Author: Shepherd, Stephane M.; Luebbers, Stefan; Ogloff, James R. P.

Title: Are youth violence risk instruments interchangeable? Evaluating instrument convergence in a sample of incarcerated adolescent offenders

Year: 2014

Journal: Journal of Forensic Psychology Practice

Volume: 14

Issue: 4

Pages: 317-341

URL: http://hdl.handle.net/1959.3/386844

Copyright: This is an Author's Accepted Manuscript of an article published in the Journal of Forensic Psychology Practice, Vol. 14, no. 4 (2014), pp. 317-341, copyright © 2014 Taylor & Francis, available online at: http://www.tandfonline.com/doi/abs/10.1080/15228932.2014.954871

This is the author's version of the work, posted here with the permission of the publisher for your personal use. No further distribution is permitted. You may also be able to access the published version from your library.

The definitive version is available at: http://doi.org/10.1080/15228932.2014.954871
Are youth violence risk instruments interchangeable? Evaluating instrument convergence in a sample of incarcerated adolescent offenders

Stephane M. Shepherd, Stefan Luebbers, & James R. P. Ogloff

Centre for Forensic Behavioural Science

Monash University and Forensicare

Author Note

Stephane M. Shepherd, Centre for Forensic Behavioral Science, Swinburne University of Technology, Melbourne, Australia; Stefan Luebbers, Monash Health, Melbourne, Australia; James R. P. Ogloff, Centre for Forensic Behavioral Science, Swinburne University of Technology, Melbourne, Australia.

This research was supported in part by a grant from the Australian Research Council (DP1095697). Thanks to the Victorian Department of Human Services and participants from the Victorian youth justice centres. The views and conclusions contained herein are those of the authors and do not necessarily represent the views of the Department or the State.

Correspondence concerning this article should be addressed to Stephane Shepherd, Centre for Forensic Behavioural Science, Swinburne University of Technology, 505 Hoddle Street, Clifton Hill VIC 3068 Australia

Email address: sshepherd@swin.edu.au
Abstract

Given the contemporary availability of several youth violence risk instruments at a clinicians disposal, this study sought to investigate whether two widely validated adolescent violence risk instruments are interchangeable. The concurrent and incremental validity of two widely used adolescent violence risk assessment instruments, the Structured Assessment of Violence in Youth (SAVRY) and the Youth Level of Service/Case Management Inventory (YLS/CMI), was evaluated in a young Australian custodial population. A significant degree of dimensional construct overlap between instruments was discovered. Both measures were also found to be moderately predictive of general and violent recidivism to a similar extent. Findings indicate that the instruments are interchangeable when used to evaluate future violent recidivism in these settings. Last, a model of static and dynamic dimensions across both instruments demonstrated strong relationships with recidivistic outcome. Clinical implications for risk assessment practice are discussed.

Key Words: Youth Violence, Risk Assessment, Recidivism, Juvenile Offending, SAVRY, YLS/CMI
Introduction

The growing significance and implications of violence risk assessment reaches across legal and clinical spheres. Appraisal of a client’s likelihood of engaging in future offending in these contexts may inform decisions concerning a client’s sentencing, suitability for treatment and intervention programs, and admission to, or release from correctional or secure hospital environments. Given the comparatively higher rates of violence among offenders and forensic mental health patients compared to the general population (Ogloff, Davis, Rivers, & Ross, 2007), an accurate review of a client’s violence risk level is necessary for future supervision and treatment schemes. Contemporary practice in violence risk assessment is increasingly reliant upon the use of risk assessment instruments, following research continually demonstrating the superiority of validated risk instruments over unstructured traditional clinical judgement (Grove, Zald, Lebow, Snitz, & Nelson, 2000; Monahan & Steadman, 1994).

Violence risk instruments encompass a concert of salient risk factors that have demonstrated empirical associations with violence and other maladaptive outcomes. The constellation of risk items included in violence risk inventories regularly include past and present environmental factors (peer criminality, school attendance, substance use, family discord, parental neglect) and clinical factors (aggression, negative attitudes, callousness, impulsivity, antisociality) (Borum, 2000; Webster, Douglas, Eaves, & Hart, 1997a). Although incipient risk inventories featured mainly static factors that were immutable, contemporary instruments incorporate dynamic risk factors which fluctuate over time.

Modern risk inventories frequently operate as broader case management strategies which signpost problematic risk factors as targets for treatment (Hoge, 2002). The overarching objective is to ascertain a general level of violence risk, identify the relevant items for intervention planning and then monitor the ongoing progress of the client with the intention of assuaging the initial level of risk. The Risk/Needs/Responsivity (RNR) model developed by Andrews and Bonta reflects this process through the identification of dynamic criminogenic needs and the evaluation of a client’s suitability for various interventions (Andrews, Bonta, & Wormith, 2006). With contemporary reports indicating increases in adolescent violent behavior and imprisonment in Australian jurisdictions (Australian Institute of Criminology, 2010; Australian Institute of Health and Welfare, 2008), the need to distinguish between high and low risk young offenders is increasingly relevant. Given estimates that more than 50% of young offenders in Australia re-offend (Australian Bureau of Statistics, 2009; Department of Human
Services Victoria, 2001), triaging young offenders into appropriate management plans commensurate with their level of risk is critical. Thus the developing utilization of violence risk inventories has assisted the risk assessment process prompting a systematic framework for the early identification of maladaptive and antisocial behaviors.

