Published in final edited form as:

Am J Drug Alcohol Abuse. 2014 November ; 40(6): 476–483. doi:10.3109/00952990.2014.916718.

Neuropsychological Assessment Battery-Screening Module (S-NAB): Performance in treatment-seeking cocaine users

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Abstract

Background—Cocaine use is associated with cognitive impairments, which can have a negative effect on treatment retention and drug use. Thus, there is an increasing demand for a screening cognitive battery can be used by clinicians to detect such impairments in cocaine patients so that treatment can be adapted to patients' specific cognitive strengths and deficits. The Neuropsychological Assessment Battery-Screening Module (S-NAB) test for adults takes approximately 35–45 min to administer, and assesses attention, language, memory (verbal and visual), visual spatial reasoning, and executive functioning.

Objective—The purpose of this descriptive study was to present S-NAB score results for a sample of treatment seeking adult cocaine users to determine its potential utility for detecting cognitive impairments in this population.

Methods—In the present sample, 145 adult cocaine users participated in screening to enroll in an intervention to decrease cocaine use (59% male; 73.1% African American); screening included the S-NAB and self-report questionnaires.

Results—A substantial proportion of the sample (44%) met criteria for impairment, i.e. composite scores of one or more standard deviations below the mean. Furthermore, memory scores were significantly lower than language and spatial scores ($p < 0.007$).

Conclusions—The impairments detected by the S-NAB were generally consistent with those previously observed in samples of cocaine users completing other batteries, as well in other substance abusing samples completing the S-NAB. This suggests that the S-NAB can be considered an additional appropriate battery, as an alternative to other existing batteries, for assessment of the cognitive functioning of adult cocaine users.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

Keywords

Cocaine; cognitive performance; neuropsychology

Introduction

Cocaine use is associated with sub-clinical to severe cognitive impairments. The most consistently documented impairments include deficits in attention (1–10), verbal memory (4–6,8,10–12), and executive functioning (6,8,9,13–17). Some studies also report impairments in visual memory (3,6,8), spatial functioning (10,11), sensory-perceptual functioning (3), verbal fluency (3,6), and inhibition and control (3,9,17). The presence of these cognitive impairments can have a negative effect on treatment, including retention in treatment (2,7,10,13,14,16–18) and drug use (2). For example, studies conducted by Aharonovich et al. (7,10) reported that patients who did not complete a cognitive behavioral therapy intervention for cocaine dependence were more cognitively impaired at baseline than patients who completed the intervention. Verdejo-Garcia (16) also found that impaired cognitive functioning predicted shorter retention in treatment in cocaine-dependent patients residing in therapeutic communities. Furthermore, Carroll et al. (2) showed that impaired baseline cognitive functioning predicted an increase in drug use and a decrease in treatment engagement and retention in a sample of cocaine-dependent patients receiving a computerized cognitive behavioral therapy intervention. As researchers and clinicians have become aware of this association between cognitive functioning and treatment outcome, there has been an increasing demand for a time-efficient cognitive battery for use with cocaine patients; such a battery could help clinicians to adapt treatment planning to patients' specific cognitive strengths and deficits.

Substance abusing patients' cognitive performance has been assessed by a wide range of neuropsychological batteries such as the full-length Cambridge Neuropsychological Test Automated Battery (19–23) and MicroCog (MC) (7,10,24,25). Although several full-length batteries exist, there are limited options for screening assessments that can be used to detect impairments relatively quickly in substance-abusing populations. It should be noted that although screening batteries can assess a range of various cognitive domains, they should not necessarily be substituted for full-length batteries when full testing is indicated. However, they may serve as an option when full testing is not possible or as a way to determine whether full neuropsychological assessment is warranted.

The MicroCog Short Form (24) and the Neuropsychological Assessment Battery-Screening Module (S-NAB) (26) are two screening batteries that can be used for cognitive assessment by clinicians and researchers. A main difference between the two batteries is that the MC Short Form is computerized while the S-NAB is administered in person. While computerized assessments eliminate the need for in-person administration and scoring, they require the use of laptops or computers, which might not be readily available for patients' use in some settings. Furthermore, computerized batteries do not allow for the clinical observation of patients during the assessment, which can yield rich information to clinicians. Also pertinent to substance-abusing populations, the computerized assessments may be

