

Offender Assessment Index: Adult Offender Assessment

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Abstract

The Offender Assessment Index (OAI) is an adult defendant assessment test that accurately measures defendant risk of violence (lethality), resistance attitudes, substance (alcohol and drugs) abuse, emotional and mental health problems. There were 1,996 adult defendants included in this study. Reliability analyses showed that all six OAI scales had very high reliability coefficient alphas of between .85 and .95. OAI scales were validated in several tests of validity. Discriminant validity was shown by significant differences on OAI scale scores between first and multiple offenders. The Violence Scale correctly identified 100% of defendants who admitted they were violent. The Alcohol and Drugs Scales correctly identified 100% and 98.6% of the defendants who had been treated for alcohol and drug problems, respectively. The Resistance Scale correctly identified 92.9% of the defendants who admitted resistance problems. OAI classification of defendant risk was shown to be very accurate. All OAI scale scores were within 1.6% of predicted risk range percentile scores. This study demonstrated that the OAI is a reliable, valid and accurate adult defendant assessment test.

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Introduction

Many individuals in the community are in need of services and when they are arrested the criminal justice system becomes an important contact point for the adult offenders (Hammett, Gaiter & Crawford, 1998). Offenders can be screened for problems and directed to appropriate agencies for help, treatment and rehabilitation. The Offender Assessment Index is an adult defendant assessment or screening test. Screening adult defendants to identify problems facilitates placement of defendants into appropriate supervision levels, intervention programs and treatment. Accurate and reliable defendant risk and needs assessment is essential for defining defendant populations for placement in programs such as ISPs (Intensive Supervision Programs, Fulton, Gendreau & Paparozzi, 1995).

According to Fulton, et al. (1995) risk and needs assessment should involve a compilation of criminal history along with other defendant behavioral history which includes substance abuse, violence potential, personal resistance or cooperation factors. These factors are incorporated in the OAI. For intervention and treatment programs to be effective defendants risk level must match programs intensity level. That is, high risk defendants placed in high risk programs and low risk defendants placed in low risk programs. Andrews, Bonta & Hoge (1990) found that placing low risk defendants in programs designed for high risk defendants can be harmful to them. The OAI was designed specifically for the purpose of aiding decisions regarding defendant placement and rehabilitation.

The Offender Assessment Index (OAI) is a multidimensional test that was developed to meet the needs of adult defendant screening and assessment. OAI scales measure violence (lethality) tendencies (Violence Scale), alcohol and drug abuse severity (Alcohol & Drugs Scales), resistance (Resistance Scale), and emotional or mental health problems (Stress Coping Abilities Scale). In addition, the Truthfulness Scale measures defendant truthfulness while completing the test. Defendants who deny or minimize their problems are detected by the Truthfulness Scale. Truthfulness Scale scores are used to truth-correct other scale scores. A test that is multidimensional lends itself to recidivism prediction. The present study investigated the reliability, validity and accuracy of the Offender Assessment Index.

Violence, resistance and stress coping abilities are personality factors that are relevant to defendant risk. These factors are measured by the OAI. Personality, attitude and behavioral factors, often referred to as “dynamic variables,” are capable of change and are amenable to intervention and treatment. Positively changing defendants’ personality, attitudes and behavior can lead to behavioral change, which in turn can lead to reductions in recidivism. Identification of problem prone defendants is the first step in directing defendants to appropriate programs aimed at helping defendants to positively change their behavior.

For ease in interpreting defendant risk, the OAI scoring methodology classifies defendant scale scores into one of four risk ranges: 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). By definition the expected percentages of defendants scoring in each risk range (for each scale) is: low

risk (39%), medium risk (30%), problem risk (20%), and severe problem risk (11%). Defendants who score at or above the 70th percentile are identified as having problems. Defendants scale scores at or above the 90th percentile identify severe problems. The accuracy of the OAI in terms of risk range percentages was examined in this study.

This study sought to validate the OAI in a sample of adult defendants who were tested at court referral programs. Two methods for validating the OAI were used in this study. The first method (discriminant validity) compared first and multiple offenders' scale scores. Multiple offenders were offenders with two or more arrests and first offenders had one or no arrest. It was hypothesized that statistically significant differences between multiple and first offenders would exist and OAI scales would differentiate between first and multiple offenders. Multiple offenders would be expected to score higher on OAI scales because having a second arrest is indicative of serious problems.

