JUVENILE PREDISPOSITION EVALUATION
An Inventory of Scientific Findings

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Preface

The Juvenile Predisposition Evaluation (JPE) is a juvenile defendant assessment test that accurately measures defendant risk of violence (lethality), resistance attitudes, substance (alcohol and drugs) abuse, emotional and mental health problems.

Introduction

Many troubled youth are in need of services. The criminal justice system is an important contact point for juvenile offenders. The courts can screen juvenile offenders for problems and direct them to appropriate agencies for help, treatment and rehabilitation. The Juvenile Predisposition Evaluation is a juvenile defendant assessment or screening test. Screening juvenile defendants to identify problems facilitates placement of juveniles into appropriate supervision levels, intervention programs and treatment. Accurate and reliable juvenile defendant risk and needs assessment is essential for placement of troubled youths into programs that address their problems and needs.

The JPE combines criminal history along with other behavioral history which includes substance abuse, violence potential, personal resistance or cooperation and other personality factors. For intervention and treatment programs to be effective, juvenile defendants risk level must match service programs intensity level. That is, high risk juveniles placed in high risk programs and low risk juveniles placed in low risk programs. Research has found that placing low risk defendants in programs designed for high risk defendants can be harmful to them (Andrews, D., Bonta, J.& Hoge, R. Classification for effective rehabilitation: Rediscovering Psychology. Criminal Justice and Behavior, 1990, 17, 19-52.). The JPE was designed specifically for the purpose of aiding decisions regarding juvenile defendant placement and rehabilitation.

The Juvenile Predisposition Evaluation (JPE) is a multidimensional test that was developed to meet the needs of juvenile defendant screening and assessment. JPE scales measure violence (lethality) tendencies (Violence Scale), alcohol and drug abuse severity (Alcohol & Drugs Scales), resistance (Resistance Scale), suicide ideation (Suicide scale) and emotional or mental health problems (Distress, Self-esteem and Stress Coping Abilities Scales). In addition, the Truthfulness Scale measures juvenile truthfulness while completing the test. Juveniles 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 Juvenile Predisposition Evaluation.

Personality, attitude and behavioral factors, often referred to as "dynamic variables," are capable of change and are amenable to intervention and treatment. Positively changing juvenile 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 juveniles to appropriate programs aimed at helping them to positively change their behavior.

For ease in interpreting defendant risk, the JPE scoring methodology classifies juvenile 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 juveniles scoring in each risk range (for each scale) is: low risk (39%), medium risk (30%), problem risk (20%), and severe problem risk (11%). Youths who score at or above the 70th percentile are identified as having problems. Juveniles' scale scores at or above the 90th percentile identify severe problems. The accuracy of the JPE in terms of risk range percentages was examined in this study.

This study sought to validate the JPE in a sample of juvenile defendants who were tested at court referral programs. Two methods for validating the JPE 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 JPE scales would differentiate between first and multiple offenders. Multiple offenders would be expected to score higher on JPE scales because having a second arrest is indicative of serious problems.

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

Having been in alcohol treatment identifies juveniles as having an alcohol problem. It is acknowledged that there are some juveniles who have an alcohol problem but have not been in treatment. Nevertheless, youths 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 youths who have drug problems. In regards to violence, juveniles' direct admissions of problems were used as the criteria.

For the predictive validity analyses participants 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, respondent scores on the relevant JPE scales were compared. It was predicted that problem group youths would score in the problem risk range (70th percentile and above) on the relevant JPE scales. Non-problem was defined in terms of low risk scores (39th percentile and below). The percentage of problem group youths who scored in the 70th percentile range and above is a measure of how accurate JPE scales are. High percentages (above 90%) of problem group youths who had problem risk scores would indicate the scales are accurate. Conversely, the percentages of problem group juveniles who score in the low range are predicted to be very low (less than 10%). Because criterion measures were gotten from the JPE database, a lack of suitable criterion measures prevented carrying out predictive validity analyses on the other JPE scales. The test items used in these analyses were, "I have been in alcohol treatment for my drinking problem." "I have been in counseling or treatment for my drug use." "I am a violent person."

Method

Subjects

There were 1,329 juvenile defendants tested with the JPE. There were 927 males (69.8%) and 402 females (30.2%). The ages of the participants were follows: 12 & under (2.5%); 13 (8.2%); 14 (16.1%); 15 (27.7%); 16 (31.5%); 17 (12.3%) and 18 & over (1.7%). The demographic composition of participants was as follows. Race/Ethnicity: Caucasian (48.9%); Black (40.3%), Hispanic (8.0%) and Other (2.8%). Education: Sixth grade or less (6.8%); 7th grade (11.3%); 8th grade (28.5%); 9th grade (30.9%); 10th grade (16.0%); 11th grade (5.7%); High school graduate/GED (0.5%) and Some college (0.2%).

