Domestic Violence Offender Assessment:
Validation of the Domestic Violence Inventory

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ABSTRACT

The Domestic Violence Inventory (DVI) is a domestic violence offender test that accurately measures offender risk of violence (lethality), substance (alcohol and drugs) abuse, controlling behaviors, emotional and mental health problems. There were 37,024 domestic violence offenders represented in this study. Reliability analyses showed that all DVI scales had very high alpha reliability coefficients of between .86 and .94. DVI scales were validated in several tests of validity. Discriminant validity was shown by significant differences on DVI scale scores between first and multiple offenders. The Violence Scale and Control Scale were validated by direct admissions of violent and controlling behaviors. The Violence Scale correctly identified 98% and the Control Scale correctly identified 97%, respectively. The Alcohol Scale correctly identified 96% of the offenders that had been treated for alcohol problems. The Drugs Scale accurately identified 97% of offenders that had drug problems. DVI classification of offender risk was shown to be very accurate. All DVI scale scores were within 2% of predicted risk range percentile scores. This study demonstrated that the DVI is a reliable, valid and accurate domestic violence offender test.

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Introduction

The recognition of domestic violence as a serious problem led to the enactment of the Violence Against Women Act in 1994. The overriding concern that was addressed by this legislation was victim safety and offender accountability (US Department of Justice, 1998). The enactment of this legislation set a precedent that domestic violence would no longer be tolerated and that such violence must stop. Initially, what was meant by offender accountability was punishment. It was thought that punishment would lower recidivism. Unfortunately, punishment has not proven to be an effective deterrent. People wanted to punish violent offenders rather than develop programs that aimed at long-term solutions to reducing the violence.

It is clear that domestic violence can lead to more serious degrees of violence, including homicide (Buzawa & Buzawa, 1996). Furthermore, in many domestic violence cases the violence occurred over several months leading up to incidents involving the police (US Dept. Justice, 1994). Even mild forms of domestic violence can lead to more serious forms of violence if left unchecked. Early identification of violence can help stop further violence by placing offenders with a high probability of recidivism in appropriate programs and thereby preventing further violent acts. Intervention and treatment are long-term solutions to domestic violence. Effective treatment is largely contingent upon early problem identification. Assessment tests can screen violence potential in offenders and aid in the early selection of appropriate levels of intervention and treatment.

One of the most widely used domestic violence offender tests is the **Domestic Violence Inventory (DVI)**. The DVI is a multidimensional test that was developed to meet the needs of judicial court screening and assessment. DVI scales measure violence (lethality) tendencies (Violence Scale), controlling attitudes and behaviors (Control Scale), alcohol and drug abuse severity (Alcohol & Drugs Scales) and emotional or mental health problems (Stress Coping Abilities Scale). In addition, there is the Truthfulness Scale to measure offender truthfulness while completing the test. Offenders who deny or minimize their problems are detected with the Truthfulness Scale. Truthfulness Scale scores determine the factors used for truth-correcting other scale scores. Truth-corrected scores are more accurate than raw scores. A test that is multidimensional lends itself to recidivism prediction. A reliable, valid and accurate test is essential for measuring offender risk and need. The present study sought to validate the DVI test.

Aggressiveness, violence, controlling behaviors and stress coping abilities are personality and attitude factors that have been demonstrated to be relevant to domestic violence. These factors are measured by the DVI. Personality and attitude factors, often referred to as "dynamic variables," are capable of change and are amenable to intervention or treatment programs. Positively changing offenders' personality and attitudes can lead to behavioral change and reductions in recidivism. Early identification of violence prone individuals can lead to reductions in domestic violence.

For ease in interpreting domestic violence offender risk, the DVI scoring methodology classifies offender 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 offenders scoring in each risk range (for each scale) is: low risk (39%), medium risk (30%), problem risk (20%), and severe problem risk (11%). Offenders who score at or above the 70th percentile are identified as having problems. For example, offenders' Alcohol Scale scores of 70 or above identify them as problem drinkers. Offenders scale scores at or above the 90th percentile identify severe problems. The accuracy of the DVI in terms of risk range percentages was also examined in this study.

This study sought to validate the DVI in a large sample (37,024) of domestic violence offenders that were processed as part of standard offender evaluation procedures in court and community service programs. Two methods for validating the DVI 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 domestic violence arrests and first offenders had only one arrest for domestic violence. It was hypothesized that statistically significant differences between multiple and first offenders would exist and the test would differentiate between first and multiple offenders. Multiple offenders would be expected to score higher on the Violence Scale because having a second domestic violence arrest is indicative of a serious violence problem. This study revealed that multiple offenders do in fact score significantly higher than first offenders on the Violence Scale.