challenging for patients with low computer literacy, an issue that we have witnessed in our previous studies (7,10) with some of our treatment-seeking cocaine patients. We have also found in-person administration to be useful in circumstances where additional clarification of instructions is needed, particularly for our more cognitively impaired patients. An additional difference between the MC Short Form and the S-NAB concerns the cognitive domains that are assessed. Both batteries assess attention, memory and spatial reasoning/processing, but the S-NAB also assesses language. Given these considerations, the S-NAB may add to the repertoire of existing batteries that clinicians and researchers can use for the assessment of various cognitive domains of cocaine-using patients. However, the S-NAB does not assess other more specific functions such as impulsivity, inhibitory control, selective attention, and social cognition, which may be relevant to heavy cocaine users. Such specific abilities are beyond the scope of a general screening battery, and may require more targeted assessment.

The S-NAB is a modular test with normative data for adults between the ages of 18 and 97 years old. Compared to full-length batteries, which can take hours to administer and score (19,24), the S-NAB is of intermediate length, as it takes approximately 35–45 min to administer and 5 min to score (26). It provides information regarding cognitive functioning in five main areas: (a) attention, (b) language, (c) memory (assessing immediate and delayed verbal and visual memory), (d) spatial reasoning, and (e) executive functioning, as well as an index of overall cognitive functioning. S-NAB scores are corrected for age-group, gender, and education level. Furthermore, two equal but parallel forms of the S-NAB are available, which allows for repeated administration with minimal learning effects (26).

The S-NAB has been used extensively in patients with moderate to severe traumatic brain injuries (27–31). Studies in these populations have demonstrated ecological validity of the S-NAB through associations between S-NAB scores and tests measuring daily functional status (29,30). Evidence for construct validity of the S-NAB was also found in these samples, with S-NAB index scores significantly related to scores of the Modified Mini-Mental State Exam (3MSE), the Mini-Mental State Exam (MMS), and the Repeated Battery for the Assessment of Neuropsychological Status (RBANS) (26,28). In addition to studies of traumatic brain injury patients, the S-NAB has also been used to detect mild cognitive impairments among patients with cardiovascular diseases and risk factors (32).

Two studies have examined the S-NAB in populations of patients with varied substance use disorders (33,34). Grohman and Fals-Stewart (2004) examined the sensitivity, specificity, and classification accuracy of the S-NAB in identifying impaired and unimpaired substance-abusing patients seeking treatment by comparing NAB scores to scores on the Neuropsychological Screening Battery (NSB). Results indicated that the S-NAB had a sensitivity proportion of 0.81, a specificity proportion of 0.92, and a classification accuracy of 0.88, suggesting that the S-NAB was capable of discriminating accurately between cognitively impaired and non-impaired substance abusers. The S-NAB was also validated in another substance-abusing sample, where it correlated highly with another widely used measure of cognitive functioning, the Montreal Cognitive Assessment (MoCA) battery (34).

While these studies (33,34) were important in establishing initial information about the S-NAB in alcohol and drug abusing samples, both studies examined patients in either partial hospital or residential inpatient treatment programs; populations of substance abusers seeking less intensive outpatient treatment have yet to be examined. In addition, both studies assessed samples of users of various substances, including alcohol, opioids, cannabis, benzodiazepine, methamphetamine, and cocaine. Notably, the most common substance of abuse in both studies was alcohol (in the study conducted by Copersino et al. [34] 65% were alcohol-dependent; in the study conducted by Grohman and Fals-Stewart [33] 71% were alcohol-dependent). In contrast, no studies have assessed the S-NAB in samples of adults whose primary substance of abuse is cocaine, a population in which impairment is known to be elevated and clinically relevant. As profiles of cognitive impairments have been shown to differ across groups of users of different substances (35), it is unclear whether impairment findings in studies of heterogeneous samples of substance users would apply specifically to cocaine users.

Therefore, the purpose of the current study was to administer the S-NAB to a treatment-seeking sample of adult cocaine using patients, and to describe the pattern of impairment and correlates of this measure. To the best of our knowledge, this is the first study to report on the utility of the S-NAB to screen for cognitive impairments in cocaine users participating in outpatient drug treatment (35). Results of this descriptive study were used to determine whether the S-NAB is an appropriate screening battery that can be added to the repertoire of existing screening batteries used to assess the cognitive functioning of treatment seeking adult cocaine users.