The second validation method (predictive validity) examined the accuracy at which the OAI identified "problem defendants," i.e., violent prone defendants, inappropriately resistant defendants, problem drinkers and problem drug abusers. Tests that measure severity of problems should be able to predict if defendants have problems by the magnitude (severity) of their scores. Accurate tests differentiate between problem and non-problem defendants. An inaccurate test, for example, may too often call non-problem drinkers problem drinkers or vice versa. Responses to test items obtained from the defendants' served as criterion measures.

Having been in alcohol treatment identifies defendants as having an alcohol problem. It is acknowledged that there are some defendants who have an alcohol problem but have not been in treatment. Nevertheless, defendants who have been in alcohol treatment would be expected to score in the Alcohol Scale's problem range. Similarly, having been in drug treatment identifies defendants who have drug problems. In regards to violence and resistance, defendants direct admissions of problems were used as the criteria.

For the predictive validity analyses defendants were separated into two groups, those who had treatment or admitted problems (problem group) and those who did not have treatment or did not admit to problems (no problem group). Then, defendant scores on the relevant OAI scales were compared. It was predicted that problem group defendants would score in the problem risk range (70th percentile and above) on the relevant OAI scales. Non-problem was defined in terms of low risk scores (39th percentile and below). The percentage of problem group defendants who scored in the 70th percentile range and above is a measure of how accurate OAI scales are. High percentages (above 90%) of problem group defendants who had problem risk scores would indicate the scales are accurate. Conversely, the percentages of problem group defendants who score in the low range are predicted to be very low (less than 10%). Because criterion measures were gotten from the OAI database, a lack of suitable criterion measures prevented carrying out predictive validity analyses on the other two OAI scales. The test items used in these analyses were, "I have been enrolled in one or more treatment programs for alcohol problems," "I have been enrolled in one or more treatment programs for drug problems," "I have been arrested for assault or a violent crime," and "Two or more of the following are true: negative or unfriendly, defiant or disobedient, resistant or non-compliant, uncooperative or oppositional, argumentative or confrontative."

Method

Subjects

There were 1,996 adult defendants tested with the OAI. There were 1,595 males (79.9%) and 401 females (20.1%). The ages of the participants ranged from 18 through 60 as follows: 19 & under (15.2%); 20-29 (39.4%); 30-39 (27.9%); 40-49 (13.6%); 50-59 (3.2%) and 60 & over (0.7%). The demographic composition of participants was as follows. Race/Ethnicity: Caucasian (58.5%); Black (24.9%), Hispanic (15.1%) and Other (1.6%). Education: Eighth grade or less (11.9%); Some high school (31.9%); High school graduate/GED (43.8%); Some college (9.1%) and College graduate (3.3%). Marital Status: Single (56.8%); Married (25.7%); Divorced (11.8%); Separated (5.0%) and Widowed (0.8%).

Over 69 percent of the participants were arrested two or more times. Nearly ten percent of the defendants had six or more arrests. Nearly two-thirds (63.4%) of the defendants had two or more felony arrests. One-fourth (25.9%) of the participants had two or more alcohol arrests and 13.3 percent had two or more drug arrests. Over 18 percent of the defendants had their first arrest before the age of 17 and over half (57.4%) were arrested by the age of 21.

Procedure

Participants completed the OAI as part of defendant screening and assessment in court referral settings. The OAI contains six measures or scales. These scales are briefly described as follows. The Truthfulness Scale measures the truthfulness, denial and problem minimization of the respondent while taking the OAI. The Alcohol Scale measures severity of alcohol use or abuse. The Drugs Scale measures severity of drug use or abuse. The Resistance Scale measures cooperation or resistant behaviors. The Violence Scale measures defendant proneness to commit violence. The Stress Coping Abilities Scale measures ability to cope with stress. A score at the 90th percentile or higher on this scale identifies established emotional and mental health problems.

Results and Discussion

The inter-item reliability coefficient alphas for the six OAI scales are presented in Table 1. All scales were highly reliable. Reliability coefficient alphas for all OAI scales were at or above 0.85. These results demonstrate that the OAI is a very reliable adult defendant assessment test.

