



Validity of START:AV Assessments in Predicting Adverse Outcomes in Incarcerated Youth



Høgskolen i Molde
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Introduction

Youth involved with the criminal justice system are at heightened risk of experiencing adverse outcomes, such as substance abuse, violence, and victimization. The determination of risk for these outcomes is important for informing risk management and treatment planning (Viljoen, Cruise, Nicholls, Desmarais, & Webster, 2012).

Currently, there are a number of tools that assess violence risk with good predictive validity. However, the majority have not been sufficiently evaluated in juvenile correctional settings; do not consider adverse outcomes beyond violence; and are limited in their inclusion of protective factors (Viljoen et al., 2012). Moreover, these assessments typically focus on long-term rather than short-term risk, though the latter may be more relevant to adolescents (Desmarais et al., 2012).

The Short-Term Assessment of Risk and Treatability: Adolescent Version (START:AV; Nicholls, Viljoen, Cruise, & Desmarais, 2010) is a structured professional judgment tool being developed to address these gaps in adolescent risk assessment. Prior research evaluating the START:AV has indicated good structural reliability (Desmarais et al., 2012) and predictive validity (Viljoen et al., 2012). However, further research is needed to establish validity of assessments conducted in the field, as well as to inform ongoing refinement of the instrument.

The Present Study

We report findings of a project evaluating the field implementation of the pilot version of the START:AV in a sample of incarcerated adolescent offenders. Specifically, we examined associations of START:AV total scores and risk estimates with occurrences of violence, self-harm, suicidal behavior, self-neglect, unauthorized leave, substance abuse, victimization, and institutional infractions.

Methods

START:AV Assessments

START:AV assessments were completed by 13 case managers on 64 adolescent offenders (51 boys, 13 girls). Assessors rated current strengths and vulnerabilities independently, identified historical areas of strength and vulnerability, and estimated risk as low, moderate, or high for each outcome domain. Total strength and vulnerability scores were calculated by summing individual item ratings.

Outcome Data

Data regarding adverse outcomes were coded based on progress reports available in institutional files using an adapted version of the START Outcome Scale (SOS; Nicholls et al., 2007) (see Singh et al., 2013). Outcome data were dichotomized to indicate if the behavior occurred during follow-up (yes/no). An inter-rater reliability check on 10 cases showed an agreement rate of 90.5%. The period of time between the START:AV assessment and progress report ranged between eight and 365 days ($M = 143.56, SD = 95.93$)

Results

Descriptive Statistics

The majority of the sample experienced some form of adverse outcome during follow-up (see Table 1). Strength total scores ranged from 1 to 38 ($M = 19.19, SD = 8.88$) and Vulnerability total scores ranged from 0 to 36 ($M = 19.18, SD = 7.94$), out of a possible range of 0 to 46. For all items except self-care, peer support, and medication adherence, assessors made use of the full range of scores (0 to 2) for both Strength and Vulnerability ratings, suggesting good distribution and discrimination at the item level (see supplemental table). For the majority of items, associations between the Strength and Vulnerability ratings were moderate to strong and in the expected direction.

Table 1. Prevalence of Adverse Outcomes

OUTCOME BEHAVIORS	Adolescent Offenders	
	n	%
Any adverse outcome	49	76.6
Any violence (incl. verbal & physical & sexual)	33	51.6
Physical violence (incl. physical & sexual)	30	46.9
Nonsexual violence (incl. verbal & physical)	32	50.0
Nonsexual physical violence (incl. physical)	29	45.3
Internalizing behaviors ^a	3	4.3
Unauthorized leave	5	7.8
Substance abuse	1	1.6
Victimization	2	3.1
Institutional infractions	49	76.6

Notes. $N = 64$. % = valid percent. ^aIncludes self-harm, suicidal behavior, & self-neglect

Partial Correlations

Partial correlations (controlling for follow-up length) showed that strength total scores were negatively associated with incidents of internalizing behaviors and victimization (see Table 2). Though non-significant, a number of partial correlations between vulnerability scores and outcomes showed trends in the hypothesized direction. In comparison, partial correlations between risk estimates and their respective outcomes demonstrated stronger, significant associations.

