Self-Assessment Index

An Inventory of Scientific Findings

TABLE OF CONTENTS

INTRODUCTION

SELF-ASSESSMENT INDEX

Increased public awareness of substance (alcohol and other drugs) abuse as a nationwide health problem has clarified the need for identification and treatment of these disorders. Concurrently, rising health care costs have placed increasing responsibilities on all persons working with substance abusers. Workers in the field must now document and substantiate their intervention and treatment decisions.

The Self-Assessment Index (SAI) scales evolved from scale items represented in other established assessment instruments. For example, the Truthfulness, Alcohol, Drug and Stress Coping Abilities items largely evolved from the Substance Abuse Questionnaire, which is an established substance (alcohol and other drugs) abuse screening instrument. Work Index items largely evolved from the Employment Inventory, which is an established pre-employment screening instrument. These items were included in large item pools. Item selection was initially a rational process by three psychologists having clearly understood definitions of each scale. The original pool of potential test items was analyzed and items with the best statistical properties were retained. The Self-Assessment Index (SAI) test was then administered to a variety of client groups, e.g., substance abuse outpatients, inpatients, municipal court diversion clients, probationers, college students, job applicants, and welfare recipients. Test items with the best statistical properties have been retained.

Information on the Self-Assessment Index (SAI) is available in the SAI Orientation & Training Manual. Computer scoring information is contained in the SAI Computer Operating Guide. Each of these manuals can be obtained from Behavior Data Systems, Ltd.

SAI MEASURES (SCALES)

Users of the Self-Assessment Index (SAI) should be familiar with each SAI scale. A description of each SAI scale follows.

FIVE SAI SCALES (MEASURES)

1. **Truthfulness Scale:** measures the truthfulness of the welfare recipient while they were completing the SAI. This scale identifies self-protective, defensive or guarded people who minimize or even fake answers.

2. **Alcohol Scale:** measures a person's alcohol use, abuse and proneness. Alcohol refers to beer, wine and other liquors. This scale measures the severity of alcohol use or abuse.

3. **Drug Scale:** measures a person's use or abuse of illicit drugs (marijuana, crack, cocaine, amphetamines, barbiturates and heroin). This scale measures the severity of illicit drug use.

4. **Work Index Scale:** measures a person's work-related attitude and motivation This scale incorporates many cloaked issues, such as perceived value of employment, work-related costs, work impact on family, people (cooperation, non-defensiveness) problems, transportation concerns, etc. The Work Index Scale identifies welfare recipients' special needs—including the probability of vocational rehabilitation and employment success.

5. 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.

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

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

Over the years the Self-Assessment Index (SAI) has become more and more focused on welfare recipient screening. This evolution has culminated in the SAI being entirely focused on Welfare recipient screening.

SAI 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-ASSESSMENT INDEX RESEARCH

Self-Assessment Index is designed specifically to screen welfare recipients for alcohol and drug problems, vocational rehabilitation needs as well as emotional/mental health problems and referral to appropriate treatment services. The SAI has a long history of research and development, much of which

is contained in the following summary. **SAI research is reported in a chronological format, reporting studies as they occurred.** This gives the reader the opportunity to see how the SAI 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 SAI scale consideration. Consensual agreement among three Ph.D. level psychologists and other experienced chemical dependency counselors familiar with SAI 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 SAI was then objectively standardized and normed on substance abuse populations.

10. A Study of Self-Assessment Index 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 SAI 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 SAI in a paper-pencil test format. One week later they were re-tested with the SAI 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 SAI. Test-retest consistency was very high and indicates that the SAI scores are reproducible and reliable over a one week interval.

11. Validation of the Truthfulness Scale

The Truthfulness Scale in the SAI is an important psychometric scale as these scores establish how truthful the respondent was while completing the SAI. Truthfulness Scale scores determine whether or not SAI profiles are accurate and are integral to the calculation of Truth-Corrected SAI 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-Assessment Index 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 SAI 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 reveals that the Truthfulness Scale accurately detects "Fakers" from those students that took the test honestly.

12. Validation of Four Self-Assessment Index 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 four Self-Assessment Index scales (Truthfulness, Alcohol, Drug, 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 SAI 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 Drug Scale was validated with the MacAndrew and Psychopathic Deviant scales. 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 SAI and the MMPI. Tests were counterbalanced for order effects -- half were given the SAI first and half the MMPI first.

Results and Discussion

Product-moment correlation coefficients were calculated between SAI scales and MMPI scales. These results are summarized in Table 1. Correlation results presented in Table 1 show that all SAI 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 SAI scales.

**Table 1. (1985) Product-moment correlations
between MMPI scales and Self-Assessment Index scales**

MMPI SCALES (MEASURES)	Self-Assessment Index Scales (Measures)			
	Truthfulness	**Alcohol**	**Drug**	**Stress Coping**
L (Lie) Scale	0.72	-0.38	-0.41	0.53
Psychopathic Deviant	-0.37	0.52	0.54	-0.59
Psychasthenia	-0.34	0.38	0.41	-0.68
Social Maladjustment	-0.25	0.34	0.26	-0.54
Authority Conflict	-0.43	0.31	0.47	-0.46
Manifest Hostility	-0.45	0.34	0.47	-0.58
Taylor Manifest Anxiety	-0.58	0.47	0.46	-0.78
MacAndrew	-0.40	0.58	0.62	-0.33
Social Alienation	-0.47	0.35	0.45	-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 **Drug Scale** correlates significantly with the MacAndrew ($r = 0.62$) Scale and the Psychopathic Deviant ($r = 0.54$) Scale.

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

13. Inter-item Reliability of the Self-Assessment Index

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 and welfare recipients 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 support the reliability of the Self-Assessment Index. The Self-Assessment Index is a highly reliable instrument.

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

SAI Scales Measures	N Items	Outpatients (N = 100)	Inpatients (N = 100)	Job Applicants (N = 189)
Truthfulness Scale	21	0.81	0.79	0.81
Alcohol Scale	21	0.86	0.93	0.83
Drug Scale	21	0.80	0.85	0.79
Work Index Scale	21	0.74	0.74	0.61
Stress Coping Abilities	40	0.81	0.84	0.73

These results (Table 2 and 3) demonstrate the impressive reliability of the SAI. Reliability was demonstrated with three different groups of people (outpatients & welfare clients, inpatients and job applicants) taking the SAI.

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

SAI Scales 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
Drug Scale	21	27.19	16.34	58.18
Work Index Scale	21	15.97	19.21	23.67
Stress Coping Abilities	40	46.74	16.20	195.86

In each of these subject samples, all SAI scales (measures) were found to be significantly independent of the other SAI 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 SAI scale in each of the samples.

The F statistics show that each SAI scale measures essentially one factor (or trait). In addition, all SAI 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 SAI scale are significantly related and measure just one factor. In other words, each SAI scale measures one factor, yet the factor being measured is different from scale to scale.

The inter-item reliability coefficients show very similar results across the three subject samples. The Truthfulness Scale, Alcohol Scale and Drug Scale are in close agreement. The Stress Coping Abilities Scale shows similar results for the chemical dependency groups but the job applicant group had a slightly lower coefficient alpha. This difference might be accounted for by the fact that individuals applying for a job would not want to show themselves in a bad light by indicating they have an emotional, stress-related, substance abuse-related or mental health problem. The Work Index Scale has a somewhat lower coefficient alpha than the other SAI 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 Scale and inpatient clients may score high. By combining the data, scale scores would likely be distributed from low to high and result in even better coefficient alphas than each sample separately. Table 4 presents the inter-item reliability analysis of all of these independent studies (N = 100, N = 100, N = 189) combined (N = 389).

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

SAI Scales Measures	N Items	Coefficient Alpha	F Value
Truthfulness Scale	21	0.82	96.93
Alcohol Scale	21	0.94	26.68
Drugs Scale	21	0.88	79.71
Work Index Scale	21	0.77	53.03
Stress Coping Abilities	40	0.85	150.78

The combined data shows that all coefficient alphas 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-Assessment Index.

14. Relationships between Selected Self-Assessment Index 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-Assessment Index scales were chosen for this study; Truthfulness Scale, Alcohol Scale and Drug Scale. The Truthfulness Scale was chosen because it is used in the SAI to measure the truthfulness or honesty of the respondent while completing the SAI. The Alcohol and Drug scales are well suited for comparison with the polygraph exam because of the situation specific nature of the scales. Alcohol and Drug scale items are direct and relate specifically to alcohol and drug use. The comparison with the

Truthfulness Scale is less direct because of the subtle nature of the Truthfulness Scale items as used in the SAI. The respondent's attitude, emotional stability and tendencies to fake good affect the Truthfulness Scale. It was expected that the Alcohol and Drug scales would be highly correlated with the polygraph results and the Truthfulness Scale would show a somewhat less but nonetheless significant correlation.

Method
One hundred and eighty-nine (189) job applicants (1985) were administered both the SAI scales and the Polygraph examination. Tests were given in a counterbalanced order, half of the applicants were given the SAI scales first and the other half of the applicants were administered the polygraph first. The subjects were administered the SAI 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 SAI scales indicated there was a significant positive correlation between the Truthfulness Scale and Polygraph exam (r = 0.23, p<.001). Similarly, significant positive relationships were observed between the Polygraph exam and the Alcohol Scale (r = 0.54, p<.001) and the Drug Scale (r = 0.56, p<.001).

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

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

These results indicate that the SAI Truthfulness Scale is an accurate measure of the respondent's truthfulness or honesty while completing the SAI. 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 SAI 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 SAI is a valid assessment instrument.

15. Validation of Self-Assessment Index Scales in a Sample of Substance Abuse Inpatients

The Self-Assessment Index is an adult chemical dependency and substance (alcohol and other drugs) abuse assessment instrument. It is designed for use in court-related settings, patient milieus, diversion programs, and chemical dependency patients. The SAI is a test designed for welfare recipient populations. The present study (1987) was conducted to validate the SAI scales in a sample of substance abuse inpatients in a chemical dependency facility.

