Self-Audit

An Inventory of Scientific Findings

Professional Online Testing Solutions, Inc.
www.online-testing.com
info@online-testing.com

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INTRODUCTION

SELF-AUDIT

Over the past decade we have witnessed dramatic changes in health care systems, particularly in mental health, chemical dependency and counseling. There is renewed emphasis upon objective and accurate problem identification, appropriate referral and documented outcome. Decisions regarding the type of intervention needed, changes in inpatient-outpatient status, continuation or completion of treatment and effectiveness of treatment are now subject to review. Provider accountability, utilization review and substantiation of decision making are here to stay.

The Self-Audit was developed to help meet these needs. The Self-Audit combines objective assessment with the client's perception of his or her own needs. As Ulenhuth (1970) observed, "it is the patient's opinion with all its biases that is most relevant for the initiation and maintenance of treatment." The Self-Audit enables staff to compare patient's opinions with empirically based objective measures of client problems and need.

This document is a cumulative research record of the evolution of the Self-Audit into a state-of-the-art clinical assessment instrument. It should be noted that research studies are presented chronologically, from 1980 to the present, in the same order each of the research analyses was done. **Recent studies are most representative of the Self-Audit.** No attempt has been made to incorporate all Self-Audit research into this document. However, it is representative of the Self-Audit's reliability, validity and accuracy.

The Self-Audit is an automated computerized assessment instrument designed for use at intake (pre-treatment) and post-treatment intervals. It enables comparison of client status prior to, during and upon treatment completion. The proprietary Self-Audit database ensures continued research and development. The Self-Audit is a brief, easily administered and automated (computer scored) test that is designed for clinical assessment. It includes true/false and multiple choice items and can be completed in 30 to 35 minutes. The Self-Audit contains nine empirically based scales: Truthfulness, Resistance, Violence, Alcohol, Drugs, Distress, Morale, Self-esteem, and Stress Coping Abilities. The Self-Audit has been researched on outpatients, inpatients, college students and others.

The Self-Audit report explains client's attained scores and makes specific intervention and treatment recommendations. It also presents Truth-Corrected scores, significant items, a concise "structured interview" and much more. The Self-Audit is designed to measure the severity of problems in clinical and court settings. It is a risk and needs assessment instrument. The Self-Audit has demonstrated reliability, validity and accuracy. It correlates impressively with both experienced staff judgment and other recognized tests.

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

Information on the Self-Audit is available in the Self-Audit Orientation & Training Manual. Computer scoring information is contained in the Self-Audit Computer Operating Guide. Each of these manuals can be obtained upon request.

NINE SELF-AUDIT SCALES (MEASURES)

1. **Truthfulness Scale:** measures the truthfulness of the client while they were completing the Self-Audit. This scale identifies self-protective, defensive or guarded people who minimize or even fake answers. This type of scale is considered necessary, if not essential, in any objective assessment instrument. In most referral and

treatment settings, clients are cooperative and positively responsive to assessment procedures. However, it would be very naïve to believe that all clients answer all assessment questions truthfully. All interview and self-report test information is subject to the dangers of untrue answers due to defensiveness, guardedness, or deliberate falsification. The Truthfulness Scale also identifies clients who are reading impaired.

2. Resistance Scale: measures a person's self-reported willingness (or resistance) to work with others in a cooperative and non-defensive environment. Resistance is defined in terms of a person's willingness (or resistance) to positively work with or relate to others. It incorporates communication, attitude toward others, acceptance, mutual assistance and affiliation activation. The Resistance Scale identifies negative interpersonal relationships, negative attitudes toward authority figures and a high propensity toward "people problems."

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

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

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

4. Alcohol Scale: The Alcohol Scale measures the client's alcohol proneness and alcohol-related problems. This scale was developed with the assistance of experienced chemical dependency program staff. Item selection was based on relevance and comprehensiveness employing a rational consensual agreement procedure. Final item selection is based on each item's statistical properties.

Alcoholism is a significant problem in our society. Woolfolk and Richardson note in "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 and pain associated with alcohol-related problems are staggering.

5. Drugs Scale: The burgeoning awareness of the impact of illicit drugs emphasizes the need for any clinical assessment to differentiate between licit and illicit drugs. The Drugs Scale is an **independent** measure of the client's drug-related problems. Without this type of scale many drug abusers would remain undetected. Thus, the Self-Audit differentiates between "alcohol" and "drug" abuse or licit versus illicit drugs. Increased public awareness of drug (marijuana, cocaine, crack, heroin, etc.) abuse emphasizes the importance of a drug scale.

The national outcry in the 1980's concerning cocaine momentarily obscured the fact that a number of other substances are also being abused--including marijuana, cocaine, crack, LSD, heroin, etc. The prevalence of drug-related problems is increasing. The Drugs Scale provides insight into areas of inquiry that may need to be pursued in counseling and treatment.

6. Distress Scale: measures sorrow, misery, pain and suffering. Distress incorporates pain (physical and mental), physical and mental abuse, agony and anguish. Distress involves both mental and physical pain and

strain. This Distress Scale was adopted from other clinical tests in which it is used.

7. Morale Scale: measures the client's mental state or outlook with respect to enthusiasm, confidence and willingness to work through difficult problems and hardships.

8. Self-Esteem Scale: reflects a client's explicit valuing and appraisal of self. Self-esteem incorporates an attitude of acceptance-approval versus rejection-disapproval. Self-esteem refers to a person's perception of self.

9. Stress Coping Abilities Scale: establishes how well the client copes with stress. The National Institute for Occupational Safety and Health (NIOSH) evaluated the health records of 22,000 workers in 130 organizations. **Their conclusion: stress affects workers in all types of job levels; unskilled laborers are equally susceptible, as are top-line executives.** Stress exacerbates symptoms of emotional and mental health problems.

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

The following studies summarize research conducted on a variety of clients, e.g., substance abuse inpatients/outpatients, vocational rehabilitation clients, people applying for jobs, victims, college students, municipal court diversion defendants, etc.

Self-Audit research is presented chronologically in the order it was conducted. Chronological presentation enables the reader to follow the evolution of the Self-Audit into a state-of-the-art automated (computerized) screening instrument. More recent studies (toward the end of this document) are most representative of current Self-Audit statistics.

SELF-AUDIT RESEARCH

STRESS QUOTIENT

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

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

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

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

Validation Study 1: This study was conducted (1980) to compare SQ scores between High Stress and Low Stress groups. The High Stress group (N=10) was comprised of 5 males and 5 females. Their average age was 39. Subjects for the High Stress group were randomly selected from outpatients seeking treatment for stress. The Low Stress group (N=10) was comprised of 5 males and 5 females (average age 38.7) randomly selected from persons not involved in treatment for stress. High Stress group SQ scores ranged from 32 to 97, with a

mean of 64.2. Low Stress group SQ scores ranged from 82 to 156, with a mean of 115.7. The t-test statistical analysis of the difference between the means of the two groups indicated that the High Stress group had significantly higher SQ scores than the Low Stress group ($t = 4.9$, $p < .001$). This study shows that the SQ or Stress Coping Abilities Scale is a valid measure of stress coping. The Stress Coping Abilities Scale significantly discriminates between high stress individuals and low stress individuals.

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

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

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

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

Validation Study 5: Psychotherapy outpatient clients were used in this validation study (1982) that evaluated the relationship between selected Wiggin's MMPI (Minnesota Multiphasic Personality Inventory) supplementary content scales (ES & MAS) as criterion measures and the SQ scale. ES measures ego strength and MAS measures manifest anxiety. It was predicted that the ES and SC correlation would be positive, since people with high ego strength would be more likely to possess good coping skills. Similarly, it was predicted that MAS and S correlation's would be positive, since people experiencing high levels of manifest anxiety would also likely experience high levels of stress. The subjects were 51 psychotherapy outpatients ranging in age from 22 to 56 years with an average age of 34. There were 23 males and 28 females. The MMPI and the SQ were administered in counterbalanced order. The correlation (product-moment correlation coefficient) results indicated that ES and CS were positively significantly correlated ($r = .29$, $p<.001$). MAS and S comparisons resulted in an r of .54, significant at the $p < .001$ level. All results were significant and in predicted directions.

