

**SAQ**

**SUBSTANCE ABUSE QUESTIONNAIRE:**

**An Inventory of Scientific Findings**

**SAQ**

**SAQ- Short Form**

**SAQ-Adult Probation II**

**SAQ-Adult Probation III**

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## PREFACE

Substance Abuse Questionnaire (SAQ) research and development began in 1980 and has continued to the present. The SAQ evolved into the SAQ-Adult Probation, SAQ-Adult Probation II and SAQ-Adult Probation III. **For conciseness, the acronym SAQ will be used interchangeably for all SAQ versions.** The copyrighted SAQ database ensures continued research and development. The SAQ is a brief, easily administered and automated (computer scored) test that is designed for adult substance (alcohol and other drugs) abuse assessment. It includes true/false and multiple choice items and can be completed in 30 minutes. The SAQ contains six empirically based scales: Truthfulness, Alcohol, Drug, Aggressivity, Resistance and Stress Coping Abilities. Two additional scales -- **Antisocial** and **Violence** were added in 1994. The SAQ has been researched on college students, outpatients, inpatients, job applicants, chemical dependency clients, probationers and others.

The SAQ report explains client's attained scores and makes specific intervention and treatment recommendations. It also presents Truth-Corrected scores, significant items, a concise "structured interview" and much more. The SAQ-Adult Probation report is designed for adult probation and parole use. In addition to treatment recommendations, this report presents specific probation recommendations. It is a risk and needs assessment instrument. The SAQ-Adult Probation has been researched on adult probationers. Later, an Antisocial Scale and Violence Scale were added to the **SAQ-Adult Probation** and this version is called the **SAQ-Adult Probation II**, which has been further refined into the **SAQ-Adult Probation III**. This document summarizes much of the SAQ (and its different versions) research.

The SAQ has demonstrated reliability, validity and accuracy. It correlates impressively with both experienced staff judgment and other recognized tests. The **SAQ-Short Form** was completed in 1991. The SAQ-Short Form is used with the reading impaired, in high volume testing settings and as an alternative retest instrument. SAQ-Short Form scales correlate significantly and in expected directions with corresponding SAQ scales.

SAQ tests can be given directly on the computer screen or in paper-pencil test booklet format. All tests are computer scored on-site. SAQ reports are available within three minutes of test completion. Diskettes contain all of the software needed to score tests, build a database and print reports. The SAQ Windows version also has an optional human voice audio presentation that presents the test on the computer screen with accompanying auditory presentation of the text seen on the computer screen.

SAQ users are typically not clinicians or diagnosticians. Their role is usually to identify client risk, substance (alcohol and other drugs) abuse and client need prior to recommending intervention, supervision levels and/or treatment. The SAQ and its versions (SAQ-Adult Probation, SAQ-Adult Probation II, and SAQ-Adult Probation III) are to be used in conjunction with a review of available records and respondent interview. No decision or diagnosis should be based solely on SAQ results. Client assessment is not to be taken lightly as the decisions made can be vitally important as they effect peoples lives. SAQ research is ongoing in nature, so that evaluators can be provided with the most accurate information possible.

## **INTRODUCTION**

### **SUBSTANCE ABUSE QUESTIONNAIRE (SAQ)**

Increased public awareness of substance (alcohol and other drugs) abuse as a nationwide health problem has clarified the need for identification and treatment of these disorders. Rising health care costs have placed increasing responsibilities on all persons working with substance abusers. Workers in the field must now document and substantiate their intervention and treatment. Patients, clients, their families, probation departments, the courts, diversion programs, corrections programs and funding agencies are now requiring substantiation and documentation of staff decision making. Substance (alcohol and other drugs) abuse and dependency problems must now be measured in terms of degree of severity, with quantitative statements substantiating intervention and treatment.

The Substance Abuse Questionnaire (SAQ) and subsequent versions were developed to help meet these needs. The SAQ is designed for adult chemical dependency and substance (alcohol and other drugs) abuse assessment. The SAQ is particularly useful in intake-referral settings, inpatient and outpatient treatment programs, court-related assessments, diversion programs and probation departments. The SAQ-Adult Probation and Versions II and III are variations of the SAQ report and are designed for adult probation department offender assessment. Although the SAQ and the SAQ-Adult Probation II and III reports differ, they are based on the same core of test items and scales. In these reports quantitative information is obtained by empirically based measures (scales) which independently generate risk (percentile) scores. Scale development is based upon nearly 20 years of research. In addition, explanatory paragraphs describe attained scores and contain specific score-related recommendations. And each scale is presented graphically in the SAQ profile.

### **SUBSTANCE ABUSE QUESTIONNAIRE SAQ-ADULT PROBATION MEASURES OR SCALES**

1. Truthfulness Scale
2. Alcohol Scale
3. Drug Scale
4. Aggressiveness Scale
5. Resistance Scale\*\*
6. Stress Coping Abilities Scale
- \*7. Antisocial Scale
- \*8. Violence Scale

**\*NOTE:** the Antisocial and Violence Scales are included in the SAQ-Adult Probation II and III. And the Resistance Scale\*\* was deleted from the SAQ-Adult Probation III.

The SAQ is a brief, easily administered and interpreted substance abuse screening or assessment instrument. It is particularly useful in hospitals, chemical dependency treatment programs, referral agencies, outpatient counseling programs, community clinics, community corrections, probation departments and criminal justice programs. The SAQ and SAQ-Adult Probation represent the latest developments in psychometric techniques and computerized technology. The SAQ can be administered on a computer (IBM-PC compatibles) screen or by using paper-pencil test booklets. Regardless of how

the SAQ is administered, all tests are scored and interpreted with a computer which generates SAQ reports.

The SAQ requires approximately 30 minutes for completion and is appropriate for high school ages through adulthood. The SAQ is composed of True-False and multiple-choice items. It can be administered individually or in groups. The language is direct, non-offensive and uncomplicated. Automated scoring and interpretive procedures help insure objectivity and accuracy. The SAQ is to be used in conjunction with a review of available records, a focused interview and experienced staff judgment.

The SAQ was designed to provide carefully developed measures (called scales) of several behavioral patterns and traits of interest to those working with substance abusers. The measures (scales) chosen for inclusion in the SAQ further the understanding of the substance (alcohol and other drugs) abuser. In addition, they provide important information on the clients test taking attitude, emotional/behavioral adjustment, and much more. And the Antisocial and Violence Scales were added in Versions II and III of the SAQ.

## UNIQUE FEATURES

**Truth Correction:** A sophisticated psychometric technique permitted by computerized technology involves "truth-corrected" scores which are calculated individually for SAQ scales. Since it would be naive to assume everybody responds truthfully while completing any self-report test, the Truthfulness Scale was developed. **The Truthfulness Scale establishes how honest or truthful a person is while completing the SAQ.** Correlations between the Truthfulness Scale and all other scales permit identification of error variance associated with untruthfulness. This error variance can then be added back into scale scores, resulting in more accurate "Truth-Corrected" scores. Unidentified denial or untruthfulness produces inaccurate and distorted results. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide. Truth-Corrected scores are more accurate than raw scores.

**Risk Range Percentile Scores:** Each SAQ scale is scored independently of the other scales. SAQ scale scoring equations combine client pattern of responding to scale items, Truthfulness Scale and prior history that is contained on the SAQ answer sheet. The Truthfulness Scale applies a truth-correction factor so that each scale score is referred to as a Truth-Corrected scale score. These Truth-Corrected scale scores are converted to the percentile scores that are reported in the client SAQ report.

SAQ scale percentile scores represent "degree of severity." Degree of severity is defined as follows: **Low Risk** (zero to 39th percentile), **Medium Risk** (40th to 69th percentile), **Problem Risk** (70th to 89th percentile), and **Severe Problem** or **Maximum Risk** (90th to 100th percentile). Severe problems include dependency.

Standardization data is statistically analyzed where percentile scale scores are derived from obtained scale scores from offender populations. The cumulative distributions of truth-corrected scale scores determine the cut-off scores for each of the four risk range categories. Individual scale score calculations are automatically performed and results are presented in the SAQ report numerically (percentile), by attained risk category (narrative) and graphically (SAQ profile).

**SAQ Database:** Every time an SAQ is scored the test data is automatically stored on the diskette for inclusion in the SAQ database. This applies to SAQ diskettes used anywhere in the United States and Canada. When the preset number of tests are administered (or used up) on an SAQ diskette, the diskette is returned for replacement and the test data contained on these used diskettes is input, in a confidential (no names) manner, into the SAQ database for later analysis. This database is statistically analyzed annually, at which time future SAQ diskettes are adjusted to reflect demographic changes or trends that might have occurred. This unique and proprietary database also enables the formulation of annual summary reports that are descriptive of the populations tested. Summary reports provide important testing information, for budgeting, planning, management and program description.

**Confidentiality (Delete Client Names):** Many agencies and programs are rightfully concerned about protecting their client's confidentiality. The proprietary Delete Client Names option is provided to allow deletion of client names from test diskettes prior to their being returned to Risk & Needs Assessment. This is optional and once the names have been deleted they are gone and cannot be retrieved. Deleting client names does not delete demographic information or test data. It only deletes the client names when the option is used. The option is available at any time and can be used whether the diskette is full or not. Once the client names are deleted there can be no further editing of the client names. This ensures client confidentiality.

## **DESCRIPTION OF EMPIRICALLY BASED MEASURES OR SCALES**

SAQ scales were developed from large item pools. Initial item selection was a rational process based upon clearly understood definitions of each scale. Subsequently, items and scales were analyzed for final test selection. The original pool of potential test items was analyzed and the items with the best statistical properties were retained. **Final test and item selection was based on each item's statistical properties.** It is important that users of the SAQ familiarize themselves with the definition of each scale. For that purpose a description of each SAQ scale follows.

**Truthfulness Scale:** This scale is a measure of the truthfulness of the client while completing the SAQ. Obtained scores are categorized in terms of percentiles and risk levels, i.e., Low Risk, Medium Risk, Problem Risk, and Severe Problem (Maximum) Risk.

All interview and self-report information is subject to the dangers of untrue answers due to defensiveness, guardedness or deliberate falsification. The straightforward nature of any self-report questionnaire may appear to some people as intrusive -- giving rise to denial, faking and even distortion. The Truthfulness Scale identifies these self-protective, recalcitrant and guarded people who minimize or even conceal information. It is equally important to establish that the client understood the test items he or she was responding to, and the Truthfulness Scale also helps identify the reading impaired.

The Truthfulness Scale goes beyond establishing the truthfulness of the client. The correlation between the Truthfulness Scale and each other scale has been established, error variance associated with untruthfulness has been identified, and this error variance measure is added back into "truth-corrected" scale scores. **Truth-corrected scale scores are more accurate than raw scores.** A high Truthfulness Scale score (at or above the 90th percentile) invalidates all scale scores.

**Alcohol Scale:** This empirically based scale is a measure of a person having alcohol related problems. Obtained scores are categorized in terms of percentiles and risk levels (i.e., Low Risk, Medium Risk,

Problem Risk and Severe Problem (Maximum) Risk). An elevated score at or above the 90th percentile identifies dependency and severe problems.

Alcoholism is a significant problem in our society. Woolfolk and Richardson note in their book, "Stress, Sanity and Survival" that alcoholism costs industry over \$15.6 billion annually due to absenteeism and medical expenses. And over two decades later these costs have increased substantially. The harm associated with alcohol abuse -- mental, emotional, and physical -- is well documented. The costs associated with alcohol-related problems are staggering.

Alcoholism has been empirically related to arrest records, hospitalizations, illicit substance (drugs) abuse, emotional problems, driving records and stress. Experienced staff are aware of alcoholics' job performance problems, impaired interpersonal relationships and poor stress coping abilities.

It is apparent that most people have been exposed to alcohol in our society. Frequency and magnitude of alcohol use or severity of abuse are important factors. It is important to assess or measure the degree of severity of alcohol abuse, including dependency. This is done with the Alcohol Scale.

**Drug Scale:** This empirically based scale is a measure of a person having drug abuse related problems. Obtained scores are categorized in terms of percentiles and risk levels (i.e., Low Risk, Medium Risk, Problem Risk and Severe Problem (Maximum Risk)).

A drug may be broadly defined as any chemical substance that affects living processes. This definition includes alcohol as well as marijuana, cocaine, crack, ice, heroin, opium, amphetamines, barbiturates, LSD, etc. An important distinction between these substances is legality. The major licit (or legal) drugs are caffeine, nicotine and alcohol. They are generally socially approved and legally marketed substances.

Increased public awareness of illicit (or illegal) substance use and abuse as well as its effects on peoples' lives is a growing concern. The burgeoning awareness of marijuana and cocaine abuse is but one example of this concern about illicit substance use and abuse. Since both licit and illicit substances, as discussed herein, are defined as "drugs," correlations between alcohol and drug abuse measures have been shown to exist. To discriminate between these groups in the SAQ the licit versus illicit dichotomy is emphasized.

It is apparent that many people have been exposed to drugs in our society. Frequency and magnitude of drug use or abuse are important factors. It is important to assess or measure the degree of severity of drug abuse including dependency. This is done with the Drug Scale.

**Aggressiveness Scale:** This empirically based scale is a measure of the probability of a person being inappropriately aggressive. Obtained scores are categorized in terms of percentiles and risk levels (i.e., Low Risk, Medium Risk, Problem Risk and Severe Problem (Maximum Risk)).

Studies such as those conducted at the University of Michigan indicate that drivers can be classified on a risk potential index as safe drivers or high risk drivers by monitoring inappropriate driving behavior such as moving violations, arrests, etc. Mortimer, et al. (1971)<sup>1</sup> concluded that alcoholics were significantly more involved in such offenses. Selzer (1971)<sup>2</sup> concluded in his research that for maximal screening effectiveness, test results and arrest records be used jointly. More recently (1984), the National Council on Alcoholism pointed out that "research results indicated driver's potential for risk-taking behavior may exist independently of his or her use of alcohol, and manifest itself as, aggressive irresponsibility."

Continuing (NCA Newsletter, 1984), “positive correlations were found between high-risk groups and a number of other enforcement-related variables. Among these are non-traffic related drinking offenses, violent crimes, social, and fraudulent offenses, non-violent crimes, larceny, etc.”

These studies emphasize the importance of a multi-dimensional approach to assessing aggressivity-related problems. A person's aggressivity (e.g., acting out potential) may be related to substance abuse, overall adjustment, emotional problems, traits such as aggressiveness or risk-taking, and stress-coping abilities. With these relationships in mind, it is important to explore these areas of inquiry to better understand the substance (alcohol and other drugs) abuser. This is done with the Aggressiveness Scale.

**Resistance Scale:** This empirically based scale is a measure of person's self-reported willingness (or resistance) to work with others in a cooperative and non-defensive environment. Obtained scores are categorized in terms of percentiles and risk levels (i.e., Low Risk, Medium Risk, Problem Risk and Severe Problem (Maximum) Risk). Resistance is defined in terms of a person's willingness (or resistance) to positively work with or relate to others. It incorporates communication, attitude toward others, acceptance, mutual assistance and affiliation activation. The Resistance Scale identifies negative interpersonal relationships, negative attitudes toward authority figures and a high propensity toward “people problems.”

It is important to measure the degree of severity of resistance because of its broad applicability in our lives. Our attitude toward others influences relationships at home, work, in our families and social lives. Resistance also is an important construct to be addressed in diversion programs, probation departments as well as chemical dependency treatment programs. For example, staff-client relationships, peer relationships, group participation, compliance, cooperation, etc., are important areas of inquiry. These relationships are very important in both probation and treatment settings.

**Stress Coping Abilities Scale:** This empirically based scale is a measure of a person's experienced stress level in comparison to that person's ability to cope with stress. Obtained scores are categorized in terms of percentiles and risk levels (i.e., Low Risk, Medium Risk, Problem Risk and Severe Problem (Maximum) Risk).

Stress is an increasingly significant concept in our society. The National Institute for Occupational Safety and Health (NIOSH) recently evaluated the health records of 22,000 workers in 130 organizations. **Their conclusion: stress affects workers in all types of job levels; unskilled laborers are equally susceptible, as are top-line executives.**

How effectively individuals cope with stress determines whether or not stress is a significant factor in their lives. Two concepts, stress and coping abilities dominate the literature on stress. The Stress Coping Abilities Scale includes measures of both of these concepts in its Stress Quotient (SQ) equation. The better an individual's coping skills, compared to their amount of experienced stress, the higher the SQ score. In contrast, if an individual is experiencing more stress than he or she can cope with, the lower the SQ score. **In the SAQ profile, Stress Quotient (SQ) scores were inverted to conform to the established risk levels ranging from low to high risk categories.**

Stress exacerbates other symptoms of emotional, attitudinal, interpersonal and substance abuse related problems. Frequency and magnitude of impaired stress coping abilities are important factors in understanding the substance abuser. **A Stress Coping Abilities Scale score at or above the 90th percentile is typically indicative of a diagnosable mental health problem.** It is important to assess or

measure the degree of severity of stress coping ability problems. This is done with the Stress Coping Abilities Scale.

**Antisocial Scale:** This term refers to those chronically antisocial individuals who seem to lack the capacity to form significant attachments or loyalties with others or groups. They are often callous, given to immediate pleasure, appear devoid of a sense of responsibility, and fail to learn from experience. They seem to lack in social judgment. Such individuals often rationalize their behavior in a “seemingly logical” manner and can be very convincing to others. Obtained scores are categorized in terms of percentiles and risk levels (i.e., Low Risk, Medium Risk, Problem Risk and Severe Problem (Maximum) Risk).

Underlying characteristics often include personal self-aggrandizement, acquisition of money and material goods, and the control of others. Antisocial individuals are typically selfish, affectionless, ungrateful, narcissistic, and sometimes exhibitionistic. They can be egocentric, “demanding a lot and giving little.” Their conduct often appears hostile from a social standpoint, and they show few feelings of anxiety, guilt, or remorse. They are often restless. The defect, or lacunae, as it has been termed, may be limited to a general style of behavior--such as stealing, running away, or promiscuity. Antisocial individuals show a moral or ethical blunting and a lack of sympathy or concern for others. They lack a sense of responsibility, engage in purposeless lying, and manifest denial as well as projection.

**Violence Scale:** This scale measures the client’s use of physical force to injure, damage, or destroy. It identifies individuals that are dangerous to themselves and others. Obtained scores are categorized in terms of percentiles and risk levels (i.e., Low Risk, Medium Risk, Problem Risk and Severe Problem (Maximum) Risk).

An ever-present concern when evaluating offenders is lethality or violence potential. Violence is a significant problem in our society. The harm associated with violence--mental, emotional, and physical--is often under-reported by victims and family. And, there are some people who are “violence prone.” They are sensitive to perceived criticism, seek revenge, and overtly try to hurt, harm, or even destroy.

**As noted earlier, the SAQ-Adult Probation and Versions II and III are variations of the SAQ.** The SAQ report is designed for counseling and substance (alcohol and other drugs) abuse treatment settings. The SAQ-Adult Probation (and Version II and II) report is designed for diversion programs and adult probation department use. **Throughout the remainder of this document the term SAQ will be used interchangeably with SAQ-Adult Probation and Versions II and III.**

SAQ items are personal. The straightforward nature of any self-report questionnaire may appear to some people as intrusive. Although perhaps discomforting to some, such criticism is directly related to the SAQ’s strength in assessing substance abuse and related problems objectively. Information deemed personal by some is necessary in an empirical (as opposed to rational) approach to assessment. A similar type of criticism (intrusiveness) has been leveled at the MMPI in the past.

## RESEARCH STUDIES

SAQ validation studies were conducted with established Minnesota Multiphasic Personality Inventory (MMPI) scales as well as Polygraph examinations and other reports. Reliability and validity studies have been conducted on substance abuse inpatients, outpatients, college students, job applicants, defendants, diversion program attendees, probationers, inmates and counseling patients. The SAQ-Adult Probation has been studied in many adult probation departments and court related settings.

Empirically based SAQ scales (or measures) were developed by statistically relating scale item configurations to known substance (alcohol and other drugs) abuse groups. The SAQ was then normed against an identified substance abuse population. As the SAQ-Adult Probation evolved, it was standardized and normed on adult probation populations throughout the United States. A summary of much of this SAQ research follows.

This document first presents the earlier studies that investigated the Stress Coping Abilities Scale. Validation studies are presented next followed by reliability studies. Within the validity and reliability sections, the research represented in this document is reported chronologically -- as it occurred. Chronological presentation enables the reader to follow the evolution of the SAQ into a state-of-the-art assessment instrument. More recent studies (toward the end of this document) are most representative of current SAQ statistics.

SAQ risk level classification categories are presented below. These percentages are based on SAQ respondent scale scores. This permits comparison of predicted percentages with obtained percentages for each risk range category.

<i>PREDICTED RISK RANGE PERCENTAGES FOR EACH SAQ SCALE</i>		
<b>RISK CATEGORY</b>	<b>RISK RANGE</b>	<b>PREDICTED PERCENTAGE</b>
Low Risk	zero to 39th percentile	39%
Medium Risk	40 to 69th percentile	30%
Problem Risk	70 to 89th percentile	20%
Severe Problem	90 to 100th percentile	11%

Predicted percentages for each scales risk range category can be compared to actually attained percentile scores. This comparison helps understand the accuracy of the SAQ.

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<sup>1</sup>Mortimer, R.G., Filkins, L.D., and Lower, J.S. 1971 Court Procedures for identifying problem drinkers: Phase 11 (U.S. Department of Transportation, Report No. HSRI 71-120, HUF-1 1) Ann Arbor, Michigan: University of Michigan Highway Safety Research Institute.

<sup>2</sup>Selzer, M.L 1971. Differential risk among alcoholic drivers. Proceedings of the American Association for Automotive Medicine 14: 107-213.

## STRESS QUOTIENT

The Stress Quotient (SQ) or Stress Coping Abilities Scale is based upon the following mathematical equation:

$$SQ = CS/S \times k$$

The Stress Quotient (SQ) scale is a numerical value representing a person's ability to handle or cope with stress relative to their amount of experienced stress. CS (Coping Skill) refers to a person's ability to cope with stress. S (Stress) refers to experienced stress. k (Constant) represents a constant value in the SQ equation to establish SQ score ranges. The SQ includes measures of both stress and coping skills in the derivation of the Stress Quotient (SQ) score. The better an individual's coping skills, compared to the amount of experienced stress, the higher the SQ score.

The Stress Quotient (SQ) scale equation represents empirically verifiable relationships. The SQ scale (and its individual components) lends itself to research. Nine studies were conducted to investigate the validity and reliability of the Stress Quotient or Stress Coping Abilities Scale.

**Validation Study 1:** This study was conducted (1980) to compare SQ between High Stress and Low Stress groups. The High Stress group (N=10) was comprised of 5 males and 5 females. Their average age was 39. Subjects for the High Stress group were randomly selected from outpatients seeking treatment for stress. The Low Stress group (N=10) was comprised of 5 males and 5 females (average age 38.7) randomly selected from persons not involved in treatment for stress. High Stress group SQ scores ranged from 32 to 97, with a mean of 64.2. Low Stress group SQ scores ranged from 82 to 156, with a mean of 115.7. The t-test statistical analysis of the difference between the means of the two groups indicated that the High Stress group had significantly higher SQ scores than the Low Stress group ( $t = 4.9, p < .001$ ). This study shows that the SQ or Stress Coping Abilities Scale is a valid measure of stress coping. The Stress Coping Abilities Scale significantly discriminates between high stress individuals and low stress individuals.

**Validation Study 2:** This study (1980) evaluated the relationship between the SQ scale and two criterion measures: Taylor Manifest Anxiety Scale and Cornell Index. These two measures have been shown to be valid measures of anxiety and neuroticism, respectively. If the SQ or Stress Coping Abilities Scale is correlated with these measures it would indicate that the SQ or Stress Coping Abilities Scale is a valid measure. In the Taylor Manifest Anxiety Scale, high scores indicate a high level of anxiety. Similarly, in the Cornell Index high scores indicate neuroticism. Negative correlation coefficients between the two measures and the SQ were expected because high SQ scores indicate good stress coping abilities. The three tests were administered to forty-three (43) subjects selected from the general population. There were 21 males and 22 females ranging in age from 15 to 64 years. Utilizing a product-moment correlation, SQ scores correlated  $-.70$  with the Taylor Manifest Anxiety Scale and  $-.75$  with the Cornell Index. Both correlations were significant, in the predicted direction, at the  $p < .01$  level. These results support the finding that the Stress Coping Abilities Scale is a valid measure of stress coping abilities. The reliability of the SQ was investigated in ten subjects (5 male and 5 female) randomly chosen from this study. A split-half correlation analysis was conducted on the SQ items. The product-moment correlation coefficient ( $r$ ) was  $.85$ , significant at the  $p < .01$  level. This correlation indicates that the SQ or Stress Coping Abilities Scale is a reliable measure. These results support the Stress Coping Abilities Scale as a reliable and valid measure.

**Validation Study 3:** In this study (1981) the relationship between the SQ Scale and the Holmes Rahe Social Readjustment Rating Scale (SRRS) was investigated. The SRRS, which is comprised of a self-rating of stressful life events, has been shown to be a valid measure of stress. Three correlation analyses were done. SRRS scores were correlated with SQ scores and separately with two components of the SQ scale: Coping Skill (CS) scores and Stress (S) scores. It was hypothesized that the SQ and SRRS correlation would be negative, since subjects with lower SQ scores would be more likely to either encounter less stressful life events or experience less stress in their lives. It was also predicted that subjects with a higher CS would be less likely to encounter stressful life events, hence a negative correlation was hypothesized. A positive correlation was predicted between S and SRRS, since subjects experiencing more frequent stressful life events would reflect more experienced stress. The participants in this study consisted of 30 outpatient psychotherapy patients. There were 14 males and 16 females. The average age was 35. The SQ and the SRRS were administered in counterbalanced order. The results showed there was a significant positive correlation (product-moment correlation coefficient) between SQ and SRRS ( $r = .4006$ ,  $p < .01$ ). The correlation results between CS and SRRS was not significant ( $r = .1355$ , n.s.). There was a significant positive correlation between S and SRRS ( $r = .6183$ ,  $p < .001$ ). The correlations were in predicted directions. The significant correlations between SQ and SRRS as well as S and SRRS support the construct validity of the SQ or Stress Coping Abilities Scale.

**Validation Study 4:** This validation study (1982) evaluated the relationship between factor C (Ego Strength) in the 16 PF Test as a criterion measure and the SQ in a sample of juveniles. High scores on factor C indicate high ego strength and emotional stability, whereas high SQ scores reflect good coping skills. A positive correlation was predicted because emotional stability and coping skills reflect similar attributes. The participants were 34 adjudicated delinquent adolescents. They ranged in age from 15 to 18 years with an average age of 16.2. There were 30 males and 4 females. The Cattell 16 PF Test and the SQ scale were administered in counterbalanced order. All subjects had at least a 6.0 grade equivalent reading level. The correlation (product-moment correlation coefficient) results indicated that Factor C scores were significantly correlated with SQ scores ( $r = .695$ ,  $p < .01$ ). Results were significant and in the predicted direction. These results support the SQ or Stress Coping Abilities Scale as a valid measure of stress coping abilities in juvenile offenders.

In a subsequent study the relationship between factor Q4 (Free Floating Anxiety) on the 16 PF Test and S (Stress) on the SQ scale was investigated. High Q4 scores reflect free floating anxiety and tension, whereas high S scores measure experienced stress. A high positive correlation between Q4 and S was predicted. There were 22 of the original 34 subjects included in this analysis since the remainder of the original files were unavailable. All 22 subjects were male. The results indicated that Factor Q4 scores were significantly correlated (product-moment correlation coefficient) with S scores ( $r = .584$ ,  $p < .05$ ). Results were significant and in predicted directions. The significant correlations between factor C and SQ scores as well as factor Q4 and S scores support the construct validity of the SQ scale.

**Validation Study 5:** Psychotherapy outpatient clients were used in this validation study (1982) that evaluated the relationship between selected Wiggan's MMPI (Minnesota Multiphasic Personality Inventory) supplementary content scales (ES & MAS) as criterion measures and the SQ scale. ES measures ego strength and MAS measures manifest anxiety. It was predicted that the ES and SC correlation would be positive, since people with high ego strength would be more likely to possess good coping skills. Similarly, it was predicted that MAS and S correlations would be positive, since people experiencing high levels of manifest anxiety would also likely experience high levels of stress. The subjects were 51 psychotherapy outpatients ranging in age from 22 to 56 years with an average age of 34. There were 23 males and 28 females. The MMPI and the SQ were administered in counterbalanced

order. The correlation (product-moment correlation coefficient) results indicated that ES and CS were positively significantly correlated ( $r = .29, p < .001$ ). MAS and S comparisons resulted in an  $r$  of  $.54$ , significant at the  $p < .001$  level. All results were significant and in predicted directions.

In a related study (1982) utilizing the same population data ( $N=51$ ) the relationship between the Psychasthenia (Pt) scale in the MMPI and the S component of the SQ scale was evaluated. The Pt scale in the MMPI reflects neurotic anxiety, whereas the S component of the SQ scale measures stress. Positive Pt and S correlations were predicted. The correlation (product-moment correlation coefficient) results indicated that the Pt scale and the S component of the SQ scale were significantly correlated ( $r = .58, p < .001$ ). Results were significant and in the predicted direction. The significant correlations between MMPI scales (ES, MAS, Pt) and the SQ scale components (CS, S) support the construct validity of the SQ or Stress Coping Abilities Scale.

**Reliability Study 6:** The reliability of the Stress Quotient (SQ) or Stress Coping Abilities Scale was investigated (1984) in a population of outpatient psychotherapy patients. There were 100 participants, 41 males and 59 females. The average age was 37. The SQ was administered soon after intake. The most common procedure for reporting inter-item (within test) reliability is with Coefficient Alpha. The reliability analysis indicated that the Coefficient Alpha of 0.81 was highly significant ( $F = 46.74, p < .001$ ). Highly significant inter-item scale consistency was demonstrated.

**Reliability Study 7:** (1985) The reliability of the Stress Quotient (SQ) or Stress Coping Abilities Scale was investigated in a sample of 189 job applicants. There were 120 males and 69 females with an average age of 31. The SQ was administered at the time of pre-employment screening. The reliability analysis indicated that the Coefficient Alpha of 0.73 was highly significant ( $F = 195.86, p < .001$ ). Highly significant Cronbach Coefficient Alpha reveals that all SQ scale items are significantly ( $p < .001$ ) related and measure one factor or trait.

**Validation Study 8:** Chemical dependency inpatients were used in a validation study (1985) to determine the relation between MMPI scales as criterion measures and the Stress Quotient (SQ) Scale or Stress Coping Abilities Scale. The SQ is inversely related to other MMPI scales, consequently, negative correlations were predicted. The participants were 100 chemical dependency inpatients. There were 62 males and 38 females with an average age of 41. The SQ and the MMPI were administered in counterbalanced order. The reliability analysis results indicated that the Coefficient Alpha of 0.84 was highly significant ( $F = 16.20, p < .001$ ). Highly significant inter-item scale consistency was demonstrated.

The correlation (product-moment correlation coefficient) results between the Stress Quotient (SQ) and selected MMPI scales were significant at the  $p < .001$  level and in predicted directions. The SQ correlation results were as follows: Psychopathic Deviate ( $-0.59$ ), Psychasthenia ( $-.068$ ), Social Maladjustment ( $-0.54$ ), Authority Conflict ( $-0.46$ ), Taylor Manifest Anxiety Scale ( $-0.78$ ), Authority Problems ( $-0.22$ ), and Social Alienation ( $-0.67$ ). The most significant SQ correlation was with the Taylor Manifest Anxiety Scale. As discussed earlier, stress exacerbates symptoms of impaired adjustment as well as emotional and attitudinal problems. These results support the Stress Quotient or Stress Coping Abilities Scale as a valid measure of stress coping abilities.

**Validation Study 9:** In a replication of earlier research, a study (1986) was conducted to further evaluate the reliability and validity of the Stress Quotient (SQ). The participants were 212 inpatients in chemical dependency programs. There were 122 males and 90 females with an average age of 44. The SQ and MMPI were administered in counterbalanced order. Reliability analysis of the SQ scale resulted in a

Coefficient Alpha of 0.986 ( $F = 27.77$ ,  $p < .001$ ). Highly significant inter-item scale consistency was again demonstrated. Rounded off, the **Coefficient Alpha for the SQ was 0.99**.

In the same study (1986, inpatients), product-moment correlations were calculated between the Stress Quotient (SQ) and selected MMPI scales. The SQ correlated significantly (.001 level) with the following MMPI scales: Psychopathic Deviate (Pd), Psychasthenia (Pt), Anxiety (A), Manifest Anxiety (MAS), Ego Strength (ES), Social Responsibility (RE), Social Alienation (PD4A), Social Alienation (SC1A), Social Maladjustment (SOC), Authority Conflict (AUT), Manifest Hostility (HOS), Suspiciousness/Mistrust (TSC-II), Resentment/Aggression (TSC-V) and Tension/Worry (TSC-VII). **All SQ correlations with selected MMPI scales were significant (at the .001 level of significance) and in predicted directions.** These results support the SQ scale or Stress Coping Abilities Scale as a valid measure of stress coping abilities.

The studies cited above demonstrate empirical relationships between the SQ scale (Stress Coping Abilities Scale) and other established measures of stress, anxiety and coping skills. This research demonstrates that the Stress Quotient (SQ) or Stress Coping Abilities Scale is a reliable and valid measure of stress coping abilities. The SQ has high inter-item scale reliability. The SQ also has high concurrent (criterion-related) validity with other recognized and accepted tests. The SQ scale permits objective (rather than subjective) analysis of the interaction of these important variables. In the research that follows, the **Stress Quotient** or **SQ** is also referred to as the **Stress Coping Abilities Scale**.

## **SAQ VALIDATION RESEARCH**

SAQ research is reported in a chronological format, reporting studies as they occurred. This gives the reader the opportunity to see how the SAQ evolved into a state-of-the-art risk and needs assessment instrument. For current information refer to the more recent studies near the end of this research section.

Initially, a large item pool was rationally developed for SAQ scale consideration. Consensual agreement among three Ph.D. level psychologists and other experienced chemical dependency counselors familiar with SAQ scale definitions reduced the initial item pool markedly. Final item selection was empirical - comparing statistically related item configurations to known substance abuse groups. Items chosen had acceptable inter-item reliability coefficients and correlated highest with their respective scales. Final item selection was based on each item's statistical properties. The SAQ was then objectively standardized and normed on substance abuse populations.