The second validation method (predictive validity) examined the accuracy at which the DVI identified violent prone offenders, problem drinkers and problem drug abusers. Tests that measure severity of problems should be able to predict if offenders have problems by the magnitude (severity) of their scores. Scores that fall in problem ranges should indicate that problems exist. To be considered accurate an offender test must accurately identify violent individuals, drinkers and drug abusers. Accurate tests also should differentiate between problem and non-problem offenders. An inaccurate test, for example, may too often call non-problem drinkers problem drinkers or vice versa. In the DVI, treatment information is used to determine accuracy because it is readily obtained from the offenders' responses to test items. Having been in treatment identifies offenders as having a violence, alcohol or drug problem. If a person has never had a violence, alcohol or drug problem it is very likely they have not been treated for a violence, alcohol or drug problem. However, there are some offenders who have a violence, alcohol or drug problem but have not been in treatment. Nevertheless, offenders that have been in treatment would be expected to score in the corresponding scale's problem range. In regards to violence and control, offenders direct admissions of problems were used as the criteria, because violence and control are often subsumed under other criminal statutes.

Offenders were separated into two groups, those who had treatment or admitted problems and those who have not had treatment and did not admit to problems. Then, offender scores on the relevant DVI scales were compared. It was predicted that domestic violence offenders with an alcohol and/or drug treatment history would score in the problem risk range (70th percentile and above) on the Alcohol and/or Drugs Scales. Similarly, offenders that admit problems are predicted to score higher than offenders not admitting problems. Non-problem is defined in terms of low risk scores (39th percentile and below). The percentage of offenders that have been in treatment or admit problems and also scored in the 70th percentile range and above is a measure of how accurate DVI scales are. High percentages of offenders with treatment and problem histories and elevated problem risk scores would indicate the scales are accurate. The results of this analysis showed that the DVI Alcohol Scale had an accuracy rate of **95.5 percent** correct identification and the Drugs Scale had **96.7 percent** correct identification of problem prone offenders. The Violence Scale was **98.1 percent** accurate in identifying offenders who

admit domestic violence problems. The Control Scale correctly identified **97.1 percent** of problem prone offenders.

Method

<u>Subjects</u>

There were 37,024 domestic violence offenders tested with the Domestic Violence Inventory (DVI) between July 1996 and August 2005. There were 30,454 males (82.3%) and 6,543 females (17.7%). The ages of the participants ranged from 15 through 84 as follows: 19 & under (6%); 20-29 (36%); 30-39 (33%); 40-49 (19%); 50-59 (4%) and 60 & Over (1%). The demographic composition of participants was as follows. Race/Ethnicity: Caucasian (65%); Black (18%); Hispanic (11%); Native American (3%) and Other (4%). Education: Eighth grade or less (7%); Some high school (28%); High school graduate/GED (45%); Some college (13%) and College graduate (5%). Marital Status: Single (44%); Married (35%); Divorced (12%); Separated (9%) and Widowed (1%).

Over three-fourths (79%) of the participants were first time offenders (one domestic violence arrest). Fourteen percent of the participants had two domestic violence arrests, four percent had three arrests and three percent had four or more domestic violence arrests. Twenty-four percent of the participants had been arrested for assault. Seventeen percent had one arrest for assault; 4% had been arrested twice, and 3% had been arrested for assault three or more times.

Nearly half of the participants (43%) had been arrested for an alcohol-related offence. Of those, 22 percent had one alcohol arrest, 10 percent had two arrests and 12 percent had three or more arrests.

Eighteen percent of the participants had been arrested for a drug-related offence. Twelve percent had one drug arrest, 3% had two drug arrests and 3% had three or more drug arrests.

<u>Procedure</u>

Participants completed the DVI as part of the normal routine for domestic violence offender evaluation in court, probation departments, service programs and community treatment programs. The DVI contains six measures or scales. These scales are briefly described as follows. The Truthfulness Scale measures the truthfulness of the respondent while taking the DVI. The Alcohol Scale measures severity of alcohol use or abuse. The Drugs Scale measures severity of drug use or abuse. The Control Scale measures controlling behaviors that affect self and others. The Violence Scale measures offender propensity to commit acts of violence. The Stress Coping Abilities Scale measures ability to cope with stress. More DVI information is available on www.domestic-violence-tests.com.