There have now been a considerable number of studies testing the utility of adult risk inventories in predicting violence include the Historical Clinical Risk Management-20 (HCR-20; Webster, Douglas, Eaves, & Hart, 2007b), the Level of Service Inventory- Revised (LSI-R; Andrews & Bonta, 1995) and the Level of Service/Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith, 2004). During the last decade, violence risk assessment has been extended to adolescents spawning the development of youth specific risk instruments including the Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2006) and the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2006). The SAVRY, based on the HCR-20, is designed to assess the likelihood of a young person (aged 12-18 years) engaging in future violence. It follows the Structured Professional Judgement (SPJ) model of risk assessment which involves assigning a client a violence risk rating, adjudicated by an assessor after the consideration of empirically established risk factors (Conroy & Murray, 2007; Douglas, Cox, & Webster, 1999; Douglas & Reeves, 2010) The SAVRY has been shown to have moderate to good predictive accuracy across community and institutional settings in North America (Catchpole & Gretton, 2003; McGowan, Horn, & Mellott, 2011; Meyers & Schmidt, 2008; Schmidt, Campbell, & Houlding, 2011; Welsh, Schmidt, McKinnon, Chattha, & Meyers, 2008) and Europe (Dolan & Rennie, 2008; Lodewijks, Doreleijers, & de Ruiter, 2008a; Lodewijks, Doreleijers, de Ruiter, & Borum, 2008b). The SAVRY also contains six mitigating items called Protective Factors, the presence of which has been found to increase the prospect of criminal desistance (Lodewijks, de Ruiter, & Doreleijers, 2010; Rennie & Dolan, 2010b). Like its LSI adult predecessors, the YLS/CMI is an additive risk/needs actuarial inventory designed to assess level of risk for general recidivism. The instrument also encompasses a case planning component in line with the RNR model. The YLS/CMI has been shown to be a moderate to strong predictor of general recidivism for young offenders in North America (Catchpole & Gretton, 2003; Jung & Rawana, 1999; Olver, Stockdale, & Wong, 2012; Onifade et al., 2008; Schmidt et al., 2011; Schmidt et al., 2005) and the United Kingdom (Marshall, Egan, English, & Jones, 2006; Rennie & Dolan, 2010a). Similarly, the youth version of the Psychopathy Checklist, the Psychopathy Checklist: Youth Version (Forth, Kosson, & Hare, 2003) has demonstrated utility in predicting general and violence recidivism for cohorts of young offenders (Edens, Campbell, & Weir, 2006).
Extant literature comparing the predictive validity of the SAVRY and YLS/CMI instruments together have largely been conducted in North America with few exceptions (Catchpole & Gretton, 2003; Hilterman, Nicholls, & van Nieuwenhuizen, 2014; Schmidt et al., 2011; Welsh et al., 2008). For the bulk of these investigations, the SAVRY outperformed the YLS/CMI in the prediction of both general and violent recidivism (Hilterman et al., 2014; Schmidt et al, 2011; Welsh et al., 2008). To our knowledge three comparison studies have evaluated the incremental validity of both instruments. In two of these studies the SAVRY offered additional variance over the YLS/CMI (Schmidt et al., 2011; Welsh et al., 2008). However given the paucity of literature on this subject, trends remain equivocal. The purpose of this study was to address these two gaps in the current literature. First, the study aimed to evaluate the predictive validity of both these measures in an Australian sample of incarcerated adolescent offenders. This would provide population validity beyond North American investigations and simultaneously add to the developing body of adolescent violence risk literature in Australia. Second, we set out to investigate the corresponding psychometric properties and incremental validity of each instrument over and above the other. To our knowledge, no prior study has comprehensively explored the concurrent validity of the subcomponents of both risk instruments in tandem. An incremental validity analysis would also inform the practicality of the combined clinical use of the instruments as well as providing information on the strength of instrument dimensions and their relationship with violent re-offence. No previous research has explored these procedures in an Australian adolescent correctional setting. Without regional empirical data we will not know whether the use of multiple instruments is efficacious in predicting violence for Australian adolescents in detention. Furthermore we can identify which instrument may have greater utility in these unique circumstances.

Although both instruments were initially developed to appraise different recidivistic outcomes (SAVRY: violent recidivism; YLS/CMI: general recidivism), we anticipated strong relationships between instrument domains and an overlap of constructs given their content overlay and commensurate predictive abilities in the literature. Given that the SAVRY is a violence risk instrument, we expect the SAVRY to exhibit increased validity over the YLS/CMI for violent outcome. Based on prior empirical (Lodewijks, Doreleijers, & de Ruiter, 2008a) and theoretical research (Borum & Douglas, 2003) we also expect the SAVRY Summary Risk Rating, the SPJ feature used to determine a client’s level of overall risk, to add incremental validity over the YLS/CMI and SAVRY total scores. We also anticipate that the SAVRY domains would demonstrate strong associations with violent outcome over the YLS/CMI subscales given the SAVRY was designed as a specialized violence risk instrument. Across the domains and
subscales of both instruments, we expected dynamic factors to display the strongest association with violent re-offense. The consideration of dynamic factors is particularly appropriate when assessing youth given the instability and transience of adolescence.

Method

Participants

The sample included 177 male participants who were recruited from the Victorian Youth Justice Centres, Parkville Youth Justice Precinct (PYJP) and Malmsbury Youth Justice Centre (MYJC). PYJP accommodates child and adolescent males and females aged 10 to 17 years who have been remanded or sentenced by a Victorian Court, and young women 18 to 20 years of age who have been sentenced by a Victorian Court. MYJC accommodates young men aged 18 to 20 years who have been sentenced by a Victorian Court. The State of Victoria is situated in the South-East region of Australia and has a population of approximately 5.5 million people, most of who reside in Melbourne (Population Bulletin, 2012).

Demographics

The mean age of the cohort was 16.94 years (SD 1.80). The inclusion of 18-20 year olds in the youth sample was grounded on the state of Victoria’s ‘Dual Track’ system (Section 32 of the Victorian Sentencing Act 1991) which differentiates young offenders within this age group as subject to either adult or youth criminal justice systems. This system is intended for a subset of young adult offenders who are particularly impressionable, immature or likely to be susceptible to undesirable influences in adult prison, and display amenability to treatment and rehabilitation (see Luebbers & Ogloff, 2010).