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

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

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

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

The correlation (product-moment correlation coefficient) results between the Stress Quotient (SQ) and selected

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

Validation Study 9: In a replication of earlier research, a study (1986) was conducted to further evaluate the reliability and validity of the Stress Quotient (SQ). The participants were 212 inpatients in chemical dependency programs. There were 122 males and 90 females with an average age of 44. The SQ and MMPI were administered in counterbalanced order. Reliability analysis of the SQ scale resulted in a Coefficient Alpha of 0.986 ($F = 27.77$, $p<.001$). Highly significant inter-item scale consistency was again demonstrated. Rounded off, the **Coefficient Alpha for the SQ was 0.99**.

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

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

SELF-AUDIT RESEARCH

Self-Audit is designed to evaluate people at intake in clinical and court settings. The Self-Audit has a long history of research and development, much of which is contained in the following summary. **Self-Audit research is reported in a chronological format, reporting studies as they occurred.** This gives the reader the opportunity to see how the Self-Audit evolved into a state-of-the-art risk and needs assessment instrument. For current information refer to the more recent studies near the end of this research section.

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

10. A Study of Self-Audit Test-Retest Reliability

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. Psychometric principles and computer technology insures Self-Audit 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 correlation coefficient. In this type of study, the test is administered to a group and then the same test is re-administered to the same group at a later date.

Method

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

Results

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

11. Validation of the Truthfulness Scale

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

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

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

Method

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

Results

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

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

the test honestly.

12. Validation of Five Self-Audit Scales using Criterion Measures

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

Method

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

Results and Discussion

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

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

Table 1. (1985) Product-moment correlations between MMPI scales and Self-Audit scales

MMPI SCALES	**Self-Audit Scales (Measures)**				
(MEASURES)	**Truthfulness**	**Alcohol**	**Drugs**	**Resistance**	**Stress Coping**
L (Lie) Scale	0.72	-0.38	-0.41	-0.29	0.53
Psychopathic Deviant	-0.37	0.52	0.54	0.27	-0.59
Psychasthenia	-0.34	0.38	0.41	0.37	-0.68
Social Maladjustment	-0.25	0.34	0.26	0.35	-0.54
Authority Conflict	-0.43	0.31	0.47	0.55	-0.46
Manifest Hostility	-0.45	0.34	0.47	0.57	-0.58
Taylor Manifest Anxiety	-0.58	0.47	0.46	0.50	-0.78
MacAndrew	-0.40	0.58	0.62	0.26	-0.33
Social Alienation	-0.47	0.35	0.45	0.48	-0.67

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

The **Alcohol Scale** correlates significantly with all represented MMPI scales. This is consistent with the conceptual definition of the Alcohol Scale and previous research that has found that alcohol abuse is associated

with mental, emotional and physical problems. Of particular interest are the highly significant correlation's with the MacAndrew (r = 0.58) Scale and the Psychopathic Deviant (r = 0.52) Scale. High MacAndrew and Psychopathic Deviant scorers on the MMPI are often found to be associated with substance abuse. Similarly, the **Drugs Scale** correlates significantly with the MacAndrew (r = 0.62) Scale and the Psychopathic Deviant (r = 0.54) Scale.

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

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

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

13. Inter-item Reliability of the Self-Audit

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

Method

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

Results and Discussion

The inter-item reliability coefficient alpha and within-test reliability statistics are presented in Tables 2 and 3, respectively. All inter-item reliability coefficient alphas and within-test reliability F-values are significant at $p<.001$. These results supports the reliability of the Self-Audit. The Self-Audit is a highly reliable instrument.

Table 2. Inter-item reliability, coefficient alpha. (1985)
Outpatients, Substance Abuse Inpatients and Job Applicants (N = 389)

SELF-AUDIT SCALES	N ITEMS	Outpatients (N = 100)	Inpatients (N = 100)	Job Applicants (N = 189)
Truthfulness Scale	21	0.81	0.79	0.81
Resistance Scale	21	0.74	0.74	0.61
Alcohol Scale	21	0.86	0.93	0.83
Drugs Scale	21	0.80	0.85	0.79
Stress Coping Abilities	40	0.81	0.84	0.73

Table 3. Within-test reliability, F statistic. All F statistics are significant at p<.001.

SELF-AUDIT MEASURES	N ITEMS	Outpatients (N = 100)	Inpatients (N = 100)	Job Applicants (N = 189)
Truthfulness Scale	21	21.73	53.15	45.91
Alcohol Scale	21	9.29	31.46	47.75
Drugs Scale	21	27.19	16.34	58.18
Resistance Scale	21	15.97	19.21	23.67
Stress Coping Abilities	40	46.74	16.20	195.86

These results (Tables 2 and 3) demonstrate the impressive reliability of the Self-Audit. Reliability was demonstrated with three different groups of people (outpatients, inpatients and job applicants) taking the Self-Audit.

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

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

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

Because each sample may have scored differently from the other two samples, the data for all subjects were combined. For example, job applicants may score low on the Alcohol and Drugs Scales and inpatient clients may score high. By combining the data, scale scores would likely be distributed from low to high and result in even better coefficient alphas than each sample separately. Table 4 presents the inter-item reliability analysis of all of these independent studies (N = 100, N = 100, N = 189) combined (N = 389).

The combined data shows that all but one coefficient alpha increased in the combined data compared to coefficient alphas of each subject sample alone. These coefficient alphas in the combined data are very high and provide strong support for the reliability of the Self-Audit.

Table 4. Inter-item reliability, coefficient alpha. All data combined (1985, N = 389). All F statistics are significant at p<.001.

SELF-AUDIT MEASURES	N ITEMS	COEFFICIENT ALPHA	F VALUE
Truthfulness Scale	21	0.82	96.93
Resistance Scale	21	0.77	53.03
Alcohol Scale	21	0.94	26.68
Drugs Scale	21	0.88	79.71
Stress Coping Abilities	40	0.85	150.78

14. Relationships between Selected Self-Audit Scales and Polygraph Examination

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

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

Method

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

Results

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

In summary, this study supports the validity of the Self-Audit Truthfulness Scale, Alcohol Scale and Drugs Scale. There were strong positive relationships between the selected Self-Audit scales and the Polygraph examination. The highly significant product-moment correlations between Self-Audit scales and Polygraph examinations demonstrates the validity of the Self-Audit Truthfulness, Alcohol and Drugs Scales.

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

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

15. Validation of Self-Audit Scales

The Self-Audit is an assessment instrument. It is designed for use in intake-referral settings, inpatient and outpatient treatment programs, court-related assessments, diversion programs and probation departments. The

Self-Audit is a specific test designed for a specific population. The present study (1987) was conducted to validate Self-Audit scales.

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

Method

The subjects used in the study were 212 inpatients in chemical dependency facilities. The Self-Audit and MMPI were administered in counterbalanced order.

Results and Discussion

The product-moment correlation results are summarized in Table 5. Since this study is important in understanding Self-Audit validity, each Self-Audit scale is briefly summarized below. (N=212):

Table 5. Self-Audit-MMPI Product-moment Correlations (1987, N=212)

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

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

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

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

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

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

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

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

16. Replication of Self-Audit Reliability in a Sample of Inpatient Clients

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

Method and Results

The Self-Audit was administered to 192 inpatients in a chemical dependency facility. The inter-item coefficient alpha statistics are presented in Table 6. These results are in close agreement to reliability results obtained in an earlier study using chemical dependency inpatient clients. In some cases the coefficient alphas are higher in the present study as in the previous study. The results of the present study support the reliability of the Self-Audit.