Table 2. Partial Correlations between START:AV Ratings and Outcomes

OUTCOME BEHAVIORS	Strength Total Score	Vulnerability Total Score	Risk Estimates
	r	r	r
Any adverse outcome	-.09	.24 [‡]	–
Any violence	-.14	.21	.33*
Physical violence	-.15	.22 [‡]	.36*
Nonsexual violence	-.12	.19	.36*
Nonsexual physical violence	-.13	.20	.40*
Internalizing behaviors	-.25*	.13	–
Unauthorized leave	-.19	.23 [‡]	-.14
Substance abuse	-.01	.02	.15
Victimization	-.33**	.03	.39**
Institutional infractions	-.19	.24 [‡]	–

Notes. $N = 64$. * $p < .05$. ** $p < .01$. [‡] $p < .10$.

Results

Cox Regressions

Cox regressions with total scores predicting adverse outcomes, controlling for follow-up length, showed that higher vulnerability scores were associated with increased likelihood of unauthorized leave (see Table 3). The associations of vulnerability total scores with any adverse outcome and physical violence approached significance.

Table 3. Cox Regression between Total Scores and Outcomes

OUTCOME BEHAVIORS	Strength Total Score		Vulnerability Total Score	
	HR	95% CI	HR	95% CI
Any adverse outcome	0.99	0.96-1.02	1.04 [‡]	1.00-1.10
Any violence	0.98	0.94-1.02	1.06 [‡]	1.00-1.12
Physical violence	0.98	0.94-1.02	1.07 [‡]	1.00-1.14
Nonsexual violence	0.98	0.94-1.02	1.05 [‡]	0.99-1.12
Nonsexual physical violence	0.98	0.94-1.02	1.06 [‡]	1.00-1.13
Internalizing behaviors	0.85 [‡]	0.70-1.03	1.21	0.91-1.63
Unauthorized leave	0.93	0.83-1.03	1.33*	1.01-1.74
Substance abuse	0.98	0.79-1.22	1.07	0.80-1.43
Victimization	0.81	0.61-1.06	1.05	0.78-1.41
Institutional infractions	0.99	0.96-1.02	1.04 [‡]	1.00-1.10

Notes. $N = 64$. HR = hazard ratio. CI = confidence interval. * $p < .05$. [‡] $p < .10$.

In contrast, risk estimates were stronger predictors of outcome behaviors (see Table 4). In particular, youth deemed at high risk for violence were more likely than those classified as low risk to have engaged in any violence, physical violence, nonsexual violence, and nonsexual physical violence.

Table 4. Cox Regressions between Risk Estimates and Outcomes

OUTCOME BEHAVIORS	Risk Estimates			
	Medium vs. Low		High vs. Low	
	HR	95% CI	HR	95% CI
Any violence	1.35	0.52-3.55	6.03*	1.20-30.17
Physical violence	1.48	0.55-3.95	7.32*	1.14-37.97
Nonsexual violence	1.47	0.55-3.94	7.27*	1.40-37.71
Nonsexual physical violence	1.62	0.59-4.44	9.16*	1.68-49.81

Notes. $N = 64$. HR = hazard ratio. CI = confidence interval. * $p < .05$.

Discussion

Overall, final risk judgments were better than strength and vulnerability scores at estimating the likelihood of adverse outcomes in this sample of incarcerated adolescents. As such, our findings highlight the value of structured professional judgments over reliance on total scores, and provide support for the validity of START:AV assessments in the field.

Findings, however, are limited in several ways. Generalizability is restricted by small sample size and variable follow-up periods, and the small number of girls precludes examination of differences in outcomes and validity by sex. Moreover, outcome behaviors were gathered from progress reports only, which may underestimate prevalence.