The sample included participants who self-identified as English speaking background (ESB, 48%), culturally and linguistically diverse background (CALD, 34%) and Aboriginal and Torres Strait Islanders (ATSI, 18%). ESB comprised participants who self-identified as White Anglo-Saxon or Caucasian. The CALD category included participants who self-identified as belonging to an ethnic minority group or possessing a non-English speaking heritage. The ATSI group included participants who identified as belonging to the Indigenous peoples of Australia and the Torres Strait.
The mean length of sentence that participants were serving was 8.69 months (SD 15.53 months). All participants had a self-reported history of violence. Virtually everyone in the sample (97%) had previously received a police charge for a violent offense and 69% per cent had committed a violent index offense. There were no significant differences in the distribution of offenses across the three ethnic categories.

** Measures **

**SAVRY.** The SAVRY is a Structured Professional Judgment instrument designed to predict the likelihood of future violent behavior in young people aged 12-18 years (Borum et al., 2006). It comprises 24 risk items divided into three subscales assessing Historical, Socio/Contextual and Individual/Clinical domains, shown in Table 2. Historical risk factors largely include static items focusing on prior behaviors and experiences. The Social/Contextual domain considers dynamic factors relating to peer relationships and community influences whilst the Individual/Clinical domain assesses psychological patterns and behaviors.

Each SAVRY risk factor is coded on a three point scale (0 - Low, 1- Medium, 2- High) which represents the presence and severity of the risk item. Scores can be summed to generate a SAVRY Total Score for research (not clinical) purposes. As there are no assigned cut-off scores, the professional is required to form a judgment called SAVRY ‘Summary Risk Rating’ after considering all SAVRY risk and protective factors in light of the young person’s history of violence and situation. The instrument also contains 6 additional ‘Protective Factors’ which have been shown to lower the risk of recidivism (Lodewijks, de Ruiter, & Doreleijers, 2010; Rennie & Dolan, 2010b). The protective factors are coded dichotomously as either ‘Absent’ or ‘Present’ (See Appendix).

Previous research on the SAVRY research has demonstrated high reliability across raters, regularly reaching Intraclass Correlation Coefficient (ICC) values of between .81 and .96 for the SAVRY Total Score (Catchpole & Gretton, 2003; Dolan & Rennie, 2008; Lodewijks et al., 2008a; Meyers and Schmidt, 2008; Welsh et al., 2008). Meta-analyses have shown the SAVRY exhibits moderate to strong predictive accuracy for general and violent recidivism (Olver et al., 2009; Singh, Grann, & Fazel, 2011).

**YLS/CMI.** The YLS/CMI is a quantitative risk/needs assessment and case management tool for young offenders aged 12-17 years that encompasses a dichotomously rated checklist and a case management plan addressing responsivity (Hoge & Andrews, 2006). It is derived from the original adult risk assessment measure the Level of
Running head: Are youth violence risk instruments interchangeable?

Service Inventory Revised. It includes 42 risk items over 8 domains covering Offense history, Family Circumstances, Education/Employment, Peer Relationships, Substance Use/Abuse, Leisure/Recreation, Personality/Behavior and Attitude/Orientation (Hoge & Andrews, 2006). Total scores and risk levels are calculated overall and for each subsection (See Appendix).

The YLS/CMI has demonstrated predictive validity for young offenders in North America and the United Kingdom (Catchpole & Gretton, 2003; Jung & Rawana, 1999; Marshall et al., 2006; Olver et al., 2012; Rennie & Dolan, 2010a). Additionally, YLS/CMI tools have also demonstrated validity across gender and multi-ethnic sub groups (Jung & Rawana, 1999; Schwalbe, 2008; Stockdale, 2008). Concerning rater consistency, the YLS/CMI has previously yielded ICC values of .80 and above (Catchpole & Gretton, 2003; Marczyk, Heilbrun, Lander, & DeMatteo, 2003).

Procedure

The study employed a prospective longitudinal cohort design consisting of young offenders who were incarcerated in Victorian detention centres between July 2011 and June 2012. Prior to the commencement of data collection, ethics approval was obtained from Monash University Human Research Ethics Committee; Department of Human Services – Human Research Ethics Committee and the Victoria Police Human Research Ethics Committee. Written informed consent was required for the participant to take part in the study. Consent for participants under 18 years of age fell within the “mature minor” concept as described in Victorian legislation where capacity to consent was established by the ability of youth to understand the nature and purpose of their participation in the study, and to agree to participate in the study.

Interviews and instrument coding were completed by postgraduate clinician-researchers who had completed training and received supervision in the use of the SAVRY and YLS/CMI. In addition to information extracted from clinical interviews and risk assessment measures, data were obtained from the Victoria Police Law Enforcement Assistance Program (LEAP) and the Department of Human Services Client Relationship Information System for Service Providers (CRISSP) databases.

Participants consented to Victoria Police releasing their de-identified criminal histories from the LEAP database. The follow-up recidivism data were collected for a period of 6-18 months following release from custody.
Recidivism was defined as any offense that resulted in police charge. General Recidivism included any charge excluding technical breaches of orders, and Violent Recidivism comprised acts intending or threatening to cause physical harm to a victim.

**Data Handling and Analysis**

Data were analysed using IBM SPSS Statistics version 19. First, internal consistency was calculated using Cronbach’s alpha. Second, convergent validity of the SAVRY and YLS/CMI was examined using correlational analyses (Pearson’s) on instrument total scores and domain scores. Third, predictive validity of the risk assessment instruments for general and violent recidivism was assessed using Receiver Operating Characteristic (ROC) analysis. ROC analysis provides an Area under the Curve (AUC) value by charting sensitivity against specificity. The score determines the probability that a randomly selected recidivist would score higher on a risk instrument than a randomly selected non recidivist. An AUC value of .75 and above is estimated to be a large effect (Douglas et al., 1999). Fourth, an analysis was conducted to determine if the total scores and items of one instrument had greater incremental validity over the other instrument to predict offending of violent reoffenders. Last, a stepwise logistic regression analysis was conducted combining SAVRY and YLS/CMI domain scores as covariates to establish a parsimonious set of predictors for violent outcome.