### **10. Validation of the SAQ Truthfulness Scale**

The Truthfulness Scale in the SAQ is an important psychometric scale as these scores establish how truthful the respondent was while completing the SAQ. Truthfulness Scale scores determine whether or not SAQ profiles are accurate and are integral to the calculation of Truth-Corrected SAQ scale scores.

The Truthfulness Scale identifies respondents who were self-protective, recalcitrant and guarded, as well as those who minimized or even concealed information while completing the test. Truthfulness Scale items are designed to detect respondents who try to fake good or put themselves into a favorable light. These scale items are statements about oneself that most people would agree to. The following statement is an example of a Truthfulness Scale item, "Sometimes I worry about what others think or say about me."

There are 21 Truthfulness Scale items in the SAQ. This preliminary study was done to determine if these Truthfulness Scale items could differentiate between respondents who were honest from those trying to fake good. It was hypothesized that the group trying to fake good would score higher on the Truthfulness Scale than the group instructed to be honest.

### Method

Seventy-eight Arizona State University college students (1985) enrolled in an introductory psychology class were randomly assigned to one of two groups. Group 1 comprised the "Honest" group and Group 2 comprised the "Fakers" group. Group 1 was instructed to be honest and truthful while completing the SAQ. Group 2 was instructed to "fake good" while completing the SAQ, but to respond "in such a manner that their faking good would not be detected." The SAQ, which included the six SAQ scales, was administered to the subjects and the Truthfulness Scale was embedded in the SAQ as one of the six scales. Truthfulness Scale scores were made up of the number of deviant answers given to the 21 Truthfulness Scale items.

### Results

The mean Truthfulness Scale score for the Honest group was 2.71 and the mean Truthfulness Scale score for Fakers was 15.77. The results of the correlation (product-moment correlation coefficient) between the Honest group and the Fakers showed that the Fakers scored significantly higher on the Truthfulness Scale than the Honest group ( $r = 0.27, p < .05$ ).

The Truthfulness Scale successfully measured how truthful the respondents were while completing the SAQ. The results of this study reveals that the Truthfulness Scale accurately detects "Fakers" from those students that took the SAQ honestly.

## **11. Validation of the Six SAQ Scales Using Criterion Measures**

In general terms, a test is valid if it measures what it is supposed to measure. The process of confirming this statement is called validating a test. A common practice when validating a test is to compute a correlation between it and another (criterion) test that purports to measure the same thing and that has been previously validated. For the purpose of this study, the six SAQ scales (Truthfulness, Alcohol, Drug, Aggressivity, Resistance, Stress Coping Abilities) were validated with comparable scales on the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI was selected for this validity study because it is the most researched, validated and widely used objective personality test in the United States. The SAQ scales were validated with MMPI scales as follows. The Truthfulness Scale was validated with the L Scale. The Alcohol Scale was validated with the MacAndrew Scale and Psychopathic Deviant. The Drug Scale was validated with the MacAndrew and Psychopathic Deviant. The Aggressiveness Scale was validated with the Taylor Manifest Anxiety and MacAndrew. The Resistance Scale was validated with the Manifest Hostility and Authority Conflict. The Stress Coping Abilities Scale was validated with the Taylor Manifest Anxiety, Psychasthenia, Social Maladjustment and Social Alienation.

### Method

One hundred (100) chemical dependency inpatients (1985) were administered both the SAQ and the MMPI. Tests were counterbalanced for order effects -- half were given the SAQ first and half the MMPI first.

Results and Discussion

Product-moment correlation coefficients were calculated between SAQ scales and MMPI scales. These results are summarized in Table 1. The correlation results presented in Table 1 show that all SAQ scales significantly correlated (.001 level of significance) with all represented MMPI scales. In addition, all correlations were in predicted directions.

**Table 1. (1985) Product-moment correlations  
between MMPI scales and SAQ scales**

<u>MMPI SCALES (MEASURES)</u>	<u>SAQ SCALES (MEASURES)</u>					
	<b>Truthful- ness</b>	<b>Alcohol</b>	<b>Drug</b>	<b>Aggressivity</b>	<b>Resistance</b>	<b>Stress Coping</b>
<b>L (Lie) Scale</b>	0.72	-0.38	-0.41	-0.28	-0.29	0.53
<b>Psychopathic Deviant</b>	-0.37	0.52	0.54	0.35	0.27	-0.59
<b>Psychasthenia</b>	-0.34	0.38	0.41	0.28	0.37	-0.68
<b>Social Maladjustment</b>	-0.25	0.34	0.26	0.18	0.35	-0.54
<b>Authority Conflict</b>	-0.43	0.31	0.47	0.37	0.55	-0.46
<b>Manifest Hostility</b>	-0.45	0.34	0.47	0.37	0.57	-0.58
<b>Taylor Manifest Anxiety</b>	-0.58	0.47	0.46	0.48	0.50	-0.78
<b>MacAndrew</b>	-0.40	0.58	0.62	0.44	0.26	-0.33
<b>Social Alienation</b>	-0.47	0.35	0.45	0.28	0.48	-0.67

**NOTE:** All correlations were significant at  $p < .001$ .

The **Truthfulness Scale** correlates significantly with all of the represented MMPI scales in Table 1. Of particular interest is this scale's highly significant positive correlation with the MMPI Lie (L) Scale. A high L Scale score on the MMPI invalidates other MMPI scale scores due to untruthfulness. This helps in understanding why the Truthfulness Scale is significantly, but negatively, correlated with the other represented MMPI scales. Similarly, the MMPI L Scale correlates significantly, but negatively, with the other SAQ scales.

The **Alcohol Scale** correlates significantly with all represented MMPI scales. This is consistent with the conceptual definition of the Alcohol Scale and previous research that has found that alcohol abuse is associated with mental, emotional and physical problems. Of particular interest are the highly significant correlations with the MacAndrew ( $r = 0.58$ ) Scale and the Psychopathic Deviant ( $r = 0.52$ ) Scale. High MacAndrew and Psychopathic Deviant scorers on the MMPI are often found to be associated with substance abuse. Similarly, the **Drug Scale** correlates significantly with the MacAndrew ( $r = 0.62$ ) Scale and the Psychopathic Deviant ( $r = 0.54$ ) Scale.

The **Aggressiveness Scale** is most (highly) significantly correlated with the Taylor Manifest Anxiety (MAS,  $r = 0.48$ ) and the MacAndrew Alcoholism ( $r = 0.44$ ) scales. Mortimer, et al. (1971) concluded that alcoholics were significantly more involved in driving violations and aggressiveness.

The **Resistance Scale** is most significantly correlated with the Manifest Hostility ( $r = 0.57$ ) and the Authority Conflict ( $r = 0.55$ ) scales. These findings are consistent with the conceptual definition of the Resistance Scale as measurement of willingness to work and cooperate with others.

The **Stress Coping Ability Scale** is inversely related to MMPI scales which accounts for the negative correlations shown in Table 1. The positive correlation with the L scale on the MMPI was discussed earlier, i.e., Truthfulness Scale. It should be noted that stress exacerbates symptoms of impaired adjustment and even psychopathology. The Stress coping Ability Scale correlates most significantly with the Taylor Manifest Anxiety ( $r = -0.78$ ) Scale, the Psychasthenia ( $r=-0.68$ ) Scale and the Social Alienation ( $r=-0.67$ ) Scale.

These findings strongly support the validity of SAQ scales. All of the SAQ scales were highly correlated with the MMPI criterion scale they were tested against. The large correlation coefficients support the validity of the SAQ. All product-moment correlation coefficients testing the relation between SAQ and MMPI scales were significant at the  $p < .001$  level.

## **12. Relationships Between Selected SAQ Scales and Polygraph Examination**

A measure that has often been used in business or industry for employee selection is the Polygraph examination. The polygraph exam is most often used to determine the truthfulness or honesty of an individual while being tested. The Polygraph examination is more accurate as the area of inquiry is more "situation" specific. Conversely, the less specific the area of inquiry, the less reliable the Polygraph examination becomes.

Three SAQ scales were chosen for this study; Truthfulness Scale, Alcohol Scale and Drug Scale. The Truthfulness Scale was chosen because it is used in the SAQ to measure the truthfulness or honesty of the respondent while completing the SAQ. The Alcohol and Drug scales are well suited for comparison with the polygraph exam because of the situation specific nature of the scales. Alcohol and Drug scale items are direct and relate specifically to alcohol and drug use. The comparison with Truthfulness Scale is less direct because of the subtle nature of the Truthfulness Scale items as used in the SAQ. The Truthfulness Scale is affected by the respondent's attitude, emotional stability and tendencies to fake good. It was expected that the Alcohol and Drug scales would be highly correlated with the polygraph results and the Truthfulness Scale would show a somewhat less but nonetheless significant correlation.

### Method

One hundred and eighty-nine (189) job applicants (1985) were administered both the SAQ and the Polygraph examination. Tests were given in a counterbalanced order, half of the applicants were given the SAQ first and the other half of the applicants were administered the polygraph first. The subjects were administered the SAQ and polygraph exam in the same room in the same session with the examiner present for both tests.

### Results

The product-moment correlation results between the Polygraph exam and SAQ scales indicated there was a significant positive correlation between the Truthfulness Scale and Polygraph exam ( $r = 0.23$ ,  $p < .001$ ). Similarly, significant positive relationships were observed between the Polygraph exam and the Alcohol Scale ( $r = 0.54$ ,  $p < .001$ ) and the Drug Scale ( $r = 0.56$ ,  $p < .001$ ).

In summary, this study supports the validity of the SAQ. There were strong positive relationships between the selected SAQ scales and the Polygraph examination. The highly significant product-moment correlations between SAQ scales and Polygraph examinations demonstrates the validity of the SAQ Truthfulness, Alcohol and Drug Abuse measures.

These results are important because the Polygraph exam is a direct measure obtained from the individual being tested rather than a rating by someone else. This is similar to self-report such as utilized in the SAQ. The fact that there was a very strong relationship between Polygraph results and SAQ scales shows that this type of information can be obtained accurately in self-report instruments.

These results indicate that the SAQ Truthfulness Scale is an accurate measure of the respondent's truthfulness or honesty while completing the SAQ. The Truthfulness Scale is an essential measure in self-report instruments. There must be a means to determine the honesty or "correctness" of the respondents answers and there must be a means to adjust scores when the respondent is less than honest. The SAQ Truthfulness Scale addresses both of these issues. The Truthfulness Scale measures truthfulness and then applies a correction to other scales based on the Truthfulness Scale score. The Truthfulness Scale ensures accurate assessment. The results of this study shows that the SAQ is a valid assessment instrument.

### **13. Validation of the SAQ in a Sample of Substance Abuse Inpatients**

The SAQ is an adult chemical dependency and substance (alcohol and other drugs) abuse assessment instrument. It is designed for use in intake-referral settings, inpatient and outpatient treatment programs, court-related assessments, diversion programs and probation departments. The SAQ is a specific test designed for a specific population. The present study (1987) was conducted to validate the SAQ in a sample of substance abuse inpatients in a chemical dependency facility.

Selected scales in the Minnesota Multiphasic Personality Inventory (MMPI) were used as criterion measures for the different SAQ scales. The Truthfulness Scale was validated with MMPI L Scale, F Scale and K Scale. The Alcohol Scale was validated with MMPI MacAndrew Scale (MAC) and Psychopathic Deviate-Obvious (PD-O). The Drug Scale was validated with MMPI MacAndrew Scale and Psychopathic Deviate-Obvious. The Aggressiveness Scale was validated with MMPI Authority Problems (PD2), Psychopathic Deviate (PD), Manifest Hostility (HOS) and Resentment/Aggression (TSC-V). The Resistance Scale was validated with MMPI Ego Strength (ES), Social Responsibility (RE), Social Maladjustment (SOC), Social Alienation (PD4), Social Alienation (SCIA), Authority Conflict (AUT) and Suspiciousness (TSC-III). The Stress Coping Abilities Scale was validated with MMPI Psychasthenia (PT), Anxiety (A), Taylor Manifest Anxiety (MAS) and Tension/Worry (TSC-VII). The MMPI scales were chosen to compare to the SAQ scales because they measure similar attributes.

#### Method

The subjects used in the study were 212 substance (alcohol and other drugs) abuse inpatients in chemical dependency facilities. The SAQ and MMPI were administered in counterbalanced order.

#### Results and Discussion

The product-moment correlation results are summarized in Table 2. Since this study is important in understanding SAQ validity, each SAQ scale is briefly summarized below. (N=212):

The **Truthfulness Scale** correlates significantly in predicted directions with selected MMPI criterion scales, L Scale (lie,  $p < .001$ ), F Scale (validity,  $p < .001$ ) and K Scale (validity correction,  $p < .001$ ). Other significant correlations with traditional MMPI scales include: PD (Psychopathic deviate,  $p < .001$ ), ES (Ego Strength,  $p < .001$ ), and RE (Social responsibility,  $p < .001$ ); Harris MMPI subscales: PD2 (Authority Problems,  $p < .001$ ), PD4 (Social Alienation,  $p < .001$ ), SCIA (Social Alienation,  $p < .001$ ); Wiggins MMPI

content scales: SOC (Social Maladjustment,  $p < .001$ ), HOS (Manifest Hostility,  $p < .001$ ); Wiener-Harmon MMPI subscales: PDO (Psychopathic Deviant-Obvious,  $p < .001$ ); Tryon, Stein & Chu MMPI cluster scales: TSC-V (Resentment/Aggressive,  $p < .001$ ).

The **Alcohol Scale** correlates significantly in predicted directions with selected MMPI criterion scales: MAC (MacAndrew scale,  $p < .001$ ), and PD-O (Psychopathic Deviate Obvious,  $p < .021$ ). The **Drug Scale** correlates significantly in predicted directions with selected MMPI criterion scales: MAC (MacAndrew scale,  $p < .001$ ), and PD-O (Psychopathic Deviate Obvious,  $p < .001$ ).

The **Aggressiveness Scale** correlates significantly in predicted directions with selected MMPI criterion scales: PD2 (Authority problems,  $p < .003$ ), PD (Psychopathic Deviate,  $p < .009$ ), HOS (Manifest Hostility,  $p < .001$ ) and TSC-V (Resentment/Aggression,  $p < .001$ ).

**Table 2. SAQ-MMPI Product-moment Correlations (1987)  
Inpatients, Chemical Dependency Facilities**

MMPI SCALES (MEASURES)	SAQ SCALES (MEASURES)					
	Truthfulness	Alcohol	Drug	Aggressivity	Resistance	Stress Coping
L	0.60	-0.24	-0.15	-0.13	-0.23	-0.30
F	-0.34	0.32	0.32	0.31	0.56	0.49
K	0.39	-0.28	-0.29	-0.25	-0.61	-0.51
MAC	-0.30	0.35	0.37	0.34	0.19	0.28
PD-O	-0.35	0.22	0.33	0.21	0.52	0.53
PD2	-0.26	0.18	0.17	0.20	0.07	0.07
PD	-0.33	0.21	0.33	0.18	0.19	0.39
HOS	-0.45	0.25	0.33	0.33	0.55	0.46
TSC-V	-0.46	0.34	0.28	0.28	0.59	0.58
ES	0.25	-0.27	-0.25	-0.21	-0.48	-0.51
RE	0.41	-0.27	-0.34	-0.38	-0.88	-0.45
SOC	-0.19	0.17	0.08	-0.03	0.34	0.39
PD4	-0.41	0.20	0.28	0.22	0.63	0.55
SCIA	-0.36	0.27	0.32	0.24	0.58	0.39
AUT	-0.21	0.20	0.30	0.34	0.52	0.18
TSC-III	-0.22	0.26	0.28	0.31	0.57	0.45
PT	-0.39	0.27	0.24	0.16	0.27	0.58
A	-0.41	0.31	0.31	0.26	0.53	0.68
MAS	-0.44	0.25	0.18	0.15	0.39	0.65
TSC-VII	-0.41	0.33	0.29	0.27	0.51	0.66

The **Resistance Scale** correlates significantly in predicted directions with selected MMPI criterion scales: ES (Ego Strength,  $p < .001$ ), RE (Social Responsibility,  $p < .001$ ), PD4 (Social Alienation,  $p < .001$ ), SCIA (Social Alienation,  $p < .001$ ), SOC (Social Maladjustment,  $p < .001$ ), AUT (Authority Conflict,  $p < .001$ ), TSC-III (Suspiciousness,  $p < .001$ ) and TSC-V (Resentment/Aggression,  $p < .001$ ).

The **Stress Coping Abilities Scale** correlates significantly in predicted directions with selected MMPI criterion scales: PT (Psychasthenia,  $p < .001$ ), A (Anxiety,  $p < .001$ ), MAS (Taylor Manifest Anxiety,  $p < .001$ ), PD4 (Social Alienation,  $p < .001$ ) and TSC-VII (Tension/Worry,  $p < .001$ ).

These findings strongly support the validity of the SAQ scales in this sample of chemical dependency inpatients. All of the SAQ scales were highly correlated with the MMPI criterion scales they were tested against. The large correlation coefficients support the SAQ as a valid instrument for assessment of substance abuse. Inpatients in chemical dependency facilities are known to have substance abuse problems and these correlation results confirm the validity of the instruments.

The SAQ Alcohol and Drug scales are direct measures of alcohol and drug use and abuse, respectively, whereas the MacAndrew Scale was developed from discriminant analysis and does not include a truthfulness scale. The MacAndrew Scale items do not relate specifically to alcohol and drugs. Hence, the correlations between the MacAndrew Scale and the Alcohol and Drug scales could be affected by the lack of a truthfulness measure which is a deficiency of the MacAndrew Scale. However, the correlation coefficients were significant.

Where MMPI scales are closely related (by definition) to SAQ scales the correlation coefficients were highly significant. For example, the SAQ Truthfulness Scale and the MMPI L Scale both measure tendencies to fake good, and the correlation was very highly significant at  $r = .60$ . The correlation between Resistance Scale and MMPI Social Responsibility Scale was  $r = -.88$ , and the correlation between Stress Coping Abilities Scale and MMPI Tension/Worry Scale was  $r = -.66$ . This study supports the validity of the SAQ.

#### **14. Validation of the SAQ Using the DRI as the Criterion Measure**

A study was conducted in 1988 that was designed to examine relationships (correlations) between the Substance Abuse Questionnaire (SAQ) and the Driver Risk Inventory (DRI) on an inmate population of incarcerated DWI offenders. The DRI has been demonstrated to be a valid, reliable and accurate assessment instrument for evaluation of DWI offenders.

The SAQ is designed for adult chemical (alcohol and other drugs) dependency assessment. It contains six measures or scales: Truthfulness, Alcohol, Drug, Aggressivity, Resistance and Stress Coping Abilities. Five of these six SAQ scales are analogous (although independent) and directly comparable to Driver Risk Inventory (DRI) measures or scales. The DRI is designed for DWI (Driving While Intoxicated) and DUI (Driving Under the Influence) offender evaluation. The DRI contains five measures or scales: Truthfulness, Alcohol, Drug, Driver Risk and Stress Coping Abilities.

Although the scales designated Truthfulness, Alcohol, Drug, and Aggressivity are independent and differ in the SAQ and DRI, they were designed to measure similar behaviors or traits. Thus, although essentially composed of different test questions in the SAQ and DRI test booklets, these comparable measures or scales do have similarity. The Stress Coping Abilities Scale is the same in both SAQ and DRI and each contains 40 test items. The Driver Risk Scale in the DRI was used as the criterion measure for the Aggressiveness Scale in the SAQ.

#### Method

The SAQ and DRI were administered in group settings to 154 DWI offender inmates, in counter balanced order, at Arizona State Department of Corrections (ADOC) facilities. All of the subject in this study were male inmates. The demographic composition was as follows. There were 98 Caucasians, 25 Hispanics, 13 American Indians, 12 Blacks and six other ethnicities. Five age categories were represented: 16-25 years ( $N = 26$ ), 26-35 years ( $N = 74$ ), 36-55 years ( $N = 38$ ), 46-55 years ( $N = 11$ ) and 56 or older ( $N = 5$ ). Six educational levels were represented: Eighth grade or less ( $N = 7$ ), Partially

completed high school (N = 50), High school graduates (N = 70), Partially completed college (N = 16), College graduates (N = 9), and Professional/graduate school (N = 2). Each inmate completed both the SAQ and the DRI. Although all inmates volunteered to participate in this study, inmate motivation varied.

### Results and Discussion

The results of this study are presented in Table 3. The results demonstrate highly significant relationships between the analogues SAQ and DRI scales. The DRI has been shown to be a valid measure of substance abuse in DUI/DWI offenders, hence, these correlation results support the validity of the SAQ as a valid measure of substance abuse.

**Table 3. Product-moment correlations 1988 study of DWI inmates (N = 154).  
All product-moment correlations are significant at p<.001.**

<u>DRI versus SAQ Scales</u>	<u>Agreement Coefficients</u>
Truthfulness Scale	.6405
Alcohol Scale	.3483
Drug Scale	.3383
Driver Risk (DRI) versus Aggressivity (SAQ)	.4070
Stress Coping Abilities	.7642

It was noted that inmate motivation varied widely. This is evident in the Stress Coping Abilities correlation coefficient of .7642. Even though this is a highly significant correlation (p<.001), the Agreement Coefficient could be expected to be even higher because these were identical scales consisting of the same 40 items. It is reasonable to conclude that low motivation on the part of many inmate volunteers contributed to lower Agreement Coefficients. Inmate volunteers were serving DWI-related sentences and these tests had no bearing on their incarcerated status or sentences. However, in spite of widely varied inmate motivation, Agreement Coefficients for all five sets of scale comparisons were highly significant.

These results are important for another reason. This study extends the SAQ normative (standardization sample) population to include inmates and incarcerated individuals who are serving their sentences in maximum security facilities. The validity of the SAQ has been demonstrated on a sample of incarcerated substance abuse offenders.

### **15. Validation of the SAQ in a Sample of Vocational Rehabilitation Clients**

The Substance Abuse Questionnaire (SAQ) was investigated in a sample of individuals who are not generally associated with substance abuse but who have other disadvantages. The participants in the present study (1991) were Vocational Rehabilitation clients. These are individuals who have some form of handicap and require assistance in obtaining and maintaining employment.

Selected scales in the Minnesota Multiphasic Personality Inventory (MMPI) were used as criterion measures for the different Substance Abuse Questionnaire (SAQ) scales. Comparisons to previous validating studies which used substance abuse subjects will be made to determine the applicability of the SAQ to various adult samples.

### Method

The subjects used in the present study consisted of 74 Vocational Rehabilitation clients. The SAQ and MMPI were administered in counterbalanced order. Product-moment correlations were calculated between

SAQ scales and selected criterion MMPI scales. The Truthfulness Scale was validated with the MMPI L Scale, F Scale and K Scale. The Alcohol Scale was validated with the MMPI MacAndrew Scale (MAC) and Psychopathic Deviate (PD). The Drug Scale was validated with the MMPI MacAndrew Scale, Psychopathic Deviate. The Aggressiveness Scale was validated with the MMPI Resentment (TSC-V), Dominance (DO) and Manifest Hostility (HOS). The Resistance Scale was validated with the MMPI Social Maladjustment (SOC), Authority Conflict (AUT), Authority Problems (PD2), Suspiciousness (TSC-III) and Social Alienation (SCIA). The Stress Coping Abilities Scale was validated with the MMPI Psychasthenia (PT), Taylor Manifest Anxiety (MAS) and Tension (TSC-VII).

### Result and Discussion

There were 74 Vocational Rehabilitation clients used in the study. There were 49 males and 25 females. Age was distributed (frequency given in parentheses) as follows: 18 to 21 years (11), 22 to 25 years (7), 26-29 years (11), 30-33 years (14), 34-37 years (10), 42-45 years (9), 46-49 years (8), 50 or more years (4). Six education categories were represented: 8th grade or less (11), Partially completed High School (18), GED (14), High School Graduate (21), Some College (6), College Graduate (4). There were 47 Caucasians, 12 Blacks, 8 Hispanics, 6 American Indians and 1 other ethnicity. The correlation results are summarized in Table 4. For clarity, SAQ scales are summarized individually and their MMPI scale correlations discussed.

**Table 4. Product-moment correlations.  
Vocational Rehabilitation Clients (1991, N=74)**

<u>MMPI SCALES</u>	<u>SAQ SCALES</u>					
	<u>Truthfulness</u>	<u>Alcohol</u>	<u>Drug</u>	<u>Aggressivity</u>	<u>Resistance</u>	<u>Stress Coping</u>
L	.493**	.001	-.141	-.012	.009	-.105
F	-.344*	.435**	.334*	.529**	.226	.440**
K	.344*	-.257	-.079	-.410**	-.066	-.308*
PD	-.109	.454**	.292*	.387**	.112	.568**
MAC	-.177	.303*	.145	.369**	.051	.168
DO	.193	-.438**	-.205	-.549**	-.071	-.511**
HOS	-.497**	.231	.136	.439**	.308*	.207
SOC	-.379**	.431**	.199	.223	.123	.259
AUT	-.360**	.339**	.174	.374**	.149	.204
PD2	-.293*	.381**	.263	.259	.017	.209
SCIA	-.397**	.349*	.159	.414**	.258	.390**
TSC-III	-.372**	.319**	.040	.421**	.076	.254
TSC-V	.387**	.396**	.207	.531**	.196	.435**
TSC-VII	.480**	.295*	.189	.413**	.151	.441**
PT	-.135	.273*	.244	.216	.264	.501**
MAS	-.245	.396**	.240	.426	.085	.574**

NOTE: level of significance, \* < .01, \*\* < .001

The **Truthfulness Scale** was significantly correlated with the MMPI scales that are associated with truthfulness measures. The SAQ Truthfulness Scale was significantly correlated with the MMPI L Scale (p<.001), F scale (p<.01) and K scale (p<.01). When a person attains elevated L, F or K scales on the MMPI, other MMPI scale scores are invalidated. Similarly, an elevated Truthfulness Scale score on the SAQ invalidates other SAQ scale scores.

The **Alcohol Scale** was significantly correlated with the MMPI MacAndrew Scale ( $p < .01$ ) and the PD scale (Psychopathic Deviate,  $p < .001$ ). High MMPI PD and MAC scores are often associated with substance abuse.

The **Drug Scale** was significantly correlated with the PD Scale (Psychopathic Deviate,  $p < .01$ ). The SAQ Drug scale did not correlate significantly with the MMPI MacAndrew Scale. Substance (alcohol and other drugs) abusers have a close identity with their substance of choice. Without independent scales on the MacAndrew Scale for alcohol and drugs, many substance abusers would remain undetected. The low correlation between SAQ Drug Scale and MacAndrew Scale may have been due to lying or faking on the MacAndrew Scale.

The **Aggressiveness Scale** was significantly correlated with the MMPI DO Scale (Dominance,  $-.549$ ), TSC-V (Resentment,  $.531$ ) and HOS (Manifest Hostility,  $.439$ ). These correlations were significant at the  $p < .001$  level of significance.

The **Resistance Scale** correlated significantly with the MMPI Social Alienation Scale (SCIA,  $p < .05$ ). The expected correlations with Social Maladjustment (SOC), Authority Problems (AUT), Suspiciousness (TSC-III), TSC-V (Resentment) and Authority Problems (PD) was not demonstrated. It could be that Vocational Rehabilitation clients are generally cooperative and willing to go along with authority because they stand to benefit. Length of Vocational Rehabilitation involvement would be an interesting variable to study in future research.

The **Stress Coping Abilities Scale** correlates most significantly with the MMPI MAS (Taylor Manifest Anxiety,  $r = .574$ ,  $p < .001$ ), PT (Psychasthenia,  $r = .501$ ,  $p < .001$ ) and TSC-VII (Tension,  $r = .568$ ,  $p < .001$ ). These findings are consistent with earlier research.

These results are consistent with earlier research involving the administration of both the SAQ and MMPI in that SAQ scales are significantly correlated with criterion MMPI scales. An exception in the present study is that the Resistance Scale did not correlate significantly with all criterion scales. The lack of a significant correlations with the Resistance Scale is likely due to the lack of a resistant attitude in the participants of this study. Vocational Rehabilitation may be unlike many other assessment milieus where resistance is expected. This is suggested by a somewhat lower correlation between the Truthfulness Scale and L Scale ( $.493$  present study and  $.60$  previous study) due to a lower degree of faking good in the present study. These findings support the validity of the SAQ.

Comparisons between the present study and previous research that tested substance abusers (inpatient clients at chemical dependency facilities) shows some interesting results. As stated above, there was a somewhat lower correlation between the Truthfulness Scale and L Scale. There was a higher correlation between the Drug Scale and MacAndrew Scale in the substance abuser study and a lower correlation between the Alcohol Scale and Psychopathic Deviate Scale.

Of particular interest in this study are the correlation results of the Resistance Scale. The present studies lower correlations between the Resistance Scale scores and criterion scale scores are of interest when compared to correlations of the substance abusers. It may be that the present subjects do not exhibit resistant attitudes because they are accustomed to cooperating with authority. This finding provides further validation of the SAQ.

## 16. Validation of the SAQ in a Sample of Adult Probationers

The present study (1992) was conducted to validate the Substance Abuse Questionnaire (SAQ) with adult probation clients with criterion measures from selected Minnesota Multiphasic Personality Inventory (MMPI) scales. This study was done to provide validation of the SAQ and to compare these findings to those obtained in previous research for different client samples. The subjects used in the present study were individuals who had been arrested, convicted and entered the probation system.

The SAQ was modified to include recommendations on the client report that would be appropriate for adult probation. The new SAQ was called SAQ-Adult Probation. The purpose of the present study was to investigate the applicability of the SAQ to adult probation clients.

### Method

There were 171 adult probationers included in the present study. There were 129 males and 42 females. Age was distributed (frequency given in parentheses) as follows, Under 17 years (2), 18-21 years (20), 22-25 years (25), 26-29 years (27), 30-33 years (24), 34-37 years (22), 38-41 years (17), 42-45 years (13), 46-49 years (5), 50-53 years (8), over 54 years (8). Education was represented as follows: 8th grade or less (20), Partially completed High School (43), GED (16), High School Graduate (53), Some College (36) and College Graduate (3).

The SAQ and MMPI were administered in counterbalanced order. Product-moment correlations were calculated between SAQ scales and selected MMPI scales. The MMPI scales used for criterion measures were as follows. The Truthfulness Scale was validated with the MMPI L Scale, F Scale and K Scale. The Alcohol Scale was validated with the MMPI MacAndrew Scale and PD Scale. The Drug Scale was validated with the MMPI MacAndrew Scale and PD Scale. The Aggressiveness Scale was validated with the MMPI HOS Scale and TSC-V. The Resistance Scale was validated with the MMPI SOC Scale, SCIA Scale, AUT Scale and TSC-III Scale. The Stress Coping Abilities Scale was validated with the MMPI PT Scale, MAS Scale and TSC-VII Scale.

Key to MMPI Scales: **L** (Lie Scale), **F** (Validity), **K** (Validity Correction), **PD** (Psychopathic Deviate), **PT** (Psychasthenia), **MAS** (Taylor Manifest Anxiety) **MAC** (MacAndrew), **SOC** (Social Maladjustment), **AUT** (Authority Conflict), **HOS** (Manifest Hostility), **TSC-III** (Suspiciousness), **TSC-V** (Resentment), **TSC-VII** (Tension), **PD2** (Authority Problems) and **SCIA** (Social Alienation).

### Results and Discussion

The results of this study (1992, N = 171) are summarized in Table 25.

The **Truthfulness Scale** was highly significantly correlated with the MMPI L Scale, F Scale and K Scale. The scales in the MMPI that relate to truthfulness are significantly correlated with the SAQ Truthfulness Scale. This supports the validity of the SAQ Truthfulness Scale.

The **Alcohol Scale** correlates significantly with the MMPI PD Scale. The correlation with the MAC Scale was not significant. Similarly, The **Drug Scale** correlates significantly with the MMPI PD Scale but not with the MAC Scale. These results support the validity of the SAQ Alcohol Scale and Drug Scale.

The **Aggressiveness Scale** correlates highly with the MMPI HOS Scale and TSC-V Scale. The **Resistance Scale** correlates highly significantly with the MMPI AUT Scale, SCIA Scale and TSC-III Scale. These results support the validity of the SAQ Aggressiveness Scale and the Resistance Scale.

The **Stress Coping Abilities Scale** correlates highly significantly with the MMPI PT Scale, MAS Scale and TSC-VII Scale. These results support the validity of the SAQ Stress Coping Abilities Scale.

**Table 5. Product-moment correlations.  
Adult Probation Clients (1992, N=171)**

MMPI SCALES	Truthfulness	Alcohol	Drugs	Aggressivity	Resistance	Stress Coping
L	.511**	.022	-.186*	-.034	.089	-.065
F	-.293**	.379**	.269*	.323**	.276**	.462**
K	.458**	-.201*	-.151	-.340**	-.077	-.319**
PD	-.241**	.312**	.190*	.300**	.065	.491**
PT	-.279**	.202*	.115	.142	.069	.470**
MAS	-.394**	.288**	.151	.259**	.031	.536**
MAC	.005	.051	.090	.188*	.127	.076
SOC	-.335**	.273**	.174	.139	.033	.329**
AUT	-.321**	.238**	.173	.351**	.262**	.217*
HOS	-.465**	.197*	.159	.380**	.176	.266**
TSC-III	-.373**	.195*	.061	.292**	.209*	.247**
TSC-V	-.457**	.322**	.195*	.404**	.140	.402**
TSC-VII	-.431**	.222*	.168	.314**	.052	.446**
PD2	-.161	.165	.161	.321**	.031	.105
SC1 A	-.377**	.283**	.171	.311**	.249**	.447**

NOTE: level of significance \* p<.01, \*\* p<.001

**The present study supports the validity of the SAQ in a sample of adult probationers.** SAQ scales correlate significantly, in predicted directions with criterion MMPI scales. The MMPI was selected for this criterion-related validity study because it is the most widely used and respected personality test in the United States. A short coming of the MMPI MAC Scale (MacAndrew) is that it is a discriminant scale that discriminates between known substance abusers and non-abusers. However, none of the MacAndrew items relate to alcohol or drugs per se. The SAQ Alcohol and Drug scales are correlated with the PD Scale which has been shown do be valid for substance abusers and adult probationers.