Selected scales in the Minnesota Multiphasic Personality Inventory (MMPI) were used as criterion measures for the different SAI scales. The Truthfulness Scale was validated with MMPI L Scale, F Scale and K Scale. The Alcohol Scale was validated with MMPI MacAndrew Scale (MAC) and

Psychopathic Deviate-Obvious (PD-O). The Drug Scale was validated with MMPI MacAndrew Scale and Psychopathic Deviate-Obvious. The 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 SAI scales because they measure similar attributes.

Method

The subjects used in the study were 212 substance (alcohol and other drugs) abuse inpatients in chemical dependency facilities. The SAI and MMPI scales 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 SAI validity, each SAI scale is briefly summarized below. (N=212):

Table 5. Self-Assessment Index-MMPI Product-moment Correlations (1987)
Inpatients, Chemical Dependency Facilities (N = 212)

MMPI SCALES	SELF-ASSESSMENT INDEX SCALES (MEASURES)			
(MEASURES)	Truthfulness	Alcohol	Drug	Stress Coping
L	0.60	-0.24	-0.15	-0.30
F	-0.34	0.32	0.32	0.49
K	0.39	-0.28	-0.29	-0.51
MAC	-0.30	0.35	0.37	0.28
PD-O	-0.35	0.22	0.33	0.53
PD2	-0.26	0.18	0.17	0.07
PD	-0.33	0.21	0.33	0.39
HOS	-0.45	0.25	0.33	0.46
TSC-V	-0.46	0.34	0.28	0.58
ES	0.25	-0.27	-0.25	-0.51
RE	0.41	-0.27	-0.34	-0.45
SOC	-0.19	0.17	0.08	0.39
PD4	-0.41	0.20	0.28	0.55
SCIA	-0.36	0.27	0.32	0.39
PT	-0.39	0.27	0.24	0.58
A	-0.41	0.31	0.31	0.68
MAS	-0.44	0.25	0.18	0.65
TSC-VII	-0.41	0.33	0.29	0.66

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

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

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

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

Where MMPI scales are closely related (by definition) to SAI scales the correlation coefficients were highly significant. For example, the SAI 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 the Stress Coping Abilities Scale and MMPI Tension/Worry Scale was r = -.66. This study supports the validity of the Self-Assessment Index.

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

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

Method and Results
The SAI 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 SAI.

In all of the subject samples studied, the SAI 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 SAI scale. These analyses demonstrate that each SAI scale measures one factor or trait. All SAI scales demonstrate high inter-item congruency, as reflected in the standardized Cronbach Coefficient Alpha. The items on each SAI scale are significantly related to the factor or trait each scale was designed to measure. In other words, each SAI scale measures one factor, and the factor (or trait) being measured differs from scale to scale.

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

SAI Scales 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
Work Index Scale	21	0.81	10.92	0.001
Stress Coping Abilities	40	0.99	27.77	0.001

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

17. Validation of Self-Assessment Index Scales Using DRI Scales as the Criterion Measures

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

The Self-Assessment Index is designed for welfare recipient and chemical (alcohol and other drugs) dependency assessment. It contains five measures or scales: Truthfulness, Alcohol, Drug, Work Index and Stress Coping Abilities. Four of these five SAI scales are analogous (although independent) and directly comparable to Driver Risk Inventory (DRI) measures or scales. The DRI is designed for DWI (Driving While Intoxicated) and DUI (Driving Under the Influence) offender evaluation. The DRI contains five measures or scales: Truthfulness, Alcohol, Drug, Driver Risk and Stress Coping Abilities.

Although the scales designated Truthfulness, Alcohol, and Drug are independent and differ in the SAI and DRI, they were designed to measure similar behaviors or traits. Thus, although essentially composed of different test questions in the SAI and DRI test booklets, these comparable measures or scales do have similarity. The Stress Coping Abilities Scale in both SAI and DRI contains the same 30 test items.

Method
The SAI and DRI scales were administered in group settings to 154 DWI offender inmates, in counter balanced order, at Arizona State Department of Corrections (ADOC) facilities. All of the subjects in this study were male inmates. The demographic composition was as follows. There were 98 Caucasians, 25 Hispanics, 13 American Indians, 12 Blacks and six other 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 inmate completed both the SAI and DRI scales. Although all inmates volunteered to participate in this study, inmate motivation varied.

Results and Discussion
The results of this study are presented in Table 7. The results demonstrate highly significant relationships between the analogous SAI and DRI scales. The DRI has been shown to be a valid measure of substance (alcohol and drug) abuse in DUI/DWI offenders, hence, these correlation results support the validity of the SAI as a valid measure of substance abuse.

DRI versus SAI Scales	Agreement Coefficients
Truthfulness Scale	.6405
Alcohol Scale	.3483
Drug Scale	.3383
Stress Coping Abilities	.7642

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

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

18. A Study of Sex Differences in the Self-Assessment Index

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

Method
There were three subject samples included in the present study. Some of the participants were in public assistance (welfare) programs. Group 1 consisted of 446 adults. Group 2 consisted of 294 adults. Group 3 consisted of 846 adults. The SAI 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 American Indians, and 4 Other. Educational levels were: Below 8th grade (24), Some High School (71), GED (64), High School Graduates (155), Some College (92), Business/Technical School (9), and College Graduates (31).

The 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); American Indian (7

males); and other (2 males, 1 female). Education was represented as follows: 8th grade or less (13 males, 1 female); Some High School (43 males, 19 females); GED (16 males, 7 females); High School Graduates (83 males, 24 females); Some college (26 males, 21 females); Business/Technical School (1 male, 1 female); College Graduates (13 males, 15 females); and Graduate/Professional Degrees (8 males, 3 females).

The 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 American Indian (15 males). Education was distributed as follows: 8th grade or less (56 males, 5 females); Some High School (241 males, 34 females); GED (72 males, 9 females); High School Graduate (230 males, 30 females); Some College (91 males, 49 females); Business/Technical School (6 males, 1 female); College Graduates (14 males, 3 females); and Graduate/Professional Degree (5 males).

Results and Discussion
Reliability coefficient alpha results are presented in Table 8.

Table 8. Reliability statistics, coefficient alpha.
All coefficient alphas are significant as p<.001.

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

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

T-tests were calculated for all SAI scales to assess possible sex or gender differences. T-test results are presented in Table 9.

Significant sex differences were demonstrated on one of the five scales, i.e., Alcohol Scale, in Group 1, significant sex differences were found on the Alcohol Scale in Group 2 and significant sex differences were found on the Alcohol and Stress Coping Abilities scales in Group 3.

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

Table 9. T-test comparisons of sex differences. (1990)
Sex Differences (Total N = 1,586)

SAI Scale	Group 1 446 Adults	Group 2 294 Adults	Group 3 846 Adults
Truthfulness Scale	n.s.	n.s.	n.s.
Alcohol Scale	t=6.41, p<.001	t=2.29, p<.023	t=5.95, p<.001
Drug Scale	n.s.	n.s.	n.s.
Work Index Scale	n.s.	n.s.	n.s.
Stress Coping Abilities	n.s.	n.s.	t=2.92, p<.004

In Group 1, females had a mean Alcohol Scale score of 5.35 and males 11.30. Similar sex differences were demonstrated on the Driver Risk Inventory Alcohol Scale. Higher male scores on this SAI scales are likely reflecting straightforward admissions. Males appear to be more open than females regarding their drinking behavior.

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

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

19. Self-Assessment Index Sex Differences in a Sample of Municipal Court Clients

A study (Arizona, 1990) involving substance abuse-related offenders and welfare or public assistance clients processed through the Phoenix Municipal Court was conducted to evaluate possible sex differences in SAI scale scores. SAI scales reliability were also reviewed. Comparison to previous SAI research regarding sex differences will help determine the consistency of sex difference across subject samples.

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

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

Table 10. Self-Assessment Index reliability, coefficient alpha. Municipal court clients (N=794).
All coefficient alphas are significant at p<.001.

SAI Scales	Coefficient Alpha
Truthfulness Scale	.80
Alcohol Scale	.90
Drug Scale	.89
Work Index Scale	.85
Stress Coping Abilities	.94

This study supports the reliability (internal consistency) of the Self-Assessment Index. The coefficient alphas for all SAI scales were significant at p<.001. Similar reliability results have been demonstrated on other client populations.

20. Self-Assessment Index Reliability Study in Different Samples of Adults

The present (1991) study was conducted to evaluate the statistical properties of the Self-Assessment Index in three different adult samples some of whom were in public assistance (welfare) programs. As the SAI becomes more widely used it will continue to be our policy to continue to investigate statistical (reliability) properties on the various offender population databases.

Method
There were three groups of 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 11. 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.

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

Table 11. Reliability coefficient alphas. (N = 1,665)
All coefficient alphas are significant at p<.001.

SAI Scales	Group 1 1,299 Adults	Group 2 177 Adults	Group 3 253 Adults
Truthfulness Scale	.81	.85	.86
Alcohol Scale	.93	.84	.91
Drug Scale	.90	.91	.89
Work Index Scale	.88	.92	.90
Stress Coping Abilities	.91	.92	.92

T-tests were calculated for all SAI scales to assess possible sex differences in Group 1 adults. Significant gender differences were demonstrated on two (2) of the SAI scales, i.e., Alcohol Scale and Drug Scale. These results are presented in Table 12.

Table 12. Sex differences in Group 1 adult participants sample (N = 1,299).

SAI Scale	Mean Scale Score Males	Females	Significance Level
Alcohol Scale	9.30	13.94	P<.05
Drug Scale	8.78	12.34	P<.05

Significant gender differences were not observed on the other SAI scales, consequently separate male and female scoring procedures were established for only the Alcohol and Drug scales.

Higher male scores on these two SAI 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.

21. Validation of Self-Assessment Index Scales in a Sample of Vocational Rehabilitation Clients

The Self-Assessment Index was investigated in a sample of individuals who are not generally associated with substance abuse but who have other handicaps. The participants in the present study (1991) were Vocational Rehabilitation clients. These are individuals who have some form of handicap and require assistance in obtaining and/or maintaining employment.