**Results**

**General Psychometric Properties**

The means and standard deviations for the SAVRY and YLS/CMI subscale and total scores are presented in table 1. The SAVRY Summary Risk Ratings assigned to participants identified 48% of the overall sample to be of a high risk for violent re-offense, 36% as a moderate risk and 16% as a low risk. Both SAVRY and YLS/CMI exhibited good internal consistency (Cronbach’s Alpha) for instrument total scores. Reliability co-efficients varied between 0.67 and 0.79 for SAVRY domains and between 0.54 and 0.82 for the YLS/CMI subscales. Interrater reliability was measured for 11 SAVRY cases assessed independently. The Intraclass Correlations (single measure) demonstrated high concordance [Total Score: ICC = 1.00 (a = 1.00), Risk Rating: ICC = 1.00 (a = 1.00), Historical Domain: ICC = .97 (α = .99), Socio/Contextual Domain: ICC = .96 (α = .98), Protective Domain: ICC = .99 (α = 1.00). For the
YLS/CMI, 18 cases were measured. Again, ICC scores indicated strong reliability between raters [Total Score: ICC $= .97$ ($\alpha = .98$)].

**Correspondence between measures**

As displayed in table 2, dimensional concurrent validity of the SAVRY and YLS/CMI was conducted. Zero order Pearson correlations were performed between SAVRY total and domain scores and YLS/CMI total and subscale scores. Significant strong positive correlations were found between the YLS/CMI total score and all SAVRY domain scores indicating strong concordance. The SAVRY total score also demonstrated strong significant correlations with the YLS/CMI subscales Family Circumstances, Education/Employment, Leisure/Recreation and Personality/Behavior. Significant positive relationships were also shown between the SAVRY Socio/Contextual domain and YLS/CMI subscales Family Circumstances and Peer Relations. The Family Circumstances subscale was also found to be strongly correlated with the SAVRY Historical domain. Significant strong correlations were similarly detected between the SAVRY Individual/Clinical domain and the Personality/Behavior and Attitudes/Orientation subscales. Next, the SAVRY Protective Factor domain demonstrated expected negative relationships with the YLS/CMI, particularly with the total score and the Leisure/Recreation subscale.

**Association with Recidivism**

Thirty-Eight participants were not included in the follow-up component of the study (17 had not been released from custody, 21 did not provide consent to access their police records, and 2 were not released and did not provide consent to access their police records). The revised released sample comprised 139 participants. At the conclusion of the follow up period, 104 (74.8%) of the outcome sample had been charged by police for at least one new offense. Eighty-two (59.0%) of the outcome sample were charged by police for a new violent offense.

Predictive validity of the SAVRY and YLS/CMI instruments was determined through ROC analyses. The SAVRY total score demonstrated moderate predictive validity for general recidivism [AUC = .70, $p < .001$] and violent recidivism [AUC = .66, $p < .01$]. The SAVRY Summary Risk Rating showed comparable, though slightly lower predictive validity for general recidivism [AUC = .68, $p < .01$] and violent recidivism [AUC = .64, $p < .01$]. The YLS/CMI total score also demonstrated moderate predictive validity for both general [AUC = .72, $p < .001$] and violent re-offense [AUC = .65, $p < .01$].
Incremental Validity Analyses

A series of entry method hierarchical logistic regressions were conducted to determine the incremental validity of the SAVRY and YLS/CMI over one another for the prediction of violent and general recidivism. The $R^2$ scores are the Nagelkerke’s pseudo R squared measure. For violent recidivism, the SAVRY total score was a significant predictor at Step 1 of the model ($R^2 = .112$; -2 log likelihood [LL] = 176.09; Wald statistic = 10.92, $p < .01$). The YLS/CMI total score explained an additional 0.6% of the variance beyond the SAVRY total score and was not statistically significant ($R^2 = .118$; -2 log likelihood [LL] = 174.43; Wald statistic = .65, $p = .42$). When entered at Step 1 of the model, the YLS/CMI total score demonstrated a significant predictive relationship with violent re-offense ($R^2 = .11$; -2 log likelihood [LL] = 176.59; Wald statistic = 10.43, $p < .001$). The SAVRY total score did not significantly add to the model accounting for a further 1.0% of the variance over the YLS/CMI total score ($R^2 = .12$; -2 log likelihood [LL] = 175.43; Wald statistic = 1.143, $p = .285$). A similar pattern of results was discovered for general recidivism outcome. The SAVRY total score revealed a significant association with the outcome at Step 1 of the model ($R^2 = .15$; -2 log likelihood [LL] = 142.06; Wald statistic = 13.09, $p < .001$). In Step 2, the YLS/CMI total score explained an additional 1.0% of the variance over the SAVRY total score and again, this was not significant ($R^2 = .16$; -2 log likelihood [LL] = 140.49; Wald statistic = 1.55, $p = .213$). Similarly, when the SAVRY total score was entered at Step 2 of this model it explained non-significantly a further 0.6% ($R^2 = .164$; -2 log likelihood [LL] = 140.49; Wald statistic = .63, $p = .43$) over the YLS/CMI total score which was a significant predictor of general re-offense in Step 1 ($R^2 = .158$; -2 log likelihood [LL] = 141.13; Wald statistic = 13.84, $p < .001$). The low incremental validity exhibited in the first two analyses is a likely consequence of the strong collinear relationship between the YLS/CMI and SAVRY total and particular domain/subscale scores as demonstrated in Table 2.

