugh 1993; Longabaugh et al. 1993, 1995a, 1995b). The IPA is an interviewer-administered instrument that provides information about those individuals with whom clients have frequent contact, how important each of these individuals is to the clients, how much they like each of these individuals, and how these individuals respond to clients' drinking and abstinence. Clients also rate the drinking behavior of those important individuals in their social network as well as the frequency with which these individuals drink during activities that are important to or valued by the client.

The IPA is meant to tap into three primary domains: attitudinal and behavioral support from members of the social network for drinking, the lack of sanctions against drinking, and attitudinal and behavioral support for abstinence. The Cronbach alpha coefficient of internal consistency for items assessing these three areas ranged from 0.61 to 0.78 (Clifford et al. 1992; Beattie et al. 1993). An index of affiliative support for alcohol involvement versus abstinence has been developed (Longabaugh et al. 1993). Those individuals characterized as having interpersonal networks supportive of alcohol involvement have important people who are perceived as more accepting of the clients' drinking and who are more likely to be drinkers themselves. Conversely, those characterized as having a network supportive of abstinence have important people who are perceived as less accepting of the clients' drinking and are more likely to be abstainers themselves. Beattie et al. (1993) found that this index of affiliative support for alcohol involvement correlated significantly with a similar index of workplace support for alcohol involvement as measured by the YWP; however, the IPA index of support for drinking

was not correlated significantly with actual pretreatment drinking behavior.

Longabaugh and colleagues (1993, 1995a) found that three different forms of alcoholism treatment had differential outcomes as a function of the nature of the client's alcohol-specific social support and the investment in this support network. At the 18-month followup (Longabaugh et al. 1995a), those subjects who had either a network that was unsupportive of abstinence or a low level of investment in their network had better outcomes following an extended relationship enhancement therapy. A broad-spectrum treatment approach was most effective with clients who had both a social network unsupportive of abstinence and a low investment in their network or with clients who were highly invested in a social network that was supportive of abstinence. More recently, Longabaugh and colleagues (1998) found that 12-step facilitation therapy was particularly effective with alcoholics having a social network supportive of their continued drinking. Clearly, the results suggest that a therapeutic focus should be directed toward the enhancement of interpersonal relationships, the development of a social network supportive of abstinence, and a means of facilitating the client's investment in this group. While this seems like a straightforward goal, it is an area typically underemphasized in the treatment process (Beattie et al. 1993).

The Significant-Other Behavior Questionnaire (SBQ) (Love et al. 1993) was developed to assess the responses of a single significant other to the presence or absence of drinking in alcohol-involved clients. The SBQ is a 24-item questionnaire that uses a 5-point response scale for the client to rate the likelihood that a significant other would respond in a variety of ways to the client's drinking. Two forms are available, allowing the client to rate the significant other's behavior from either the client's or the significant other's point of view. Four factors were derived for both the client form and the significant other form of the SBQ. On the client form these included the perception that the significant other punishes drinking, supports sobriety,

supports drinking, and withdraws from the patient when drinking. Internal consistency indices for these four subscales ranged from 0.75 to 0.87. The same patterns of factors and item loadings on factors were found on the significant other form and on the client form. With the exception of the subscale measuring perceived withdrawal from the patient when drinking, the SBQ subscales showed fair concordance between the client and corresponding significant other scores. General social support from family and friends was not related to the rated support of the significant other for drinking or sobriety. However, the SBQ subscales also demonstrated a relative independence from measures of drinking behavior and sobriety.

MULTIDIMENSIONAL ASSESSMENT MEASURES

Drinking behavior and alcohol problems are multidimensional. As such, it is often important to have a broad overview of the parameters of drinking, the expectancies that accompany and potentially maintain alcohol use, and the biopsychosocial aspects of the individual's life that are affected by drinking (Donovan 1988). Assessments thus need to be relatively broad to capture the extent and complexity of the multiple facets of alcohol problems. This can be done by the use of instruments derived from a variety of assessment domains or that assess a broad range of factors within a single interview or questionnaire. A number of such instruments are reviewed in this section.