Methods

Participants and procedures

A total of 145 adults were recruited from the greater New York City area to be screened to participate in a randomized clinical trial designed to provide outpatient treatment for cocaine dependence. Recruitment strategies included advertisements in local newspapers, word of mouth, and referrals from local outpatient clinics. All participants were English-speaking adults between the ages of 18 and 55 (mean = 45.7; SD = 7.1); 59% were male, 73.1% African American, 16.5% Caucasian, and 6.9% Hispanic. The majority (63.9%) was unemployed, 71.7% had never been married, and 51.7% completed at least high school or a graduate equivalency degree. Approximately 19% of the sample ($n = 27$) was HIV positive.

The average age at which cocaine was first used was 21.67 (SD = 6.5), and the total number of years cocaine was used was 21.11 (SD = 7.9). The mean number of days cocaine was used by participants in the 30 days prior to baseline was 17.23 (SD = 8.04, range: 1–30). The median minimum dollar value of cocaine used per week was \$100 and the median maximum dollar value of cocaine used per week was \$288. Participants were carefully screened by trained study personnel for their primary problem substance; the primary problem substance of all patients included in this sample was cocaine.

All measures used in the current study were administered as part of the screening process, following informed consent but prior to participation in the trial intervention. Participants

received \$20 in gift cards as compensation for their screening participation. Study procedures were approved by the New York State Psychiatric Institute Institutional Review Board.

Measures

Psychiatric disorders—During the screening visit, patients were administered the Psychiatric Research Interview for Substance and Mental Disorders (PRISM), a semi-structured diagnostic interview used to assess psychiatric symptoms in accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). Patients were assessed for symptoms of all substance use disorders, including those related to alcohol, nicotine, cannabis, cocaine, heroin, hallucinogens, sedatives, stimulants, opiates (prescription and non-prescription), and other drugs, as well as for symptoms of other psychiatric disorders, including mood disorders, post-traumatic stress disorder (PTSD) and personality disorders during the past 30 days. The PRISM has demonstrated excellent test-retest reliability and validity among substance abusing patients (36,37). It should be noted that some participants ($n = 11$) had missing data from the PRISM, as not all participants completed the screening process in entirety. Therefore, 134 patients out of our screening sample of 145 had data available for the PRISM. All ($n = 145$) patients were administered the Conners' Adult ADHD Rating Scales-Self Report Short Version (CAARS-S:S) (38) to assess for DSM-IV symptoms of Attention Deficit Hyperactivity Disorder (ADHD). CAARS-S:S ADHD Index raw scores were converted to standard scores based on age and gender specific normative data; standard scores above 65 on the ADHD index indicate the presence of ADHD symptoms. The CAARS has demonstrated good sensitivity and specificity, and predictive validity (39,40).

Neuropsychological assessment—The participants were administered the Screening Module of the Neuropsychological Assessment Battery (S-NAB), an approx. 35–45-min long battery of 15 brief individual neuropsychological tests. Tests assess five main domains of cognitive functioning: memory (visual and verbal immediate and delayed recall), attention, language, spatial reasoning, and executive functioning. More specifically, memory assessment includes: (a) shape learning (multiple-choice immediate and delayed recognition of visual stimuli), and (b) story learning (immediate and delayed free recall of a short story). Attention assessment includes: (a) the digits forward task (auditory attention task requiring repetition of orally presented digits), (b) the digits backward task (working memory task requiring recall of orally presented digits in reverse order), and (c) the letter cancellation task (task of divided attention, information processing speed, and concentration, requiring the participant to mark a target letter in a string of mixed letters and digits while performing a serial addition task). Language assessment includes: (a) auditory comprehension tasks (requiring enactment of orally presented commands), and (b) object naming tasks (requiring verbal identification of objects). Spatial reasoning assessment includes: (a) three-dimensional design-construction (requiring assembly of plastic shapes to copy two-dimensional target designs), and (b) visual discrimination (requiring matching a target visual design to one of four similar response options). Lastly, executive functioning assessment includes: (a) paper-and-pencil maze completion (examining planning, impulse control, and psychomotor speed), and (b) a word generation/anagram task (examining verbal fluency and

generativity by requiring participants to create words from a selection of visually presented letters) (26). More detailed information regarding the S-NAB's task designs can be found in Strauss, Sherman and Spreen's (41) *A Compendium of Neuropsychological Tests: Administration, Norms and Commentary*.