Incremental validity analyses of the SAVRY Summary Risk Rating were also conducted. Entry method hierarchical logistical regression models were again performed to ascertain additional predictive improvement for the SAVRY Summary Risk Rating over instrument total scores. The results indicated that the SPJ risk rating did not significantly contribute to the prediction of violent and general recidivism over either the SAVRY total score [VR: (change in -2LL = .64, $\chi^2$ block (1) = .022, $p = .882$), GR: (change in -2LL = .16, $\chi^2$ block (1) = .155, $p = .694$)] or the YLS/CMI
Entry method binary logistic regression analysis was performed to investigate the incremental validity of the SAVRY domains over the YLS/CMI subscales for the outcome variable of violent re-offense. The results indicate that the SAVRY domains significantly increased the strength of the overall model (change in -2LL = 11.82, $\chi^2 (12) = 40.514$, $p < .001$). The addition of the SAVRY domains to the model increased the prediction of violent recidivism, explaining an additional 9% of the variance. YLS/CMI subscales Prior and Current Offenses/Dispositions, Peer Relations, and Leisure/Recreation, were significant predictors of violent recidivism in Step 1, though they lose their significant contributions to the outcome with the addition of SAVRY domain variables in Step 2. The SAVRY protective factor domain ($\text{Exp} (B) = .612$, $p < .01$) remained the only significant predictor of violent recidivism after accounting for all YLS/CMI subscales.

Forward Stepwise Binary Logistic Regression analyses (see Table 3) were carried out to identify salient factors associated with general and violent recidivism when both SAVRY domain and YLS/CMI subscale scores were added to the model. The model for general recidivism ($\chi^2 (3) = 37.495$, $p < .001$) correctly identified 81.3% of cases overall and explained 34.9% of the variance. The two item model for violent recidivism ($\chi^2 (2) = 26.110$, $p < .001$) identified 65.5% of cases correctly and accounted for 23.1% of the overall variance. Participants were 42.8% more likely to generally offend and 36.8% more likely to violently reoffend as their Prior Offenses/Dispositions YLS score increased by one unit. Participants were also 74.9% more likely to generally reoffend if their YLS/CMI Peer Delinquency score increased by one unit. In contrast the same unit increase on the SAVRY Protective Factor domain meant that participants were 33.1% and 33.3% less likely to generally and violently reoffend respectively.

**Discussion**

This study provided a comparative analysis of two widely used adolescent violence risk inventories. These measures included the SAVRY and YLS/CMI which are both often utilized as part of an overall violence risk assessment across clinical, forensic and correctional settings. The relative psychometric properties of the SAVRY and YLS/CMI were explored through a series of statistical methods. Additionally, the study sought to ascertain the
predictive validity for general and violent recidivism for both instruments. Last, regression analyses were performed to establish the dimensional contribution of both instruments to re-offense.

The mean total scores for both the SAVRY and the YLS/CMI were relatively higher than previous investigations. This is likely due to the severe nature of the cohort, the bulk of whom had previously been charged with a violent offense (97%). The state of Victoria has traditionally legislated welfare focused youth justice strategies with an emphasis on diversion from detention (Sentencing Advisory Council, 2012). Consequently, youth receiving a custodial disposition are often chronic or repeat violent offenders. The YLS/CMI and SAVRY total scores achieved strong internal consistency scores in line with previous studies. Although the SAVRY total and its domains are not intended to be used as scales, previous research had established the strong internal consistency of the risk total (see Borum, Lodewijks, Bartel, & Forth, 2010).

The intercorrelation matrix indicated robust associations between instruments. Strong to very strong significant relationships were demonstrated between several SAVRY domain and YLS/CMI subscale scores. The strong correlation between the SAVRY total score and YLS/CMI total score in this study ($r = .87$) is comparable to the relationship found between instrument totals ($r = .89$) in the SAVRY’s incipient validation study (Borum et al., 2006). In other investigations, a strong association between the SAVRY total score and YLS/CMI total score was found by Welsh et al. (2008) in a community corrections sample ($r = .58$) and by Hilterman et al. (2014) in a Spanish adolescent sample on community probation ($r = .74$). The SAVRY Summary Risk Rating had also previously demonstrated a strong relationship with the YLS/CMI total score ($r = .64$) in a Canadian cohort of incarcerated young violent offenders (Catchpole & Gretton, 2003). Similar to their adolescent derivatives, the HCR-20 and LSI-R instruments have demonstrated significant congruence between total scores (Dahle, 2006).

As anticipated, significant dimensional correspondence was established between the SAVRY and YLS/CMI instruments. The YLS/CMI Family Circumstances subscale which encompasses parenting style and relationship with care-givers, was highly correlated with the Historical domain on the SAVRY which comprises items tapping into childhood maltreatment and experience of violence within the home. The YLS/CMI Family Circumstances subscale also demonstrated a strong association with the Socio/Contextual SAVRY domain which includes a poor parental management item. Given that a poor family environment is a common risk factor for future violence and maladaptive behavior (Capaldi & Patterson, 1996; Farrington & Loeber, 2000; Loeber & Stouthamer-Loeber, 1986),
its representation and subsequent convergence across both instruments is typical. Both instruments have previously demonstrated convergent validity with other dynamic specific violence risk inventories that largely comprise environmental and contextual items (Viljoen et al., 2012; Stockdale, Olver, & Wong, 2014). The SAVRY Historical domain additionally demonstrated a strong correlation with the YLS/CMI Education/Employment subscale, both of which comprise factors concerning school achievement.

Other significant relationships between scale components included the YLS/CMI subscale Peer Relations and the SAVRY Socio/Contextual domain. Both domains harbour dynamic peer group delinquency items, a significant predictor of youth antisocial behavior within the literature (Farrington, 1989; Loeber & Hay, 1997; Valois, MacDonald, Bretous, Fischer, & Wanzer, 2002). The SAVRY Individual/Clinical domain exhibited the strongest association with the YLS/CMI total score indicating a strong alignment between psychopathology and problem behaviours and the YLS/CMI.

