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Reliability and Predictive Validity of Screener/Assessment Tools in Nebraska Juvenile Diversion

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EVIDENCE-BASED NEBRASKA

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EXECUTIVE SUMMARY

Juvenile diversion is offered in most counties throughout Nebraska to eligible youth; and although state guidelines require the use of a screening or assessment tool, the tools utilized are not standardized or uniform statewide. This report quantifies whether the various tools are being reliably administered and are effectively predicting diversion completion and future system involvement.

The Juvenile Justice Institute gathered item-level risk/needs screener and assessment data from all juvenile diversion programs receiving Community-based Aid (CBA) funds. Overall, 3,916 youth were assessed for a juvenile diversion program between July 1st, 2015 and June 30th, 2017. The Youth Level of Service Inventory/Case Management Inventory (YLS) comprised the largest number of completed assessments (n = 2,193), followed by the Nebraska Youth Screen (NYS; n = 1,512), and the Arizona Risk-Needs Assessment (ARNA; n = 211).

First, we tested the reliability of each tool, which is how well it is consistently performing at predicting risk (i.e., less error in measurement). Reliability analyses revealed the YLS/CMI had the strongest internal consistency of the three measures, which means the items are grouped well together to measure the construct (i.e., risk level). The items within the NYS, however, demonstrated the strongest item-total correlations, which means these items were most related to the overall construct (i.e., risk level). Both the NYS and ARNA had poor internal consistency.

Second, we performed Receiver Operating Curve (ROC) analyses to determine the predictive validity of each tool, utilizing both unsuccessful discharge from diversion and future system involvement as outcomes. Results revealed all three tools had predictive validity for unsuccessful diversion completion with large effect sizes (i.e., measure of strength of the relationship). Furthermore, while all three tools demonstrated predictive validity for future system involvement with small to moderate effect sizes, when we tested predictive validity by both gender and race/ethnicity, only the YLS accurately predicted future system involvement for girls, none of the tools accurately predicted future system involvement for Black/African American youth, and only the ARNA accurately predicted future system involvement for Hispanic youth.

While it is always recommended to screen and/or assess youth, the tools currently being utilized in Nebraska juvenile diversion programs are not reliably and validly measuring risk for all youth assessed.

The most problematic items within each tool were those relating to prior convictions or prior contacts with the legal system. Because this is a diversion population, presumably with little to no prior juvenile justice system involvement, these items poorly capture risk in this population, which in turn contributes to lower reliability and predictive validity. While these findings do not provide definitive results for us to whole-heartedly recommend a tool for juvenile diversion programs at this time, our recommendation is to explore creating/utilizing a risk assessment tool that removes items that measure previous legal system involvement or norming current tools without those items. Future research and practice should continue to explore gender and racial/ethnic differences within youth assessment.

JUVENILE DIVERSION AND RISK-NEEDS-RESPONSIVITY

Juvenile diversion programs were created to help low- and moderate-risk youth avoid any unintended consequences of formal system processing, such as the stigmatization of being labeled a delinquent and learning antisocial behaviors from higher-risk youth, both of which can increase the likelihood of future offending (OJJDP, 2017). Instead of going through juvenile court, youth referred to diversion remain in their communities and are connected to services for rehabilitative purposes or are never served. After successful completion of diversion, typically the juvenile's case is dismissed. Although diversion programs are intended to reduce future system involvement, research on their effectiveness is somewhat mixed (OJJDP, 2017). In Wilson and Hoge's (2013) meta-analysis of 73 juvenile programs, they found that future system involvement was reduced for youth who participated in diversion compared to youth who were processed through juvenile courts. Although in a similar meta-analysis, Schwalbe et al. (2012) found diversion to have a nonsignificant effect on future system involvement. A possible reason for these conflicting findings may be differences in the quality of programming. Programs that provide individualized juvenile diversion plans based on a validated risk assessment tool are more effective at reducing future system involvement because youths' risk-needs are being targeted (Wylie et al., 2019).

Three principles underlie Andrews, Bonta, and Hoge's (1990) Risk-Needs-Responsivity (RNR) framework that address who to treat, what to treat, and how to treat youth to effectively rehabilitate them. The first principle of risk focuses on the importance of matching the intensity and duration of treatment to the risk level of the juvenile, such that more intensive services are reserved for higher risk youth and lower risk youth receive minimal or no interventions. Bonta and Andrews (2017) recommend that risk be determined with a validated assessment tool because they are more predictive than clinical judgement (Andrews, Bonta, & Wormith, 2006).

JUVENILE RISK ASSESSMENT

In a Models for Change MacArthur Foundation report, Vincent and colleagues (2012), outline three decisions that assessments can assist with:

- First, a risk assessment tool estimates the likelihood that a juvenile will continue delinquent behavior if there is no intervention; and allows a professional to assess whether a youth is lower or higher risk of future reoffending.
- Second, assessing risk guides professionals for intervention planning by indicating the areas with the most needs that warrant intervention to reduce the likelihood of reoffending.
- Third, risk assessment provides a standardized way to collect data for agencies, which can demonstrate areas of need within a population and assist in service planning.

Implementing risk assessment appropriately contributes to several positive outcomes, including minimizing bias in case planning, providing a common language between agencies, decreasing costs by only using more intensive interventions for those with higher risk, improving case planning and targeting services to youth, improving data collection for allocating resources, and reducing reoffending rates (Vincent et al., 2012).

NEBRASKA JUVENILE DIVERSION SCREENING AND ASSESSMENT

According to Nebraska juvenile diversion statute and guidelines, "a juvenile pretrial diversion program shall provide screening services for use in creating a diversion plan utilizing appropriate services for the juvenile" (43-260.04; Nebraska Juvenile Diversion Guidelines, 2015, p.14). Specifically, juvenile diversion programs may use either a screening or assessment tool (or both). Screening refers to a shorter process to determine who may need a more comprehensive review and is useful for identifying additional assessments or targeted interventions for each juvenile; and risk screening is specifically used to determine the likelihood a juvenile will become system-involved in the future (Nebraska Juvenile Diversion Guidelines, 2015, p.14). Assessment refers to an in-depth examination of needs and strengths identified during the initial screening process; which includes past records, interviews, and collateral information (Nebraska Juvenile Diversion Guidelines, 2015, p.15).

The diversion guidelines specify possible screening instruments to include: the Arizona Risk-Needs Assessment (ARNA), the Nebraska Youth Screen (NYS), the Youth Level of Service/Case Management Inventory Screening Version (YLS/CMI), and the Early Assessment Risk List (EARL). Possible assessment instruments to include are: the Youth Level of Service/Case Management Inventory Screening Version (YLS/CMI), the Juvenile Inventory for Functioning (JIFF), and the School Refusal Survey (SRS).

THE CURRENT PROJECT

In an effort to standardize the screening and assessment tools utilized statewide in Nebraska juvenile diversion programs, the data and assessment working group of the Nebraska juvenile diversion sub-committee requested that the Juvenile Justice Institute (JJI) evaluate current screening and assessment practices, as well as the reliability and predictive validity of current risk assessment tools utilized. The Nebraska Juvenile Diversion Guidelines require that each juvenile is assessed with an evidence-based screening or assessment tool that is reliable and valid, with "evidence they produce dependable scores and measure what they claim to measure for the population being served" (Nebraska Juvenile Diversion Guidelines, 2015, p.15); however, to date, there has not been a localized evaluation of all the screening and assessment tools utilized in Nebraska juvenile diversion.

NEBRASKA SCREENER AND ASSESSMENT PRACTICES: STAFF INTERVIEWS

To provide context on screener and assessment practices in Nebraska, we extracted all screener and assessment data entered into the Juvenile Case Management System (JCMS) between July 1st, 2015 and June 30th, 2017; we interviewed 27 diversion program managers that serve Community-based Aid (CBA) funded diversion programs in 51 counties by phone. There was a total of 7,941 cases entered into JCMS during the relevant time period; of these, only 47.8% had a risk assessment tool entered into the system. This could be for a few reasons. First, the juvenile was screened or assessed with a tool that was not a risk assessment tool; second, the juvenile was screened or assessed, but that data was not entered in to JCMS; or third, the juvenile was not screened or assessed at all (see Appendix A).