Selected scales in the Minnesota Multiphasic Personality Inventory (MMPI) were used as criterion measures for the different SAI scales. Comparisons to previous validating studies that used substance (alcohol and other drugs) abuse subjects will be made to determine the applicability of the SAI to various adult samples.

Method

The subjects used in the present study consisted of 74 Vocational Rehabilitation clients. The SAI and MMPI scales were administered in counterbalanced order. Product-moment correlations were calculated between SAI scales and selected criterion MMPI scales. The Truthfulness Scale was validated with the MMPI L Scale, F Scale and K Scale. The Alcohol Scale was validated with the MMPI MacAndrew Scale (MAC) and Psychopathic Deviate (PD). The Drug Scale was validated with the MMPI MacAndrew Scale and Psychopathic Deviate scales. The Stress Coping Abilities Scale was validated with the MMPI Psychasthenia (PT), Taylor Manifest Anxiety (MAS) and Tension (TSC-VII) scales.

Result and Discussion

There were 74 Vocational Rehabilitation clients used in the study. There were 49 males and 25 females. Age was distributed (frequency given in parentheses) as follows: 18 to 21 years (11), 22 to 25 years (7), 26-29 years (11), 30-33 years (14), 34-37 years (10), 42-45 years (9), 46-49 years (8), 50 or more years (4). Six education categories were represented: 8th grade or less (11), Partially completed High School (18), GED (14), High School Graduate (21), Some College (6), College Graduate (4). There were 47 Caucasians, 12 Blacks, 8 Hispanics, 6 American Indians and 1 other ethnicity. The correlation results are summarized in Table 13. For clarity, SAI scales are summarized individually and their MMPI scale correlations discussed.

Table 13. Product-moment correlations.
Vocational Rehabilitation Clients (1991, N=74)

MMPI SCALES	SELF-ASSESSMENT INDEX SCALES			
	Truthfulness	**Alcohol**	**Drug**	**Stress Coping**
L	.493**	.001	-.141	-.105
F	-.344*	.435**	.334*	.440**
K	.344*	-.257	-.079	-.308*
PD	-.109	.454**	.292*	.568**
MAC	-.177	.303*	.145	.168
TSC-VII	.480**	.295*	.189	.441**
PT	-.135	.273*	.244	.501**
MAS	-.245	.396**	.240	.574**

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

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

The **Alcohol Scale** was significantly correlated with the MMPI MacAndrew Scale (p<.01) and the PD scale (Psychopathic Deviate, p<.001). High MMPI PD and MAC scores are often associated with substance abuse. The **Drug Scale** was significantly correlated with the PD Scale (Psychopathic Deviate, p<.01). The SAI Drug scale did not correlate significantly with the MMPI MacAndrew Scale. Substance (alcohol and other drugs) abusers have a close identity with their substance of choice. Without independent scales on the MacAndrew Scale for alcohol and drugs, many substance abusers would remain undetected. The MacAndrew Scale does not have its own truthfulness scale. The low correlation between SAI Drug Scale and MacAndrew Scale may have been due to lying or faking on the MacAndrew Scale.

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

These results are consistent with earlier research involving the administration of both the SAI and MMPI scales in that SAI scales are significantly correlated in expected directions with criterion MMPI scales. These findings support the validity of the SAI.

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

22. Validation of Self-Assessment Index Scales in a Sample of Adults

The present study (1992) was conducted to validate the Self-Assessment Index with adult clients, many of whom were public assistance (welfare) clients, with criterion measures from selected Minnesota Multiphasic Personality Inventory (MMPI) scales. This study was done to provide validation of SAI scales 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 adults 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 SAI and MMPI scales were administered in counterbalanced order. Product-moment correlations were calculated between SAI scales and selected MMPI scales. The MMPI scales used for criterion measures were as follows. The Truthfulness Scale was validated with the MMPI L Scale, F Scale and K Scale. The Alcohol Scale was validated with the MMPI MacAndrew Scale and PD Scale. The Drug Scale was validated with the MMPI MacAndrew Scale and PD Scale. The 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), **TSC-VII** (Tension).

Results and Discussion
The results of this study (1992, N = 171) are summarized in Table 14.

Table 14. Product-moment correlations.
Adult Clients (1992, N=171)

MMPI Scales	Truthfulness	Alcohol	Drugs	Stress Coping

L	.511**	.022	-.186*	-.065
F	-.293**	.379**	.269*	.462**
K	.458**	-.201*	-.151	- .319**
PD	-.241**	.312**	.190*	.491**
PT	-.279**	.202*	.115	.470**
MAS	-.394**	.288**	.151	.536**
MAC	.005	.051	.090	.076
TSC-VII	-.431**	.222*	.168	.446**

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

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 SAI Truthfulness Scale. This supports the validity of the SAI Truthfulness Scale.

The **Alcohol Scale** correlates significantly with the MMPI PD Scale. The correlation with the MAC Scale was not significant. Similarly, The **Drug Scale** correlates significantly with the MMPI PD Scale but not with the MAC Scale. These results support the validity of the SAI Alcohol Scale and Drug Scale while raising questions concerning the MacAndrew's (MAC) lack of a Truthfulness 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 SAI Stress Coping Abilities Scale.

This study supports the validity of Self-Assessment Index scales in a sample of adult and welfare clients. SAI 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 shortcoming 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. And the MacAndrew Scale lacks a Truthfulness Scale. The SAI Alcohol and Drug scales correlate with the PD Scale which has been shown to be a valid measure of substance abusers and substance abusing adults.

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

23. A Study of Self-Assessment Index Reliability in a Sample of Adults

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

<u>Method and Results</u>
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 SAI scales indicate that males scored significantly higher than females on the Alcohol Scale and Drug Scale. These results are in agreement with sex differences that were found in previous SAI research.

Reliability coefficient alphas are presented in Table 15. All coefficient alphas were significant at p<.001. These results support the reliability of the SAI in the assessment of adult participants.

Table 15. Reliability coefficient alpha. Adult participants (N = 306).
All coefficient alphas are significant at p<.001.

SAI Scales	Coefficient Alpha
Truthfulness Scales	.89
Alcohol Scale	.93
Drug Scale	.90
Work Index Scale	.85
Stress Coping Abilities	.92

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

24. A Study of SAI 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 and public assistance (welfare) clients, 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 and public assistance (welfare) 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 16. All coefficient alphas are significant a $p<.001$. These results strongly support the reliability of the Self-Assessment Index.

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

Table 16. Reliability coefficient alphas for five adult samples (1993, N = 4,000).
All coefficient alphas are significant at p<.001.

SAI 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
Alcohol Scale	.92	.93	.92	.92	.96
Drug Scale	.90	.93	.89	.92	.92
Work Index Scale	.85	.88	.87	.86	.88
Stress Coping Abilities	.99	.91	.93	.93	.93

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.

25. Reliability of the Self-Assessment Index

The purpose of the present study (1994) was to test the reliability of the Self-Assessment Index. 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 SAI was administered to 4,067 adult participants as part of routine evaluation programs. Subjects were administered the SAI individually in paper-pencil test format.

Results
Reliability coefficient alphas for the three groups (total N = 4,067) are presented in Table 17.

Table 17. Reliability coefficient alphas for Self-Assessment Index (N = 4,067).
All coefficient alphas are significant at p<.001.

SAI Scale	1 Participants N = 2,734	2 Participants N = 344	3 Participants N = 989
Truthfulness Scale	.88	.87	.88
Alcohol Scale	.94	.91	.91
Drug Scale	.92	.89	.89
Work Index Scale	.85	.86	.85
Stress Coping Abilities	.91	.92	.92

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

26. Reliability of Self-Assessment Index and Review of Client Responses across Samples of Adults

This study (1995) was done to further test the reliability of the Self-Assessment Index and to review responses to selected SAI test items across participant samples. Two samples, some of whom were welfare clients, were included in the study. The samples were from similar adult evaluation programs but came from different parts of the country. Items selected for review include self-perception of the severity of alcohol and drug problems, desire for treatment and violence problems. Summarizing the percentage of responses to selected SAI items gives added insight into participants situation and needs.

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

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

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

(51.5%); and Advanced Education (17.6%). Employment: Employed (63.7%); Unemployed (36.2%). Marital Status: Single (48.8%); Married (30.0%); Divorced (12.2%); Separated (8.0%); and Widowed (0.9%).

Reliability coefficient alphas are presented in Table 18 and 3,791 participants are represented.

Table 18. Reliability coefficient alphas Self-Assessment Index (N = 3,791).
All coefficient alphas are significant at p<.001.

SAI Scale	Group 1 (N = 1,969)	Group 2 (N = 1,822)
Truthfulness Scale	.89	.88
Alcohol Scale	.93	.91
Drug Scale	.90	.89
Work Index Scale	.84	.87
Stress Coping Abilities	.93	.93

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

The SAI facilitates analysis of client responses to items or questions. The percentage of participants responding to selected items provide additional insight into participant profiles and patterns of responding. The following items were selected for participant "percentage of response" analyses. Public assistance departments could find it interesting to compare participant's percentage responses to selected SAI items, so percentage of participant responses follow.

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

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

Table 19. Participant (N = 3,791) self-perceptions of substance abuse.

Alcohol and Drug Responses	Group 1 (Midwest-1,969)	Group 2 (Southwest-1,822)
6. I am concerned about my drinking	16%	17%
27. My drinking is more than just a minor problem	13%	14%
32. I have a drinking or alcohol-related problem	16%	19%
50. I am a recovering alcoholic	12%	17%
87. How would you describe your drinking?		
1. A Serious problem...	7%	9%
2. A moderate problem	8%	7%
3. A mild problem..	12%	11%
88. Recovering means having an alcohol or drug problem, but not using or abusing them anymore. I am a recovering:		
1. Alcoholic	12%	12%
2. Drug abuser...	7%	6%
3. Both 1 and 2..	5%	8%
48. I have a drug abuse or drug-related problem..............................	10%	12%
90. How would you describe your drug use?		
1. Serious problem...	5%	5%
2. Moderate problem..	3%	4%
3. Mild problem	6%	8%

Whereas these two samples may appear to be quite similar, differences exist that suggests a "one-size-fits-all" approach would not work. For this reason the SAI continues to be individualized on a variety of adult populations. The Self-Assessment Index database makes this type of research possible. Participant self-perceptions are presented in Table 19.