The Addiction Severity Index (ASI) (McLellan et al. 1980, 1992*b*) is one of the most frequently used measures in substance abuse treatment and outcome evaluation; it is widely used as an intake evaluation form to aid in identifying areas in need of treatment and as a multidimensional measure of treatment outcome. The ASI can be used to effectively explore problems within any adult group of individuals who report substance abuse as their major problem.

The ASI is a semi-structured interview designed to provide an overview of a variety of problem areas related to substance use rather than focusing on any single area. The items on the ASI address seven rationally developed potential problem areas in substance-abusing patients: medical status, employment and support, drug use, alcohol use, legal status, family/social status, and psychiatric status. Factor analysis has suggested that the ASI may have four independent empirically derived factors: chemical dependence, criminality, psychological distress, and health-related problems (Rogalski 1987). A trained technician or counselor can gather information on recent (past 30 days) and lifetime problems in each of these problem areas.

Following the completion of each section of the interview, the client is asked to rate on a 5-point scale (from "not at all" to "extremely") the extent to which he or she feels troubled or bothered by the problem and the extent to which the client feels a need for counseling or treatment for this problem. The interviewer also makes a severity rating on a 10-point scale for each problem area based on a review of the client's responses to the interview items. The interviewer also rates his or her level of confidence that the client has understood and answered the questions truthfully. In addition to these subjective ratings, composite scores, representing weighted mathematical combinations of specific items, are computed to provide more objective measures of problem severity during the prior 30 days. A number of clinical indices, based on responses to both the lifetime and recent (30-day) problem questions, have been developed and evaluated in conjunction with the composite scores as well as the subjective ratings (T.G. Brown et al. 1999; Alterman et al. 2000*a*, 2001).

The ASI has been used across a wide range of clinical groups of substance abusers and treatment settings, including gender and ethnic groups (e.g., J.A. Lee et al. 1991; L.S. Brown et al. 1993), groups of clients differing in their primary drug of choice and seen in multiple treatment centers (e.g., McLellan et al. 1985, 1994), psychiatrically

impaired groups (Hodgins and El-Guebaly 1992; Appleby et al. 1997; Zanis et al. 1997), homeless substance abusers (Argeriou et al. 1994; Zanis et al. 1994; Joyner et al. 1996), and those with differing HIV serostatus (Davis et al. 1995).

Overall, the ASI and its subscales have demonstrated a high degree of concurrent validity against established and previously validated measures of psychosocial problems (Kosten et al. 1983; Hendricks et al. 1989), test-retest reliability and stability across relatively short and longer term time intervals (McCusker et al. 1994; Stoffelmayr et al. 1994; Zanis et al. 1994; Cacciola et al. 1999), and interrater reliability (Alterman et al. 1994; Stoffelmayr et al. 1994). These high levels of internal consistency and validity have been found even in a very large field study lacking the rigorous controls over administration that has typically accompanied most of the previous psychometric evaluations (Leonhard et al. 2000). However, the level of interrater agreement appears to be considerably lower for the clinician severity ratings than for the composite scores (Alterman et al. 1994). Additional and continued training and monitoring may be necessary to maintain high levels of agreement across raters over time (Fureman et al. 1994). This training can be supplemented by using standardized case vignettes (Cacciola et al. 1997). The psychiatric severity scale from the ASI has been found to be a potentially important measure with respect to matching clients to different intensities and types of treatment (McLellan et al. 1983; McLellan 1986) or aftercare services (Kadden et al. 1989).

Although there are a number of potential limitations of the scale that its authors acknowledge (McLellan et al. 1992*b*, 1992*c*), the ASI has been widely accepted as an extremely useful instrument in the field (Grissom and Bragg 1991). In fact, both computerized (Carise et al. 1999; Butler et al. 2001) and self-report versions (Rosen et al. 2000) of the ASI have been developed. Although the authors of the scale have not recommended or supported the development of computerized administration of the ASI, they have recognized that

adding items to extend the coverage of areas of particular clinical interest or relevance can increase the scale's clinical utility (McLellan et al. 1992*b*, 1992*c*). Some of the deficiencies in content coverage have been addressed in the most recent edition of the ASI (McLellan et al. 1992*b*), which includes additions to the AOD use, legal, and family/social areas. Accompanying software is available that can be used to score the ASI by computer, generate composite scores, and convert scores into computer-generated reviews of history and initial treatment plans. Jacobson (1989*a*) suggested that the available clinical and research evidence and the range and flexibility of the instrument's applications strongly support the ASI being included as a part of a pretreatment evaluation process.