Table 6. Inter-item reliability, coefficient alpha.
Chemical dependency inpatients (N = 192).

SELF-AUDIT MEASURES	N ITEMS	COEFFICIENT ALPHA	F VALUE	P VALUE P<
Truthfulness Scale	21	0.79	13.28	0.001
Alcohol Scale	21	0.92	24.39	0.001
Drugs Scale	21	0.87	22.23	0.001
Resistance Scale	21	0.81	10.92	0.001
Stress Coping Abilities	40	0.99	27.77	0.001

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

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

17. Validation of Self-Audit Scales Using DWI Evaluator Ratings

This study (1987) was designed to demonstrate the relationship between Self-Audit scales and DWI evaluator ratings, i.e., concurrent validity. Participating DWI evaluators had over six years expertise in DWI offender assessment. Evaluators were instructed to complete their normal and usual screening procedures "prior to rating" clients on the scales incorporated into the Self-Audit, i.e., the Alcohol and Drugs Scales. Evaluators were "blind" in the sense that they did not have any knowledge of scale scores at the time of their ratings.

Method and Results

There were 563 DWI offenders included in this study (1987). The participants completed the Self-Audit as part of normal DWI screening and evaluation procedures. Results of staff (evaluator) ratings and scale scores (Alcohol and Drugs Scales) are presented in Table 7. As sown in the table below, the product-moment correlation coefficients between staff ratings and scale scores are highly statistically significant at p<.001.

Table 7. Agreement Coefficients between Evaluator Ratings and Self-Audit Scale Scores (1987, N=563)

Self-Audit Scales	Agreement Coefficient	Significance Level
Alcohol Scale	.63	P<.001
Drugs Scale	.54	P<.001

It should be noted that these experienced evaluators invested considerable time in reviewing available records and interviewing each client. In contrast, scale scores were arrived at after 25 minutes of testing time. These results strongly support the validity of the Alcohol and Drugs Scales. Concurrent (criterion related) validity is demonstrated.

In addition, product-moment correlations were computed between these scales and the MAST, Sandler and Court Screening procedures used by these experienced evaluators. These results are represented in Table 8.

Table 8. Product-moment correlations (1987, N=563)
Mast, Sandler, and Court Procedures

Self-Audit Scales	Mast	Sandler	Court Procedure
Alcohol Scale	.68	.46	.80
Drugs Scale	.37	.11	.32

These results support the validity (criterion) of the Self-Audit scales (Alcohol and Drugs Scales). The highest coefficient is between the Alcohol Scale and Court Procedure, indicating that both procedures are essentially

reflecting the same information. The Court Procedure involved a review of court records (DUI priors, BAC level, substance abuse-related convictions, MAST results and Sandler scores). These findings support the validity of the Alcohol and Drugs Scales.

Although researchers look for high coefficients, any positive correlation indicates that predictions from the test will be more accurate than guesses. Whether a validity coefficient is high enough to permit use of the test as a predictor, depends upon numerous factors, such as the importance of prediction and evaluation cost.

And, any statistics has a variation from one sample to another. Even if subjects are drawn randomly from the same population, criterion coefficients between variables will differ from sample to sample. Using a large sample makes the correlation more dependable. Correlations between a test and criterion are called validity coefficients, coefficients of productivity and concurrent validity. Concurrent validity procedures involve administering a test and comparing test results with identifiable criterion of performance.

18. Validation of Self-Audit Scales Using the Mortimer-Filkins Test

In this study (1988), Self-Audit Alcohol and Drugs Scale scores were validated with Mortimer-Filkins total scores. The Product-moment correlations are presented in Table 9. There were 1,299 participants included in the study.

Table 9. Product-moment correlations. (1988, N = 1,299)
Mortimer-Filkins versus Self-Audit Alcohol And Drugs Scales

Self-Audit Measures	First Sample Coefficients	Second Sample Coefficients
Alcohol Scale	.451	.323
Drugs Scale	.240	.237

The Mortimer-Filkins total score correlate highly significantly ($p<.001$) with the Self-Audit Alcohol Scale and Drugs Scale. These high correlations support the validity of the Alcohol and Drugs Scales.

19. Validation of Self-Audit Scales Using the MacAndrews Scale

This study (1989) evaluated relationships between the MacAndrews Scale (in the Minnesota Multiphasic Personality Inventory) and the Self-Audit Alcohol Scale and Drugs Scale. Product-moment correlations are reported in Table 10. There were 1,181 participants included in the study.

Table 10. Product-moment correlations. (1989, N = 1,181)
Macdrews Scale versus Self-Audit Alcohol and Drugs Scales

Self-Audit Measures	MacAndrews	Significance Level
Alcohol Scale	.1660	P<.02
Drugs Scale	.1694	P<.02

A positive correlation is demonstrated between the MacAndrews Scale and the Self-Audit Alcohol Scale and Drugs Scale. These results support the concurrent validity of the Self-Audit Alcohol Scale and the Drugs Scale.

20. Validation of Self-Audit Scales Using SAQ Scales as Criterion Measures

This study (1989) compared the Substance Abuse Questionnaire (SAQ) with the Self-Audit. The SAQ has been demonstrated to be a valid, reliable and accurate adult assessment instrument. The Self-Audit is designed for court or treatment intake assessment. It contains nine measures or scales: Truthfulness, Resistance, Violence, Alcohol, Drugs, Distress, Morale, Self-Esteem and Stress Coping Abilities. Five of these nine Self-Audit scales

are analogous (although independent) and directly comparable to SAQ measures or scales. The SAQ is designed for adult offender evaluation. The SAQ contains six measures or scales: Truthfulness, Alcohol, Drugs, Aggressivity, Resistance and Stress Coping Abilities.

Although the scales designated Truthfulness, Alcohol, Drugs, Resistance and Stress Coping Abilities are independent and differ in the Self-Audit and SAQ, they were designed to measure similar behaviors or traits. Thus, although essentially composed of different test questions in the Self-Audit and SAQ test booklets, these comparable measures or scales do have similarity.

Method

The Self-Audit and SAQ were administered in group settings to 154 adult offenders, in counter balanced order. All of the subjects in this study were male inmates. The demographic composition was as follows. There were 98 Caucasians, 25 Hispanics, 13 Native American, 12 Blacks and six other ethnicity's. 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 participant completed both the Self-Audit and the SAQ. Although all inmates volunteered to participate in this study, inmate motivation varied.

Results and Discussion

The results of this study are presented in Table 11. The results demonstrate highly significant relationships between the analogues Self-Audit and SAQ scales. The SAQ has been shown to be a valid measure of substance abuse in adult offenders, hence, these correlation results support the validity of the Self-Audit.

It was noted that inmate motivation varied widely. This is evident in the Stress Coping Abilities correlation coefficient of .7642. Even though this is a highly significant correlation ($p<.001$), the Agreement Coefficient could be expected to be even higher because these scales were nearly identical and only differed by the number of test 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 validity of the Self-Audit has been demonstrated on a sample of incarcerated offenders.

Table 11. Product-moment correlations 1988 study of male inmates (N = 154).
All product-moment correlations are significant at p<.001.

SAQ versus Self-Audit Scales	Agreement Coefficients
Truthfulness Scale	.6405
Alcohol Scale	.3483
Drugs Scale	.3383
Resistance Scale	.6129
Stress Coping Abilities	.7642

These results support the relationships between independent, but analogous SAQ and Self-Audit scales. Correlation coefficients for this study are presented in Table 11. And, these concurrent validity findings support the accuracy of the Self-Audit Truthfulness Scale, Alcohol Scale, Drugs Scale, Resistance Scale, and Stress Coping Abilities Scale. These Self-Audit scales measure what they were intended to measure.

