

Quantitative Analyses

17. A Standardized Alcohol and Drug Assessment Will Be Implemented

One of the primary components of the NEW VISTAS program was to provide treatment for families with drug and alcohol problems. Treatment included a variety of services provided to youths and their families based on the degree of substance abuse impairment experienced (i.e., moderate or severe). This included services for family members with substance abuse impairment, prevention activities for younger siblings, and appropriate support to increase family cohesion, competency, and social support. A structured setting was provided with multiple options to provide families with choices, appropriate staff and client matching, lasting relationships with positive peer and adult role models, respect for cultural strengths and barriers, therapeutic recreation and skill based programming (e.g., academic, social, and living skills), and the involvement of the entire family in the treatment process. In order to develop appropriate treatment plans and evaluate the success of comprehensive treatment program, a standardized drug and alcohol assessment was implemented.

The Adolescent Addiction Severity Index (AASI) was conducted with all NEW VISTAS youths at Intake (n = 353). The AASI was originally created as an Adult Severity Index (ASI) and augmented and implemented for use with adolescents. The AASI is a semi-structured interview designed for use by paraprofessionals with substance-dependent clients for the purpose of evaluating treatment outcome. Originally created in 1980, this interview was created to reflect the premise that alcohol and drug dependency is best understood from a person's whole environment. Over the past 20 years, questions have been updated to reflect changes in the field

The reliability and validity of the original ASI was established with samples of adults who have applied to substance abuse treatment programs. The AASI has not been validated for use as a measure with juvenile justice populations. McLellan (1992) suggests that data may not be as reliable with a criminal population as there is more incentive to misrepresent the truth when interviewed by probation staff rather than by treatment personnel in a confidential setting. However, the AASI has consistency checks and interviewer rating scales that help offset this problem.



The AASI was adopted from an adult measure of substance use created 20 years ago and updated to reflect recent research findings regarding ecological influences on substance use patterns.

The AASI measures seven areas related to a person's daily functioning.

Interviewer ratings provide data that add reliability to self-report responses.

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Background

Most juvenile justice systems across the United States use some form of assessment in order to classify juvenile offenders (Risler, Sutphen, & Shields, 2000). Such assessments have usually been developed through the inclusion of risk factors that are related to recidivism. In general, youths with more risk factors are classified as the most likely to reoffend. The highest risk youths are given more supervision and allocated more services. This practice was developed in order to maximize the use of public funds by allocating resources to those youths with the greatest need.

Unfortunately, the development, validation, and implementation procedures of these assessments are seldom found in peer-reviewed journals. Though screening procedures to predict the risk of future antisocial behavior are often used to make high-stakes decisions, their effectiveness has been limited by several factors including failure to consider gender differences, protective factors, and theoretical models of criminal behavior. In addition, they are rarely subjected to follow-up analyses, even when used for populations other than initially examined. Though these risk assessments may have the potential to aid professionals in collecting data relevant to treatment and supervision decisions, significant methodological and ethical issues require that these types of assessments be carefully developed and validated before they are implemented, and used for high stakes decisions.

Description

The Santa Barbara Assets and Risks Assessment (SB ARA) was created by UCSB Research Team members in order to provide an assessment that would take into consideration important, yet neglected areas in risk assessment development. As such, the SB ARA incorporates contemporary research and theory in a comprehensive measure to take the next step in efficient prevention of antisocial behavior. The SB ARA advances the field of outcome assessment by incorporating assets, addressing a broad spectrum of relevant domains, considering gender differences, and looking at both outcome prediction and treatment allocation.

The SB ARA is a semi-structured interview conducted with youths and their family members targeting 56 indicators selected to provide information about important assets (i.e., indicators that promote positive developmental outcomes) and risks (i.e., indicators that promote negative developmental outcomes). This assessment was designed to include indicators that reflect the unique developmental experiences of both males and females. The SB ARA has been used by the Santa Barbara County Probation Department in order to better understand assets and risks associated with repeat offending with the goal of preventing reoffense among juvenile offenders (O'Brien, Jimerson, Saxton, Furlong, & Sia, 2001).