The development and use of the Treatment Services Review (TSR) as a companion instrument to the ASI allows clinicians and administrators to determine the extent to which those problems identified at intake by the ASI have been addressed during the course of treatment (McLellan et al. 1992*a*; Alterman et al. 1993, 2000*b*). Such an evaluation of the linkage between severity of problems and service utilization is an area of relevance clinically but also could be incorporated into the broader context of quality assurance and quality improvement reviews at a programmatic level. It is possible to estimate costs of clinical services and cost offsets of providing these services from either the ASI or the TSR (French et al. 2000*a*, 2000*b*).

A second multidimensional measure with a long history of use in alcoholism treatment and research is the Alcohol Use Inventory (Wanberg et al. 1977; Wanberg and Horn 1983; Horn et al. 1987). The AUI was developed within a differential conceptual and measurement model of alcoholism. It was developed and validated on several large samples of alcoholics admitted to inpatient treatment, with subsequent developmental work on outpatient samples and groups of driving while intoxicated (DWI) offenders (Horn et al. 1987). The inventory consists of 228 items that can be administered either as a self-report questionnaire or via computer. The multiple alternative items

contribute to a set of 24 scales (17 first-order factors, 6 second-order factors, and 1 third-order factor). The AUI scales were empirically constructed from a series of factor analytic studies of large sets of items measuring aspects of the use and abuse of alcohol. They provide operational indicators for important constructs of a multiple-condition or differential theory of the use and abuse of alcohol (Wanberg and Horn 1983).

The AUI is based on a theory about how people differ in their perceptions of benefits derived from drinking, in their styles of drinking, in their ideas about the consequences of drinking, and in their thoughts about how to deal with drinking problems. Correspondingly, four broad domains are assessed by the scales: perceived benefits of drinking (e.g., mood management, social enhancement), styles or patterns of drinking (e.g., solitary vs. gregarious, continuous), physical and psychosocial consequences of drinking (e.g., symptoms of alcohol dependence, behavioral impairment), and concerns and acknowledgment of problems which reflect the individual's awareness of drinking problems and readiness to accept help for these problems.

Studies reported by the instrument authors (Horn et al. 1987) indicate that the AUI scales demonstrate good to excellent levels of internal consistency, test-retest reliability, and both concurrent and construct validity. The pattern of these findings concerning the AUI's reliability and validity has been replicated and extended by other investigators (e.g., Rohsenow 1982; Skinner and Allen 1983; Tarter et al. 1987; Isenhardt 1990). However, Chang, Lapham, and Wanberg (2001) found the reliability estimates to be lower in a sample of DUI offenders than in the normative sample.

The AUI has been used in a wide range of applications, some of which are described here. DiClemente and Hughes (1990) found that groups of alcoholics differing in their readiness to change as measured by the URICA differed across AUI subscales. Similarly, alcoholic subtypes based on personality types defined by either their Millon Clinical Multiaxial Inventory (MCMI) or their Minnesota Multiphasic Personality Inventory

profiles have been found to differ with respect to the symptoms and consequences of alcohol use as assessed by the AUI (Robyak et al. 1984; Corbisiero and Reznikoff 1991). Conversely, subtypes of alcoholics derived by cluster analyzing AUI scale scores were found to differ with respect to the personality and symptom scales of the MCMI-II (Donat 1994).