With the exception of the MacAndrew Scale, these correlation results are in close agreement with previous studies that validated the SAQ with criterion measures selected from the MMPI. The results of the present study support the validity of the SAQ.

## **17. Validation of the SAQ-Adult Probation II Violence Scale with a Polygraph Examination**

In 1994 two additional scales were included in the SAQ and the new instrument was called the **SAQ-Adult Probation II**. The new scales include the **Antisocial Scale** and the **Violence Scale**. The Antisocial Scale measures antisocial behavior, lying, irresponsibility, disloyalty, uncaring, remorseless, emotionally blunted and irresponsible behavior. The Violence Scale measures physical force to injure, damage or destroy. The Violence Scale identifies people that are dangerous to themselves and others. Version II contains eight scales: Truthfulness Scale, Alcohol Scale, Drug Scale, Aggressiveness Scale,

Resistance Scale, Antisocial Scale, Violence Scale, and Stress Coping Abilities Scale. This study (1994) was conducted to evaluate the validity of the Violence Scale.

### Method and Results

One hundred and seven (107) halfway house male resident volunteers participated in the study. The Violence Scale and a Polygraph “violence” examination were alternately administered. The Product-moment correlation coefficient of  $r = .25$  was significant at  $p < .01$ . This means the SAQ Violence Scale and polygraph examination on violence were in agreement most of the time. The significant correlation was in the predicted direction. This study supports the validity of the Violence Scale.

## **18. Validation of the SAQ-Adult Probation II Antisocial and Violence Scales**

The present study (1994) utilized selected MMPI scales as criterion measures to validate the Antisocial Scale and Violence Scale. Ninety-seven (97) male chemical dependency outpatients were alternately administered the MMPI and the two SAQ-Adult Probation II scales. The results demonstrated that the Antisocial Scale correlated significantly, in the expected direction, with the following MMPI scales: Psychopathic Deviant (PD,  $r = 0.48$ ), Social Alienation (SCIA,  $r = 0.46$ ) and Social Maladjustment (SOC,  $r = 0.51$ ). The Violence Scale correlated significantly in the predicted direction with the following MMPI scales: Hypomania (MA,  $r = 0.49$ ) and Manifest Hostility (HOS,  $r = 0.44$ ). All correlations were significant at  $p < .01$ . These results support the validity of the Antisocial and Violence Scales.

## **SAQ-SHORT FORM RESEARCH**

An SAQ-ADULT PROBATION SHORT FORM (hereinafter referred to as the SAQ-Short Form or "SHORT FORM") was developed for the reading impaired, high volume testing settings and as a retest instrument. The SHORT FORM consists of five scales. It can be administered orally in 9 minutes in individual or group testing settings. The SHORT FORM provides an alternative for reading impaired risk and needs assessment.

## **19. Validation of the SAQ-Short Form**

The SHORT FORM was completed in 1991 and a SHORT FORM validity study was also conducted on adult probationers for whom the test was designed. The SAQ-Adult Probation includes six scales, whereas the SHORT FORM includes five scales. The Stress Coping Abilities scale is not included in the SHORT FORM because it consists of 40 scale items. SHORT FORM scales were selected from SAQ scale items having the best statistical properties. Thus, these comparable scales vary in length, yet essentially consist of the same test questions (the best-of-the-best) in the SAQ-Adult Probation and SHORT FORM.

### Method

There were 310 adult probationers included in the present study. There were 217 (70%) males and 93 (30%) females. Age was distributed as follows: 16-25 years (56, 18%); 26-35 years (160, 51.5%); 36-45 years (60, 19.5%); 46-55 years (28, 9%); and over 55 (6, 2%). Education was summarized as follows: 8th grade or less (26, 8.5%); Some High School (60, 19.5%); GED (63, 20%), High School Graduate (113, 36.5%); Some College (40, 12.8%); College Graduate (8, 2.5%). Ethnicity was categorized as follows: Caucasian (193, 2.5%); Black (67, 21.5%); Hispanic (45, 14.5%) and American Indian (5, 1.5%).

Participants completed both the SAQ-Adult Probation and the SHORT FORM in the same session. The presentation order was counterbalanced.

## Results and Discussion

Product-moment correlation coefficients between the SAQ-Adult Probation and SHORT FORM are presented in Table 6.

The correlation between SAQ-Adult Probation scales and corresponding SHORT FORM scales are highly significant. The test items in SAQ-Adult Probation scales with the best statistical properties were included in analogous SHORT FORM scales. These results supports with validity of the SHORT FORM.

**Table 6. Product-moment correlations (1991)**  
**SAQ-Adult Probation and SAQ-Short Form**

<u>SCALES</u>	<u>AGREEMENT COEFFICIENT</u>	<u>SIGNIFICANCE LEVEL</u>
Truthfulness Scale	.570	P < .001
Alcohol Scale	.405	P < .001
Drug Scale	.482	P < .001
Aggressiveness Scale	.385	P < .001
Resistance Scale	.348	P < .001

## **SAQ RELIABILITY RESEARCH**

Any approach to detection, assessment, or measurement must meet the criteria of reliability and validity. The research summarized above supports the validity of the SAQ. Reliability research is summarized below.

Reliability refers to an instrument's consistency of results regardless of who uses it. This means that the outcome must be objective, verifiable, and reproducible. Ideally, the instrument or test must also be practical, economical, and accessible. Psychometric principles and computer technology insures accuracy, objectivity, practicality, cost-effectiveness and accessibility.

### **20. A Study of SAQ Test-Retest Reliability**

Reliability is a measure of the consistency of a test in obtaining similar results upon re-administration of the test. One measure of test reliability, over time, is the test-retest correlation coefficient. In this type of study, the test, is administered to a group and then the same test is re-administered to the same group at a later date.

#### Method

College students at two different colleges enrolled in introductory psychology classes participated in this study (1984). A total of 115 students participated and received class credit for their participation. The students were administered the SAQ in a paper-pencil test format. One week later they were retested with the SAQ again.

## Results

The results of this study revealed a significant test-retest product-moment correlation coefficient of  $r = 0.71$ ,  $p < .01$ . These results support the reliability of the SAQ. Test-retest consistency was very high and indicates that the SAQ scores are reproducible and reliable over a one week interval.

### **21. Inter-item Reliability of the SAQ**

Within-test reliability measures to what extent a test with multiple scales measuring different factors, measures each factor independent of the other factors (scales) in the test. It also measures to what extent items in each scale consistently measures the particular trait (or factor) that scale was designed to measure. Within-test reliability measures are referred to as inter-item reliability. The most common method of reporting within-test (scale) inter-item reliability is with Coefficient Alpha.

## Method

This study (1985) included three separate groups of subjects: 100 outpatients in private practice, 100 substance abuse inpatients, and 189 job applicants -- totaling 389 subjects. Separate inter-item reliability analyses were conducted to compare results across the three groups.

## Results and Discussion

The inter-item reliability coefficient alpha and within-test reliability statistics are presented in Tables 7 and 8, respectively. All inter-item reliability coefficient alphas and within-test reliability F-values are significant at  $p < .001$ . These results supports the reliability of the SAQ. The SAQ is a highly reliable instrument.

**Table 7. Inter-item reliability, coefficient alpha. (1985)  
Outpatients, Substance Abuse Inpatients and Job Applicants (N = 389)**

<b>SAQ SCALES MEASURES</b>	<b>N ITEMS</b>	<b>Outpatients (N = 100)</b>	<b>Inpatients (N = 100)</b>	<b>Job Applicants (N = 189)</b>
Truthfulness Scale	21	0.81	0.79	0.81
Alcohol Scale	21	0.86	0.93	0.83
Drug Scale	21	0.80	0.85	0.79
Aggressiveness Scale	21	0.63	0.72	0.50
Resistance Scale	21	0.74	0.74	0.61
Stress Coping Abilities	40	0.81	0.84	0.73

**Table 8. Within-test reliability, F statistic.  
All F statistics are significant at  $p < .001$ .**

<b>SAQ SCALES MEASURES</b>	<b>N ITEMS</b>	<b>Outpatients (N = 100)</b>	<b>Inpatients (N = 100)</b>	<b>Job Applicants (N = 189)</b>
Truthfulness Scale	21	21.73	53.15	45.91
Alcohol Scale	21	9.29	31.46	47.75
Drug Scale	21	27.19	16.34	58.18
Aggressiveness Scale	21	26.97	17.05	48.26
Resistance Scale	21	15.97	19.21	23.67
Stress Coping Abilities	40	46.74	16.20	195.86

These results (Table 7 and 8) demonstrate the impressive reliability of the SAQ. Reliability was demonstrated with three different groups of people (outpatients, inpatients and job applicants) taking the SAQ.

In each of these subject samples, all SAQ scales (measures) were found to be significantly independent of the other SAQ scales as shown by the highly significant within-test F statistics. The F statistic is obtained in within-subjects between measures ANOVA performed on each individual SAQ scale in each of the samples.

The F statistics show that each SAQ scale measures essentially one factor (or trait). In addition, all SAQ scales show high inter-item reliability. This is demonstrated by the Standardized Cronbach's Coefficient Alpha - a widely used test of inter-item reliability when using parallel models. This measure reveals that all items in each SAQ scale are significantly related and measure just one factor. In other words, each SAQ scale measures one factor, yet the factor being measured is different from scale to scale.

The inter-item reliability coefficients show very similar results across the three subject samples. The Truthfulness Scale, Alcohol Scale and Drug Scale are in close agreement. The Stress Coping Abilities Scale shows similar results for the chemical dependency groups but the job applicant group had a slightly lower coefficient alpha. This difference might be accounted for by the fact that individuals applying for a job would not want to show themselves in a bad light by indicating they have an emotional, stress-related or mental health problem. The Aggressiveness Scale and the Resistance Scale have somewhat lower coefficient alphas than the other SAQ scales perhaps because these two scales are not as specific as, say alcohol or drug abuse.

Because each sample may have scored differently from the other two samples, the data for all subjects were combined. For example, job applicants may score low on the Alcohol Scale and inpatient clients may score high. By combining the data, scale scores would likely be distributed from low to high and result in even better coefficient alphas than each sample separately. Table 9 presents the inter-item reliability analysis of all of these independent studies (N = 100, N = 100, N = 189) combined (N = 389).

The combined data shows that all but one coefficient alpha increased in the combined data compared to coefficient alphas of each subject sample alone. Only the Aggressiveness Scale had a higher coefficient alpha in the inpatient chemical dependency clients than this scale coefficient alpha for the combined data. These coefficient alphas in the combined data are very high and provide strong support for the reliability of the SAQ.

**Table 9. Inter-item reliability, coefficient alpha. All data combined (N = 389).  
All F statistics are significant at p<.001.**

<b>SAQ SCALES MEASURES</b>	<b>N ITEMS</b>	<b>COEFFICIENT ALPHA</b>	<b>F VALUE</b>
<b>Truthfulness Scale</b>	21	0.82	96.93
<b>Alcohol Scale</b>	21	0.94	26.68
<b>Drugs Scale</b>	21	0.88	79.71
<b>Aggressiveness Scale</b>	21	0.70	82.00
<b>Resistance Scale</b>	21	0.77	53.03
<b>Stress Coping Abilities</b>	40	0.85	150.78

## 22. Replication of SAQ Reliability in a Sample of Inpatient Clients

In a replication of earlier SAQ research, chemical dependency inpatients (1987) were used to evaluate the reliability of the SAQ scales.

### Method and Results

The SAQ was administered to 192 inpatients in a chemical dependency facility. The inter-item coefficient alpha statistics are presented in Table 10. These results are in close agreement to reliability results obtained in an earlier study using chemical dependency inpatient clients. In some cases the coefficient alphas are higher in the present study as in the previous study. The results of the present study support the reliability of the SAQ.

**Table 10. Inter-item reliability, coefficient alpha.**  
**Chemical dependency inpatients (N = 192).**

<b>SAQ SCALES MEASURES</b>	<b>N ITEMS</b>	<b>COEFFICIENT ALPHA</b>	<b>F VALUE</b>	<b>P VALUE P&lt;</b>
<b>Truthfulness Scale</b>	21	0.79	13.28	0.001
<b>Alcohol Scale</b>	21	0.92	24.39	0.001
<b>Drugs Scale</b>	21	0.87	22.23	0.001
<b>Aggressiveness Scale</b>	21	0.81	10.32	0.001
<b>Resistance Scale</b>	21	0.81	10.92	0.001
<b>Stress Coping Abilities</b>	40	0.99	27.77	0.001

In all of the subject samples studied, the SAQ scales were demonstrated to be independent measures. This mutual exclusivity (significant at  $p < .001$ ) was demonstrated by a within-subjects measures ANOVA performed on each SAQ scale. These analyses demonstrate that each SAQ scale measures one factor or trait. All SAQ scales demonstrate high inter-item congruency, as reflected in the standardized Cronbach Coefficient Alpha. The items on each SAQ scale are significantly related to the factor or trait each scale was designed to measure. In other words, each SAQ scale measures one factor, and the factor (or trait) being measured differs from scale to scale.

**SAQ scales (measures) have been shown to be both mutually exclusive and have high inter-item scale consistency. The SAQ has acceptable and empirically demonstrated reliability. In addition, inter-item reliability studies have shown that each SAQ scale is an independent measure of the trait (factor) it was designed to measure.**

## 23. A Study of Sex Differences in the SAQ-Adult Probation

People often develop firm masculine and feminine identifications that contribute to consistent "sex differences" or gender differences on psychometric tests. The SAQ-Adult Probation is a risk assessment instrument that measures risk from a variety of perspectives, notably, risk of alcohol and drug abuse, aggressiveness, resistance to authority and mental health. If sex differences exist in these areas then male and female respondents are likely to score differently on these SAQ scales. The purpose of the present study (1990) was to investigate sex differences in SAQ scales.

### Method

There were three subject samples included in the present study. Group 1 consisted of 446 North Dakota adult probationers. Group 2 consisted of 294 probationers from Washington, DC. Group 3 consisted of 846

Texas adult probationers. The SAQ-Adult Probation was administered to each probationer individually as part of routine adult offender evaluation programs at each location.

The North Dakota group consisted of 446 probationers. There 347 males (77.8%) and 99 females (22.2%). Age categories were as follows: 221 (16 to 25 years), 143 (26 to 35 years), 46 (36 to 45 years), 31 (46 to 55 years), and 5 (over 55 years of age). There were 370 Caucasians, 18 Blacks, 14 Hispanics, 1 Asian, 39 American Indians, and 4 Other. Educational levels were: Below 8th grade (24), Some High School (71), GED (64), High School Graduates (155), Some College (92), Business/Technical School (9), and College Graduates (31).

The Washington, DC group consisted of 294 probationers, 203 (69%) males and 91 (31%) females. Age was represented as follows: 16-25 years (71 males, 16 females); 26-35 years (93 males, 42 females); 36-45 years (32 males, 17 females); and 46-55 years (7 males, 16 females). Ethnicity was represented as follows: Caucasian (55 males, 32 females); Black (130 males, 58 females), Hispanic (9 males); American Indian (7 males); and other (2 males, 1 female). Education was represented as follows: 8th grade or less (13 males, 1 female); Some High School (43 males, 19 females); GED (16 males, 7 females); High School Graduates (83 males, 24 females); Some college (26 males, 21 females); Business/Technical School (1 male, 1 female); College Graduates (13 males, 15 females); and Graduate/Professional Degrees (8 males, 3 females).

The Texas group consisted of 846 probationers, 715 were male and 131 female. Age distributions were as follows: Under 16 (11 males, 2 females); 16-25 years (394 males, 60 females); 26-35 years (301 males, 67 females); and over 55 (9 males, 2 females). Ethnicity was represented as follows: Caucasian (436 males, 106 females); Black (96 males, 16 females); Hispanic (168 males, 9 females); and American Indian (15 males). Education was distributed as follows: 8th grade or less (56 males, 5 females); Some High School (241 males, 34 females); GED (72 males, 9 females); High School Graduate (230 males, 30 females); Some College (91 males, 49 females); Business/Technical School (6 males, 1 female); College Graduates (14 males, 3 females); and Graduate/Professional Degree (5 males).

Results and Discussion

Reliability coefficient alpha results are presented in Table 11.

**Table 11. Reliability statistics, coefficient alpha.**  
**All coefficient alphas are significant as p<.001.**

<b><u>SAQ SCALES</u></b>	<b><u>North Dakota 446 Probationers</u></b>	<b><u>Washington, DC 294 Probationers</u></b>	<b><u>Texas 846 Probationers</u></b>
Truthfulness Scale	.81	.83	.84
Alcohol Scale	.87	.86	.87
Drugs Scale	.89	.87	.86
Aggressiveness Scale	.80	.80	.80
Resistance Scale	.80	.80	.82
Stress Coping Abilities Scale	.91	.93	.94

Coefficient Alpha is considered the most important index of internal consistency or reliability. This study demonstrates the reliability (internal consistency) of the SAQ-Adult Probation scales with probationers from three different locations. Reliability refers to consistency of test results regardless of who uses the test. SAQ-Adult Probation test results are reliable, objective, verifiable and reproducible. These results support the internal consistency (reliability) of the SAQ-Adult Probation.

T-tests were calculated for all SAQ-Adult Probation scales to assess possible sex or gender differences. T-test results are presented in Table 12.

**Table 12. T-test comparisons of sex differences. (1990)**  
**Probation Sex Differences (Total N = 1,586)**

<b><u>SAQ SCALE</u></b>	<b><u>North Dakota 446 Probationers</u></b>	<b><u>Washington, DC 294 Probationers</u></b>	<b><u>Texas 846 Probationers</u></b>
Truthfulness Scale	n.s.	n.s.	n.s.
Alcohol Scale	t=6.41, p<.001	t=2.29, p<.023	t=5.95, p<.001
Drug Scale	n.s.	n.s.	n.s.
Aggressiveness Scale	t=2.91, p<.004	n.s.	n.s.
Resistance Scale	n.s.	n.s.	n.s.
Stress Coping Abilities	n.s.	n.s.	t=2.92, p<.004

Significant sex differences were demonstrated on two of the six scales, i.e., Alcohol and Aggressivity, in the North Dakota group, significant sex differences were found on the Alcohol Scale in the Washington, DC group and significant sex differences were found on the Alcohol and Stress Coping Abilities scales in the Texas group.

Based on this (1990) study, gender specific norms (or separate male and female scoring procedures) have been established in the SAQ-Adult Probation software program for men and women on the Alcohol, Aggressivity and Stress Coping Abilities scales. Significant sex differences were not observed on the other SAQ-Adult Probation scales. This is an example of the value of ongoing SAQ and SAQ-Adult Probation research. With more accurate and fair measures, assessment personnel can be more confident in their assessment-related decisions.

In the present North Dakota sample, females had a mean Alcohol scale score of 5.35 and males 11.30. On the Aggressiveness Scale females had a mean scored of 4.64 and males 6.11. Similar sex differences were demonstrated on the Driver Risk Inventory Alcohol and Driver Risk scales.

Higher male scores on these two SAQ-Adult Probation scales are likely reflecting straightforward admissions. Males appear to be more open than females regarding their drinking and aggressive behavior. Aggressivity has traditionally been viewed as more of a stereotype male trait in United States society.

No significant gender differences were observed on the Truthfulness Scale. The Truthfulness Scale is composed of items to which most people would agree. The present analyses (1990) suggest that clients were so open (candid or honest) in their answers to these test items that sex differences were minimal or non-significant. In other words, items on the Truthfulness Scale do not appear to be intimidating or threatening.

No significant sex differences were observed on the SAQ-Adult Probation Drug Scale and Resistance Scale. These results suggest an equal level of guardedness among men and women when answering questions about illegal substances or compliance in a probation or court-related setting. This uniform guardedness (defensiveness) appears to neutralize and perhaps cancel out any sex differences on these two scales.

## 24. SAQ Sex Differences in a Sample of Municipal Court Clients

A study (Arizona, 1990) involving substance abuse-related offenders processed through the Phoenix Municipal Court was conducted to evaluate possible sex differences in Substance Abuse Questionnaire (SAQ) scale scores. SAQ scales reliability were also reviewed. Comparison to previous SAQ-Adult Probation research regarding sex differences will help determine the consistency of sex difference across subject samples.

### Methods and Results

The SAQ was administered as part of the routine substance abuse evaluation program in Phoenix Municipal Court to 794 individuals. There were 727 (92%) males and 67 (8%) females included in this study. Age was distributed as follows: Under 16 years of age (1 male); 16-25 years of age (229 males, 28 females); 26-45 years (450 males, 29 females); 46-55 years (33 males, 6 females); and over 55 years (14 males, 4 females). Ethnic composition is summarized as follows: Caucasian (400 males, 71 females); Black (62 males, 14 females); Hispanic (151 males, 9 females); American Indian (59 males, 21 females); Asian (1 female); and other (5 males, 1 female). Education is summarized as follows: 8th grade or less (8 males, 1 female); Some High School (182 males, 36 females); GED (69 Males, 6 females); High School Graduates (216 males, 34 females); Some College (165 males, 34 females); Business/Technical School (8 males); College Graduates (27 males, 5 females); and Graduate/Professional Degree (2 males, 1 female).

The t-test comparisons of SAQ scales between males and females indicated that there was a significant sex (male and female) difference on the Resistance Scale ( $t = 2.29, p < .023$ ). Significant sex differences were not demonstrated on the Truthfulness Scale, Alcohol Scale, Drug Scale, Aggressiveness Scale or the Stress Coping Abilities Scale. The seeming lack of a consistent pattern of sex differences on a state-by-state comparison emphasizes the importance of ongoing database research.

**Table 13. SAQ reliability, coefficient alpha. Municipal court clients (N=794).  
All coefficient alphas are significant at  $p < .001$ .**

<b>SAQ SCALES</b>	<b>Coefficient Alpha</b>
Truthfulness Scale	.80
Alcohol Scale	.90
Drug Scale	.89
Aggressiveness Scale	.81
Resistance Scale	.85
Stress Coping Abilities	.94

This study supports the reliability (internal consistency) of the Substance Abuse Questionnaire (SAQ). The coefficient alphas for all SAQ scales were significant at  $p < .001$ . Similar reliability results have been demonstrated on other client populations.

## 25. SAQ Reliability Study in Different Samples of Adult Probationers

The present (1991) study was conducted to evaluate the statistical properties of the SAQ-Adult Probation in three different adult probation samples. As the SAQ-Adult Probation becomes more widely used it will continue to be our policy to continue to investigate statistical (reliability) properties on the various offender population databases.

## Method

There were three groups of adult probationers included in this study. Group 1 consisted of 1,299 Missouri Adult Probation clients. Group 2 consisted of 177 Iowa adult probationers. Group 3 consisted of 253 Oklahoma adult probationers. The **Missouri group** consisted of 1149 (88.5%) men and 150 (11.5%) women. Age group by gender is summarized as follows: Under 16 (2 males, 5 females, total 7); 16 to 25 (649 males, 64 females, total 713); 26 to 35 (277 males, 48 females, total 325); 36 to 45 (180 males, 23 females, total 203); 46 to 55 (26 males, 7 females, total 33); over 55 (15 males, 3 females, total 18). Ethnicity is summarized as follows: Caucasian (897 males, 126 females, total 1023); Black (234 males, 23 females, total 257); Hispanic (6 males, 0 females); American Indian (5 males); and Asian (7 males, 1 female, total 8). Education level is as follows: Less than 8th grade (103 males, 13 females, total 116); Some High School (478 males, 47 females, total 525); GED (132 males, 17 females, total 149); High School Graduates (283 males, 43 females, total 326); Business/Technical School (125 males, 26 females, total 151); Some College (8 males, 2 females, total 10); College Graduate (14 males, 1 female, total 15) and Professional/Graduate Degree (6 males, 1 female, total 7).

Demographics of the **Iowa group** are as follows. Age: Under 16 years (1, .6%); 16 to 25 (30, 16.9%); 26 to 35 (93, 52.5%); 36 to 45 (35, 19.8%); 46 to 55 (14, 7.9%); and over 55 (4, 2.3%). Ethnicity: Caucasian (152, 85.9%); Black (11, 6.2%); Hispanic (3, 1.7%); American Indian (2, 1.1%); and Other (9, 5.1%). Education: 8th grade or less (15, 8.5%); Some High School (36, 20.3%); GED (36, 20.3%); High School Graduate (63, 35.6%); Some college (23, 13.0%); Business/Technical School (1, .6%); College Graduate (2, 1.1%); and Graduate/Professional Degree (1, .6%).

The **Oklahoma group** consisted of 189 (75%) men and 64 (25%) women. Age was distributed as follows: Under 16 years (1, .4%); 16 to 25 (100, 39.5%); 26 to 35 (105, 51.5%); 36 to 45 (37, 14.6%); 46 to 55 (9, 3.6%); and over 55 (1, .4%). Ethnicity categories were the following: Caucasian (167, 66%); Black (52, 20.6%); Hispanic (13, 5.1%); American Indian (19, 7.5%) and Other (2, .8%). Education level was as follows: 8th grade or less (10, 4.0%); Some High School (95, 37.5%); GED (21, 8.3%); High School Graduate (75, 29.6%); Some College (45, 17.8%); Business/Technical School (3, 1.2%); College Graduate (3, 1.2%); and Graduate/Professional degree (1, 0.4%).

## Results and Discussion

Reliability coefficient alphas are presented in Table 14. The three groups are presented together for comparison purposes: Missouri 1,299 probationers, Iowa 177 probationers and Oklahoma 189 probationers; Total number of probationers = 1,665.

**Table 14. SAQ-Adult Probation reliability coefficient alphas. (N = 1,665)**  
**All coefficient alphas are significant at p<.001.**

<b>SAQ SCALES</b>	<b>Missouri 1,299 Probationers</b>	<b>Iowa 177 Probationers</b>	<b>Oklahoma 253 Probationers</b>
Truthfulness Scale	.81	.85	.86
Alcohol Scale	.93	.84	.91
Drug Scale	.90	.91	.89
Aggressiveness Scale	.80	.81	.82
Resistance Scale	.88	.92	.90
Stress Coping Abilities	.91	.92	.92

The results of this study demonstrates the reliability (internal consistency) of the SAQ-Adult Probation. Reliability coefficient alphas for all SAQ-Adult Probation scales are very high. These results strongly support the reliability of the SAQ-Adult Probation.

T-tests were calculated for all SAQ-Adult Probation scales to assess possible sex differences in the Missouri adult probationers. Significant gender differences were demonstrated on three (3) of the SAQ-Adult Probation scales, i.e., Alcohol Scale, Drugs Scale, and the Aggressiveness Scale. These results are presented in Table 15.

**Table 15. Sex differences in the Missouri adult probationer sample (N = 1,299).**

<b>SAQ SCALE</b>	<b>Mean Scale Score</b>		<b>SIGNIFICANCE LEVEL</b>
	<b>Males</b>	<b>Females</b>	
Alcohol Scale	9.30	13.94	P<.05
Drug Scale	8.78	12.34	P<.05
Aggressiveness Scale	7.14	8.71	P<.05

Significant gender differences were not observed on the other SAQ-Adult Probation scales, consequently separate male and female scoring procedures were established for only the Alcohol, Drug and Aggressiveness Scales.

Higher male scores on these three SAQ-Adult Probation scales likely reflects more straightforward admissions by men. Men appear to be more open than women regarding their substance (alcohol and other drugs) abuse and aggressive behavior. Aggressivity has traditionally been perceived as a stereotyped male trait.

## **26. A Study of SAQ Reliability in a Sample of Nebraska Probationers**

The present study (1992) was conducted to investigate reliability and possible sex differences in Nebraska probationers.

### Method and Results

There were 306 Nebraska adult probationers included in the present study. There were 241 men (78.8%) and 65 women (21.2%). Demographics are presented in the following table.

<b><u>AGE GROUP</u></b>		<b><u>ETHNICITY</u></b>		<b><u>EDUCATION</u></b>	
Under 16 years:	1, 0.3%	Caucasian:	228, 74.5%	8th grade or less:	11, 3.6%
16 to 25 years:	146, 47.7%	Black:	66, 21.6%	Some High School:	71, 23.2%
26 to 35 years:	112, 36.6%	Hispanic:	3, 1.0%	GED:	24, 7.8%
36 to 45 years:	34, 11.1%	Asian:	3, 1.0%	High School Grad.:	114, 37.3%
46 to 55 years:	10, 3.3%	Am. Indian:	5, 1.6%	Some College:	69, 22.5%
Over 55 years:	3, 1.0%	Other:	1, 0.3%	Business/Tech. Degree:	8, 2.6%
				College Graduate:	7, 2.3%
				Grad/Prof. Degree:	2, 0.7%

T-test comparisons indicated there were no sex differences for age group, ethnicity or education levels. T-test comparisons between males and females on SAQ scales indicate that males scored significantly higher than females on the Alcohol Scale, Drug Scale and Aggressiveness Scale. These results are in agreement with sex differences that were found in previous SAQ research.

Reliability coefficient alphas are presented in Table 16. All coefficient alphas were significant at  $p < .001$ . These results support the reliability of the SAQ in the assessment of Nebraska adult probationers.

**Table 16. Reliability coefficient alpha. Nebraska adult probationers (N = 306).**  
All coefficient alphas are significant at  $p < .001$ .

<u>SAQ SCALES</u>	<u>Coefficient Alpha</u>
Truthfulness Scales	.89
Alcohol Scale	.93
Drug Scale	.90
Aggressiveness Scale	.87
Resistance Scale	.85
Stress Coping Abilities	.92

These results are in close agreement with reliability coefficient alphas found in previous SAQ and SAQ-Adult Probation studies. These results again demonstrate the internal consistency of the SAQ.

## 27. A Study of Reliability in Five Samples of Adult Probationers

Five adult probation samples were included in the present study (1993) to further investigate reliability and sex differences in different samples and assessment milieu. The groups of probationers represented diversion program clients, department of corrections probationers, outpatient probationers and probationers.

### Methods and Results

The five groups that participated in the present study were made up of probationers located in different areas of the country. The **Group 1** consisted of 110 Arizona misdemeanor diversion program clients. Demographics for this diversion group are summarized as follows: Gender (92 males and 18 females). Age: 16 to 25 (27.3%), 26 to 35 (35.5%), 36 to 45 (26.4%), 46 to 55 (7.3%), and Over 55 (3.6%). Ethnicity: Caucasian (62.7%), Black (37.3%). Education: 9th grade or less (2.7%), Some High School (21.8%), GED (6.4%), High School Graduate (22.7%), Some College (23.6%), Technical/Business School (10%), College Graduates (10%) and Graduate/Professional Degree (2.7%).

**Group 2** consisted of 510 Georgia Department Of Corrections probationers (475 male and 35 female). Demographics are summarized for age as follows: Under 16 (4.0%), 16 to 25 (55.1%), 26 to 35 (31.6%), 36 to 45 (9.6%), 46 to 55 (2.5%) and Over 55 (8.0%). Ethnicity: Caucasian (26.7%), Black (71.4%), Hispanic (1%), Asian (0.2%), and Other (0.8%). Education: Less than 9th grade (5.5%), Some High School (44.3%), GED (5.1%), High School Graduate (27.6%), Some College (12.4%) Technical/Business School (0.4%), College Graduate (3.7%) and Graduate/Professional Degree (1.0%).

**Group 3** consisted of Georgia 859 outpatients and probationers (724 males and 135 females). Age is summarized as follows: Under 16 (0.3%), 16 to 25 (30.8%), 26 to 35 (39%), 36 to 45 (21.9%), 46 to 55 (6.1%) and Over 55 (1.9%). Ethnicity: Caucasian (82.8%), Black (15.1%), Hispanic (1.0%), Asian (0.5%), American Indian (0.3%) and Other (0.2%). Education: 9th grade or less (4.1%), Some High School (29.3%), GED (4.8%), High School Graduate (41.2%), Some College (16.2%), Technical/Business School (0.3%), College Graduate (3.8%) and Graduate/Professional Degree (0.2%).

**Group 4** consisted of another Georgia 1479 outpatient and probation respondents (1291 males and 188 females). Age demographics were: Under 16 (0.3%), 16 to 25 (38.9%), 26 to 35 (36.2%), 36 to 45 (18.0%), 46 to 55 (4.9%) and Over 55 (1.6%). Ethnicity: Caucasian (61.9%), Black (36.2%), Hispanic (0.9%), Asian (0.3%), American Indian (0.2%) and Other (0.4%). Education: 9th grade or less (4.5%), Some High School (33.9%), GED (5.0%), High School Graduate (35.2%), Some College (15.4%), Technical/Business School (1.1%), College Graduates (4.3%) and Graduate/Professional Degree (0.7%).

**Group 5** consisted of Missouri 1,042 adult probationers. There were 835 (80.1%) males and 207 (19.9%) females. This sample is described as follows: Age: 18 years or younger (10.8%); 19 to 29 (43.8%); 30 to 39 (31.0%); 40 to 49 (10.5%); 50 to 59 (3.3%); and 60 & over (0.7%). Ethnicity: Caucasian (73.6%); Black (23.2%); Asian (0.3%); American Indian (1.2%); Hispanic (1.5%); and Other (0.1%). Education: 8th grade or less (7.9%); Partially Completed High School (36.5%); High School Graduate (34.2%); Partially Completed College (7.9%); College Graduate (0.8%); and Professional/Graduate School (12.8%). Marital Status: Single (57.5%); Married (18.9%); Divorced (16.7%); Separated (6.0%); and Widowed (0.5%). Employment Status: Employed (50.6%); Unemployed (49.2%).

Reliability coefficient alphas for the 4,000 clients represented in these five groups are presented in Table 17. All coefficient alphas are significant a  $p < .001$ . These results strongly support the reliability of the SAQ-Adult Probation.

T-test comparisons of male/female differences in SAQ scale scores (N = 4,000) showed varied results. For Group 1 diversion clients, there were no sex differences observed on any of the SAQ-Adult Probation scales. Group 2 DOC probationers exhibited significant sex differences on three of the SAQ-Adult

**Table 17. Reliability coefficient alphas for five probationer samples (1993, N = 4,000).**

**All coefficient alphas are significant at  $p < .001$ .**

<b><u>SAQ SCALES</u></b>	<b>1 Diversion Clients N = 110</b>	<b>2 DOC Probationers N = 510</b>	<b>3 Outpatient Probationers N = 859</b>	<b>4 Outpatient Probationers N = 1479</b>	<b>5 Probationers N = 1042</b>
Truthfulness Scale	.87	.87	.87	.87	.90
Alcohol Scale	.92	.93	.92	.92	.96
Drug Scale	.90	.93	.89	.92	.92
Aggressiveness Scale	.86	.86	.85	.85	.91
Resistance Scale	.85	.88	.87	.86	.88
Stress Coping Abilities	.99	.91	.93	.93	.93

Probation scales, i.e., Truthfulness Scale, Alcohol Scale and the Stress Coping Abilities Scale. For Groups 3 and 4 outpatient probationers, and Group 5 probationers, significant sex differences were found on the Alcohol and Aggressiveness Scales. Consistent male/female differences are found on the Alcohol and Aggressiveness Scales across different subject groups and locations around the country. These results suggest that men are on the average more open with regard to self-report and their alcohol consumption than most women. Higher male scores likely reflect more straightforward admissions by men.