The S-NAB yields standardized scores for each individual domain with means equal to 100 and standard deviations equal to 15. In addition to the five individual index scores, a composite score, which reflects overall cognitive functioning, is also generated. Standardized scores are generated using a computerized scoring program (26). Demographically corrected norms are based on age group, gender, and education level, and were developed using continuous norming (26). Cognitive impairment was determined by an S-NAB composite score below 85, which corresponds to one standard deviation ($SD=15$) below the mean score of 100 (26). Previous studies examining the S-NAB have used this cut-off (31–34). We also examined the proportion of impairment in our sample using more conservative cutoffs for impairment. We report the proportion of S-NAB scores that were more than 1.5 standard deviations below the mean (scores below 77.5) and the proportion of S-NAB scores that were more than 2 standard deviations below the mean (scores below 70).

IQ—The Wechsler Test of Adult Reading (WTAR) (42) was administered as an estimate of premorbid IQ. Scores are standardized (Mean =100; $SD=15$) and demographically corrected for age, race, ethnicity, and gender (42). Only the subset of 102 patients randomized into the larger clinical trial completed the WTAR.

Analysis plan

Descriptive statistics were used to examine performance on each cognitive domain, the total S-NAB composite score, and the proportion of patients meeting impairment criteria. Impaired performance was defined by S-NAB scores of 84 or less, below average performance by scores of 85–91, and average or above average performance by scores of 92 or greater (26). The associations between impairment status (as defined by S-NAB composite scores of 85 and above versus 84 and below) and gender and ethnicity were examined using Chi-square tests. Kruskal-Wallis non-parametric tests were used to examine the associations between impairment status (as defined by S-NAB composite scores) and age, total years cocaine was used, and the number of days cocaine was used in the past 30 days, as the distribution for these data were not normal. WTAR scores were normally distributed and a f-test was used to determine its association with impairment status.

Differences between patients' scores on the S-NAB cognitive domains were calculated for seven pairs of domains including: attention and language, attention and spatial reasoning, attention and executive functioning, attention and memory, memory and language, memory and spatial reasoning, and memory and executive functioning. These pairs were chosen to allow us to explore whether performance on domains with the lowest mean scores (attention and memory) indicated significantly poorer performance in comparison with the other domains. While the S-NAB scores themselves were normally distributed, the difference scores were not and contained outliers. Therefore, to account for the non-normal distributions and the outliers in these difference scores, Wilcoxon signed rank tests were

performed to determine whether within-patient performance in the various cognitive domains differed. Within-patient performance on the cognitive domains was also examined stratified among the three impairment categories defined by S-NAB composite scores (impaired: S-NAB scores of 84 or less, below average: S-NAB scores between 85 and 91 inclusive, and average or above average: S-NAB scores of 92 or greater). These within subject analyses are intended to indicate the relative deficits among patients from this population. A Bonferroni adjusted *P*-value threshold of 0.007 was used to control for multiple comparisons as calculated by using a critical *P*-value of 0.05 and accounting for seven comparisons. All analyses were completed using SAS version 9.2 (43).

Results

Psychiatric profile

Results of the PRISM indicated that 97.8% of patients had current cocaine dependence, 33.8% had current alcohol dependence, 10.3% had current cannabis dependence, and 6.6% had current nicotine dependence. None of the patients were diagnosed with current substance use disorders related to heroin, hallucinogens, sedatives, stimulants, or opiates (prescription and non-prescription), or other drugs. Additionally, 1.5% of patients had a current primary mood disorder, 8.3% had a current substance induced mood disorder, 3.0% had PTSD and 4.4% had lifetime borderline personality disorder. Results of the CAARS-S:S revealed that 18.6% had elevated scores on the ADHD index ($t > 65$).

Levels of cognitive functioning

The sample's mean composite S-NAB score, as well as the scores of the five cognitive domains, are presented in Figure 1. The mean S-NAB composite score was 86.23 (SD=13.66). Of the five domains, the language domain yielded the highest mean score (mean = 93.74, SD= 18.44), while the memory domain yielded the lowest (mean = 88.31, SD=14.00) (Figure 1). The mean attention score was 89.61 (SD=13.71), the mean spatial functioning score was 92.14 (SD = 13.76) and the mean executive functioning score was 91.66 (SD= 14.55).