A number of more recent studies have investigated the derivation of clinical subtypes based on the AUI (Rychtarik et al. 1998, 1999; Chang et al. 2001). Rychtarik and colleagues derived and independently replicated eight subtypes, with variations within three light, moderate, and heavy drinking groups. These groups included low severity, gregarious drinkers; low severity, steady drinkers; overall moderate-low severity drinkers; moderate severity, solitary, mental enhancement drinkers; moderate severity, gregarious drinkers; steady, solitary, moderate impairment drinkers; higher severity, mental enhancement drinkers; and high severity, compulsive, mood management drinkers. These groups differed across a number of dimensions, including client background, cognitive functioning, psychosocial functioning, history of alcohol use, and pretreatment drinking behavior; they also differed in percentage of days abstinent and drinks per drinking day at a 12-month posttreatment followup. The AUI has also served as the primary dependent measure in studies examining patterns, perceived benefits, and consequences of drinking among heavy social drinkers (Rohsenow 1982), male and female alcoholics and non-alcoholics (Olenick and Chalmers 1991), and Black and White alcoholics (Robyak et al. 1989).

Although it has an extensive background as a research instrument, the AUI was developed primarily as a clinical assessment tool. Based on their psychometric analysis, Skinner and Allen (1983) suggested that the AUI has considerable promise as a differential assessment instrument. It can provide a profile across the 24 scales, reflecting the individual's unique pattern and style of use, perceived benefits derived from drinking, and the resultant physical and psychosocial consequences (Donat 1994; Rychtarik et al. 1998, 1999;

Chang et al. 2001). The individual's scale scores and profile can also be compared with normative information (Horn et al. 1987). The authors suggest that this information can help the clinician select the most appropriate treatment setting (e.g., inpatient vs. outpatient), intensity, or modality (e.g., group vs. individual therapy, behavioral vs. insight-oriented therapies). The test manual (Horn et al. 1987) provides a number of relatively specific recommendations concerning the treatment implications for scores on given scales or typologies of alcoholics based on the pattern of relationships among scales. While this seems to be one of the many potential benefits of the AUI, further research is needed to validate its utility in this treatment-matching process.

W.R. Miller and Marlatt (1984, 1987) introduced a family of structured multidimensional clinical interviews known as the Comprehensive Drinker Profile (CDP). This family includes the standard CDP and an abbreviated form (the Brief Drinker Profile), both of which are administered at intake, the Follow-up Drinker Profile to assess treatment outcome, and the Collateral Interview Form, which provides a systematic method of eliciting information about the client from a significant other. The 88 items of the CDP, which requires 1–2 hours to administer, are designed to obtain both objective and subjective data on a client's status at intake and followup in multiple domains: demographic information, drinking history (e.g., quantity, frequency, pattern, drinking settings, dependence symptoms), motivation (e.g., reasons for drinking, alcohol-related expectancies), and self-efficacy (e.g., selection of client's own treatment goals, perceived likelihood of achieving these goals). The CDP has been used to compare the characteristics of alcohol-dependent men and women at treatment entry (W.R. Miller and Cervantes 1997) and to compare the relative effectiveness and cost-effectiveness of a 5-week inpatient program and a 2-week in- and day-patient regime (Long et al. 1998).

Jacobson (1989a) noted that the style of conducting the interview, as outlined in the manual, is quite individualized and is intended

both to facilitate information gathering and to engage and motivate the client in the assessment and treatment process. The nonconfrontational, empathic, nonjudgmental, and supportive style advocated for use in the CDP interview process appears to have served as the background from which more formalized motivational interviewing techniques have emerged (W.R. Miller 1983; W.R. Miller and Rollnick 1991; W.R. Miller et al. 1993). The manual also provides a number of clinical implications associated with certain response patterns, suggesting treatment-matching recommendations, some of which are based on previous treatment outcome research and others based on clinical observations (Jacobson 1989a).

The Chemical Dependency Assessment Profile (CDAP) (Davis et al. 1989; Harrell et al. 1991) is a multidimensional, self-report clinical research questionnaire composed of 232 multiple-choice, true/false, and open-ended items. Its primary purpose is to evaluate parallel dimensions of cognitive and behavioral dysfunction related to alcohol use, use of other drugs, and mixed or polydrug abuse over a 2-month time period prior to entering treatment. The CDAP assesses chemical use history, patterns of use, use beliefs and expectancies, use symptoms, self-concept, and interpersonal relations. Content dimensions, rationally developed based on clinician card sorts of items, provide measures of quantity and frequency of use, physiological symptoms, situational stressors, antisocial behavior, interpersonal skills, affective dysfunction, attitude toward treatment, and degree of life impact. Also, three scales of expectancies concerning the anticipated effects of alcohol (tension reduction, social facilitation, and mood enhancement) were included from a measure previously developed and validated by Farber et al. (1980).