Within the interviews, all program staff indicated that they used some kind of assessment currently, but some said they did not assess youth during a portion of the study timeframe (2015 to 2017) or did not necessarily know the assessment practices prior to their employment. For a short description of all screener and assessment tools utilized within Nebraska juvenile diversion programs and other tools, please see Appendices B and C. With respect to assessment tools, the number of programs utilizing each tool was: the Nebraska Youth Screen (NYS, n = 19), followed by the Youth Level of Service/Case Management Inventory (YLS/CMI, herein referred to as the YLS, n = 10), then the Arizona Risk-Needs Assessment (ARNA, n = 6). Programs also reported using other non-risk assessment tools including the Massachusetts Youth Screening Instrument (pre-MAYSI or MAYSI, n = 11), the School Refusal Scale (SRAS, n = 3), the Developmental Assets Parent Questionnaire (DAP, n = 1), Simple Screening Instrument for Alcohol and Other Drugs (SSI, n = 4), Diagnostic and Predictive Scales (DPS, n = 1), Juvenile Inventory for Functioning (JIFF, n = 1), Early Assessment Risk List (EARL, n = 1), CRAFFT (n = 1), and Global Appraisal of Individual Needs (GAIN, n = 1).

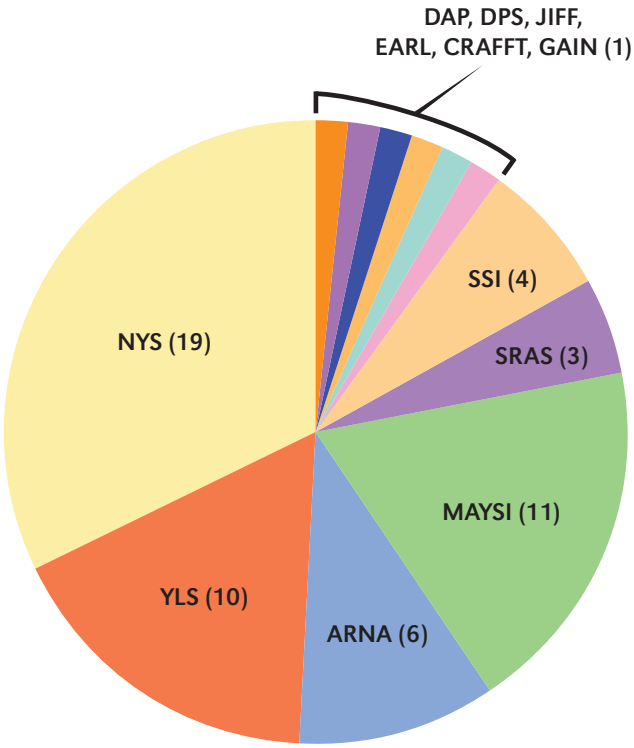

Figure 1. Number of programs using each assessment

We also asked diversion program staff several questions related to the use of assessment tools and whether the assessment tools were utilized in creating the juvenile diversion plans or whether diversion plans were standardized across all/most youth. Of the 27 interviewed, 12 program staff (serving n = 15 or 29.4% of counties) stated that the diversion plans were individualized and that the assessment tool was used to design the diversion plan for each youth. Some examples they provided were that the risk score would indicate the length of the diversion contract or that that higher scores in certain needs areas would warrant services in that area. Another subset of program staff (n = 10; serving n = 22 or 43.1% of counties) indicated that although diversion plans begin standardized, any areas of need may be addressed through additional services that go beyond the standardized plan. For these programs, there are set criteria for all youth (e.g., curfew, community service) and then the plan may be enhanced to add services such as mental health or substance use, if the need is presented. Others indicated that the diversion plan is standardized based on the offense/charge (n = 4; serving n = 9 or 17.6% of counties) but the assessment tool would then be used to identify needs that should be addressed with services not part of the diversion plan. The last two program staff (serving n = 5 or 9.8% of counties) indicated that they did not individualize diversion plans based on the assessment tool, but rather used the tool to get to know the youth as a way to better serve them.

RELIABILITY & PREDICTIVE VALIDITY OF RISK/NEEDS SCREENERS & ASSESSMENT TOOLS

DATA AND PROCEDURE

Data for a part of the study were obtained directly from the diversion programs for any youth who was assessed for juvenile diversion between July 1st, 2015 and June 30th, 2017 using any risk assessment tool (i.e., NYS, YLS, or ARNA). The data was gathered in one of three ways: (1) the program staff entered item-level data for every assessment into a spreadsheet and provided it to JJI, (2) the program sent each scored assessment tool to JJI and JJI staff recorded the item-level data into a spreadsheet, or (3) JJI staff traveled on-site to programs and recorded item-level data into a spreadsheet from the physical files. Assessment data were then merged with data obtained from the JCMS, a statewide database in which juvenile diversion programs are required under statute to enter individual youth data. JCMS includes demographic information and diversion outcomes (e.g. successful/unsuccessful discharge from diversion). Last, future system involvement data was obtained from JUSTICE, the Nebraska statewide trial case management system, including sealed and unsealed cases filed in court. Please see Appendix D for the Nebraska Community-based Aid definition of future system involvement.

Sample

For the ARNA sample, there were 211 youth with a mean age of 15.62 (*SD* = 1.62). More youth were male (*n* = 128, 60.7%) residing in nonmetro counties (*n* = 152, 72.0%). Most identified as White (*n* = 134, 63.5%), followed by Hispanic (*n* = 59, 28.0%), multiple races (*n* = 8, 3.8%), and Black/African American (*n* = 5, 2.4%). A total of 25 participants (11.8%) had future system involvement after an average time of 154.16 (*SD* = 106.95) days (Table 1).

Table 1. Descriptive statistics for the ARNA sample (*N* = 211).

		n (%)	*M*(*SD*)
Age			15.62 (1.62)
Gender			
	Male	128 (60.7%)	
	Future System Involvement	20 (15.6%)	
	Unsuccessful Diversion	14 (11.3%)	
	Female	83 (39.3%)	
	Future System Involvement	5 (6.0%)	
	Unsuccessful Diversion	9 (11.1%)	
Location			
	Nonmetro	152 (72.0%)	
	Metro	59 (28.0%)	
Race/Ethnicity			
	White	134 (63.5%)	
	Future System Involvement	15 (11.2%)	
	Unsuccessful Diversion	15 (11.5%)	
	Hispanic	59 (28.0%)	
	Future System Involvement	9 (15.3%)	
	Unsuccessful Diversion	3 (5.3%)	
	Black/African American	5 (2.4%)	
	Future System Involvement	1 (20.0%)	
	Unsuccessful Diversion	2 (40.0%)	
	American Indian/Alaskan Native	2 (0.9%)	
	Multiple Races	8 (3.8%)	
	Unspecified	3 (1.4%)	
Future System Involvement			
	Unsuccessful Diversion	23 (10.9%)	
	3 months	7 (3.3%)	
	6 months	14 (6.6%)	
	9 months	21 (10.0%)	
	1 year	25 (11.8%)	
Days to Future System Involvement			154.16 (106.95)

For the NYS sample, there were 1,512 youth with a mean age of 15.23 (*SD* = 1.83). More youth were male (*n* = 898, 59.4%) residing in nonmetro counties (*n* = 937, 62.0%). Most identified as White (*n* = 982, 64.9%), followed by Hispanic (*n* = 244, 16.1%), Black/African American (*n* = 160, 10.6%), and unspecified (*n* = 65, 4.6%). A total of 184 participants (12.2%) had future system involvement after an average time of 132.29 (*SD* = 101.55) days (Table 2).