Risk assessments are used to predict which offenders are most likely to reoffend.

The effectiveness of risk assessments procedures has been limited by failure to consider gender differences, protective factors, and theoretical models of criminal behavior.

The SB ARA takes into consideration neglected, yet important areas in risk assessment development.

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Development Process

The development of the SB ARA involved a multistep process involving literature review, theoretical consideration, ethnographic interviews with youths and families and interviews with probation officers. Fundamental to this task were considerations of gender appropriateness, the inclusion of assets, and the ability of the measure to provide information relevant to treatment planning.

Derivation of indicators

Indicators were derived through several steps designed to capture those variables that have been theoretically developed to explain criminal activity and empirically associated with repeat offending. Reviewing theories related to developmental pathways towards increasing levels of delinquency was a specific focus. Literature describing empirical investigations of the relationship between theoretically derived variables and criminal activity was reviewed for significant relationships relevant to male and female patterns of offending. In addition, ethnographic interviews with youths and families involved in the juvenile justice system were conducted in order to gain insight into those influences relevant to the population under study. These interviews were especially important because the literature is particularly sparse regarding offending patterns of Mexican American males and females, a significant portion of the juvenile justice population in Santa Barbara County. Finally, Probation Officers provided input regarding their experiences with youths on probation and feedback regarding the face validity of various indicators. This process derived a list of 56 indicators.

Operationalizing the relationship between risks and assets

Once indicators were derived, the relationships between each indicator and recidivism were operationalized to reflect the theoretical orientation of the authors. Masten (2001) suggests that the influence of indicators on a developmental outcome lie on a continuum. That is, risk factors can be inverted to create protective factors. The extant literature supports this theory, as evidence exists for both the negative and positive influences of many indicators. For example, healthy family cohesion has been demonstrated to be a protective factor, whereas unhealthy family cohesion has been demonstrated to be a risk factor (Olson et al., 1979). From this perspective, each indicator has a continuum of conditions, ranging from those risks considered to be associated with recidivism to those assets considered to protect against recidivism. In cases where the literature did not provide direct evidence for both the protective and risk influences of a particular indicator, Masten's theory of a continuum of influence was used to logically balance the indicator. For example, though individual substance use has been found to be a risk factor for juvenile delinquency (Kandel, 1975), the absence of substance has not been examined as a protective factor against delinquency for youths at-risk for repeat offending. Nonetheless, the absence of substance use was included as a protective influence given the theoretical orientation of the measure and the practical rationale that youth involved in the juvenile justice system who do not present with drug or alcohol problems will be advantaged by this. However, not all items cover the full range of asset to risk. For example, physical abuse ranges from neutral to high risk because no evidence

Developing the SB ARA was a multi-step process. Steps taken to derive indicators included literature review, ethnographic interview, and probation collaboration.

Once indicators were derived, research team members used a theoretically and empirically supported process to create interview questions and probes.

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of logical argument supported the absence of physical abuse as a protective factor against recidivism. Whereas the model used to create the SB ARA is theoretically and logically sound, only preliminary data examining outcomes at 6 months is available to support its reliability and validity. Subsequent analysis at 12 months will provide further insight.

2001 SB ARA

The SB ARA consists of 56 indicators within 12 domains: Parent-Child Relationships, Family Criminality, Family Substance Abuse, Family Mental Health, Individual Factors, Individual Criminality, Individual Substance Use, Community Factors, Peer Factors, School Factors, Sexual Activity, and History of Trauma. The SB ARA includes two subscales: Assets, which is a sum of all items scored in the asset range, and Risks, which is a sum of all items scored in the risk range. A Total score, which is the Risk score subtracted from the Asset score, is available as well.