Harrell et al. (1991) found the Cronbach coefficients of internal consistency to range from 0.78 to 0.88 across the CDAP subscales. Similarly high test-retest reliabilities were found (with all but one scale exceeding 0.83) following a 1-week interval. Results of factor analyses at the scale level suggested three primary factors: (1) behavioral/

physiological (composed of the physiological symptoms, affective dysfunction, antisocial behavior, and quantity/frequency of use dimensions and the tension reduction expectancy), (2) social (composed of the interpersonal skills dimension and the social facilitation and mood enhancement expectancies), and (3) cognitive (composed of the situational stressors and the attitude toward treatment dimensions). Significant differences were found across the problem dimensions and expectancy scales among samples of alcohol abusers, polydrug abusers, and social drinkers, with the clinical groups evidencing a greater degree of dysfunction and stronger expectancies than the group of social drinkers. Harrell et al. (1991) suggested that the CDAP reliably assesses a number of dimensions thought to be important in attempting to match substance-abusing clients to treatments. Although this measure appears to be of potential use in clinical practice, there is no recent evidence in the literature concerning its further development.

A relatively new instrument is the Minnesota Substance Abuse Problems Scale (MSAPS) (Westermeyer et al. 1998). This is a semi-structured interview protocol that attempts to assess a broad range of psychological, behavioral, and social problems associated with AOD use. It was designed to be completed within a 30-minute interview. Three factors were derived from a factor analysis of the 37 items of the scale: the Psychiatric-Behavioral Problems scale (14 items), the Social Problems scale (11 items), and the Addictive Use Symptoms scale (12 items). The Cronbach alpha measures of internal consistency were 0.83, 0.82, and 0.79, respectively. The pattern of correlations with measures of psychological distress, depression, anxiety, social problems, and substance use and problems suggests that the MSAPS scales have a high degree of concurrent validity.

Another relatively new instrument is the Personal Experience Inventory for Adults (PEI-A) (Winters 1999). The measure has two parts. The first part, Problem Severity, consists of 120 questions organized around 10 problem severity scales,

3 validity scales, and AOD use consumption characteristics (e.g., quantity, frequency, duration, age of onset); an additional research scale assesses receptivity to treatment. The second part, Psychosocial Problems, consists of 150 items distributed across 8 personal risk adjustment scales, 3 environmental scales, 10 problem screens, and 2 validity scales. Adequate to good internal consistency indices were obtained. The median alpha levels for the 10 Problem Severity scales were 0.89, 0.81 for the 11 Psychosocial Problems scales, and 0.63 for the 5 validity scales. One-week test-retest reliability was also acceptable. The scales demonstrated a high level of concurrent validity when correlated with measures of psychopathology and psychological functioning, alcohol dependence, reports of clients' behavior as provided by a significant other, DSM-III-R diagnoses (American Psychiatric Association 1987), and referral recommendations (no treatment, outpatient treatment, or residential treatment).

MEASURES TO ASSIST IN DIFFERENTIAL TREATMENT PLACEMENT

Client-treatment matching attempts to place the client in those treatments most appropriate to his or her needs. There are a number of dimensions on which treatments may vary and which need to be considered in attempting to make an appropriate referral or match (Marlatt 1988; W.R. Miller 1989*b*; Institute of Medicine 1990; Donovan et al. 1994; Gastfriend and McLellan 1997). Among these dimensions are treatment setting (e.g., inpatient, residential, outpatient), treatment intensity, specific treatment modalities, and the degree of therapeutic structure. A number of possible variables may interact with these dimensions to lead to differential outcomes, making the clinician's task more difficult.