Nearly half the sample (44%; $n = 64$) performed at an impaired level (scores of below 85), according to their composite S-NAB score. Twenty-seven percent ($n = 39$) performed below average (scores of 85–91). Twenty-nine percent of the sample ($n = 42$) performed at an average or above average level of cognitive functioning (scores of 92 or greater). Approximately one-third of the sample was impaired in each of the cognitive domains (30.3–33.1%) except for memory, where 44.8% of the sample performed at an impaired level. Figure 2 shows the sample's distribution of S-NAB scores. When defining impairment more stringently as 1.5 standard deviations below the mean composite score, 28.3% ($n = 41$) were classified as impaired. When defining impairment as 2 standard deviations below the mean composite score, 8.9% ($n = 13$) were impaired.

There was no significant association between impairment status (as defined by S-NAB composite scores) and (a) age, (b) ethnicity, (c) number of days cocaine was used in the past 30 days, or (d) total number of years cocaine was used (Table 1). However, there was a

significant association between impairment status and gender, with 37% of males and 54% of females being categorized as impaired ($p = 0.043$; Table 1).

Differences among the five cognitive domains

Among the entire sample, performance on memory and attention tasks were the lowest compared to performance on language, spatial, and executive functioning tasks. Memory scores were significantly lower than both language ($p = 0.0019$) and spatial reasoning ($p = 0.0056$) scores. When examining differences within the subgroups, there were no significant differences in performance among the cognitive domains among the impaired and below average subgroups using a Bonferroni threshold value 0.007. However, among the subgroup classified as average and above average, performance on language was significantly better than on attention ($p < 0.0001$) and memory ($p = 0.0059$).

IQ and cognition

Our sample's WTAR standard scores had a mean of 87.9 ($SD = 8.76$). Among those who were classified as impaired based on the S-NAB, the mean WTAR standard score was 83.8 ($SD = 5.6$), while among those who were classified as non-impaired, the mean was 91.0 ($SD = 9.5$). *T*-test results revealed that impaired patients scored significantly lower on the WTAR than non-impaired patients [$t(96) = 4.23$, $p < 0.0001$]. Furthermore S-NAB composite scores evidenced a moderate to large correlation with WTAR standard scores ($r = 0.43$, $p < 0.0001$).

Discussion

The purpose of this descriptive study was to present the profile of S-NAB scores from our sample of treatment-seeking adult cocaine users. Although previous work has examined the utility of the S-NAB in assessing cognition in heterogeneous samples of patients with alcohol and drug use disorders (33,34), this is the first study examining an outpatient sample of treatment-seeking cocaine-using adults. Given the high rate of cognitive impairments seen in cocaine users, this study is clinically important in that it demonstrates the utility and feasibility of the S-NAB in this population. The S-NAB thus serves as one option for a screening battery for detecting impairments in cocaine patients, which can be considered in comparison with other screening batteries using alternate methods of administration and assessing different specific skills. Screening using the S-NAB or other batteries can allow clinicians to detect potential impairment and to modify treatment according to their patients' relative strengths and deficits.

Results indicated that a substantial proportion of the sample was cognitively impaired. Nearly half (44%) received composite S-NAB scores that corresponded to impaired levels of cognitive functioning (S-NAB composite scores < 85), while only 29% received scores that corresponded to average or above average levels of cognitive functioning. Furthermore, patients' scores on the memory domain were significantly lower than their scores on the language and spatial reasoning domains. Among those who were classified as average or above average by their composite S-NAB score, performance on attention tasks was significantly worse than on language tasks ($p < 0.0001$). No significant differences among

domains were found for the subgroup of impaired patients or for the subgroup of below average patients. These within-subject analyses of the patients' relative strengths and weaknesses illustrate the S-NAB's ability to detect differences in performance on various domains, and thus inform clinicians about relative areas of strength and weakness in the cognitive functioning of their patients from this population.

Our finding that 44% of the sample was impaired as defined by their S-NAB composite score was also consistent with the study conducted by Grohman and Fals-Stewart (33), who reported that the S-NAB classified 38% of their substance abusing sample as cognitively impaired. However, a study by Copersino et al. (34) reported lower rates of impairment (20%) in their substance-abusing sample. The reason for this discrepancy is not entirely clear, but could be related to the demographic composition of their sample (i.e. 95% Caucasian, in contrast with the current study and that of Grohman and Fals-Stewart (33), in which samples consisted primarily of minority patients). It is also possible that their sample consisted of less severe substance users. Our finding that a substantial proportion of our sample (44.8%) was impaired in the memory domain was consistent with previous studies indicating that impairments in memory are consistently found in cocaine users (3–6,8,11,12).