21. Validation of the Self-Audit Self-Esteem Scale

This study (1990) evaluated ratings between experienced counselors and the Self-Audit Self-Esteem Scale. These counselors had at least 8 years experience and an MA degree in counseling. Two counselors rated each client's self-esteem. They reviewed client outpatient files containing court histories, progress notes, diagnoses,

MMPI and Incomplete Sentence materials. Each patient was interviewed for a minimum of 30 minutes. Product-moment correlation coefficients were calculated for each rater and are presented in Table 12.

Table 12. Staff Ratings and Self-Audit Self-Esteem Scale (1990, N=89)
Product-moment correlation coefficients significant at p<.05.

Self-Audit Scale	First Rater	Second Rater
Self-Esteem	.11	.18

The results of this study show that staff ratings of client's self-esteem and the Self-Audit Self-Esteem Scale are statistically significantly correlated. These results support the accuracy of the Self-Audit Self-Esteem Scale. Even though this study was completed over a six month period, all comparisons were significant.

22. Validation of the Self-Audit with MMPI Scales as Criterion Measures

This study (1990) validated Self-Audit scales using analogous scales from the MMPI. The Self-Audit Truthfulness Scale was correlated with the MMPI L (Lie) Scale. The Self-Audit Alcohol Scale and Drugs Scale were correlated with the MMPI MacAndrews Scale and Psychopathic Deviate Scale. The Self-Audit Stress Coping Abilities Scale was correlated with the Hypomania (Mam) and Taylor Manifest Anxiety (MAS) Scales. The Self-Audit Self-Esteem Scale was correlated with the Psychasthenia (PT) and the Social Alienation (SOA) Scales.

Method and Results

The participants in this study (1990) were 100 chemical dependency inpatients. Tests were administered in counterbalanced order. Product-moment correlation coefficients between analogous Self-Audit and MMPI scale scores are discussed individually.

The **Truthfulness Scale** (L, r=0.72) correlates highly significantly with the MMPI Lie (L) Scale. Although independent of each other, the MMPI - L Scale and the Self-Audit - Truthfulness Scale are conceptually similar. Each consists of items that most people agree or disagree with. And, they both determine client honesty. The **Alcohol Scale** correlates significantly with the MacAndrews Alcohol (ALC, r=0.58) Scale and the Psychopathic Deviate (PD, r=0.52) Scale. The **Drugs Scale** correlates significantly with the MacAndrews (ALC, r=0.62) Scale and the Psychopathic Deviate (PD, r=0.54) Scale. High PD and ALC scores on the MMPI are often associated with substance abuse. The **Stress Coping Abilities Scale** correlates significantly with the Hypomania (Mam r=0.37) and Taylor Manifiest Anxiety (MAS, r=0.78) Scales. The **Self-Esteem Scale** correlates significantly with the Psychasthenia (PT, r=0.34) and the Social Alienation (SOA, r=0.36) Scale.

All correlations were highly statistically significant. These results strongly support the validity of the Self-Audit. Validity refers to a test measuring what it is purported to measure. The Self-Audit is an accurate assessment instrument. The Self-Audit measures what it is designed to measure.

23. A Study of Sex Differences in the Self-Audit

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

Method

There were three subject samples included in the present study. Group 1 consisted of 446 adults. Group 2 consisted of 294 adults. Group 3 consisted of 846 adults. The Self-Audit was administered to each participant individually as part of routine evaluation programs at each location.

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

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

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

Results and Discussion

Reliability coefficient alpha results are presented in Table 13.

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

Table 13. Reliability statistics, coefficient alpha. (1990)
All coefficient alphas are significant as p<.001.

Self-Audit Scales	Group 1 446 Adults	Group 2 294 Adults	Group 3 846 Adults
Truthfulness Scale	.81	.83	.84
Resistance Scale	.80	.80	.82
Alcohol Scale	.87	.86	.87
Drugs Scale	.89	.87	.86
Stress Coping Abilities Scale	.91	.93	.94

T-tests were calculated for all Self-Audit scales to assess possible sex or gender differences. T-test results are presented in Table 14.

Table 14. T-test comparisons of sex differences. (1990)
Sex Differences (Total N = 1,586)

Self-Audit Scale	Group 1 446 Adults	Group 2 294 Adults	Group 3 846 Adults
Truthfulness Scale	n.s.	n.s.	n.s.
Resistance Scale	n.s.	n.s.	n.s.
Alcohol Scale	t=6.41, p<.001	t=2.29, p<.023	t=5.95, p<.001
Drugs Scale	n.s.	n.s.	n.s.
Stress Coping Abilities	n.s.	n.s.	t=2.92, p<.004

Significant sex differences were demonstrated on one of the five scales, i.e., Alcohol Scale, in all three groups, significant sex differences were found on the Alcohol Scale and significant sex differences were found on the Stress Coping Abilities Scale in Group 3.

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

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

24. Self-Audit Reliability Study in Different Samples of Adults

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

Method

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

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

.6%).

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

Results and Discussion

Reliability coefficient alphas are presented in Table 15. The three groups are presented together for comparison purposes: Group 1: 1,299 adults, Group 2: 177 adults and Group 3: 189 adults; Total number of participants = 1,665.

Table 15. Reliability coefficient alphas. (1991, N = 1,665)
All coefficient alphas are significant at p<.001.

Self-Audit Scales	Group 1 1,299 Adults	Group 2 177 Adults	Group 3 253 Adults
Truthfulness Scale	.81	.85	.86
Resistance Scale	.88	.92	.90
Alcohol Scale	.93	.84	.91
Drugs Scale	.90	.91	.89
Stress Coping Abilities	.91	.92	.92

The results of this study demonstrate the reliability (internal consistency) of the Self-Audit. Reliability coefficient alphas for all Self-Audit scales are very high. These results strongly support the reliability of the Self-Audit.

T-tests were calculated for all Self-Audit scales to assess possible sex differences in Group 1 adults. Significant gender differences were demonstrated on the Alcohol and Drugs scales. These results are presented in Table 16.

Table 16. Sex differences in Group 1 adult participants sample (1991, N = 1,299).

Self-Audit	Mean Scale Score		Significance
Scale	Males	Females	Level
Alcohol Scale	9.30	13.94	P<.05
Drugs Scale	8.78	12.34	P<.05

Significant gender differences were not observed on the other Self-Audit scales, consequently separate male and female scoring procedures were established for only the Alcohol and Drugs Scales.

Higher male scores on these two Self-Audit scales likely reflect more straightforward admissions by men. Men appear to be more open than women regarding their substance (alcohol and other drugs) abuse behavior.

25. Validation of Self-Audit Scales in a Sample of Adults

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

Method

There were 171 adult probationers included in the present study. There were 129 males and 42 females. Age was

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

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

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

Results and Discussion

The results of this study (1992, N = 171) are summarized in Table 17.

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

The **Resistance Scale** correlates highly significantly with the MMPI AUT Scale, SCIA Scale and TSC-III Scale. These results support the validity of the Self-Audit Resistance Scale.

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

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

Table 17. Product-moment correlations. Adult Probation Clients (1992, N=171)

MMPI SCALES	Truthfulness	Resistance	Stress Coping	Alcohol	Drugs
L	.511**	.089	-.065	.022	-.186*
F	-.293**	.276**	.462**	.379**	.269*
K	.458**	-.077	- .319**	-.201*	-.151
PD	-.241**	.065	.491**	.312**	.190*
PT	-.279**	.069	.470**	.202*	.115
MAS	-.394**	.031	.536**	.288**	.151
MAC	.005	.127	.076	.051	.090
SOC	-.335**	.033	.329**	.273**	.174
AUT	-.321**	.262**	.217*	.238**	.173
TSC-III	-.373**	.209*	.247**	.195*	.061
TSC-VII	-.431**	.052	.446**	.222*	.168
PD2	-.161	.031	.105	.165	.161
SC1 A	-.377**	.249**	.447**	.283**	.171

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

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

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

26. A Study of Self-Audit Reliability

The present (1992) study was conducted to evaluate the statistical reliability of the Self-Audit in an inpatient adult sample. As the population of adult offenders could conceivably consist of widely varying people, it is important to continue to investigate statistical (reliability) properties on the various adult population databases.