Table 1. Reliability of the Offender Assessment Index (N=1,996)

<u>OAI SCALES</u>	<u>Coefficient Alphas</u>	<u>Significance Level</u>
Truthfulness Scale	.88	p<.001
Alcohol Scale	.95	p<.001
Drugs Scale	.92	p<.001
Violence Scale	.88	p<.001
Resistance Scale	.85	p<.001
Stress Coping Abilities	.92	p<.001

Discriminant validity results are presented in Table 2. In these analyses the answer sheet item "Total number of times arrested" was used to define first offenders (one or no arrest) and multiple offenders (2 or more arrests). T-test comparisons were used to study the statistical

significance between the offender groups. There were 653 first offenders and 1,343 multiple offenders. The Alcohol and Drugs Scales were again analyzed using alcohol and drug arrests. “Number of alcohol arrests” was used for the Alcohol Scale, which had 1,491 first offenders and 505 multiple offenders (2 or more arrests). “ Number of drug arrests” was used for the Drug Scale, which had 1,737 first offenders and 259 multiple offenders (2 or more arrests).

Table 2. Comparisons between first offenders and multiple offenders (N=1,996).

<u>OAI Scale</u>	<u>First Offenders Mean</u>	<u>Multiple Offenders Mean</u>	<u>T-value</u>	<u>Level of significance</u>
Truthfulness Scale	10.16	8.35	t = 6.91	p<.001
Alcohol Scale	6.50	14.49	t = 13.76	p<.001
Drugs Scale	8.84	13.98	t = 8.73	p<.001
Violence Scale	9.43	21.04	t = 26.37	p<.001
Resistance Scale	14.09	13.85	t = 0.67	n.s.
Stress Coping Abilities	125.27	112.22	t = 5.99	p<.001
*Alcohol Scale	6.97	26.38	t = 25.40	p<.001
*Drugs Scale	10.44	24.78	t = 17.48	p<.001

*Note: Offender status defined by alcohol and drug arrests. The Stress Coping Abilities Scale is reversed in that higher scores are associated with better stress coping skills.

Table 2 shows that mean (average) scale scores of first offenders were significantly lower than scores for multiple offenders on all OAI scales with the exception of the Truthfulness and Resistance Scales. As expected, multiple offenders scored significantly higher than did first offenders. Truthfulness Scale results indicate that first offenders tried to minimize their problems or fake good when tested more than did multiple offenders. First offenders may have tried to lessen their situation by faking good. Resistance Scale results indicated that there was no significance difference between first and multiple offenders. OAI severity measurement scales differentiated between first offenders and multiple offenders. These results support the validity of the OAI.

As shown in Table 2, Alcohol Scale and Drugs Scale score differences were even more dramatic when defendant status was defined by alcohol and drug arrests. The mean Alcohol Scale score for the multiple offender group, at 26.38, was over three times as high as the first offender group mean score which was 6.97. The mean Drugs Scale score for the multiple offender group (24.78) was also more than twice that of the first offender group mean score (10.44). The higher the OAI scale score the more severe the problem behavior. These results support the hypothesis that multiple offenders, because of their history of arrests, score higher than first-time offenders do.

Multiple offenders scored significantly higher on the Stress Coping Abilities Scale than did first offenders. Defendants who have multiple arrests demonstrate emotional problems beyond the expected problem-prone behaviors. Defendants’ emotional and personality problems must be addressed if these defenders are to be helped. Changing defendant problem-prone behavior entails resolving emotional and personality problems.

Correlation coefficients between defendants’ criminal history and their OAI scale scores are presented in Table 3. Statistically significant correlation coefficients between OAI scales and criminal history variables also validate OAI scale scores. OAI scales that measure problem-prone

behavior were expected to be correlated with variables that indicate defendant problems, such as the number of times they have been arrested, their age at first arrest and probation records. For example, it is expected that the Alcohol Scale correlates with number of alcohol-related arrests and the Drugs Scale correlates with drug-related arrests. Defendants' criminal histories were obtained from OAI answer sheets that were completed by the defendants.