Implementation

The SB ARA protocol is completed by a professional trained in its use, such as a Probation Officer, based on data compiled from a variety of available sources. The primary source of information is a semi-structured interview with youths and parents, conducted using a glossary of terms and sample probes that has been developed by the authors. In addition, professionals are encouraged to seek information from schools, community centers, other family members, and other professionals involved with the youth.

Preliminary Psychometric Analyses

Analyses were conducted in order to provide preliminary data regarding the psychometric properties of the SB ARA. Through implementation of the Crime Prevention Act 2000, the SB ARA was coadministered with the Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1998) and The Ohio Youth Problem and Youth Functioning Scales (Ogles, Melendez, Davis, & Lunnen, 2001). With available six-month follow-up data, the sample was made up of 378 youths. Participants were 244 male (65%) and 134 female (35%) adolescents of whom 57% were Mexican American, 40% European American, 1% African American, and 2% other ethnicities. Upon intake, 15 were under 12 years old (4%), 72 between 12 and 13 years old (19%), and 285 14 or older (77%). Participants were drawn from a delinquency prevention project implemented in Santa Barbara County. Eligible youths were those who entered probation services for a first offense between January 1, 2000 and July 31, 2002.

Psychometric Properties-Reliability

The Cronbach's alpha coefficient was .84 for the total score, .85 for the Asset subscale and .84 for the Risk subscale, indicating high internal consistency for the scale. Determining the accuracy of information reported by interviewers on the SB ARA is an important aspect of determining its reliability as a measure. In addition, demonstrating that a measure is scored consistently between two different raters given the same information is an important aspect of demonstrating its reliability. These reliability analyses are currently under study by the authors.

The 2001 SB ARA included 56 indicators within 12 domains on a continuum from strong asset to strong risk.

The primary source of information to complete the SB ARA is a semi-structured interview conducted by a professional trained in its use.

Psychometric Analyses were conducted with preliminary data in order to provide information regarding the reliability and validity of the SB ARA.

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Psychometric Properties–Convergent Validity

In order to examine construct validity, the SB ARA was compared with several other measures of assets and risks. Results of the correlations between the SB ARA asset and risk subscales and these measures are reported in Figure 18a.

Figure 18a. Convergent Validity: Correlations Between SB ARA Subscales and Other Measures of Similar Constructs

Other Measures	SB ARA–Assets	SB ARA–Risks
BERS – parent	.461**	-.502**
BERS – youth	.483**	-.482**
Ohio Problem – parent	-.441**	.535**
Ohio Problem – youth	-.424**	.477**
Orange County Risk Assessment	-.628**	.750**

* $p < .05$; ** $p < .01$

The Assets component was positively correlated with the Behavioral and Emotional Rating Scale (BERS; youth $r = .483$, parent $r = .461$, $p < .01$), and negatively correlated with the Orange County Risk Assessment ($r = -.628$, $p < .01$), and the Ohio Youth Problem Severity Scale (youth $r = -.424$, parent $r = -.441$, $p < .01$). These correlations are in the expected directions. The Risks subscale was negatively correlated with the BERS (youth $r = -.482$, parent $r = -.502$, $p < .01$), and positively correlated with the Orange County Risk Assessment ($r = .750$), and the Ohio Youth Problem Severity Scale (youth $r = .477$, parent $r = .535$, $p < .01$). These data indicate convergent validity through strong correlations with a variety of scales measuring similar constructs.

Psychometric Properties–Predictive Validity

One of the purposes of the SB ARA is to provide information regarding the likelihood that a youth who enters probation for a first offense will reoffend. In order to examine the ability of the SB ARA to predict recidivism, analyses were conducted with the pilot sample described previously to isolate those variables to include in predictive models for males and females. First, Spearman’s rank–order correlation coefficients were calculated separately by gender in order to determine which variables were individually associated with recidivism. Second, logistic regression analyses were conducted with all indicators found to be individually associated with recidivism by gender entered simultaneously into the model, with recidivism as the dependent variable. Through this process a unique combination of variables was found to significantly predict recidivism for males, $\chi^2(23, n = 228) = 55.239, p = .0002$. According to Nagelkerke’s R^2 , 36% of the variance in recidivism scores was explained by this model. A different set of variables was found to significantly predict recidivism for females, $\chi^2(28, n = 123) = 65.214, p = .0001$. According to Nagelkerke’s R^2 , 71% of the variance in recidivism scores was explained by this model.

