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## SUBSTANCE ABUSE QUESTIONNAIRE RESEARCH SUMMARY

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**Validity (Truthfulness) Scale:** Self-report tests are subject to the danger of respondent's not telling the truth. An important advance in psychometrics is the Validity (Truthfulness) scale, which measures how truthful the client is while completing the test. The Validity (Truthfulness) scale identifies guarded or defensive clients that attempt to deny, minimize or even conceal information.

**Truth-Corrected Scores:** Correlations between the Validity (Truthfulness) scale and all other scales identify error variance associated with untruthfulness. This error variance is then added back into scale scores, resulting in "Truth-Corrected" scores. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide.

**Data Base:** SAQ data base analysis insures ongoing cost-effective research. The built-in SAQ data base provides a research and program summary capability that was not possible before. Copyrighted software programs "save" the test data from each test that is given in the SAQ data base. A data base also enables annual summary of test results for test program description, budgeting and planning purposes.

## PREFACE

**Substance Abuse Questionnaire (SAQ)** research and development began in 1980 and has continued to the present. The copyrighted SAQ data base insures 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 153 items and can be completed in 30 minutes. The SAQ contains 6 empirically based scales: Truthfulness (Validity), Alcohol, Drugs, Aggressivity, Resistance and Stress Coping Abilities. The SAQ has been researched on college students, outpatients, inpatients, job applicants, chemical dependency clients and others.

The SAQ report explains client's attained scores on the 6 objective scales and makes specific treatment recommendations. It also presents Truth-Corrected scores, significant items, a concise "structured interview" and much more.

Another SAQ report is called the **SAQ-Adult Probation**. Although the same SAQ test booklet is used, 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.

This document summarizes much of the SAQ and SAQ-Adult Probation research. For convenience, the terms SAQ and SAQ-Adult Probation are used interchangeably as these terms refer to different versions of the SAQ report. As noted earlier, the same test booklet is used to generate each of these reports.

The SAQ has demonstrated reliability, validity and accuracy. It correlates impressively with both experienced staff judgement and other recognized tests. The SAQ-SHORT FORM was completed in 1991 and this instrument is used with the reading impaired, in high volume testing settings and as an alternative retest method.

SAQ tests can be given directly on the computer screen or in paper-and-pencil test booklet format. All tests are computer scored on-site. SAQ reports can be available within 4 minutes of test completion. Diskettes contain all of the software needed to score tests, build a data base and print reports.

SAQ diskettes contain copyrighted software programs and all rights are reserved. Clients are cautioned not to attempt to copy SAQ diskettes, nor attempt loading these programs on a hard drive, as these diskettes are copy-protected and such acts would damage the program, rendering it unusable. Attempts to copy these programs would also be a violation of federal copyright law. All diskettes, including used, damaged, or recalled diskettes are returned to Behavior Data Systems.

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 or establishing supervision levels. Client assessment is not to be taken lightly as the decisions made can be vitally important. For this reason SAQ research is ongoing in nature, so that we can provide the evaluator with the most accurate data possible.

This document describes the SAQ and gathers together research and descriptive materials into one source. Its purpose is to provide understanding about the SAQ and the automated risk and needs assessment system it represents. This collection of research studies reflects the growth and development of the SAQ and the SAQ-Adult Probation into state-of-the-art assessment instruments. SAQ and SAQ Adult Probation research is ongoing and future studies will be reported in updated documents.

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## **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, insurance carriers, the courts, corrections programs and funding agencies are now requiring substantiation and documentation of staff decision making. Substance (alcohol and other drugs) abuse problems must now be measured in terms of degree of severity with quantitative statements substantiating intervention and treatment placed in the client's record.

The Substance Abuse Questionnaire (SAQ) was 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 and court-related assessments. The SAQ-Adult Probation is a variation of the SAQ report and is designed for adult probation department offender assessment. Although the **SAQ** and the **SAQ-Adult Probation** reports differ, they are both based on the same test booklet. In both of these reports, quantitative information is obtained by six empirically based measures (scales) which independently generate risk (percentile) scores. In addition, explanatory paragraphs describing attained scores contain specific recommendations, and these six scales are presented graphically in the SAQ profile.

### **SUBSTANCE ABUSE QUESTIONNAIRE SAQ-ADULT PROBATION SIX SCALES**

1. Validity (Truthfulness)
2. Alcohol Scale
3. Drugs Scale
4. Aggressivity Scale
5. Resistance Scale
6. Stress Coping Abilities Scale

The SAQ and SAQ-Adult Probation represent the latest developments in psychometric techniques and computerized technology. Scale development is based upon over 12 years of research. The SAQ can be administered on a computer (IBM-PC compatibles) screen or by using paper-and-pencil test booklets. Regardless of how the SAQ is administered, all tests are scored and interpreted with a computer which generates SAQ or SAQ-Adult Probation reports.

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, DUI/DWI treatment programs, referral agencies, outpatient counseling programs, community clinics and criminal justice programs for substance abusers.

As noted above, the SAQ-Adult Probation is a variation of the SAQ report and uses the same test booklet. However, the SAQ-Adult Probation report is designed specifically for adult probation departments, corrections and court-related programs. As noted earlier, the terms SAQ and SAQ-Adult Probation shall be used interchangeably throughout the remainder of this document and designated the SAQ.

The SAQ requires approximately 30 minutes for completion and is appropriate for high school ages through adulthood. The SAQ is composed of 153 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 focused interview and experienced staff judgement.

The SAQ was validated with established Minnesota Multiphasic Personality Inventory (MMPI) scales as well as Polygraph examinations. Reliability and validity studies have been conducted on substance abuse inpatients, outpatients, college students, job applicants, and counseling patients. The SAQ-Adult Probation has been studied in a variety of adult probation departments and court related settings.

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 our understanding of the substance (alcohol and other drugs) abuser. In addition, they provide important information on the client's test taking attitude, emotional/behavioral adjustment, and much more.

Six (6) empirically derived scales (Truthfulness, Alcohol, Drugs, Aggressivity, Resistance, and Stress Coping Ability) are measured in terms of degree or severity of attained risk levels. Risk Levels (Low, Medium, Problem and Maximum risk) are established independently for each of these six empirically based scales.

Standardization data was statistically analyzed so that percentiles are calculated independently for each of the six scale scores -- each time an SAQ is scored. Six individual scale score calculations are automatically performed and presented in the SAQ report numerically (percentile), by attained risk category (narrative) and graphically (SAQ profile). These scores represent "degree of severity." Degree of severity is statistically defined as follows: Low Risk (Zero to 39th percentile), Medium Risk (40th to 69th percentile), Problem Risk (70 to 89th percentile), and Severe Problem or Maximum Risk (90 to 100th percentile).

Every time an SAQ is scored the test data is automatically stored in the SAQ diskette for inclusion in the SAQ data base. This applies to SAQ diskettes used anywhere in the United States. 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 in these used diskettes is input, in a confidential (no names) manner, into the SAQ data bank for later analysis. This data base 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 copyrighted database also enables the formulation of annual

summary reports that are descriptive of the populations tested. These summary reports provide important testing information for budgeting, planning, management and program description.

Another sophisticated psychometric technique permitted by computerized technology involves "truth-corrected" scores which are calculated individually for each SAQ scale. Since it would be naive to assume everybody responds truthfully while completing any self-report test, the Truthfulness (Validity) Scale was developed. The Truthfulness Scale establishes how honest or truthful a person is while completing the SAQ. Correlations between the Validity (Truthfulness) scale and all other test 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.**

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 selection. The original pool of potential scale and test items was analyzed and the items with the best statistical properties were selected and 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.

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

**Validity (Truthfulness) Scale:** This empirically based 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 (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 and even distortion. The Validity (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 Validity (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 SAQ 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 SAQ scale scores are more accurate than raw scores.

A high Validity (Truthfulness) Scale score may invalidate other empirically based SAQ scale scores -- particularly if other scale scores are in the low risk range. However,

even in these instances, the SAQ was designed to provide added insight and understanding into the client's situation.

The type of information derived from the Validity (Truthfulness) Scale is considered necessary -- if not essential -- to any self-report questionnaire.

**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 (Maximum) risk.

Alcoholism is a significant problem in our society. Woolfolk and Richardson note in their book, "Stress, Sanity and Survival" (1978) that alcoholism costs industry over \$15.6 billion annually due to absenteeism and medical expenses. 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. These areas of inquiry are represented in the Alcohol Scale.

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

**DRUGS 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 (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 abuse and 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 exist. To discriminate between these groups in the SAQ the licit versus illicit dichotomy was 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. This is done in the Drug Scale.

**AGGRESSIVITY 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 (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 in the Aggressivity 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 (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 towards others, acceptance, mutual assistance and affiliation motivation. The Resistance Scale identifies negative interpersonal relationships, negative attitudes toward authority figures and 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 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.

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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 II (U.S. Department of Transportation, Report No. HSRI 71-120, HUF-11) 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 COPING ABILITY 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 (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 jobs at all 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/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 Ability 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 in the Stress coping Ability Scale.

### **SUMMARY**

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. Thus, when the screening out of overt substance abusers is the goal, the SAQ is an important instrument. Similarly, when measuring the degree of severity of substance abuse is the goal, the SAQ is a particularly valuable instrument. As the SAQ-Adult probation evolved, it was standardized and normed on adult probation populations throughout the United States.

**As noted earlier, the SAQ-Adult Probation is a variation of the SAQ. Both use the same test booklet, however, their reports differ.** The SAQ report is designed for counseling and substance (alcohol and other drugs) abuse treatment settings. The SAQ-Adult Probation report is designed for adult probation department use. Throughout the remainder of this document the terms SAQ and SAQ-Adult Probation are used interchangeably.

The SAQ is a multi-dimensional empirically based test that was specifically designed to provide meaningful and relevant measures to more adequately understand the substance (alcohol and other drugs) abuser.

SAQ items are personal. The straightforward nature of any self-report questionnaire may appear to some people as intrusive. Although perhaps discomforting

to some people, 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 approach (as opposed to rational) to assessment. A similar type of criticism (intrusiveness) has been leveled at the MMPI in the past.

The SAQ is a multi-dimensional self-report questionnaire that provides several relevant sources of information (and measures) considered important in understanding the substance (alcohol and other drugs) abuser. The Truthfulness Scale was built into the SAQ to measure the respondent's truthfulness at the time of test administration. It also identifies respondents with impaired reading abilities. This scale permits measurement of untruthfulness and once identified, this error variance is added back into truth-corrected scale scores, resulting in more accurate measures. Truth-Corrected scores are more accurate than raw scores. In addition, each time an SAQ is scored, individual risk levels are calculated for each of the 6 empirically based scales and are reported in terms of percentiles and risk levels. Few other substance (alcohol and other drugs) abuse related instruments have such sophisticated psychometric techniques integrated with computer technology and built in as an integral part of the test.

The SAQ has been researched, normed and validated on inpatients in substance abuse programs, outpatients, job applicants, college students and adult probationers. The SAQ has also been validated with established scales in the Minnesota Multiphasic Personality Inventory (MMPI). A summary of much of this SAQ research follows.

### STRESS QUOTIENT (SQ) RESEARCH

The Stress Quotient (SQ) 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) refers to 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) equation represents empirically verifiable relationships. The SQ scale and its individual components lends itself to research.

A study was conducted (1980) to demonstrate the SQ's ability to differentiate between High Stress and Low Stress groups. High Stress subjects (N=10, 5 males and 5 females, average age 39) were randomly selected from outpatients seeking treatment for stress. Low Stress subjects (N=10, 5 males and 5 females, average age 38.7) were 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. Statistical analysis resulted in a t of 4.9, significant at the  $p < .001$  level.

Another study (1980) evaluated the relationship between the SQ scale and two other tests: Taylor Manifest Anxiety Scale (high score indicates a high level of anxiety) and the Cornell Index (high score indicates neuroticism). These three tests were administered to forty-three (43) subjects. Subjects consisted of 21 males and 22 females selected from the general population and ranging in age from 15 to 64 years. It was hypothesized that SQ scores would correlate negatively with the other two tests. Utilizing a Pearson 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. Ten subjects (5 males and 5 female) were randomly chosen from this (1980) study for SQ reliability analysis. A split-half analysis was conducted on items weighted on this variable. The Pearson Product Moment Correlation Coefficient ( $r$ ) was  $.85$ , significant at the  $p < .01$  level.