27. Self-Assessment Index 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-Assessment Index. There were four 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 welfare 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 20.

Table 20. Reliability coefficient alphas. (1995, N = 10,740)

SAI 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
Alcohol Scale	.93	.92	.93	.93	.92
Drug Scale	.90	.89	.90	.93	.89
Work Index Scale	.86	.86	.86	.86	.85
Stress Coping Abilities	.93	.92	.93	.93	.91

These results support the reliability (internal consistency) of the SAI. All coefficient alphas are significant at p<.001. The SAI 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 SAI is applicable across different national adult samples. The SAI is a reliable adult risk assessment instrument.

28. Self-Assessment Index Reliability in Large Samples of Welfare Recipients

In 1996 two large adult assessment programs were added to the Self-Assessment Index database. A study (1996) was conducted to determine the reliability of the SAI in these two new welfare recipient samples. **The first group contained 15,203 participants.** Demographic composition of Group 1 is as follows. Of the 15,203 participants 12,424 (81.7%) were male and 2,772 (18.2%) were female. Age: 18 or younger (10.3%); 19 to 29 (43.0%); 30 to 39 (31.5%); 40 to 49 (11.8%); 50 to 59 (2.5%) and 60 or older (0.7%). Ethnicity:

Caucasian (64.5%); Black (32.6%); Hispanic (1.1%); Asian (0.3%); Native American (0.7%) and Other (0.4%). Education: 8th grade or less (7.1%); Partially Completed High School (34.9%); High School Graduate (44.7%); Partially Completed College (9.3%); College Graduate (2.0%) and Professional/Advanced Degree (0.3%). Employment: Employed (54.4%) and Unemployed (45.1%).

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

Reliability coefficient alphas are represented in Table 21 and represent 24,450 welfare recipients.

These results support the internal consistency (reliability) of the SAI for these two large welfare recipient 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-Assessment Index test results are reliable.

Table 21. Reliability coefficient alphas (N = 24,450).
All coefficient alphas are significant at p<.001.

SAI Scale	Group 1 N = 15,203	Group 2 N = 9,247
Truthfulness Scale	.89	.89
Alcohol Scale	.95	.96
Drug Scale	.92	.93
Work Index Scale	.86	.87
Stress Coping Abilities	.93	.93

29. Self-Assessment Index Reliability in Two Samples of Women Welfare Recipients

A study (1997) was conducted to determine the reliability of the Self-Assessment Index in two samples of welfare recipients composed entirely of women. **The first group consisted of 529 female welfare recipients.** Demographic composition of Group 1 is as follows. Age: 19 or younger (18.7%); 20 to 29 (43.9%); 30 to 39 (25.3%); 40 to 49 (9.3%); 50 to 59 (1.5%) and 60 or older (1.3%). Ethnicity: Caucasian (66.0%); Black (25.7%); Hispanic (4.9%); Asian (0.9%); Native American (1.3%) and Other (1.1%). Education: 8th grade or less (3.2%); Partially Completed High School (24.8%); High School Graduate (49.7%); Partially Completed College (16.1%) and College Graduate (5.9%). Marital Status: Single (61.4%); Married (15.9%); Divorced (13.4%); Separated (8.5%) and Widowed (0.8%).

Group 2 consisted of 442 female welfare recipients. Demographic composition of Group2 is as follows. Age: 19 or younger (11.1%); 20 to 29 (33.8%); 30 to 39 (37%); 40 to 49 (15.4%); 50 to 59 (2.5%) and 60 or older (0.2%). Ethnicity: Caucasian (55.9%); Black (24%); Hispanic (15.5%); Asian (0.5%); Native American (2.7%) and Other (1.4%). Education: 8th grade or less (10.9%); Partially Completed High School (25.8%); High School Graduate (43.7%); Partially Completed College (12.7%) and College Graduate (4.3%). Marital Status: Single (41.9%); Married (25.7%); Divorced (20.4%); Separated (10.0%) and

Widowed (2.1%).

Reliability coefficient alphas are represented in Table 22 and represent 971 female welfare recipients.

Table 22. Reliability coefficient alphas (N = 971, women).
All coefficient alphas are significant at p<.001.

SAI Scale	Group 1 N = 529	Group 2 N = 442
Truthfulness Scale	.87	.89
Alcohol Scale	.91	.93
Drug Scale	.91	.93
Work Index Scale	.83	.80
Stress Coping Abilities	.93	.93

These results support the reliability of the SAI for these two samples of female welfare recipients. 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-Assessment Index.

30. Reliability and Scale Risk Range Accuracy of the Self-Assessment Index in a Sample of Welfare Recipients

This study (1997) was conducted to test the reliability and accuracy of the Self-Assessment Index for the assessment of public assistance (welfare) recipients. Reading levels of the test items were analyzed to improve readability and comprehension for welfare recipients. Inter-item reliability coefficients were used in combination with content of test items to aid in development of the test items. Reliability of the SAI was investigated in the present study.

Risk range percentile scores are calculated for each SAI 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 SAI risk range percentile scores involves comparing the risk range percentile scores obtained from SAI 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 consisted of 850 adult welfare clients. There were 663 males (78%) and 187 females (22%). Demographic composition of these participants 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 23 for 850 welfare recipients.

Table 23. Reliability coefficient alphas (N = 850).
All coefficient alphas are significant at p<.001.

SAI Scale	Welfare Clients N = 850
Truthfulness Scale	.87
Alcohol Scale	.95
Drug Scale	.93
Work Index Scale	.87
Stress Coping Abilities	.93

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

The risk range percentile score results for welfare recipients using the SAI are presented in Table 24.

Table 24. Risk Range Percentile Scores, N = 850 welfare clients.

■ Low □ Medium ■ Problem □ Severe Problem
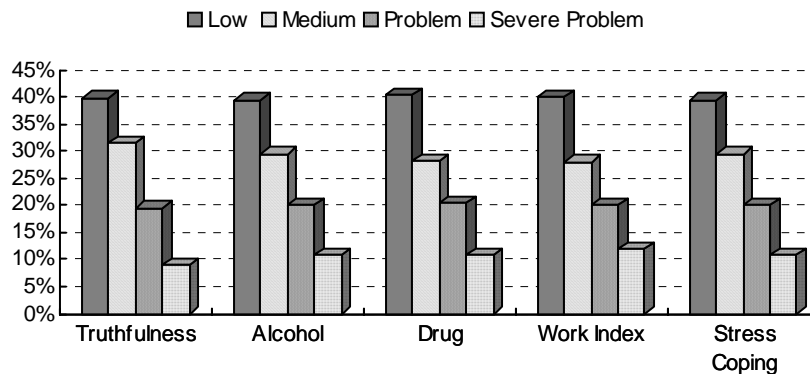
Risk Range	Truthfulness	Alcohol	Drug	Work Index	Stress Coping	**Predicted**
Low	39.9	39.6	40.5	40.0	39.5	**39%**
Medium	31.6	29.5	28.2	28.1	29.6	**30%**
Problem	19.6	20.0	20.5	20.0	20.1	**20%**
Maximum	8.9	10.9	10.8	11.9	10.8	**11%**

These results show that obtained risk range percentile scores closely approximated the predicted risk range percentile scores for each of the five SAI scales presented in Table 24 for the public assistance (welfare) clients included in the study. **These results indicate that the SAI is a very accurate welfare client 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 2.1 percent of predicted. For the Problem Risk and Maximum Risk categories, all but one comparison showed that the obtained percentages were within one percentage point of predicted. **This is very accurate assessment.**

31. Reliability, Validity and Accuracy of the SAI in a Sample of Welfare Recipients

This study (1998) further explored the reliability, validity and accuracy of the Self-Assessment Index. There were 375 welfare recipient clients included in the study. All welfare recipients were tested with the revised SAI that was modified to lower reading levels and improve readability and comprehension of test items. Reliability of the SAI was studied, as well as discriminant validity and SAI scale risk range percentile score accuracy.

Risk range percentile scores for the 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) were compared to predicted percentages. Risk range percentile scores represent degree of severity.

Method and Results
The subjects in this study consisted of 375 adult welfare recipients. There were 30 males (8%) and 345 females (92%). Demographic composition of these participants is as follows: Age: 19 & under (9.6%); 20-29 (52.5%); 30-39 (25.6%); 40-49 (10.6%); 50 & over (1.6%). Ethnicity: Caucasian (32.3%); Black (60%); Hispanic (6.1%); Asian (0.3%); Native American (0.3%) and Other (1.1%). Education: Eighth grade or less (9.3%); Some H.S. (36.8%); H.S. graduate (42.4%); Some college (8.5%) and College graduate (2.9%). Marital Status: Single (69.3%); Married (12.5%); Divorced (9.3%); Separated (8.3%) and Widowed (0.5%).

Reliability coefficient alphas are presented in Table 25 for 375 welfare recipients.

Table 25. Reliability coefficient alphas (1998, N = 375).
All coefficient alphas are significant at p<.001.

SAI Scale	Welfare Clients N = 370
Truthfulness Scale	.86
Alcohol Scale	.82
Drug Scale	.86
Work Index Scale	.80
Stress Coping Abilities	.80

The results of the study support the reliability of the SAI. All coefficient alphas are significant at p<.001. All scale reliability coefficients are at or above professionally accepted levels for test reliability. These results show that the Self-Assessment Index is a reliable risk assessment instrument.