## **28. Reliability of the SAQ-Adult Probation II**

In 1994 the SAQ-Adult Probation II was developed to include two important areas of probationer assessment. **The two new scales that were added to the SAQ are the Antisocial Scale and the**

**Violence Scale.** The Antisocial Scale measures antisocial behavior, lying, irresponsibility, disloyalty, uncaring, remorseless, emotionally blunted and irresponsible behavior. The Violence Scale measures physical force to injure, damage or destroy. The Violence Scale identifies people that are dangerous to themselves and others. The purpose of the present study (1994) was to test the reliability of the SAQ-Adult Probation II. Three subject samples are included in the study and they total 4,067 probationers.

### Method

There were three groups of probationers included in the present study. There were 2,734 probationers in Group 1, 344 probationers in Group 2 and 989 probationers in Group 3. Demographic composition of **Group 1** probationers is as follows: There were 2,182 (79.8%) males and 552 (20.2%) females. Age: 19 years and younger (11.9%); 20 to 29 years (46.0%); 30 to 39 years (29.8%); 40 to 49 years (9.4%); 50 to 59 years (2.2%); 60 to 69 years (0.3%); 70 + years (0.3%). Ethnicity: Caucasian (50.4%); Black (17.4%); Hispanic (31.0%); Asian (0.3%); American Indian (0.5%); Other (0.4%). Marital Status: Single (53.2%); Married (25.5%); Divorced (12.6%); Separated (7.5%); Widowed (0.7%); and Missing (0.5%).

**Group 2** demographic composition is as follows: There were 273 males (79.4%) and 71 females (20.6%) probationers. Age: 19 and younger (9.3%); 20 to 29 years (46.5%); 30 to 39 years (29.1%); 40 to 49 years (9.3%); 50 to 59 years (4.1%); and 60 to 69 years (1.5%). Ethnicity: Caucasian (55.5%); Black (15.1%); Hispanic (24.1%) American Indian (3.8%); and Other (1.5%). Education: 8th grade or less (2.0%); Partially Completed High School (31.1%); High School Graduates (41.0%); and Other (26.9%). Marital Status: Single (59.3%); Married (25.3%); Divorced (7.8%); Separated (6.7%); and Widowed (0.9%).

**Group 3** demographic composition is as follows: Of the 989 probationers there were 721 (72.9%) males and 267 (27.0%) females. Age: 16 to 20 years (15.3%); 21 to 25 years (22.4%); 26 to 30 years (18.1%); 31 to 35 years (17.3%); 36 to 40 (11.1%); 41 to 45 years (7.3%); 46 to 50 years (3.7%); 51 to 55 years (2.0%); 56 to 60 years (0.9%); 61 and older (1.8%). Ethnicity: Caucasian (57.5%); Black (10.2%); Hispanic (23.5%); Asian (0.5%); American Indian (5.8%); and Other (2.3%). Marital Status: Single (58.9%); Married (22.9%); Divorced (10.5%); Separated (6.8%); and Widowed (0.7%). Employment Status: Employed (62.3%); Unemployed (37.4%).

The SAQ-Adult Probation II was administered to 4,067 probationers as part of routine evaluation programs. Subjects were administered the SAQ-Adult Probation II individually in paper-pencil test format.

### Results

Reliability coefficient alphas for the three groups (total N = 4,067) are presented in Table 18.

These results support the reliability of the Antisocial Scale and Violence Scale of the SAQ-Adult Probation II. Coefficient alphas for the Antisocial and Violence scales are highly significant at  $p < .001$ . Coefficient alphas for all scales are highly significant. These results support the reliability of the SAQ-Adult Probation II.

**Table 18. Reliability coefficient alphas for SAQ-Adult Probation II (N = 4,067).  
All coefficient alphas are significant at p<.001.**

<b>SAQ SCALE</b>	<b>1 Probationers N = 2,734</b>	<b>2 Probationers N = 344</b>	<b>3 Probationers N = 989</b>
Truthfulness Scale	.88	.87	.88
Alcohol Scale	.94	.91	.91
Drug Scale	.92	.89	.89
Antisocial Scale	.84	.84	.84
Aggressiveness Scale	.88	.88	.88
Violence Scale	.84	.85	.87
Resistance Scale	.85	.86	.85
Stress Coping Abilities	.91	.92	.92

### **29. Reliability of SAQ-Adult Probation II and Review of Client Responses Across Samples of Probationers**

This study (1995) was done to further test the reliability of the SAQ-Adult Probation II and to review responses to selected SAQ-Adult Probation II test items across probationer samples. Two probationer samples were included in the study. The samples were from similar probationer evaluation programs but came from different parts of the country. Items selected for review include self-perception of the severity of alcohol and drug problems, desire for treatment and violence problems. Summarizing the percentage of responses to selected SAQ-Adult Probation II items gives added insight into probationers situation and needs.

The present study (1995) was done to compare probationer responses to selected SAQ test items. These comparisons could serve to determine the general nature of substance abuse problems that are reported by probationers. If self-perceptions of probationers show similarities this would suggest that the SAQ-Adult Probation II has wide applicability across different samples of probationers.

#### Method and Results

There were two probationer samples used in the present study (1995). The total number of probationers administered the SAQ-Adult Probation II was 3,791. The participants in **Group 1** were 1,969 probationers in the Midwest. This sample consisted of 1,539 males (78.2%) and 430 females (21.8%) All were administered the SAQ-Adult Probation II. Demographic composition is as follows: Age: 19 and younger (24.9%); 20 to 29 years (42.3%); 30 to 39 years (23.5%); 40 to 49 years (7.0%); 50 to 59 years (1.6%); 60 to 69 years (0.7%); and over 70 (0.1%). Ethnicity: Caucasian (78.2%); Black (14.8%); Hispanic (4.2%); Asian (0.3%); American Indian (1.9%); and Other (0.6%). Employment Status: Employed (70.9%); Unemployed (29.1%). Marital Status: Single (65.1%); Married (17.2%); Divorced (12.6%); Separated (4.5%); and Widowed (0.7%).

**Group 2** consisted of 1,822 probationers in the Southwest. Demographic composition of this sample is as follows: Gender: males (1,452, 79.7%) and females (370, 20.3%). Age: 19 and younger (15.8%); 20 to 29 (45.9%); 30 to 39 (26.1%); 40 to 49 (8.2%); 50 to 59 (3.0%); 60 to 79 (1.1%). Ethnicity: Caucasian (48.7%), Black (36.9%); Hispanic (12.1%); Asian (0.8%); American Indian (0.4%); and Other (1.0%). Education: 8th grade or less (5.4%); Partially Completed High School (25.6%); High School Graduate (51.5%); and Advanced Education (17.6%). Employment: Employed (63.7%); Unemployed (36.2%).

Marital Status: Single (48.8%); Married (30.0%); Divorced (12.2%); Separated (8.0%); and Widowed (0.9%).

Reliability coefficient alphas are presented in Table 19 and 3,791 probationers are represented.

**Table 19. Reliability coefficient alphas SAQ-Adult Probation II (N = 3,791).  
All coefficient alphas are significant at p<.001.**

<b>SAQ SCALE</b>	<b>Group 1 Probationers (N = 1,969)</b>	<b>Group 2 Probationers (N = 1,822)</b>
Truthfulness Scale	.89	.88
Alcohol Scale	.93	.91
Drug Scale	.90	.89
Antisocial Scale	.85	.86
Aggressiveness Scale	.88	.87
Violence Scale	.87	.88
Resistance Scale	.84	.87
Stress Coping Abilities	.93	.93

These results support the reliability and internal consistency of the SAQ-Adult Probation II. All coefficient alphas are significant at p<.001. These results are consistent with reliability coefficient alphas found in earlier studies. The SAQ-Adult Probation II has proven to be a reliable test instrument across different probationer samples around the country. These reliability results support the applicability of the SAQ-Adult Probation II for widely distributed probationer populations.

The SAQ-Adult Probation II facilitates analysis of client responses to items or questions. The percentage of probationers responding to selected items provide additional insight into probationer profiles and patterns of responding. The following items were selected for probationer “percentage of response” analyses. Probation departments could find it interesting to compare probationer’s percentage responses to selected SAQ-Adult Probation II items, so percentage of probationer responses follow.

It should be noted that all respondents consisted of probationers. And negative responses to alcohol, drug or violence questions could be perceived by respondents as potentially having adverse consequences on probation status, so these percentages may be underestimates. In many cases percentage response analysis, even though likely underestimates (client self-report), do provide additional insight and understanding of the probationers risk and needs.

Comparisons of probationer self-perceptions of substance abuse (alcohol and drugs) problems shows striking similarities across these two probationer samples. Regarding alcohol abuse there were about 7-9 percent of the probationers who indicated they had a severe alcohol problem and 12 percent in both samples indicated they were recovering alcoholics. It is interesting to note that the percentage of probationers that indicated alcohol problems was in close agreement to the percentage who indicated a desire for alcohol treatment. Similar patterns emerged for drug abuse problems, however, there were only 5 percent of the probationers who indicated a severe drug problem. Group 2 (Southwest) probationers reported higher percentages of substance abuse treatment than Group 1 (Midwest) probationers (36% for Southwest and 24% for Midwest).

**Table 20. Probationer (N = 3,791) self-perceptions of substance abuse and violence problems.**

<b>Alcohol Responses</b>	<b>1 Probationers (Midwest-1,969)</b>	<b>2 Probationers (Southwest-1,822)</b>
7. I am concerned about my drinking .....	16%	17%
21. My drinking is more than just a minor problem .....	13%	14%
54. My drinking is a serious problem.....	10%	14%
60. I have a drinking or alcohol-related problem .....	16%	19%
81. I am a recovering alcoholic .....	12%	17%
121. I am an alcoholic .....	12%	20%
173. Select the statement that best describes your drinking (beer, wine or liquor) problem.		
1. Severe problem .....	7%	9%
2. Moderate problem .....	8%	7%
3. Slight problem .....	12%	11%
175. Recovering means having an alcohol or drug problem, but not using or abusing them anymore. I am a recovering:		
1. Alcoholic ( beer, wine or liquor) .....	12%	12%
2. Drug abuser (pot, cocaine, etc.).....	7%	6%
3. Both 1 and 2 (alcohol and drugs) .....	5%	8%
176. How much motivation or desire do you have for alcohol rehabilitation, treatment or help?		
1. Highly motivated( want help).....	13%	13%
2. Some motivation (undecided).....	6%	7%
3. Little motivation (handle it myself).....	9%	11%
<b>Drug Responses</b>		
90. I am dependent on drugs and may be addicted to them .....	5%	7%
91. I am a recovering drug abuser .....	10%	13%
103. I have a drug abuse or drug-related problem.....	10%	12%
114. My use of drugs is out of control .....	7%	6%
174. Select the statement that best describes your drug (marijuana, cocaine, crack, speed, heroin, etc.) problem.		
1. Severe problem .....	5%	5%
2. Moderate problem .....	3%	4%
3. Slight problem .....	6%	8%

<b>Drug Responses, continued</b>	<b>1 Probationers (Midwest)</b>	<b>2 Probationers (Southwest)</b>
175. Recovering means having an alcohol or drug problem, but not using or abusing them anymore. I am a recovering:		
1. Alcoholic ( beer, wine or liquor) .....	12%	12%
2. Drug abuser (pot, cocaine, etc.).....	7%	6%
3. Both 1 and 2 (alcohol and drugs) .....	5%	8%
177. How much motivation or desire do you have for drug rehabilitation, treatment or help?		
1. Highly motivated ( want help).....	9%	9%
2. Some motivation (undecided).....	3%	4%
3. Little motivation (handle it myself).....	4%	8%

**Substance Abuse Treatment**

172. How many times have you had treatment(inpatient, outpatient or counseling) for alcohol or drug abuse?		
2. Once .....	13%	19%
3. Twice .....	3%	7%
4. Three times or more .....	8%	10%

<b>Violence Responses</b>	<b>1 Probationers (Midwest)</b>	<b>2 Probationers (Southwest)</b>
31. I am a violent person .....	3%	5%
39. I frequently think of death, dying or suicide .....	9%	12%
44. I am a member of a gang .....	2%	3%
65. When angered, I am dangerous .....	9%	11%
79. I am proud of my reputation for being tough and aggressive.....	11%	11%
107. I have never been a member of a gang .....	18%	16%

With regard to violence, the Southwest probationers indicated a slightly higher overall tendency toward violence potential than the Midwest probationers. In particular the percentage of Southwest probationers (12%) who reported frequent thoughts of death, dying or suicide was higher than the percentage of Midwest probationers (9%).

Whereas these two probationer samples may appear to be quite similar, differences exist that suggests a “one-size-fits-all” approach would not work. For this reason the SAQ-Adult Probation II continues to be individualized on a variety of probationer populations. The SAQ-Adult Probation II database makes this type of research possible. Probationer self-perceptions are presented in Table 20.

It should be noted that these responses were provided by probationers, consequently they are likely underestimates -- as alcohol, drugs, and violence could negatively impact on their probationary status. Percentage response analyses is yet another way to look at the information provided by the probationers who complete the SAQ-Adult Probation II.

### 30. SAQ-Adult Probation II Reliability Study on Different Samples of Probationers

In 1995 several probationer samples (total N = 10,740) were studied to test the reliability of the SAQ-Adult Probation II. There were four probationer samples included in the study. **Group 1** consisted of 3,790 adult probationers, 2,990 (78.9%) males and 800 (21.1%) females. Demographic composition of this group is as follows: Age: 18 and less (20.5%); 19 to 29 (44.1%); 30 to 39 (24.7%); 40 to 49 (4.9%); 50 to 59 (2.3%); 60 to 69 (0.8%); and 70 & over (.01%). Ethnicity: Caucasian (64%); Black (25.5%); Hispanic (8%); Asian (0.5%); American Indian (1.2%); and Other (0.8%). Marital Status: Single (57.3%); Married (23.4%); Divorced (12.4%); Separated (6.2%); and Widowed (0.7%).

**Group 2** consisted of 763 probationers, 570 (74.7%) males and 193 (25.3%) females. Demographic composition is as follows: Age: 19 and under (18.6%); 20 to 29 (41.5%); 30 to 39 (26.6%); 40 to 49 (8.5%); 50 to 59 (3.5%); and 60 and older (0.7%). Ethnicity: Caucasian (50.7%); Black (29.5%); Hispanic (16.0%); Asian (1.6%); Native American (0.4%) and Other (1.0%). Education: 8th grade or less (7.9%); Some High School (29.0%); High School Graduate (46.5%); Some College (12.8%); and College Graduate (3.8%). Marital Status: Single (48.8%); Married (29.5%); Divorced (11.7%); Separated (8.4%) and Widowed (0.4%). Employment: Employed (70.4%) and Unemployed (29.0%).

**Group 3** consisted of 4,899 probationers. Demographic composition is summarized as follows. Males (3,938; 80.4%); Females (961, 19.6%). Age: 19 and under (12.0%); 20 to 29 (41.4%); 30 to 39 (30.6%); 40 to 49 (12.6%); 50 to 59 (2.8%); and 60 or older (0.6%). Ethnicity: Caucasian (57.5%); Black (22.4%), Hispanic (16.6%); Asian (0.1%); Native American (1.7%); Other (1.3%). Education: 8th grade or less (12.7%); Some High School (36.0%); High School Graduate (93.5%); Some College (9.2%); and College Graduate (3.6%). Marital Status: Single (55.1%); Married (24.0%); Divorced (12.1%); Separated (7.2%) and Widowed (0.8%). Employment: Employed (57.8%) and Unemployed (41.5%).

**Group 4** consisted of 306 probationers. Demographic composition of this group is as follows. Gender: Males (261, 85.3%); Females (45, 14.7%). Age: 19 and younger (4.6%); 20 to 29 (38.2%); 30 to 39 (36.3%); 40 to 49 (17.6%); 50 to 59 (26%); and 60 or older (0.7%). Ethnicity: Caucasian (57.2%); Black (5.9%); Hispanic (23.5%); Asian (0.3%); Native American (12.1%); Other (1.0%). Education: 8th grade or less (12.4%); Some High School (19.3%); High School Graduate (30.4%); Some College (31.7%); College Graduate (6.2%). Marital Status: Single (54.2%); Married (21.2%); Divorced (16.0%); and Separated (8.5%). Employment: Employed (63.1%) and Unemployed (36.9%).

**Group 5** consisted of 982 adult probationers. There were 755 (76.9%) males and 207 (23.1%) females. Demographic composition is summarized as follows. Age: 19 and younger (6.9%); 20 to 29 (46.5%); 30 to 39 (35.2%); 40 to 49 (10.1%) 50 to 59 (0.8%); and 60 or older (0.4%). Ethnicity: Caucasian (37.4%), Black (67.9%); Hispanic (1.1%); Asian (0.2%); Native American (1.6%); and Other (1.4%). Education: 8th grade or less (16.4%); Some High School (36.0%); High School Graduate (39.2%) Some College (5.7%); College Graduate (2.6%). Marital Status: Single (71.0%); Married (11.3%); Divorced (9.2%); Separated (4.5%) and Widowed (0.7%).

Reliability coefficient alphas for all five probationer groups (total N = 10,740) are presented in Table 21.

**Table 21. Reliability coefficient alphas. (1995, N = 10,740)**

**All coefficient alphas are significant at p<.001.**

<b>SAQ SCALE</b>	<b>1 Probationers N = 3,790</b>	<b>2 Probationers N = 763</b>	<b>3 Probationers N = 4,899</b>	<b>4 Probationers N = 306</b>	<b>5 Probationers N = 982</b>
Truthfulness Scale	.89	.86	.88	.89	.86
Alcohol Scale	.93	.92	.93	.93	.92
Drug Scale	.90	.89	.90	.93	.89
Antisocial Scale	.87	.85	.85	.85	.85
Aggressiveness Scale	.88	.85	.86	.86	.87
Violence Scale	.89	.85	.85	.85	.87
Resistance Scale	.86	.86	.86	.86	.85
Stress Coping Abilities	.93	.92	.93	.93	.91

These results support the reliability (internal consistency) of the SAQ-Adult Probation II. The SAQ-Adult Probation II is an objective and reliable assessment instrument. Reliability coefficient alphas across the five groups of probationers are in close agreement. These results suggest that the SAQ-Adult Probation II is applicable across different national probationer samples. The SAQ-Adult Probation II is a reliable probationer risk assessment instrument.

### **31. SAQ-Adult Probation Reliability in Large Samples of Probationers**

In 1996 two large probationer assessment programs were added to the SAQ-Adult Probation database. A study (1996) was conducted to determine the reliability of the SAQ-Adult Probation in these two new probationer samples. **The first group contained 15,203 probationers.** Although completed in 1996, this study used the SAQ-Adult Probation. Demographic composition of Group 1 is as follows. Of the 15,203 probationers 12,424 (81.7%) were male and 2,772 (18.2%) were female. Age: 18 or younger (10.3%); 19 to 29 (43.0%); 30 to 39 (31.5%); 40 to 49 (11.8%); 50 to 59 (2.5%) and 60 or older (0.7%). Ethnicity: Caucasian (64.5%); Black (32.6%); Hispanic (1.1%); Asian (0.3%); Native American (0.7%) and Other (0.4%). Education: 8th grade or less (7.1%); Partially Completed High School (34.9%); High School Graduate (44.7%); Partially Completed College (9.3%); College Graduate (2.0%) and Professional/Advanced Degree (0.3%). Employment: Employed (54.4%) and Unemployed (45.1%).

**Group 2 consisted of 9,247 probationers.** Of these 9,247 probationers, 7,582 (82%) were male and 1,665 (18%) were female. Demographic composition of Group2 is as follows. Age: 18 or younger (9.7%); 19 to 29 (43.0%); 30 to 39 (32.2%); 40 to 49 (11.8%); 50 to 59 (2.7%) and 60 or older (0.7%). Ethnicity: Caucasian (64.9%); Black (32.3%); Hispanic (1.2%) Asian (0.2%); Native American (0.7%) and Other (0.3%). Education: 8th grade or less (7.3%); Partially Completed High School (34.6%); High School Graduate (44.6%); Partially Completed College (9.1%); College Graduate (2.0%) and Professional/Advanced Degree (0.4%). Employment: Employed (52.8%) and Unemployed (46.8%)

Reliability coefficient alphas are represented in Table 22 and represent 24,450 probationers.

These results support the internal consistency (reliability) of the SAQ-Adult Probation for these two large probationer samples. These results are similar to those reported earlier on other client populations. Similar results will be obtained upon replication or retest. Outcomes are objective, verifiable and reproducible. SAQ-Adult Probation test results are reliable.

**Table 22. Reliability coefficient alphas (1996, N = 24,450).**  
All coefficient alphas are significant at  $p < .001$ .

<b>SAQ SCALE</b>	<b>Group 1 Probationers N = 15,203</b>	<b>Group 2 Probationer N = 9,247</b>
Truthfulness Scale	.89	.89
Alcohol Scale	.95	.96
Drug Scale	.92	.93
Aggressiveness Scale	.91	.91
Resistance Scale	.86	.87
Stress Coping Abilities	.93	.93

### 32. SAQ-Adult Probation II Reliability in Two Samples of Probationers

A study (1997) was conducted to determine the reliability of the SAQ-Adult Probation II in two probationer samples from different geographical regions. **The first group consisted of 1,930 probationers.** Demographic composition of Group 1 is as follows. Of the 1,930 probationers 1,401 (72.6%) were male and 529 (27.4%) were female. Age: 19 or younger (20.5%); 20 to 29 (46.3%); 30 to 39 (22.1%); 40 to 49 (8.3%); 50 to 59 (1.9%) and 60 or older (0.9%). Ethnicity: Caucasian (72.5%); Black (17.7%); Hispanic (6.3%); Asian (0.9%); Native American (1.6%) and Other (1.0%). Education: 8th grade or less (3.9%); Partially Completed High School (26.3%); High School Graduate (51.3%); Partially Completed College (14.5%) and College Graduate (3.2%). Marital Status: Single (66.8%); Married (14.8%); Divorced (13.2%); Separated (4.8%) and Widowed (0.4%).

**Group 2 consisted of 2,284 probationers.** Of these 2,284 probationers, 1,842 (80.6%) were male and 442 (19.4%) were female. Demographic composition of Group2 is as follows. Age: 19 or younger (16.1%); 20 to 29 (39.5%); 30 to 39 (29.5%); 40 to 49 (11.9%); 50 to 59 (2.2%) and 60 or older (0.8%). Ethnicity: Caucasian (56.7%); Black (25%); Hispanic (14.5%); Asian (0.4%); Native American (1.5%) and Other (1.8%). Education: 8th grade or less (9.8%); Partially Completed High School (32.9%); High School Graduate (41.8%); Partially Completed College (10.1%) and College Graduate (3.3%). Marital Status: Single (58.5%); Married (21.9%); Divorced (12.5%); Separated (6.2%) and Widowed (0.8%).

Reliability coefficient alphas are represented in Table 23 and represent 4,214 probationers.

**Table 23. Reliability coefficient alphas (1997, N = 4,214).**  
All coefficient alphas are significant at  $p < .001$ .

<b>SAQ SCALE</b>	<b>Group 1 Probationers N = 1,930</b>	<b>Group 2 Probationer N = 2,284</b>
Truthfulness Scale	.88	.88
Alcohol Scale	.93	.93
Drug Scale	.91	.92
Antisocial Scale	.64	.69
Aggressiveness Scale	.82	.87
Violence Scale	.80	.81
Resistance Scale	.83	.83
Stress Coping Abilities	.93	.93

These results support the reliability of the SAQ-Adult Probation II for these two probationer samples. These results are similar to those reported earlier on other client populations. An exception is the lower coefficient alpha of the Antisocial Scale. Both probationer samples had lower coefficient alphas on the Antisocial Scale. This may indicate that probationer attitude toward social norms may vary across different geographical regions. All coefficient alphas are significant at  $p < .001$ . These results support the reliability of the SAQ-Adult Probation II.

### **SAQ-ADULT PROBATION III RESEARCH**

In 1996 the SAQ-Adult Probation II was reviewed, shortened and even further sophisticated. It was decided that with the inclusion of the Antisocial Scale the test could be shortened to 149 items with the deletion of the Resistance Scale and little information would be lost. However, the test was improved. Double negatives were removed, items were made more readable and the best-of-the-best items were retained in each scale. The SAQ-Adult Probation III can be completed in a timely (on average 30 minutes) manner.

#### **33. Validity, Reliability and Scale Risk Range Accuracy Study of the SAQ-Adult Probation III**

This study (1997) was conducted to test the validity, reliability and accuracy of the improved SAQ-Adult Probation III assessment instrument. The SAQ-Adult Probation II was shortened in order to reduce the amount of time the probationers needed to complete the test and the improved test is called the SAQ-Adult Probation III. Revising the test would also make it more concise, direct and easier to complete. Reading levels of the test items were also analyzed to improve readability and comprehension for probationers. About 30 test items were eliminated from the previous version.

Reliability research on the SAQ-Adult Probation II was used to decide which test items were to be dropped. The items with the best statistical properties were retained. Inter-item reliability coefficients were used in combination with content of test items to aid in development of the new scales. However, it was felt the Antisocial Scale would become less defined in terms of measuring antisocial tendencies and attitude. Consequently, several new test items were incorporated into the Antisocial Scale to make the scale specific to antisocial behavior and attitudes. Reliability of the SAQ-Adult Probation III was investigated in the present study.

Two statistics procedures were used in the present study to test the validity of the SAQ-Adult Probation III. The first procedure involved t-test comparisons between first offenders and multiple offenders (discriminant validity) and the second procedure involved statistical decision-making (predictive validity). For the t-test comparisons, a first offender was defined as an offender who did not have a prior arrest and a multiple offender was defined as an offender who had one or more prior arrests. Several discriminant validity tests were conducted. Number of alcohol arrests was used to define first offenders and multiple offenders to test discriminant validity of the Alcohol Scale. Similarly, number of drug arrests was used for the Drug Scale. The answer sheet item "total number of times arrested" was used to categorize offenders as either first offenders or multiple offenders for other scale analyses. Because risk is often defined in terms of severity of problem behavior it is expected that multiple offenders would score significantly higher on the different scales than first offenders. This was an empirical question that was tested in the present study.

In assessment, a measurement can be considered a prediction. For example, the Alcohol Scale is a measure of alcohol abuse or severity of abuse. Alcohol Scale scores would predict if an individual has an alcohol

problem. A benchmark that can be used for the existence of an alcohol problem is treatment. If an individual has been in alcohol treatment then the individual is known to have had an alcohol problem. Therefore, the Alcohol Scale should predict if an individual has been in treatment.

Statistical decision-making is closely related to predictive validity of a test. The quality of statistical decision-making and test validity are both assessed by the accuracy with which the test (Alcohol Scale) classifies “known” cases (treatment). In the present study predictive validity was evaluated in the SAQ-Adult Probation III by using contingency tables defined by scale scores and either treatment or number of arrests. Treatment was used with the Alcohol Scale and Drug Scale, and number of arrests was used with the Violence Scale.

Risk range percentile scores are calculated for each SAQ scale. These risk range percentile scores are derived from scoring equations based on responses to scale items, Truth-Corrections and prior criminal history information, then converted to percentile scores. There are four risk range categories: **Low Risk** (zero to 39th percentile), **Medium Risk** (40 to 69th percentile), **Problem Risk** (70 to 89th percentile) and **Severe Problem or Maximum Risk** (90 to 100th percentile). Risk range percentile scores represent degree of severity.

Analysis of the accuracy of SAQ risk range percentile scores involves comparing the risk range percentile scores obtained from probationer SAQ test results to the predicted risk range percentages as defined above. The percentages of probationers expected to fall into each risk range is the following: Low Risk (**39%**), Medium Risk (**30%**), Problem Risk (**20%**) and Severe Problem or Maximum Risk (**11%**). The actual percentage of probationers falling in each of the four risk ranges, based on their risk range percentile scores, was compared to these predicted percentages.

### Method and Results

There were two samples of adult probationers included in this study. **The subjects in Group 1 consisted of 850 adult probationers.** There were 663 males (78%) and 187 females (22%). Demographic composition of these probationers is as follows: Age: 19 & under (21%); 20-29 (43%); 30-39 (23%); 40-49 (9%); 50-59 (2%) and 60 & over (1%). Ethnicity: Caucasian (74%); Black (11%); Hispanic (10%); Asian (1%); Native American (3%) and Other (1%). Education: Eighth grade or less (7%); Some H.S. (30%); H.S. graduate (47%); Some college (11%) and College graduate (4%). Marital Status: Single (61%); Married (19%); Divorced (13%); Separated (5%) and Widowed (1%).

**Group 2 consisted of 2,331 adult probationers.** There were 1,847 males (79%) and 484 females (21%). Demographic composition of these probationers is as follows: Age: 19 & under (15%); 20-29 (40%); 30-39 (28%); 40-49 (13%); 50-59 (3%) and 60 & over (1%). Ethnicity: Caucasian (58%); Black (25%); Hispanic (15%); Asian (1%); Native American (1%) and Other (1%). Education: Eighth grade or less (9%); Some H.S. (31%); H.S. graduate (44%); Some college (9%) and College graduate (3%). Marital Status: Single (55%); Married (25%); Divorced (12%); Separated (5%) and Widowed (1%).

Reliability coefficient alphas for the two groups (total N = 3,181) are presented in Table 24.

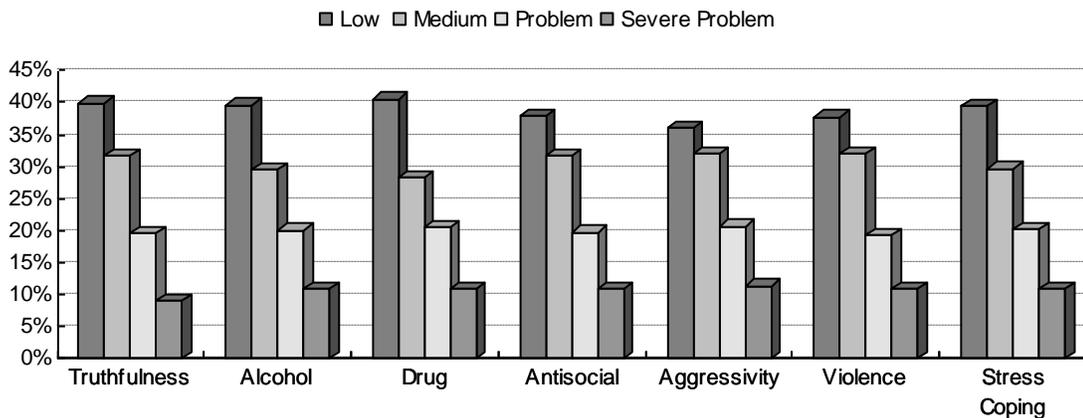
The results of the study support the reliability of the SAQ-Adult Probation III. All coefficient alphas are significant at  $p < .001$ . All scale reliability coefficients maintained high levels. These results show that the SAQ-Adult Probation III is a reliable risk assessment instrument.

**Table 24. Reliability coefficient alphas (1997, N = 3,181).**  
All coefficient alphas are significant at p<.001.

<b>SAQ AP III SCALES</b>	<b>1 Probationers N = 850</b>	<b>2 Probationers N = 2,331</b>
Truthfulness Scale	.87	.88
Alcohol Scale	.95	.95
Drug Scale	.93	.92
Antisocial Scale	.81	.80
Aggressiveness Scale	.88	.85
Violence Scale	.87	.85
Stress Coping Abilities	.93	.92

The risk range percentile scores for the two samples in the study using the SAQ-Adult Probation III are presented in Table 25. Group 1 results are presented in the graph.

**Table 25. Risk Range Percentile Scores for Group 1, N = 850 probationers.**



<u>Risk Range</u>	<u>Truthfulness</u>	<u>Alcohol</u>	<u>Drug</u>	<u>Antisocial</u>	<u>Aggressivity</u>	<u>Violence</u>	<u>Stress Coping</u>	<u>Predicted</u>
Low	39.9	39.6	40.5	37.9	36.1	37.8	39.5	<b>39%</b>
Medium	31.6	29.5	28.2	31.6	32.0	32.0	29.6	<b>30%</b>
Problem	19.6	20.0	20.5	19.7	20.6	19.3	20.1	<b>20%</b>
Maximum	8.9	10.9	10.8	10.8	11.3	10.9	10.8	<b>11%</b>

**Risk Range Percentile Scores for Group 2, N = 2,331 probationers.**

<u>Risk Range</u>	<u>Truthfulness</u>	<u>Alcohol</u>	<u>Drug</u>	<u>Antisocial</u>	<u>Aggressivity</u>	<u>Violence</u>	<u>Stress Coping</u>	<u>Predicted</u>
Low	36.3	37.1	40.7	38.7	35.3	37.4	39.0	<b>39%</b>
Medium	30.8	32.1	27.7	30.8	31.1	31.8	30.3	<b>30%</b>
Problem	19.6	20.0	21.0	20.0	22.3	20.2	20.1	<b>20%</b>
Maximum	13.3	10.8	10.6	10.5	11.3	10.6	10.6	<b>11%</b>

These results show that obtained risk range percentile scores closely approximated the predicted risk range percentile scores for each of the eight SAQ scales presented in Table 25 for both probationer samples included in the study. **These results indicate that the SAQ-Adult Probation III is a very accurate probationer risk assessment instrument.**

The results of the comparisons between obtained risk percentages and predicted percentages for Group 1 shows that all obtained scale risk range percentile scores were within 2.9 percent of predicted. For Group 2, all obtained scale risk range percentile scores were within 3.7 percent of predicted. The largest difference between obtained and predicted risk range percentages occurred on the Aggressiveness Scale. For the Problem Risk and Maximum Risk categories, all but one comparison for Group 1 showed that the obtained percentages were within one percentage point of predicted, and for Group 2 all but two comparisons were within one percentage point. **This is very accurate probationer risk assessment.**

The t-test comparisons between first offenders and multiple offenders for each scale is presented in Tables 26 through 28. Group 1 probationers were used in this analysis (1997, N = 850).