A study (1981) was conducted to demonstrate the relationship between the SQ scale and the Holmes Rahe Social Readjustment Rating scale (SRRS). The SRRS comprises a self-rating of stressful life events. Thirty outpatient psychotherapy patients ( $N=30$ , 14 males and 16 females, average age 35) in treatment for neurotic symptomatology were alternately administered the SQ and the SRRS. SRRS scores were correlated (Pearson Product Moment Correlation Coefficient) with SQ scores and separately with two components of the SQ scale: Coping Skill (SC) and Stress (S) scores. It was hypothesized that the correlation would be negative, since subjects with lower scores would be more likely to encounter less stressful life events or experience less stress in their lives, 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. Results were as follows: SQ and SRRS ( $r=.4016$ ,  $p < .01$ ); CS and SRRS ( $r=.1365$ , N.S.); S and SRRS ( $r=.618$ ,  $p < .001$ ). All correlations were in predicted directions. The significant correlations between SAQ and SRRS as well as S and SRRS support the construct validity of the SQ scale.

A study (1982) was conducted to evaluate the relationship between factor C (Ego Strength) in the 16 PF Test and the SQ. Thirty-four adjudicated delinquent adolescents ( $N=34$ , 30 males and 4 female, average age 16.2) were jointly administered the Cattell 16 PF Test and the SQ scale. Subjects ranged in age from 15 to 18 years. All subjects had at least a 6.0 grade equivalent reading level. High scores on factor C indicate high ego strength and emotional stability, whereas high SQ scores reflect good coping skills. Factor C scores were correlated with SQ scores utilizing the Pearson Product Moment Correlation Coefficient, resulting in an  $r$  of  $.695$ , significant at the  $p < .01$  level. Results were significant and in the predicted direction.

It was later decided to evaluate the relationship between factor Q4 (Free Floating Anxiety) on the 16 PF Test and S (Stress) on the SQ scale. High Q4 scores reflect free floating anxiety and tension, whereas high S scores measure experienced Stress. Twenty-two of the original 34 subjects were included in this analysis since the remainder of the original files were unavailable. All 22 subjects were male. Factor Q4 scores were correlated (Pearson Product Moment Correlation Coefficient) with S scores, resulting in an  $r$  of  $.584$ , significant at the  $p < .05$  level. 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.

A study was conducted (1982) to evaluate the relationship between selected

Wiggin's MMPI supplementary content scales (Es, A, MAS) and the SQ scale. Es measures ego strength, A measures anxiety, and MAS measures manifest anxiety. Fifty-one psychotherapy outpatients (N=51, 23 male and 28 female), average age 34) ranging in age from 22 to 56 years were alternately administered the MMPI and the SQ. The Pearson Product Moment Correlation Coefficient was utilized in the data analysis. It was predicted that the ES and CS correlation would be positive, since people with high ego strength would be more likely to possess good coping skills. Es and CS correlations resulted in an r of .29, significant at the  $p < .05$  level. It was predicted that the A and SC correlation would be negative, since people experiencing high levels of anxiety would likely manifest impaired coping skills. A and CS correlations resulted in a r of -.46, significant at the  $p < .001$  level. 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. 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 Pearson Product Moment Correlation Coefficient resulted in an r of .58, significant at the  $p < .001$  level. Results were significant and in the predicted direction. The significant correlations between MMPI scales (Es, A, MAS, Pt) and the SQ scale components (CS, S) support the construct validity of the SQ scale.

A study (1984) was conducted to evaluate the reliability of the Stress Quotient (SQ) scale. One hundred outpatient psychotherapy patients (N=100, 41 male and 59 female, average age 37) were administered the SQ soon after intake. The most common procedure for reporting inter-item (within test) reliability is with Coefficient Alpha. The analysis resulted in a Coefficient Alpha of 0.81 (F Value 46.74) with a  $p < 0.001$ . Highly significant inter-item scale consistency was demonstrated.

Another reliability study (1985) was conducted on the Stress Quotient (SQ) scale. One hundred and eighty nine job applicants (N=189, 120 male and 69 female, average age 31) were administered the SQ at the time of pre-employment screening. This analysis resulted in a Coefficient Alpha of 0.73 (F Value 195.86) with a  $p < 0.001$ . Highly significant inter-item scale consistency was demonstrated. The standardized Cronbach Coefficient Alpha reveals that all SQ scale items are significantly ( $p < 0.001$ ) related and measure one factor or trait.

Another study (1985) was conducted to further evaluate the reliability and validity of the Stress Quotient (SQ). One hundred chemical dependency inpatients (N=100, 62 male and 38 female, average age 41) were administered the SQ and the MMPI in counter balanced order. Analysis of the SQ data resulted in a Coefficient Alpha of 0.84 (F Value 16.20) with a  $p < 0.001$ . Highly significant inter-item scale consistency was demonstrated.

In the same study (1985, inpatients), Pearson Product Moment Correlations were calculated between the Stress Quotient (SQ) and selected MMPI scales. The SQ is inversely related to other MMPI scales; consequently, negative correlations were predicted. All selected MMPI scale and SQ correlations were significant (0.001 level) and

in predicted directions. The SQ correlated (0.001 level of significance) with the following MMPI scales: Psychopathic Deviate (-0.59), Psychasthenia (-0.068), Social Maladjustment (-0.54), Authority Conflict (-0.46), Taylor Manifest Anxiety Scale (-0.78), Authority Problems (-0.22) and Social Alienation (0.67). The SQ correlated (0.001 level) significantly in predicted directions with selected MMPI scales. 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.

In a replication and expansion of earlier research, another study (1986) was conducted to further evaluate the reliability and validity of the Stress Quotient (SQ). Two hundred and twelve inpatients (N=212, 122 male and 90 female, average age 44) in chemical dependency programs were alternately administered the SQ and MMPI. Analysis of the SQ data resulted in a Coefficient Alpha of 0.986 (F Value 27.77) with a  $p < 0.001$ . Highly significantly inter-item scale consistency was again demonstrated. Rounded off, the Coefficient Alpha for the SQ was 0.99.

In the same study (1986, inpatients), Pearson Product Moment Correlations were calculated between the Stress Quotient (SQ) and selected MMPI scales. All SQ correlations with selected MMPI scales were significant (at the 0.001 level of significance) and in predicted directions. The SQ correlated significantly (0.001 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-III), as well as Resentment/Aggression (TSC-V) and Tension/Worry (TSC-VIII).

The studies cited above demonstrate empirical relationships between the SQ scale and other indices of stress, anxiety and coping skills. This research demonstrates that the Stress Quotient (SQ) is a reliable and valid instrument. The SQ has high inter-item scale consistency. 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 evaluation of stress, anxiety and coping abilities. As noted earlier, stress exacerbates symptoms of impaired adjustment and even psychopathology. A Stress Quotient (or Stress Coping Abilities) score at or above the 90th percentile indicates the presence of a diagnosable mental health disorder. In the discussion that follows, the Stress Quotient (SQ) scale is referred to as the Stress Coping Abilities scale and the terms SAQ and SAQ-Adult Probation are used interchangeably.

### **SAQ (SAQ-ADULT PROBATION) RESEARCH**

Any approach to detection, assessment, or measurement must meet the criteria of reliability and validity.

**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. As noted earlier, the SAQ represents the latest developments in psychometric and

computerized technology. Regardless of how the SAQ is administered (on a personal computer or via paper-and-pencil test booklets), all SAQ's are scored, interpreted and processed with a computer (IBM-PC compatibles) which generates the SAQ summary report. Normative data, empirically based scale equations and interpretive logic are all programmed into the SAQ diskettes insuring accuracy as well as consistency of results. This means that the outcome (SAQ report) is objective, verifiable and reproducible. Psychometric principles and computer technology insures accuracy, objectivity, practicality, cost-effectiveness and accessibility.

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 stability 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.

Thirty ASU college students (1984) enrolled in an introductory psychology class were administered the SAQ. One week later they were retested with the SAQ again. Results of this study revealed a significant test-retest correlation coefficient of +0.71 over a one-week period.

Similarly, eighty-five Phoenix College students (1984) enrolled in psychology classes were administered the SAQ and then retested one month later with the SAQ. Results of this study demonstrated a significant test-retest correlation coefficient at the .01 level of significance.

Within-test reliability measures to what extent a test with multiple scales measuring different factors, measures each factor independent of the other scales (factors) in the test. It also measures to what extent items in each scale consistently measure 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 scale inter-item reliability is with Coefficient Alpha.

Inter-item reliability (1985) was evaluated with three separate groups of subjects: 100 outpatients in private practice, 100 substance abuse inpatients, and 189 job applicants -- totalling 389 subjects. These independent studies are summarized in Tables 1, 2, and 3.

**TABLE 1. INTER-ITEM RELIABILITY**  
**100 OUTPATIENTS, PRIVATE PRACTICE**

<u>SAQ SCALES</u> <u>(MEASURES)</u>	<u>N</u> <u>ITEMS</u>	<u>COEFFICIENT</u> <u>ALPHA</u>	<u>F</u> <u>VALUE</u>	<u>P VALUE</u> <u>P &lt;</u>
Truthfulness (Validity)	21	0.81	21.73	0.001
Alcohol Scale	21	0.86	9.29	0.001
Drugs Scale	21	0.80	27.19	0.001
Aggressivity Scale	21	0.63	26.97	0.001
Resistance Scale	21	0.74	15.97	0.001
Stress Coping Ability	40	0.81	46.74	0.001

**TABLE 2. INTER-ITEM RELIABILITY  
100 CHEMICAL DEPENDENCY INPATIENTS**

<u>SAQ SCALES (MEASURES)</u>	<u>N ITEMS</u>	<u>COEFFICIENT ALPHA</u>	<u>F VALUE</u>	<u>P VALUE P &lt;</u>
Truthfulness (Validity)	21	0.79	53.15	0.001
Alcohol Scale	21	0.93	31.46	0.001
Drugs Scale	21	0.85	16.34	0.001
Aggressivity Scale	21	0.72	17.05	0.001
Resistance Scale	21	0.74	19.21	0.001
Stress Coping Ability	40	0.84	16.20	0.001

**TABLE 3. INTER-ITEM RELIABILITY  
SAQ/POLYGRAPH, 189 JOB APPLICANTS**

<u>SAQ SCALES (MEASURES)</u>	<u>N ITEMS</u>	<u>COEFFICIENT ALPHA</u>	<u>F VALUE</u>	<u>P VALUE P &lt;</u>
Truthfulness (Validity)	21	0.81	45.91	0.001
Alcohol Scale	21	0.83	7.75	0.001
Drugs Scale	21	0.79	58.18	0.001
Aggressivity Scale	21	0.50	48.26	0.001
Resistance Scale	21	0.61	23.67	0.001
Stress Coping Ability	40	0.73	195.86	0.001

In each of these independent (1985) studies, all SAQ scales (measures) were found to be significantly independent of the other SAQ scales. This mutual exclusivity ( $P < 0.001$ ) is shown by a within-subjects between measures ANOVA performed on each individual SAQ scale in each of the studies.

These analysis show that each SAQ scale measures essentially one factor (or trait). In addition, all SAQ scales show high inter-item congruency. 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.

Table 4 presents the inter-item reliability analysis of all of these independent studies ( $N = 100$ ,  $N = 100$ ,  $N = 189$ ) combined ( $N = 389$ ). Inter-item correlations show that all SAQ scales are measuring independent factors (or traits).

Table 5 presents minimum, maximum and average inter-item reliability correlations for these combined ( $N=389$ ) independent studies. The 100 private practice outpatients were combined with the 100 substance abuse inpatients and the 189 job applicants for these analyses.



**TABLE 4. INTER-ITEM RELIABILITY (COMBINED)  
OUTPATIENTS, INPATIENTS, JOB APPLICANTS**

SAMPLE SIZE=389

<u>SAQ SCALES (MEASURES)</u>	<u>N ITEMS</u>	<u>COEFFICIENT ALPHA</u>	<u>F VALUE</u>	<u>P VALUE P &lt;</u>
Truthfulness (Validity)	21	0.82	96.93	0.00
Alcohol Scale	21	0.94	26.68	0.00
Drugs Scale	21	0.88	79.71	0.00
Aggressivity Scale	21	0.70	82.00	0.00
Resistance Scale	21	0.77	53.03	0.00
Stress Coping Ability	40	0.85	150.78	0.00

Table 5 presents minimum, maximum, and average inter-item correlations for each SAQ study combined.