The risk range percentile scores are presented in Table 26. The welfare recipient risk range percentile scores are in close agreement with the predicted risk range percentile scores for each of the five SAI scales. The results presented in Table 26 demonstrate that all of the 20 risk range percentage comparisons between obtained percentages and predicted percentages were within 3.9 percent. Only two risk range percentages were more than 1.3 percent from the predicted (Alcohol Scale low and medium risk). **These results demonstrate that the SAI is a very accurate welfare recipient risk assessment test.**

Table 26. Risk Range Percentile Scores, N = 375 welfare recipients (1998).
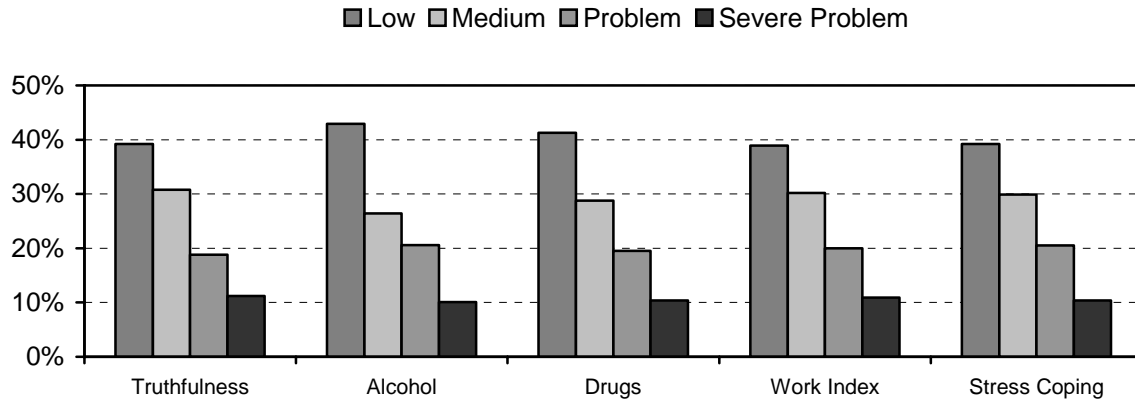
Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	39.2	**(0.2)**	30.8	**(0.8)**	18.8	**(1.2)**	11.2	**(0.2)**
Alcohol	42.9	**(3.9)**	26.4	**(3.6)**	20.6	**(0.6)**	10.1	**(0.9)**
Drugs	41.3	**(1.3)**	28.8	**(1.2)**	19.5	**(0.5)**	10.4	**(0.4)**
Work Index	38.9	**(0.1)**	30.2	**(0.2)**	20.0	**(0.0)**	10.9	**(0.1)**
Stress Coping	39.2	**(0.2)**	29.9	**(0.1)**	20.5	**(0.5)**	10.4	**(0.6)**

The differences between obtained percentages and predicted percentages are given in parentheses.

Discriminant validity

Three different comparisons were performed welfare recipient groups formed on the basis of alcohol problems, drug problems and work attitude problems. Alcohol problem clients were defined as welfare recipients who reported having been in alcohol treatment. Alcohol Scale scores were compared between welfare recipients that had alcohol treatment (problem group) and welfare recipients that had not been in alcohol treatment (non-problem group). Similarly, Drugs Scale scores were compared between welfare recipients who had and had not been in drug treatment.

Work problem groups were defined using direct admission of bad work attitude for the Work Index Scale comparison. Welfare recipient clients who admitted to having a bad work attitude made up the work problem group. Clients who did not admit to having a bad work attitude made up the non-problem group. There is a lack of a concrete definition for work problems such as was used for alcohol and drugs, i.e., having had treatment. Defining the problem group on the basis of bad work attitude at least provides a general characterization of work problems that enables the Work Index Scale comparison to be made. Truthfulness and Stress Coping Abilities Scale have been validated in previous research.

There were 23 welfare recipients in the alcohol problem group (had alcohol treatment) and 352 welfare recipients in the non-problem group. There were 29 welfare recipients in the drug problem group and 346 in the non-problem group. For the work problem groups there were 353 non-problem welfare recipients and 22 problem welfare recipients. The t-test comparisons between problem and non-problem groups for each SAI scale are presented in Table 27. There are 375 welfare recipients included in these analyses.

The t-test comparison for the Truthfulness Scale indicated there was no significant difference between problem group and non-problem group scale scores. This finding shows that welfare recipients are equally open and honest when completing the SAI. As noted earlier, Truthfulness Scale validation was done in research studies that are reported earlier in this research summary document.

Table 27. T-Test Comparisons Between Problem And Non-Problem Groups (1998, N = 375)

SAI Scale	Non-problem Group Mean Scale Score	Problem Group Mean Scale Score	T-value	Level of significance
Alcohol Scale	1.43	9.52	t = 5.84	p<.001
Drugs Scale	1.93	12.31	t = 7.61	p<.001
Work Index Scale	17.82	24.50	t = 3.37	p<.001
Stress Coping Abilities	97.74	81.34	t = 2.44	p<.02

Alcohol Scale, Drugs Scale and Work Index Scale results show that welfare recipients with problems scored significantly higher on the scales than did non-problem clients. Welfare recipients with alcohol problems (had treatment) scored significantly higher on the Alcohol Scale than non-problem welfare recipients (never had treatment). Similarly, welfare recipients with drug problems scored significantly higher on the Drugs Scale than non-problem clients. And work attitude problem clients scored higher on the Work Index Scale than non-problem clients. These results are important because they show that the Alcohol, Drugs and Work Index scales do measure level of severity and that problem welfare recipient clients score significantly higher on these scales than non-problem clients. These results support the discriminant validity of the Alcohol, Drugs and Work Index Scales.

The Stress Coping Abilities Scale score t-test comparison was done using the work problem groups. Validity of the Stress Coping Abilities Scale, reported earlier in this document, was demonstrated using criterion validation with MMPI scales. Scores on the Stress Coping Abilities Scale are reversed in that higher scores are associated with better stress coping abilities. It is interesting to note that the work problem group scored significantly higher on the Stress Coping Abilities Scale than the non-problem group. Welfare recipients who admit to having work attitude problems demonstrate poorer stress coping skills. This result indicates there is a high correlation between bad work attitudes and stress coping problems.

Taken together these results demonstrate that the SAI is a very accurate test for welfare recipient screening. SAI scale risk range percentile scores closely approximate predicted percentages and scale score comparisons between problem and non-problem welfare recipients indicate that these groups are significantly different. The SAI accurately identifies welfare recipient risk.

32. Study of the SAI in a Large Sample of Welfare Recipients

This study (2000) examined the statistical properties of the SAI in a large sample of welfare recipients. Some recommendations for revising the SAI are offered. Self-Assessment Index test results for 1,127 welfare recipient clients are summarized.

Method and Results
The subjects in this study consisted of 1,127 adult welfare recipients. There were 47 males (4.2%) and 1,080 females (95.8%). Demographic composition of these participants is as follows: Age: 19 & under (10.1%); 20-29 (58.1%); 30-39 (23.5%); 40-49 (8.0%); 50 & over (0.3%). Ethnicity: Caucasian (14.3%); Black (82.5%); Hispanic (0.8%) and Other (2.3%). Education: Eighth grade or less (5.2%); Some H.S. (43.7%); H.S. graduate (38.9%); Some college (10.3%) and College graduate (2.0%). Marital Status: Single (76.8%); Married (4.7%); Divorced (5.5%); Separated (10.3%) and Widowed (0.6%).

Accuracy of the SAI

The SAI contains five measurement (or severity) scales. In the graph and table below, the percentage of

clients scoring in the four risk categories (low, medium, problem and severe problem) is compared to the predicted percentage for each of the five measurement scales. The differences between obtained and predicted percentages are shown in parentheses in the table below the graph. There are 1,127 SAI test results summarized in the following risk range percentile analysis.

Table 28. SAI Scale Accuracy (2000, N = 1,127)
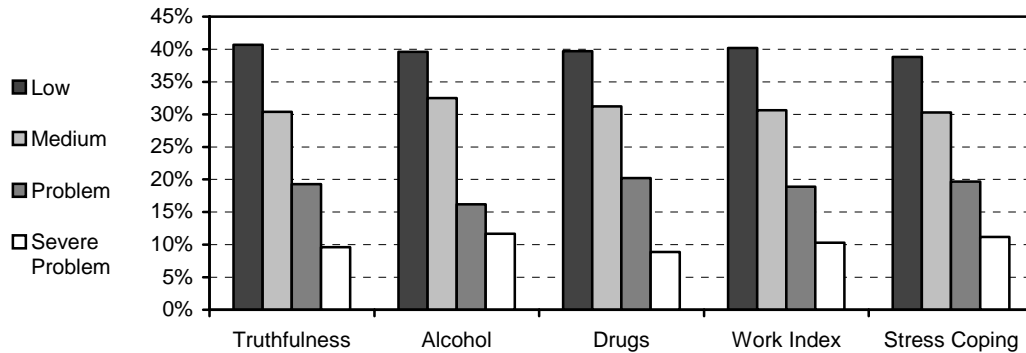
Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	40.7	**(1.7)**	30.4	**(0.4)**	19.3	**(0.7)**	9.6	**(1.4)**
Alcohol	39.6	**(0.6)**	32.5	**(2.5)**	16.2	**(3.8)**	11.7	**(0.7)**
Drugs	39.7	**(0.7)**	31.2	**(1.2)**	20.2	**(0.2)**	8.9	**(2.1)**
Work Index	40.2	**(1.2)**	30.6	**(0.6)**	18.9	**(1.1)**	10.3	**(0.7)**
Stress Coping	38.8	**(0.2)**	30.3	**(0.3)**	19.7	**(0.3)**	11.2	**(0.2)**

The differences between obtained percentages and predicted percentages are given in parentheses.

As shown in Table 28, obtained risk range percentages for all risk categories and all SAI scales were within **3.8** percentage points of the predicted percentages. **Of the 20 possible comparisons (5 scales x 4 risk ranges) between attained and predicted percentages, 12 were within one percentage point of the predicted percentage. Only three obtained risk range percentages were greater than 1.7% from the predicted percentage, and these were the medium (2.5%) and problem risk (3.8%) ranges for the Alcohol Scale and the severe problem (2.1%) range for the Drugs Scale. These results demonstrate the accuracy of the SAI.**

The difference between obtained and expected percentages is a measure of accuracy. The results presented in the graph and table above demonstrate that the four risk range percentages for each of the SAI scales are very accurate because they are in close agreement with predicted percentages. **These results demonstrate that SAI scale scores accurately identify welfare recipient risk.**

Reliability of the SAI

In the Table 29 "pilot" refers to the original 85 item SAI that was given to 1,127 welfare recipients. "Projected" refers to an improved 98 item SAI that would evolve from subsequent SAI database analysis. Cronbach's coefficient alpha is a widely used test of reliability, consequently the following table summarizes Cronbach coefficients for each SAI scale.