Method and Results

This study (1992) involved 365 inpatients (222 males and 143 females). The demographic composition of the sample was the following. Age: 18 years or less (41, 1.2%); 19 years to 29 years of age (134, 36.7%); 30 years to 39 years (111, 30.4%); 40 to 49 (47, 12.9%); 50 to 59 (20, 5.5%) and 60 + years (12, 3.3%). Gender: males (222, 60.8%) and females (143, 39.2%). Ethnicity/Race: Caucasian (304, 83.3%); Black (28, 7.7%); Hispanic (21, 5.8%); Asian (3, 0.8%); Native American (7, 1.9%) and Other (2, 0.5%). Education: 8th grade or less (19, 5.2%); Partially Completed High School (82, 22.5%); G.E.D. (28, 7.7%); High School Graduate (116, 31.8%); Partially Completed College (75, 20.5%); Technical/Business School (6, 1.6%); College Graduate (30, 8.2%); Professional/Graduate School (9, 2.5%). Marital Status: Single (190, 52.1%); Married (108, 29.6%); Divorced (21, 5.8%); Separated (38, 10.4%); Widowed (7, 1.9%).

Coefficient Alpha reliability (internal consistency) coefficients are presented in Table 18.

Table 18. Reliability coefficient alphas. (1992, N=365)
All reliability coefficients are significant at p<.001.

Self-Audit Scales	Coefficient Alpha
Truthfulness Scale	.85
Alcohol Scale	.90
Drugs Scale	.87
Distress Scale	.87
Self-Esteem Scale	.91
Stress Coping Ability Scale	.95

This study supports the reliability of these scales of the Self-Audit. The coefficient alpha is the most widely used statistic of internal consistency or reliability. The Self-Audit produces similar results upon repetition. The Self-Audit is reliable.

27. A Study of Self-Audit Reliability in a Sample of Adults

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

Method and Results

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

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

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

Reliability coefficient alphas are presented in Table 19. All coefficient alphas were significant at $p<.001$. These results support the reliability of these scales of the Self-Audit in the assessment of adult participants.

Table 19. Reliability coefficient alpha. Adult participants (1992, N = 306).
All coefficient alphas are significant at p<.001.

Self-Audit Scales	Coefficient Alpha
Truthfulness Scale	.89
Resistance Scale	.85
Alcohol Scale	.93
Drugs Scale	.90
Stress Coping Abilities	.92

These results are in close agreement with reliability coefficient alphas found in previous Self-Audit studies. These results again demonstrate the internal consistency of the Self-Audit.

28. A Study of Self-Audit Reliability in Five Samples of Adults

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

Methods and Results

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

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

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

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

Group 5 consisted of 1,042 adult probationers. There were 835 (80.1%) males and 207 (19.9%) females. This sample is described as follows: Age: 18 years or younger (10.8%); 19 to 29 (43.8%); 30 to 39 (31.0%); 40 to 49 (10.5%); 50 to 59 (3.3%); and 60 & over (0.7%). Ethnicity: Caucasian (73..6%); Black (23.2%); Asian (0.3%); American Indian (1.2%); Hispanic (1.5%); and Other (0.1%). Education: 8th grade or less (7.9%); Partially Completed High School (36.5%); High School Graduate (34.2%); Partially Completed College (7.9%); College Graduate (0.8%); and Professional/ Graduate School (12.8%). Marital Status: Single (57.5%); Married (18.9%); Divorced (16.7%); Separated (6.0%); and Widowed (0.5%). Employment Status: Employed (50.6%); Unemployed (49.2%).

Reliability coefficient alphas for the 4,000 clients represented in these five groups are presented in Table 20. All coefficient alphas are significant a $p<.001$. These results strongly support the reliability of these scales of the Self-Audit.

Table 20. Reliability coefficient alphas for five adult samples (1993, N = 4,000).
All coefficient alphas are significant at p<.001.

Self-Audit Scales	1 Diversion Clients N = 110	2 DOC Probationers N = 510	3 Outpatient Probationers N = 859	4 Outpatient Probationers N = 1479	5 Probationers N = 1042
Truthfulness Scale	.87	.87	.87	.87	.90
Resistance Scale	.85	.88	.87	.86	.88
Alcohol Scale	.92	.93	.92	.92	.96
Drugs Scale	.90	.93	.89	.92	.92
Stress Coping Abilities	.99	.91	.93	.93	.93

T-test comparisons of male/female differences in Self-Audit scale scores (N = 4,000) showed varied results. For Group 1 diversion clients, there were no sex differences observed on any of the Self-Audit scales. Group 2 DOC probationers exhibited significant sex differences on three of the Self-Audit scales, i.e., Truthfulness Scale, Alcohol Scale and the Stress Coping Abilities Scale. For Groups 3 and 4 outpatient probationers, and Group 5 probationers, significant sex differences were found on the Alcohol Scale. Consistent male/female differences are found on the Alcohol Scale across different subject groups and locations around the country. These results suggest that men are on the average more open with regard to self-report and their alcohol consumption than most women. Higher male scores likely reflect more straightforward admissions by men.

29. Reliability of the Self-Audit

In 1994 the Violence Scale was added to the Self-Audit. The Violence Scale measures physical force to injure, damage or destroy. The Violence Scale identifies people that are dangerous to themselves and others. The

purpose of the present study was to test the reliability of the Self-Audit. Three subject samples are included in the study and they total 4,067 adult participants.

Method

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

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

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

The Self-Audit was administered to 4,067 adult participants as part of routine evaluation programs. Subjects were administered the Self-Audit individually in paper-pencil test format.

Results

Reliability coefficient alphas for the three groups (total N = 4,067) are presented in Table 21.

These results support the reliability of the Self-Audit. Coefficient alphas for all scales are highly significant. These results support the reliability of these scales of the Self-Audit.

Table 21. Reliability coefficient alphas (1994, N = 4,067). All coefficient alphas are significant at p<.001.

Self-Audit Scale	1 Participants N = 2,734	2 Participants N = 344	3 Participants N = 989
Truthfulness Scale	.88	.87	.88
Resistance Scale	.85	.86	.85
Violence Scale	.84	.85	.87
Alcohol Scale	.94	.91	.91
Drugs Scale	.92	.89	.89
Stress Coping Abilities	.91	.92	.92

30. Self-Audit Reliability Study on Different Samples of Participants

In 1995 several adult samples (total N = 10,740) were studied to test the reliability of the Self-Audit. There were five adult samples included in the study. **Group 1** consisted of 3,790 adults, 2,990 (78.9%) males and 800 (21.1%) females. Demographic composition of this group is as follows: Age: 18 and less (20.5%); 19 to 29

(44.1%); 30 to 39 (24.7%); 40 to 49 (4.9%); 50 to 59 (2.3%); 60 to 69 (0.8%); and 70 & over (.01%). Ethnicity: Caucasian (64%); Black (25.5%); Hispanic (8%); Asian (0.5%); American Indian (1.2%); and Other (0.8%). Marital Status: Single (57.3%); Married (23.4%); Divorced (12.4%); Separated (6.2%); and Widowed (0.7%).

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

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

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

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

Reliability coefficient alphas for all five groups (total N = 10,740) are presented in Table 22.

Table 22. Reliability coefficient alphas. (1995, N = 10,740) All coefficient alphas are significant at p<.001.