**TABLE 5. INTER-ITEM RELIABILITY (COMBINED)  
OUTPATIENTS, INPATIENTS, JOB APPLICANTS (N=389)**

<u>SAQ SCALES (MEASURES)</u>	<u>N ITEMS</u>	<u>MAXIMUM</u>	<u>CORRELATIONS MINIMUM</u>	<u>AVERAGE</u>
Truthfulness (Validity)	21	0.45	-0.16	0.17
Alcohol Scale	21	0.84	-0.10	0.40
Drugs Scale	21	0.69	0.02	0.27
Aggressivity Scale	21	0.71	-0.15	0.11
Resistance Scale	21	0.35	-0.07	0.13
Stress Coping Ability	40	0.65	-0.67	0.13

In a replication and extension of earlier SAQ research, the SAQ was then administered along with the MMPI to 192 chemical dependency inpatients (1987). The SAQ and MMPI presentation was counter-balanced. This SAQ-MMPI study was completed in 1987 and the results are summarized in Tables Six and Seven.

**TABLE 6. SAQ BETWEEN MEASURES  
192 CHEMICAL DEPENDENCY INPATIENTS**

<u>SAQ SCALES (MEASURES)</u>	<u>N ITEMS</u>	<u>COEFFICIENT ALPHA</u>	<u>F VALUE</u>	<u>P VALUE P &lt;</u>
Truthfulness (Validity)	20	0.79	13.28	0.001
Alcohol Scale	20	0.92	24.39	0.001
Drugs Scale	20	0.87	22.23	0.001
Aggressivity Scale	20	0.81	10.32	0.001
Resistance Scale	20	0.81	10.92	0.001
Stress Coping Ability	40	0.99	27.77	0.001

**TABLE 7. INTER-ITEM RELIABILITY  
192 CHEMICAL DEPENDENCY INPATIENTS**

<u>SAQ SCALES (MEASURES)</u>	<u>N ITEMS</u>	<u>COEFFICIENT ALPHA</u>	<u>F VALUE</u>	<u>P VALUE P &lt;</u>
Truthfulness (Validity)	20	.4662	-.0852	.1602
Alcohol Scale	20	.7355	.0527	.3759
Drugs Scale	20	.7453	-.0501	.2538
Aggressivity Scale	20	.6942	-.0731	.1804
Resistance Scale	20	.5559	-.0609	.1770
Stress Coping Ability	40	.7103	-.1019	.2769

In all of the studies reviewed, the SAQ scales were demonstrated to be independent measures. This mutual exclusivity ( $P < .001$ ) 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 on 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.

In summary, SAQ scales (measures) have been shown in a number of reliability studies 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.

**VALIDITY** refers to a test measuring what it is purported to measure. The quality of a test is normally determined by its validity.

Content validity is a measure of how well test items (or scales) measure the factor they were designed to measure. Initially, a large item pool was rationally developed for SAQ scale consideration. Consensual agreement among three psychologists and experienced chemical dependency counselors familiar with SAQ scale definitions reduced the initial item pool markedly. Final item selection was empirical -- developing statistically related item configurations to known substance abuse groups. Items chosen had acceptable reliabilities 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 a substance abuse population.

Predictive validity measures how well a scale or test can predict performance (behaviors) which the test was designed to measure. The Truthfulness Scale in the SAQ is an important psychometric scale as these scores establish how truthful the respondent was while completing the SAQ. As cited earlier, Truthfulness Scale scores determine whether or not SAQ profiles are valid and are integral to the calculation of truth-corrected SAQ scale scores.

Seventy-eight ASU college students (1985) enrolled in an introductory psychology class were divided into two groups. One group was instructed to take the SAQ honestly

or truthfully, whereas the other group was instructed to "fake good" while completing the SAQ -- but "in such a manner that their faking good would not be detected." The results of this study reveals that the Truthfulness Scale accurately detected "Fakers" from those students that took the SAQ honestly. This is shown by the significant (beyond chance) negative correlation ( $r = -0.27$ ) between these two groups. Mean scores were as follows: Honest = 2.71; Fakers = 15.77. Thus, the Truthfulness Scale measures and predicts how truthful the respondent is while completing the SAQ.

Concurrent validity (criterion-related validity) correlates the independent scales of the test being validated with similar scale measures from an established test which has empirically demonstrated reliability and validity.

The six empirically based SAQ scales were correlated 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.

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. Pearson Product-Moment Correlations were calculated between SAQ scales and MMPI scales. These results are summarized in Table 8.

The results of the concurrent validity study presented in Table 8 shows that all SAQ scales significantly correlated (0.001 level of significance) with all represented MMPI scales. In addition, all significant correlations were in predicted directions.

**TABLE 8 . . . (1985) PEARSON CORRELATIONS  
BETWEEN MMPI SCALES AND SAQ SCALES.**

<u>MMPI SCALES (MEASURES)</u>	<u>SAQ SCALES (MEASURES)</u>					
	TRUTH	ALCO	DRUG	AGGR	RES	SCA
L	0.72	-0.38	-0.41	-0.28	-0.29	0.53
PD	-0.37	0.52	0.54	0.35	0.27	-0.59
PT	-0.34	0.38	0.41	0.28	0.37	-0.68
SOC	-0.25	0.34	0.26	0.18	0.35	-0.54
AUT	-0.43	0.31	0.47	0.37	0.55	-0.46
HOS	-0.45	0.34	0.47	0.37	0.57	-0.58
MAS	-0.58	0.47	0.46	0.48	0.50	-0.78
ALC	-0.40	0.58	0.62	0.44	0.26	-0.33
AUP	-0.32	0.36	0.42	0.35	0.18	-0.22
SOA	-0.47	0.35	0.45	0.28	0.48	-0.67

NOTE: All correlations were significant at the 0.001 level.

KEY: SAQ Measures (Scales):

TRUTH = Truthfulness (Validity)  
ALCO = Alcohol Scale

DRUG = Drugs Scale  
AGGR = Aggressivity Scale  
RES = Resistance Scale  
SCA = Stress Coping Ability

KEY: MMPI Measures (Scales):

L	=	Lie Scale
PD	=	Psychopathic Deviant
PT	=	Psychasthenia
SOC	=	Social Maladjustment
AUT	=	Authority Conflict
HOS	=	Manifest Hostility
MAS	=	Taylor Manifest Anxiety
ALC	=	MacAndrew Alcohol Scale
AUP	=	Authority Problems
SOA	=	Social Alienation

The **TRUTHFULNESS Scale** correlates significantly with all of the represented MMPI scales in Table 8. 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. This helps in understanding why the Truthfulness Scale is significantly, but negatively, correlated with the other represented MMPI scales. When a person attains a high L scale MMPI score, this invalidates other MMPI scale scores due to untruthfulness. 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 description of the Alcohol Scale that was presented earlier. Of particular interest are the highly significant correlations with the MacAndrews Alcoholism (ALC,  $r = 0.58$ ) MMPI Scale and the Psychopathic Deviant (PD,  $r = 0.52$ ) MMPI scale. High PD and ALC scorers on the MMPI are often found to be associated with substance abuse.

The **DRUG Scale** correlates significantly with all represented MMPI scales. These findings are consistent with the conceptual description of the Drugs Scale that was cited earlier, e.g., both alcohol and other drugs are in the category of "drugs." Similar to Alcohol Potential, the Drugs Scale is highly significantly correlated with MacAndrews (ALC,  $r = 0.62$ ) MMPI Scale and the Psychopathic Deviant (PD,  $r = 0.54$ ) MMPI scale. As noted earlier, high PD and ALC scorers on the MMPI are often found to be associated with substance abuse.

The **AGGRESSIVITY Scale** correlates significantly with all represented MMPI scales. The Aggressivity Scale is most (highly) significantly correlated with the Taylor Manifest Anxiety (MAS,  $r = 0.48$ ) and the MacAndrew Alcoholism (ALC,  $r = 0.44$ ) MMPI scales. As noted earlier, Mortimer, et al. (1971) concluded that alcoholics were significantly more involved in driving violations and aggressiveness.

The **RESISTANCE Scale** correlates significantly with all represented MMPI scale scores. The Resistance Scale is most significantly correlated with the Manifest Hostility (HOS,  $r = 0.57$ ) and the Authority Conflict (AUT,  $r = 0.55$ ) MMPI scales. These findings are consistent with the conceptual description of the Resistance Scale that was cited earlier.

The **STRESS COPING ABILITY Scale** correlates significantly with all represented

MMPI scales. As noted earlier, the Stress Coping Ability Scale is inversely related to the other MMPI scales which accounts for the negative correlations shown in Table 8. 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 (MAS,  $r = -0.78$ ) MMPI scale.

In summary, several MMPI scales were selected for representation in this concurrent validity study because it was believed they might have an empirical relationship with the SAQ scales. All SAQ-MMPI scale correlations were significant at the 0.001 level. These empirical findings strongly support the validity of the SAQ scales.

As with the MMPI, the SAQ was correlated to another measure which has often been used in business or industry for employee selection, i.e., the Polygraph examination. 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; e.g., half of the applicants were given the SAQ first and the other half of the applicants were administered the polygraph first.

Initially, the intent was to compare polygrapher ratings of the six empirically based SAQ scales with SAQ scale scores themselves. However, this SAQ-Polygraph study was quickly restricted to an evaluation of SAQ-Polygraph relationships on the Truthfulness Scale, Alcohol Scale and Drugs Scale. Reasons for this decision include: Both the Truthfulness Scale and Polygraph examination are designed to assess the truthfulness or honesty of an individual while they are being tested. Areas of inquiry regarding Alcohol abuse and Drug abuse are more specific and therefore more accurately measure by the Polygraph examination. 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.

The results of the SAQ-Polygraph examination study (1986) are summarized as follows:

Truthfulness measures were significantly related as shown by the significant positive Pearson correlation ( $r = 0.23$ ;  $P < 0.001$ ). Similarly significant positive relationships were observed for Alcohol Potential ( $r = 0.54$ ;  $P < 0.001$ ) and Drug Abuse Potential ( $r = 0.56$ ,  $P < 0.001$ ). In summary, SAQ and Polygraph examinations demonstrated significant Pearson Product Moment correlation coefficients on Truthfulness, Alcohol and Drug Abuse measures.

The SAQ was administered to 212 substance (alcohol and other drugs) abuse inpatients in chemical dependency facilities along with the MMPI. SAQ-MMPI administration was counterbalanced. This SAQ -- MMPI validity study was completed in 1987 and the results are summarized in Table 9.

**TABLE 9. SAQ-MMPI PEARSON CORRELATIONS (1987)  
INPATIENTS, CHEMICAL DEPENDENCY FACILITIES**

MMPI SCALES (MEASURES)	SAQ SCALES (MEASURES)					
	TRUTH	ALCO	DRUG	AGGR	RES	SCA
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
PD	-0.33	0.21	0.33	0.18	0.19	-0.39
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
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
MAC	-0.30	0.35	0.37	0.34	0.19	-0.28
PD2	-0.26	0.18	0.17	0.20	0.07	-0.07
PD4	-0.41	0.20	0.28	0.22	0.63	-0.55
SC1	-0.36	0.27	0.32	0.24	0.58	-0.39
SOC	-0.19	0.17	0.08	-0.03	0.34	-0.39
AU1	-0.21	0.20	0.30	0.34	0.52	-0.18
HOS	-0.45	0.25	0.33	0.33	0.55	-0.46
TSC-III	-0.22	0.26	0.28	0.31	0.57	-0.45
TSC-V	-0.46	0.34	0.28	0.28	0.59	-0.58
TSC-VII	-0.41	0.33	0.29	0.27	0.51	-0.66
PD-O	-0.35	0.22	0.33	0.21	0.52	-0.53

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 scales. Pearson Correlation significance levels are presented in parentheses after the name of the MMPI scale. Traditional MMPI scales: L (Lie scale, < .001), F (Validity, < .001), K (Validity correction, < .001), PD (Psychopathic deviate, < .001), ES (Ego strength, < .001), and RE (Social responsibility, < .001). Harris MMPI subscales: PD2 (authority problems, < .001), PD4 (Social alienation, < .001), SCIA (Social alienation, < .001). Wiggins MMPI content scales: SOC (Social Maladjustment, < .001), HOS (Manifest hostility, <.001). Wiener-Harmon MMPI subscales: PDO (Psychopathic deviant-obvious, < .001). Tryon, Stein & Chu MMPI cluster scales: TSC-V (Resentment/aggressive, < .001).

The **ALCOHOL Scale** correlates significantly in predicted directions with selected MMPI scales: PD (Psychopathic deviate, < .001), MAC (MacAndrews Alcoholism scale, < .0004), and PD-O (Psychopathic deviate obvious, < .0210).

The **DRUGS Scale** correlates significantly in predicted directions with selected MMPI scales: PD (Psychopathic deviate, < .001), MAC (MacAndrews Alcoholism scale, < .001), and PD-O (Psychopathic deviate obvious, < .0003).

