



### *Estimates of the Reliability and Criterion Validity of the Adult SASSI-3*

This is to summarize information on the reliability and validity of the *Substance Abuse Subtle Screening Inventory* (SASSI-3). The SASSI-3 is a psychological questionnaire designed to screen individuals for substance dependence and substance abuse. This instrument is currently used by many diverse types of organizations including addictions treatment centers, criminal justice programs, hospitals, other health care organizations, and employee assistance programs. The research conducted to develop and evaluate the effectiveness of the SASSI-3 is reported in an article published in the *Journal of Personality Assessment* (Lazowski, Miller, Boye, and Miller, 1998). The primary findings of this research are as follows:

- 1) Test-retest stability coefficients for the SASSI-3 scales ranged from .92 to 1.00, and the overall alpha coefficient was .93.
- 2) The overall accuracy of the SASSI-3 in distinguishing substance-abusing and substance-dependent respondents from those without a substance use disorder was 94%.
- 3) The SASSI-3 was found to be accurate in five diverse types of settings. Overall accuracy in these settings ranged from 93% to 98%.
- 4) SASSI-3 accuracy did not differ for males and females. Additionally, the accuracy of SASSI-3 screening results was found not to be significantly affected by respondents' ethnic group, age, educational level, marital status, and occupational status (e.g., full time, part time, retired).
- 5) The respondents' level of functioning (DSM-IV Axis V) did not have a significant impact on the accuracy of SASSI-3 screening results.

Lazowski, et al. (1998) described research on the development and validation of the SASSI-3 with a sample of 1,958 participants. Treatment programs provided the SASSI Institute with completed SASSIs attached to some of their standard clinical forms such as intake and discharge schedules and criminal history evaluations. Thus, not all cases contained identical information. The criterion measure used to develop and evaluate the accuracy of the SASSI-3 was a DSM-based (APA, 1987, 1994) diagnosis concerning the lifetime presence or absence of substance dependence and substance abuse.

The responses of 839 respondents were used to evaluate the accuracy of the SASSI-3. These respondents were selected from the larger sample using three criteria: 1) the respondent had completed enough items on the SASSI-3 to allow researchers to obtain a clear decision rule result 2) a DSM-based clinical diagnosis of the subject had been provided, and 3) the respondent did not exceed the cutoff score on a measure of random responding. This sample of 839 respondents was divided randomly into two subsamples, with the provision that the subsamples contain equal numbers of cases diagnosed with and without a substance use disorder. One of the subsamples (the development sample) was used to develop the SASSI-3 scoring rules; the other (the validation sample) was reserved to validate their accuracy.

### Reliability

Two-week test-retest stability coefficients obtained with a sample of 40 respondents ranged from .92 to 1.00, and the internal consistency coefficient (i.e., “coefficient alpha”) for the SASSI-3 inventory (based on the larger sample;  $n = 1,821$ ) was found to be .93. Because the SASSI-3 items were selected empirically on the basis of their ability to distinguish substance dependent from nondependent people regardless of their consistency with other items on the instrument, coefficient alpha is less relevant than are stability coefficients for evaluating the reliability of the SASSI-3.

### Accuracy of Classifications on the SASSI-3

The results of the SASSI-3 were compared to the diagnoses obtained from clinicians. Table 1 displays the results obtained with the overall sample. The levels of accuracy obtained with the development and validation samples were both 94%, for an overall accuracy of 94%. The sensitivity of the SASSI-3 (i.e., the percentage of respondents diagnosed as having a substance use disorder who screened test positive on the SASSI-3) was 95% with the development sample and 93% with the validation sample, for an overall sensitivity of 94%. The specificity (i.e., the percentage of respondents diagnosed as not having this type of disorder who screened test negative on the questionnaire) was 93% with the development sample and 95% with the validation sample, for an overall specificity of 94%.

The overall sample used to estimate accuracy rates included only a small percentage of respondents (i.e., 8%,  $n = 67$ ) who were diagnosed with substance abuse. Seventy percent of this sample of abusers (i.e., 47 of the 67 abusers) was classified by the SASSI-3 as being likely to have a substance use disorder. Given the small sample size of substance abusers available for test development and test validation, the SASSI-3 is not presented as a fully validated screening tool for the diagnostic category of substance abuse. That is, current research speaks primarily to the accuracy of identifying those with substance dependence disorders. However, a set of guidelines is available from The SASSI Institute to assist clinicians in identifying potential substance abusers for further assessment.