Preliminary analyses suggest that the SB ARA is reliable and valid for use as a measure of assets and risks related to recidivism and other important outcomes.

Psychometric examination is an ongoing process that is still underway.

Preliminary analyses have demonstrated the ability of SB ARA items to predict recidivism for both males and females.

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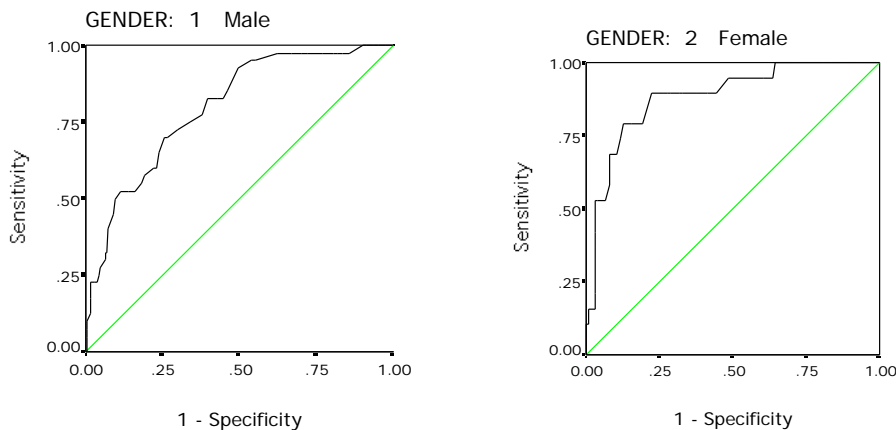
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Receiver Operating Characteristic (ROC) curve graphs were plotted in order to provide a visual representation between the true-positive rate (sensitivity) and the false-positive rate (100% minus specificity; specificity is the true negative rate) when using these models to predict recidivism for males and females. This is a descriptive technique that demonstrated the ability of the SB ARA to correctly classify whether or not a youth will reoffend. By examining the area underneath the curve, ROC curve analysis described how likely the prediction was to be greater than chance. When prediction is no better than chance, the area under the curve equals .50 and is a straight diagonal line across the plot. As prediction improves from chance, the plot line arches up towards the corner of the graph and the area under the curve approaches 1.0. For this analysis, the test variable was derived by adding together only those research-based indicators that were significant for each gender. Thus, the higher the total score, the more risks versus assets were present. The state variable was recidivism status. Recidivism status was coded “1” if the youths reoffended.

The ROC curve for predicting male recidivism is plotted in Figure 18b. The area under the curve for the male sample is .797 (95% confidence interval = .726 to .869, $S_x = .036$), which indicates that a randomly selected individual from the group of males who reoffended had a higher score on this combination of indicators than a randomly selected individual from the group of males who did not reoffend 79.7% of the time. As the confidence interval indicates, using this set of research-based indicators to predict recidivism was better than chance for the male sample.

The ROC curve for predicting female recidivism is also plotted in Figure 18b. The area under the curve for the female sample is .885 (95% confidence interval = .804 to .966, $S_x = .041$), which indicates that a randomly selected individual from the group of females who reoffended had a higher score on this combination of indicators than a randomly selected individual from the group of females who did not reoffend 88.5% of the time. As the confidence interval indicates, using this set of research-based indicators to predict recidivism was better than chance for the female sample.

Figure 18b. Receiver Operating Characteristic (ROC) Curves: Predicting Recidivism



Receiver Operating Characteristic Curves provide a visual picture of how accurate a predictive tool is. The greater the area between the green line and the arched line, the greater the prediction.

These ROC curves highlight the strength of the SB ARA derived models to predict recidivism, particularly for females.