Table 2. Descriptive statistics for the NYS sample (*N* = 1512).

		n(%)	*M*(*SD*)
Age			15.23 (1.83)
Gender			
	Male	898 (5 9.4%)	
	Future System Involvement	113 (12.6%)	
	Unsuccessful Diversion	111 (13.6%)	
	Female	614 (40.6%)	
	Future System Involvement	71 (11.6%)	
	Unsuccessful Diversion	70 (12.4%)	
Location			
	Nonmetro	937 (62.0%)	
	Metro	575 (38.0%)	
Race/Ethnicity			
	White	982 (64.9%)	
	Future System Involvement	111 (11.3%)	
	Unsuccessful Diversion	121 (13.0%)	
	Hispanic	244 (16.1%)	
	Future System Involvement	24 (9.8%)	
	Unsuccessful Diversion	24 (10.3%)	
	Black/African American	160 (10.6%)	
	Future System Involvement	24 (15.0%)	
	Unsuccessful Diversion	29 (19.7%)	
	American Indian/Alaskan Native	32 (2.1%)	
	Multiple Races	1 (0.1%)	
	Unspecified	65 (4.3%)	
	Asian	19 (1.3%)	
	Native Hawaiian/Pacific Islander	3 (0.2%)	
Future System Involvement			
	Unsuccessful Diversion	181 (12.0%)	
	3 months	70 (4.6%)	
	6 months	131 (8.7%)	
	9 months	168 (11.1%)	
	1 year	181 (12.0%)	
Days to Future System Involvement			132.29 (101.55)

For the YLS sample, there were 2,193 youth with a mean age of 15.46 (*SD* = 1.55). More youth were male (*n* = 1224, 55.8%) residing in metro counties (*n* = 2059, 93.9%). Most identified as White (*n* = 1321, 60.2%), followed by Black/African American (*n* = 581, 26.5%), and Hispanic (*n* = 229, 10.4%). A total of 222 participants (10.1%) had future system involvement with an average time of 134.90 (*SD* = 98.55) days (Table 3).

Table 3. Descriptive statistics for the YLS sample (*N* = 2193).

		n(%)	*M*(*SD*)
Age			15.46 (1.55)
Gender			
	Male	1224 (55.8%)	
	Future System Involvement	143 (11.7%)	
	Unsuccessful Diversion	289 (24.7%)	
	Female	969 (44.2%)	
	Future System Involvement	79 (8.2%)	
	Unsuccessful Diversion	196 (21.1%)	
Location			
	Nonmetro	134 (6.1%)	
	Metro	2059 (93.9%)	
Race/Ethnicity			
	White	1321 (60.2%)	
	Future System Involvement	129 (9.8%)	
	Unsuccessful Diversion	241 (19.9%)	
	Hispanic	229 (10.4%)	
	Future System Involvement	21 (9.2%)	
	Unsuccessful Diversion	66 (29.9%)	
	Black/African American	581 (26.5%)	
	Future System Involvement	69 (11.9%)	
	Unsuccessful Diversion	160 (28.9%)	
	American Indian/Alaskan Native	15 (0.7%)	
	Unspecified	2 (0.1%)	
	Asian	32 (1.5%)	
	Native Hawaiian/Pacific Islander	2 (0.1%)	
	Other	11 (0.5%)	
Future System Involvement			
	Unsuccessful Diversion	485 (22.1%)	
	3 months	89 (4.1%)	
	6 months	152 (6.9%)	
	9 months	195 (8.9%)	
	1 year	218 (9.9%)	
Days to Future System Involvement			134.90 (98.55)

ANALYTIC STRATEGY

Descriptive statistics were examined on each measure and its subscales where applicable. An item analysis was performed for each individual item including means, standard deviations, and item-total correlations to assess the fit of each item to the overall measure. Cronbach's alpha was calculated to determine the internal consistency of each measure (i.e., reliability). Internal consistency measures how well the items are grouping together to measure the construct (i.e. risk).

Receiver Operating Characteristic (ROC) curves were used as the primary method to test each measure's ability to predict unsuccessful discharge from diversion and future system involvement across varying timeframes (i.e., predictive validity). Each position on the curve is a representation of a sensitivity/specificity pairing, which corresponds to a decision threshold. The area under the curve (AUC) value determines how well the measure can distinguish between the two groups, in this case no future system involvement versus future system involvement and unsuccessful versus successful discharge from diversion. Larger numbers indicate more predictive validity. Specifically, previous literature states that an AUC of .556 is a small effect, .639 is a medium effect, and .714 is a large effect (Rice & Harris, 2005). To examine the predictive validity of the tools over time, analyses examined future system involvement within three months, within six months, within nine months, and within one year of discharge from the diversion program. If the size of the subsample allowed, we conducted additional reliability and validity analyses by gender, race/ethnicity, location, and diversion program.

RESULTS

RELIABILITY ANALYSIS

Arizona Risk Needs Assessment

For the item analysis of the ARNA, the means, standard deviations, and item-total correlations for the total sample, as well as for male and female juveniles only are presented in Table 4. In the current sample, females scored higher ($M = 2.07$, $SD = 1.49$) than males ($M = 1.78$, $SD = 1.41$); however that difference was not statistically significant ($p = .159$). Alternately, White youth scored significantly higher ($M = 2.13$, $SD = 1.47$) than Hispanic youth ($M = 1.29$, $SD = 1.12$, $p = .008$). Cronbach's alpha for this sample was .36, suggesting unacceptable internal consistency for the measure.

Further results revealed that for the total sample, Q5 (where enrolled in school) and Q10 (prior complaint) have a non-significant correlation to the total score. This means that these two items are not adequately contributing to the overall construct (i.e. risk level). Similarly, in the analysis of the female youth, the item analysis reveals that Q5 (where enrolled in school) and Q10 (prior complaint) are non-significantly correlated with the total score, while they are reliable for males. Further analysis by race/ethnicity displayed in Table 5, revealed that Q2 (assaultive) may also be problematic in Hispanic youth, in addition to Q5 (where enrolled in school) and Q10 (prior complaint). Furthermore, several items fell below the desired threshold of .50; however, further research is warranted given the small sample size.

Table 4. ARNA: Item means, standard deviations, and item-total correlations for the total sample and by gender.

	Total			Males			Females		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q1	.11	.31	.26***	.07	.26	.24**	.17	.38	.26*
Q2	.13	.34	.37***	.14	.35	.28**	.11	.31	.54***
Q3	.28	.45	.59***	.27	.45	.61***	.29	.46	.57***
Q4	.16	.37	.37***	.17	.37	.41***	.15	.36	.33**
Q5	.11	.32	.12	.13	.33	.21*	.10	.30	-.02
Q6	.23	.42	.50***	.21	.41	.45***	.25	.44	.58***
Q7	.41	.49	.40***	.38	.49	.40***	.46	.50	.39***
Q8	.06	.23	.45***	.06	.23	.38***	.06	.24	.54***
Q9	.39	.49	.58***	.35	.48	.57***	.45	.50	.58***
Q10	.05	.22	.05	.04	.20	.12	.07	.26	-.05
Total	1.90	1.44	-	1.78	1.41	-	2.07	1.49	-

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Table 5. ARNA: Item means, standard deviations, and item-total correlations by race and ethnicity.

	White			Hispanic		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q1	.10	.31	.31***	.15	.36	.36**
Q2	.14	.35	.43***	.12	.33	.19
Q3	.31	.47	.59***	.19	.39	.51***
Q4	.14	.35	.44***	.17	.38	.29*
Q5	.10	.31	.07	.08	.28	.25
Q6	.26	.44	.51***	.15	.36	.49***
Q7	.49	.50	.27**	.22	.42	.56***
Q8	.07	.25	.48***	.02	.13	.32**
Q9	.51	.50	.55***	.10	.31	.37**
Q10	.04	.21	.16	.08	.28	-.08
Total	2.13	1.47	-	1.29	1.12	-

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$. There were not enough Black/African American youth to include in this analysis.

Nebraska Youth Screen

For the item analysis of the NYS, the means, standard deviations, and item-total correlations for the total sample, as well as for male and female youth only are presented in Table 6 and results are presented by race/ethnicity in Table 7. In the present sample, females scored similarly ($M = 5.40$, $SD = 3.41$) to males ($M = 5.36$, $SD = 3.35$), and as such, there was no significant difference between groups ($p = .806$). Alternately, Black/African American youth scored significantly higher ($M = 6.63$, $SD = 3.03$) than both White ($M = 5.15$, $SD = 3.41$, $p = .008$) and Hispanic youth ($M = 5.05$, $SD = 3.19$, $p < .001$). There was no difference in mean scores for the White and Hispanic youth ($p = .909$). Cronbach's alpha for this sample was .58, suggesting poor internal consistency for the measure. For the NYS, Spearman Rank Order Correlations were utilized, given the composition of the questions (i.e., three response options). Results revealed significant item-total correlations for all items, however Q6 (substance use) fell well below the desired threshold of .50 suggesting further review of inclusion of the item.