The American Society of Addiction Medicine (ASAM) has established a set of rationally developed criteria for admission, placement, discharge, and transfer of individuals with alcohol problems to different levels of care (Hoffman et al. 1987, 1991;

Mee-Lee et al. 2001). These criteria, which are based on a consensus of treatment specialists, are meant to facilitate the matching of patients to the most appropriate level of care (Gastfriend et al. 2000). They are also assumed to facilitate clinical decisions that will lead to increased quality of care while maintaining fiscal accountability (e.g., managed care considerations). Separate criteria have been developed for adults and adolescents. The criteria are based on an assessment of six general problem areas: acute intoxication and/or withdrawal potential; biomedical conditions and complications; emotional, behavioral, or cognitive conditions or complications; readiness to change (previously treatment acceptance or resistance); relapse, continued use, or continued problem potential; and recovery/living environment. From this assessment, one of four levels of care is selected as the most appropriate: outpatient treatment of less than 9 hours per week, intensive outpatient or partial hospitalization with a minimum of 9 hours per week, medically monitored intensive inpatient treatment, or medically managed inpatient treatment.

Despite potential limitations in the ASAM placement criteria (McKay et al. 1997), these criteria have been used increasingly in a variety of States and clinical settings (e.g., Gondolf et al. 1996; Gregoire 2000; Heatherton 2000). Further, there is increasing evidence concerning their validity and clinical, administrative, and fiscal utility (Turner et al. 1999).

A pair of complementary instruments, one interviewer-administered and the other a self-report questionnaire, have been developed to provide a standardized assessment of the dimensions included in the ASAM criteria: the Recovery Attitude and Treatment Evaluator (RAATE) Clinical Evaluation (CE) and Questionnaire I (QI) (Mee-Lee 1988; Mee-Lee et al. 1992; Smith et al. 1992, 1995). The RAATE-CE and RAATE-QI instruments were designed to assist in placing patients into the appropriate level of care at admission, making continued stay or transfer decisions during treatment (utilization review), and documenting appropriateness of discharge.

The RAATE-CE is a 35-item structured clinical interview, which may be administered by a trained technician or counselor in 20–30 minutes. It uses five scales to measure the constructs of resistance to treatment (current treatment/recovery motivation and denial), resistance to continuing care (future and long-term treatment/recovery motivation and denial), severity of biomedical problems, severity of psychiatric/psychological problems, and social/environmental support (the extent to which family, friends, and others in the individual's home setting are supportive of or detrimental to recovery). Severity profiles, based on a 5-point rating scale, can be derived for each of these areas and can be used to determine initial treatment matching, admission and placement, continued stay, and treatment planning decisions. The interrater reliability on the severity ratings was higher with raters having more clinical expertise than with less skilled clinicians (Mee-Lee 1988). The lowest levels of agreement were for the dimensions assessing the acuity of biomedical and psychiatric problems. These initial severity ratings have subsequently been revised to be less reliant on clinical judgment; the severity scale has been changed to a 4-point rating, and profiles are based on standard scores that are based on a rational expert judgment approach (Smith et al. 1992). Smith et al. (1992) found that the RAATE-CE's average interrater reliability (across three experienced nonmedical chemical dependency clinicians) ranged from 0.59 to 0.77, and the internal consistency reliabilities ranged from 0.65 to 0.87. The lowest level of interrater reliability was again associated with the severity of psychiatric problems; however, the biomedical acuity scale had the highest level of agreement among the raters.

The RAATE-QI is a 94-item true/false self-report questionnaire, taking approximately 30–45 minutes to complete. It was designed to be compatible with and assess the same five underlying dimensions as the RAATE-CE from the patient's point of view (Smith et al. 1995). In addition, an experimental validity scale, composed of infrequently endorsed items, attempts to detect patients who either are in

extreme denial or who are responding in a pattern suggestive of falsification. Scores from the five primary scales are converted to standard scores and profiled with respect to problem severity. Also, there is a conversion table available to translate client severity scores to ASAM criteria. The RAATE-QI internal consistency reliabilities ranged from 0.63 to 0.78, and the test-retest reliabilities (over a 24-hour period) ranged from 0.73 to 0.87.