Self-Audit Scale	Group 1 N = 3,790	Group 2 N = 763	Group 3 N = 4,899	Group 4 N = 306	Group 5 N = 982
Truthfulness Scale	.89	.86	.88	.89	.86
Resistance Scale	.86	.86	.86	.86	.85
Violence Scale	.89	.85	.85	.85	.87
Alcohol Scale	.93	.92	.93	.93	.92
Drugs Scale	.90	.89	.90	.93	.89
Stress Coping Abilities	.93	.92	.93	.93	.91

These results support the reliability (internal consistency) of these scales of the Self-Audit. The Self-Audit is an objective and reliable assessment instrument. Reliability coefficient alphas across the five groups of adult participants are in close agreement. These results suggest that the Self-Audit is applicable across different

national adult samples. The Self-Audit is a reliable adult risk assessment instrument.

31. Self-Audit Reliability in Three Samples of Outpatient Clients

This study (1996) examined the reliability of the Self-Audit in three samples of outpatient clients. There were a total of 1,485 participants. The Self-Audit was administered as part of the established intake procedure. **Group 1** consisted of 204 adult outpatient clients. There were 147 males (72.1%), 56 females (27.5%) and 1 (0.5%) missing gender information. The demographic composition of this sample is the following. Age: 18 years or younger (36, 17.6%); 19 through 29 (115, 56.4%); 30 through 39 (35, 17.2%); 40 through 49 (9, 4.4%); 50 through 59 (6, 2.9%); and 60+ (3, 1.5%). Ethnicity: Caucasian (102, 50.0%); Black (16, 7.8%); Hispanic (67, 32.8%); American Indian (6, 2.9%); Other (5, 2.5%); and Missing (8, 3.9%). Education: 8th grade or less (5, 2.5%); Partially Completed High School (49, 24.0%); G.E.D. (13, 6.4%); High School Graduate (63, 30.9%); Partially Completed College (60, 29.4%); Technical/Business School (1, 0.5%); College Graduate (9, 4.4%) and Missing (4, 2.0%). Marital Status: Single (141, 69.1%); Married (34, 16.7%); Divorced (7, 3.4%); Separated (4, 2.0%); and Missing (18, 8.8%).

Group 2 consisted of 116 participants. There were 79 males (68.1%) and 37 females (31.9%). Demographic composition is summarized as follows. Age: 18 years or younger (12, 10.3%); 19 through 29 (48, 41.4%); 30 through 39 (33, 28.4%); 40 through 49 (17, 14.7%); 50 through 59 (4, 3.4%); 60 years and older (2, 1.7%). Ethnicity: Caucasian (94, 81.0%); Black (19, 16.4%); Hispanic (2, 1.7%); Asian (1, 0.9%). Education: 8th grade or less (8, 6.9%); Partially Completed High School (22, 19.0%); G.E.D. (14, 12.1%); High School Graduate (27, 23.3%); Partially Completed College (37, 31.9%); Technical/Business School (4, 3.4%); College Graduate (3, 2.6%); and Professional/Graduate School (1, 0.9%). Marital Status: Single (70, 60.3%); Married (26, 22.4%); Divorced (8, 6.9%); Separated (9, 7.8%); Widowed (2, 1.7%); and Missing (1, 0.9%).

Group 3 consisted of 1,165 counseling outpatients. Demographic composition is summarized as follows. Of the 1,165 outpatients 842 (72.3%) were men and 323 (27.7%) were women. Age: 18 years or less (95, 8.2%); 19 through 29 (407, 34.9%); 30 through 39 (418, 35.9%); 40 through 49 (173, 14.8%); 50 through 59 (44, 3.8%); 60 years and older (27, 2.3%) and Missing (1, 0.1%). Ethnicity: Caucasian (809, 69.4%); Black (210, 18.0%); Hispanic (107, 9.2%); Asian (8, 0.7%); American Indian (20, 1.7%); and Other (11, 0.9%). Education: 8th grade or less (662, 56.8%); Partially Completed High School (248, 21.3%); G.E.D. (19, 1.6%); High School Graduate (140, 12.0%); Partially Completed College (76, 6.5%); Technical/Business School (2, 0.2%); College Graduate (13, 1.1%); Professional/Graduate Degree (4, 0.3%); and Missing (1, 0.1%). Marital Status: Single (652, 56.0%); Married (277, 23.8%); Divorced (145, 12.4%); Separated (72, 6.2%); Widowed (18, 1.5%); and Missing (1, 0.1%).

Reliability coefficient alphas for all three groups (total N = 1,485) are presented in Table 23.

Table 23. Reliability coefficient alphas (1996, N = 1,485).
All coefficient alphas are significant at p<.001.

Self-Audit Scale	Group 1 N = 204	Group 2 N = 116	Group 3 N = 1,165
Truthfulness Scale	.85	.85	.86
Distress Scale	.87	.84	.93
Morale Scale	.88	.85	.90
Alcohol Scale	.88	.88	.89
Drugs Scale	.85	.86	.88
Self-Esteem Scale	.95	.95	.95
Resistance Scale	.87	.84	.93
Violence Scale	.87	.88	.87
Stress Coping Abilities	.90	.91	.92

These results support the internal consistency (reliability) of the Self-Audit for these three samples. Reliability coefficients are consistent across the different samples. These results are similar to those reported earlier on other client populations. Similar results will be obtained upon replication or retest. Outcomes are objective, verifiable and reproducible. Self-Audit test results are reliable.

32. Self-Audit Reliability in Two Samples of Adult Probationers

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

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

Reliability coefficient alphas are represented in Table 24 and represent 4,214 probationers.

Table 24. Reliability coefficient alphas (1997, N = 4,214). All coefficient alphas are significant at p<.001.

Self-Audit Scale	Group 1 Probationers N = 1,930	Group 2 Probationer N = 2,284
Truthfulness Scale	.88	.88
Resistance Scale	.83	.83
Violence Scale	.80	.81
Alcohol Scale	.93	.93
Drugs Scale	.91	.92
Distress Scale	.84	.90
Morale Scale	.85	.87
Self-Esteem Scale	.95	.95
Stress Coping Abilities	.93	.93

These results support the reliability of the Self-Audit for these two samples of probationers. These results are similar to those reported earlier on other client populations. All coefficient alphas are significant at p<.001. These results support the reliability of the Self-Audit.

33. Reliability and Scale Risk Range Accuracy of the Self-Audit

This study (1998) was conducted to test the reliability and accuracy of the Self-Audit. Reliability of the Self-Audit and risk range percentile score accuracy was investigated in the present study.

Risk range percentile scores are calculated for each Self-Audit scale. These risk range percentile scores are derived from scoring equations based on responses to scale items and Truth-Corrections, then converted to percentile scores. There are four risk range categories: **Low Risk** (zero to 39th percentile), **Medium Risk** (40 to 69th percentile),

Problem Risk (70 to 89th percentile) and **Severe Problem or Maximum Risk** (90 to 100th percentile). Risk range percentile scores represent degree of severity.

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

Method and Results

The subjects in this study (1998) consisted of 850 adult probationers. There were 663 males (78%) and 187 females (22%). Demographic composition of these probationers is as follows: Age: 19 & under (21%); 20-29 (43%); 30-39 (23%); 40-49 (9%); 50-59 (2%) and 60 & over (1%). Ethnicity: Caucasian (74%); Black (11%); Hispanic (10%); Asian (1%); Native American (3%) and Other (1%). Education: Eighth grade or less (7%); Some H.S. (30%); H.S. graduate (47%); Some college (11%) and College graduate (4%). Marital Status: Single (61%); Married (19%); Divorced (13%); Separated (5%) and Widowed (1%).

Reliability coefficient alphas are presented in Table 25.

Table 25. Reliability coefficient alphas (1998, N = 850).
All coefficient alphas are significant at p<.001.