The **AGGRESSIVITY Scale** correlates significantly in predicted directions with selected MMPI scales: MAC (MacAndrews Alcoholism scale, < .001), PD2 (Authority problems, < .003), PD (Psychopathic deviate, < .009), AUT (Authority conflict, < .001), PD-O (Psychopathic deviate-obvious, < .028), HOS (Manifest hostility, < .001), and TSC-V

(Resentment/aggression,  $< .001$ ).

The **RESISTANCE Scale** correlates significantly in predicted directions with selected MMPI scales: L (Lie scale,  $< .001$ ), F (Validity,  $< .001$ ), PD (Psychopathic deviate,  $< .001$ ), ES (Ego strength,  $< .001$ ), RE (Social responsibility,  $< .001$ ), SOC (Social maladjustment,  $< .001$ ), AUT (Authority conflict,  $< .001$ ), HOS (Manifest hostility,  $< .001$ ), and TSC-VII (Tension/worry,  $< .001$ ).

The **STRESS COPING ABILITIES Scale** correlates significantly in predicted directions with selected MMPI scales: PD (Psychopathic deviant,  $< .001$ ), PT (Psychasthenia,  $< .001$ ), A (Anxiety,  $< .001$ ), MAS (Taylor Manifest Anxiety,  $< .001$ ), MAC (MacAndrews Alcoholism,  $< .0057$ ), SOC (Social maladjustment,  $< .001$ ), HOS (Manifest hostility,  $< .001$ ), and TSC-VII (Tension/worry,  $< .001$ ).

A 1988 study (Incarcerated DWI offenders,  $N = 154$ ) 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 SAQ is a 153-item automated (computerized) test designed for adult chemical (alcohol and other drugs) dependency assessment. The SAQ contains six empirically based measures or scales: TRUTHFULNESS (VALIDITY), ALCOHOL, DRUGS, 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 a 139-item automated test designed for DWI (Driving While Intoxicated) and DUI (Driving Under the Influence) offender evaluation. The DRI contains five empirically based measures or scales: TRUTHFULNESS (VALIDITY), ALCOHOL, DRUGS, DRIVER RISK and STRESS QUOTIENT.

Although the scales designated TRUTHFULNESS (VALIDITY), ALCOHOL, DRUGS, 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 (SAQ) scale is the same as the STRESS QUOTIENT (DRI) and each contains 40 test items.

The SAQ and DRI (1988) were administered in group settings to 154 DWI offender inmates, in counter balanced order, at Arizona State Department of Corrections (ADOC) facilities. This ADOC (1988) sample consisted of 154 male inmates (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.

The results of this 1988 (ADOC) validity study demonstrate the relationships between the analogues SAQ and DRI scales, as determined by Pearson Product Moment Correlation Coefficients computed between corresponding scales on these two (SAQ and

DRI) tests. The actual coefficients are present below.

**TABLE 10. SAQ VERSUS DRI CORRELATIONS: 1988 INMATES (N = 154)**

<u>SAQ versus DRI SCALES</u>	<u>AGREEMENT COEFFICIENTS</u>	<u>SIGNIFICANT LEVELS</u>
Truthfulness (Validity)	.6405	P < .001
Alcohol Scale	.3483	P < .001
Drugs Scale	.3383	P < .001
Driver Risk (DRI) vs. Aggressivity (SAQ)	.4070	P < .001
Stress Coping Abilities	.7642	P < .001

Earlier it was noted that inmate motivation varied widely. This is evident in the Stress Coping Abilities Coefficient of .7642. Even though this is a highly significant correlation ( $P < .001$ ), the Agreement Coefficient would 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.

The Substance Abuse Questionnaire (SAQ) has been researched on chemical (alcohol and other drugs) dependency treatment patients, college students, pre-employment applicants and outpatients. The SAQ-Adult Probation has been researched on adult probation department clients. In contrast, the Driver Risk Inventory (DRI) has been extensively researched on the convicted DWI (Driving While Intoxicated) or DUI (Driving Under the Influence) offender population. In each of these instances test results have a bearing on subsequent client and probationer recommendations. The present study is important in integrating these SAQ and DRI research findings. In addition, the present study (ADOC, 1988) extends the normative (standardization sample) population to include inmates or incarcerated individuals who are serving their sentences in maximum security facilities.

Another SAQ-Adult Probation study (North Dakota, 1990) consisted of 446 probationers (347 males, 99 females). Thus, 77.8 percent of the clients were male and 22.2 percent of the clients were female. 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). Ethnicity was represent as follows: Caucasian (370), Black (18), Hispanic (14), Asian (1), American Indian (39), and Other (4). 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).



People often develop firm masculine and feminine identifications that contribute to consistent "gender differences" on psychometric tests. T-tests were calculated for all SAQ-Adult Probation scales to assess possible sex or gender differences. Significant gender differences were demonstrated on two of the six scales, i.e., Alcohol and Aggressivity.

**TABLE 11. NORTH DAKOTA ADULT PROBATION (1990) GENDER DIFFERENCES**

<u>SCALE</u>	<u>T-TEST</u>	<u>SIGNIFICANCE LEVEL</u>
ALCOHOL	6.4081	0.001
AGGRESSIVITY	2.9102	0.004

Based on this (1990) North Dakota study, gender specific norms (or separate male and female scoring procedures) have been established in the North Dakota SAQ-Adult Probation software program for men and women on the Alcohol scale and Aggressivity scale. Significant gender differences were not observed on the other four 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.

This 1990 North Dakota SAQ-Adult Probation research demonstrated significant gender differences on two scales: Alcohol scale and the Aggressivity scale. A similar gender difference was demonstrated on the Driver Risk Inventory (1988) Alcohol scale. In the present North Dakota (1990) study, females had a mean Alcohol scale score of 5.35 and males 11.30. On the Aggressivity scale females had a mean scored of 4.64 and males 6.11.

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. As noted earlier, similar gender differences have been demonstrated on the Driver Risk Inventory Alcohol scale in 1988, and these DRI gender differences have continued to the present. Aggressivity has traditionally been viewed as more of a stereotype male trait in United States society.

No significant gender differences were observed on the Validity, Drugs, Resistance and Stress Coping Abilities scales. The Validity scale is composed of items to which most people would agree. Similarly, no gender differences were found on the Stress Coping Abilities scale. The present analysis (1990) suggest that clients were so open (candid or honest) in their answers to these test items that gender (sex) differences were minimal or non-significant. In other words, items on the validity scale and the Stress Coping Abilities scale do not appear to be intimidating or threatening.

No significant gender 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 gender (sex) differences on these two scales.

Cronbach Alpha reliability coefficients for the 446 North Dakota SAQ-Adult Probation (1990) probationers are summarized as follows:

**TABLE 12. SAQ-ADULT PROBATION (N = 446)  
NORTH DAKOTA ADULT PROBATION (1990)**

<u>SAQ SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity (Truthfulness)	.81	P < .001
Alcohol Scale	.87	P < .001
Drugs Scale	.89	P < .001
Aggressivity Scale	.90	P < .001
Resistance Scale	.80	P < .001
Stress Coping Abilities	.91	P < .001

Cronbach Coefficient Alpha is considered the most important indice of internal consistency or reliability. This study demonstrates the reliability (internal consistency) of the SAQ-Adult Probation scales with probationers. 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.

Based on these findings the North Dakota SAQ-Adult Probation test has been modified to accommodate demonstrated gender differences on the Alcohol scale and the Aggressivity scale. The other four SAQ-Adult Probation scales (Validity scale, Drugs scale, Resistance scale and Stress Coping Abilities scale) did not reflect gender differences.

In another study (Washington, D.C., 1990) 294 probationers completed the SAQ-Adult Probation. This sample consisted of 203 (69 percent) males and 91 (31 percent) 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: 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).

This study (Washington, D.C., 1990) was conducted to accurately set SAQ-Adult

Probation risk range scale scores and concurrently assess gender differences. Significant gender (male and female) differences were demonstrated on the Alcohol scale. Significant gender differences were not demonstrated on the Validity (Truthfulness) scale, Drugs scale, Aggressivity scale, Resistance scale and Stress Coping Abilities scale.

**TABLE 13. WASHINGTON, D.C. ADULT PROBATION (1990)  
GENDER DIFFERENCES (N=294)**

<u>SCALE</u>	<u>T-TEST</u>	<u>SIGNIFICANCE LEVEL</u>
ALCOHOL	2.29	.023

Based on this Washington D.C. (1990) study, gender specific norms (separate male and female scoring procedures) have been established in the SAQ-Adult Probation software program for men and women on the Alcohol scale. Significant gender differences were not demonstrated on other SAQ-Adult Probation scales.

**TABLE 14. WASHINGTON D.C. ADULT PROBATION  
SAQ-ADULT PROBATION (N=294) INTERNAL CONSISTENCY**

<u>SAQ SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity (Truthfulness)	.83	P < .001
Alcohol Scale	.86	P < .001
Drugs Scale	.87	P < .001
Aggressivity	.80	P < .001
Resistance	.80	P < .001
Stress Coping	.93	P < .001

These Cronbach Alpha's demonstrate that the SAQ-Adult Probation is reliable. Similar SAQ-Adult Probation internal consistency results were reported earlier.

A Texas (1990) study was conducted to evaluate gender differences and concurrently standardize the SAQ-Adult Probation on Texas probationers. Of the 846 probationers sampled, 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: 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).

In this Texas (1990) study, gender differences were demonstrated on the Alcohol scale and the Stress Coping Abilities scale. No significant gender (male/female) differences were demonstrated on the SAQ-Adult Probation Validity (Truthfulness) scale, Drugs scale, Aggressivity scale or the Resistance scale.

**TABLE 15. TEXAS ADULT PROBATION (1990)  
GENDER DIFFERENCES (N=846)**

<u>SCALE</u>	<u>T-TEST</u>	<u>SIGNIFICANCE LEVEL</u>
Alcohol	5.95	.001
Stress Coping	2.92	.004

Based on this Texas (1990) study, gender specific scoring procedures have been established in the SAQ-Adult Probation software program for the Alcohol scale and the Stress Coping Abilities scale for Texas adult probation clients.

Cronbach Alpha reliability coefficients for the 846 Texas SAQ-Adult Probation (1990) probationers are summarized are follows:

**TABLE 16. TEXAS ADULT PROBATION (1990)  
SAQ-ADULT PROBATION (N=846) INTERNAL CONSISTENCY**

<u>SAQ SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity	.84	P < .001
Alcohol	.87	P < .001
Drugs	.86	P < .001
Aggressivity	.80	P < .001
Resistance	.82	P < .001
Stress Coping	.94	P < .001

As noted earlier, Cronbach Alpha is considered the most important indice of internal consistency and reliability. SAQ-Adult Probation results are reliable. Similar internal consistency results were reported earlier.

A study (Arizona, 1990) involving substance abuse-related offenders processed through the Phoenix Municipal Court was conducted to evaluate possible gender differences. Substance Abuse Questionnaire (SAQ) scales risk range scores were also reviewed. The sample studied included 794 Municipal court-related cases.

Demographics for this sample (N = 794) are summarized as follows: Under 16 years of age (1 male); 16-25 years of age (229 males, 28 females); 26-45 years (460 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).

Gender (male and female) differences were demonstrated on the Resistance scale.

**TABLE 17. ARIZONA MUNICIPAL COURT (1990)  
SUBSTANCE ABUSE QUESTIONNAIRE (N = 794) GENDER DIFFERENCES**

<u>SCALE</u>	<u>T-TEST</u>	<u>SIGNIFICANCE LEVEL</u>
RESISTANCE	2.29	.023

Significant gender differences were demonstrated on the Resistance scale of the Substance Abuse Questionnaire (SAQ). The seeming lack of a consistent pattern of gender differences on a state-by-state comparison emphasizes the importance of this type of ongoing data base research. Significant gender differences were not demonstrated on the Validity (Truthfulness) scale, Alcohol scale, Drugs scale, Aggressivity scale or the Stress Coping Abilities scale.

**TABLE 18. ARIZONA MUNICIPAL COURT (1990) SAQ  
SUBSTANCE ABUSE QUESTIONNAIRE (N=794) INTERNAL CONSISTENCY**

<u>SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity (Truthfulness)	.80	P < .001
Alcohol Scale	.90	P < .001
Drugs Scale	.89	P < .001
Aggressivity Scale	.81	P < .001
Resistance Scale	.85	P < .001
Stress Coping Abilities	.94	P < .001

This study again demonstrates the reliability (internal consistency) of the Substance Abuse Questionnaire (SAQ). The Cronbach Alpha is considered the most important indice of internal consistency. Similar reliability results have been demonstrated on other client populations and were reported earlier.