Table 6. NYS: Item means, standard deviations, and item-total correlations for the total sample and by gender.

	Total			Male			Female		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q1 & 2	1.33	1.50	.56***	1.45	1.55	.59***	1.17	1.39	.52***
Q3	.52	.69	.58***	.48	.67	.59***	.57	.71	.57***
Q4	.66	.67	.62***	.67	.66	.60***	.66	.70	.64***
Q5	.65	.67	.45***	.64	.70	.43***	.67	.62	.49***
Q6	.51	.66	.25***	.53	.67	.24***	.49	.65	.27***
Q7	.63	.74	.57***	.58	.70	.56***	.70	.78	.59***
Q8	.55	.63	.56***	.53	.62	.56***	.59	.64	.60***
Q9	.41	.57	.57***	.40	.57	.56***	.42	.58	.58***
Total	5.37	3.37	-	5.36	3.35	-	5.40	3.41	-

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Table 7. NYS: Item means, standard deviations, and item-total correlations by race/ethnicity.

	White			Hispanic			Black/African American		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q1 & 2	1.15	1.40	.57***	1.42	1.46	.51***	2.03	1.69	.45***
Q3	.55	.71	.60***	.43	.62	.55***	.54	.66	.53***
Q4	.61	.68	.65***	.69	.68	.59***	.89	.59	.50***
Q5	.67	.70	.45***	.61	.64	.60***	.58	.57	.29***
Q6	.60	.68	.27***	.36	.59	.41***	.33	.60	.26**
Q7	.59	.73	.59***	.66	.71	.60***	.69	.77	.50***
Q8	.51	.63	.60***	.53	.56	.48***	.77	.66	.51***
Q9	.40	.58	.57***	.32	.54	.57***	.56	.57	.48***
Total	5.15	3.41	-	5.05	3.19	-	6.63	3.03	-

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Youth Level of Service/Case Management Inventory

The item analysis of the YLS, including the means, standard deviations, and item-total correlations for the total sample, and by male and female youth only are presented in Table 8 and results are presented by race/ethnicity in Table 9. In the present sample, females scored similarly ($M = 8.20$, $SD = 5.25$) to males ($M = 8.26$, $SD = 5.19$), and as such, there was no significant difference between groups ($p = .780$). Alternately, White youth scored significantly lower ($M = 7.68$, $SD = 5.17$) than both Hispanic ($M = 9.15$, $SD = 5.09$, $p < .001$) and Black/African American youth ($M = 9.21$, $SD = 5.14$, $p < .001$). There were no differences in mean scores for the Hispanic and Black/African American youth ($p = .893$). Results revealed non-significant item-total correlations for Q1 (three or more prior convictions) and Q2 (two or more failures to comply), however, low base rates of endorsing these items, as well as others, including Q4 (prior custody) and Q5 (three or more current convictions) could impact the item-total correlations. Analysis by gender and race/ethnicity revealed further difficulty for item analyses, because there was no variability among scores, as seen in several times among Hispanic participants such as Q1, Q2, Q4, and Q5 (all items from the Prior or Current Offense subscale). The Cronbach's alpha for the total score in this sample was .82, suggesting good internal consistency for the measure (Table 10); however, the internal consistency values for each subscale ranged from .30 (unacceptable) to .72 (acceptable).

Table 8. YLS: Item means, standard deviations, and item-total correlations for males and females.

	Total			Males			Females		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q1	.00	.04	.04	.00	.03	.03	.00	.05	.05
Q2	.00	.02	.02	.00	.00	-	.00	.03	.03
Q3	.02	.12	.10***	.02	.13	.08*	.01	.12	.12***
Q4	.00	.06	.05*	.00	.04	.02	.01	.08	.07*
Q5	.00	.05	.05*	.00	.06	.05	.00	.05	.08*
Q6	.10	.30	.36***	.10	.29	.36***	.10	.30	.37***
Q7	.23	.42	.58***	.23	.42	.59***	.23	.42	.57***
Q8	.12	.33	.33***	.12	.33	.33***	.12	.33	.33***
Q9	.25	.43	.42***	.22	.41	.39***	.28	.45	.46***
Q10	.34	.47	.31***	.31	.46	.31***	.37	.48	.30***
Q11	.16	.37	.31***	.13	.34	.27***	.20	.40	.37***
Q12	.29	.46	.45***	.32	.47	.44***	.25	.44	.45***
Q13	.13	.34	.29***	.15	.35	.32***	.11	.31	.26***
Q14	.35	.48	.43***	.38	.48	.41***	.31	.46	.44***
Q15	.15	.36	.35***	.11	.32	.34***	.19	.39	.38***
Q16	.11	.31	.39***	.11	.31	.39***	.12	.32	.40***
Q17	.23	.42	.48***	.22	.41	.46***	.25	.43	.50***
Q18	.01	.09	.11***	.01	.09	.12***	.01	.10	.10***
Q19	.83	.37	.29***	.84	.37	.30***	.83	.38	.27***
Q20	.59	.49	.28***	.59	.49	.30***	.58	.49	.25***
Q21	.13	.34	.38***	.13	.34	.38***	.14	.35	.38***
Q22	.22	.41	.42***	.21	.41	.43***	.23	.42	.41***
Q23	.50	.50	.40***	.54	.50	.38***	.45	.50	.42***
Q24	.22	.41	.42***	.24	.43	.40***	.20	.40	.44***
Q25	.03	.18	.14***	.03	.17	.12***	.04	.19	.16***
Q26	.19	.40	.37***	.22	.41	.37***	.17	.37	.37***
Q27	.35	.48	.14***	.41	.49	.15***	.28	.45	.14***
Q28	.41	.49	.44***	.40	.49	.45***	.41	.49	.44***
Q29	.42	.49	.53***	.41	.49	.55***	.43	.50	.51***
Q30	.05	.22	.30***	.04	.20	.30***	.06	.24	.30***
Q31	.06	.24	.16***	.06	.23	.19***	.07	.25	.12***
Q32	.14	.35	.38***	.14	.35	.37***	.14	.34	.39***
Q33	.24	.43	.46***	.24	.43	.49***	.24	.43	.43***
Q34	.24	.47	.36***	.24	.43	.41***	.23	.52	.32***
Q35	.34	.52	.48***	.30	.46	.51***	.40	.58	.45***
Q36	.19	.39	.37***	.20	.40	.36***	.17	.38	.39***
Q37	.14	.35	.44***	.12	.33	.42***	.16	.37	.47***
Q38	.16	.36	.40***	.17	.37	.42***	.15	.35	.37***
Q39	.08	.27	.32***	.09	.29	.35***	.06	.24	.27***
Q40	.03	.18	.23***	.04	.19	.26***	.03	.16	.18***

	Total			Males			Females		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q41	.15	.36	.56***	.16	.36	.55***	.15	.35	.57***
Q42	.03	.16	.24***	.03	.18	.27***	.02	.13	.18***
Total	8.23	5.22	-	8.26	5.19	-	8.20	5.25	-

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Table 9. YLS: Item means, standard deviations, and item-total correlations by race/ethnicity.