Table 29. Reliability coefficient alphas (2000, N = 1,127)

SAI Scale	Pilot 85-Items	Projected 98-Items
Truthfulness Scale	.85	.88
Alcohol Scale	.86	.90
Drugs Scale	.84	.87
Work Index Scale	.80	.88
Stress Coping Abilities	.80	.90

All alpha coefficients for all pilot program (N=1,127) scales are well within professionally accepted ranges. **The original SAI as used in the pilot program is a reliable assessment instrument.** Moreover, statistical analysis identified each item's item-total (scale) correlation. Items with the best statistical properties were retained and weaker items replaced. Scale items were replaced as follows: Truthfulness (3 items), Alcohol (3 items), Drugs (4 items), Work Index (7 items) and Stress Coping Abilities (1 item). Replacement items contributed to a revised 103-item SAI test booklet.

It is recommended that the 103-item SAI be administered to an additional 300 welfare recipients. Analysis of this data would then enable reducing the number of SAI items to 98—without weakening reliability. Indeed, the new 98-item SAI would have improved reliability as projected in Table 29. The goal is to reach a desired medium between a test with high statistical reliability and a favorably low number of items. **The 85-item SAI is reliable, and the new 98-item SAI would be even more reliable.**

Validity of the SAI
SAI scales measure the severity of problems that are barriers to employment. It is expected that welfare recipient clients having problems would have higher scores than those clients who don't have problems. Measures of severity must accurately differentiate between problem and non-problem groups. A comparison between groups selected on the basis of a known problem is a statistical validation method commonly referred to as discriminant validity. **Discriminant validity of the SAI is shown by significant scale score differences between problem and non-problem client groups, in predicted directions.**

Discriminant validity
The following discriminant validity analyses consisted of three different comparisons made between welfare recipient groups. The three groups were formed on the basis of alcohol problems, drug problems and work attitude problems. Alcohol problem clients were defined as welfare recipients who reported having been in alcohol treatment. Alcohol Scale scores were compared between welfare recipients that had alcohol treatment (problem group) and welfare recipients that had not been in alcohol treatment (non-problem group). Similarly, Drugs Scale scores were compared between welfare recipients who had and had not been in drug treatment. Welfare recipients who had never been in treatment were operationally defined for these comparisons as non-problem clients.

Work problem groups were defined using direct admission of work problems (e.g., bad work attitude) for the Work Index Scale comparison. Welfare recipient clients who admitted to having a bad work attitude made up the work problem group. Clients who did not admit to having a bad work attitude made up the non-problem group. There is a lack of a concrete definition for work problems such as was used for alcohol and drugs, i.e., having had treatment. Defining the problem group on the basis of bad work attitude at least provides a general characterization of work problems that enables the Work Index Scale comparison to be made. Truthfulness and Stress Coping Abilities Scales have been validated in previous research.

There were 97 welfare recipients in the alcohol problem group (had alcohol treatment) and 1,030 welfare recipients in the non-problem group. There were 75 welfare recipients in the drug problem group (had drug treatment) and 1,052 in the non-problem group. The Work Index Scale item "I have been told I have a bad work attitude." defined groups for the Work Index and Stress Coping Abilities Scale comparisons. There were 1,063 non-problem welfare recipients and 64 problem welfare recipients. The t-test comparisons between problem and non-problem groups for each SAI scale are presented in the table below. There are 1,127 welfare recipients included in these analyses.

Table 30. T-Test Comparisons Between Problem And Non-Problem Groups (2000, N = 1,127)

SAI Scale	Non-problem Group Mean Scale Score	Problem Group Mean Scale Score	T-value	Level of significance
Alcohol Scale	1.38	10.96	t = 18.65	p<.001
Drugs Scale	1.68	11.80	t = 14.12	p<.001
Work Index Scale	17.84	30.95	t = 8.13	p<.001
Stress Coping Abilities	99.57	77.31	t = 5.31	p<.001

With regards to the Truthfulness Scale, t-test comparisons indicated there was no significant difference between problem group and non-problem group scale scores. This finding shows that welfare recipients are equally open and honest when completing the SAI. As noted earlier, Truthfulness Scale validation was done in research studies that are reported in this research summary document.

Alcohol Scale, Drugs Scale and Work Index Scale results show that welfare recipients with problems scored significantly higher on the scales than did non-problem clients. Welfare recipients with alcohol problems (had treatment) scored significantly higher on the Alcohol Scale than non-problem welfare recipients (never had treatment). Similarly, welfare recipients with drug problems scored significantly higher on the Drugs Scale than non-problem clients. And work attitude problem clients scored higher on the Work Index Scale than non-problem clients. These results are important because they show that the Alcohol, Drugs and Work Index scales do measure level of severity and that problem welfare recipient clients score significantly higher on these scales than non-problem clients.

The Stress Coping Abilities Scale score t-test comparison was done using the work problem groups. Validity of the Stress Coping Abilities Scale, which was summarized earlier in this research document, was demonstrated using criterion validation with MMPI scales. Scores on the Stress Coping Abilities Scale are reversed in that higher scores are associated with better stress coping abilities. It is interesting to note that the work problem group scored significantly higher on the Stress Coping Abilities Scale than the non-problem group. Welfare recipients who admit to having work attitude problems demonstrate poorer stress coping skills. This result indicates there is a high correlation between bad work attitudes and stress coping problems.

In summary, these t-test results support the discriminant validity of the Alcohol, Drugs, Work Index and Stress Coping Abilities Scales. We predicted welfare recipients with problems would score higher on these scales than non-problem clients. The Alcohol, Drugs, Work Index and Stress Coping Abilities Scales measure severity of problem behavior. The higher the scale scores the more severe the problems are. Moreover, having been in treatment is indicative of "problem behavior." Welfare recipients who had been in treatment for alcohol and/or drugs scored significantly higher on the Alcohol and Drugs scales than welfare recipients who had not had treatment. These results support the discriminant validity of the Alcohol, Drugs, Work Index and Stress Coping Abilities Scales.

Predictive validity

To be considered accurate an assessment or screening test must accurately identify problem welfare recipients (drinkers and/or drug abusers). The SAI accurately identifies problem prone drinkers and/or drug abusers. The same welfare recipient groups defined above for alcohol and drug problems were used in this analysis. That is, welfare recipients were assigned to the problem group if they had been in alcohol or drug treatment. It was predicted that clients with an alcohol or drug treatment history will score in the problem risk range (70th percentile and above) on the Alcohol and Drug Scales, respectively.

Predictive validity analysis shows that Alcohol and Drug Scales accurately identify welfare recipients who have had alcohol and/or drug treatment. The SAI Alcohol Scale is very accurate in identifying clients who have alcohol problems. Of the 97 welfare recipients classified as problem drinkers, all but 1 of the individuals or **99 percent**, had Alcohol Scale scores at or above the 70th percentile. In comparison to other tests, this is very accurate assessment. The Alcohol Scale correctly identified nearly all of the welfare recipients categorized as problem drinkers. **These results are very impressive and strongly validate the SAI Alcohol Scale.**

The SAI Drugs Scale is also very accurate in identifying welfare recipients who have drug problems. There were 75 welfare recipients who reported having been in drug treatment. Of these 75 individuals, 74 welfare recipients, or **99 percent**, had Drugs Scale scores at or above the 70th percentile. **These results are similar to those reported above for the Alcohol Scale and represent very accurate assessment.** These results strongly substantiate the accuracy of the SAI Drugs Scale.

The SAI is a very accurate screening or assessment instrument. This was discussed earlier regarding risk range percentile scores for all SAI scales, scale score comparisons between problem and non-problem welfare recipients and correct identification of problem drinkers and drug abusers. It can reasonably be assumed that the inclusion of a review of available records and interview with welfare recipients would improve assessment accuracy even further. The SAI identifies welfare recipients with substance (alcohol and other drugs) abuse problems. In addition, the SAI also accurately identifies malingerers (Truthfulness Scale), problematic work attitudes/behaviors (Work Index Scale) and the emotionally disturbed (Stress Coping Abilities Scale). What does this mean? The SAI is both comprehensive and accurate. Comprehensive in the sense that it screens important areas of inquiry that are "barriers to employment." Accurate in the sense that the SAI does what it is purported to do - - that is accurately identify welfare recipient risk.

SAI Client Self-Perceptions

Sometimes reviewing welfare recipients' response patterns to specific areas of inquiry (e.g., alcohol, drugs and emotional problems) can provide additional insight into their attitudes and behavior. For these reasons several SAI items were selected for response pattern analysis. Selected SAI items are presented below along with the percentage of males and females that admitted to the problem. There were 1,127 welfare recipients who responded to these SAI items. Of these 1,127 welfare recipients 47 were male and 1,080 female. It should be noted that response pattern frequency or percentage analysis simply reflects welfare recipient answers – with all their biases. Welfare recipient thinking, motivation concerns and problems can sometimes be inferred.

Areas of inquiry include: Alcohol and Drugs (SAI item #32, 45, 78, 79, 80, 81 and 82) and Emotional/Mental Health (SAI item #7, 53, 83 and 85). For these items the SAI item number is

presented, the item is summarized and the percentage of male and female responses (admissions) are given. Comparison of these percentage responses with SAI scale scores and welfare recipient history can stimulate discussion of welfare recipient answers, societal issues and even provoke thought.