Results and Discussion

Inter-item reliability (alpha) coefficients for the six DVI scales are presented in Table 1. All scales were highly reliable. All of the alpha reliability coefficients for all DVI scales were at or above 0.86. The professionally accepted standard for test reliability is 0.75. All DVI scales exceed

that standard. These results demonstrate that the DVI is a very reliable domestic violence offender assessment test.

Table 1. Reliability of the DVI

DVI Scale	Alpha	Significance Level
Truthfulness Scale	**.88**	p<.001
Alcohol Scale	**.94**	p<.001
Control Scale	**.88**	p<.001
Drugs Scale	**.92**	p<.001
Violence Scale	**.86**	p<.001
Stress Coping Abilities	**.93**	p<.001

Nearly one-fourth (21%) of the participants in this study had two or more domestic violence arrests. These multiple offenders scored significantly higher than first-time domestic violence offenders on the DVI Alcohol Scale, Control Scale, Drugs Scale, Violence Scale and Stress Coping Abilities Scale. Higher scores on these DVI scales are associated with more severe problems. Discriminant validity results for the comparisons between first and multiple offenders are presented in Table 2. A multiple offender is an offender who had two or more domestic violence arrests. The table presents the mean scale scores for each DVI scale for first and multiple offenders along with t-test comparisons. The number of first offenders and multiple offenders are shown in parentheses.

T-test comparisons were used to study the statistical significance between first and multiple offenders. There were 29,490 first offenders and 7,534 multiple offenders (2 or more domestic violence arrests). These results are presented in Table 2.

Table 2. T-test Comparisons between First Offenders and Multiple Offenders.

DVI Scale	First Offenders Mean (N=29,490)	Multiple Offenders Mean (N=7,534)	T-value	Level of Significance
Truthfulness Scale	8.80	9.51	t =18.37	p<.001
Alcohol Scale	6.25	10.89	t = 30.64	p<.001
Control Scale	3.25	4.70	t = 25.78	p<.001
Drugs Scale	16.65	18.58	t = 18.53	p<.001
Violence Scale	21.13	23.44	t = 11.12	p<.001
Stress Coping Abilities	122.71	101.92	t = 20.88	p<.001

Note: The Stress Coping Abilities Scale is reversed in that the higher the score the better one copes with stress. It is now generally accepted that stress exacerbates emotional and mental health symptomatology.

Table 2 shows that mean (average) scale scores of first offenders were significantly lower than mean scores for multiple offenders on all DVI scales except the Stress Coping Scale, on which higher scores represent reflect better stress management, meaning that lower scores by multiple offenders indicates that they have poorer stress coping abilities (on average) than the first offenders. As predicted, multiple offenders scored significantly higher on the Truthfulness Scale, Alcohol Scale, Control Scale, Drugs Scale, and Violence Scale than did first offenders.

The Alcohol, Control, Drugs, Violence and Stress Coping Abilities Scales results strongly support the discriminant validity of the DVI. These results are important because they show that the Alcohol, Control, Drugs, Violence and Stress Coping Abilities scales do measure

levels of severity. The offenders who were believed to have more severe problems (multiple offenders) scored significantly higher on these scales than first-time offenders.

Correlation coefficients between DVI scales and "arrests for domestic violence" and "assault" are presented in Table 3. These correlation results show that the Violence Scale is highly correlated with violence-related arrests. All other DVI scales had correlation coefficients that were much lower than the Violence Scale. These results support the validity of the Violence Scale.

Table 3. Correlations between Domestic Violence and Assault Arrests with DVI Scales

	Alcohol Scale	Control Scale	Drugs Scale	Violence Scale	Stress Coping
Domestic violence arrests	.179	.124	.100	.403	.090
Assault arrests	.124	.089	.120	.298	.080

Predictive validity results for the correct identification of problem behavior (violence tendencies, control, drinking and drug abuse problems) are presented in Table 4. Table 4 shows the percentage of offenders that had or admitted to having problems and who "scored in the problem risk range". For the Alcohol and Drugs Scales "problem behavior" means the offender "had alcohol or drug treatment." For the Violence Scale the offender's "admission to having a serious or moderate domestic violence problem" was the criteria. For the Control Scale the offender's "admission to dominating and controlling others" was the criteria. In these analyses scale scores in the Low risk range represent "no problem," (39th percentile or lower) whereas, scores in the Problem and Severe Problem risk ranges (70th percentile and higher) represent "problems."