**Table 26. T-test comparisons between first offenders and multiple offenders.  
Offender status defined by total number of arrests.**

<b>SAQ-AP III Scale</b>	<b>First Offenders Mean (N=277)</b>	<b>Multiple Offenders Mean (N=573)</b>	<b>T-value</b>	<b>Level of significance</b>
Truthfulness Scale	8.91	7.23	t = 3.93	p<.001
Alcohol Scale	6.84	13.86	t = 6.48	p<.001
Drug Scale	7.88	14.86	t = 7.29	p<.001
Antisocial Scale	11.74	26.03	t = 19.81	p<.001
Aggressiveness Scale	6.74	8.75	t = 3.72	p<.001
Violence Scale	11.26	24.11	t = 16.31	p<.001
Stress Coping Abilities	117.54	106.68	t = 3.38	p<.001

**Table 27. T-test comparison of Alcohol Scale between first offenders and multiple offenders.  
Offender status defined by number of alcohol arrests.**

<b>SAQ-AP III Scale</b>	<b>First Offenders Mean (N=646)</b>	<b>Multiple Offenders Mean (N=204)</b>	<b>T-value</b>	<b>Level of significance</b>
Alcohol Scale	7.03	25.95	t = 14.13	p<.001

**Table 28. T-test comparison of Drug Scale between first offenders and multiple offenders.  
Offender status defined by number of drug arrests.**

<b>SAQ-AP III Scale</b>	<b>First Offenders Mean (N=741)</b>	<b>Multiple Offenders Mean (N=109)</b>	<b>T-value</b>	<b>Level of significance</b>
Drug Scale	9.85	28.70	t = 11.66	p<.001

These t-test results support the discriminant validity of the SAQ-Adult Probation III. All t-test comparisons between first offenders and multiple offenders were significant at p<.001. All but the Truthfulness Scale showed that multiple offenders had higher scale scores than first offenders. The Truthfulness Scale indicated that first offenders had higher scale scores than multiple offenders. This result suggests that first offenders are more likely to “fake good” or minimize than multiple offenders.

T-test results of the Violence Scale indicated that multiple offenders scored much higher than first offenders. The very large significant difference between first and multiple offenders strongly support the discriminant validity of the Violence Scale. T-test results of the Alcohol Scale and Drug Scale, where offender status was defined by alcohol arrests and drug arrests, respectively, also showed very large

significant differences between first and multiple offenders. These results strongly support the discriminant validity of the Alcohol Scale, Drug Scale and Violence Scale.

The test of predictive validity for the Alcohol Scale is presented in Table 29. The data is from Group 1 that contained 850 probationers. Probationers who scored between the 40th and 69th percentile are not included in the table because the table distinguishes between problem and no problem behavior. No problem is defined as an Alcohol Scale score at or below the 39th percentile, whereas alcohol-related problematic behavior is defined as an Alcohol Scale score in the 70th or above percentile range. Alcohol treatment information was obtained from probationers responses to SAQ-Adult Probation III test items.

**Table 29. Predictive validity for the Alcohol Scale using scale scores and alcohol treatment.**

Alcohol Scale	Alcohol Treatment		Number in each category
	No treatment	One or more treatments	
Low Risk (zero to 39th percentile)	328 (.84)	9 (.04)	337
Problem or Severe Problem Risk (70 to 100th percentile)	64 (.16)	199 (.96)	263
	392	208	N = 600

These results show that for the 208 probationers who reported having had alcohol treatment, 199 probationers, or 96 percent, had Alcohol Scale scores at or above the 70th percentile. Similarly, of the 392 probationers who did not have alcohol treatment, 328 probationers or 84 percent had Alcohol Scale scores in the Low Risk or no problem range. This lower percentage is reasonable because probationers could have a drinking problem without having been in treatment. Combining these results gives an overall accuracy of the Alcohol Scale of 88 percent. This is very accurate considering that a highly accepted diagnostic procedure, the mammogram, is about 70 percent accurate. These results show there is a very strong positive correlation between Alcohol Scale scores and alcohol treatment.

The predictive validity test of the Drug Scale was done in the same way using drug treatment as the criterion. Of the 204 probationers who reported having had drug treatment 194 or 95 percent had Drug Scale scores in the 70th percentile or higher (Problem Risk and above). Of the 406 probationers who did not have treatment 334 (82%) had Drug Scale scores in the Low Risk (no problem) range. The overall accuracy of the Drug Scale in predicting drug treatment was 87 percent. These results show there is a very strong positive correlation between the Drug Scale and drug treatment.

Similar procedures done where number of arrests was the criteria used for testing the Alcohol Scale, Drug Scale and Violence Scale showed nearly as high accuracy as the Alcohol and Drug scales with treatment accuracy. For the Alcohol Scale, 84 percent of the probationers who had one or more alcohol arrests had Alcohol Scale scores at or above the 70th percentile (Problem or Severe Problem Risk). The overall accuracy of the Alcohol Scale in predicting alcohol arrests was 83 percent. This result means that there is a very strong positive correlation between Alcohol Scale scores and alcohol arrests. For the Drug Scale, 87 percent of the probationers who had one or more drug arrests had Drug Scale scores in the Problem or Severe Problem risk range (70th percentile or above). The overall accuracy of the Drug Scale

in predicting drug arrests was 81 percent. This means there is a very strong positive correlation between Drug Scale scores and drug arrests. For the Violence Scale, 80 percent of the probationers who had one or more total number of arrests, had Violence Scale scores at or above the 70th percentile and the overall accuracy was 80 percent. This means that there is a very strong positive correlation between Violence Scale scores and total number of arrests.

Taken together these results strongly support the reliability, validity and accuracy of the SAQ-Adult Probation III. Reliability coefficient alphas were significant at  $p < .001$  for all SAQ-Adult Probation III scales. T-test comparisons between first offenders and multiple offenders support discriminant validity of all but the Truthfulness Scale. Discriminant validity was supported on the Alcohol Scale, Drug Scale, Antisocial Scale, Violence Scale and Stress Coping Abilities Scale because multiple offenders scored significantly higher on the different scales than first offenders. Predictive validity of the Alcohol Scale, Drug Scale and Violence Scale was shown by the accuracy with which the scales identified problem risk behavior (having had treatment or having had an arrest). The Alcohol Scale had an accuracy of 88 percent, the Drug Scale had an accuracy of 87 percent and the Violence Scale had an accuracy of 80 percent. These results support the reliability, validity and accuracy of the SAQ-Adult Probation III.

#### **34. Reliability of the SAQ-Adult Probation III in Two Samples of Probationers**

Another study (1998) was conducted to determine the reliability of the SAQ-Adult Probation III in two different probationer samples. **The first group consisted of 3,483 probationers.** Demographic composition of Group 1 is as follows. Of the 3,483 probationers 2,875 (82.5%) were male and 608 (17.5%) were female. Age: 19 or younger (14.7%); 20 to 29 (41.4%); 30 to 39 (26%); 40 to 49 (13.7%); 50 to 59 (3%) and 60 or older (1.1%). Ethnicity: Caucasian (57.9%); Black (27.8%); Hispanic (12.1%); Asian (0.5%); Native American (0.8%) and Other (0.9%). Education: 8th grade or less (8.3%); Partially Completed High School (30.5%); High School Graduate (43.9%); Partially Completed College (11.1%) and College Graduate (3.6%). Marital Status: Single (57.4%); Married (25.3%); Divorced (12.4%); Separated (4.4%) and Widowed (0.5%).

**Group 2 consisted of 1,056 probationers.** Of these 1,056 probationers, 823 (77.9%) were male and 233 (22.1%) were female. Demographic composition of Group2 is as follows. Age: 19 or younger (13.7%); 20 to 29 (41.1%); 30 to 39 (28.3%); 40 to 49 (13.6%); 50 to 59 (2.5%) and 60 or older (0.7%). Ethnicity: Caucasian (54.8%); Black (30%); Hispanic (13.3%); Asian (0.3%); Native American (1%) and Other (0.6%). Education: 8th grade or less (8.9%); Partially Completed High School (32.3%); High School Graduate (43.6%); Partially Completed College (8%) and College Graduate (3.2%). Marital Status: Single (56.3%); Married (26.6%); Divorced (11.3%); Separated (5.1%) and Widowed (0.7%).

Reliability coefficient alphas are represented in Table 30 and represent 4,539 probationers.

**Table 30. Reliability coefficient alphas (1998, N = 4,539).**  
All coefficient alphas are significant at  $p < .001$ .

<b>SAQ AP III SCALES</b>	<b>Group 1 Probationers N = 3,483</b>	<b>Group 2 Probationers N = 1,056</b>
Truthfulness Scale	.88	.88
Alcohol Scale	.94	.95
Drug Scale	.92	.92
Antisocial Scale	.80	.80
Aggressiveness Scale	.86	.85
Violence Scale	.85	.86
Stress Coping Abilities	.92	.92

These results support the reliability of the SAQ-Adult Probation III for these two probationer samples. These results are similar to those reported earlier on other probationer populations. All coefficient alphas are significant at  $p < .001$ . These results support the reliability of the SAQ-Adult Probation III.

### **35. SAQ-Adult Probation III Reliability, Validity and Accuracy**

This study (1998) was conducted to further study the statistical properties of the SAQ-Adult Probation III. Reliability, validity and accuracy were studied. The test data was collected from many agencies from around the country. These agencies often provide screening services for the courts and represent a wide variety of testing milieu. This sample of offenders is a general sample of offenders and may be typical of other offenders.

A general sample of offenders helps to determine whether or not a test is appropriate for most offenders and not restricted to a certain type of offender. It is important to analyze test results from a representative sample of offenders.

#### Method and Results

The participants in this study (1998) consisted of 4,078 offenders. There were 3,201 (78.5%) males and 877 (21.5%) females. Demographic composition of this sample is as follows. Age: 19 or younger (14.7%); 20 to 29 (42.1%); 30 to 39 (24.5%); 40 to 49 (14.1%); 50 to 59 (3.7%) and 60 or older (1.3%). Ethnicity: Caucasian (64.4%); Black (19.9%); Hispanic (13.8%); Asian (0.5%); Native American (0.7%) and Other (0.7%). Education: 8th grade or less (8.5%); Some High School (27.0%); High School Graduate (44.7%); Some College (12.4%) and College Graduate (5.1%). Marital Status: Single (57.2%); Married (22.6%); Divorced (13.5%); Separated (5.9%) and Widowed (0.9%).

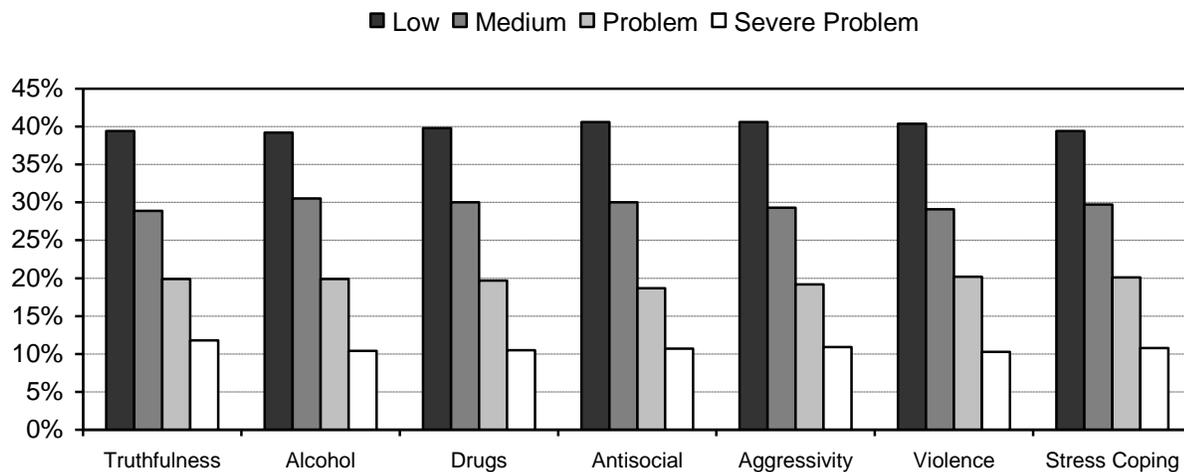
Reliability coefficient alphas are presented in Table 31. These reliability results show that the SAQ-Adult Probation III is a highly statistically reliable test. These results are similar to those reported earlier on probationers. All coefficient alphas are significant at  $p < .001$ . These results support the reliability of the SAQ-Adult Probation III.

The accuracy of the SAQ-Adult Probation III is presented in Table 32.

**Table 31. Reliability coefficient alphas (1998, N = 4,078).**

<u>SAQ AP III SCALES</u>	<u>Coefficient Alpha</u>	<u>Significance Level</u>
Truthfulness Scale	.89	p<.001
Alcohol Scale	.94	p<.001
Drug Scale	.93	p<.001
Antisocial Scale	.83	p<.001
Aggressiveness Scale	.89	p<.001
Violence Scale	.84	p<.001
Stress Coping Abilities	.93	p<.001

**Table 32. SAQ-Adult Probation III Accuracy (1998, N = 4,078).**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	39.4 (0.4)	28.9 (1.1)	19.9 (0.1)	11.8 (0.8)
Alcohol	39.2 (0.2)	30.5 (0.5)	19.9 (0.1)	10.4 (0.6)
Drugs	39.8 (0.8)	30.0 (0.0)	19.7 (0.3)	10.5 (0.5)
Antisocial	40.6 (1.6)	30.0 (0.0)	18.7 (1.3)	10.7 (0.3)
Aggressivity	40.6 (1.6)	29.3 (0.7)	19.2 (0.8)	10.9 (0.1)
Violence	40.4 (1.4)	29.1 (0.9)	20.2 (0.2)	10.3 (0.7)
Stress Coping	39.4 (0.4)	29.7 (0.3)	20.1 (0.1)	10.8 (0.2)

The SAQ-Adult Probation III scale scores were very accurate for this sample of offenders. All of the obtained risk range percentages were within 1.6 percentage points of the expected percentages and most (23 of the 28 comparisons) were within 1.0 percentage point. Only five obtained percentages were more than 1.0% from the predicted, and these were within 1.6 percent. These results demonstrate that the SAQ-Adult Probation III scale scores accurately identify offender risk. The SAQ-Adult Probation III is an accurate offender risk assessment test.

**Validity of the SAQ-Adult Probation III**

The same validity analyses were carried on this sample as was done in the previous studies. SAQ-Adult Probation III scale score comparisons between first offenders and multiple offenders were done to study

discriminant validity. It would be expected that multiple offenders (offenders who have 2 or more arrests) would score higher than first offenders. The SAQ-Adult Probation III answer sheet item “Total number of times arrested” was used to define first offenders and multiple offenders (2 or more arrests). There were 1,556 first offenders and 2,522 multiple offenders. The Alcohol and Drug Scales were also analyzed using alcohol and drug arrests. “Number of alcohol arrests” was used for the Alcohol Scale, which had 3,042 first offenders and 1,036 multiple offenders. “Number of drug arrests” was used for the Drug Scale, which had 3,664 first offenders and 414 multiple offenders. The t-test comparisons between first offenders and multiple offenders for each SAQ-Adult Probation III scale are presented in Table 33 (N=4,078). Multiple offenders had two or more arrests as reported on the SAQ answer sheet.

**Table 33. T-test comparisons between first offenders and multiple offenders (1998, N=4,078).**

<b>SAQ-AP III Scale</b>	<b>First Offenders Mean</b>	<b>Multiple Offenders Mean</b>	<b>T-value</b>	<b>Level of significance</b>
Truthfulness Scale	14.33	16.01	t = 8.32	p<.001
*Alcohol Scale	13.41	28.79	t = 32.25	p<.001
*Drugs Scale	10.00	26.09	t = 22.75	p<.001
Antisocial Scale	10.38	17.28	t = 24.36	p<.001
Aggressiveness Scale	12.75	19.81	t = 28.69	p<.001
Violence Scale	11.80	16.39	t = 17.44	p<.001
Stress Coping Abilities	129.24	117.87	t = 7.15	p<.001

\*Note: Offender status defined by alcohol and drug arrests. Also the Stress Coping Abilities Scale is reversed in that the higher the score the lower the risk.

All SAQ-Adult Probation III scales demonstrate that multiple offenders score significantly higher than first offenders. The SAQ-Adult Probation III accurately differentiates between first offenders and multiple offenders. These results support the validity of the SAQ-Adult Probation III.

### **Predictive validity**

The predictive validity analyses were explained in previous studies reported above. The SAQ-Adult Probation III demonstrates it accurately identifies problem prone drinkers and drug abusers. In these analyses Alcohol and Drug Scale scores are compared for offenders who have had alcohol or drug treatment. It is predicted that offenders with an alcohol and/or drug treatment history will score in the problem risk range (70<sup>th</sup> percentile and above) on the Alcohol Scale and/or Drug Scale. Offenders with Alcohol and Drug Scale scores in the low risk and problem risk ranges are included. Alcohol treatment information is obtained from offender answers to SAQ-Adult Probation III test item #77, #142, #53, #101 and #148 regarding alcohol and drug treatment.

**Predictive validity** analyses show that the SAQ-Adult Probation III Alcohol Scale is very accurate in identifying offenders who have alcohol problems. There were 2,951 offenders who had Alcohol Scale scores in the low risk range (0-39<sup>th</sup> percentile) and problem risk ranges (70-100<sup>th</sup> percentile). There were 866 offenders who reported having been in alcohol treatment and these offenders are classified as problem drinkers. Of these 866 offenders, 797 offenders, or 92 percent, had Alcohol Scale scores at or above the 70<sup>th</sup> percentile. The Alcohol Scale correctly identified 92 percent of the offenders categorized as problem drinkers.

The SAQ-Adult Probation III Drug Scale is also very accurate in identifying offenders who have drug

problems. There were 2,902 offenders scoring in the low risk and problem risk ranges. There were 817 offenders who had been in drug treatment, of these, 797 offenders, or 97.6 percent had Drug Scale scores at or above the 70<sup>th</sup> percentile. These results validate the SAQ-Adult Probation III Drug Scale.

## **Conclusion**

Taken together these results demonstrate that the SAQ-Adult Probation III is a very accurate, reliable and valid assessment instrument for screening offender risk. The SAQ-Adult Probation III identifies offenders with substance (alcohol and other drugs) abuse problems, malingerers (Truthfulness Scale), antisocial thinking/behavior (Antisocial Scale), violence (lethality) potential (Violence Scale), aggressiveness (Aggressiveness Scale) and the emotionally disturbed (Stress Coping Abilities Scales). The SAQ-Adult Probation III is a very accurate, reliable and valid offender assessment instrument.

## **36. A Study of the SAQ-Adult Probation III in a Sample of Midwest Probationers**

This study (1999) included nearly 4,000 adult offenders who were tested at a Midwestern State probation department. The participants completed the SAQ-Adult Probation III as part of their routine program assessment. SAQ-Adult Probation III reliability, validity and accuracy was studied.

### Method and Results

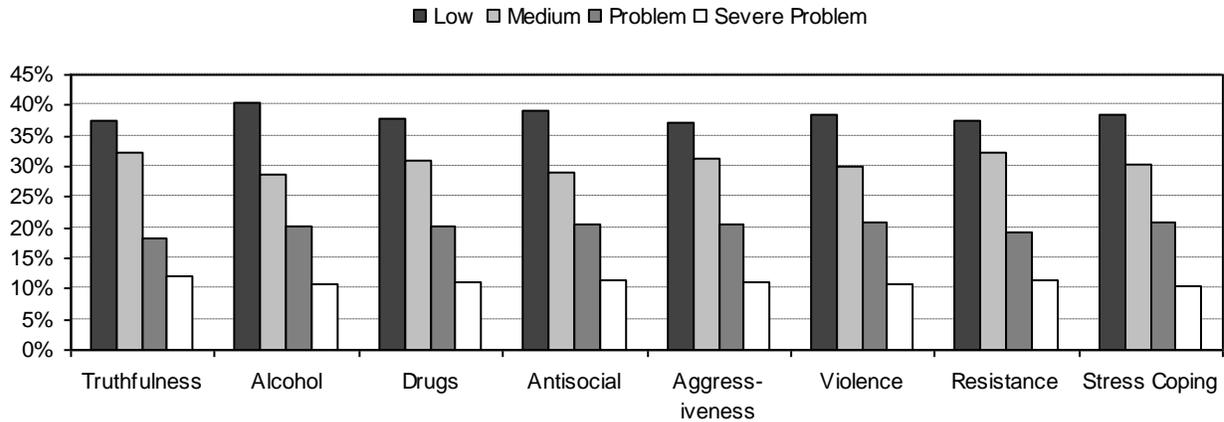
The participants in this study (1999) consisted of 3,949 offenders. There were 3,095 (78.4%) males and 854 (21.6%) females. Demographic composition of this sample is as follows. Age: 19 or younger (19.9%); 20 to 29 (40.2%); 30 to 39 (25.5%); 40 to 49 (11.7%); 50 to 59 (1.9%) and 60 or older (0.6%). Ethnicity: Caucasian (74.4%); Black (14.0%); Hispanic (7.3%); Asian (0.7%); Native American (2.7%) and Other (0.9%). Education: 8th grade or less (6.3%); Some High School (29.7%); High School Graduate (47.5%); Some College (11.7%) and College Graduate (2.9%). Marital Status: Single (63.8%); Married (20.0%); Divorced (13.0%); Separated (2.8%) and Widowed (0.4%).

### SAQ-Adult Probation III Accuracy

The percentages of offenders scoring in the four risk categories (low, medium, problem and severe problem risk) are presented for the SAQ-Adult Probation III measurement or severity scales. These obtained risk range percentages are compared to predicted percentages for each scale. The differences between obtained and predicted percentages are shown in parentheses in the table below the graph. The closeness of obtained scale scores with the predicted determines accuracy. Table 34 presents SAQ-Adult Probation III results for the 3,949 offenders tested.

Table 34 shows that offender obtained risk range percentages for all risk categories and all SAQ-Adult Probation III scales were within 2.3 percentage points of the predicted percentages. Twenty of the possible 32 (8 scales x 4 risk ranges) comparisons were within one percentage point of the predicted. Only two of the 32 obtained risk range percentages were greater than 1.9% from the predicted percentage, and these were within 2.3 percent. These results demonstrate the accuracy of the SAQ-Adult Probation III. Offender obtained risk range percentages for all SAQ-Adult Probation III are in close agreement with their predicted percentages.

**Table 34. SAQ-Adult Probation III Scale Risk Ranges (1999, N = 3,949)**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	37.6 (1.4)	32.3 (2.3)	18.1 (1.9)	12.0 (1.0)
Alcohol	40.4 (1.4)	28.8 (1.2)	20.2 (0.2)	10.6 (0.4)
Drugs	37.7 (1.3)	31.1 (1.1)	20.1 (0.1)	11.1 (0.1)
Antisocial	39.0 (0.0)	29.0 (1.0)	20.5 (0.5)	11.5 (0.5)
Aggressiveness	37.1 (1.9)	31.3 (1.3)	20.4 (0.4)	11.2 (0.2)
Violence	38.5 (0.5)	29.9 (0.1)	20.8 (0.8)	10.8 (0.2)
Resistance	37.4 (1.6)	32.2 (2.2)	19.1 (0.9)	11.3 (0.3)
Stress Coping	38.6 (0.4)	30.2 (0.2)	20.8 (0.8)	10.4 (0.4)

**Reliability of the SAQ-Adult Probation III**

Reliability statistics for the SAQ-Adult Probation III are presented in Table 35.

**Table 35. Reliability of the SAQ-Adult Probation III (1999, N=3,949).**

**All coefficient alphas are significant at p<.001.**

<u>SAQ SCALES</u>	<u>Coefficient Alphas</u>
Truthfulness Scale	.87
Alcohol Scale	.95
Drug Scale	.93
Aggressiveness Scale	.87
Antisocial Scale	.88
Violence Scale	.85
Resistance Scale	.87
Stress Coping Abilities	.92

These results support the statistical reliability of the SAQ-Adult Probation III. All scale reliability coefficients are significant at p<.001 and meet or exceed professional test reliability standards. These results show that the SAQ-Adult Probation III is a reliable risk assessment instrument.

**Validity of the SAQ-Adult Probation III**

A test is valid if it measures what it is supposed to measure. Tests that measure severity must accurately differentiate between problem and non-problem groups. A comparison between groups selected on the basis of a known problem is a statistical validation method commonly referred to as **discriminant validity**.

Offenders who have a history of arrests are expected to be more at risk and have more severe problems than first time offenders. The SAQ-Adult Probation III built-in database enables comparisons of first offenders and multiple offenders. It is expected that multiple offenders would score higher on SAQ scales due in part to a history of problems (as compared to first offenders). Comparisons between first and multiple offenders were conducted using “Total number of times arrested,” “Number of alcohol arrests” and “Number of drug arrests” to define first offenders or multiple offenders. There were 1,006 offenders that had two or more alcohol arrests, 469 offenders had two or more drug arrests and 2,626 offenders were arrested two or times. There are a total of 3,949 adult offenders included in these SAQ-Adult Probation III analyses.

**Table 36. Comparisons between first offenders and multiple offenders. (1999, N = 3,949)**

<u>SAQ Scale</u>	<u>First Offenders Mean Score</u>	<u>Multiple Offenders Mean Score</u>	<u>T-value</u>	<u>Level of significance</u>
Truthfulness Scale	8.61	7.56	t = 5.78	p<.001
Alcohol Scale *	6.46	26.53	t = 35.85	p<.001
Drug Scale *	9.58	26.88	t = 29.11	p<.001
Antisocial Scale	10.93	24.71	t = 44.65	p<.001
Aggressiveness Scale	5.69	7.37	t = 7.52	p<.001
Violence Scale	10.12	22.59	t = 36.34	p<.001
Resistance Scale	11.69	12.18	t = 2.00	p<.05
Stress Coping Abilities	118.01	110.38	t = 4.76	p<.001

\* Offender status defined by alcohol arrests and drug arrests. Note: Stress Coping Abilities Scale is reversed in that higher scores mean better stress coping.

These results demonstrate that multiple offenders score significantly higher on the Alcohol, Drug, Antisocial, Aggressivity, Violence, Resistance and Stress Coping Abilities Scales than first offenders. Offenders that had two or more arrests were found to have higher scores than first offenders on these seven scales. Higher scores mean that offenders are more at risk and have more severe problems. These t-test results support the discriminant validity of the Alcohol, Drug, Antisocial, Aggressivity, Violence, Resistance and Stress Coping Abilities Scales.

The Truthfulness Scale indicates that first offenders scored significantly higher than multiple offenders did. This result suggests that first offenders tend to minimize or deny their problems. In contrast, multiple offenders may be more experienced and know their histories are well documented by the probation department. When testing first offenders instructions regarding truthfulness and test taking attitude should be emphasized. As noted earlier, multiple offenders may be more open about self-disclosure because they see little to be gained by further denial.

There were very large scale score differences between first and multiple offenders on the Alcohol, Drugs, Antisocial and Violence Scales. These scales clearly show that multiple offenders are at higher risk levels than first offenders. The Aggressivity, Resistance and Stress Coping Abilities Scales also had significant scale score differences between first and multiple offenders but these differences were not nearly as great as the differences seen on the other scales.

Alcohol Scale scores accurately identify offenders who have alcohol problems. This analysis, referred to as **predictive validity**, compared Alcohol Scale scores between offenders who had been in alcohol treatment to those offenders who never had treatment. It was predicted that if a person had alcohol treatment their

Alcohol Scale score would fall in the problem or severe problem risk range (70<sup>th</sup> percentile or higher). Alcohol treatment information was obtained from offenders' answers to SAQ test items (#115 & #160) concerning alcohol treatment. Offenders who had problem scores (70<sup>th</sup> percentile and above) are compared to offenders who had non-problem scores (low risk range or 39<sup>th</sup> percentile and below).

The results of the predictive validity analysis demonstrated that for the 928 offenders who reported having been in alcohol treatment, 901 offenders, or 97.1 percent, had Alcohol Scale scores at or above the 70th percentile. The SAQ Alcohol Scale accurately identified offenders who had been in treatment. Over 97 percent of the offenders with known alcohol problems scored in the Problem or Severe Problem risk range on the Alcohol Scale. These results support the validity of the SAQ Alcohol Scale.

The predictive validity analysis of the SAQ Drug Scale using drug treatment test items #48, #117 and #161 demonstrates that the Drug Scale accurately identifies offenders who have drug problems. Of the 850 offenders who had drug treatment 833 or 98 percent had Drug Scale scores in the Problem and Severe Problem risk ranges. The SAQ Drug Scale accurately identifies offenders who have drug problems. These results support the validity of the Drug Scale.

These results support the reliability, validity and accuracy of the SAQ-Adult Probation III. Most of the scales reliability coefficients were at or near .90. All scales demonstrate significant scale score differences between first and multiple offenders. And all scales risk range percentages were within 2.3 percent of the predicted percentages. The SAQ-Adult Probation III is a reliable, valid and accurate offender assessment test.

### **37. A Study of the SAQ-Adult Probation III in a Large Sample of Offenders**

This study (2000) included SAQ-Adult Probation III test results from many testing agencies from around the US. Large samples of data from a variety of sources help to eliminate regional effects. Such data serves to standardize the test on a majority of offenders. Reliability, validity and accuracy were studied for the purpose of standardizing the SAQ-Adult Probation III on the adult offender population.

#### Method and Results

The participants in this study (2000) consisted of 10,533 offenders. There were 8,226 (78.1%) males and 2,307 (21.9%) females. Demographic composition of this sample is as follows. Age: 19 or younger (14.4%); 20 to 29 (41.5%); 30 to 39 (25.1%); 40 to 49 (14.0%); 50 to 59 (3.7%) and 60 or older (1.0%). Ethnicity: Caucasian (59.3%); Black (23.1%); Hispanic (15.7%); Asian (0.5%); Native American (0.7%) and Other (0.7%). Education: 8th grade or less (8.5%); Some High School (30.2%); High School Graduate (43.2%); Some College (12.0%) and College Graduate (4.1%). Marital Status: Single (56.4%); Married (23.8%); Divorced (12.9%); Separated (5.9%) and Widowed (0.9%).

Reliability coefficient alphas are presented in Table 37.

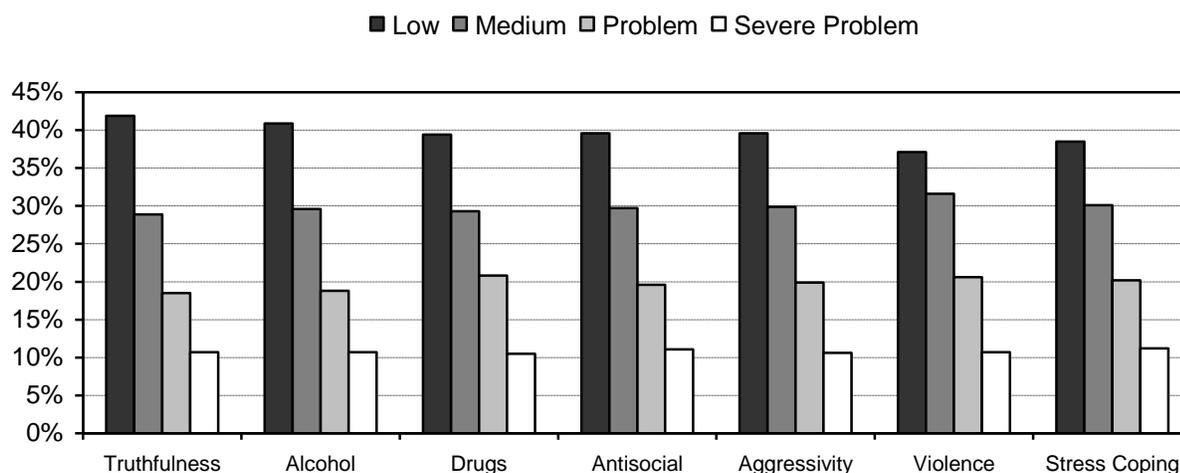
These results show that the SAQ-Adult Probation III is a highly statistically reliable test. All coefficient alphas are significant at  $p < .001$ . All SAQ-Adult Probation III scale's reliability coefficients are well above the professionally accepted standard of .75 for test reliability. These results support the reliability of the SAQ-Adult Probation III.

**Table 37. Reliability coefficient alphas (2000, N = 10,533).**

<u>SAQ AP III SCALES</u>	<u>Coefficient Alpha</u>	<u>Significance Level</u>
Truthfulness Scale	.89	p<.001
Alcohol Scale	.94	p<.001
Drug Scale	.94	p<.001
Antisocial Scale	.84	p<.001
Aggressiveness Scale	.89	p<.001
Violence Scale	.88	p<.001
Stress Coping Abilities	.93	p<.001

The accuracy of the SAQ-Adult Probation III is presented in Table 38. The comparisons between obtained risk range percentages and the predicted percentages for each of the four risk categories (low, medium, problem and severe problem risk) are presented for the SAQ-Adult Probation III measurement or severity scales. The differences between obtained and predicted percentages are shown in parentheses.

**Table 38. SAQ-Adult Probation III Accuracy (2000, N = 10,533).**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	41.9 (2.9)	28.9 (1.1)	18.5 (1.5)	10.7 (0.3)
Alcohol	40.9 (1.9)	29.6 (0.4)	18.8 (1.2)	10.7 (0.3)
Drugs	39.4 (0.4)	29.3 (0.7)	20.8 (0.8)	10.5 (0.5)
Antisocial	39.6 (0.6)	29.7 (0.3)	19.6 (0.4)	11.1 (0.1)
Aggressiveness	39.6 (0.6)	29.9 (0.1)	19.9 (0.1)	10.6 (0.4)
Violence	37.1 (1.9)	31.6 (1.6)	20.6 (0.6)	10.7 (0.3)
Stress Coping	38.5 (0.5)	30.1 (0.1)	20.2 (0.2)	11.2 (0.2)

These results show that all of the obtained risk range percentages were within 2.9 percentage points of the expected percentages and most (21 of the 28 comparisons) were within 1.0 percentage point. Only four obtained percentages were more than 1.5% from the predicted, and these were within 2.9 percent. The SAQ-Adult Probation III scale scores were very accurate for this large sample of offenders. These results demonstrate that the SAQ-Adult Probation III scale scores accurately identify offender risk. The SAQ-Adult Probation III is an accurate offender risk assessment test.