The Substance Abuse Questionnaire (SAQ) and the Minnesota Multiphasic Personality Inventory (MMPI) were administered (1991) in counterbalanced order to 74 Vocational Rehabilitation clients. Pearson Product Moment Correlations were calculated between SAQ scales and selected MMPI scales to further examine the SAQ's validity.

Demographics for this study (1991, N=74) are summarized 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). Education was distributed as follows: 8th grade or less (11), Partially completed High School (18), GED (14), High School Graduate (21), Some College (6), College Graduate (4). Gender composition consisted of 49 males and 25 females. Ethnicity was distributed as follows: Caucasian (47), Black (12), Hispanic (8), American Indian (6) and Other (1).

The results of this Substance Abuse Questionnaire (SAQ) validity study (1991) are summarized in Table 19.

**TABLE 19. SAQ-MMPI PEARSON CORRELATIONS  
VOCATIONAL REHABILITATION CLIENTS (1991, N=74)**

MMPI SCALES	SAQ SCALES					
	TRUTH	ALCO	DRUG	AGGR	RES	SCA
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**
PT	-.135	.273*	.244	.216	.264	.501**
MA	-.136	.147	.155	.354**	.101	.076
SI	-.376**	.450**	.220	.359**	.119	.415**
DO	.193	-.438**	-.205	-.549**	-.071	-.511**
MAS	-.245	.396**	.240	.426**	.085	.574**
MAC	-.177	.303*	.145	.369**	.051	.168
SOC	-.379**	.431**	.199	.223	.123	.259
AUT	-.360**	.339**	.174	.374**	.149	.204
HOS	-.497**	.231	.136	.439**	.308*	.207
TSC-III	-.372**	.319**	.040	.421**	.076	.254
TSC-V	-.387**	.396**	.207	.531**	.196	.435**
TSC-VII	-.322*	.295*	.189	.413**	.151	.441**
SE	.347*	-.377**	-.141	-.141	-.175	-.239
HY1	.480**	-.412**	-.304*	-.257	-.056	-.157
PD2	-.293*	.381**	.263	.259	.017	.209
SCI A	-.397**	.349*	.159	.414**	.258	.390**

NOTE: \* < .01, \*\* < .001, No asterisk = Non-significant

**KEY: SAQ SCALES**

- TRUTH = Validity (Truthfulness)
- ALCO = Alcohol Scale
- DRUG = Drugs Scale
- AGGR = Aggressivity Scale
- RES = Resistance Scale
- SCA = Stress Coping Ability

KEY: MMPI SCALES

L = Lie  
F = Validity  
K = Validity  
PD = Psychopathic Deviate  
PT = Psychasthenia  
MA = Hypomania  
SI = Social Introversion  
DO = Dominance  
MAS = Taylor Manifest Anxiety  
MAC = MacAndrews Scale

KEY: MMPI SCALES (continued)

SOC = Social Maladjustment  
AUT = Authority Conflict  
HOS = Manifest Hostility  
TSC-III = Suspiciousness  
TSC-V = Resentment  
TSC-VII = Tension  
SE = Social Extroversion  
HY1 = Denial: Social Anxiety  
PD2 = Authority Problems  
SCI A = Social Alienation

In the following description of SAQ-MMPI scales Pearson correlations, the MMPI scale acronym is followed in parentheses by the name of the scale and the Pearson correlation for that scale.

The **Truthfulness (Validity) Scale** correlates most significantly with the MMPI L scale (Lie, .493), and HY1 (Denial: Social Anxiety, .480). The SAQ Truthfulness (Validity) scale correlates significantly with the MMPI L scale ( $P < .001$ ), MMPI F scale ( $P < .01$ ) and the MMPI K scale ( $P < .01$ ). When a person attains elevated L, F or K scales on the MMPI, this invalidates other MMPI scale scores. Similarly, an elevated Truthfulness (Validity) scale score on the SAQ invalidates other SAQ scale scores.

The **Alcohol Scale** correlates most significantly with the MMPI PD scale (Psychopathic Deviate, .454), SI scale (Social Introversion, .450) and the SOC (Social Maladjustment, .431) scale. It correlates at the  $P < .01$  level of significance with the MMPI MacAndrews Alcoholism scale. High MMPI PD and MAC scores are often associated with substance abuse.

The **Drug Scale** correlates most significantly with the MMPI F scale (Validity, .334) and the PD (Psychopathic Deviate, .292) scale. The SAQ Drugs scale did not correlate significantly with the MMPI MacAndrews scale. Substance (alcohol and other drugs) abusers have a close identity with their substance of choice. Without independent scales for alcohol and drugs, many substance abusers would remain undetected.

The **Aggressivity Scale** correlates most significantly with the MMPI F scale (Validity, .529), TSC-V (Resentment, .531), HOS (Manifest Hostility, .439), TSC-III (Suspicion, .421) and TSC-VIII (Tension, .413). As reported in earlier research, the Aggressivity scale again correlates significantly with MA (Hypomania,  $P < .001$  level of significance) and MAS (Taylor Manifest Anxiety,  $P < .001$  level of significance).

The **Resistance Scale** correlates most significantly with the MMPI HOS (Manifest Hostility, .308) scale. This finding is consistent with earlier concurrent validity results with the MMPI. The expected correlation with TSC-V (Resentment, .196) was not demonstrated. However, the correlation with SC1A (Social Alienation, .414) was significant at the  $P < .001$  level of significance.

The **Stress Coping Abilities Scale** correlates most significantly with the MMPI PD (Psychopathic Deviate, .568) MAS (Taylor Manifest Anxiety, .574) and PT (Psychasthenia,

.501) scale. These findings are consistent with earlier research.

In summary, this validity study replicated earlier research involving the administration of both the SAQ and MMPI. These empirical findings strongly support the validity of the SAQ.

A Missouri (1991) study was conducted to evaluate the statistical properties of the SAQ-Adult Probation, including gender differences, and concurrently standardize the test on the Missouri adult probation offender population.

This Missouri (1991) Adult Probation client sample includes 1149 (88.5%) men and 150 (11.5%) women. These clients represent the following age groups: Under 16 (7, 0.5%), 16 to 25 (659, 50.7%); 26 to 35 (421, 32.4%), 36 to 45 (161, 12.4%); 46 to 55 (33, 2.5%) and over 55 (18, 1.4%). Ethnicity is represented as follows: Caucasian (1023, 78.8%); Black (257, 19.8%); Hispanic (6, 0.5%), American Indian (5, 0.4%) and Asian (8, 0.6%). Education levels include: Less than 8th grade (116, 8.9%); some High School (525, 40.4%); GED (149, 11.5%); High School graduates (326, 25.1%); Business/Technical school (151, 11.5%); some College (10, 0.8%); College graduates (15, 1.2%), and Professional/Graduate degree (7, .05%).

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). In summary, there were 1149 (88.45%) males and 150 (11.55%) females.

Ethnicity by gender 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 by gender: 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). There were 1149 males and 150 females totaling 1299 probationers.

Cronbach Alpha reliability coefficients for the 1299 Missouri SAQ-Adult Probation (1991) probationers are summarized as follows:



**TABLE 20. RELIABILITY COEFFICIENTS (1991)  
SAQ-ADULT PROBATION (N = 1299)**

<u>SAQ SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity (Truthfulness)	.81	P < .001
Alcohol Scale	.93	P < .001
Drugs Scale	.90	P < .001
Aggressivity Scale	.80	P < .001
Resistance Scale	.88	P < .001
Stress Coping Abilities	.91	P < .001

The Cronbach Coefficient Alpha is considered the most important measure of internal consistency or reliability. This study again demonstrates the reliability (internal consistency) of the SAQ-Adult Probation. Reliability refers to consistency of test results regardless of who uses the test. SAQ-Adult Probation test results are again demonstrated to be objective, verifiable, reliable and reproducible.

As noted earlier, people often develop firm masculine and feminine identifications that contribute to consistent "gender differences" on psychometric tests. T-tests were calculated for all SAQ-Adult Probation scales to assess possible gender differences.

Significant gender differences were demonstrated on three (3) of the SAQ-Adult Probation scales, i.e., Alcohol Scale, Drugs Scale, and the Aggressivity Scale.

**TABLE 21. MISSOURI SAQ-ADULT PROBATION (1991)  
SAQ-ADULT PROBATION (N=1299) GENDER DIFFERENCES**

<u>SCALE</u>	<u>T-TEST</u>	<u>SIGNIFICANCE LEVEL</u>
Alcohol Scale	.001	P < .05
Drugs Scale	.001	P < .05
Aggressivity Scale	.001	P < .05

Based on this (1991) Missouri Adult Probation study, gender specific norms (separate male and female scoring procedures) have been established in the Missouri SAQ-Adult Probation software program for men and women on these 3 scales; i.e., Alcohol, Drugs, and Aggressivity.

Significant gender differences were not observed on the other SAQ-Adult Probation

scales, consequently separate male and female scoring procedures were not established for these scales. On the Alcohol scale females had a mean score of 9.30 and males 13.94. Similarly, on the Drugs scales females had a mean score of 8.78 and males 12.34. Also on the Aggressivity scale females had a mean score of 7.14 and males 8.71.

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. As noted earlier, aggressivity has traditionally been perceived as a stereotyped male trait.

An SAQ-ADULT PROBATION SHORT FORM (hereinafter referred to as the "SHORT FORM") was developed for the reading impaired, high volume testing settings and as a retest instrument. The SHORT FORM consists of 58 items and 5 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.

The SHORT FORM was completed in 1991 and a SHORT FORM validity study was conducted on 310 adult probationers. Of the 310 respondents, 217 (70 percent) were male and 93 (30 percent) were female. The demographics of this sample are summarized as follows:

Age: 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 is 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 is summarized 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 counterbalanced order. Pearson Product-Moment Correlation Coefficients between the SAQ-Adult Probation and SHORT FORM are presented below.

**TABLE 22. (1991) SAQ-SAQ SHORT FORM (N = 310)**

<u>SCALES</u>	<u>AGREEMENT COEFFICIENT</u>	<u>SIGNIFICANCE LEVEL</u>
Truthfulness (Validity)	.570	P < .001
Alcohol Scale	.405	P < .001
Drugs Scale	.482	P < .001
Aggressivity Scale	.385	P < .001
Resistance Scale	.348	P < .001

The SAQ 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 comperable scales vary in length, yet essentially

consist of the same test questions in the SAQ and SHORT FORM. The correlation between SAQ scales and corresponding SHORT FORM scales is highly significant. The test items in SAQ scales with the best statistical properties were included in analogous SHORT FORM scales. The SHORT FORM is introduced here for chronological continuity. Further references to the SHORT FORM shall clearly specify "SHORT FORM" to avoid confusion with the SAQ or SAQ-Adult Probation.

Another SAQ study (Iowa, 1991) was conducted on 177 adult probationers. Of the 177 respondents, 171 were men and 6 were women. The demographics of this sample are summarized 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 is summarized as follows: Caucasian (152, 85.9%); Black (11, 6.2%); Hispanic (3, 1.7%); American Indian (2, 1.1%); and Other (9, 5.1%). Education is summarized as follows: 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 reliability analysis of this Iowa adult probationer test data is summarized as follows:

**TABLE 23. IOWA ADULT PROBATION (1991)  
SAQ-ADULT PROBATION (N=177) INTERNAL CONSISTENCY**

<u>SAQ SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity (Truthfulness)	.85	P < .001
Alcohol Scale	.84	P < .001
Drugs Scale	.91	P < .001
Aggressivity Scale	.81	P < .001
Resistance Scale	.92	P < .001
Stress Coping Abilities	.92	P < .001

These results again demonstrate the internal consistency of the SAQ. Similar Cronbach Alpha reliability coefficients were reported earlier.

Another study (Oklahoma, 1991) involved 253 adult probationers. This sample consisted of 189 (75%) men and 64 (25%) women. Demographics are summarized as follows:

Age: 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 is summarized as follows: Caucasian (167, 66%); Black (52, 20.6%); Hispanic (13, 5.1%); American Indian (19, 7.5%) and Other (2, .8%). Education is summarized 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%).

T-tests for gender-specific differences were calculated for all of the SAQ scales. No significant gender specific differences were observed, consequently no gender specific distributions were calculated.

**TABLE 24. OKLAHOMA ADULT PROBATION (1991)  
RELIABILITY COEFFICIENTS (N=253)**

<u>SAQ SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity (Truthfulness)	.86	P < .001
Alcohol Scale	.91	P < .001
Drugs Scale	.89	P < .001
Aggressivity Scale	.82	P < .001
Resistance Scale	.90	P < .001
Stress Coping Abilities	.92	P < .001

Similar Cronbach Alpha reliability coefficients were demonstrated in earlier SAQ and SAQ-Adult Probation studies. These results demonstrate the internal consistency of the SAQ.