### Accuracy of SASSI-3 Classifications in Various Assessment Settings

Data concerning the accuracy of the dichotomous SASSI-3 decision rule was obtained in five different types of clinical settings. Thirty-two percent of these respondents were from addiction treatment centers, 31% from general psychiatric hospitals, 22% from a vocational rehabilitation program, 9% from a sex offender treatment program, and 7% from a dual diagnosis (substance abuse and psychiatric) hospital. Overall levels of accuracy (i.e., accuracy in identifying those diagnosed with and without a substance dependence disorder) were 96%, 97%, 94%, 93%, and 98% respectively, and did not differ significantly among these five diverse types of settings.

### SASSI-3 Screening Accuracy with Criminal Offenders

Many clients served in behavioral health and substance abuse treatment programs have histories of involvement with the criminal justice system in addition to mental health and substance use disorders. Half of the samples included in the SASSI-3 validation study were from programs that routinely assess criminal history. These cases ( $n = 338$ ) included variables such as number and types of arrests, prior incarcerations, and probation status in addition to completed SASSIs and DSM diagnoses. The prevalence of prior arrest or incarceration in this sample was 78%. The sample included persons who were Caucasian (59%), African American (24%), Hispanic (10%), Native American (4%) and 3% Asian or other ethnicities. Men composed 86% of the sample. Mean years of education was 11.5 (SD = 1.8 years); mean age was 34.1 (SD = 10.3 years). Findings showed SASSI-3 screening accuracy of 92% in the offender sample, and this accuracy rate did not differ significantly from the screening accuracy rates in the other samples in the validation study. For the offender sample, sensitivity was 91% and specificity was 95%.

### The Influence of Demographic Factors on Accuracy

The influence of demographic factors on the accuracy of the SASSI-3 was also explored. Using logistic regression analysis, it was found that the accuracy of the SASSI-3 was not significantly affected by gender, racial or ethnic group membership, occupational status, marital status, age, and educational level. The levels of accuracy for males and females were 96% and 97% respectively. Accuracy rates ranged by racial or ethnic group from 92% to 100%, by occupational status from 94% to 100%, by marital status from 92% to 98%, by age group from 93% to 97%, and by educational level from 93% to 100%.

### The Influence of Functioning Level on Accuracy

The SASSI-3 is often used in human-service settings in which individuals may have problems in functioning other than those associated with substance abuse. Therefore, the effect of variability in level of functioning (i.e., DSM-IV Axis V, the “global assessment of functioning,” or “GAF”) on the accuracy of the SASSI-3 was examined with a subsample of 210 respondents. GAF scores did not have a significant impact on the correspondence between SASSI-3 classifications and clinical diagnoses concerning substance dependence. This finding suggests that SASSI-3 is accurate across a range of clients’ levels of functioning. This result also provides evidence indicating that the SASSI-3 measures substance use disorders per se rather than general maladjustment.

### Conclusion

These results provide evidence that the SASSI-3 is a reliable and valid measurement tool and support its use for clinical assessment. The SASSI-3 demonstrated high reliability using two separate methodologies, and was found to correspond closely with clinical diagnoses. Although the accuracy of a screening instrument may be affected when it is applied to new populations, classifications on the SASSI-3 were found to be highly accurate in five diverse types of assessments settings, and with criminal offenders, and the influence of a number of demographic classifications on the accuracy of the SASSI-3 was found to be negligible. Finally, the level of respondent adjustment and functioning was found not to have a significant effect on the accuracy of the SASSI-3.

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### References

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Table 1  
The Correspondence of Classifications on the SASSI-3 to Clinical  
Diagnoses of the Presence or Absence of a Substance Use Disorder

<u>Clinical Diagnosis</u>	<u>Classification on the SASSI-3</u>	
	<u>Likely to have a Substance use disorder</u>	<u>Not likely to have a Substance use disorder</u>
Substance use disorder	626	41
No substance use disorder	10	162

Notes

This table includes 67 participants who were diagnosed as having a substance abuse disorder but not as substance dependent.

$$\text{Screening Accuracy Rate} = \frac{626 + 162}{626 + 41 + 10 + 162} = 94\%$$

$$\text{Sensitivity Rate} = \frac{626}{626 + 41} = 94\%$$

$$\text{Specificity Rate} = \frac{162}{10 + 162} = 94\%$$



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