	White			Hispanic			Black/African American		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q1	.00	.05	.06*	.00	.00	-	.00	.00	-
Q2	.00	.00	-	.00	.00	-	.00	.04	.03
Q3	.01	.11	.10***	.01	.12	.14*	.02	.14	.07
Q4	.00	.06	.03	.00	.00	-	.01	.09	.08
Q5	.00	.06	.08**	.00	.00	-	.00	.00	-
Q6	.08	.27	.35***	.11	.31	.33***	.14	.34	.35***
Q7	.21	.41	.59***	.23	.42	.53***	.29	.46	.56***
Q8	.09	.29	.33***	.27	.45	.40***	.12	.33	.30***
Q9	.23	.42	.45***	.29	.45	.43***	.27	.44	.33***
Q10	.30	.46	.30***	.27	.45	.22***	.45	.50	.28***
Q11	.16	.37	.30***	.13	.34	.37***	.19	.39	.31***
Q12	.18	.38	.40***	.35	.48	.46***	.54	.50	.46***
Q13	.10	.30	.32***	.11	.31	.24***	.21	.41	.25***
Q14	.31	.46	.43***	.47	.50	.48***	.39	.49	.36***
Q15	.13	.34	.37***	.16	.37	.30***	.19	.39	.35***
Q16	.07	.26	.38***	.09	.29	.29***	.20	.40	.45***
Q17	.18	.38	.45***	.49	.50	.55***	.25	.43	.48***
Q18	.01	.11	.16***	.00	.07	.12***	.00	.06	-.03
Q19	.82	.38	.29***	.87	.34	.30***	.85	.36	.23***
Q20	.61	.49	.30***	.62	.49	.32***	.54	.50	.23***
Q21	.14	.34	.41***	.16	.37	.32***	.13	.34	.36***
Q22	.22	.41	.45***	.24	.43	.30***	.23	.42	.40***
Q23	.51	.41	.41***	.56	.50	.42***	.45	.50	.37***
Q24	.23	.42	.45***	.19	.39	.42***	.21	.41	.38***
Q25	.04	.21	.17***	.03	.16	.08	.02	.13	.15**
Q26	.22	.42	.41***	.18	.39	.45***	.14	.35	.28***
Q27	.42	.49	.19***	.37	.48	.16*	.19	.39	.10*
Q28	.38	.49	.47***	.57	.50	.37***	.41	.49	.41***
Q29	.40	.49	.53***	.52	.50	.51***	.43	.50	.55***
Q30	.06	.24	.35***	.06	.23	.31***	.03	.17	.17***
Q31	.06	.23	.19***	.02	.15	-.10	.09	.29	.15***
Q32	.10	.30	.39***	.14	.35	.37***	.22	.42	.35***

	White			Hispanic			Black/African American		
	M	*SD*	r_{tot}	*M*	*SD*	r_{tot}	*M*	*SD*	r_{tot}
Q33	.22	.42	.49***	.25	.44	.43***	.26	.44	.40***
Q34	.23	.42	.42***	.22	.41	.34***	.27	.60	.29***
Q35	.35	.54	.48***	.33	.47	.48***	.39	.49	.46***
Q36	.13	.34	.35***	.29	.46	.40***	.28	.45	.34***
Q37	.13	.34	.43***	.08	.35	.31***	.19	.39	.50***
Q38	.12	.32	.39***	.16	.37	.42***	.24	.43	.39***
Q39	.08	.28	.35***	.07	.25	.27***	.08	.27	.29***
Q40	.04	.20	.29***	.01	.09	.17**	.02	.15	.15***
Q41	.11	.31	.50***	.18	.38	.56***	.15	.43	.63***
Q42	.02	.15	.22***	.01	.09	.19**	.05	.21	.27***
Total	7.68	5.17	-	9.15	5.09	-	8.23	5.22	-

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Table 10. Internal consistency for the YLS total scale and its subscales.

	Cronbach's α	Value
Prior and Current Offenses/Dispositions Subscale (PO)	.30	Unacceptable
Family Circumstances/Parenting Subscale (Fam)	.57	Poor
Education/Employment Subscale (EE)	.55	Poor
Peer Relations Subscale (Peer)	.56	Poor
Substance Abuse Subscale (SA)	.72	Acceptable
Leisure/Recreation (LR)	.62	Questionable
Personality/Behavior Subscale (PerBeh)	.60	Questionable
Attitudes/Orientation Subscale (AO)	.46	Unacceptable
YLS Total	.82	Good

Predictive Validity Analysis

Arizona Risk Needs Assessment

ROC analyses examined the predictive validity of the ARNA in the total sample as well as by gender, race/ethnicity, and location (see Tables 11 through 14). As seen in Table 11, the ARNA significantly predicted future system involvement, as well as unsuccessful diversion program completion in the total sample. Despite this, the measure did not have significant predictive accuracy in the female sample. Furthermore, when analyzed by race/ethnicity, the ARNA was a significant predictor of total future system involvement with large effects for both White and Hispanic youth, however it did not significantly predict unsuccessful completion of the diversion program. When conducting analyses by location, the ARNA significantly predicted total future system involvement in both metro and nonmetro locations. However, analyses by agency revealed that while future system involvement was predicted with a medium to large effect in Platte County, unsuccessful diversion was not significantly predicted by the tool; yet in Washington County, unsuccessful diversion was significantly predicted with a large effect, while total recidivism was not significantly predicted.

Table 11. ARNA: ROC Analyses for future system involvement, 3 months, 6 months, 9 months and 1 year for the full sample and by gender.

	Full Sample ($N = 211$)		Males Only ($n = 128$)		Females Only ($n = 83$)	
	AUC	*p*	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.649	.020	.640	.089	.671	.096
3 Months	.784	.011	.803	.022	.766	.201
6 Months	.742	.003	.771	.003	.688	.271
9 Months	.700	.003	.726	.003	.688	.271
1 Year	.692	.002	.711	.003	.711	.157

Note. AUC values are significant at the $p < .05$ level.

Table 12. ARNA: ROC Analyses for future system involvement, 3 months, 6 months, 9 months and 1 year by race/ethnicity.

	White ($n = 134$)		Hispanic ($n = 59$)	
	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.647	.065	.648	.391
3 Months	.788	.017	.741	.411
6 Months	.757	.007	.802	.045
9 Months	.778	.002	.750	.033
1 Year	.782	.001	.726	.032

Note. AUC values are significant at the $p < .05$ level. There were not enough Black/African-American youth to include in analysis.

Table 13. ARNA: ROC Analyses by location.

	Metro ($n = 134$)		Nonmetro ($n = 59$)	
	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.666	.090	.607	.222
Future System Involvement	.719	.046	.675	.022

Note. AUC values are significant at the $p < .05$ level.

Table 14. ARNA: ROC Analyses by agency where $n > 50$.

	Platte County ($n = 128$)		Washington County ($n = 50$)	
	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.664	.122	.763	.015
Future System Involvement	.672	.036	.671	.132

Note. AUC values are significant at the $p < .05$ level.

Nebraska Youth Screen

ROC analyses examined the predictive validity of the NYS in the total sample as well as by gender, race/ethnicity, and location (see Tables 15 through 18). As seen in Table 15, the NYS significantly predicted unsuccessful diversion with a large effect for the full sample and males, but not females. The predictive accuracy for future system involvement for the total sample, while significant, had a small effect. Similar results were revealed for the White participants; however, there were no significant effects for the Black/African American youth, and only unsuccessful diversion was significant for the Hispanic youth, albeit with a large effect. Unsuccessful diversion was significantly predicted with a large effect for both metro and nonmetro youth, but future system involvement was not significantly predicted by location. Comparisons by agency revealed that future system involvement in Gage County was significantly predicted with a medium to large effect and unsuccessful diversion was generally predicted with large effects across all agencies.

Table 15. NYS: ROC Analyses for future system involvement 3 months, 6 months, 9 months and 1 year for the full sample and by gender.

	Full Sample ($N = 1512$)		Males Only ($n = 898$)		Females Only ($n = 614$)	
	AUC	*p*	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.719	.000	.730	.000	.703	.000
3 Months	.535	.331	.510	.819	.584	.171
6 Months	.527	.317	.538	.278	.511	.786
9 Months	.547	.047	.556	.068	.535	.360
1 Year	.559	.011	.569	.019	.542	.256

Note. AUC values are significant at the $p < .05$ level.

Table 16. NYS: ROC Analyses for future system involvement 3 months, 6 months, 9 months and 1 year by race/ethnicity.

	White ($n = 982$)		Black ($n = 160$)		Hispanic ($n = 244$)	
	AUC	*p*	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.717	.000	.609	.070	.800	.000
3 Months	.531	.480	.542	.710	.530	.759
6 Months	.524	.475	.503	.970	.487	.854
9 Months	.556	.070	.452	.469	.458	.525
1 Year	.567	.024	.470	.641	.480	.758

Note. AUC values are significant at the $p < .05$ level.

Table 17. NYS: ROC Analyses by location.

	Metro ($n = 575$)		Nonmetro ($n = 937$)	
	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.713	.000	.733	.000
Future System Involvement	.555	.062	.566	.492

Note. AUC values are significant at the $p < .05$ level.

Table 18. NYS: ROC Analyses by agency where $n > 50$.