The OAI scales included in this analysis were the Alcohol, Drugs, Violence and Resistance Scales. These scales measure problem-prone behavior that can result in defendant arrests. The Truthfulness and Stress Coping Abilities Scales are not included because these scales measure emotional and mental health factors.

Table 3. Relationships between Criminal History Variables and OAI Scales

	<u>Alcohol</u> <u>Scale</u>	<u>Drugs</u> <u>Scale</u>	<u>Violence</u> <u>Scale</u>	<u>Resis-</u> <u>tance</u>
Age at first arrest	-.07*	-.17**	-.37**	-.02
Total number of arrests	.29**	.19**	.51**	.12**
Number of Felonies	.06*	.15**	.38**	.01
Times on probation	.31**	.22**	.42**	.10**
Alcohol arrests	.56**	.07*	.26**	.08**
Drug arrests	.07*	.42**	.23**	.15**

Note: Significance level * p<.01, ** p<.001.

Age at first arrest is shown to be correlated with the Violence, Alcohol and Drugs Scales. The negative coefficients indicate that the younger a defendant is at their first arrest the higher their scale scores are. Total number of arrests is correlated with all of the OAI scales. Number of felonies is correlated with the Alcohol, Drugs and Violence Scales. Number of times on probation is also correlated with all OAI scales. The Alcohol Scale is significantly correlated with alcohol-related arrests. The Drugs Scale is significantly correlated with drug-related arrests. These results are in agreement with the discriminant validity results reported above. Significant correlations with alcohol and drug arrests support the validity of the Alcohol and Drugs Scales, respectively. The magnitude of the correlation coefficients are moderate and suggest that criminal history variables alone do not predict defendant problems. OAI scales, that measure problem-prone behaviors, are needed for accurate prediction of defendant problems.

Predictive validity results for the correct identification of problem behavior (violence tendencies, drinking and drug abuse problems) are presented in Table 4. Table 4 shows the percentages of defendants that had or admitted to having problems and who scored in the problem risk range. For the Alcohol and Drugs Scales criteria, problem behavior means the defendant had alcohol or drug treatment. For the Violence Scale criterion the defendant admitted having been arrested for a violent crime. In these analyses scale scores in the Low risk range (zero to 39th percentile) represent “no problem,” whereas, scores in the Problem and Severe Problem risk ranges (70th percentile and higher) represent alcohol, drugs and violence problems.

The Alcohol Scale is very accurate in identifying defendants who have alcohol problems. There were 411 defendants who had been in alcohol treatment and these defendants were classified as problem drinkers. All 411 defendants, or 100 percent, had Alcohol Scale scores at or above the

70th percentile. The Alcohol Scale correctly identified all of the defendants categorized as problem drinkers. This result validates the Alcohol Scale. It is likely that some defendants have alcohol problems but have not been in treatment. For these individuals scoring at or above the 70th percentile on the Alcohol Scale alcohol treatment is recommended.

The Drugs Scale was also very accurate in identifying defendants who have drug problems. There were 354 defendants who had been in drug treatment, 349 defendants, or 98.6 percent, had Drugs Scale scores at or above the 70th percentile. This result strongly substantiates the accuracy of the OAI Drugs Scale.

Table 4. Predictive Validity of the OAI

<u>OAI Scale</u>	<u>Correct Identification of Problem Behavior</u>
Alcohol	100%
Drugs	98.6%
Violence	100%

The Violence Scale accurately identified defendants (**100%**) who admitted violence problems. Defendants who had been arrested for a violent crime scored in the problem range. The direct admission of a violence problem validates the Violence Scale. The Alcohol and Drugs Scale accurately identified defendants who had alcohol and drug problems. These results strongly support the validity of the OAI Violence, Alcohol and Drugs Scales. The other two OAI scales were not included in these analyses because of a lack of direct admission or other criterion measure within the OAI database.

OAI risk range percentile accuracy is presented in Table 5. Risk range percentile scores are derived from scoring equations based on defendants’ pattern of responding to scale items and criminal history, when applicable. There are four risk range categories: Low Risk (zero to 39th percentile), Medium Risk (40 to 69th percentile), Problem Risk (70 to 89th percentile) and Severe Problem or Maximum Risk (90 to 100th percentile). Risk range percentile scores represent degree of severity. The higher the percentile score is the higher the severity of the defendant’s problems.