Najavits and colleagues (1997) evaluated the interrater reliability of the RAATE-CE. Both professional-level raters (e.g., master's degree or above) and nonprofessional interviewers administered the measure. A high level of agreement was found across all the raters, although the reliability was somewhat higher for the professional raters. Internal consistency coefficients ranged from 0.45 for the resistance to treatment scale to 0.71 for the social and environmental support scale. Exploratory factor analysis led to a four-factor solution. These factors to a large extent mirrored the a priori rational subscales of the RAATE. The factors were labeled psychological problems, acceptance of alcohol/drug problems, family and environmental problems, and biomedical problems. Gastfriend and colleagues (1995) also found evidence for the validity of the RAATE-CE, with scores on the RAATE subscales being predictive of the level of care to which alcoholics in a detoxification unit were subsequently referred. Britt et al. (1995) investigated the usefulness of the RAATE in relation to attrition from treatment for pregnant and postpartum women. They found no differences across three groups (completers, dropouts, and administrative discharges) on the RAATE-CE. However, on the self-report RAATE, it was found that those women who completed the treatment had lower ratings on resistance to treatment and continuing care; those who completed less than 1 month of treatment had the highest resistance scores.

The COMPASS (Craig and Craig 1988) is an interesting and potentially useful multidimensional instrument for both the general purpose of assessing adult or adolescent alcohol-involved

individuals and the specific purpose of assisting the clinician in making treatment referral and placement decisions. The scale is a 98-item, direct question, self-report questionnaire designed to measure the frequency of substance abuse and personal adjustment problems experienced over the last 6-month time period. The focus is on assessing the frequency of occurrence of behaviors associated with substance use rather than on issues such as quantity and frequency of drinking or other substance use. The scale assesses two broad dimensions, each with a number of rationally developed subscales. The first area consists of four substance abuse scales assessing dimensions consistent with DSM-III criteria of substance use disorders: psychological dependence (frequency of drinking alcohol for its actual or expected effects in assisting the person cope with various life situations); abusive, secretive, and irresponsible use (how frequently negative consequences of excessive drinking are experienced); interference due to use (frequency of alcohol use negatively affecting function in a variety of life areas); and signs of withdrawal. The second area includes three personal adjustment scales: frustration problems, interpersonal problems, and self-image problems. Additionally, a number of validity scales are included to identify response patterns suggestive of defensiveness, inconsistency, or minimization. Based on data provided in the COMPASS manual (Craig and Craig 1988), test-retest reliability over a 7-day interval was high, ranging from 0.89 to 0.91 for the substance abuse scales and from 0.78 to 0.86 for the personal adjustment scales. Significant differences between a sample of substance abusers in an inpatient treatment program and a general population sample who had reported using at least one psychoactive drug over the previous 6 months suggest discriminant validity of the scale.

The COMPASS is presented as a measure useful to treatment selection. It takes into account both the severity of substance abuse problems and the severity of personal adjustment problems. The total scores from the substance abuse and personal adjustment problems dimensions are entered onto

a referral guide. Based on the severity of the individual's scores on these two dimensions, specific recommendations are made to refer the individual to substance abuse information/education classes, outpatient counseling, intensive outpatient treatment, inpatient hospitalization, or inpatient hospitalization with substantial structured aftercare. The COMPASS appears to have potential clinical and research utility, but it needs considerably more developmental work and psychometric research to extend the test developers' initial work on reliability, concurrent validity with other relevant measures, and predictive validity with respect to the differential effectiveness of treatments to which individuals are assigned via the referral guide versus other clinical methods of treatment matching.

SUMMARY

This chapter's review of instruments potentially helpful in the treatment planning process should not be seen as exhaustive. Other measures of similar assessment domains likely exist and may be useful to the clinician. There are also a number of other important assessment domains that were not included in this review. Examples include affective states, such as anxiety and depression; cognitive/neuropsychological functioning; the concurrent use of other drugs with alcohol; the presence of comorbid major (Axis I) psychiatric disorders and personality disorders (Axis II); and perceived barriers to treatment (L.C. Sobell et al. 1994a). These domains clearly should be considered for inclusion in clinical assessment protocols, since these areas have been shown to affect the course of treatment and recovery.