Validity of the SAQ-Adult Probation III

SAQ-Adult Probation III scale score comparisons between first offenders and multiple offenders are presented in Table 39. Multiple offenders (offenders who have 2 or more arrests) would be expected to score higher than first offenders. The SAQ-Adult Probation III answer sheet item “Total number of times arrested” was used to define first offenders and multiple offenders (2 or more arrests). There were 3,742 first offenders and 6,791 multiple offenders. The Alcohol and Drug Scales were also analyzed using alcohol and drug arrests. “Number of alcohol arrests” was used for the Alcohol Scale, which had 7,913 first offenders and 2,620 multiple offenders. “ Number of drug arrests” was used for the Drug Scale, which had 9,161 first offenders and 1,372 multiple offenders. The t-test comparisons between first offenders and multiple offenders for each SAQ-Adult Probation III scale are presented in Table 39 (N=10,533). Multiple offenders had two or more arrests as reported on the SAQ answer sheet.

**Table 39. T-test comparisons between first offenders and multiple offenders (2000, N=10,533).**

<u>SAQ-AP III Scale</u>	<u>First Offenders Mean</u>	<u>Multiple Offenders Mean</u>	<u>T-value</u>	<u>Level of significance</u>
Truthfulness Scale	13.96	15.61	t = 13.03	p<.001
*Alcohol Scale	13.77	30.19	t = 53.83	p<.001
*Drugs Scale	11.09	28.24	t = 42.92	p<.001
Antisocial Scale	10.93	17.88	t = 38.19	p<.001
Aggressiveness Scale	13.21	20.37	t = 45.32	p<.001
Violence Scale	12.23	16.91	t = 27.14	p<.001
Stress Coping Abilities	127.93	117.24	t = 10.77	p<.001

\*Note: Offender status defined by alcohol and drug arrests. Also the Stress Coping Abilities Scale is reversed in that the higher the score the lower the risk.

Multiple offenders scored significantly higher than first offenders on all SAQ-Adult Probation III scales. The SAQ-Adult Probation III accurately differentiates between first offenders and multiple offenders. Multiple offenders were expected to score higher than first offenders because having a history of arrests is indicative of having problems. These results support the validity of the SAQ-Adult Probation III.

**Predictive validity**

The SAQ-Adult Probation III accurately identifies problem prone drinkers and drug abusers. In these analyses Alcohol and Drugs Scale scores are compared for offenders who have had alcohol or drug treatment. It was predicted that offenders with an alcohol and/or drug treatment history would score in the problem risk range (70<sup>th</sup> percentile and above) on the Alcohol Scale and/or Drugs Scale. Offenders with Alcohol and Drugs Scale scores in the low risk and problem risk ranges are included. Alcohol treatment information is obtained from offender answers to SAQ-Adult Probation III test item #77, #142, #53, #101 and #148 regarding alcohol and drug treatment.

**Predictive validity** analyses show that the SAQ-Adult Probation III Alcohol Scale is very accurate in identifying offenders who have alcohol problems. There were 7,669 offenders who had Alcohol Scale scores in the low risk range (0-39<sup>th</sup> percentile) and problem risk ranges (70-100<sup>th</sup> percentile). There were 2,273 offenders who reported having been in alcohol treatment and these offenders are classified as problem drinkers. Of these 2,273 offenders, 2,111 offenders, or 92.6 percent, had Alcohol Scale scores at or above the 70th percentile. The Alcohol Scale correctly identified over 92 percent of the offenders categorized as problem drinkers.

The SAQ-Adult Probation III Drugs Scale is also very accurate in identifying offenders who have drug problems. There were 7,067 offenders scoring in the low risk and problem risk ranges. There were 2,461 offenders who had been in drug treatment, of these, 2,416 offenders, or 98.2 percent had Drugs Scale scores at or above the 70<sup>th</sup> percentile. These results validate the SAQ-Adult Probation III Drugs Scale.

## Conclusion

These results demonstrate that the SAQ-Adult Probation III is a very accurate, reliable and valid assessment instrument for screening offender risk. The SAQ-Adult Probation III identifies offenders with substance (alcohol and other drugs) abuse problems, malingerers (Truthfulness Scale), antisocial thinking/behavior (Antisocial Scale), violence (lethality) potential (Violence Scale), aggressiveness (Aggressiveness Scale) and the emotionally disturbed (Stress Coping Abilities Scales). The SAQ-Adult Probation III is a very accurate, reliable and valid offender assessment instrument.

### 38. An Analysis of the SAQ-Adult Probation III and ISP Admittance in a Sample of Nebraska Probationers

This analysis (2004) of Nebraska SAQ-Adult Probation III data (including Intensive Supervision Probation (ISP) admittance) was conducted to provide descriptive data on the numbers and percentages of individuals admitted to the Intensive Supervision Probation program.

Two methods of analysis were completed based on ISP classifications. The first method was focused on ISP admittance based solely on ISP scores (i.e., classifications of “offender within threshold for ISP” and “within threshold for ISP and work ethic camp (WEC)”) and the second method was focused on actual ISP admittance (since results of the two methods differ). Classifications used in the first method were incorporated into the second method along with the additional classifications of “below threshold, but should be considered for ISP” and “above threshold, however may be suitable for ISP/WEC.” ISP classifications are presented in the following table.

<b>Intensive Supervision Probation Classifications</b>
1. Not eligible, offender lives out-of-state or unwilling
2. Offender within threshold for ISP
3. Within threshold, but shouldn't be considered for ISP
4. Point total exceeded ISP threshold
5. Point total below ISP threshold
6. Below threshold, but should be considered for ISP
7. Within threshold for ISP and Work Ethic Camp (WEC)
8. Not within threshold for ISP and WEC
9. Above threshold, however may be suitable for ISP/WEC

The reason that the numbers of individuals who would have been admitted based only on their scores is different from the number of individuals who were actually admitted can be attributed directly to the fact that some admission decisions were subjective while others were objective (i.e., based only on the ISP score).

The results of the first analysis method were as follows:

- 916 (33.2%) individuals were admitted to the ISP program while 1,840 (66.8%) were not.
- Of the 916 individuals admitted, 589 (64.3%) were admitted only to the ISP program (based on ISP scores of 11-15) and 327 (35.7%) were admitted to both the ISP program and the Work Ethic Camp (based on ISP scores of 16-20).
- **Note:** Even though the classifications indicate that these 916 individuals should have received ISP scores ranging from 11-20, 12 individuals did not score within said range.

The results of the second analysis method were as follows:

- 954 (34.6%) individuals were admitted to the ISP program while 1,802 (65.4%) were not.
- Of the 954 individuals admitted, 589 (64.3%) were admitted only to the ISP program (based on ISP scores of 11-15) and 327 (35.7%) were admitted to both the ISP program and the Work Ethic Camp (based on ISP scores of 16-20). In addition, 17 (1.8%) individuals were classified as, “Below threshold, but should be considered for ISP,” and 21 (2.2%) were classified as, “Above threshold, however may be suitable for ISP/WEC.”

## **Conclusion**

Findings revealed that only a small proportion of individuals were admitted to the ISP program that did not score within the recommended ISP score range. This means that there was considerable consistency between the subjective judgments of probation officers and results based on the objective ISP score. Such consistency has implications for increased trust and reliance on objective scores in making determinations regarding appropriate levels of probation supervision.

## **39. Study of SAQ-Adult Probation III in a State Probation Program**

This study (2007) examined the SAQ-APIII test statistics in a statewide probation program. Data were obtained from the agencies that administered the SAQ-APIII. Offenders were tested throughout January 2007 to December 2007. There were 5,301 offenders included. SAQ-APIII reliability, validity and accuracy were studied.

### Method and Results

The participants in this study (2007) consisted of 5,301 offenders. There were 3,945 (74.4%) males and 1,356 (25.6%) females. Demographic composition of this sample is as follows. Age: 20 & under (19.8%); 21-30 (39.9%); 31-40 (21.4%); 41-50 (14.2%); 51-60 (4.0%) and 61 & Over (0.8%). Ethnicity: Caucasian (71.9%); African American (12.7%), Hispanic (10.0%), Asian (0.8%), Native American (3.2%) and Other (1.3%). Education: Eighth grade or less (2.6%); Some H.S. (32.0%); H.S. graduate/G.E.D. (46.7%); Some college (14.9%) and College graduate (3.7%).

### Accuracy of the SAQ-Adult Probation III

During the calendar year 2007, there were 5,301 offenders tested. Table 40 presents a comparison between offender obtained percentages and predicted percentages for all scale risk categories.

**Table 40. SAQ- Adult Probation III Scales Risk Range Accuracy (2007, N = 5,301)**

Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	37.0 (2.0)	32.2 (2.2)	21.0 (1.0)	9.8 (1.2)
Alcohol	39.5 (0.5)	29.7 (0.3)	20.4 (0.4)	10.4 (0.6)
Drugs	38.5 (0.5)	30.5 (0.5)	20.3 (0.3)	10.7 (0.3)
Antisocial	40.0 (1.0)	29.2 (0.8)	20.6 (0.6)	10.2 (0.8)
Aggressiveness	40.0 (1.0)	28.5 (1.5)	20.9 (0.9)	10.6 (0.4)
Violence	39.7 (0.7)	28.8 (0.2)	21.3 (1.3)	10.2 (0.8)
Stress Coping	39.7 (0.7)	29.6 (0.4)	20.1 (0.1)	10.6 (0.4)

The above table shows that offender obtained risk range percentages for all risk categories and all SAQ-Adult Probation III scales were within 2.2 percentage points of the predicted percentages (shown in parentheses in the top row). This means that SAQ-adult Probation III scales can be considered 98% accurate. The SAQ-Adult Probation III is a very accurate adult offender assessment test.

Reliability of the SAQ-Adult Probation III

Within-test reliability, or inter-item reliability coefficient alphas for the SAQ-Adult Probation III are presented in Table 41.

**Table 41. SAQ-Adult Probation III reliability coefficient alphas (2007, N = 5,301)**

<b>DRI-II Scale</b>	<b>Coefficient Alpha</b>	<b>Significance Level</b>
Truthfulness Scale	.89	.001
Alcohol Scale	.95	.001
Drugs Scale	.94	.001
Antisocial Scale	.85	.001
Aggressiveness Scale	.90	.001
Violence Scale	.84	.001
Stress Coping Scale	.92	.001

Alpha coefficients for all scales were .84 and above. These results are similar to those reported in previous studies for entirely different populations of offenders and empirically demonstrate that the SAQ-Adult Probation III is a highly reliable offender risk assessment test.

Validity of the SAQ-Adult Probation III

Predictive validity analysis involves comparing the Low Risk (zero to 39<sup>th</sup> percentile range) and High Risk (70<sup>th</sup> to 100<sup>th</sup> percentile range) groups, on the basis of having previously received treatment versus no treatment. The SAQ-Adult Probation III offenders were asked if they had alcohol treatment. Theoretically, offenders that had alcohol treatment should score at or above the 70<sup>th</sup> percentile (problem risk range) or higher on the Alcohol Scale and not score in the Low Risk (zero to 39<sup>th</sup> percentile) range. SAQ-Adult Probation III Alcohol Scale scores correctly identified all 100% offenders that had been treated for drinking

problems. Similarly the Drugs Scale correctly identified 99.1 percent of offenders that had been treated for drug problems. The antisocial Scale accurately identified 99.3 percent of offenders that admitted they were unsocial and antisocial. The Violence Scale correctly identified 100 percent of offenders that were arrested for a violent crime, a crime involving force or the threat of force or both. The Aggressiveness Scale correctly identified 100 percent of offenders that admitted they were overly aggressive. Nearly all problem offenders were identified by their SAQ-Adult Probation III answers. These results demonstrate empirically that the SAQ-Adult Probation III scales have a very high degree of predictive validity. Nearly all problem offenders were identified by their scores on SAQ-Adult Probation III scales.

#### **40. Study of SAQ-Adult Probation III in a Midwest County Probation Program**

This study (2008) examined SAQ-Adult Probation III test statistics in a Midwestern county probation program. Offenders were tested throughout the year beginning January, 2008 and ending December, 2008. There were 426 offenders included. SAQ-Adult Probation III reliability, validity and accuracy were examined.

##### Method

Participants in this study (2008) consisted of 426 offenders. There were 329 (77.2%) males and 97 (22.8%) females. Demographic composition of the sample follows. Age: 20 & under (9.2%); 21-30 (44.4%); 31-40 (24.2%); 41-50 (15.8%); 51-60 (5.1%); 61 & Over (1.4%). Ethnicity: Caucasian (70.7%); African American (23.8%); Hispanic (1.4%); Asian (0.5%); Other (2.6%). Education: Eighth grade or less (3.3%); Some H.S. (32.4%); H.S. graduate (55.4%); Some college (6.1%); College graduate (2.8%). Marital Status: Single (58.2%); Married (19.0%); Divorced (14.6%); Separated (7.5%); and Widowed (0.7%).

##### Court History and SAQ-Adult Probation III Scale Scores

Correlations give information regarding the strength of relationships. They show how closely two variables are associated with one another. Higher correlation coefficients signify strong relationships between the variables being correlated.

Alcohol Scale scores were most closely associated with the number of alcohol-related arrests. A strong positive correlation was demonstrated, indicating that higher Alcohol Scale scores are associated with a higher number of alcohol-related arrests,  $r(424)=.46$ ,  $p<.001$ .

Drugs Scale scores were most highly correlated with the number of drug-related arrests,  $r(424)=.48$ ,  $p<.001$ . Higher Drugs Scale scores are strongly associated with a higher number of drug-related arrests.

Violence Scale scores were most closely associated with the number of prison sentences. A strong positive correlation,  $r(424)=.32$ ,  $p<.001$ , indicated that higher Violence Scale scores are related to a higher number of lifetime prison sentences.

The number of drug-related arrests was the court history variable that was most highly correlated with both Antisocial Scale scores,  $r(424)=.34$ ,  $p<.001$ , and Stress Coping Abilities Scale scores,  $r(424)=.14$ ,

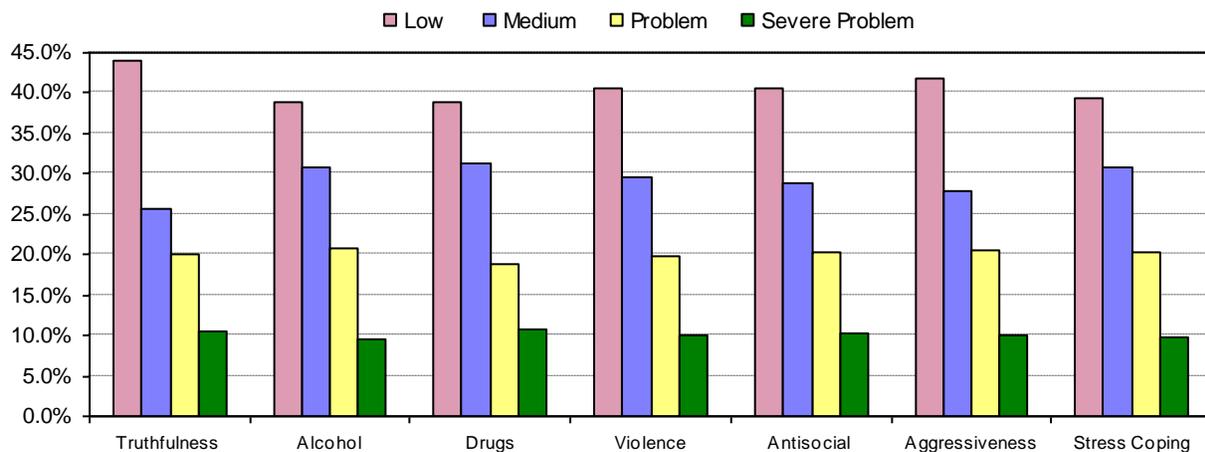
$p=.005$ . The positive correlations indicate that higher scores on both of these scales are related to a higher number of drug-related arrests.

Aggressiveness Scale scores were most highly correlated with age at first arrest,  $r(424) = -.30, p < .001$ . The strong negative correlation suggests that the prevalence of aggressive traits and behaviors (as measured by the Aggressiveness Scale) among offenders increases as the age at first arrest decreases.

### Accuracy

Test accuracy is demonstrated by how close attained scale scores are to predicted scores. Four categories of risk are assigned: Low Risk (zero to 39<sup>th</sup> percentile), Medium Risk (40 to 69<sup>th</sup> percentile), Problem Risk (70 to 89<sup>th</sup> percentile), and Severe Problem Risk (90 to 100<sup>th</sup> percentile). The top row of Table 42 shows the percentages of offenders that were predicted to score within each risk range. Predicted percentages for each SAQ-Adult Probation III scale risk category were obtained from SAQ-Adult Probation III standardization data. Table 42 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Severe Problem Risk range for the Truthfulness Scale: 11% of offenders were predicted to score within this range; the attained percentage of offenders who scored in this range was 10.6%, which is a difference of 0.4 percentage points from what was predicted.

**Table 42. SAQ-Adult Probation III Accuracy (N=426\*, 2008)**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	43.9 (4.9)	25.6 (4.4)	20.0 (0.0)	10.6 (0.4)
Alcohol	39.0 (0.0)	30.7 (0.7)	20.7 (0.7)	9.5 (1.5)
Drugs	39.0 (0.0)	31.4 (1.4)	18.8 (1.2)	10.7 (0.3)
Violence	40.7 (1.7)	29.5 (0.5)	19.8 (0.2)	10.0 (1.0)
Antisocial	40.7 (1.7)	28.8 (1.2)	20.2 (0.2)	10.2 (0.8)
Aggressiveness	41.7 (2.7)	27.9 (2.1)	20.5 (0.5)	10.0 (1.0)
Stress Coping Abilities	39.3 (0.3)	30.7 (0.7)	20.2 (0.2)	9.8 (1.2)

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 6 (the number of offenders with invalid Scale scores).

Twenty six out of 28 attained risk range percentiles were within **3.0** points of the predicted percentages. The two exceptions- the Low Risk and Medium Risk percentiles for the Truthfulness Scale- were both within 5.0 points of the predicted percentages. The average difference between attained percentages and predicted percentages was **1.1** points. These results strongly support the accuracy of the SAQ-Adult Probation III as an offender assessment instrument.

Reliability

Test reliability refers to a scale’s consistency of measurement. A scale is reliable if a person gets the same score when re-tested. Table 43 shows the reliability scores for each SAQ-Adult Probation III scale. Perfect reliability is 1.00.

**Table 43. SAQ-Adult Probation III Reliability (N=426, 2008)**

<u>Scale</u>	<u>Alpha coefficient</u>
Truthfulness Scale	<b>.85</b>
Alcohol Scale	<b>.91</b>
Drugs Scale	<b>.91</b>
Violence Scale	<b>.82</b>
Antisocial Scale	<b>.82</b>
Aggressiveness Scale	<b>.90</b>
Stress Coping Abilities	<b>.91</b>

**All SAQ-Adult Probation III scales have a reliability of .82 or higher.** The professionally accepted reliability standard is .75. All SAQ-Adult Probation III scales exceed this standard and demonstrate very impressive reliability.

Validity

Validity refers to a test’s ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another established test. This type of validation (concurrent validation) has been conducted in numerous studies on SAQ-Adult Probation III scales, which are presented earlier in this document.

Predictive validity refers to a test’s ability to predict observable “criterion” behaviors. In this analysis, our prediction criterion was offender status. By comparing the scale scores of First and Multiple Offenders, the analysis examined whether test scales could distinguish between offenders with known different levels of problem severity. It was predicted that Multiple Offenders would obtain significantly higher scale scores than First Offenders. *T*-test results (presented in Table 44) revealed that Multiple Offenders did indeed score significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, Violence Scale, Antisocial Scale, Aggressiveness Scale and Stress Coping Abilities scale than did First Offenders.

**Table 44. Independent Samples *t*-test Results (N=426\*, 2008)**

Scale	Mean Scores First Offenders	Mean Scores Multiple Offenders	<i>t</i> -value	Cohen's <i>d</i> (effect size)
Truthfulness	58.5	58.8	-0.09	0.01
Alcohol	35.3	62.6	-8.03**	1.20
Drugs	34.9	65.8	-8.12**	1.19
Violence	39.9	65.2	-8.10**	1.16
Antisocial	35.8	67.3	-14.37**	1.60
Aggressiveness	27.8	52.6	-9.90**	1.22
Stress Coping Abilities	45.9	58.8	-3.14*	0.46

\*Significant at  $p < .05$

\*\*Significant at  $p < .001$

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 6 (the number of offenders with invalid Scale scores).

**These results strongly support the predictive validity of the SAQ-Adult Probation III.** This is important because it shows that the Alcohol, Drugs, Violence, Antisocial, Aggressiveness, and Stress Coping Abilities Scales do accurately measure levels of problem severity. The scales effectively discriminate between offenders who are known to have more severe problems (Multiple Offenders) and First Offenders. Measuring problem severity enables staff to match problem severity with treatment program intensity. Proper matching is very important for treatment program effectiveness.

#### **41. Nationwide Study of SAQ-Adult Probation III Reliability, Validity, and Accuracy**

This study (2008) examined SAQ-Adult Probation III test statistics in a sample of offenders tested by probation agencies across the United States. Offenders were tested throughout the year beginning January, 2008 and ending December, 2008. There were 51,929 offenders included. SAQ-Adult Probation III reliability, validity and accuracy were examined.

##### Method

Participants in this study (2008) consisted of 51,929 offenders. There were 38,226 (73.6%) males and 13,634 (26.3%) females. Demographic composition of the sample follows. Age: 20 & under (20.7%); 21-30 (40.7%); 31-40 (19.8%); 41-50 (13.4%); 51-60 (4.1%); 61 & Over (1.0%). Ethnicity: Caucasian (60.2%); African American (22.1%); Hispanic (13.9%); Asian (0.9%); Native America (1.2%); Other (1.1%). Education: Eighth grade or less (4.9%); Some H.S. (28.3%); H.S. graduate (47.3%); Some college (13.1%); College graduate (4.6%). Marital Status: Single (59.6%); Married (20.9%); Divorced (12.0%); Separated (5.5%); and Widowed (0.9%).

##### Court History and SAQ-Adult Probation III Scale Scores

Correlations give information regarding the strength of relationships. They show how closely two variables are associated with one another. Higher correlation coefficients signify strong relationships between the variables being correlated.

Alcohol Scale scores were most closely associated with the number of alcohol-related arrests. A strong positive correlation was revealed, indicating that higher Alcohol Scale scores are associated with a higher number of alcohol-related arrests,  $r(49252)=.50$ ,  $p<.001$ .

Drugs Scale scores were most highly correlated with the number of drug-related arrests,  $r(49300)=.44$ ,  $p<.001$ . Higher Drugs Scale scores are strongly associated with a higher number of drug-related arrests.

Total number of arrests was the court-history variable that was most strongly correlated with Violence Scale scores,  $r(48677)=.36$ ,  $p<.001$ , Antisocial Scale scores,  $r(48677)=.39$ ,  $p<.001$ , Aggressiveness Scale scores,  $r(48677)=.25$ ,  $p<.001$  and Stress Coping Abilities Scale scores,  $r(48677)=.17$ ,  $p<.001$ . High scores on each of these scales were strongly associated with a higher number of total lifetime arrests.

### Reliability

Test reliability refers to a scale’s consistency of measurement. A scale is reliable if a person gets the same score when re-tested as he/she did when originally tested. Table 45 shows the reliability scores for each SAQ-Adult Probation III scale. Perfect reliability is 1.00.

**Table 45. SAQ-Adult Probation III Reliability (N=51,929, 2008)**

<u>Scale</u>	<u>Alpha coefficient</u>
Truthfulness Scale	<b>.89</b>
Alcohol Scale	<b>.90</b>
Drugs Scale	<b>.91</b>
Violence Scale	<b>.85</b>
Antisocial Scale	<b>.83</b>
Aggressiveness Scale	<b>.90</b>
Stress Coping Abilities	<b>.92</b>

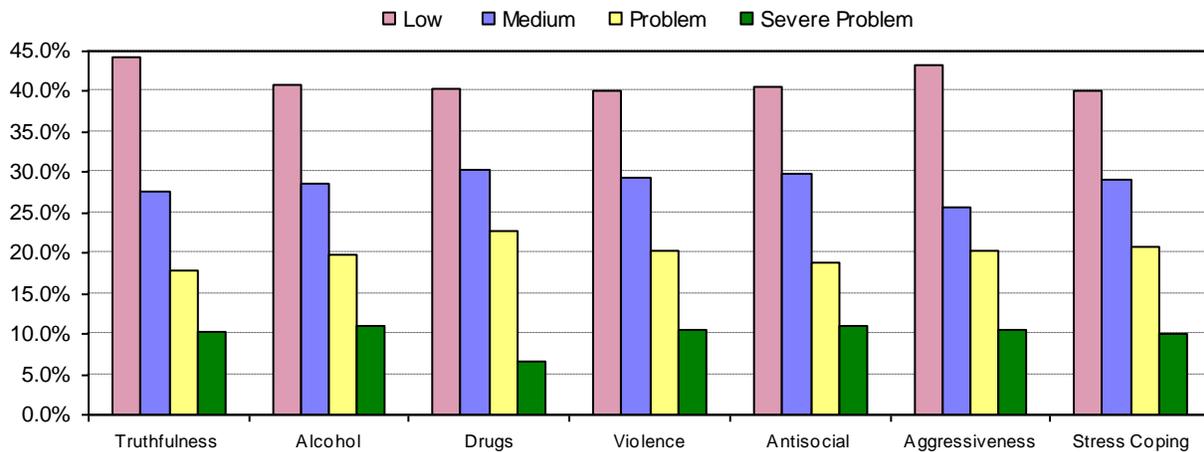
**All SAQ-Adult Probation III scales have a reliability of .83 or higher.** The professionally accepted reliability standard is .75. All SAQ-Adult Probation III scales exceed this standard and demonstrate very impressive reliability.

### Accuracy

Test accuracy is demonstrated by how close attained scale scores are to predicted scores. Four categories of risk are assigned: Low Risk (zero to 39<sup>th</sup> percentile), Medium Risk (40 to 69<sup>th</sup> percentile), Problem Risk (70 to 89<sup>th</sup> percentile), and Severe Problem Risk (90 to 100<sup>th</sup> percentile). The top row of Table 46 shows the percentages of offenders that were predicted to score within each risk range. (These predicted percentages for each SAQ-Adult Probation III scale risk category were obtained from SAQ-Adult Probation III standardization data.) The body of Table 46 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Severe Problem Risk range for the Truthfulness Scale: 11% of offenders were predicted to

score within this range; the attained percentage of offenders who scored in this range was 10.3%, which is a difference of 0.7 percentage points from what was predicted.

**Table 46. SAQ-Adult Probation III Accuracy (N=51,929\*, 2008)**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	44.3 (5.3)	27.6 (2.4)	17.8 (2.2)	10.3 (0.7)
Alcohol	40.8 (1.8)	28.5 (1.5)	19.8 (0.2)	10.9 (0.1)
Drugs	40.4 (1.4)	30.3 (0.3)	22.7 (2.7)	6.6 (4.4)
Violence	40.1 (1.1)	29.3 (0.7)	20.2 (0.2)	10.4 (0.6)
Antisocial	40.5 (1.5)	29.8 (0.2)	18.8 (1.2)	10.9 (0.1)
Aggressiveness	43.3 (4.3)	25.8 (4.2)	20.3 (0.3)	10.6 (0.4)
Stress Coping Abilities	40.1 (1.1)	29.0 (1.0)	20.8 (0.8)	10.1 (0.9)

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 1,582 (the number of offenders with invalid Scale scores).

Twenty seven out of 28 attained risk range percentiles were within **4.5** points of the predicted percentages. (The one exception- the Low Risk percentile for the Truthfulness Scale- was within 5.3 points of the predicted percentage.) The average difference between attained percentages and predicted percentages was **1.5** points. These results strongly support the accuracy of the SAQ-Adult Probation III as an offender-assessment instrument.

### Validity

Validity refers to a test’s ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another established test. This type of validation (concurrent validation) has been conducted in numerous studies on SAQ-Adult Probation III scales, which are presented earlier in this document.

Predictive validity refers to a test’s ability to predict observable “criterion” behaviors. In this analysis, our prediction criterion was whether or not offenders had been treated for alcohol and/or drug problems. It was

predicted that the “treated” offenders would be identified by their higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of “treated” offenders would have Alcohol and/or Drugs Scale scores that fell within the 70<sup>th</sup> and 100<sup>th</sup> percentile range (the High Risk range). The possibility of “treated” offenders scoring in the Low Risk range (zero to 69<sup>th</sup> percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the High Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. The majority (**91.7%**) of offenders who had been treated for alcohol problems scored in the High Risk range on the Alcohol Scale. Additionally, the majority (**91.3%**) of the offenders who had been treated for drug problems scored in the High Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify offenders who have been treated for alcohol and/or drug problems, thus providing support for the predictive validity of the SAQ-AP III.

In a second validity analysis, the prediction criterion was offender status. By comparing the scale scores of First and Multiple Offenders, the analysis examined whether test scales could distinguish between offenders with known different levels of problem severity. It was predicted that Multiple Offenders would obtain significantly higher scale scores than First Offenders. *T*-test results (presented in Table 47) revealed that Multiple Offenders did indeed score significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, Violence Scale, Antisocial Scale, Aggressiveness Scale, and Stress Coping Abilities Scale (on which higher scores indicate poorer stress coping abilities).

**Table 47. Independent Samples *t*-test Results (N=51,929\*, 2008)**

Scale	Mean Scores First Offenders	Mean Scores Multiple Offenders	<i>t</i> -value	Cohen’s <i>d</i> (effect size)
Truthfulness	58.87	60.67	-7.84	0.07
Alcohol	33.31	54.66	-118.72	1.10***
Drugs	32.00	50.92	-77.25	0.75**
Violence	34.69	52.98	-83.83	0.79**
Antisocial	37.49	55.41	-90.17	0.83***
Aggressiveness	37.49	50.20	-56.47	0.53**
Stress Coping Abilities	39.71	48.31	-31.43	0.30*

\*Small effect; \*\*Medium effect; \*\*\*Large effect

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 1,582 (the number of offenders with invalid Scale scores).

**These results strongly support the predictive validity of the SAQ-Adult Probation III.** This is important because it shows that the Alcohol, Drugs, Violence, Antisocial, Aggressiveness, and Stress Coping Abilities Scales do accurately measure levels of severity. The scales effectively discriminate between offenders who are known to have more severe problems (Multiple Offenders) and First Offenders.

#### **42. Study of SAQ-Adult Probation III in a Texas County Probation Program**

This study (2008) examined SAQ-Adult Probation III test statistics in a Texas county probation program. Offenders were tested throughout the year beginning January, 2008 and ending December, 2008. There

were 1,910 offenders included. SAQ-Adult Probation III reliability, validity and accuracy were examined.

## Method

Participants in this study (2008) consisted of 1,910 offenders. There were 1,357 (71.0%) males and 552 (28.9%) females. Demographic composition of the sample follows. Age: 20 & under (24.5%); 21-30 (43.9%); 31-40 (16.0%); 41-50 (10.5%); 51-60 (4.3%); 61 & Over (0.8%). Ethnicity: Caucasian (41.9%); African American (36.5%); Hispanic (17.9%); Other (3.2%). Education: Eighth grade or less (4.5%); Some H.S. (33.1%); H.S. graduate (44.7%); Some college (13.7%); College graduate (2.6%). Marital Status: Single (57.2%); Married (23.2%); Divorced (11.4%); Separated (6.6%); and Widowed (0.6%).

## Court History and SAQ-Adult Probation III Scale Scores

Correlations give information regarding the strength of relationships. They show how closely two variables are associated with one another. Higher correlation coefficients signify strong relationships between the variables being correlated.

Alcohol Scale scores were most closely associated with the number of alcohol-related arrests. A strong positive correlation indicated that higher Alcohol Scale scores are associated with a higher number of alcohol-related arrests,  $r(1787) = .47$ ,  $p < .001$ .

Drugs Scale scores were most highly correlated with the number of drug-related arrests,  $r(1794) = .57$ ,  $p < .001$ . Higher Drugs Scale scores are strongly associated with a higher number of drug-related arrests.

Aggressiveness Scale scores were most highly correlated with age at first arrest,  $r(1830) = -.20$ ,  $p < .001$ . The negative relationship indicates that higher Aggressiveness Scale scores are associated with a younger age at first arrest. A comparably strong positive correlation was also found with total number of arrests,  $r(1776) = .18$ ,  $p < .001$ , indicating that higher Aggressiveness Scale scores are associated with a higher number of lifetime arrests.

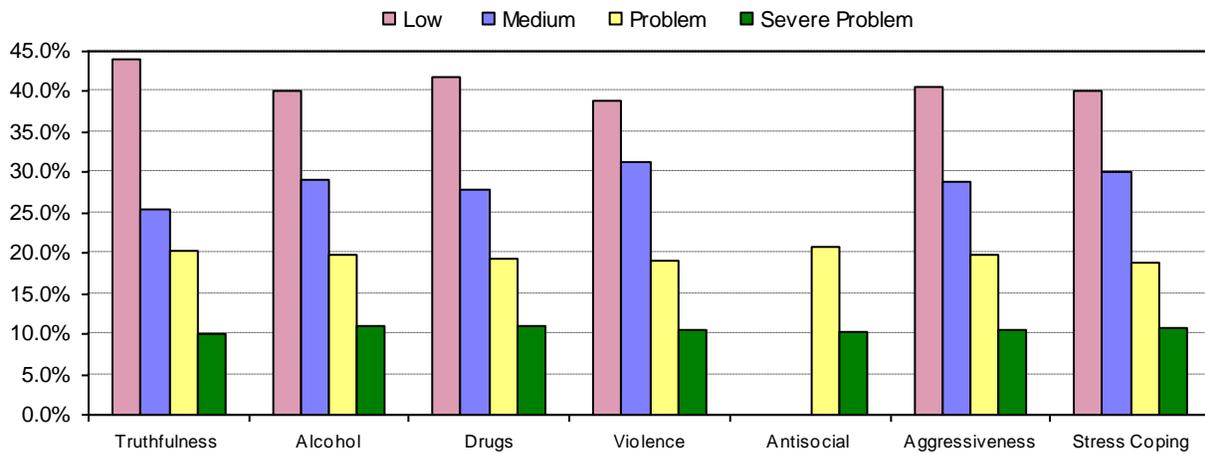
Stress Coping Abilities Scale scores were most closely associated with the number of months employed in the last twelve months. The strong negative correlation,  $r(1747) = -.18$ ,  $p < .001$ , signified that Stress Coping Abilities Scale scores increase as the number of months employed decreases. Higher scores on the Stress Coping Abilities Scale signify poorer stress coping skills. Poorer stress coping skills may impair offenders' abilities to maintain jobs for extensive periods.