The majority of the YLS/CMI subscales produced strong significant correlations with the SAVRY Individual/Clinical domain. Aside from the Prior and Current Offenses/Dispositions and Peer Relations subscales which are not within the scope of the SAVRY Individual/Clinical domain, all other YLS/CMI subscales share an equivalent item within the SAVRY Individual/Clinical domain structure, demonstrating a considerable construct overlap between the YLS/CMI instrument and the Individual/Clinical domain of the SAVRY. In particular the Personality/Behavior subscale on the YLS/CMI and the SAVRY Individual/Clinical domain demonstrated the strongest bivariate relationship within the matrix. This was not unexpected given that both components encompass factors assessing the manifestations of behaviors associated with mental illness. The mutual clinical items include problematic externalizing and disinhibitory conduct associated with antisocial behavior, such as risk taking, aggression and impulsivity. Several studies have shown that high levels of impulsivity and risk taking behaviors are associated with youth violence and future antisocial behavior in adulthood (Farrington, 1989; Hawkins et al., 1998; Higgins, Kirchner, Ricketts, & Marcum, 2013). Self-control theories of crime describe a lack of impulse control and immediate gratification as primarily responsible for criminal behavior (Gottfredson & Hirschi, 1990). In addition, the literature has consistently identified childhood aggression as a predictor of adolescent aggression and violence (Bor, Najman, O’Callaghan, Williams, & Anstey, 2001; Farrington, 1998; Huesmann, Eron, & Dubow, 2002). Furthermore studies have shown the severity of future antisocial behavior is enhanced when a youth exhibits a
combination of aggressive and hyperactive behaviors (see Loeber & Hay, 1997). Aggression is also a primary symptom of Conduct Disorder, a condition beginning in childhood characterized by the violation of the rights of a person or their property (American Psychiatric Association, 2000). The prevalence of Conduct Disorder among young people in detention is found to be high (Fazel, Doll, & Langstrom, 2008). This is unsurprising given that the symptoms of Conduct Disorder are also common offending precursors in the youth violence literature.

As hypothesized, the SAVRY Protective Factor domain demonstrated strong negative correlations with the YLS/CMI total score, as supported in a previous comparison (Borum et al., 2006). The Protective Factor domain includes items that may mitigate the risk level of a client and are central in treatment and case management initiatives (Borum et al., 2006). Strong negative relationships between the SAVRY Protective Factor Domain and the YLS/CMI subscales Leisure/Recreation and Education/Employment were anticipated given that the SAVRY Protective Factor domain principally contains items comprising pro-social attitudes, resilience and commitment to education. By contrast, high scores on the YLS/CMI Leisure/Recreation and Education/Employment subscales indicate low school achievement and a lack of organized activities.

The SAVRY total score, SAVRY risk rating and YLS/CMI total score demonstrated comparative predictive validity for general and violent recidivism, resembling previous literature (Catchpole & Gretton, 2003). Additionally, the SAVRY risk rating displayed effective discernment between risk categories. In line with earlier findings (Gammelgard, Koivisto, Eronen, & Kaltiala-Heino, 2008), a higher proportion of participants allocated a high risk rating reoffended compared to participants determined as being of low risk. A related point is that half of the low risk group generally re-offended and over a-third violently re-offended. This again, is a likely reflection of the chronic nature of the sample.

The series of hierarchical logistic regression analyses examining the incremental validity of the SAVRY and YLS/CMI for the prediction of general and violent recidivism indicated that the total scores of both instruments were significantly associated with both forms of re-offense when entered unaccompanied in the first block. Previous research has shown that the SAVRY total score is significantly associated with general (Dolan & Rennie, 2008; Welsh et al., 2008) and violent recidivism (Dolan & Rennie, 2008; Lodewijks, de Ruiter, & Doreleijers, 2008c; Penney, Lee & Moretti, 2010; Welsh et al., 2008) when entered at a first step in regression models. Additionally, the YLS/CMI total score has been found to be a significant predictor of violent recidivism in regression analyses.
Running head: Are youth violence risk instruments interchangeable?

(Rennie & Dolan, 2010a; Welsh et al., 2008). The finding that neither total score from either instrument was able to significantly add to the predictive model over the other suggests strong multicollinearity between measures. Similar findings were reported by Hilterman and colleagues (2014). In contrast previous studies which identified the incremental validity of the SAVRY total score over the YLS/CMI total score (Schmidt et al., 2011; Welsh et al., 2008). Although the SAVRY and YLS/CMI inventories are designed to address different forms of re-offense, the severity of our custodial sample is a likely explanation for their high correspondence. The bulk of the participants in the custodial sample had chronic offending histories including both violent and general transgressions. Such indiscriminate offending patterns are typical of high-end young offenders. Moreover, as high risk youth are more likely to present with a combination of risk factors, scores on both measures were elevated across parallel domains and subscales contributing to the commonality of constructs.

A further hierarchical logistical inquiry was conducted to assess the incremental validity of the SAVRY Summary Risk Rating over first, the SAVRY total score and second, the YLS/CMI total score. Given that the SAVRY Summary Risk Rating is the official overall mode of risk deliberation and not an additive total score, it was expected to add to both predictive models as evidenced in previous SPJ literature. The outcomes show that the SAVRY Summary Risk Rating was unable to significantly explain any additional variance over the SAVRY and YLS/CMI total scores. The results are in line with Hilterman et al. (2014) and Schmidt, Campbell and Houlding (2011) whom also reported that the SAVRY Summary Risk Rating did not add any improvement to the SAVRY total score in the prediction of violent recidivism. However the SAVRY Summary Risk Rating was able to demonstrate incremental validity over the SAVRY total score in a previous investigation (Lodewijks et al., 2008a). The results indicate that at the severe end of youth offending, the SAVRY total score appears to be a comparable predictor of violent recidivism to the SAVRY Summary Risk Rating.

Given the significant overlap of instrument total scores, further hierarchical logistic regression analyses were conducted incorporating the domains and subscales of both measures as predictor variables for violent recidivism. As a specialised violence risk instrument, it was anticipated that the properties of the SAVRY would add incremental validity to the YLS/CMI subscales and were thus entered into Step 2 of the analyses. The YLS/CMI subscales were entered into Step 1 and generated a significant predictive model. Three subscales Prior and Current Offenses/Dispositions, Peer Relations and Leisure/Recreation were significant predictors of the outcome. Offense
history is a strong predictor of future violence in the risk literature. Longitudinal research has consistently shown that early contact with the criminal justice system as a juvenile increases the likelihood of ongoing contact into adulthood (Chen, Matruglio, Weatherburn, & Hua, 2005; Vignaendra & Fitzgerald, 2006). McGrath and Thompson (2012) found the Prior and Current Offenses/Dispositions subscale to be a robust predictor of recidivism. In contrast, Marczyk et al., (2003) found the subscale to be inversely related to recidivism.