Over 58 percent of the participants were arrested two or more times. Over 13 percent of the juveniles had six or more arrests. Over 80 percent of the juveniles had been on probation one or more times. Over 13 percent of the participants had two or more alcohol

arrests and 24.6 percent had two or more drug arrests. Over 15 percent of the juveniles had their first arrest before the age of 13 and over 15 percent were arrested by the age of 16.

Procedure

Participants completed the JPE as part of defendant screening and assessment in court referral settings. The JPE contains nine 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 JPE. The Suicide Scale identifies suicide prone individuals. Some youth are emotionally overwhelmed, desperate and dangerous to themselves. The Resistance Scale measures defensiveness, cooperation or resistance to help. The Self-Esteem Scale reflects a person's explicit valuing and appraisal of self. It incorporates an attitude of acceptance-approval versus rejection-disapproval. The Violence Scale measures the use of force to injure, damage or destroy. This scale measures the youth's danger to self and others. The Alcohol Scale measures severity of alcohol use or abuse. The Drugs Scale measures severity of drug use or abuse. The Distress Scale measures experienced pain, worry, sorrow and grief. Distress can involve both mental and physical strain. 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 nine JPE scales are presented in Table 1. All scales were highly reliable. Reliability coefficient alphas for all JPE scales were at or above 0.85. These results demonstrate that the JPE is a very reliable juvenile defendant assessment test.

Table 1. Reliability of the Juvenile Predisposition Evaluation (N=1,329)

JPE SCALES	Coefficient Alphas	Significance Level
Truthfulness Scale	.87	p<.001
Suicide Scale	.87	p<.001
Resistance Scale	.85	p<.001
Self-esteem Scale	.90	p<.001
Violence (Lethality) Scale	.91	p<.001
Alcohol Scale	.92	p<.001
Drugs Scale	.91	p<.001
Distress Scale	.91	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 556 first offenders and 773 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 1,282 first offenders and 47 multiple offenders (2 or more arrests). " Number of drug

arrests" was used for the Drug Scale, which had 1,234 first offenders and 95 multiple offenders (2 or more arrests).

Table 2. Comparisons between first offenders and multiple offenders (N=1,329).

JPE Scale	First Offenders Mean	Multiple Offenders Mean	T-value	Level of significance
Truthfulness Scale	9.14	9.80	t = 2.00	p<.05
Suicide Scale	21.40	24.99	t = 1.63	n.s.
Resistance Scale	14.23	19.44	t = 11.38	p<.001
Self-Esteem Scale	19.19	19.33	t = 0.13	n.s.
Violence Scale	12.27	21.38	t = 17.01	p<.001
Alcohol Scale*	4.13	16.62	t = 11.97	p<.001
Drugs Scale*	9.02	22.96	t = 13.41	p<.001
Distress Scale	16.78	24.48	t = 10.86	p<.001
Stress Coping Abilities	94.97	84.21	t = 4.91	p<.001

*Note: Offender status defined by alcohol and drug arrests. The Self-Esteem and Stress Coping Abilities Scales is reversed in that higher scores are associated with higher self-esteem and 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 JPE scales with the exception of the Truthfulness, Suicide and Self-Esteem 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. Suicide and Self-Esteem Scales indicated that there was no significance difference between first and multiple offenders. JPE severity measurement scales differentiated between first offenders and multiple offenders. These results support the validity of the JPE.

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

Correlation coefficients between defendants' criminal history and their JPE scale scores are presented in Table 3. Statistically significant correlation coefficients between JPE scales and criminal history variables also validate JPE scale scores. JPE scales that measure problem-prone behavior were expected to be correlated with variables that indicate juvenile 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. Juveniles' criminal histories were obtained from JPE answer sheets that were completed by the youths.

The JPE scales included in this analysis were the Alcohol, Drugs and Violence Scales. These scales measure problem-prone behavior that can result in defendant

arrests. The other JPE scales are not included because the scales measure emotional and mental health factors.

Table 3. Relationships between Criminal History Variables and JPE Scales

	Alcohol Scale	Drugs Scale	Violence Scale
Age at first arrest	-.06^	-.02	-.39**
Number of times arrested	.24**	.19**	.52**
Times on probation	.11**	.14**	.29**
Alcohol arrests	.40**	.12**	.10**
Drug arrests	.20**	.38**	.15**

Note: Significance level ^ p<.05, ** 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. Number of times arrested is correlated with these JPE scales. Number of times on probation is also correlated with these JPE 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. JPE scales, that measure problem-prone behaviors, are needed for accurate prediction of juvenile 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 juveniles who had or admitted to having problems and who scored in the problem risk range. For the Alcohol and Drugs Scales criteria, problem behavior meant the youth had alcohol or drug treatment. For the Violence Scale criterion the juvenile admitted being a violent person. 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 juveniles who have alcohol problems. There were 92 juveniles who had been in alcohol treatment and these youths were classified as problem drinkers. All 92 youths, or 100 percent, had Alcohol Scale scores at or above the 70th percentile. The Alcohol Scale correctly identified all of the juvenile defendants categorized as problem drinkers. This result validates the Alcohol Scale. It is likely that some juveniles 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 juveniles who have drug problems. There were 188 juvenile defendants who had been in drug treatment, 182

defendants, or 96.8 percent, had Drugs Scale scores at or above the 70th percentile. This result strongly substantiates the accuracy of the JPE Drugs Scale.