		Total Recidivism		Unsuccessful Diversion	
	n	AUC	*p*	AUC	*p*
Dakota County	119	.548	.584	.920	.004
Gage County	110	.687	.021	.690	.002
Hall County	147	.564	.323	.822	.268
Lancaster County	788	.563	.056	.686	.000
Otoe County	65	.503	.979	.863	.016
Scotts Bluff County	77	.545	.623	.701	.043

Note. AUC values are significant at the $p < .05$ level.

Youth Level or Service/Case Management Inventory

ROC analyses examined the predictive validity of the YLS in the total sample as well as by gender, race/ethnicity, and location (see Tables 19 through 23). As seen in Table 19, the YLS significantly predicted unsuccessful diversion with large effects and future system involvement with small effects for the full sample, males, and females. When classified by race/ethnicity, unsuccessful diversion was significantly predicted with large effects for White and Hispanic youth, and with a medium to large effect for Black/African American youth. Future system involvement was significantly predicted for the White youth with a small to medium effect, but was not significant for the Black/African-American or Hispanic youth. Unsuccessful diversion was predicted with large effects for both metro and nonmetro youth, but future system involvement was only significantly predicted for metro youth with a small effect. When classified by agency, unsuccessful diversion was significantly predicted with a large effect for Douglas County and Sarpy County, while future system involvement was significantly predicted for both with a small effect. In Dodge County, future system involvement was significantly predicted with a large effect. The YLS was also analyzed by subscale score. Results revealed that the Family Circumstances/Parenting Subscale, Education/Employment Subscale, Peer Relations Subscale, and Substance Abuse Subscale predicted total recidivism, albeit with small effects.

Table 19. YLS: ROC Analyses for YLS future system involvement, 3 months, 6 months, 9 months and 1 year for the full sample and by gender.

	Full Sample ($N = 2193$)		Males Only ($n = 1224$)		Females Only ($n = 969$)	
	AUC	*p*	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.738	.000	.745	.000	.729	.000
Total Future System Involvement	.571	.001	.554	.040	.598	.005
3 Months	.522	.590	.538	.447	.492	.912
6 Months	.588	.000	.554	.080	.646	.000
9 Months	.563	.004	.546	.093	.590	.014
1 Year	.570	.001	.555	.037	.593	.008

Note. AUC values are significant at the $p < .05$ level.

Table 20. YLS: ROC Analyses for YLS future system involvement, 3 months, 6 months, 9 months and 1 year by race/ethnicity.

	White ($n = 1321$)		Black ($n = 581$)		Hispanic ($n = 229$)	
	AUC	*p*	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.761	.000	.672	.000	.712	.000
3 Months	.516	.765	.561	.401	.311	.168
6 Months	.620	.000	.559	.171	.414	.300
9 Months	.588	.002	.532	.419	.467	.646
1 Year	.595	.001	.533	.388	.486	.828

Note. AUC values are significant at the $p < .05$ level

Table 21. YLS: ROC Analyses by location.

	Metro ($n = 2059$)		Nonmetro ($n = 134$)	
	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.737	.000	.718	.005
Total Future System Involvement	.570	.001	.627	.085

Note. AUC values are significant at the $p < .05$ level.

Table 22. YLS: ROC Analyses by agency where $n > 50$.

	Douglas County JAC ($n = 1226$)		Sarpy County ($n = 673$)		Dodge County ($n = 75$)	
	AUC	*p*	AUC	*p*	AUC	*p*
Unsuccessful Diversion	.716	.000	.797	.000	.711	.118
Total Future System Involvement	.563	.019	.581	.026	.750	.006

Note. AUC values are significant at the $p < .05$ level.

Table 23. YLS: ROC Analyses for YLS subscale scores, 3 months, 6 months, 9 months and 1 year.

	3 Months		6 Months		9 Months		1 Year	
	AUC	*p*	AUC	*p*	AUC	*p*	AUC	*p*
PO	.506	.887	.507	.761	.507	.767	.505	.820
Fam	.461	.339	.544	.073	.540	.068	.556	.008
EE	.519	.639	.575	.002	.553	.016	.561	.004
Peer	.534	.395	.551	.039	.542	.059	.540	.059
SA	.492	.838	.553	.032	.550	.024	.543	.042
LR	.553	.186	.555	.027	.522	.323	.528	.176
PerBeh	.527	.497	.527	.267	.516	.480	.518	.383
AO	.495	.901	.522	.381	.515	.506	.522	.296

Note. AUC values are significant at the $p < .05$ level.

DISCUSSION

Overall, the ARNA was a better predictor of future system involvement than unsuccessful diversion. Furthermore, predictive validity was stronger for White juveniles than Hispanic, and youth in metro areas compared to nonmetro. However, results for the ARNA must be interpreted in light of sample size limitations because it limits the generalizability of the measure. More specifically, there were not enough participants identifying as Black/African American to estimate specific analyses, and only five females recidivated, which is not a large enough sample for the results to be reliably interpreted. The current study also identified questionable results for questions 5 and 10, which state "Juvenile is not currently enrolled in school?" and "Has there been a complaint prior to this assessment?" It may be beneficial to assess the composition of the measure and its predictive accuracy after removal of these questions.

For the NYS, the strength of the assessment was in predicting unsuccessful diversion, which it did with a large effect. When this measure predicted recidivism (males and White youth only) it was with a small effect. Item level analysis found that question six, which asks about substance use, was problematic. Reanalysis after the removal or reworking of question six may improve the psychometrics of this measure. Despite the strength with which this measure predicted unsuccessful diversion in all other categories, it was not predictive for Black/African American youth.

The YLS similarly predicted unsuccessful diversion with greater accuracy and strength than future system involvement. Large effects were evident for unsuccessful diversion for males and females, as well as White and Hispanic participants. The YLS still predicted unsuccessful diversion in Black youth with a medium effect, however, with respect to diversion, this measure was no longer able to significantly predict discharge reason for either Black or Hispanic youth. The item analysis revealed several problematic questions on the measure, all clustered on the Prior and Current Offenses/Dispositions Subscale, which resulted in a Cronbach's alpha in the unacceptable range (.30) for this subscale. Range restriction, or lack of variability in scores on some items, made analysis for some of the subgroups difficult and may be limiting the utility of the measure.

Descriptive analyses reveal that Black/African American youth have the highest percentage of future system involvement and unsuccessful diversion, yet these measures are failing to successfully predict these outcomes for these particular youth. Of the three measures, none were able to significantly predict future system involvement and while the YLS was able to significantly predict unsuccessful completion of diversion for this group, it was only with a moderate effect, much smaller than its ability in either White or Hispanic youth. Future research should improve on the psychometric properties of juvenile risk measures for a lower risk juvenile diversion sample.

REFERENCES

Andrews, D. A., Bonta, J., & Hoge, R. D. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior, 17*(1), 19-52.

Andrews, D. A., Bonta, J., & Wormith, J. S. (2006). The recent past and near future of risk and/or need assessment. *Crime & Delinquency, 52*(1), 7-27.

Bonta, J., & Andrews, D. A. (2017). The psychology of criminal conduct (6th ed.). New York, NY: Routledge.

Nebraska juvenile pretrial diversion guidelines: Best practice recommendations for juvenile pretrial diversion programs in Nebraska (2015). Nebraska Crime Commission. Retrieved from ncc.nebraska.gov/sites/ncc.nebraska.gov/files/pdf/juvenile_justice_materials/DiversionGuidelines.pdf.

Nebraska Revised Statute: Juvenile pretrial diversion programs; requirements. § 43-260.04 (2019)

OJJDP (2017). Diversion from formal juvenile court processing. Office of Juvenile Justice and Delinquency Prevention. Retrieved from www.ojjdp.gov/mpg/litreviews/Diversion_Programs.pdf.

Rice, M. E., & Harris, G. T. (2005). Comparing effect sizes in follow-up studies: ROC Area, Cohen's d, and r. *Law and Human Behavior, 29*(5), 615-620.

Schwalbe, C. S., Gearing, R. E., MacKenzie, M. J., Brewer, K. B., & Ibrahim, R. (2012). A meta-analysis of experimental studies of diversion programs for juvenile offenders. *Clinical Psychology Review, 32*, 26-33.