Results indicated that there was no significant association between impairment status and age, ethnicity, and drug use severity, but there was a significant association between impairment status and gender, with females showing more impairment on tasks than males. The association between cognitive functioning and demographic and drug use severity variables has been examined in the past with inconsistent results (5,9,10,15). The inconsistent findings suggest an opportunity for continued research.

Of the 134 (out of the full sample of 145) patients who were assessed using the PRISM, all but two were diagnosed with cocaine dependence. We repeated the above analyses using a sample of only patients for whom cocaine dependence could be confirmed ($n=132$) and found no meaningful changes in results. Furthermore, as HIV can impact cognition (44,45), we also conducted analyses to examine whether cognitive impairment differed by HIV status. Results indicated that there were no significant differences in the S-NAB composite or domain scores between participants with and without HIV. This suggests that the presence of an HIV diagnosis, or a lack of a diagnosis of cocaine dependence among subsets of this sample did not influence results.

Although the S-NAB is a strong assessment measure, it is not without limitations. Specifically, (a) although it assesses a broad range of widely recognized and important cognitive functions, it does not assess other more specific functions such as impulsivity, inhibitory control, selective attention, and social cognition, which may be relevant to heavy cocaine users; and (b) although the norms are adjusted for important demographics such as age, gender, and education, they are not corrected for race/ethnicity. An additional limitation of our study is lack of comparison to scores obtained from full-length neuropsychological screening batteries, which were not available for the full screening sample. We will address this issue in later research on the sub-sample screened into the randomized trial. This study also did not assess the patients for the presence of learning disabilities, which could

potentially interfere with patients' performance on neurocognitive tasks. Additionally, it should be noted that this study was a cross-sectional assessment of neurocognition, and therefore it is not possible to conclude whether cognitive impairments detected by the S-NAB were caused by cocaine use, or conversely that cognitively impaired patients self-selected into cocaine use. Either way, such impairments may negatively impact treatment and are therefore clinically relevant to detect. Furthermore, the S-NAB is not appropriate as a replacement for more thorough batteries when full neuropsychological assessment is indicated. However, it may provide an alternative assessment option (a) in cases where cognitive functioning appears relevant but full assessment is not feasible, or (b) to determine whether more extensive testing is needed.

Strengths of this study include the large sample size ($n = 145$), the examination of a novel application of the S-NAB that could aid screening of cocaine-using patients for cognitive impairments, and the presentation of guidelines for levels of impairment to be expected in this population. S-NAB scores were also associated with scores on the WTAR, a premorbid estimate of IQ, with impaired S-NAB scores correlating with low WTAR scores, providing evidence for the S-NAB's validity. Furthermore, this study demonstrates the S-NAB's feasibility to be used in the context of a treatment setting.

In summary, the S-NAB is an appropriate battery that allows for assessment of the cognitive abilities of treatment seeking adults using cocaine. This descriptive study contributes to an existing literature on the S-NAB in substance-abusing populations. It also importantly provides a foundation for further exploration of the S-NAB in the specific population of treatment-seeking cocaine users, and suggests that the S-NAB could prove to be a valuable tool for clinicians. This screening battery can provide clinicians with an additional appropriate battery, among other alternative existing batteries, that assesses relative strengths and deficits of their patients, which could allow them to modify treatment plans accordingly, ultimately allowing for more effective treatment.

Acknowledgements

This study was funded by NIH grants R01DA020647, K05AA014223, and T32DA031099.

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Figure 1.
Means and standard deviations of Neuropsychological Assessment Battery-Screening Module (S-NAB) scores.

Figure 2.
Distribution of Neuropsychological Assessment Battery-Screening Module (S-NAB) scores.

Table 1

Associations between impairment status and demographic and drug use variables.

	Impaired (<i>n</i> = 64) %	Non-impaired (<i>n</i> = 81) %	Chi-Square <i>p</i> value
Gender			
Male	37.2	62.8	0.043*
Female	54.2	45.8	
Ethnicity/race			
Hispanic	45.8	54.2	0.67
African American	45.3	54.7	
Other	33.3	66.7	
	Mean (SD)	Mean (SD)	Kruskal-Wallis <i>p</i> value
Age	45.1 (8.1)	46.1 (6.3)	0.81
Number of days cocaine used in past 30 days	16.9 (7.6)	17.5 (8.4)	0.79
Total years cocaine used	20.2 (8.9)	21.8 (7.1)	0.24