For the Alcohol Scale comparisons, there were 4,484 offenders who reported having been in alcohol treatment. These offenders are classified as problem drinkers. Of these 4,484 offenders, 4,282 individuals, or **95.5 percent**, had Alcohol Scale scores at or above the 70th percentile. The Alcohol Scale correctly identified nearly all (96%) of the offenders categorized as problem drinkers. These results support the DVI Alcohol Scale's validity.

The DVI Drugs Scale was also very accurate in identifying offenders who have had drug problems. There were 2,308 offenders who reported having been in drug treatment. Of these, 2,231 individuals, or **96.7 percent**, had Drugs Scale scores at or above the 70th percentile. These results strongly support the validity of the DVI Drugs Scale.

For Violence Scale comparisons there were 6,758 offenders who admitted having serious or moderate domestic violence problems. Of these 6,758 offenders, 6,630 individuals or **98.1 percent** had Violence Scale scores in the Problem or Severe Problem ranges. These results support the validity of the Violence Scale. Control Scale comparisons found that for the 4,110 offenders who admitted to dominating and controlling others, 4,001 or **97.3 percent** had Control Scale scores in the Problem or Severe Problem ranges. This result supports the validity of the Control Scale.

Table 4. Predictive Validity of the DVI

DVI Scale	Correct Identification of Problem Behavior
Alcohol	95.5%
Drugs	96.7%
Violence	98.1%
Control	97.3%

The Violence Scale accurately identified offenders (**98%**) who described their domestic violence problem as a serious or moderate problem. These direct admissions of domestic violence problems support the validity of the Violence Scale. The correct identification of **97 percent** of the offenders who admitted to dominating and controlling others supports the validity of the Control Scale. The Alcohol and Drugs Scale accurately identified offenders who had alcohol and drug treatment. The Alcohol Scale correctly identified **96%** of the offenders categorized as "problem drinkers" and the Drugs Scale correctly identified **97%** of the offenders categorized as "problem drug users." In comparison to many other tests, this is very accurate assessment. These results strongly support the validity of the DVI Violence, Control, Alcohol and Drugs Scales.
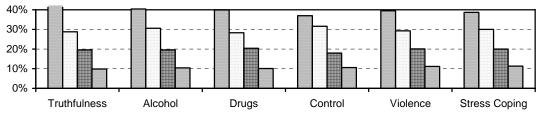
Risk range percentile scores are derived from scoring equations based on offenders' patterns of responding to scale items, truth-corrected scores and criminal history, if applicable. These results are presented in Table 5. There are four risk range categories: Low Risk (zero to 39th percentile), Medium 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 degrees of severity.

Analysis of the accuracy of DVI risk range percentile scores involved comparing the offender's obtained risk range percentile scores to their predicted risk range percentages as defined above. The percentages of offenders 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 bold print) in the top row of Table 5. The actual percentage of offenders 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 to the right of each attained percentage.

As shown in Table 5, DVI 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 many (17 of 24 possible) were within one percentage point. These results demonstrate accurate domestic violence offender screening.

Table 5. Accuracy of DVI Risk Range Percentile Scores
(N = 37,024)

□Low □Medium ▤Problem ▥Severe Problem

Scale	Low Risk (39%)		Medium Risk (30%)		Problem Risk (20%)		Severe Problem (11%)	
Truthfulness Scale	41.8	(1.8)	28.8	(1.2)	19.6	(0.4)	9.8	(1.2)
Alcohol Scale	40.4	(1.4)	30.6	(0.6)	19.6	(0.4)	10.4	(0.6)
Control Scale	37.0	(2.0)	31.6	(1.6)	18.0	(2.0)	11.1	(0.1)
Drugs Scale	39.9	(0.1)	28.3	(1.7)	20.4	(0.4)	10.1	(0.9)
Violence Skills	39.5	(0.5)	29.3	(0.7)	20.1	(0.1)	11.1	(0.1)
Stress Coping Abilities	39.0	(0.0)	29.8	(0.2)	20.3	(0.3)	10.9	(0.1)

Gender differences between male and female scale scores are shown in Table 6.

Table 6. Comparisons between Males and Females

DVI Scale	Males Mean	Females Mean	T-value	Significance
Truthfulness Scale	8.63	8.12	t =6.65	p<.001
Alcohol Scale	9.58	7.47	t = 13.75	p<.001
Control Scale	7.93	8.68	t = 6.99	p=.001
Drugs Scale	5.45	5.41	t = 0.32	p<.749
Violence Scale	24.91	19.77	t = 26.18	p<.001
Stress Coping Abilities	111.69	105.06	t = 11.22	p<.001

Note: The Stress Coping Abilities Scale is reversed because originally the higher the score the better one coped with stress. With the reversal, highly elevated (90th percentile or higher) Stress Coping Abilities scores now indicate the presence of identifiable emotional or mental health problems.