Violence Scale scores and Antisocial Scale scores were most closely associated with the number of months employed in the last twelve months. The negative correlations demonstrated that, as the number of months employed decreases, Violence Scale scores,  $r(1747) = -.25$ ,  $p < .001$ , and Antisocial Scale scores,  $r(1747) = -.31$ ,  $p < .001$ , both increase. Scores on these two scales were also strongly positively correlated with total number of arrests. A higher number of total arrests was associated both with higher Violence Scale scores,  $r(1776) = .24$ ,  $p < .001$ , and Antisocial Scale scores,  $r(1776) = .27$ ,  $p < .001$ .

Accuracy

Test accuracy is demonstrated by how close attained scale scores are to predicted scores. Four categories of risk are assigned: Low Risk (zero to 39<sup>th</sup> percentile), Medium Risk (40 to 69<sup>th</sup> percentile), Problem Risk (70 to 89<sup>th</sup> percentile), and Severe Problem Risk (90 to 100<sup>th</sup> percentile). The top row of Table 48 shows the percentages of offenders that were predicted to score within each risk range. (These predicted percentages for each SAQ-Adult Probation III scale risk category were obtained from SAQ-Adult Probation III standardization data.) The body of Table 48 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Low Risk range for the Truthfulness Scale: 39% of offenders were predicted to score within this range; the attained percentage of offenders who scored in this range was 44.0%, which is a difference of 5.0 percentage points from what was predicted.

**Table 48. SAQ-Adult Probation III Accuracy (N=1,910\*, 2008)**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	44.0 (5.0)	25.5 (4.5)	20.4 (0.4)	10.1 (0.9)
Alcohol	40.1 (1.1)	29.2 (0.8)	19.8 (0.2)	11.0 (0.0)
Drugs	41.8 (2.8)	28.0 (2.0)	19.3 (0.7)	10.9 (1.1)
Violence	39.0 (0.0)	31.4 (1.4)	19.0 (1.0)	10.6 (0.4)
Antisocial	52.0** (13.0)	17.1** (12.9)	20.7 (0.7)	10.2 (0.8)
Aggressiveness	40.7 (1.7)	28.8 (1.2)	19.9 (0.1)	10.6 (0.4)
Stress Coping Abilities	40.1 (1.1)	30.2 (0.2)	18.9 (1.1)	10.8 (0.2)

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 82 (the number of offenders with invalid Scale scores).

\*\*For whatever reason, offenders are not responding to “Low-risk” alcohol-related items. This is unique to Bell County CSCD. All other probation programs that Risk & Needs serves do not manifest this “effect”. Consequently, there may be a procedural explanation.

Twenty-four out of 28 attained risk range percentiles were within **2.8** points of the predicted percentages. The average difference between attained percentages and predicted percentages was **2.0** points. These results strongly support the accuracy of the SAQ-Adult Probation III as an offender-assessment instrument.

## Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets the same score when re-tested as he/she did when originally tested. Table 49 shows the reliability scores for each SAQ-Adult Probation III scale. Perfect reliability is 1.00.

**Table 49. SAQ-Adult Probation III Reliability (N=1,910, 2008)**

<u>Scale</u>	<u>Alpha coefficient</u>
Truthfulness Scale	<b>.88</b>
Alcohol Scale	<b>.89</b>
Drugs Scale	<b>.90</b>
Violence Scale	<b>.85</b>
Antisocial Scale	<b>.86</b>
Aggressiveness Scale	<b>.90</b>
Stress Coping Abilities	<b>.93</b>

**All SAQ-Adult Probation III scales have a reliability of .86 or higher.** The professionally accepted reliability standard is .75. All SAQ-Adult Probation III scales exceed this standard and demonstrate very impressive reliability.

## Validity

Validity refers to a test's ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another established test. This type of validation (concurrent validation) has been conducted in numerous studies on SAQ-Adult Probation III scales, which are presented earlier in this document.

Predictive validity refers to a test's ability to predict observable "criterion" behaviors. In this analysis, our prediction criterion was whether or not offenders had been treated for alcohol and/or drug problems. It was predicted that the "treated" offenders would be identified by their higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of "treated" offenders would have Alcohol and/or Drugs Scale scores that fell within the 70<sup>th</sup> and 100<sup>th</sup> percentile range (the High Risk range). The possibility of "treated" offenders scoring in the Low Risk range (zero to 69<sup>th</sup> percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the High Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. Almost all (**99.3%**) of offenders who had been treated for alcohol problems scored in the High Risk range on the Alcohol Scale. Additionally, the majority (**93.5%**) of the offenders who had been treated for drug problems scored in the High Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify offenders who have been treated for alcohol and/or drug problems, thus providing support for the predictive validity of the SAQ-Adult Probation III.

In a second validity analysis, the prediction criterion was offender status. By comparing the scale scores of First and Multiple Offenders, the analysis examined whether test scales could distinguish between offenders with known different levels of problem severity. It was predicted that Multiple Offenders

would obtain significantly higher scale scores than First Offenders. *T*-test results (presented in Table 50) revealed that Multiple Offenders did indeed score significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, Violence Scale, Antisocial Scale, and Aggressiveness Scale. Multiple Offenders also had a higher average score on the Stress Coping Abilities scale (on which higher scores indicate poorer stress coping abilities) than did First Offenders. Although the effect size of this difference was not quite substantial, it was close; and the effect size of the difference between Stress Coping scores has been substantial in most other studies of the SAQ-Adult Probation III.

**Table 50. Independent Samples *t*-test Results (N=1,910\*, 2008)**

Scale	Mean Scores First Offenders	Mean Scores Multiple Offenders	<i>t</i> -value	Cohen's <i>d</i> (effect size)
Truthfulness	63.06	58.05	4.06	0.20*
Alcohol	31.53	50.04	-19.90	0.95***
Drugs	34.31	51.30	-13.62	0.67**
Violence	39.82	52.08	-9.78	0.50**
Antisocial	43.79	55.88	-10.27	0.51**
Aggressiveness	40.56	46.30	-4.75	0.24*
Stress Coping Abilities	40.61	45.45	-3.36	0.17

\*Small effect; \*\*Medium effect; \*\*\*Large effect

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 78 (the number of offenders with invalid Scale scores).

**These results strongly support the predictive validity of the SAQ-Adult Probation III.** This is important because it shows that the Alcohol, Drugs, Violence, Antisocial, Aggressiveness, and Stress Coping Abilities Scales do accurately measure levels of severity. The scales effectively discriminate between offenders who are known to have more severe problems (Multiple Offenders) and First Offenders.

### 43. Study of SAQ-Adult Probation III in a Texas County Probation Program

This study (2008) examined SAQ-Adult Probation III test statistics in a Texas county probation program. Offenders were tested throughout the year beginning January, 2008 and ending December, 2008. There were 1,675 offenders included. SAQ-Adult Probation III reliability, validity and accuracy were examined.

#### Method

Participants in this study (2008) consisted of 1,675 offenders. There were 1,200 (71.6%) males and 471 (28.1%) females. Demographic composition of the sample follows. Age: 20 & under (20.0%); 21-30 (42.9%); 31-40 (18.6%); 41-50 (13.2%); 51-60 (3.9%); 61 & Over (1.1%). Ethnicity: Caucasian (52.6%); African American (32.0%); Hispanic (13.4%); Other (1.2%). Education: Eighth grade or less (5.7%); Some H.S. (25.7%); H.S. graduate (49.4%); Some college (13.8%); College graduate (2.8%). Marital Status: Single (56.2%); Married (24.1%); Divorced (10.9%); Separated (5.3%); and Widowed (1.0%).

## Court History and SAQ-Adult Probation III Scale Scores

Correlations give information regarding the strength of relationships. They show how closely two variables are associated with one another. Higher correlation coefficients signify strong relationships between the variables being correlated.

Alcohol Scale scores were most closely associated with the number of alcohol-related arrests. A strong positive correlation indicated that higher Alcohol Scale scores are associated with a higher number of alcohol-related arrests,  $r(1573)=.60$ ,  $p<.001$ .

Drugs Scale scores were most highly correlated with the number of drug-related arrests,  $r(1574)=.56$ ,  $p<.001$ . Higher Drugs Scale scores are strongly associated with a higher number of drug-related arrests.

Aggressiveness Scale scores were most highly correlated with age at first arrest,  $r(1548)= -.26$ ,  $p<.001$ . The negative relationship indicates that higher Aggressiveness Scale scores are associated with a younger age at first arrest.

Stress Coping Abilities Scale scores were most closely associated with the number of months employed in the last twelve months. The strong negative correlation,  $r(1518)= -.18$ ,  $p<.001$ , signifies that Stress Coping Abilities Scale scores increase as the number of months employed decreases. Higher scores on the Stress Coping Abilities Scale signify poorer stress coping skills. Poorer stress coping skills may impair offenders' abilities to maintain jobs for extensive periods.

Violence Scale scores and Antisocial Scale scores were most closely associated with the number of months employed in the last twelve months. The negative correlations demonstrated that, as the number of months employed decreases, Violence Scale scores,  $r(1518)= -.31$ ,  $p<.001$ , and Antisocial Scale scores,  $r(1518)= -.31$ ,  $p<.001$ , both increase. Scores on these two scales were also strongly positively correlated with total number of arrests. A higher number of total arrests was associated both with higher Violence Scale scores,  $r(1540)= .31$ ,  $p<.001$ , and Antisocial Scale scores,  $r(1540)= .30$ ,  $p<.001$ .

## Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets the same score when re-tested as he/she did when originally tested. Table 51 shows the reliability scores for each SAQ-Adult Probation III scale. Perfect reliability is 1.00.

**Table 51. SAQ-Adult Probation III Reliability (N=1,675, 2008)**

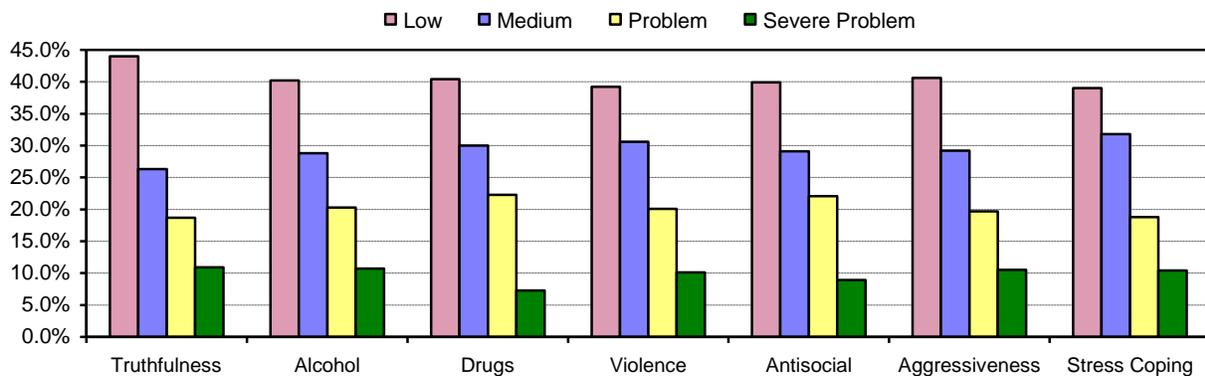
<u>Scale</u>	<u>Alpha coefficient</u>
Truthfulness Scale	<b>.89</b>
Alcohol Scale	<b>.88</b>
Drugs Scale	<b>.90</b>
Violence Scale	<b>.85</b>
Antisocial Scale	<b>.82</b>
Aggressiveness Scale	<b>.88</b>
Stress Coping Abilities	<b>.91</b>

All SAQ-Adult Probation III scales have a reliability of .82 or higher. The professionally accepted reliability standard is .75. All SAQ-Adult Probation III scales exceed this standard and demonstrate very impressive reliability.

Accuracy

Test accuracy is demonstrated by how close attained scale scores are to predicted scores. Four categories of risk are assigned: Low Risk (zero to 39<sup>th</sup> percentile), Medium Risk (40 to 69<sup>th</sup> percentile), Problem Risk (70 to 89<sup>th</sup> percentile), and Severe Problem Risk (90 to 100<sup>th</sup> percentile). The top row of Table 52 shows the percentages of offenders that were predicted to score within each risk range. (These predicted percentages for each SAQ-Adult Probation III scale risk category were obtained from SAQ-Adult Probation III standardization data.) The body of Table 52 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Low Risk range for the Truthfulness Scale: 39% of offenders were predicted to score within this range; the attained percentage of offenders who scored in this range was 44.0%, which is a difference of 5.0 percentage points from what was predicted.

**Table 52. SAQ-Adult Probation III Accuracy (N=1,675\*, 2008)**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	44.0 (5.0)	26.3 (3.7)	18.7 (1.3)	10.9 (0.1)
Alcohol	40.2 (1.2)	28.8 (1.2)	20.3 (0.3)	10.7 (0.3)
Drugs	40.4 (1.4)	30.0 (0.0)	22.3 (2.3)	7.3 (3.7)
Violence	39.2 (0.2)	30.6 (0.6)	20.1 (0.1)	10.1 (0.9)
Antisocial	39.9 (0.9)	29.1 (0.9)	22.1 (2.1)	8.9 (2.1)
Aggressiveness	40.6 (1.6)	29.2 (0.8)	19.7 (0.3)	10.5 (0.5)
Stress Coping Abilities	39.0 (0.0)	31.8 (1.8)	18.8 (1.2)	10.4 (0.6)

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 64 (the number of offenders with invalid Scale scores).

Twenty-seven out of 28 attained risk range percentiles were within 3.7 points of the predicted percentages. (The one exception- the Low Risk percentile for the Truthfulness Scale- was within 5.0 points of the predicted percentage). The average difference between attained percentages and predicted percentages was 1.3 points. These results strongly support the accuracy of the SAQ-Adult Probation III as an offender-assessment instrument.

## Validity

Validity refers to a test's ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another established test. This type of validation (concurrent validation) has been conducted in numerous studies on SAQ-Adult Probation III scales, which are presented earlier in this document.

Predictive validity refers to a test's ability to predict observable "criterion" behaviors. In this analysis, our prediction criterion was whether or not offenders had been treated for alcohol and/or drug problems. It was predicted that the "treated" offenders would be identified by their higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of "treated" offenders would have Alcohol and/or Drugs Scale scores that fell within the 70<sup>th</sup> and 100<sup>th</sup> percentile range (the High Risk range). The possibility of "treated" offenders scoring in the Low Risk range (zero to 69<sup>th</sup> percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the High Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. Almost all (**97.2%**) of offenders who had been treated for alcohol problems scored in the High Risk range on the Alcohol Scale. Additionally, the majority (**93.1%**) of the offenders who had been treated for drug problems scored in the High Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify offenders who have been treated for alcohol and/or drug problems, thus providing support for the predictive validity of the SAQ-Adult Probation III.

In a second validity analysis, the prediction criterion was offender status. By comparing the scale scores of First and Multiple Offenders, the analysis examined whether test scales could distinguish between offenders with known different levels of problem severity. It was predicted that Multiple Offenders would obtain significantly higher scale scores than First Offenders. *T*-test results (presented in Table 53) revealed that Multiple Offenders did indeed score significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, Violence Scale, Antisocial Scale, and Aggressiveness Scale. Multiple Offenders also had a higher average score on the Stress Coping Abilities scale (on which higher scores indicate poorer stress coping abilities) than did First Offenders. Although the effect size of this difference was not quite substantial, it was close; and the effect size of the difference between Stress Coping scores has been substantial in most other studies of the SAQ-Adult Probation III.

**Table 53. Independent Samples *t*-test Results (N=1,675\*, 2008)**

Scale	Mean Scores First Offenders	Mean Scores Multiple Offenders	<i>t</i> -value	Cohen's <i>d</i> (effect size)
Truthfulness	62.8	56.8	4.50	0.24*
Alcohol	33.4	50.2	-15.61	0.82***
Drugs	35.4	52.5	-11.84	0.62**
Violence	35.6	49.4	-10.97	0.58**
Antisocial	40.6	54.0	-11.11	0.58**
Aggressiveness	35.3	45.2	-8.44	0.44*
Stress Coping Abilities	42.1	46.4	-2.90	0.15

\*Small effect; \*\*Medium effect; \*\*\*Large effect

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 64 (the number of offenders with invalid Scale scores).

**These results strongly support the predictive validity of the SAQ-Adult Probation III.** This is important because it shows that the Alcohol, Drugs, Violence, Antisocial, Aggressiveness, and Stress Coping Abilities Scales do accurately measure levels of severity. The scales effectively discriminate between offenders who are known to have more severe problems (Multiple Offenders) and First Offenders.

#### **44. Texas Statewide Study of SAQ-Adult Probation III Reliability, Validity, and Accuracy**

This study (2008) examined SAQ-Adult Probation III test statistics in a sample of offenders tested by probation agencies within the state of Texas. Offenders were tested throughout the year beginning January, 2008 and ending December, 2008. There were 5,551 offenders included. SAQ-Adult Probation III reliability, validity and accuracy were examined.

##### Method

Participants in this study (2008) consisted of 5,551 offenders. There were 3,956 (71.3%) males and 1,587 (28.6%) females. Demographic composition of the sample follows. Age: 20 & under (23.9%); 21-30 (44.3%); 31-40 (16.1%); 41-50 (11.0%); 51-60 (3.6%); 61 & Over (0.9%). Ethnicity: Caucasian (51.0%); African American (29.9%); Hispanic (16.3%); Asian (0.9%); Native America (0.5%); Other (0.9%). Education: Eighth grade or less (4.4%); Some H.S. (28.3%); H.S. graduate (48.1%); Some college (13.6%); College graduate (3.7%). Marital Status: Single (76.5%); Married (13.3%); Divorced (6.0%); Separated (2.7%); and Widowed (0.5%).

##### Court History and SAQ-Adult Probation III Scale Scores

Correlations give information regarding the strength of relationships. They show how closely two variables are associated with one another. Higher correlation coefficients signify strong relationships between the variables being correlated.

Alcohol Scale scores were most closely associated with the number of alcohol-related arrests. A markedly strong positive correlation indicated that higher Alcohol Scale scores are associated with a higher number of alcohol-related arrests,  $r(5203) = .61, p < .001$ .

Drugs Scale scores were most highly correlated with the number of drug-related arrests,  $r(5203) = .57, p < .001$ . Higher Drugs Scale scores are strongly associated with a higher number of drug-related arrests.

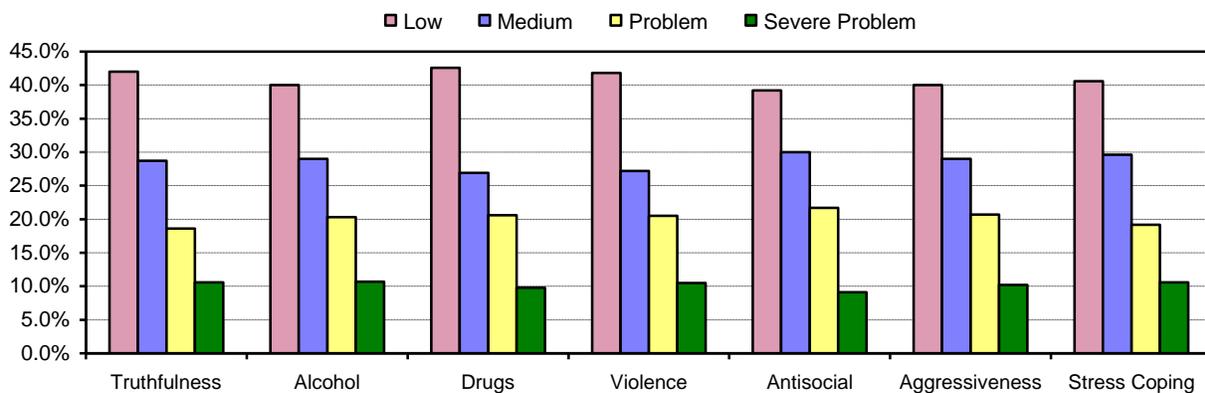
Aggressiveness Scale scores were most highly correlated with age at first arrest,  $r(5131) = -.24, p < .001$ . The negative relationship indicates that higher Aggressiveness Scale scores are associated with a younger age at first arrest.

Violence Scale scores, Antisocial Scale scores, and Stress Coping Abilities Scale scores were most closely associated with the total number of arrests. Strong positive correlations demonstrated that higher scores on the Violence Scale,  $r(5113) = .30, p < .001$ , Antisocial Scale,  $r(5113) = .29, p < .001$ , and Stress Coping Abilities Scale,  $r(5113) = .13, p < .001$ , are all associated with a higher total number of arrests.

## Accuracy

Test accuracy is demonstrated by how close attained scale scores are to predicted scores. Four categories of risk are assigned: Low Risk (zero to 39<sup>th</sup> percentile), Medium Risk (40 to 69<sup>th</sup> percentile), Problem Risk (70 to 89<sup>th</sup> percentile), and Severe Problem Risk (90 to 100<sup>th</sup> percentile). The top row of Table 53 shows the percentages of offenders that were predicted to score within each risk range. (These predicted percentages for each SAQ-Adult Probation III scale risk category were obtained from SAQ-Adult Probation III standardization data.) The body of Table 53 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Low Risk range for the Truthfulness Scale: 39% of offenders were predicted to score within this range; the attained percentage of offenders who scored in this range was 42.0%, which is a difference of 3.0 percentage points from what was predicted.

**Table 53. SAQ-Adult Probation III Accuracy (N=5,551\*, 2008)**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	42.0 (3.0)	28.7 (1.3)	18.6 (1.4)	10.6 (0.4)
Alcohol	40.0 (1.0)	29.0 (1.0)	20.3 (0.3)	10.7 (0.3)
Drugs	42.6 (3.6)	26.9 (3.1)	20.6 (0.6)	9.8 (1.2)
Violence	41.8 (2.8)	27.2 (2.8)	20.5 (0.5)	10.5 (0.5)
Antisocial	39.2 (0.2)	30.0 (0.0)	21.7 (1.7)	9.1 (1.9)
Aggressiveness	40.0 (1.0)	29.0 (1.0)	20.7 (0.7)	10.2 (0.8)
Stress Coping Abilities	40.6 (1.6)	29.6 (0.4)	19.2 (0.8)	10.6 (0.4)

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 232 (the number of offenders with invalid Scale scores).

Twenty-eight out of 28 attained risk range percentiles were within **3.6** points of the predicted percentages. The average difference between attained percentages and predicted percentages was **1.2** points. These results strongly support the accuracy of the SAQ-Adult Probation III as an offender-assessment instrument.

## Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets the same score when re-tested as he/she did when originally tested. Table 54 shows the reliability scores for each SAQ-Adult Probation III scale. Perfect reliability is 1.00.

**Table 54. SAQ-Adult Probation III Reliability (N=5,551, 2008)**

<u>Scale</u>	<u>Alpha coefficient</u>
Truthfulness Scale	<b>.88</b>
Alcohol Scale	<b>.90</b>
Drugs Scale	<b>.90</b>
Violence Scale	<b>.84</b>
Antisocial Scale	<b>.84</b>
Aggressiveness Scale	<b>.89</b>
Stress Coping Abilities	<b>.92</b>

**All SAQ-Adult Probation III scales have a reliability of .84 or higher.** The professionally accepted reliability standard is .75. All SAQ-Adult Probation III scales exceed this standard and demonstrate very impressive reliability.

### Validity

Validity refers to a test's ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another established test. This type of validation (concurrent validation) has been conducted in numerous studies on SAQ-Adult Probation III scales, which are presented earlier in this document.

Predictive validity refers to a test's ability to predict observable "criterion" behaviors. In this analysis, our prediction criterion was whether or not offenders had been treated for alcohol and/or drug problems. It was predicted that the "treated" offenders would be identified by their higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of "treated" offenders would have Alcohol and/or Drugs Scale scores that fell within the 70<sup>th</sup> and 100<sup>th</sup> percentile range (the High Risk range). The possibility of "treated" offenders scoring in the Low Risk range (zero to 69<sup>th</sup> percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the High Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. Almost all (**98.9%**) of offenders who had been treated for alcohol problems scored in the High Risk range on the Alcohol Scale. Additionally, almost all (**95.8%**) of the offenders who had been treated for drug problems scored in the High Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify offenders who have been treated for alcohol and/or drug problems, thus providing support for the predictive validity of the SAQ-Adult Probation III.

In a second validity analysis, the prediction criterion was offender status. By comparing the scale scores of First and Multiple Offenders, the analysis examined whether test scales could distinguish between offenders with known different levels of problem severity. It was predicted that Multiple Offenders would obtain significantly higher scale scores than First Offenders. *T*-test results (presented in Table 55) revealed that Multiple Offenders did indeed score significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, Violence Scale, Antisocial Scale, and Aggressiveness Scale. Multiple Offenders also had a higher average score on the Stress Coping Abilities scale (on which higher scores indicate poorer stress coping abilities) than did First Offenders. Although the effect size of this difference was not quite substantial, it was close; and the effect size of the difference between Stress Coping scores has been substantial in most other studies of the SAQ-Adult Probation III.

**Table 55. Independent Samples *t*-test Results (N=5,551, 2008)**

Scale	Mean Scores First Offenders	Mean Scores Multiple Offenders	<i>t</i> -value	Cohen's <i>d</i> (effect size)
Truthfulness	63.9	58.7	7.32	0.21*
Alcohol	32.5	50.6	-33.26	0.93**
Drugs	34.7	51.4	-22.42	0.64**
Violence	36.2	50.5	-20.48	0.59**
Antisocial	42.1	54.4	-18.43	0.52**
Aggressiveness	37.3	45.9	-12.86	0.37*
Stress Coping Abilities	40.3	45.5	-6.33	0.18

\*Small effect; \*\*Medium effect; \*\*\*Large effect

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining six Scales was slightly smaller- less by 232- the number of offenders with invalid Scale scores).

**These results strongly support the predictive validity of the SAQ-Adult Probation III.** This is important because it shows that the Alcohol, Drugs, Violence, Antisocial, Aggressiveness, and Stress Coping Abilities Scales do accurately measure levels of severity. The scales effectively discriminate between offenders who are known to have more severe problems (Multiple Offenders) and First Offenders.

#### **45. A Study of SAQ-AP Short-Form Reliability, Validity, and Accuracy**

This study (2009) examined SAQ-Adult Probation Short-Form test statistics in a sample of offenders tested by probation agencies throughout the United States during the time period beginning February, 2003 and ending March, 2006. There were 336 probationers included. SAQ-AP Short-Form reliability, validity and accuracy were examined.

##### Method

Participants in this study (2009) consisted of 335 probationers. There were 266 (79.2%) males and 70 (20.8%) females. Demographic composition of the sample follows. Age: 20 & under (31.0%); 21-30 (28.9%); 31-40 (18.5%); 41-50 (15.5%); 51-60 (4.2%); 61 & Over (2.1%). Ethnicity: Caucasian (56.0%); African American (40.5%); Hispanic (0.9%); Asian (0.3%); Native America (0%); Other (0.3%). Education: Eighth grade or less (2.7%); Some H.S. (31.3%); H.S. graduate (34.2%); Some college (7.1%); College graduate (3.3%). Marital Status: Single (56.3%); Married (16.4%); Divorced (8.0%); Separated (2.4%); and Widowed (0%).

##### Court History and SAQ-AP Short-Form Scales

Correlations give information regarding the strength of relationships. They show how closely two variables are associated with one another. Higher correlation coefficients signify strong relationships between the variables being correlated.

Alcohol Scale scores were most closely associated with the number of alcohol-related convictions. A markedly strong positive correlation indicated that higher Alcohol Scale scores are associated with a higher number of alcohol-related convictions,  $r(296)=.71$ ,  $p<.001$ .

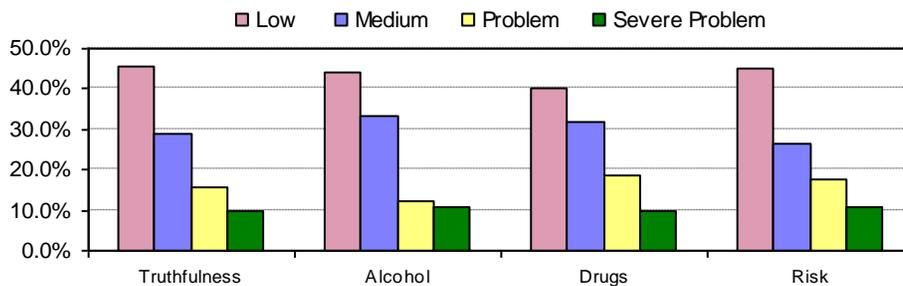
Drugs Scale scores were most highly correlated with the number of drug-related convictions,  $r(296)=.51$ ,  $p<.001$ . Higher Drugs Scale scores are strongly associated with a higher number of drug-related convictions.

Risk Scale scores were most highly correlated with the number of times on probation,  $r(299)=.43$ ,  $p<.001$ , and the number of times sentenced to jail,  $r(298)=.42$ ,  $p<.001$ . The positive relationships indicate that higher Risk Scale scores are associated with a higher frequency of both jail sentences and times on probation.

Accuracy

Test accuracy is demonstrated by how close attained scale scores are to predicted scores. Four categories of risk are assigned: Low Risk (zero to 39<sup>th</sup> percentile), Medium Risk (40 to 69<sup>th</sup> percentile), Problem Risk (70 to 89<sup>th</sup> percentile), and Severe Problem Risk (90 to 100<sup>th</sup> percentile). The top row of Table 56 shows the percentages of probationers that were predicted to score within each risk range. (These predicted percentages for each SAQ-AP Short-Form scale risk category were obtained from SAQ-AP Short-Form standardization data.) The body of Table 56 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Low Risk range for the Drugs Scale: 39% of probationers were predicted to score within this range; the attained percentage of probationers who scored in this range was 40.3%, which is a difference of 1.3 percentage points from what was predicted.

**Table 56. SAQ-AP Short-Form Accuracy (N=336\*, 2009)**



Scale	Low Risk (39%)	Medium Risk (30%)	Problem Risk (20%)	Severe Problem (11%)
Truthfulness	45.5 (6.5)	28.9 (1.1)	15.8 (4.2)	9.8 (1.2)
Alcohol	43.9 (4.9)	33.3 (3.3)	12.2 (7.8)	10.6 (0.4)
Drugs	40.3 (1.3)	31.7 (1.7)	18.5 (1.5)	9.6 (1.4)
Risk	44.9 (5.9)	26.7 (3.3)	17.5 (2.5)	10.9 (1.1)

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining three Scales was slightly smaller- less by 33 (the number of probationers with invalid Scale scores).

Thirteen out of 16 attained risk range percentiles were within **4.9** points of the predicted percentages. The average difference between attained percentages and predicted percentages was **3.0** points. These

results strongly support the accuracy of the SAQ-Adult Probation Short-Form as a probationer-assessment instrument.

### Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets the same score when re-tested as he/she did when originally tested. Table 57 shows the reliability scores for each SAQ-AP Short-Form scale. Perfect reliability is 1.00.

**Table 57. SAQ-AP Short-Form Reliability (N=336, 2009)**

<u>Scale</u>	<u>Alpha coefficient</u>
Truthfulness Scale	<b>.86</b>
Alcohol Scale	<b>.90</b>
Drugs Scale	<b>.88</b>
Risk Scale	<b>.79*</b>

\*With larger samples, higher reliability coefficients have been obtained for the Risk Scale. (For example, a reliability coefficient of .84 was obtained for the Risk Scale in 2002 with a sample of 5,179 probationers). With a small sample of 336, a lower reliability coefficient was obtained; this is likely due to sampling error.

**All SAQ-AP Short-Form scales have a reliability of .79 or higher.** The professionally accepted reliability standard is .75. All SAQ-AP Short-Form scales exceed this standard and demonstrate impressive reliability.

### Validity

Validity refers to a test's ability to measure what it is purported to measure. The quality of a test is largely determined by its validity. Concurrent validity correlates the independent scales of the test being validated with corresponding measures from another established test. This type of validation (concurrent validation) was conducted on SAQ-AP Short-Form scales in an earlier study which is presented on page 23 of this document.

Predictive validity refers to a test's ability to predict observable "criterion" behaviors. In this analysis, our prediction criterion was whether or not probationers considered themselves to have alcohol and/or drug problems. Direct self-admissions were utilized. It was predicted that the self-admitted "problem drinkers" and self-admitted "problem drug users" would be identified by their higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of these probationers would have Alcohol and/or Drugs Scale scores that fell within the 70<sup>th</sup> and 100<sup>th</sup> percentile range (the High Risk range). The possibility of these probationers scoring in the Low Risk range (zero to 69<sup>th</sup> percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the High Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. The vast majority (**86.1%**) of probationers who admitted to having alcohol problems scored in the High Risk range on the Alcohol Scale. Additionally, all (**100.0%**) of the probationers who admitted to having drug problems scored in the High Risk range on the Drugs Scale. These findings indicate that the SAQ-AP Short-Form Alcohol and Drugs Scales accurately identify probationers who admit to having alcohol and/or drug problems.

In a second validity analysis, the prediction criterion was offender status. By comparing the scale scores of First Offenders (one or no total convictions) and Multiple Offenders (two or more total convictions),

the analysis examined whether test scales could distinguish between probationers with known different levels of problem severity. It was predicted that Multiple Offenders would obtain significantly higher scale scores than First Offenders. *T*-test results (presented in Table 58) revealed that Multiple Offenders did indeed score significantly higher than First Offenders on the Alcohol Scale, Drugs Scale, and Risk Scale.