Another study (Nebraska, 1992) involved 306 probationers. This sample contained 241 men (78.8%) and 65 women (21.2%). Demographics include the following summaries. Age groups are summarized as follows:

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

No gender differences were observed for age group, ethnicity or education levels. Significant (.05 level gender differences were demonstrated for the Alcohol Scale, Drug Scale and Aggressivity Scale. Gender specific scoring methodology was established for these SAQ-Adult Probation Scales.

**TABLE 25. NEBRASKA ADULT PROBATION (1992)  
RELIABILITY COEFFICIENTS (N=306)**

<u>SAQ SCALES</u>	<u>CRONBACH ALPHA</u>	<u>SIGNIFICANCE LEVEL</u>
Validity (Truthfulness)	.89	P<.001
Alcohol Scale	.93	P<.001
Drugs Scale	.90	P<.001
Aggressivity Scale	.87	P<.001
Resistance Scale	.85	P<.001
Stress Coping Abilities	.92	P<.001

Similar Cronbach Alpha reliability coefficients were demonstrated in earlier SAQ and SAQ-Adult Probation studies. These results again demonstrate the internal consistency of the SAQ.

Another SAQ study (1992) was conducted with adult probation clients (N = 171) to further examine concurrent validity with the Minnesota Multiphasic Personality Inventory (MMPI). The SAQ and MMPI were administered in counterbalanced order to 171 probation clients. Pearson Product Moment Correlations were calculated between SAQ scales and selected MMPI scales.

Demographics for this study (1992, N = 171) are summarized 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). Gender composition involved 129 males and 42 females. The results of this study (1992, N = 171) are summarized in Table 25.

For reference SAQ scales and MMPI scales are presented by acronym and then in parenthesis by title. All scales are referenced by acronyms in Table 25.

**KEY: SAQ SCALES.** TRUTH (Truthfulness, Validity) ALCO (Alcohol Scale), DRUG (Drug Scale), AGGR (Aggressivity Scale), RES (Resistance Scale), and SCA (Stress Coping Abilities Scale).

**KEY: MMPI SCALES.** L (Lie Scale), F (Validity), K (Validity), PD (Psychopathic Deviate), PT (Psychasthenia), MA (Hypomania), SI (Social Introversion), MAS (Taylor Manifest Anxiety), MAC (MacAndrews), SOC (Social Maladjustment), AUT (Authority Conflict), HOS (Manifest Hostility), TSC-III (Suspiciousness), TSC-V (Resentment), TSC-VII (Tension), PD2 (Authority Problems) and SC1 A (Social Alienation).

**TABLE 26. SAQ-MMPI PEARSON CORRELATIONS  
ADULT PROBATION (1992, N=171) CONCURRENT VALIDITY**

<u>MMPI SCALES</u>	<u>TRUTH</u>	<u>ALCO</u>	<u>DRUG</u>	<u>AGGR</u>	<u>RES</u>	<u>SCA</u>
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**
MA	-.094	.161	.110	.313**	.264**	.140
SI	-.378**	.298**	.139	.206*	.053	.434**
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: \* < .01, \*\* < .001, No Asterisk = Non-significant

The **Truthfulness (Validity) scale** correlates most significantly with the MMPI L scale (.001 significance level) and the MMPI K scale (.001 significance level).

The **Alcohol Scale** correlates most significantly with the MMPI PD scale (.001 significance level), SI (.001 significance level), SOC (.001 significance level) and the AUT scale (.001 significance level).

The **Drug Scale** correlates most significantly with the MMPI F scale (.001 significance level), PD (.01 significance level), and the TSC-V scale (.01 significance level).

The **Aggressivity Scale** correlates highly with the MMPI MA scale (.001 significance level), MAS scale (.001 significance level), PD2 (.001 significance level), HOS scale (.001 significance level), AUT scale (.001 significance level), and the SC1A scale (.001 significance level).

The **Resistance Scale** correlates highly significantly with the MMPI F scale (.001 significance level), PD (.001 significance level), MA scale (.001 significance level), AUT scale (.001 significance level), and the SC1A scale (.001 significance level).

The **Stress Coping Abilities Scale** correlates highly significantly with the MMPI F scale (.001 significance level), PD (.001 significance level), PT scale (.001 significance level), SI scale (.001 significance level), PT scale (.001 significance level), SOC scale

(.001 significance level), HOS scale (.001 significance level), and the SC1A scale (.001 significance level).

Similar SAQ-MMPI results have been demonstrated in earlier studies. The present study further supports the validity of the SAQ. The SAQ measures what it purports to measure. SAQ scales correlate significantly, in predicted directions with similar 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. The six empirically based SAQ scales correlate significantly and in predicted directions with comparable measures of the MMPI.

## 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 and SAQ-Adult Probation 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.

SAQ research has demonstrated important relationships associated with substance abuse, attitudes towards help or assistance, adjustment and emotional problems. However, many other relationships need to be better understood for even more accurate identification of risk and need. Similarly, we need more empirical information on the effects of client intervention, education, and substance (alcohol and other drugs) abuse treatment outcome--in terms of their effect on recidivism and improved adjustment.

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

# SAQ-ADULT PROBATION

The **SAQ-Adult Probation** is a brief, easily administered and automated (computer-scored) test designed for adult probation and parole risk and needs assessment. It contains 153 items and can be completed in 30 minutes. The SAQ-Adult Probation is particularly useful in evaluating trouble prone clients, detecting substance (alcohol and other drugs) abusers and identifying the emotionally disturbed.

## UNIQUE SAQ-ADULT PROBATION FEATURES

**TRUTH-CORRECTED SCORES:** Correlations between the Validity Scale and all other SAQ-Adult Probation scales permits identification of error variance associated with untruthfulness. This error variance is then added back into scale scores, resulting in Truth-Corrected scores. **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.

**DATA BASE:** The copyrighted SAQ-Adult Probation data base provides both a research and testing program summary capability that was not possible before. Test data from each test that is administered is included in the SAQ-Adult Probation data base. Ongoing data base research ensures meaningful quality control. Annual summary reports provide program self-evaluation.

## SAQ-ADULT PROBATION QUESTIONS & ANSWERS

**1. How truthful was the client when tested?** In the past, many people were "turned off" by tests because they were too easy to fake. The SAQ-Adult Probation has a built-in Truthfulness (Validity) Scale designed to measure client truthfulness and detect denial, guardedness and faking.

**2. If the client lies, how do you get accurate information?** Truth-corrected scores are more accurate than raw scores. Unidentified denial or untruthfulness produces inaccurate and distorted results. Many professionals endorse the benefits of Truth-Corrected scores, calling them a high-tech solution to a very common down-to-earth need.

**3. Why are the six SAQ-Adult Probation scales important?** In addition to establishing client truthfulness and substance (alcohol and other drugs) abuse-related problems, it is important to know how cooperative and aggressive the client is, and how well the client copes with stress. In other words, the SAQ-Adult Probation identifies client risk and need. The SAQ-Adult Probation measures important behaviors missed by other tests.

**4. Why is the SAQ-Adult Probation data base important?** The SAQ-Adult Probation data base permits research and annual testing program summary at no additional cost. Copyrighted SAQ-Adult Probation data base functions are built-in and relate to quality control as well as testing program evaluation. Does your testing program have a built-in data base? At no additional cost?

**5. Is the SAQ-Adult Probation expensive?** The SAQ-Adult Probation is already competitively priced, however, cost per test is even lower if ordered in substantial quantities! The SAQ-Adult Probation is an affordable state-of-the-art assessment instrument. Demonstration diskettes (4 tests, test booklet) are available on a cost-free, 30 day trial basis.

**6. How can I get more information?** Call (800) 231-2401, or write:

**Risk & Needs Assessment, Inc.  
P.O. Box 32818  
Phoenix, Arizona 85064-2818  
FAX: (602) 266-8227**



## WHAT USERS AND EXPERTS ARE SAYING...

"We piloted SAQ-Adult Probation and ACIDI-Corrections Version...Staff response was overwhelmingly positive. Ninety-six percent of survey responses indicated that SAQ-Adult Probation was a useful screening tool. Similar results were obtained for the ACIDI-Corrections Version."

A.J. Pottler, Regional Administrator  
Nova Scotia, Department of Solicitor General

"I am extremely pleased with the Substance Abuse Questionnaire and would recommend it to anyone in the market for a highly reliable, easy-to-use testing instrument."

Sloan Clinic, Massachusetts

"The Adolescent Chemical Dependency Inventory (ACDI) was found to be invaluable in youthful offender investigations. It is easy to instruct, fast and reports valid information to assist officers in determining the extent of troubles facing individual youths and provides valuable recommendations for referral purposes."

Huntsville Municipal Court, Alabama

"Substance Abuse Questionnaire results were compared in each case with an extensive independent assessment obtained through referral treatment resources...The SAQ has proven excellent with the Felony Division Program and is recommended to all felony diversion counselors."

Huntsville Municipal Court, Alabama

"It is my conclusion that the SAQ is one of the most psychometrically sound and useful evaluation instruments for substance abuse screening, assessment, and evaluation presently available."

S. Drydyk, Ph.D., Psychologist

"Prior to selecting the SAQ for use in our program, we conducted an exhaustive review of all available tests. I am very pleased that we selected the SAQ-Adult Probation and the ACIDI-Corrections Version, and these tests continue to be an important resource in our program."

Conway Groups, Ltd., Arizona

"We began investigating substance abuse screening instruments approximately two years ago. The SAQ proved superior in information provided and format when compared with other screening instruments examined by us."

Brazos County, Texas  
Adult Probation Department

"The ACIDI format is focused, sequential, and easy to read...it's trouble free! The overlay between the print-out and staff assessment, so far, has been a perfect fit. The staff response is right-on-target."

County Porter, Indiana  
Juvenile Probation Office

"We are utilizing the Substance Abuse Questionnaire (SAQ) and are extremely satisfied with the results of this instrument...The SAQ is proving to be valuable among not only probation cases, but the higher risk offenders."

District VI, Oklahoma Probation & Parole

"Having tried other computerized instruments with results that created confusion, the clarity and efficiency of the SAQ has been exciting. Your instrument (SAQ) has shown itself to be very valid as supported by the personal interviews we conduct."

C.R.W. Associates, Inc., Michigan

"Based on two years experience using the Substance Abuse Questionnaire (SAQ), Substance Abuse Scoring Service is pleased with the overall results. In my opinion the SAQ is a state-of-the-art screening instrument."

Phoenix Municipal Court, Arizona

"The Substance Abuse Questionnaire (SAQ) and Adolescent Chemical Dependency Inventory (ACDI) have had many positive advantages to our clients, staff and in terms of our mission, i.e., to provide the highest quality of service to those in need at affordable prices."

National Council on Alcoholism, Phoenix

### **RISK & NEEDS ASSESSMENT, INC.**

P.O. Box 32818, Phoenix, Arizona 85064-2818  
(800) 231-2401

# FOUR VERSIONS OF THE SAQ

Each designed for a specific adult population

- I. **Substance Abuse Questionnaire(SAQ)** is designed for counseling and chemical dependency treatment programs. The SAQ contains 153 items, has a 6th grade reading level and takes 25 minutes to complete. It has six scales: **Validity (Truthfulness), Alcohol, Drug, Resistance, Aggressivity and Stress Coping Abilities**. The SAQ evaluates problem prone clients, identifies substance (alcohol and other drugs) abusers and recognizes the emotionally disturbed.
- II. **SAQ-Adult Probation** utilizes the 153 item test booklet described above and produces a report specifically designed for adult probation and parole use. It is standardized on adult male and female probationers and parolees. This report provides probation as well as treatment intervention recommendations. The SAQ-Adult Probation contains six SAQ scales and is appropriate for adult probation, parole and community corrections programs.
- III. **SAQ-Adult Probation II** is a modification of the SAQ-Adult Probation. It contains two additional scales (**Antisocial Scale and Violence Scale**) and a **recidivism prediction**. Version II contains 180 items, has a 6th grade reading level, includes 8 scales and takes 30 minutes to complete. Version II is appropriate for adult probation, parole and community corrections programs.
- IV. **SAQ-SHORT FORM** is designed for assessment of the reading impaired and for use in high volume testing settings. More than 25% of probationers and parolees are reading impaired. The **SHORT FORM** consists of 64 items, has a 4th grade reading level and can be read to an individual or group in 10 minutes. It contains four scales: **Truthfulness, Alcohol, Drug and Risk**.

## WHICH TEST MEETS YOUR NEEDS?

The SAQ is designed for counseling and treatment assessment. The **SAQ-Adult Probation** is the shorter form for probationers and parolees. The **SAQ-Adult Probation II** is designed for potentially violent offenders. The **SAQ-SHORT FORM** is appropriate for high volume testing departments/agencies and reading impaired assessment.