Alcohol and Drug Problems	Males %	Females %
#32. I have a drinking or alcohol-related problem.	17.0	2.0
#45. I have a drug abuse or drug-related problem.......................................	19.1	4.2
#78. How would describe your drinking?		
1. A serious problem	6.4	2.8
2. A moderate problem...	10.6	2.0
3. A mild problem	23.4	4.4
#81. How would you describe your drug use?		
1. A serious problem	4.3	2.5
2. A moderate problem	14.9	1.2
3. A mild problem	12.8	1.7
#80. How many times were you in alcohol treatment programs?		
1. One..	12.8	3.2
2. Two or three..	19.1	3.4
3. Four or more	10.6	0.5
#82. How many times were you in drug treatment programs?		
1. One..	14.9	2.9
2. Two or three..	10.6	2.1
3. Four or more	6.4	0.6
#79. Recovering means you had a problem in the past, but now you do not. I am a recovering:		
1. Alcoholic	25.5	4.5
2. Drug-abuser	12.8	2.9
3. Both 1 and 2	4.3	2.6

Emotional and Mental Health Problems

	Males %	Females %
#83. During the last six months I have been:		
1. Suicidal (dangerous to myself)	10.6	3.1
2. Homicidal (dangerous to others)..	6.4	1.3
3. Both 1 & 2 (suicidal and homicidal)...	6.4	1.6
#53. I have been told I have a negative attitude.	29.8	19.0
#7. I want help to straighten out my life..	55.3	68.1
#85. Are you able to work?		
1. Yes. I have no physical or medical problems	53.2	59.7
2. Yes. I have a few minor physical or medical problems................	29.8	15.2
3. You. I have some physical or medical problems	6.4	10.4
4. No. I have serious physical or medical problems	10.6	14.7

As with any self-report whether screening tests or interviews, it can be informative to look for similarities and inconsistencies in responses. Consider alcohol problems, if a person has had alcohol treatment it would be expected that they would admit having a drinking problem. Test item #80 (times in alcohol treatment) shows that the percentage of individuals having been in one or more treatment programs (#80 answers 1, 2 & 3 combined) agrees with the percentage of clients rating their drinking as a problem (#78 answers 1, 2 & 3 combined). For males these percentages are 42.5% (#80) and 40.4% (#78). For females these percentages are 7.1% (#80) and 9.2% (#78). However, test item #32 (I have a drinking problem) has a much lower percentage of clients (17% males and 2% females) who answered true to the statement. More than half of the welfare recipients who have had treatment do not admit to a drinking problem. At this time we can only speculate about the effects of recovery, cure or denial. With regard to screening tests and interviews specific questions are more accurately answered than open-ended questions. These findings show that any test needs to have more than one or just a few items to accurately measure severity of substance (alcohol and other drugs) abuse problems. It should be pointed out that male percentages on these test items are much higher than female percentages. This may be due to the small number of males in this sample. Similar findings are found for the drug items #82, 81 and 45. Treatment (#82) and drug ratings of problems (#81) are in close agreement, whereas, admission to a drug problem (#45) is much lower when compared to either the rating of their problem (#81) or having been in treatment (#82).

Sometimes individuals are inadvertently overlooked when percentages are reported. Test item #83 reported the percentage of individuals who indicated they were suicidal (10.6% or 5 males, 3.1% or 33 females), homicidal (6.4% or 3 males, 1.3% or 14 females) and both suicidal and homicidal (6.4% or 3 males, 1.6% or 17 females). **A total of 75 individuals reported their being suicidal or homicidal in the last six months.** These individuals clearly are in need of help.

The goal of moving people out of welfare and into the work force is an ambitious, yet attainable goal. On an individual level such a goal often means major life changes. Breaking the cycle of welfare dependence requires taking dramatic steps to help individuals change their lives. Overcoming barriers to employment is possible with early problem identification. The SAI helps staff identify problems that effect positive change, program completion and successful employment. The SAI is the starting point for effective welfare-to-work programs.

In summary, the SAI is an automated (computer scored) screening instrument. It facilitates early problem identification, thereby permitting prompt intervention and remediation. Welfare recipients' chances for successful program completion, recovery and subsequent employment are improved. The SAI is an objective and standardized approach to accurate welfare recipient screening. And the proprietary built-in database makes annual program summary reports available at no additional cost.

33. SAI Reliability, Validity and Accuracy in a Sample of Welfare Recipients

This study (2000) continued the examination of the statistical properties of the Self-Assessment Index in a sample of welfare recipients. As the SAI becomes more widely used it is important to continue reviewing its statistical properties in these varied testing milieus. Test results for 500 welfare recipients are summarized.

Method and Results
This study (2000) examined the test results of 500 adult welfare recipients. There were 40 males (8%) and 460 females (92%). Demographic composition of these participants is as follows: Age: 19 & under

(11%); 20-29 (51.4%); 30-39 (24.8%); 40-49 (11.2%); 50 & over (1.6%). Ethnicity: Caucasian (29.8%); Black (66%); Hispanic (3%) and Other (1.2%). Education: Eighth grade or less (4.6%); Some H.S. (38.8%); H.S. graduate (45.8%); Some college (8.8%) and College graduate (1.8%). Marital Status: Single (71.6%); Married (10.6%); Divorced (9.2%); Separated (8.4%) and Widowed (0.2%).

Accuracy of the SAI

The percentages of clients scoring in the four risk categories (low, medium, problem and severe problem) is presented in the graph and table below. These percentages are compared to the predicted percentage for each of the five measurement scales. The differences between obtained and predicted percentages are shown in parentheses in the table below the graph. There are 500 SAI test results included in this analysis.

Table 31. SAI Scale Accuracy (2000, N = 500)
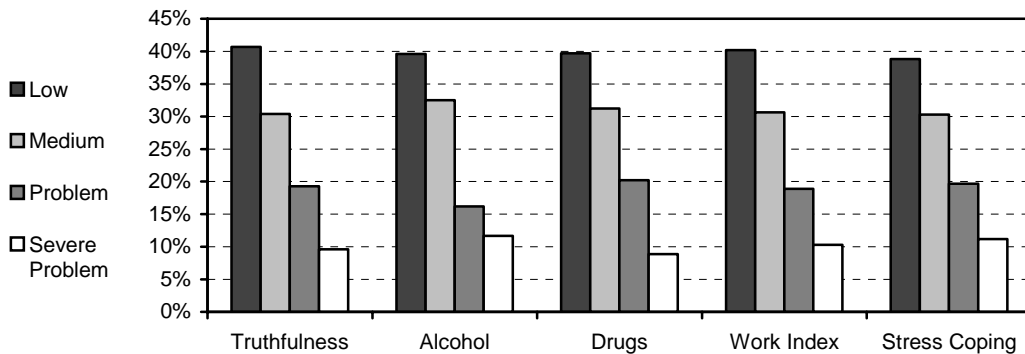
Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	40.0	**(1.0)**	30.6	**(0.6)**	20.5	**(0.5)**	8.9	**(2.1)**
Alcohol	41.4	**(2.4)**	28.4	**(1.6)**	20.0	**(0.0)**	10.2	**(0.8)**
Drugs	40.2	**(1.2)**	28.3	**(1.7)**	20.9	**(0.9)**	10.6	**(0.4)**
Work Index	41.0	**(2.0)**	28.5	**(1.5)**	19.6	**(0.4)**	10.9	**(0.1)**
Stress Coping	38.9	**(0.1)**	30.9	**(0.9)**	19.7	**(0.3)**	10.5	**(0.5)**

The differences between obtained percentages and predicted percentages are given in parentheses.

As shown in Table 31, obtained risk range percentages for all risk categories and all SAI scales were within **2.4** percentage points of the predicted percentages. **Of the 20 possible comparisons (5 scales x 4 risk ranges) between attained and predicted percentages, 13 were within one percentage point of the predicted percentage. Only three obtained risk range percentages were greater than 1.7% from the predicted percentage, and these were within 2.4% of the predicted. These results demonstrate the accuracy of the SAI.**

The difference between obtained and expected percentages is a measure of accuracy. The results presented in the graph and table above demonstrate that the four risk range percentages for each of the SAI scales are very accurate because they are in close agreement with predicted percentages. **These results demonstrate that SAI scale scores accurately identify welfare recipient risk.**

Reliability of the SAI

The reliability coefficient alphas for the original 85 item SAI are presented in Table 32. Coefficient alpha is widely used for determining test reliability. As shown in Table 32, all coefficient alphas are statistically significant at $p < 0.001$.

Table 32. Reliability coefficient alphas (2000, N = 500)

SAI Scale	Coefficient Alpha	Significance Level
Truthfulness Scale	.85	p<0.001
Alcohol Scale	.83	p<0.001
Drugs Scale	.86	p<0.001
Work Index Scale	.80	p<0.001
Stress Coping Abilities	.81	p<0.001

All alpha coefficients for all scales are within professionally accepted (0.80) ranges. The SAI is a reliable welfare recipient assessment instrument.

Validity of the SAI

As in the previous research study, the validity of the SAI was examined in two statistical procedures, discriminant validity and predictive validity. SAI scales measure the severity of problems. It is expected that welfare recipients with problems score higher than clients who don't have problems. The discriminant validity analysis entails a comparison between groups selected on the basis of a known problem. **Discriminant validity of the SAI is shown by significant scale score differences between problem and non-problem client groups, in predicted directions.**

Discriminant validity

Comparisons were made between three different welfare recipient groups. The three groups were formed on the basis of alcohol problems, drug problems and work attitude problems. Alcohol treatment was used to define problem clients for the Alcohol Scale. Similarly, Drugs Scale scores were compared between welfare recipients who had and had not been in drug treatment. Bad work attitude defined the problem group for comparisons with the Work Index Scale. Welfare recipient clients who admitted to having a bad work attitude made up the work problem group. Truthfulness and Stress Coping Abilities Scales have been validated in previous research.

There were 35 welfare recipients in the alcohol problem group (had alcohol treatment) and 465 welfare recipients in the non-problem group. There were 43 welfare recipients in the drug problem group (had drug treatment) and 457 in the non-problem group. The Work Index Scale item "I have been told I have a bad work attitude." defined groups for the Work Index and Stress Coping Abilities Scale comparisons. There were 474 non-problem welfare recipients and 26 problem welfare recipients. The t-test comparisons between problem and non-problem groups for each SAI scale are presented in Table 33. There are 500 welfare recipients included in these analyses.