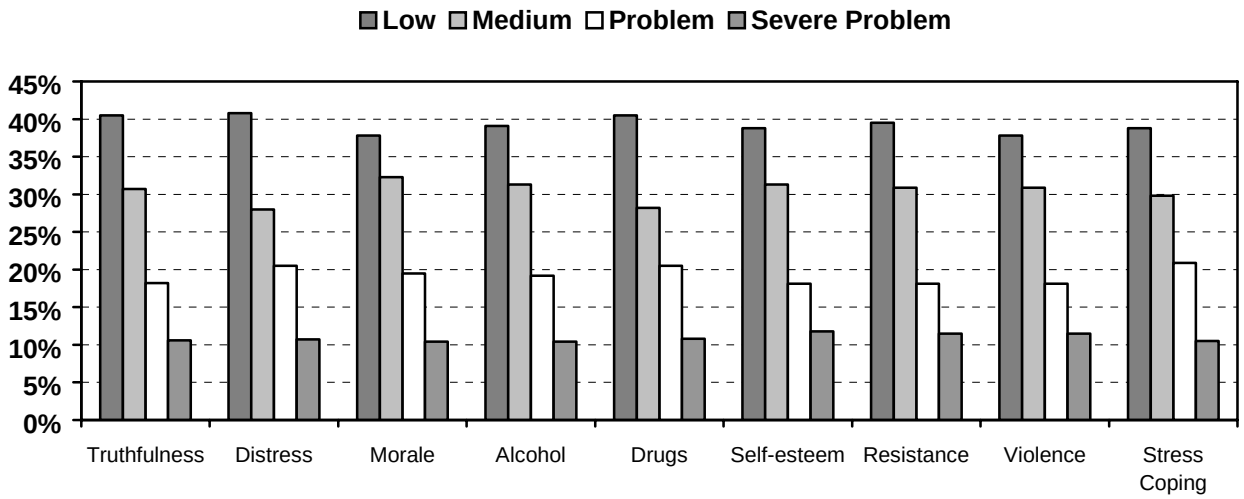
Self-Audit Scale	Probationers N = 850
Truthfulness Scale	.89
Resistance	.82
Violence Scale	.87
Alcohol Scale	.95
Drugs Scale	.93
Distress Scale	.84
Morale Scale	.80
Self-Esteem Scale	.86
Stress Coping Abilities	.94

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

The risk range percentile score results for the 850 participants administered the Self-Audit are presented in Table 26. These obtained risk range percentile scores are shown in the graph with the actual data shown in the table below the graph. The obtained risk range scores can be compared to the predicted risk range scores that are shown in the right-hand column of the table.

These results show that obtained risk range percentile scores closely approximated the predicted risk range percentile scores for each of the nine Self-Audit scales presented in Table 26 for the female clients included in the study. **These results indicate that the Self-Audit is a very accurate risk assessment instrument.**

Table 26. Risk Range Percentile Scores, 1998, N = 850.



Risk Range	Truthfulness	Distress	Morale	Alcohol	Drugs	Self-esteem	Resistance	Violence	Stress Coping	**Predicted**
Low	40.5	40.8	37.8	39.1	40.5	38.8	39.5	37.8	38.8	**39%**
Medium	30.7	28.0	32.3	31.3	28.2	31.3	30.9	32.0	29.8	**30%**
Problem	18.2	20.5	19.5	19.2	20.5	19.2	18.1	19.3	20.9	**20%**
Maximum	10.6	10.7	10.4	10.4	10.8	10.4	11.5	10.9	10.5	**11%**

The results of the comparisons between obtained risk percentages and predicted percentages show that all obtained scale risk range percentile scores were within 2.3 percent of predicted. For the Problem Risk and Maximum Risk categories, all but three comparisons showed that the obtained percentages were within one percentage point of predicted. **This is very accurate assessment.**

34. Reliability, Validity and Scale Risk Range Accuracy of the Self-Audit

This study (1999) was conducted to test the reliability, validity and accuracy of the Self-Audit in a sample of adult participants. Reliability of the Self-Audit, validity analyses used previously and risk range percentile score accuracy were investigated in the present study.

Method and Results

The subjects in this study consisted of 476 adult counseling clients. Demographic composition of these participants is as follows: Age: 19 & under (10%); 20-29 (29%); 30-39 (33%); 40-49 (21%); 50-59 (5%) and 60 & over (2%). Ethnicity: Caucasian (82%); Black (11%); Hispanic (4%); Asian (1%); Native American (1%) and Other (2%). Education: Eighth grade or less (5%); Some H.S. (24%); H.S. graduate (47%); Some college (20%) and College graduate (4%). Marital Status: Single (44%); Married (27%); Divorced (20%); Separated (7%) and Widowed (1%).

Accuracy of the Self-Audit

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

The risk range percentile score results for the 476 participants administered the Self-Audit are presented in Table 27. These obtained risk range percentile scores are shown in the table below. The obtained risk range scores can be compared to the predicted risk range scores that are shown in the right-hand column of the table.

Table 27. Risk Range Percentile Scores, 1999, N = 476 adult clients.

Risk Range	Truthful-ness	Alcohol	Drugs	Resistance	Morale	Distress	Violence	Self-esteem	Stress Coping	**Predicted**
Low	39.7	39.1	37.4	39.2	38.5	38.0	39.2	39.5	39.1	**39%**
Medium	29.2	30.6	31.5	30.3	30.4	31.5	30.5	29.6	29.4	**30%**
Problem	19.8	19.2	19.8	19.4	20.0	19.4	18.3	20.2	20.4	**20%**
Maximum	11.3	11.1	11.3	11.1	11.1	11.1	12.0	10.7	11.1	**11%**

These results show that obtained risk range percentile scores closely approximated the predicted risk range percentile scores for each of the nine Self-Audit scales presented in Table 27 for the adult clients included in the study. **These results indicate that the Self-Audit is a very accurate risk assessment instrument.**

The results of the comparisons between obtained risk percentages and predicted percentages show that all obtained scale risk range percentile scores were within 1.7 percent of predicted. For the Problem Risk and Maximum Risk categories, all but two comparisons showed that the obtained percentages were within one percentage point of predicted. **This is very accurate assessment.**

Reliability of the Self-Audit

Reliability coefficient alphas are presented in Table 28.

Table 28. Reliability coefficient alphas (1999, N = 476).
All coefficient alphas are significant at p<.001.

Self-Audit Scale	**Coefficient Alphas**
Truthfulness Scale	.86
Alcohol Scale	.92
Drugs Scale	.93
Resistance Scale	.93
Morale Scale	.91
Distress Scale	.90
Violence Scale	.88
Self-Esteem Scale	.89
Stress Coping Abilities	.94

The results of the study support the statistical reliability of the Self-Audit. All coefficient alphas are significant at p<.001. All scale reliability coefficients are well above the generally accepted level of .75 for assessment instruments. These results show that the Self-Audit is a highly statistically reliable risk assessment instrument.

Validity of the Self-Audit

In assessment, a measurement can be considered a prediction. For example, the Alcohol Scale is a measure of alcohol abuse or severity of abuse. Alcohol Scale scores would predict if an individual has an alcohol problem. A benchmark that can be used for the existence of an alcohol problem is admission of being an alcoholic or a recovering alcoholic. If an individual states that he or she is an alcoholic then the individual is known to have had an alcohol problem. Therefore, the Alcohol Scale should predict if an individual has an alcohol problem or admits to alcoholism.

Statistical decision-making is closely related to predictive validity of a test. The quality of statistical decision-making and test validity are both assessed by the accuracy with which the test (Alcohol Scale) classifies "known" cases (alcoholic admission). In the present study predictive validity was evaluated in the Self-Audit by using scale scores and admission of alcoholism.

Alcohol abuse information was obtained from clients' answers to Self-Audit test items concerning alcoholism or recovering alcoholic. Drugs abuse information was also obtained from Self-Audit test items.