Vincent, G.M., Guy, L.S., & Grisso, T. (2012). Risk assessment in juvenile justice: A guidebook for implementation. Models for Change: Systems Reform in Juvenile Justice

Wilson, H. A., & Hoge, R. D. (2013). The effect of youth diversion programs on recidivism. *Criminal Justice and Behavior, 40*(5), 497-518.

Wylie, L. E., Clininkbeard, S., & Hobbs, A. (2019). The application of risk-needs programming in a juvenile diversion program. *Criminal Justice and Behavior, 46*(8), 1128-1147.

APPENDIX A - NUMBER OF YOUTH WITH ASSESSMENT SCORES ENTERED INTO JCMS (2015-2017)

		Youth with Assessment Scores in JCMS			
	Metro/Nonmetro	No	Yes	Total	% Assessed
Adams County	Nonmetro	200	1	201	0.5%
Antelope County	Nonmetro	25	0	25	0.0%
Boone County	Nonmetro	17	1	18	5.6%
Box Butte County	Nonmetro	42	0	42	0.0%
Buffalo County	Nonmetro	572	2	574	0.35%
Burt County	Nonmetro	45	1	46	2.2%
Butler County	Nonmetro	28	12	40	30%
Cass County	Metro	74	8	82	9.8%
Chase County	Nonmetro	22	0	22	0.0%
Cherry County	Nonmetro	17	0	17	0.0%
Cheyenne County	Nonmetro	27	29	56	51.8%
Clay County	Nonmetro	8	0	8	0.0%
Colfax County	Nonmetro	62	4	66	6.1%
Cuming County	Nonmetro	24	0	24	0.0%
Custer County	Nonmetro	35	0	35	0.0%
Dakota County	Metro	15	123	138	89.1%
Dawson County	Nonmetro	82	0	82	0.0%
Deuel County	Nonmetro	7	4	11	36.4%
Dodge County	Nonmetro	64	75	139	54.0%
Douglas County	Metro	162	1269	1431	88.7%
Dundy County	Nonmetro	5	0	5	0.0%
Fillmore County	Nonmetro	3	0	3	0.0%
Frontier County	Nonmetro	27	0	27	0.0%
Furnas County	Nonmetro	2	0	2	0.0%
Gage County	Nonmetro	133	107	240	44.6%
Garfield County	Nonmetro	6	0	6	0.0%
Gosper County	Nonmetro	8	0	8	0.0%
Greely County	Nonmetro	20	0	20	0.0%
Hall County	Metro	384	148	532	27.8%
Hamilton County	Metro	0	14	14	100%
Harlan County	Nonmetro	10	0	10	0.0%
Hayes County	Nonmetro	1	0	1	0.0%
Hitchcock County	Nonmetro	29	0	29	0.0%
Howard County	Nonmetro	32	0	32	0.0%
Jefferson County	Nonmetro	2	0	2	0.0%
Johnson County	Nonmetro	14	1	15	6.7%

	Rural/Not Rural	No	Yes	Total	% Assessed
Kearny County	Nonmetro	11	0	11	0.0%
Keith County	Nonmetro	52	0	52	0.0%
Kimball County	Nonmetro	3	0	3	0.0%
Lancaster County	Metro	252	760	1012	75.1%
Lincoln County	Nonmetro	114	11	125	8.8%
Madison County	Nonmetro	345	20	365	5.5%
Merrick County	Metro	0	51	51	100%
Morrill County	Nonmetro	61	0	61	0.0%
Nance County	Nonmetro	0	23	23	100%
Nemaha County	Nonmetro	60	0	60	0.0%
Nuckolls County	Nonmetro	22	0	22	0.0%
Otoe County	Nonmetro	0	68	68	100%
Pawnee County	Nonmetro	30	0	30	0.0%
Perkins County	Nonmetro	5	0	5	0.0%
Phelps County	Nonmetro	6	0	6	0.0%
Platte Count	Nonmetro	134	131	265	49.4%
Polk County	Nonmetro	0	7	7	100%
Red Willow County	Nonmetro	51	0	51	0.0%
Richardson County	Nonmetro	24	0	24	0.0%
Saline County	Nonmetro	6	15	21	71.4%
Sarpy County	Metro	381	717	1098	65.3%
Saunders County	Metro	28	46	74	62.2%
Scotts Bluff County	Nonmetro	111	78	189	41.3%
Seward County	Metro	65	19	84	22.6%
Sherman County	Nonmetro	10	0	10	0.0%
Stanton County	Nonmetro	19	0	19	0.0%
Valley County	Nonmetro	11	0	11	0.0%
Washington County	Metro	37	51	88	58.0%
Wayne County	Nonmetro	94	0	94	0.0%
Webster County	Nonmetro	9	0	9	0.0%
		4145	**3796**	**7941**	**47.8%**

Appendix B - Screeners

KEY

12 The number to the right of the tool name refers to the number of items in it.

$ Each dollar sign stands for $100.*

Each clock represents 15 minutes.

☑ Training required

☐ No training required

CRAFFT 2.0

9 ☐ Free

This tool is designed to identify alcohol and other drug use problems in youth aged 12 to 18. This tool is copyrighted by Boston Children's Hospital, so agencies need permission to present the questions in a different format.

Pros:
- Brief
- Easy to understand (yes/no questions)

Cons:
- Limited in scope
- Need additional tools to identify the source of the problem

GAIN-SS
(Short Screener)

27 ☑ $$$

This version of GAIN is a screener meant to help identify individuals who would be flagged as having 1+ behavioral health disorders on the GAIN-I.

Pros:
- Age range begins at 11 years
- Available in multiple languages
- Follow-up versions available
- Self- or staff-administered on paper or computer

Cons:
- May need to be followed-up with an assessment

NYS
(Nebraska Youth Screen)

9 ☐ Free

This tool assesses risk of future offending with these domains: demographics, age at first arrest, criminal history, family circumstances/parenting, education/employment, peer relationships, substance use, leisure/recreational time, personality/behavior, and attitudes/orientation.

Pros:
- Brief
- Easy to use and score

Cons:
- Not comprehensive
- Single item for each domain
- Has not been extensively evaluated

SSI-AOD
(Simple Screening Instrument for Alcohol and Other Drugs)

16 ☐ Free

This government-supported document was developed by a consensus panel from existing alcohol and drug-abuse screening tools. It encompasses a broad spectrum of signs and symptoms for substance use disorders, and was designed for use in a clinical setting.

Pros:
- Brief
- Validated measure
- Easy to understand and score (yes/no questions)
- Self-administered or given as part of an interview

Cons:
- More in-depth assessment needed for those scoring ≥4

* This cost refers to the initial price of the tool. The tool may cost more money for additional material after it's purchased.

Appendix C - Assessments

KEY

12 The number to the right of the tool name refers to the number of items in it.

$ Each dollar sign stands for $200.*

Each clock represents 1 hour.

☑ Formal training suggested

☐ Informal training available

If these icons are not present, information on these elements was unavailable.

Arizona AOC

10 ☐ Free

This assessment covers these domains: type of offense, school-related information, behavioral problems, and peer relationships.

Pros:
- Validated measure (though there is some debate)
- Short
- Easy to use

Cons:
- Difficulty distinguishing between moderate and high risk levels
- Assessment may suffer equity issues

Arizona DJC DRI

18

(Dept. of Juv. Corrections Dynamic Risk Instrument)

The Arizona DRI was developed to examine dynamic factors (ones that change, especially in response to intervention) to assess a youth's likelihood of recidivism.

Pros:
- Validated measure

Cons:
- Complex scoring
- Moderate levels of discrimination
- Little distinction between recidivism rates between medium- and high-risk youth classified by this tool

DAP

58 ☐ $$

(Developmental Assets Profile)

The DAP assesses internal strengths, external supports, and social/emotional factors that contribute to a youth's success in school and life. This tool measures several contexts of their lives including personal, peers, family, school, and community.

Pros:
- Pre/post-test to measure progress
- Multiple languages
- Online or paper versions
- Can be used as a guidebook for focused planning

Cons:
- Does not measure risk level
- Suggests a minimum of 30 youth to report at the aggregate level

DPS

56 ☐ $$

(DISC Predictive Scales)

This tool is intended to identify youth who meet the diagnostic criteria for 1+ mental health disorders, such as social phobia, agoraphobia, OCD, ADHD, conduct disorders, major depressive disorder, alcohol/substance use, and others.