Table 33. T-Test Comparisons Between Problem And Non-Problem Groups (2000, N = 500)

SAI Scale	Non-problem Group Mean Scale Score	Problem Group Mean Scale Score	T-value	Level of significance
Alcohol Scale	1.50	8.51	t = 6.66	p<.001
Drugs Scale	1.60	11.30	t = 9.35	p<.001
Work Index Scale	17.54	24.62	t = 3.95	p<.001
Stress Coping Abilities	100.54	80.77	t = 3.45	p=.002

The results of the Truthfulness Scale showed that there was no significant difference in scale scores between

the work problem groups. Truthfulness Scale validation was done in research studies that are reported in this research summary document.

The results of these analyses support the discriminant validity of the Alcohol Scale, Drugs Scale and Work Index Scale. Welfare recipients with problems scored significantly higher on the scales than did non-problem welfare recipients. Having been in treatment is indicative of problem behavior and these results show that welfare recipients who had treatment scored significantly higher on the Alcohol and Drugs Scales than welfare recipients who never had treatment. Work attitude problem clients scored higher on the Work Index Scale than non-problem clients.

The work problem groups were also compared on the Stress Coping Abilities Scale. These results showed that the problem group had higher Stress Coping Abilities Scale scores than the non-problem group. Note that Stress Coping Abilities Scale scores are reversed in that higher scores are associated with better stress coping abilities. Validity of the Stress Coping Abilities Scale, which was summarized earlier in this research document, was demonstrated using criterion validation with MMPI scales. Welfare recipients who admit to having work attitude problems demonstrate poorer stress coping skills. This result indicates there is a high correlation between bad work attitudes and stress coping problems.

Predictive validity
Predictive validity of the Alcohol Scale and Drugs Scale was demonstrated in terms of accuracy of identifying problem drinkers and drug users. The SAI identified 100 percent of problem prone drinkers and/or drug abusers. The same welfare recipient groups defined above for alcohol and drug problems were used in this analysis. That is, welfare recipients were assigned to the problem group if they had been in alcohol or drug treatment. It was predicted that clients with an alcohol or drug treatment history would score in the problem risk range (70th percentile and above) on the Alcohol and Drug Scales, respectively.

The results of the Alcohol Scale showed that of the 35 welfare recipients classified as problem drinkers (had treatment), all of the individuals or **100 percent**, had Alcohol Scale scores at or above the 70th percentile. The Alcohol Scale correctly identified all of the welfare recipients categorized as problem drinkers. **These results strongly validate the SAI Alcohol Scale.**

The SAI Drugs Scale is also very accurate in identifying welfare recipients who have drug problems. There were 43 welfare recipients who reported having been in drug treatment. All 43 individuals, or **100 percent**, had Drugs Scale scores at or above the 70th percentile. **These results represent very accurate assessment.** These results strongly validate the SAI Drugs Scale.

In summary, the SAI identifies welfare recipients with substance (alcohol and other drugs) abuse problems. In addition, the SAI also accurately identifies malingerers (Truthfulness Scale), problematic work attitudes/behaviors (Work Index Scale) and the emotionally disturbed (Stress Coping Abilities Scale). The SAI is both comprehensive and accurate. Comprehensive in the sense that it screens important areas of inquiry that are "barriers to employment." Accurate in the sense that the SAI does what it is purported to do - - that is accurately identify welfare recipient risk.

34. Study of SAI Reliability, Validity and Accuracy in a Large Sample of Welfare Recipients

This study (2008) examined SAI statistics for data obtained from agencies that administered the SAI to welfare recipients throughout the United States. Data was collected from 1,123 welfare recipients tested throughout the years beginning February 25, 2004 and ending March 3, 2008. SAI accuracy, reliability, and validity were examined.

Method

Participants in this study (N=1,123, 2008) consisted of welfare recipients. There were 243 (21.6%) males and 880 (78.4%) females. Demographic composition of the sample follows. Age: 19 & under (8.0%); 20-29 (48.5%); 30-39 (29.2%); 40-49 (11.1%); 50 & over (1.9%). Ethnicity: Caucasian (49.6%); African American (2.1%); Hispanic (13.7%); Asian (0.3%); Native American (28.1%); Other (0.8%). Education: Eighth grade or less (6.5%); Some High School (34.7%); High School graduate (42.3%); Some college (11.0%); College graduate (1.4%). Marital Status: Single (48.5%); Married (24.5%); Divorced (10.8%); Separated (8.1%); Widowed (0.1%).

Reliability

Test reliability refers to a scale's consistency of measurement. A scale is reliable if a person gets the same score when re-tested as he/she did when originally tested. Table 34 shows the reliability scores for each SAI scale. Perfect reliability is 1.00.

**Table 34. SAI Reliability Coefficient Alphas (N = 1,123, 2008)**

SAI Scale	**Alpha coefficient**
Truthfulness Scale	**.89**
Alcohol Scale	**.89**
Drugs Scale	**.86**
Work Index Scale	**.93**
Stress Coping Abilities	**.92**

All SAI scales have a reliability of .86 or higher. The professionally accepted reliability standard is .75. All SAI scales exceed this standard and demonstrate very impressive reliability.

Accuracy

Test accuracy is demonstrated by how close attained scale scores are to predicted scores. Four categories of risk are assigned: Low Risk (zero to 39th percentile), Medium Risk (40 to 69th percentile), Problem Risk (70 to 89th percentile), and Severe Problem Risk (90 to 100th percentile). The top row of Table 35 shows the percentages of welfare recipients that were predicted to score within each risk range. (These predicted percentages for each SAI scale risk category were obtained from SAI standardization data.) The body of Table 35 presents actual attained risk category percentages. Differences between attained and predicted percentages are shown in bold in parentheses. For example, in terms of the Low Risk range for the Truthfulness Scale: 39% of welfare recipients were predicted to score within this range; the attained percentage of welfare recipients who scored in this range was 41.0%, which is a difference of 2.0 percentage points from what was predicted.

Table 35. SAI Scales Risk Range Accuracy (N = 1,123, 2008)
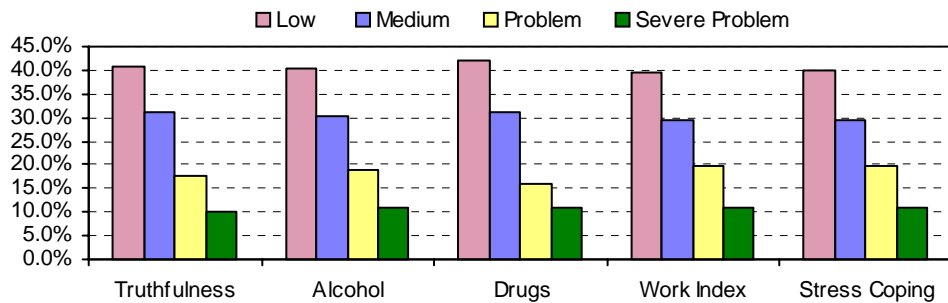
Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness	41.0	**(2.0)**	31.3	**(1.3)**	17.7	**(2.3)**	10.0	**(1.0)**
Alcohol	40.2	**(1.2)**	30.1	**(0.1)**	18.9	**(1.1)**	10.9	**(0.1)**
Drugs	42.1	**(3.1)**	31.1	**(1.1)**	15.9	**(4.1)**	11.0	**(0.0)**
Work Index	39.6	**(0.6)**	29.5	**(0.5)**	19.9	**(0.1)**	11.0	**(0.0)**
Stress Coping	39.9	**(0.9)**	29.6	**(0.4)**	19.6	**(0.4)**	11.0	**(0.0)**

Eighteen out of 20 attained risk range percentiles were within **2.5** points of the predicted percentages. (The two exceptions- the Low Risk percentile and Problem Risk percentile for the Drugs Scale- were both within 4.1 points of the predicted percentages.) The average difference between attained percentages and predicted percentages was **1.0** points. These results strongly support the accuracy of the SAI.

Validity

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

Predictive validity refers to a test's ability to predict observable "criterion" behaviors. In this analysis, our prediction criterion was whether or not welfare recipients had been treated for alcohol and/or drug problems. It was predicted that the "treated" welfare recipients would be identified by their higher scores on the Alcohol and/or Drugs Scales. More specifically, it was predicted that a large percentage of "treated" welfare recipients would have Alcohol and/or Drugs Scale scores that fell within the 70th and 100th percentile range (the High Risk range). The possibility of "treated" welfare recipients scoring in the Low Risk range (zero to 69th percentile) was not discounted altogether; however, it was expected that a significantly higher percentage of these individuals would score within the High Risk range on the Alcohol and/or Drugs Scales than the Low Risk range. The results of the analysis confirmed these predictions. Nearly all (**91.4%**) of the welfare recipients who had been treated for alcohol problems scored in the High Risk range on the Alcohol Scale. Likewise, almost all (**92.7%**) of the welfare recipients who had been treated for drug problems scored in the High Risk range on the Drugs Scale. These findings indicate that the Alcohol and Drugs Scales accurately identify individuals who have been treated for alcohol and/or drug problems, and provide strong support for the predictive validity of the SAI.

SUMMARY

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

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

Self-Assessment Index (SAI) Scales

SAI Scales	WHAT THE SCALE MEASURES
Truthfulness	Truthfulness of person while taking the test
Alcohol	Alcohol use, abuse and proneness
Drug	Illicit drug use, abuse and proneness
Work Index	Work motivation/attitude
Stress Coping	Person's ability to cope with stress

The Self-Assessment Index (SAI) is an automated (computer scored) welfare recipient screening instrument or test. The SAI study involving 1,127 welfare recipients (2000, page 35) demonstrates the SAI's reliability validity and accuracy.

Donald D. Davignon, Ph.D.
Behavior Data Systems, Ltd.
Senior Research Analyst

072000

47