## HOW TO PROCEED

Interested parties should call (800) 231-2401 or write Risk & Needs Assessment, Inc., P.O. Box 32818, Phoenix, Arizona 85064-2818. **Demonstration diskettes** containing a test booklet and four test applications are available on a 30 day cost-free basis. All we ask is that the test booklet and diskette be returned within 30 days.

SAQ Copyright©1985. SAQ-Adult Probation Copyright ©1986. SAQ-SHORT FORM Copyright ©1991.

SAQ-Adult Probation II Copyright © 1993. ALL RIGHTS RESERVED.

## SUBSTANCE ABUSE QUESTIONNAIRE (SAQ) HIGHLIGHTS

There are four versions of the Substance Abuse Questionnaire (SAQ) and each version is designed for a particular adult population. Four SAQ versions include: **Substance Abuse Questionnaire (SAQ)**, **SAQ-Adult Probation**, **SAQ-Adult Probation II** and the **SAQ-SHORT FORM**. Each of these SAQ versions contains the following unique features.

**VALIDITY (TRUTHFULNESS) SCALE:** An important advance in testing is the Validity Scale, which measures how truthful the client was while completing the test. It would be naive to believe all people taking tests always answer truthfully. Validity scales identify self-protective, guarded and defensive people attempting to deny, minimize or fake their answers.

**TRUTH-CORRECTED SCORES:** Correlations between the Validity (Truthfulness) scale and other scales establishes error variance associated with untruthfulness. This error variance is then applied to each scale score, resulting in **Truth-Corrected Scores**. Raw scores may only reflect what the client wants you to know. **Truth-Corrected scores reveal what the client is trying to hide.**

**ACCURACY:** In addition to saving staff time and money, these tests are accurate. Each test is standardized on the adult population it is designed to test. Reliability, validity and accuracy provide a sound, objective basis for decision making. The Validity Scale detects faking. Truth-Corrected scores are more accurate than raw scores.

**DATA BASE:** A database of client assessment information is extremely useful. It makes possible cost-effective research and annual program summaries that were not possible before. Risk & Needs copyrighted built-in data bases and program summary capabilities provide these features at no additional cost.

**COST EFFECTIVENESS:** SAQ's proven research continues to deliver the highest quality in offender/client assessment, at remarkably competitive prices. Volume discounts are also available. Test booklets, training manuals, support services, ongoing research and annual summary reports are included at no additional cost. There are no hidden costs or obligations. These tests are affordable state-of-the-art assessment instruments.

### OTHER HIGHLIGHTS

- |                                 |   |
|---------------------------------|---|
| * Detects denial and faking     | * Strong accountability of results      |
| * Designed for specific clients | * Sound basis for decision making       |
| * Demonstrated accuracy         | * Demonstrated reliability and validity |
| * Money back guarantee          | * Available in English and Spanish      |
| * Researched and standardized   | * Database features included free       |

**HOW TO ORDER:** Interested parties should call (800) 231-2401 or write Risk & Needs Assessment, Inc., P.O. Box 32818, Phoenix, Arizona 85064-2818. **Demonstration diskettes** containing 4 test applications and a test booklet can be provided upon request. All we ask is that the diskette and test booklet are returned in 30 days.

# **SUBSTANCE ABUSE QUESTIONNAIRE (SAQ)**

SAQ-Adult Probation; SAQ-Adult Probation II; SAQ-SHORT FORM

The SAQ is a 153 item computerized assessment instrument that is designed for counseling agencies and adult chemical dependency treatment program use. The SAQ-Adult Probation uses the SAQ test booklet, but provides a report that is designed for adult probation and parole use. The SAQ-SHORT FORM is designed for reading impaired client assessment and high volume testing settings. The SAQ-Adult Probation II contains a Violence Scale and an Antisocial Scale, in addition to the 6 SAQ scales. Version II also predicts recidivism. The SAQ-Adult Probation II has 180 items and eight scales.

## **ADULT ASSESSMENT QUESTIONS AND ANSWERS**

- 1. How do we know when the client is being truthful?** The Truthfulness Scale measures client truthfulness, identifies denial, detects defensiveness, reveals attempts to minimize problems and detects faking.
- 2. If the client lies, how can we get accurate information?** Truth-Corrected scores account for the amount of untruthfulness of the client and are more accurate than raw scores. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide.
- 3. Why is test individualization important?** Any test is designed to obtain specific information from a particular client population and questions vary accordingly. Probation and parole tests differ from DUI/DWI tests and clinical tests. Also, recommendations may vary from one program to another.
- 4. Why standardize a test on the population that will be tested?** The advantages are many and include accuracy, reliability, validity and fairness. We offer to standardize the SAQ-Adult Probation and Version II on a state-by-state basis. When was the last time anyone offered to standardize their test on your probation or parole population? At no additional cost?
- 5. Why is a data base important?** It permits research and annual test program summary--at no additional cost to the test user. SAQ-Adult Probation and Version II copyrighted data base functions are built-in and relate to quality control as well as test-program evaluation. Does your testing program have a built-in data base? At no additional cost?
- 6. Why were the 8 SAQ Version II scales selected?** In addition to identifying client truthfulness and substance abuse involvement, it is important to understand the client's outlook, risk and needs. It measures uncooperativeness, aggressiveness, antisocial attitudes, mental health problems and violence. These 8 scales are all important in recidivism prediction.
- 7. Is the SAQ-Adult Probation or Version II expensive?** These tests are competitively priced, and if you qualify for a volume discount-the price can be even lower. The SAQ saves staff time. Test booklets, training materials, support services, ongoing research and annual summary reports are included free. We believe you will agree that these tests are very affordable state-of-the-art risk and needs assessment instruments.
- 8. How can you evaluate the reading impaired?** The SAQ-SHORT FORM is designed for evaluating the reading impaired and for use in high volume testing settings. The SHORT FORM contains 64 items that can be read to an individual or group in 10 minutes. The SHORT FORM reading level is 4th grade.

**HOW TO PROCEED:** Interested parties should call (800) 231-2401 or write Risk & Needs Assessment, Inc., P.O. Box 32818, Phoenix, Arizona 85064-4401. Our FAX number is (602) 266-8227. **Demonstration diskettes** containing 4 test applications and a test booklet are available on a 30 day free trial basis. All we ask is that the diskette and test booklet are returned within 30 days.

# SAQ-ADULT PROBATION

The **SAQ-Adult Probation** report is designed for adult probation and parole risk and needs assessment. It is a brief (153 item), easily administered (6th grade reading level) and automated (computer scored) test. The SAQ-Adult Probation evaluates trouble prone clients, detects substance (alcohol and other drugs) abusers, and identifies the emotionally disturbed.

## SIX SAQ-ADULT PROBATION SCALES

- |  |   |
|--|---|
| <b>I. Validity (Truthfulness) Scale:</b> Measures client truthfulness, guardedness, denial and faking.                               | <b>IV. Resistance Scale:</b> Measures client uncooperativeness and resistance to authority, assistance or help. |
| <b>II. Alcohol Scale:</b> Measures alcohol (beer, wine or liquor) abuse and alcohol-related problems.                                | <b>V. Aggressivity Scale:</b> Measures client risk taking behavior, acting-out potential and aggressiveness.    |
| <b>III. Drugs Scale:</b> Measures drug abuse and drug-related problems. Drugs refers to marijuana, cocaine, LSD, crack, heroin, etc. | <b>VI. Stress Coping Ability:</b> Measures how well the client copes with stress, tension and pressure.         |

The **SAQ-Adult Probation** report scores and summarizes six scales in terms of their risk level classification and provides specific risk-related recommendations. "Significant items" are identified, "structured interview" responses are reported, and space is provided for staff comments. **Staff report-writing, substantiation of decision making and record keeping needs are met with SAQ-Adult Probation reports.**

## SAQ-ADULT PROBATION HIGHLIGHTS

- |                                      |  |
|--------------------------------------|--|
| * Designed for probation and parole  | * Sound basis for decision making          |
| * Researched on probation and parole | * Demonstrated reliability and validity    |
| * Available in English and Spanish   | * Strong accountability of recommendations |
| * Sixth grade reading level          | * Truthfulness (Validity) Scale            |
| * Reports available on-site          | * Truth-Corrected Scores                   |
| * State-of-the-art assessment        | * Copyrighted built-in data base           |

**FOR MORE INFORMATION:** call (800) 231-2401 or write Risk & Needs Assessment, Inc., P.O. Box 32828, Phoenix, Arizona 85064-2818. **Demonstration diskettes** containing 4 test applications and a test booklet can be provided upon request. All we ask is that the diskette and test booklet be returned within 30 days.

# **SUBSTANCE ABUSE QUESTIONNAIRE (SAQ)**

SAQ-Adult Probation; SAQ-Adult Probation II; SAQ-SHORT FORM

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## **ADULT ASSESSMENT QUESTIONS AND ANSWERS**

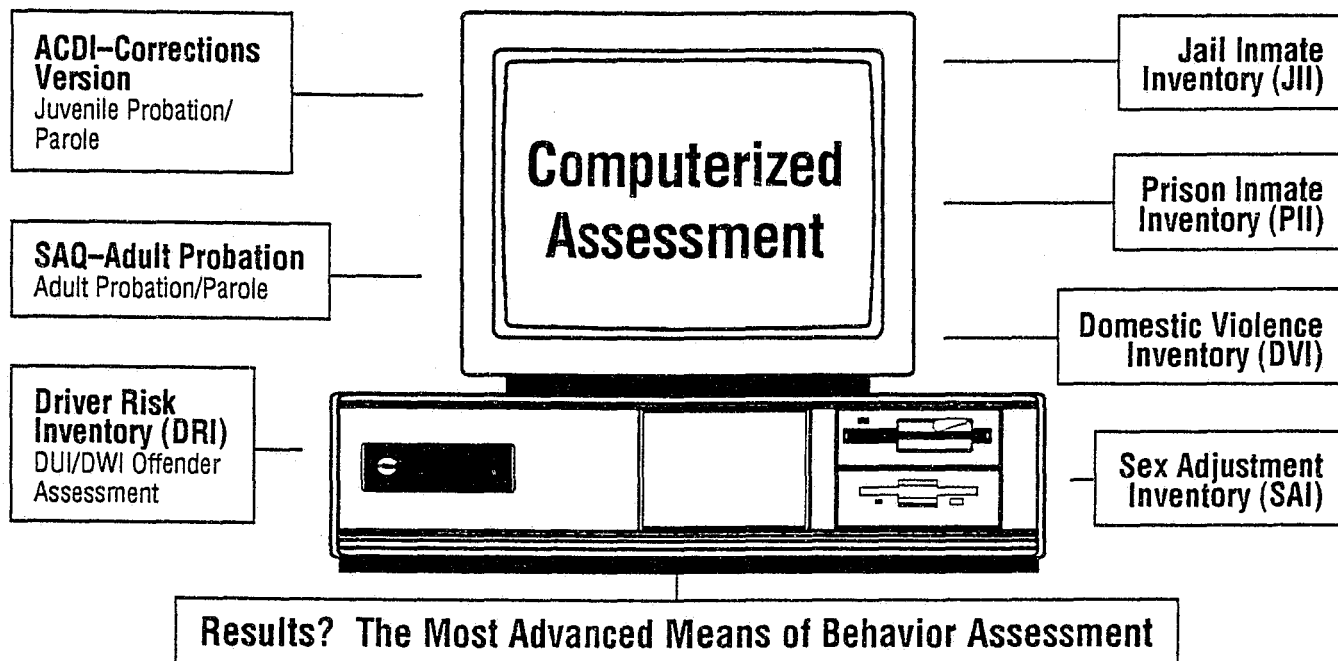
- 1. How do we know when the client is being truthful?** The Truthfulness Scale measures client truthfulness, identifies denial, detects defensiveness, reveals attempts to minimize problems and detects faking.
- 2. If the client lies, how can we get accurate information?** Truth-Corrected scores account for the amount of untruthfulness of the client and are more accurate than raw scores. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide.
- 3. Why is test individualization important?** Any test is designed to obtain specific information from a particular client population and questions vary accordingly. Probation and parole tests differ from DUI/DWI tests and clinical tests. Also, recommendations may vary from one program to another.
- 4. Why standardize a test on the population that will be tested?** The advantages are many and include accuracy, reliability, validity and fairness. We offer to standardize the SAQ-Adult Probation and Version II on a state-by-state basis. When was the last time anyone offered to standardize their test on your probation or parole population? At no additional cost?
- 5. Why is a data base important?** It permits research and annual test program summary--at no additional cost to the test user. SAQ-Adult Probation and Version II copyrighted data base functions are built-in and relate to quality control as well as test-program evaluation. Does your testing program have a built-in data base? At no additional cost?
- 6. Why were the 8 SAQ Version II scales selected?** In addition to identifying client truthfulness and substance abuse involvement, it is important to understand the client's outlook, risk and needs. It measures uncooperativeness, aggressiveness, antisocial attitudes, mental health problems and violence. These 8 scales are all important in recidivism prediction.
- 7. Is the SAQ-Adult Probation or Version II expensive?** These tests are competitively priced, and if you qualify for a volume discount-the price can be even lower. The SAQ saves staff time. Test booklets, training materials, support services, ongoing research and annual summary reports are included free. We believe you will agree that these tests are very affordable state-of-the-art risk and needs assessment instruments.
- 8. How can you evaluate the reading impaired?** The SAQ-SHORT FORM is designed for evaluating the reading impaired and for use in high volume testing settings. The SHORT FORM contains 64 items that can be read to an individual or group in 10 minutes. The SHORT FORM reading level is 4th grade.