Pros:
- Validated measure
- Self-administered
- Paper or electronic versions
- Uses DSM diagnostic information

Cons:
- Limited in scope to mental health disorders
- Does not measure risk or other needs

EARL

21 ☑ $

(Early Assessment Risk Lists)

The EARL is a structured, clinical risk assessment guide for children ages 6 to 11. It evaluates child, family, and community risk factors known to influence young childrens' propensity to engage in future antisocial behavior so appropriate treatment/risk management plans can be implemented.

Pros:
- Assessment tool & case-management
- Validated measure
- Gender-sensitive; separate tools for males/females
- Multiple languages

Cons:
- Costly
- Administered by clinicians or trained professionals

* This cost refers to the initial price of the tool. The tool may cost more money for additional material after it's purchased.

GAIN-I
(Global Appraisal of Individual Needs)

$$$

This is a comprehensive bio-psychosocial assessment meant to aid in clinical diagnosis, placement, treatment planning, performance monitoring, program planning, and economic analysis. It covers a broad range of domains.

Pros:
- Age is ≥11 years
- Measures multiple needs
- Available in multiple languages
- Follow-up versions available
- Paper/digital, self/staff-administered

Cons:
- Long, time-consuming assessment

GAIN-Q3
(Quick 3)

$$$

This version of GAIN is a brief assessment meant to aid in identifying and addressing problems across clinical and general populations. It covers a broad range of domains.

Pros:
- Same pros as GAIN-I
- Shorter duration than GAIN-I

Cons:
- Depending on the version, the assessment can be time-consuming

Georgia CRN
(Comprehensive Risk & Needs)

150+

This tool is a derivative of Northpointe's COMPASS Youth. The George CRN assessment utilizes 27 scales tapping a variety of domains.

Pros:
- Validated measure

Cons:
- Not effective at distinguishing between moderate- and high-risk level youth
- Long; 150+ items
- Complex scoring system

JIFF
(Juvenile Inventory for Functioning)

100*

$$$$$

This interview is interactive, computerized, and self-administered. JIFF covers ten domains. The number of items varies depending on the risk level of the youth responding to it.

Pros:
- Brief
- Assessment and case-management tool
- Age range is 5 to 19
- English & Spanish; read aloud to 2nd/3rd grade
- Pre/post test to measure progress

Cons:
- May need a longer, more in-depth assessment if the youth screens high

MAYSI-2
(Massachusetts Youth Screening Instrument-2)

52

$$$

The MAYSI-2 is a behavioral health assessment tool designed for youth aged 12-17. It provides scores on: alcohol/drug use, angry-irritable, depressed-anxious, somatic complaints, suicide ideation, thought disturbance, and traumatic experiences.

Pros:
- Brief
- Easy to understand (yes/no questions)
- Pre/post test to measure progress
- Most scales validated
- 12 languages available

Cons:
- Traumatic Experience scale has not been validated
- Thought Disturbance scale only validated with males

PACT
(Positive Achievement Change Tool)

126

$$*

The PACT consists of three risk/needs assessments for juveniles: Community, Residential, and Prevention. Each assessment focuses on different aspects of a youth's life, and each provides different information at different stages of a youth's involvement in the system.

Pros:
- Validated for males and females across race/ethnicity
- Available for various system points (e.g. pre-involvement)
- IDs risk, needs, intervention strategies
- Can track progress during community placement

Cons:
- Long assessment; time-consuming

SRAS
(School Refusal Assessment Scale)

24 ☐ Free

The SRAS was developed to target four common problem areas among frequently absent youth: Avoidance of negative stimuli, escape from aversiv social or evaluative situations, attention-getting behavior, and positive tangible reinforcement.

Pros:
- Brief
- Validated measure
- Likert scale ratings that are easy to interpret
- Parent and child versions can be compared

Cons:
- Focuses specifically on truancy-related issues
- Additional assessments required for other risks/needs

YASI
(Youth Assessment & Screening Instrument)

87 ☑ $$$*

This is an assessment designed to assess risk, needs, and protective factors of youth to develop a case plan and target priority areas for behavior change. It measures ten domains.

Pros:
- Provides a pre-screening form (34 items)
- Easy visual aids to help analyze and share results
- Validated measure
- Gender responsive (adjusted cutoff scores for females)

Cons:
- Long assessment; time-consuming

YLS/CMI
(Youth Level of Service/Case Management Inventory)

42 ☑ $$$*

This was derived specifically for juveniles aged 12 to 17 to aid in identifying youths' needs, strengths, barriers, and incentives. Training is highly-recommended. Its cost varies by how many forms are bought. A user's manual is $89 and an on-demand training class is $499.

Pros:
- Assessment and case management tool
- Online and paper formats
- Validated measure
- Can be used to track progress over time

Cons:
- Long assessment, time-consuming; 42-item survey plus interview

YLS/CMI 2.0
(Youth Level of Service/Case Management Inventory 2.0)

42 ☑ $$$*

This updated YLS/CMI includes an expanded age range (12 to 18), an updated literature review, significant minority representation in the normative sample, improved definitions, more direct guidelines, and more. Its cost varies by how many forms are bought; training cost also varies.

Pros:
- Same as YLS/CMI
- Gender- and culturally-informed items/factors
- Includes offender strengths

Cons:
- Long assessment, time consuming; 42-item survey plus interview

APPENDIX D - DEFINITION OF FUTURE SYSTEM INVOLVEMENT FOR THE PURPOSES OF COMMUNITY-BASED AID PROGRAM EVALUATION

For the purpose of accurately assessing post-program future law violations across Community-Based Aid (CBA) funded programs, the Juvenile Justice Institute and other researchers, shall utilize the following uniform definition of future law violations for juveniles who participated in a CBA-funded program

(A) **This definition shall apply to both juveniles, and individuals who have aged out of the juvenile justice system:**

(1) **Future System Involvement shall mean that within 1 year following discharge from a CBA-funded program the juvenile has:**

(a) **been filed on, which has not been dismissed or dropped, for an act that would constitute a felony under the laws of this state, and who, beginning on July 1, 2017, was eleven years of age or older at the time the act was committed.**

(b) **been filed on, which has not been dismissed or dropped, for an act that would constitute a misdemeanor or an infraction under the laws of this state, or violation of a city or village ordinance, and who, beginning on July 1, 2017, was eleven years of age or older at the time the act was committed.**

(i) **Future system involvement shall include minor in possession under Neb. Rev. Statute 53-180.02 and is coded as a law violation.**

(ii) **Future system involvement shall not include less serious misdemeanors or infractions that do not impact community safety, including animal(s) at large, failure to return library materials, and littering.**

(iii) **Future system involvement shall not include failure to appear.**

(c) **been filed on, which has not been dismissed or dropped, for an act that would constitute a status offense to include truancy under Neb. Rev. Statute 43-247(3)(b)(3) or Neb. Rev. Statute 79-201 ("compulsory attendance"), uncontrollable juvenile under Rev. Statute 43-247(3)(b)(1), curfew violations under city or village ordinance, or Tobacco use by a Minor under Neb. Rev. Statute 28-1418.**

(i) **Although status offenses are included in the definition of future system involvement, status offenses shall be reported separately from law violations.**

(d) **been filed on, which has not been dismissed or dropped, for an act that would constitute a serious traffic offense to include driving under the influence under Neb Rev Statute 60-6, 196 or similar city/village ordinance, leaving the scene of an accident under Neb. Rev. Statute 60-696(A), willful reckless driving under Neb. Rev. Statute 60-6, 214(A), engaging in speed contest/racing under Neb Rev. Statute 60-6, 195 (a) or (b) or related city/village ordinance**

(i) **Future system involvement shall not include less serious traffic violations that do not impact community safety, including careless driving, failure to yield, failing to stop, speeding, violating learner's permit, driving on suspended license, no valid insurance, no helmet, following to close, failure to display plates**

(2) **Future law violation shall not include the following:**

(a) **been filed on and that has not been dismissed or dropped, for an act which would constitute a Games and Parks violation as found in Neb. Rev. Statute Chapter 37**

(b) **been filed on for being mentally ill and dangerous, under Neb Rev. Statute 43-247(3)(c) or harmful to self or other under 43-247(3)(b)(2)**

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