For a comprehensive and thorough treatment plan to be developed, information derived from the assessment domains reviewed above must be integrated with that derived from the diagnostic process and the assessment of the parameters of drinking behavior. While the assessment involved in diagnosis will allow the determination of the client's meeting certain criteria, it does not

provide much information about the overall parameters of the target behaviors, namely alcohol consumption or other drug use, or other psychosocial factors. The role of assessment goes beyond that of classifying the individual's problem diagnostically to providing a more extensive picture of other areas of life functioning. A major function in initial assessment and at followup is to determine the individual's general quality of life (Longabaugh et al. 1994).

Shiffman (1989) suggested that three levels of information are necessary in order to gain a sense of the individual's "relapse proneness," and thus are relevant to treatment planning. These fall along a continuum of their proximity, in both time and influence, to the probability of relapse. The first of these represents general personal characteristics, such as demographic variables, personality factors, degree of dependence on the addictive behavior, and family history of addictions. Somewhat closer in time and influence are "background variables" likely to be experienced during the time of treatment and maintenance, such as the degree of personal, professional, and/or interpersonal stress and the availability of individuals supportive of the positive changes being implemented and of continued abstinence. The third and most proximal level includes those factors most directly associated with high-risk relapse situations. Examples of this category include the perceived self-efficacy or level of confidence that one will not relapse when encountering situations involving risk factors (e.g., social pressure to use, interpersonal conflict, depression, urges and temptation [e.g., Annis and Davis 1988a, 1988b]), the expectations that one holds about the positive outcomes associated with the addictive behavior (e.g., Goldman et al. 1987), and the coping skills available to deal specifically with the temptations to engage in the addictive behavior (Litman 1986; Shiffman 1989). Shiffman (1989) indicated that the more distal characteristics provide the background against which the relative risk of more proximal factors is moderated by their influence on the person's appraisal of the situational factors in the relapse situation.

An important component of personal resources that needs to be considered in the assessment process is the individual's more generalized coping and problem-solving abilities. DeNelsky and Boat (1986) provided a model of psychological assessment, diagnosis, and treatment that is based on the individual's coping skills and deficits in dealing with interpersonal relationships, thoughts, and feelings; approaches to oneself and life; and the ability to sustain goal-directed effort. The availability of such skills is seen as important in dealing with problems that can be anticipated to occur during the course of the treatment and maintenance phases and, as such, should have an effect on the probability of relapse.

The assessment process should be comprehensive; however, from a practical perspective, one also needs to be relatively parsimonious, given the array of areas that could be assessed (Donovan 1988; Institute of Medicine 1990; L.C. Sobell et al. 1994a, 1994b). A number of different strategies can be used to provide a framework and direction for the assessment process in each of the systems and domains noted above. The first is to use a sequential approach, in which a less intensive screening of a broad range of areas is conducted; those areas noted as being potentially problematic can be pursued further with more intensive and specialized assessment (Skinner 1988; Institute of Medicine 1990). The second is a form of clinical hypothesis testing, in which the clinician formulates hypotheses about the individual's behavior based on his or her theoretical perspective and collects information through the assessment process to test the apparent validity of these hypotheses (Shaffer and Kauffman 1985; Shaffer and Neuhaus 1985; Shaffer 1986). Each of these approaches is meant to provide information about the most critical factors needed to determine the assignment of the client to treatment.

Assessment is the initial step in the longer term process of therapy and behavior change. Its functions extend well beyond that of information gathering. The hope is that the clinician, through the assessment process, will motivate the individual, helping him or her move from the point of

contemplating the need to change, through the action phase of change, and into a productive maintenance of the desired new behavior pattern. It is also hoped that the clinician can use the results from the assessment process to facilitate the selection of the most appropriate treatment intensity, modality, and setting and in so doing maximize the chances of success for the client (Institute of Medicine 1990; Connors et al. 1994).

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