**HOW TO PROCEED:** Interested parties should call (800) 231-2401 or write Risk & Needs Assessment, Inc., P.O. Box 32818, Phoenix, Arizona 85064-2818. Our FAX number is (602) 266-8227. **Demonstration diskettes** containing 4 test applications and a test booklet are available on a 30 day free trial basis. All we ask is that the diskette and test booklet are returned within 30 days.

# RISK & NEEDS ASSESSMENT, INC.

## A movement is sweeping the country.

It is called automated assessment. People are discovering what we call the "new generation of assessment." It consists of computerized testing that is objective, accurate, and cost effective. Tests can be administered directly on the computer screen or in paper-and-pencil format. Regardless of how the tests are given, they are scored on IBM-PC compatible computers which generate on-site reports within minutes of test completion. Risk & Needs Assessment, Inc. provides a full menu of computer-scored tests that are designed for probation/parole programs, the criminal justice system, and community-based corrections programs.



### Six Important Assessment Questions and Answers

**How do you know when the client is truthful?** The Validity (Truthfulness) Scale measures truthfulness and identifies guarded clients that deny, minimize or attempt to conceal information.

**If the client lies, how can we get accurate test information?** Truth-corrected scores are more accurate than raw scores. Raw scores show what the client wants you to know. Truth-corrected scores reveal what the client is attempting to hide.

**Why is a test's database important?** It permits ongoing research and annual testing program summaries. These database functions relate directly to quality control and annual program evaluation, while ensuring inclusion of your test data in annual restandardization research.

**Why is it important to standardize a test on the population that will be tested?** The advantages are many, including accuracy, reliability, validity and fairness. Risk & Needs Assessment tests are standardized on a state-by-state basis, and directly on client populations. When was the last time anyone offered to standardize their test on your client population?

**Why is test individualization important?** Because state laws, departmental requirements, client demographics, and program needs vary. Each test is designed to obtain specific information from a particular client population.

**Are demonstration kits available?** Free demonstration diskettes (accompanied with a test booklet) containing four test applications can be provided on a 30-day trial basis.

For more information on cost-effective solutions to your assessment needs, call (602) 234-2888, or write: Risk & Needs Assessment, Inc., P.O. Box 32818, Phoenix, Arizona 85064-4401.

# SAQ - ADULT PROBATION INTRODUCTION

**PURPOSE:** The SAQ-Adult Probation report is designed specifically for adult probation department offender's risk evaluation and screening. The SAQ-Adult Probation report is helpful in evaluating substance (alcohol and other drugs) abusers, violence-prone offenders and emotionally disturbed individuals. Risk levels are calculated on six measures or scales each time an SAQ-Adult Probation test is administered and specific risk level-related recommendations are made in each report. Specific probation and treatment recommendations are presented along with "significant items," a structured interview, and much more.

**ADMINISTRATION:** Both the SAQ and the SAQ-Adult Probation version use the same 151-item test which requires a 6th grade reading level. The SAQ-Adult Probation version requires approximately 25 minutes to complete. Both the SAQ and the SAQ-Adult Probation version use the same test booklet, answer sheet, software programs and expanding data base. However, the reports generated by these two tests vary in format, recommendations and length.

**RESULTS:** SAQ-Adult Probation reports summarize six measures or scale scores, perform risk level classification on these six empirically based measures and present specific risk-related recommendations. "Significant items" are identified, structured interview responses are reported and space is also provided for staff observations and recommendations. Staff report-writing, substantiation of decision-making, and record keeping needs are met with SAQ-Adult Probation reports.

## DESCRIPTION

**TEST DESCRIPTION:** The SAQ-Adult Probation test is a self-administered risk evaluation and screening system that can be given on the computer screen or in paper-and-pencil test booklet format.

**STANDARDIZATION:** SAQ-Adult Probation research and norms are based on a national sample of male and female substance (alcohol and other drugs) abusers in probation and court-related settings. The SAQ has been validated with the MMPI, polygraph examinations and other psychometric tests.

**EXPANDING DATA BASE:** SAQ-Adult Probation software was designed to "save and retrieve" test data in a confidential (no names) manner. Theoretically, every SAQ-Adult Probation test that is administered may be placed in this expanding data base for subsequent research analysis.

**SAQ REPORT:** The 3-page SAQ-Adult Probation report summarizes all scale scores along with their risk level classification and presents specific risk-related recommendations for each of the 6 scales or measures.

## SAQ MEASURES

**I. VALIDITY SCALE:** This scale measures how truthful the offender was while completing the SAQ-Adult Probation. It also identifies defensiveness, denial, and malingering as well as the reading impaired.

**II. ALCOHOL SCALE:** This scale measures the frequency and magnitude of alcohol-related problems. Alcohol-related risk classification and recommendations are provided.

**III. DRUGS SCALE:** This scale measures drug use or abuse-related problems. Without a drug scale many drug abusers would remain undetected.

**IV. AGGRESSIVITY SCALE:** This scale measures risk-taking behavior, acting-out potential and aggressiveness. Aggressivity is an important trait in substance abuse-related violence.

**V. RESISTANCE SCALE:** This scale measures resistance, uncooperativeness and defensiveness.

**VI. STRESS COPING ABILITY:** This scale is a measure of the offender's ability to cope effectively with stress, tension, and anxiety. This measure correlates highly with mental health problems.

## UNIQUE SAQ - ADULT PROBATION FEATURES

- Report specifically designed for adult probation.
- Researched and normed on adult probation offenders.
- Sound empirical basis for decision making.
- Strong accountability of recommendations to the court.
- Software has "expanding data base" capability.
- Demonstrated reliability, validity and objectivity.
- Available on 3 1/2" and 5 1/4" IBM-PC compatible floppies
- Reports can be modified to departmental needs.
- 151-item self-report questionnaire or test.
- Test booklets available in English and Spanish.
- Sixth (6th) grade reading level required.
- Takes approximately 25 minutes to administer.
- Contains 6 empirically based measures.
- Reports available within minutes, on-site.
- Software designed specifically for on-site use.
- State-of-the-art in offender risk evaluation.



## SAQ-ADULT PROBATION

**PURPOSE:** The SAQ-Adult Probation is designed for adult probation client assessment. Reports evaluate client truthfulness, resistance, aggressiveness, stress-related problems and substance (alcohol and other drugs) abuse.

**DESCRIPTION:** The SAQ-Adult Probation consists of 153 items, requires a 6th grade reading level, and takes 25 minutes to complete. It can be given on a computer screen or in paper-and-pencil test booklet format. Regardless of how the SAQ-Adult Probation is given, all tests are scored on IBM PC compatible computers that print reports on-site within 4 to 5 minutes of test completion.

### **SIX SAQ-ADULT PROBATION SCALES**

- I. **VALIDITY (TRUTHFULNESS) SCALE** determines client truthfulness while completing the test. This scale detects defensive, guarded and malingering clients. It also identifies the reading impaired.
- II. **ALCOHOL SCALE** measures the frequency and magnitude of alcohol-related problems. This scale provides alcohol-specific probation and treatment recommendations.
- III. **DRUGS SCALE** measures drug use and abuse problems. This scale identifies drug abuse independent of alcohol involvement.
- IV. **AGGRESSIVITY SCALE** determines the client's risk taking potential, acting-out tendencies and aggressiveness, e.g., aggressive to combative.
- V. **RESISTANCE SCALE** identifies uncooperative, resistant and defensive attitudes or behavior, e.g., passive-aggressive to overt defiance. Measures resistance to structure, authority or help.
- VI. **STRESS COPING** refers to the client's ability to cope effectively with stress, tension and pressure. High scores are indicative of identifiable mental health problems.

**PROCEDURE:** SAQ-Adult Probation test are provided on diskettes (3 1/2" or 5 1/4") containing 50 test applications. These diskettes contain everything needed to score tests and print out reports. The computer program is "menu driven" so that users simply follow instructions on the screen. It's easy to use. To order, call (602) 234-2888 or write Risk & Needs Assessment, Inc., P.O. Box 32818, Phoenix, Arizona 85064-4401.

**COST: \$5.00 per test.** The SAQ-Adult Probation is affordable. And, if you qualify for additional volume discounts the price will be even lower. There are no start-up or hidden costs. Upgrades, research, orientation and support services are included at no extra cost.

**NO RISK TRIAL:** A demonstration SAQ-Adult Probation diskette containing 4 test applications can be provided--at no cost or obligation. All we ask is that you return the diskette and test booklet within 30 days.

**RISK AND NEEDS ASSESSMENT, INC., P.O. BOX 32818, PHOENIX, ARIZONA 85064-4401**

## SAQ-ADULT PROBATION II

The SAQ-Adult Probation II is designed for adult probation and parole risk and needs assessment. It is a brief self-administered test that is easily administered (paper-and-pencil) and automated (computer scored). Reports can be available on-site within 5 minutes of test completion.

There are two versions of the SAQ: the SAQ-Adult Probation (153 items and 6 scales) and the SAQ-Adult Probation II (169 items and 8 scales). A new Violence Scale has been added to Version II and a unique recidivism prediction formula included.

### EMPIRICALLY BASED SCALES

**I. Validity (Truthfulness) Scale:** measures client truthfulness, detects denial and identifies faking.

**II. Alcohol Scale:** measures alcohol proneness and the magnitude of alcohol-related problems.

**III. Drug Scale:** measures drug (marijuana, crack, cocaine, heroin, etc.) abuse and drug-related problems.

**IV. Resistance Scale:** measures client's defensiveness and uncooperativeness.

**V. Aggressivity Scale:** measures dominating, argumentative, pushy and controlling behavior.

**VI. Antisocial Scale:** measures antisocial behavior, e.g., lying, failure to pay debts, uncaring, irresponsible, etc. This is a new SAQ-Adult Probation II Scale.

**VII. Violence Scale:** measures use of physical force to injure, damage or destroy. Identifies danger to self or others. This scale is new in the SAQ-Adult Probation II.

**VIII. Stress Coping Abilities Scale:** measures ability to cope effectively with stress, tension and pressure. Reflects client's mental health.

### PREDICT RECIDIVISM

Interested agencies/departments are invited to participate in SAQ-Adult Probation II recidivism research, which will involve testing (in 1993) and one year recidivism follow-up. Throughout their research involvement, participants will be provided research summary findings. Interested parties should contact Risk & Needs Assessment, Inc.

### SAQ-SHORT FORM

Many estimate 25% or more of adult probationer's and parolee's are reading impaired. It is not enough to just lower a test's reading level because many defendants are functionally illiterate. However, the SAQ-SHORT FORM is designed for reading impaired client assessment. The SHORT FORM consists of 64 items that can be read to an individual or group in 10 minutes. The SHORT FORM contains four scales: Truthfulness Scale, Alcohol Scale, Drug Scale and Risk Scale. The SHORT FORM is designed for reading impaired assessment and can be used in high volume testing settings.

**HOW THE SAQ-ADULT PROBATION II SYSTEM WORKS:** diskettes contain 51 test applications for on-site use, and we only charge for 50. Diskettes contain all of the software needed for use on IBM PC compatibles. Software is menu driven so users can simply follow instructions on the screen. Advisory messages assist throughout the scoring process. Tests can be given directly on the computer screen or in paper-and-pencil test booklets. Regardless of how tests are administered, all tests are scored on IBM-PC compatibles, which also print the reports. Reports are printed on-site within 5 minutes of test completion.

**DEMONSTRATION DISKETTES** containing 4 test applications and a test booklet are available on a 30 day free trial basis. All we ask is that you return the diskette and test booklet within 30 days.