The predictive strength of the subscales, Peer Relations and Leisure/Recreation is illustrative of the impact a delinquent peer group and an absence of productive activity can have on impressionistic youth. The addition of SAVRY domains to the model in Step 2 produced an overall significant increase in the strength of the model as hypothesized. However the sole item to reach significance was the Protective Factor domain of the SAVRY. The findings of this analysis suggest that the presence of pro-social behaviors and acquaintances outweighs the presence of risk factors for violence, in their associations with violent recidivism. Thus a major finding from this study is that in a sample of severe young offenders with long criminal histories, the strongest discriminating feature between recidivists and non-recidivists is the presence of pro-social behaviors. This finding supports developing research which indicates that positive factors and influences are a crucial dynamic in the desistance from re-offense for young offenders (Friedrich & Farrington, 2012; Lodewijks et al., 2010; Stouthamer-Loeber, Wie, Masten & Loeber, 2004). The strength of the SAVRY Protective Domain may also have been enhanced by absence of the corresponding ‘strengths’ option on the YLS/CMI instrument which is generally considered for case management purposes rather than as a separate additive domain.

A final stepwise logistical regression analysis was conducted to ascertain a parsimonious model of prediction for general and violent recidivism. This procedure involved the merging the SAVRY domains and YLS/CMI subscales into a single step. Comparable to the entry method technique described above, the salient contributing factors for general recidivism included the Prior and Current Offenses/Dispositions and Peer Relations subscales from the YLS/CMI, and the Protective Factor domain from the SAVRY. The strongest predictors of violent recidivism also included the YLS/CMI subscale Prior and Current Offenses/Dispositions and the SAVRY Protective Factor domain. Previous investigations aimed at determining salient risk factors for juvenile recidivism have reported findings that support the results of this study. Cottle, Lee and Heilbrun (2001) revealed that offense history was the strongest contributor to re-offense in a meta-analysis of juvenile offending research. Similarly McGrath and Thompson (2012)
found that the YLS/CMI-AA Prior and Current Offenses domain was the strongest predictor of recidivism in an Australian cohort of young offenders. Furthermore, Mulder, Brand, Bullens and van Marle (2011) discovered that past convictions were a strong predictor of general recidivism in juvenile offenders. Several studies also identified positive peer relations as a strong protective factor for young offenders (Hoge, Andrews, & Leschied, 1996; Hart, O’Toole, Price-Sharps, & Shaffer, 2007). A different result was obtained by Hilterman et al. (2014) who discovered that the Protective Domain of the SAVRY demonstrated no predictive validity and provided no incremental ability over other risk factors. This finding diverges from the developing protective factor literature discussed earlier.

Clinical Application

The findings indicate that the combined use of both instruments for a violence risk appraisal is potentially redundant as far as predictive accuracy for violent recidivism is concerned. A significant overlap of risk factors was discovered suggesting that either tool may be utilized in these circumstances. Unsurprisingly then, only negligible amounts of additional variance were explained by one instrument over the other. Only the SAVRY Protective Factor Domain demonstrated a significant relationship with violent outcome after accounting for YLS/CMI subscales, denoting the influence of pro-social behaviors on criminal desistance. However, it is important to note that the risk evaluation process is a comprehensive exercise and not a simple matter of calculating risk total scores. While the findings of the study suggest that the SAVRY and the YLS/CMI are interchangeable when predicting offending and violence at the extreme end of youth justice, the overarching intention of the instruments is to initially ascertain and then address a client’s level of risk through guided case management strategies and should be utilized as thus. In this regard the SAVRY and the YLS/CMI could still be faithfully employed within their designated contexts (violent and general recidivism respectively) given their constructional framework informing future treatment programs. However further research investigating the comparative case management utility of the instruments is warranted to establish confidence in this service.

In addition, the findings from the study suggest that both static and dynamic factors play an important role in the prediction of recidivism. Although past behaviors are impervious to change, an acute history of offending should not be overlooked when appraising risk. However the influence of dynamic factors particularly an adolescent’s peer group, life interests and participation in structured activities are crucial elements impacting on a client’s level of risk. As demonstrated in the study, the presence of protective factors can disrupt offending trajectories, increasing the
likelihood of desistance from crime. And so, participation in pro-social activities would be a beneficial addition to regular treatment for problem behaviors.

The regression model discovered that a history of offending, a criminal peer group and a lack of engagement in pro-social activity engenders recidivistic outcome for an acute cohort of young offenders in custody. This means that keeping company with a criminal peer group impacts the potential to re-offend and accumulate a history of offenses. Whether this phenomenon is accelerated after befriending criminal peers or whether antisocial youth seek out criminal peers is an empirical question worthy of further research. The finding that pro-social behavior is a prominent item inducing non-re-offense in antisocial youth could mean that its presence potentially offsets the sphere of negative influence shaped by delinquent peers. The involvement in pro-social activities could also result in the limiting of time spent with criminally inclined groups and a greater exposure to constructive peers. Further research on the impact of protective factors on individual risk items is encouraged as a topic for prospective study.

**Limitations**

The study had a number of limitations that warrant attention. As previously discussed, the cohort is at the severe end of youth justice and does not reflect the broader Australian young offender population. Nonetheless, the Victorian custodial sample would generalize to the high risk end of young offenders regardless of jurisdiction. Therefore it is important to consider that the potential interchangeability of the instruments as reported by the study may not generalise to offender populations of a lower severity. Second, no analyses were conducted across ethnic groups despite the multiethnic nature of the sample. Although instrument scores may differ across ethnic groupings (see Shepherd et al., 2013), both risk measures were equally subject to potential disparities.
References


Running head: Are youth violence risk instruments interchangeable?