The results showed that the Alcohol Scale accurately identified 97 percent who admitted to abusing alcohol. Of the 147 clients who stated they were alcoholics or recovering alcoholics, 142 individuals or 97 percent had Alcohol Scale Scores in the Problem or Severe Problem risk ranges (70^{th} percentile or higher). In addition to the high correct identification rate, the false positive rate was very low. Only one percent of the clients who did not indicate abusing alcohol scored in the Problem or above risk range. The Alcohol Scale was very accurate in identifying clients who admitted to abusing alcohol. These results support the validity of the Self-Audit Alcohol Scale.

The Drugs Scale correctly identified all of the clients who admitted to abusing drugs. Of the 142 clients who admitted they were drug addicts or recovering from drugs, 100 percent scored in the Problem or Severe Problem risk ranges on the Drugs Scale. The false positive rate was less than two percent. These results strongly support the validity of the Self-Audit Drugs Scale

Taken together these results strongly support the reliability, validity and accuracy of the Self-Audit. Reliability coefficient alphas were significant at $p<.001$ for all Self-Audit scales. Validity of the Alcohol Scale and Drugs Scale was shown by the accuracy with which the scales identified problem risk behavior (admission to abusing or recovering from abuse). **The Alcohol Scale accurately identified 97 percent and the Drugs Scale accurately identified 100 percent of the clients who admitted to alcohol and drug problems.** These results support the reliability, validity and accuracy of the Self-Audit.

35. Self-Audit Reliability, Validity and Scale Risk Range Accuracy

This study (2000) continued Self-Audit research analyses by investigating the reliability, validity and accuracy of the Self-Audit in a sample of adult participants. The same reliability, validity and risk range percentile score accuracy analyses used previously were investigated in the present study.

Method and Results

The subjects in this study consisted of 2,812 adult counseling clients. Demographic composition of these participants is as follows: Age: 19 & under (12%); 20-29 (32%); 30-39 (32%); 40-49 (18%); 50-59 (5%) and 60 & over (1%). Ethnicity: Caucasian (70%); Black (7%); Hispanic (17%); Asian (1%); Native American (4%) and Other (1%). Education: Eighth grade or less (4%); Some H.S. (23%); H.S. graduate (51%); Some college (19%) and College graduate (5%). Marital Status: Single (54%); Married (24%); Divorced (16%); Separated (5%) and Widowed (1%).

Accuracy of the Self-Audit

Risk range percentile scores for each Self-Audit scale in terms of the four risk range categories are presented in Table 29. For a discussion of these scores refer to the previous study.

Table 29. Risk Range Percentile Scores, 2000, N = 2,812 adult clients.

Risk Range	Truthful-ness	Alcohol	Drugs	Resistance	Morale	Distress	Violence	Self-esteem	Stress Coping	**Predicted**
Low	39.2	39.2	39.2	41.2	40.2	37.6	42.3	39.2	38.7	**39%**
Medium	30.7	30.4	30.0	28.5	29.9	30.7	28.6	30.3	30.1	**30%**
Problem	20.1	19.9	20.3	19.9	18.7	21.4	18.3	19.9	19.8	**20%**
Maximum	10.0	10.5	10.5	10.4	11.2	10.3	10.5	10.6	11.4	**11%**

These results show that obtained risk range percentile scores closely approximated the predicted risk range percentile scores for each of the nine Self-Audit scales presented in Table 28 for the adult clients included in the study. **These results indicate that the Self-Audit is a very accurate risk assessment instrument.**

The results of the comparisons between obtained risk percentages and predicted percentages show that all obtained scale risk range percentile scores were within 3.3 percent of predicted. For the Problem Risk and Maximum Risk categories, all but nine comparisons showed that the obtained percentages were within one percentage point of predicted. **This is very accurate assessment.**

Reliability of the Self-Audit

Reliability coefficient alphas are presented in Table 30.

Table 30. Reliability coefficient alphas (2000, N = 2,812).
All coefficient alphas are significant at p<.001.

Self-Audit Scale	Coefficient Alphas
Truthfulness Scale	.88
Alcohol Scale	.93
Drugs Scale	.91
Resistance Scale	.92
Morale Scale	.89
Distress Scale	.90
Violence Scale	.88
Self-Esteem Scale	.91
Stress Coping Abilities	.94

The results of the study support the statistical reliability of the Self-Audit. All coefficient alphas are significant at p<.001. All scale reliability coefficients are well above the generally accepted level of .75 for assessment instruments. These results show that the Self-Audit is a highly statistically reliable risk assessment instrument.

Validity of the Self-Audit

Refer to the previous study for an explanation of this statistical validation analysis. In the present study predictive validity was evaluated in the Self-Audit by using scale scores and admission of alcoholism. Alcohol and drug abuse information was obtained from clients' answers to Self-Audit test items.

The results showed that the Alcohol Scale accurately identified 98 percent who admitted to abusing alcohol. Of the 858 clients who scored in the low and problem risk ranges and stated they were alcoholics or recovering alcoholics, 840 individuals or 97.9 percent had Alcohol Scale Scores in the Problem or Severe Problem risk ranges (70^{th} percentile or higher). In addition to the high correct identification rate, the false positive rate was very low. Only 1.3 percent of the clients who did not indicate abusing alcohol scored in the Problem or above risk range. The Alcohol Scale accurately identified 98 percent of the clients who admitted to abusing alcohol. These results support the validity of the Self-Audit Alcohol Scale.

The Drugs Scale correctly identified all of the clients who admitted to abusing drugs. Of the 723 clients who admitted they were drug addicts or recovering from drugs, 100 percent scored in the Problem or Severe Problem risk ranges on the Drugs Scale. The false positive rate was 11.6 two percent. Over 11 percent of the clients who did not have drug treatment scored in the problem risk range. These clients could be recommended for treatment. It is possible for clients to have drug problems but not have been in treatment. These results support the validity of the Self-Audit Drugs Scale.

These results strongly support the reliability, validity and accuracy of the Self-Audit. Reliability coefficient alphas were significant at p<.001 for all Self-Audit scales. Validity of the Alcohol Scale and Drugs Scale was shown by the accuracy with which the scales identified problem risk behavior (admission to abusing or recovering from abuse). **The Alcohol Scale accurately identified 98 percent and the Drugs Scale accurately identified 100 percent of**

the clients who admitted to alcohol and drug problems. These results support the reliability, validity and accuracy of the Self-Audit.

SUMMARY

In conclusion, this document is not intended as an exhaustive compilation of Self-Audit research. Yet, it does summarize many studies and statistics that support the reliability and validity of the Self-Audit. Based on this research, the Self-Audit presents an increasingly accurate picture of offenders and the risk they represent. The Self-Audit provides a sound empirical foundation for responsible decision making.

Summarized research demonstrates that the Self-Audit is a reliable, valid and accurate instrument for client assessment. It is reasonable to conclude that the Self-Audit does what it purports to do. The Self-Audit 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 Self-Audit is not a personality test, nor is it a clinical diagnostic instrument. Yet, it is much more than just another assessment test. The Self-Audit is designed specifically for screening victims for emotional/mental health problems, as well as alcohol and drug problems and referral to appropriate treatment services.

Self-Audit Scales

Self-Audit Scales	WHAT THE SCALE MEASURES
Truthfulness	Truthfulness of person while taking the test
Distress	Sorrow, misery, pain and suffering
Morale	Person's mental state or outlook, enthusiasm
Alcohol Scale	Alcohol abuse and proneness
Drugs Scale	Drug use, abuse and proneness
Self-Esteem	Client's explicit valuing and appraisal of self
Resistance	Defensiveness, cooperativeness, resistance to help
Violence Scale	Violence (lethality) potential and dangerousness
Stress Coping Abilities	Person's ability to cope with stress

Donald D. Davignon, Ph.D.
Senior Research Analyst