Table 4. Predictive Validity of the JPE

JPE Scale	Correct Identification of Problem Behavior
Alcohol	100%
Drugs	96.8%
Violence	99.5%

The Violence Scale accurately identified juvenile defendants (99.5%) who admitted violence problems. Youths who admitted being a violent person scored in the problem range. The direct admission of a violence problem validates the Violence Scale. The Alcohol and Drugs Scale accurately identified juvenile defendants who had alcohol and drug problems. These results strongly support the validity of the JPE Violence, Alcohol and Drugs Scales. The other JPE scales were not included in these analyses because of a lack of direct admission or other criterion measure within the JPE database.

JPE risk range percentile accuracy is presented in Table 5. Risk range percentile scores are derived from scoring equations based on juveniles' 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 juvenile's problems.

Analysis of the accuracy of JPE risk range percentile scores involved comparing the juvenile's obtained risk range percentile scores to predicted risk range percentages as defined above. The percentages of juveniles 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 youths 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 JPE Risk Range Percentile Scores

Scale	Low Risk (39% Predicted)		Medium Risk (30% Predicted)		Problem Risk (20% Predicted)		Severe Problem (11% Predicted)	
Truthfulness	39.5	**(0.5)**	31.3	**(1.3)**	19.6	**(0.4)**	9.6	**(1.4)**
Suicide	39.8	**(0.8)**	29.7	**(0.3)**	20.0	**(0.0)**	10.5	**(0.5)**
Resistance	38.5	**(0.5)**	30.4	**(0.4)**	20.2	**(0.2)**	10.9	**(0.1)**
Self-Esteem	40.0	**(1.0)**	29.2	**(0.8)**	20.3	**(0.3)**	10.5	**(0.5)**
Violence	38.1	**(0.9)**	30.8	**(0.8)**	20.4	**(0.4)**	10.7	**(0.3)**
Alcohol	39.6	**(0.6)**	29.5	**(0.5)**	20.1	**(0.1)**	10.8	**(0.2)**
Drugs	38.5	**(0.5)**	29.8	**(0.2)**	20.9	**(0.9)**	10.8	**(0.2)**
Distress	37.9	**(1.1)**	30.8	**(0.8)**	20.9	**(0.9)**	10.4	**(0.6)**
Stress Coping	38.9	**(0.1)**	30.1	**(0.1)**	20.0	**(0.0)**	11.0	**(0.0)**

As shown in Table 5, JPE 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

1.4 percentage points of the expected percentages and most (33 of the 36) were within 1.0 percentage points. These results demonstrate that the JPE scale scores accurately classify juvenile 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 JPE. These results show that JPE risk range percentile scores accurately classify defendant risk.

Conclusion

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

Reliability results demonstrated that all nine JPE scales are highly reliable. Reliability is necessary in juvenile defendant assessment or screening tests for accurate measurement of juvenile risk. Tests cannot be valid or accurate without being reliable. Validity analyses confirm that the JPE measures what it purports to measure, that is, juvenile 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 JPE accurately identified juveniles who have problems. And, obtained risk range percentages on all JPE scales very closely approximated predicted percentages. These results strongly support the validity of the JPE.

JPE results provide important risk/needs assessment for courts to make informed decisions regarding juvenile defendant sentencing options. Problem-prone individuals exhibit many characteristics that are identified with the JPE. Relationships between juveniles' criminal history variables and JPE scale scores demonstrate that the JPE measures relevant behaviors that identify juveniles as problem-prone. Identification of these problems and prompt intervention can reduce a juvenile defendant's risk of future arrests or recidivism. The JPE facilitates understanding of juvenile defendant violence tendencies, substance abuse, resistant behavior, and emotional and mental health problems. JPE 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 JPE. The Alcohol and Drugs Scales measure substance abuse problems. The Distress, Self-Esteem, Suicide, Resistance and Stress Coping Abilities scales measure emotional and mental health problems. The JPE is an important tool for decision making regarding juvenile defendant supervision level, rehabilitation, and treatment. Courts can direct troubled youths to appropriate programs to

affect behavioral change. Positively changing juvenile defendant behavior can lead to reductions in recidivism and crime.