These results demonstrate significant male/female differences on all DVI scales. The Truthfulness, Alcohol and Violence Scales show that males scored significantly higher than females. The Control and Stress Coping Abilities Scales show that females scored significantly higher than males. **These results demonstrate that separate scoring procedures are warranted for males and females.** Accurate domestic violence assessment must take into account differences between male and female scale scores. With few exceptions (other than the DVI), other domestic violence tests rarely report this research. Their rationalization is often stated "Most domestic violence perpetrators are male." They imply that female norms are not important. Yet, of the 37,024 domestic violence offenders that participated in the present study there were 6,543 (17.7%) female offenders. In the interest of accurate domestic violence offender assessment, any accurate contemporary domestic violence test must include both male and female scoring distributions. This has been done in the Domestic Violence Inventory, which has sex-related (male/female) distributions built into its scoring methodology.

Conclusions

This research study demonstrated that accurate domestic violence offender assessment is achieved with the Domestic Violence Inventory (DVI). Results corroborate and support the Domestic Violence Inventory (DVI) as an accurate assessment test for domestic violence offenders. The DVI accurately measures offender risk of violence (lethality), substance (alcohol and drugs) abuse, controlling behaviors, and mental health problems. Results demonstrate that repeat domestic violence offenders have more severe problems than first offenders.

Reliability results demonstrated that all six DVI scales are reliable. All alpha coefficients were at or above 0.86. Such high reliability is impressive. Evaluators can be confident that DVI scale scores can be reliably reproduced on retest. These results demonstrate that the DVI is a reliable test.

Validity analyses confirm that the Domestic Violence Inventory (DVI) measures what it purports to measure, that is, domestic violence offender risk. The DVI accurately identified domestic violence offenders who have serious violence-related problems. Multiple offenders (having prior domestic violence arrests) scored significantly higher than first offenders (discriminant validity). Moreover, the Violence Scale identified 98% of the offenders who admitted having domestic violence problems. The Control Scale correctly identified 97% of the offenders who admitted dominating and controlling others. The Alcohol and Drugs Scales correctly identified offenders who have had treatment for alcohol and drugs, 96% and 97%, respectively (predictive validity). And, obtained risk range percentages on all DVI scales very closely approximated predicted percentages. All DVI scale classifications of offender risk were within 2% of predicted risk range percentile scores. These results support the accuracy of the DVI.

Violence prone individuals exhibit many behavioral characteristics that can be identified with the DVI. Early identification of these problems and prompt intervention can reduce a domestic violence offender's risk of recidivism or future violence. These characteristics are similar to what the FBI lists as characteristics of violence prone individuals: low tolerance for frustration, control issues, poor coping skills, failed relationships and use of drugs and alcohol. The DVI includes measures for these characteristics and DVI measures facilitate better offender understanding. They also provide an empirical basis for recommending appropriate level of intervention and treatment programs.

One of the most important decisions regarding a domestic violence offender is what supervision level and/or intervention program is appropriate for the offender. The DVI can be used to tailor intervention (levels of supervision and treatment) to each domestic violence offender based upon their assessment results. For example, scale scores in the low risk range suggest educational programs and minimum levels of supervision. Medium risk scores suggest counseling with medium levels of supervision, whereas, problem risk scores may require outpatient treatment along with increased supervision levels. Severe problem risk scores are often associated with intensive outpatient or even inpatient treatment. In short, the DVI can help in establishing meaningful levels of supervision. And when warranted, the DVI helps in recommending treatment and/or intervention options. This helps reduce recidivism.

These results demonstrate that we can accurately measure a person's probability of engaging in domestic violence. In the DVI this is accomplished with the Violence (lethality) Scale which measures the severity of violent tendencies. At the same time we can also identify many of the exacerbating conditions that act as domestic violence triggering mechanisms. In the DVI the severity of these triggering mechanisms is measured by the Alcohol Scale, Drugs Scale, Control Scale and Stress Coping Abilities Scale. Low scale scores are associated with low levels of supervision as well as intervention and treatment, whereas high scale scores relate to more intense intervention/treatment recommendations and levels of supervision.

Interested parties are invited to contact the author to participate in Domestic Violence Inventory (DVI) related research.

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