Analysis of the accuracy of OAI risk range percentile scores involved comparing the defendant’s obtained risk range percentile scores to predicted risk range percentages as defined above. The percentages of defendants expected to fall into each risk range are: Low Risk (**39%**), Medium Risk (**30%**), Problem Risk (**20%**) and Severe Problem or Maximum Risk (**11%**). These percentages are shown in parentheses in the top row of Table 5. The actual percentage of defendants falling in each of the four risk ranges, based on their risk range percentile scores, was compared to these predicted percentages. The differences between predicted and obtained are shown in parentheses.

Table 5. Accuracy of OAI Risk Range Percentile Scores

Scale	Low Risk (39% Predicted)		Medium Risk (30% Predicted)		Problem Risk (20% Predicted)		Severe Problem (11% Predicted)	
Truthfulness	39.9	(0.9)	29.5	(0.5)	19.2	(0.8)	11.4	(0.4)
Alcohol	37.0	(2.0)	31.9	(1.9)	20.8	(0.8)	10.3	(0.7)
Drugs	38.2	(0.8)	31.5	(1.5)	19.2	(0.8)	11.1	(0.1)
Violence	39.3	(0.3)	29.9	(0.1)	20.0	(0.0)	10.8	(0.2)
Resistance	38.6	(0.4)	31.2	(1.2)	19.7	(0.3)	10.5	(0.5)
Stress Coping	38.9	(0.1)	29.9	(0.1)	20.5	(0.5)	10.7	(0.3)

As shown in Table 5, OAI scale scores are very accurate. The objectively obtained percentages of participants falling in each risk range are very close to the expected percentages for each risk category. All of the obtained risk range percentages were within 2.0 percentage points of the expected percentages and most (20 of the 24) were within 1.0 percentage points. These results demonstrate that the OAI scale scores accurately classify defendant risk.

Obtained percentages set risk range cut-off scores. Scores associated with the 39th, 69th and 89th cumulative percentile separate defendants into the four risk ranges. This method standardizes scoring procedures in the OAI. These results show that OAI risk range percentile scores accurately classify defendant risk.

Conclusion

This study demonstrates that accurate defendant assessment is achieved with the Offender Assessment Index (OAI). Results corroborate and support the OAI as an accurate assessment or screening test for adult defendants. The OAI accurately measures defendant risk of violence (lethality), substance (alcohol and drugs) abuse, resistance behavior, emotional and mental health problems. In short, the OAI provides a wealth of information concerning defendants' adjustment and problems that contributes to understanding the defendants.

Reliability results demonstrated that all six OAI scales are highly reliable. Reliability is necessary in defendant assessment or screening tests for accurate measurement of defendant risk. Tests cannot be valid or accurate without being reliable. Validity analyses confirm that the OAI measures what it purports to measure, that is, defendant risk. Results demonstrate that repeat offenders exhibit more problem-prone behavior than first offenders. Multiple offenders (having 2 or more arrests) scored significantly higher than first offenders (discriminant validity). The OAI accurately identified defendants who have problems. And, obtained risk range percentages on all OAI scales very closely approximated predicted percentages. These results strongly support the validity of the OAI.

OAI results provide important risk/needs assessment for courts to make informed decisions regarding defendant sentencing options. Problem-prone individuals exhibit many characteristics that are identified with the OAI. Relationships between defendants' criminal history variables and OAI scale scores demonstrate that the OAI measures relevant behaviors that identify defendants as problem-prone. Identification of these problems and prompt intervention can reduce a defendant's

risk of future arrests or recidivism. The OAI facilitates understanding of defendant violence tendencies, substance abuse, resistant behavior, and emotional and mental health problems. OAI results also provide an empirical basis for recommending appropriate supervision level, intervention and treatment programs.

Many of the exacerbating conditions that act as problem-prone triggering mechanisms are also identified by the OAI. The Alcohol and Drugs Scales measure substance abuse problems. The Stress Coping Abilities scales measure emotional and mental health problems. The OAI is an important tool for decision making regarding defendant supervision level, rehabilitation, and treatment. Courts can direct defendants to appropriate programs to affect behavioral change. Positively changing defendant behavior can lead to reductions in recidivism and crime.

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