**Table 58. Independent Samples *t*-test Results (N=336\*, 2009)**

<b>Scale</b>	<b>Mean Scores First Offenders</b>	<b>Mean Scores Multiple Offenders</b>	<b><i>t</i>-value</b>
Truthfulness	53.9	55.2	-.39
Alcohol	18.3	40.3	-6.14***
Drugs	34.7	51.4	-2.37**
Risk	40.2	62.0	-7.91***

\*Significant at  $p < .05$ ; \*\*Significant at  $p < .01$ ; \*\*\*Significant at  $p < .001$

\*Note: For respondents who scored in the 95<sup>th</sup> percentile or higher on the Truthfulness Scale (thereby invalidating other Scale scores), only their Truthfulness Scale scores were included in this analysis; thus, the sample size for the remaining three Scales was slightly smaller- less by 33 (the number of probationers with invalid Scale scores).

**These results strongly support the predictive validity of the SAQ-AP Short-Form.** This is important because it shows that the Alcohol, Drugs, and Risk Scales do accurately measure levels of severity. The scales effectively discriminate between probationers who are known to have more severe problems (Multiple Offenders) and First Offenders.

#### **46. SAQ-Adult Probation III Reliability, Accuracy, and Validity (2012)**

This study (2012) was conducted using SAQ-Adult Probation III test data collected from a single agency in Texas.

##### Methods/Results

There were 579 probationers tested. Gender: 74% were males and 26% were females. Age: average offenders 36.4. Race/Ethnicity: 59% Caucasian; 11% African American; 29% Hispanic; <1% Asian; and <1% Native American. Marital Status: 49% single; 30% married; 15% divorced; 4% separated; and 1% widowed. Education: 4% had an 8<sup>th</sup> grade or less level of education; 21% had some high school; 50% graduated high school; 17% completed a post secondary technical school or trade program; 7 % graduated from college; 2% had post graduate education.

Court history: 93% had been arrested one or more times; 44% had one or more felony arrests; 70% had one or more alcohol arrests; 27% had one or more drug arrests; 54% had one or more jail sentences; 8% had one or more prison sentences; 85% had been sentenced to probation at least once; 17% reported at least one probation revocation.

##### Reliability

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of the items in each scale of the SAQ-Adult Probation III. Perfect reliability is 1.00. The professionally accepted reliability standard for this type of instrument is .70 - .80 (Murphy & Davidshofer, 2001).

As noted in Table 59, all scales exceed the professionally accepted standard and support the SAQ-Adult Probation III as a reliable instrument for probationer screening.

**Table 59. SAQ-Adult Probation III Reliability (N = 579; 2012)**

<u>Scales</u>	<u>Cronbach's Alpha</u>
Truthfulness	.87
Alcohol	.92
Drug	.88
Violence	.85
Aggressiveness	.90
Antisocial	.84
Stress Coping Abilities	.90

Accuracy

Test accuracy can be calculated by comparing the differences between predicted and attained risk range percentages; **small differences represent high test accuracy**. Accuracy results for the SAQ-Adult Probation III are presented in Table x.

For each scale, respondents are classified into four risk ranges: Low Risk (zero to 39<sup>th</sup> percentile), Medium Risk (40<sup>th</sup> to 69<sup>th</sup> percentile), Problem Risk (70<sup>th</sup> to 89<sup>th</sup> percentile) and Severe Problem (90<sup>th</sup> to 100<sup>th</sup> percentile). These four risk ranges were established and subsequently reaffirmed in SAQ-Adult Probation III research. Differences between predicted and attained percentages are shown in parentheses and results (**in bold**) are used to denote the difference between the predicted and attained scores.

The top row of Table 60 shows the percentage of clients who were predicted to score within each risk range category. For example, 39% of clients were predicted to score within the Low Risk range for the Alcohol Scale. The actual percentage of individuals who scored in this range was 40.5%, which is **(1.5)** percentage points above the predicted low risk range. The largest predicted-attained score difference is in the medium risk range, on the Truthfulness Scale. All other scale comparisons are even more accurate. These findings confirm the accuracy of the SAQ-Adult Probation III in assessing probationer behavior.

**Table 60. SAQ-Adult Probation III Accuracy Findings (N = 579; 2012)**

<u>Scales</u>	<u>Low Risk (39%)</u>		<u>Medium Risk (30%)</u>		<u>Problem Risk (20%)</u>		<u>Severe Risk (11%)</u>	
Truthfulness	35.9	<b>(-3.1)</b>	38.5	<b>(8.5)</b>	13.6	<b>(-6.4)</b>	11.9	<b>(.9)</b>
Alcohol	40.5	<b>(1.5)</b>	29.8	<b>(-.2)</b>	19.5	<b>(-.5)</b>	10.1	<b>(-.9)</b>
Drug	40.6	<b>(1.6)</b>	29.6	<b>(-.4)</b>	19.3	<b>(-.7)</b>	10.5	<b>(-.5)</b>
Violence	41.1	<b>(2.1)</b>	27.8	<b>(-2.2)</b>	21.1	<b>(1.1)</b>	10.0	<b>(-1.0)</b>
Aggressiveness	41.1	<b>(2.1)</b>	29.2	<b>(-.8)</b>	19.4	<b>(-.6)</b>	10.3	<b>(-.7)</b>
Antisocial	41.7	<b>(1.7)</b>	28.2	<b>(-1.8)</b>	20.2	<b>(.2)</b>	9.9	<b>(-1.1)</b>
Stress Coping	40.1	<b>(1.1)</b>	29.9	<b>(-.1)</b>	19.4	<b>(-.6)</b>	10.5	<b>(-.5)</b>

## Validity

In testing, the term *validity* refers to the extent a test measures what it was designed to measure. A test cannot be accurate without being valid. When individuals known to have more severe problems attain higher (more severe) scale scores than individuals known to have fewer or no problems, this supports test validity. In the following validity analysis, first-time offenders' SAQ-Adult Probation III mean scale scores were compared to multiple offenders' mean scale scores. It is anticipated that multiple offenders will have higher mean scale scores than first time offenders, with the exception of the Stress Coping Abilities Scale. Stress Coping Abilities Scale scores are reversed, meaning that higher raw scores are associated with better stress management skills; multiple offenders were expected to score lower on this scale.

A comparison between the mean scores of first-time offenders and multiple offenders found higher mean scale scores for multiple offenders on all scales. It is likely that multiple offenders may have participated in treatment or intervention which may account for their higher Stress Coping Abilities score. Table 61 presents offender score comparisons along with results from statistical analyses. *T*-test analyses were conducted to examine whether the differences in mean scores were statistically significant. Results indicated that for the Alcohol Scale, Violence Scale, Aggressiveness Scale and Antisocial Scale the differences were statistically significant. Non significant results on the Truthfulness Scale, Drug Scale and Stress Coping Abilities Scale are likely the result of the small difference between first-time and multiple offenders' scores.

As a general rule, higher SAQ-Adult Probation III scores were obtained by multiple offenders when compared to first-time offenders. These results support the validity of the SAQ-Adult Probation III and demonstrate that the SAQ-Adult Probation III effectively differentiates between offenders that are known to have more severe problems (multiple offenders).

**Table 61. SAQ-Adult Probation III Validity Findings (N = 579; 2012)**

<u>Scales</u>	<u>First Offender Mean Score</u>	<u>Multiple Offender Mean Score</u>	<u>t-value</u>	<u>Significance</u>
Truthfulness	11.03	11.24	-.392	Not significant
Alcohol	12.4	28.0	-14.33	<.001
Drug	11.3	13.2	-1.69	Not significant
Violence	11.7	19.8	-11.84	<.001
Aggressiveness	13.0	18.9	-6.79	<.001
Antisocial	16.5	27.7	-9.31	<.001
Stress Coping	121.4	123.2	-.337	Not significant

The SAQ-Adult Probation III has demonstrated high reliability, accuracy, and validity. These assessment features are essential when identifying individuals who demonstrate higher severity and consequently may have more complex treatment needs. Properly identifying probationers, using a well developed assessment instrument, has been associated with reduced recidivism, reduced costs, and increased public safety (PEW Center on the States, 2011).

#### **47. SAQ- Adult Probation III and Probation Revocation Prediction (2012)**

The study presented below summarizes results of a larger prediction study with the SAQ- Adult Probation III using a sample of 8, 310 probationers. Data were submitted from probation and correction departments across the United States. Data submitted between May 6, 2009-May 6, 2010 were used in the analysis.

##### Participants

Gender: Male (73.5%); Female (26.4%) Age: from 18 to 79 years ( $M = 29.60$  years,  $SD = 10.56$  years). The majority were men (73.5%) and Caucasian (64.4%), whereas the others were Black (18.1%), Hispanic (13.4%), or other (4.2%). Most participants were single (63.4%), whereas the others were married (18.2%), divorced (11.8%), separated (5.9%), or widowed (.7%), and the majority (70.4%) were high school graduates.

##### Procedures

Probationer scores on the Violence Scale, Aggression Scale, Antisocial Scale, and Stress Coping Abilities Scale were selected predictor variables because they represent dynamic risk factors. Probation revocations served as the outcome variable for the analysis. Probation revocations occur when probationers violate a condition or requirement of their supervision. Revocations result in probationer re-incarcerations. A Poisson regression analysis was conducted to determine if the scores predicted recidivism beyond what is accounted for by static risk factors (e.g., demographic and criminal history characteristics).

Poisson regression is a member of the family of generalized linear models and its use is appropriate and necessary when analyzing non-normally distributed data like number of probation revocations, which are count variables.

##### Results

The largest predictor of probation revocations was antisocial behavior, whereby the number of probation revocations rose 6.72% for every 10% increase in antisocial behavior. Violence was also significantly predictive of probation revocation, accounting for a 4.60% increase in the number of revocations for every 10% increase in violent behavior. Lastly, stress risk was related to the number of probation revocations, in that a 10% increase in stress risk accounted for a 5.34% increase revocations. Aggression was not significantly related to the number of probation revocations.

These results demonstrate that, beyond the effects of demographic and static variables, dynamic characteristics that may increase the likelihood of risky or criminal behavior are important predictors of probation revocation.

#### **48. SAQ-Adult Probation III Confirmatory Findings (2013)**

This section summarizes test data for **9,853** Texas Community Supervision and Corrections Department probationers. SAQ-Adult Probation III test data were gathered online in the 12-month period between January 1, 2012 and December 31, 2012. Disk data that were returned to Behavior Data Systems, Ltd. before February 1, 2013 were also included in this report.

Probationer demographics were: 71% male, 29% female; 52% were Caucasian, 30% were African American, 16% were Hispanic, <1% were Asian and Native American, and 1% reported Other; 57% were single, 22% were married, 12% were divorced, 7% were separated, and 1% were widowed; 21% were unemployed and 39% were employed for 11 or more months. This group of probationers had a significant arrest history, 96% of probationers had one more arrests and 33% had 4 or more arrests. Fifty-four percent had one or more felony arrests; 36% had one or more alcohol arrests; 44% had one or more drug arrests; 41% had one or more jail sentences; 11% had one or more prisons sentences; 64% had one or probation sentences, and 20% had one or more probation revocations. Missing information for each of the criminal history items accounted for 1-3% of responses.

Reliability

Test reliability refers to a scale’s consistency of measurement. Cronbach’s Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Nebraska Office of Probation Administration. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70 - .80 (Murphy & Davidshofer, 2001). All scales exceed accepted reliability standards.

**Table 62. SAQ Adult Probation III Reliability (N= 9, 853, 2012)**

Scales	Alpha Coefficients
Truthfulness Scale	.89
Alcohol Scale	.93
Drug Scale	.92
Violence Scale	.83
Aggressiveness	.89
Antisocial Scale	.85
Stress Coping Abilities Scale,	.91

Validity

In testing, the term *validity* refers to the extent to which a test measures what it was designed to measure.. When individuals known to have more severe problems or symptoms receive higher scale scores than individuals known to have fewer problems or symptoms, the test is said to have evidence of construct validity (DeVon et al., 2007). Probationers were categorized into First-time and Multiple Probationers. First-time probationers are defined as having one arrest; Multiple probationers have two or more arrests. It is anticipated that Multiple Probationers’ mean scale scores would be higher than First-Time probationers, indicating more severe symptoms or problems. On the Stress Coping Abilities Scale scoring is reversed, thereby a lower score for Multiple probationers would indicate more severe problems.

**Table 63. SAQ Adult Probation III (N = 9, 853, 2012)**

Scales	First Time Offender Mean Scale Score	Multiple Offender Mean Scale Score	t-value	Significance
Truthfulness	12.33	10.92	11.81	<.001
Alcohol	11.02	19.21	-44.99	<.001
Drug	10.37	15.69	-25.17	<.001
Violence	12.62	18.39	-32.66	<.001
Antisocial	16.26	23.15	-38.78	<.001
Aggressiveness	13.70	17.12	-19.78	<.001
Stress Coping Abilities	120.34	114.56	5.28	<.001

A comparison between the mean scores of first-time offenders and multiple offenders found higher mean scale scores for multiple offenders on the Truthfulness, Alcohol, Drug, Violence, Aggressiveness, and Antisocial. As expected, Multiple Offenders scored lower on the Stress Coping Abilities Scale. On the Truthfulness Scale first-time offenders had higher mean scores which may be associated with an offender's level of experience with law enforcement and assessment procedures. These individuals may, naively, engage in more denial and minimizing behaviors whereas, multiple offenders (who have more experience with law enforcement and the courts) may be aware that denial, minimization, and deception will be detected.

T-test analyses were conducted to examine whether the differences in mean scores were statistically significant and results indicated that for all scales, the differences were statistically significant. These findings demonstrate that the SAQ- Adult Probation III effectively differentiates between offenders that are known to have more severe problems (multiple offenders) than first time offenders.

#### **49. SAQ-Adult Probation III Confirmatory Findings**

This section summarizes test data for **974** offenders submitted from a Midwest community services agency. SAQ-Adult Probation III test data were gathered online in the 12-month period from August 1, 2011 – March 31, 2014.

Probationer demographics: 74% male, 26% female; Race/Ethnicity: 67% were Caucasian, 24% were African American, 5% were Hispanic, <1% were Asian and Native American, and 3% reported Other; Marital Status:71% were single, 16% were married, 8% were divorced, 4% were separated, and <1% were widowed; Employment: 27% were unemployed and 43% were employed for 11 or more months. Arrest history: 93% had been arrested one or more times with 49% reporting 3 or more arrests, 36% had

one or more felony arrests, 35% had one or more alcohol arrests, 41% had one or more drug arrests, 39% had one or more jail sentences, and 9% had one or more prison sentences, 84% had been sentenced to probation at least once and 16% reported at least one probation revocation. Information for each answer sheet item was missing for 1-2% of probationers.

Reliability

Test reliability refers to a scale’s consistency of measurement. Cronbach’s Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Nebraska Office of Probation Administration. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70 - .80 (Murphy & Davidshofer, 2001). All scales exceed accepted reliability standards.

**Table 64. SAQ Adult Probation III Reliability (N= 974, 2014)**

Scales	Alpha Coefficients
Truthfulness Scale	.88
Alcohol Scale	.90
Drug Scale	.89
Violence Scale	.83
Aggressiveness	.89
Antisocial Scale	.84
Stress Coping Abilities Scale	.92

Validity

In testing, the term *validity* refers to the extent to which a test measures what it was designed to measure. When individuals known to have more severe problems or symptoms receive higher scale scores than individuals known to have fewer problems or symptoms, the test is said to have evidence of construct validity (DeVon et al., 2007). Probationers were categorized into First-time and Repeat Probationers. First-time probationers are defined as having one arrest; Repeat probationers have two or more arrests. It is anticipated that Repeat Probationers’ mean scale scores would be higher than First-Time probationers, indicating more severe symptoms or problems. On the Stress Coping Abilities Scale scoring is reversed, thereby a lower score for Repeat probationers would indicate more severe problems.

**Table 65. SAQ-Adult Probation III Validity Findings (N = 974, 2014)**

Scales	First Offender	Repeat Offender	t-value	<i>p</i>
Truthfulness	8.95	8.90	.118	>.01
Alcohol	12.34	19.24	14.18	<.001
Drug	13.19	16.16	4.91	<.001
Violence	13.59	20.79	12.77	<.001
Aggressiveness	15.62	19.25	6.63	<.001
Antisocial	16.85	24.20	13.70	<.001
Stress Management	124.92	116.29	2.72	.007

A comparison between the mean scores of first-time offenders and repeat offenders found higher mean scale scores for repeat offenders on the Truthfulness, Alcohol, Drug, Violence, Aggressiveness, and Antisocial. As expected, Repeat Offenders scored lower on the Stress Coping Abilities Scale. On the Truthfulness Scale first-time offenders had higher mean scores which may be associated with an offender's level of experience with law enforcement and assessment procedures. These individuals may, naively, engage in more denial and minimizing behaviors whereas, repeat offenders (who have more experience with law enforcement and the courts) may be aware that denial, minimization, and deception will be detected.

*T*-test analyses were conducted to examine whether the differences in mean scores were statistically significant. Adjustments were made for differences in variance and unequal sample sizes. Bonferroni corrections were applied to correct for experimentwise error. Results indicated that for all scales, the differences were statistically significant. These findings demonstrate that the SAQ- Adult Probation III effectively differentiates between offenders that are known to have more severe problems (repeat offenders) than first time offenders.

## 50. SAQ-Adult Probation III Confirmatory Reliability and Validity Findings

This section summarizes test data for **123** offenders. SAQ-Adult Probation III test data were gathered online in the 12-month period from March 1, 2013 thru February 28, 2014.

Probationer demographics: 78% male, 22% female; Race/Ethnicity: 87% were Caucasian, <1% were African American, 7% were Hispanic, 2% were Native American, and 2% reported Other; Marital Status:66% were single, 12% were married, 16% were divorced, and 5% were separated; Employment: 9% were unemployed and 51% were employed for 11 or more months. Arrest history: 93% had been arrested one or more times with 42% reporting 3 or more arrests, 35% had one or more felony arrests, 61% had one or more alcohol arrests, 63% had one or more drug arrests, 52% had one or more jail sentences, and 2% had one or more prison sentences, 69% had been sentenced to probation at least once and 17% reported at least one probation revocation.

### Reliability

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Nebraska Office of Probation Administration. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70 - .80 (Murphy & Davidshofer, 2001). All scales exceed accepted reliability standards which particularly noteworthy given the small sample size.

**Table 66. SAQ Adult Probation III Reliability (N= 123, 2014)**

Scales	Alpha Coefficients
Truthfulness Scale	.88
Alcohol Scale	.93
Drug Scale	.91
Violence Scale	.84
Aggressiveness	.89
Antisocial Scale	.87
Stress Coping Abilities Scale	.94

### Validity

In testing, the term *validity* refers to the extent to which a test measures what it was designed to measure. When individuals known to have more severe problems or symptoms receive higher scale scores than individuals known to have fewer problems or symptoms, the test is said to have evidence of construct validity (DeVon et al., 2007). Probationers were categorized into First-time and Repeat Probationers. First-time probationers are defined as having one arrest; Repeat probationers have two or more arrests. It

is anticipated that Repeat Probationers' mean scale scores would be higher than First-Time probationers, indicating more severe symptoms or problems. On the Stress Coping Abilities Scale scoring is reversed, thereby a lower score for Repeat probationers would indicate more severe problems.

**Table 67. SAQ-Adult Probation III Validity Findings (N = 123)**

Scales	First Offender	Repeat Offender	t-value	<i>p</i>
Truthfulness	10.16	9.15	.934	.354
Alcohol	14.79	24.47	5.56	<.001
Drug	16.74	22.67	3.11	.002
Violence	13.16	16.65	2.71	.008
Aggressiveness	15.24	17.66	1.98	.05
Antisocial	17.03	22.58	3.86	<.001
Stress Management	133.45	119.79	1.43	.157

A comparison between the mean scores of first-time offenders and repeat offenders found higher mean scale scores for repeat offenders on the Alcohol, Drug, Violence, Aggressiveness, and Antisocial. As expected, Repeat Offenders scored lower on the Stress Coping Abilities Scale. On the Truthfulness Scale first-time offenders had higher mean scores which may be associated with an offender's level of experience with law enforcement and assessment procedures. These individuals may, naively, engage in more denial and minimizing behaviors whereas, repeat offenders (who have more experience with law enforcement and the courts) may be aware that denial, minimization, and deception will be detected.

*T*-test analyses were conducted to examine whether the differences in mean scores were statistically significant and results indicated that for the Alcohol Scale and Antisocial Scales, the differences were statistically significant. The non-significant findings were likely the result of the relatively small sample size and small difference between the offender groups. These findings demonstrate that the SAQ- Adult Probation III effectively differentiates between offenders that are known to have more severe problems (repeat offenders) than first time offenders.

## **51. Reliability Confirmation from Clinical Samples**

### **Sample 1.**

#### Participants

There were 3, 107 offenders who were tested in this setting. 67% male, 33% female; 79% Caucasian, 13% African-American, 8% Hispanic and less than 1% Asian, Native American, and Other; 53% were single, 23% were married, 17% were divorced, 6% were separated and 2% were widowed. The average age was 33 and the average at time of first arrests was 23 for all offenders; 23% were first-time offenders.

98% reported one or more arrests with 61% reporting 3 or more arrests, 65% of probationers reported one or more felony arrests, 40% reported one or more alcohol-related arrests, 46% reported one or more drug-related arrests, 37% had one or more jail sentences, and 15% had one or more prison sentences, 82% had been sentenced to probation at least once and 23% reported at least one probation revocation

**Reliability**

Test reliability refers to a scale’s consistency of measurement. Cronbach’s Alpha, a measure of reliability, measured the internal consistency of the items in each scale of the SAQ-Adult Probation III. Perfect reliability is 1.00. The professionally accepted reliability standard for this type of instrument is .70- .80 (Murphy & Davidshofer, 2001).

**Table 68. Reliability Results Sample 1 (N = 3, 107, 2015)**

Scales	Coefficient Alpha
Truthfulness	.89
Alcohol	.92
Drug	.92
Violence	.84
Aggressiveness	.90
Antisocial	.86
Stress Management	.92

Reliability scores support the consistency of the scales to measure domains associated with offender risk.

**Sample 2.**

**Participants**

There were 249 offenders who were tested in this setting-an agency in the Midwestern United States. 72% male, 28% female; 77% Caucasian, 19% African-American, 8% Hispanic and less than 1% Asian, Native American, and 3% reported Other; 66% were single, 21% were married, 7% were divorced, 4% were separated and 1% were widowed; 23% completed less than high school, 51% graduated college, 16% completed some college and 9% graduated college; 56% had been employed 10-12 months at the time of testing. The average age was 32 and the average at time of first arrests was 23 for all offenders; 29% were first-time offenders.

96% reported one or more arrests with 32% reporting 3 or more arrests, 44% reported one or more felony arrests, 66% reported one or more alcohol-related arrests, 48% reported one or more drug-related arrests, 32% had one or more jail sentences, and 17% had one or more prison sentences; 85% had been sentenced to probation at least once and 30% reported at least one probation revocation

**Table 69. Reliability Results Sample 2 (N = 249, 2015)**

Scales	Coefficient Alpha
Truthfulness	.82
Alcohol	.92
Drug	.89
Violence	.84
Aggressiveness	.90
Antisocial	.85
Stress Management	.91

Reliability scores support the consistency of the scales to measure domains associated with offender risk.

### **Sample 3.**

#### Participants

There were 249 offenders who were tested in this setting-an agency in the Midwestern United States. 77% male, 23% female; 67% Caucasian, 22% African-American, 5% Hispanic and less than 1% Asian, Native American, and 4% reported Other; 68% were single, 14% were married, 10% were divorced, 5% were separated and 1% were widowed; 17% completed less than high school, 46% graduated college, 17% completed some college and 14% graduated college; 48% had been employed 10-12 months at the time of testing. The average age was 32 and the average at time of first arrests was 27 for all offenders; 29% were first-time offenders.

91% reported one or more arrests with 44% reporting 3 or more arrests, 30% reported one or more felony arrests, 35% reported one or more alcohol-related arrests, 41% reported one or more drug-related arrests, 33% had one or more jail sentences, and 9% had one or more prison sentences; 79% had been sentenced to probation at least once and 15% reported at least one probation revocation

**Table 70. Reliability Results Sample 3 (N = 296, 2015)**

Scales	Coefficient Alpha
Truthfulness	.88
Alcohol	.90
Drug	.89
Violence	.83
Aggressiveness	.89
Antisocial	.84
Stress Management	.92

Reliability scores support the consistency of the scales to measure domains associated with offender risk.

## **52. Validity Studies using 3 Clinical Samples**

### **Sample 1.**

#### Participants

There were 3, 107 offenders whose data were submitted to Behavior Data Systems. 67% male, 33% female; 79% Caucasian, 13% African-American, 8% Hispanic and less than 1% Asian, Native American, and Other; 53% were single, 23% were married, 17% were divorced, 6% were separated and 2% were widowed. The average age was 33 and the average at time of first arrests was 23 for all offenders; 23% were first-time offenders.

98% reported one or more arrests with 61% reporting 3 or more arrests, 65% of probationers reported one or more felony arrests, 40% reported one or more alcohol-related arrests, 46% reported one or more drug-related arrests, 37% had one or more jail sentences, and 15% had one or more prison sentences, 82% had been sentenced to probation at least once and 23% reported at least one probation revocation

#### Validity

In testing, the term *validity* refers to the extent that a test measures what it was designed to measure. A test cannot be accurate without being valid. When individuals known to have more severe problems attain higher (more severe) scale scores than individuals known to have fewer or no problems, this supports test validity. In the following validity analysis, first-time offenders' SAQ-Adult Probation III mean scale scores were compared to repeat offenders' mean scale scores. It is anticipated that repeat offenders will have higher mean scale scores than first-time offenders, with the exception of the Stress Management Scale. The Stress Management Scale assesses prosocial and protective factors meaning that higher scores are associated with better stress management skills; repeat offenders were expected to score lower on this scale.

**Table 71. SAQ-Adult Probation III Validity Findings (N = 3, 107, 2015)**

Scales	First Offender	Repeat Offender	<i>t</i>	<i>p</i>	<i>d</i>
Truthfulness	11.22	10.78	1.85	.06	.1
Alcohol	11.60	19.97	26.50	<.001	.9
Drug	11.29	17.00	15.03	<.001	.5
Violence	13.76	20.11	18.37	<.001	.7
Aggressiveness	15.57	18.56	8.36	<.001	.3
Antisocial	17.73	25.15	21.31	<.001	.8
Stress Management	123.31	117.64	2.69	.007	.1

A comparison between the mean scores of first-time offenders and repeat offenders found higher mean scale scores for repeat offenders on the Alcohol Scale, Drug Scale, Violence Scale, Aggressiveness Scale, and Antisocial Scales. First-time offenders scored higher on the Stress Management Scale as anticipated.

On the Truthfulness Scale first-time offenders had slightly higher mean scale scores which likely reflected limited experience with law enforcement, court proceedings, and the assessment process. These individuals may, naively, engage in more denial and minimizing behaviors whereas, repeat offenders (who have more experience with law enforcement and the courts) may be aware that denial, minimization, and deception will be detected.

*T*-test analyses were conducted and adjustments made to account for the differences in sample size and variance. Moreover, a Bonferroni correction was made to reduce experimentwise error ( $p = .007$ ). Results revealed statistically significant findings on the Alcohol Scale, Drug Scale, Violence Scale, Aggression Scale, Antisocial Scale and Stress Management Scale. Results were not statistically significant on the Truthfulness Scale; this is likely due to the small difference between group mean scores. Effect sizes were very small to large, respectively.

## **Sample 2.**

### Participants

There were 249 offenders who were tested in this setting-an agency in the Midwestern United States. 72% male, 28% female; 77% Caucasian, 19% African-American, 8% Hispanic and less than 1% Asian, Native American, and 3% reported Other; 66% were single, 21% were married, 7% were divorced, 4% were separated and 1% were widowed; 23% completed less than high school, 51% graduated college, 16% completed some college and 9% graduated college; 56% had been employed 10-12 months at the time of testing. The average age was 32 and the average at time of first arrests was 23 for all offenders; 29% were first-time offenders.

96% reported one or more arrests with 32% reporting 3 or more arrests, 44% reported one or more felony arrests, 66% reported one or more alcohol-related arrests, 48% reported one or more drug-related arrests, 32% had one or more jail sentences, and 17% had one or more prison sentences; 85% had been sentenced to probation at least once and 30% reported at least one probation revocation

### Validity

A comparison between the mean scores of first-time offenders and repeat offenders found higher mean scale scores for repeat offenders on the Alcohol Scale, Drug Scale, Violence Scale, Aggressiveness Scale, and Antisocial Scales. First-time offenders scored higher on the Stress Management Scale as anticipated.

On the Truthfulness Scale first-time offenders had slightly higher mean scale scores which likely reflected limited experience with law enforcement, court proceedings, and the assessment process. These individuals may, naively, engage in more denial and minimizing behaviors whereas, repeat offenders (who have more experience with law enforcement and the courts) may be aware that denial, minimization, and deception will be detected.

*T*-test analyses were conducted and adjustments made to account for the differences in sample size and variance. Moreover, a Bonferroni correction was made to reduce experimentwise error ( $p = .007$ ). Results revealed statistically significant findings on the Alcohol Scale, Drug Scale, Violence Scale, Aggression Scale, and Antisocial Scale. Results were not statistically significant on the Truthfulness Scale and Stress Management Scale; this is likely due to the small difference between group mean scores. Effect sizes were very small to large, respectively.

**Table 72. SAQ-Adult Probation III Validity Findings (N =296, 2015)**

Scales	First Offender	Repeat Offender	<i>t</i>	<i>p</i>	<i>d</i>
Truthfulness	10.59	9.74	1.29	.2	.1
Alcohol	11.60	22.55	11.71	<.001	.9
Drug	12.27	17.46	4.29	<.001	.5
Violence	11.75	19.30	7.67	<.001	.7
Aggressiveness	12.79	18.39	6.60	<.001	.3
Antisocial	15.45	22.45	7.80	<.001	.8
Stress Management	139.14	133.23	.92	.4	.01

### **Sample 3.** Participants

There were 249 offenders who were tested in this setting-an agency in the Midwestern United States. 77% male, 23% female; 67% Caucasian, 22% African-American, 5% Hispanic and less than 1% Asian, Native American, and 4% reported Other; 68% were single, 14% were married, 10% were divorced, 5% were separated and 1% were widowed; 17% completed less than high school, 46% graduated college, 17% completed some college and 14% graduated college; 48% had been employed 10-12 months at the time of testing. The average age was 32 and the average age at time of first arrests was 27 for all offenders; 29% were first-time offenders.

91% reported one or more arrests with 44% reporting 3 or more arrests, 30% reported one or more felony arrests, 35% reported one or more alcohol-related arrests, 41% reported one or more drug-related arrests, 33% had one or more jail sentences, and 9% had one or more prison sentences; 79% had been sentenced to probation at least once and 15% reported at least one probation revocation

### Validity

A comparison between the mean scores of first-time offenders and repeat offenders found higher mean scale scores for repeat offenders on the Alcohol Scale, Drug Scale, Violence Scale, Aggressiveness Scale, and Antisocial Scales. First-time offenders scored *lower* on the Stress Coping Abilities Scale which is an anomaly and unique to this sample.

*T-test* analyses were conducted with adjustments applied to address unequal variance and unequal sample sizes. Bonferroni corrections were applied to correct for experimentwise error.

**Table73. SAQ-Adult Probation III Validity Findings (N = 249, 2015)**

Scales	First Offender	Repeat Offender	t-value	<i>p</i>
Truthfulness	9.19	9.10	.141	.1
Alcohol	11.61	18.90	7.32	<.001
Drug	10.80	15.42	4.20	<.001
Violence	13.42	19.01	5.03	<.001
Aggressiveness	14.26	17.33	6.17	<.001
Antisocial	15.91	22.06	3.42	<.001
Stress Coping	120.69	122.32	.283	.1

T-test analyses revealed statistically significant results for all scales except the Truthfulness Scale and the Stress Management Scale.

These results support the validity of the SAQ-Adult Probation III and demonstrate that the SAQ-Adult Probation III effectively differentiates between offenders who are known to have more severe problems (repeat offenders) than first-time offenders.

## SUMMARY

In conclusion, this document is not intended as an exhaustive compilation of SAQ research. Yet, it does summarize many studies and statistics that support the reliability and validity of the SAQ. Based on this research, the SAQ presents an increasingly accurate picture of substance (alcohol and other drugs) abusers and the risk they represent. The SAQ provides a sound empirical foundation for responsible decision making.

Summarized research demonstrates that the SAQ, SAQ-Adult Probation, SAQ-Adult Probation II and III and the SAQ-Short Form are reliable, valid and accurate instruments for client assessment. It is reasonable to conclude that the SAQ does what it purports to do. The SAQ acquires a vast amount of relevant information for staff review prior to decision making. Empirically based scales are objective and accurate. Assessment has shifted from subjective opinions to objective accountability.

The SAQ is not a personality test, nor is it a clinical diagnostic instrument. Yet, it is much more than just another alcohol or drug test. The SAQ is an adult risk and needs assessment instrument.

As observed at the beginning of this research summary, SAQ studies are presented chronologically, as they were completed. The Stress Quotient research was presented first, then SAQ validation research, SAQ reliability research, followed by SAQ-Adult Probation III research and development. The research studies are presented chronologically within each section. This gives the reader the opportunity to observe the evolution of the SAQ into a state-of-the-art risk and needs assessment instrument. Recent studies demonstrate the impressive reliability and accuracy of the SAQ.

The SAQ-Adult Probation III research strongly supports the reliability, validity and accuracy of the SAQ-Adult Probation III. Reliability coefficient alphas were significant at  $p < .001$  for all SAQ-Adult Probation III scales. T-test comparisons between first offenders and multiple offenders support discriminant validity of the Alcohol Scale, Drug Scale, Antisocial Scale, Violence Scale and Stress Coping Abilities Scale because multiple offenders scored significantly higher on the different scales than first offenders. Predictive validity of the Alcohol Scale, Drug Scale and Violence Scale was shown by the accuracy with which the scales identified problem risk behavior (having had treatment or having had an arrest). The research summarized herein strongly supports the reliability, validity and accuracy of the SAQ-Adult Probation III.

Areas for future research are many and complex. SAQ research continues to evaluate age, gender, ethnicity, education and urban vs. rural. Consistent with the foregoing, we encourage more research on demographic, cultural and environmental factors impacting on client adjustment, risk and need.

People interested in conducting SAQ - related research should contact Risk & Needs Assessment, Inc. Please include a research outline containing design methodology, contemplated statistical analysis and the anticipated completion date. Students must include their faculty advisors name, address and telephone number. Faculty advisors and/or research principles will be contacted prior to Risk & Needs Assessment, Inc. decision regarding proceeding.