Running head: Are youth violence risk instruments interchangeable?


Running head: Are youth violence risk instruments interchangeable?


Running head: Are youth violence risk instruments interchangeable?


Running head: Are youth violence risk instruments interchangeable?


Running head: Are youth violence risk instruments interchangeable?


### SAVRY – Structured Assessment of Violence Risk in Youth

<table>
<thead>
<tr>
<th>Historical Risk Factors</th>
<th>Individual/Clinical Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of violence</td>
<td>Negative attitudes</td>
</tr>
<tr>
<td>History of non-violent offending</td>
<td>Risk taking/impulsivity</td>
</tr>
<tr>
<td>Early initiation of violence</td>
<td>Substance use difficulties</td>
</tr>
<tr>
<td>Past supervision/intervention failures</td>
<td>Anger management problems</td>
</tr>
<tr>
<td>History of self-harm or suicide attempts</td>
<td>Low empathy/remorse</td>
</tr>
<tr>
<td>Exposure to violence in the home</td>
<td>Attention deficit/hyperactivity difficulties</td>
</tr>
<tr>
<td>Childhood history of maltreatment</td>
<td>Low interest/commitment to school</td>
</tr>
<tr>
<td>Parental/caregiver criminality</td>
<td></td>
</tr>
<tr>
<td>Early caregiver disruption</td>
<td></td>
</tr>
<tr>
<td>Poor school achievement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Socio/Contextual Risk Factors</strong></td>
<td><strong>Protective Factors</strong></td>
</tr>
<tr>
<td>Peer delinquency</td>
<td></td>
</tr>
<tr>
<td>Peer rejection</td>
<td></td>
</tr>
<tr>
<td>Stress and poor coping</td>
<td></td>
</tr>
<tr>
<td>Poor Parental Management</td>
<td></td>
</tr>
<tr>
<td>Lack of personal/social support</td>
<td></td>
</tr>
<tr>
<td>Community disorganization</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>YLS/CMI – Youth Level of Service/Case Management Inventory</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Prior and Current Offenses/Dispositions</strong></td>
<td><strong>Substance Abuse</strong></td>
</tr>
<tr>
<td>Three or more prior convictions</td>
<td>Occasional drug use</td>
</tr>
<tr>
<td>Two or more failures to comply</td>
<td>Chronic drug use</td>
</tr>
<tr>
<td>Prior probation</td>
<td>Chronic alcohol use</td>
</tr>
<tr>
<td>Prior custody</td>
<td>Substance abuse interferes with life</td>
</tr>
<tr>
<td>Three or more current convictions</td>
<td>Substance abuse linked to offense(s)</td>
</tr>
<tr>
<td><strong>Family Circumstances/Parenting</strong></td>
<td><strong>Leisure/Recreation</strong></td>
</tr>
<tr>
<td>Inadequate supervision</td>
<td>Limited organized activities</td>
</tr>
<tr>
<td>Difficulty in controlling behaviour</td>
<td>Could make better use of time</td>
</tr>
<tr>
<td>Inappropriate discipline</td>
<td>No personal interests</td>
</tr>
<tr>
<td>Inconsistent parenting</td>
<td></td>
</tr>
<tr>
<td>Poor relations (father – youth)</td>
<td><strong>Personality/Behavior</strong></td>
</tr>
<tr>
<td>Poor relations (mother – youth)</td>
<td>Inflated self-esteem</td>
</tr>
<tr>
<td><strong>Education/Employment</strong></td>
<td>Physically aggressive</td>
</tr>
<tr>
<td>Disruptive classroom behaviour</td>
<td>Tantrums</td>
</tr>
<tr>
<td>Disruptive behavior on school property</td>
<td>Short attention span</td>
</tr>
<tr>
<td>Low achievement</td>
<td>Poor frustration tolerance</td>
</tr>
<tr>
<td>Problems with peers</td>
<td>Inadequate guilt feelings</td>
</tr>
<tr>
<td>Problems with teachers</td>
<td>Verbally aggressive, impudent</td>
</tr>
<tr>
<td>Truancy</td>
<td><strong>Attitudes/Orientation</strong></td>
</tr>
<tr>
<td>Unemployed/not seeking employment</td>
<td>Antisocial/procriminal attitudes</td>
</tr>
<tr>
<td><strong>Peer Relations</strong></td>
<td>Not seeking help</td>
</tr>
<tr>
<td>Some delinquent acquaintances</td>
<td>Actively rejecting help</td>
</tr>
<tr>
<td>No/few positive friends</td>
<td>Defies authority</td>
</tr>
<tr>
<td>Some delinquent friends</td>
<td>Callous, little concern for others</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>No/few positive acquaintances</td>
<td></td>
</tr>
</tbody>
</table>
List of Tables

Table 1.

*Descriptive Statistics and Internal Consistency for the SAVRY and YLS/CMI*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAVRY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>26.19</td>
<td>9.47</td>
<td>3-47</td>
<td>0.88</td>
</tr>
<tr>
<td>Historical</td>
<td>10.34</td>
<td>4.09</td>
<td>1-20</td>
<td>0.72</td>
</tr>
<tr>
<td>Socio/Contextual</td>
<td>6.71</td>
<td>2.88</td>
<td>0-12</td>
<td>0.67</td>
</tr>
<tr>
<td>Individual/Clinical</td>
<td>9.13</td>
<td>3.89</td>
<td>1-16</td>
<td>0.77</td>
</tr>
<tr>
<td>Protective</td>
<td>1.82</td>
<td>1.90</td>
<td>0-6</td>
<td>0.79</td>
</tr>
<tr>
<td><strong>YLS/CMI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td>25.18</td>
<td>8.06</td>
<td>2-40</td>
<td>0.88</td>
</tr>
<tr>
<td>Prior &amp; Current Offenses</td>
<td>2.99</td>
<td>1.55</td>
<td>0-5</td>
<td>0.67</td>
</tr>
<tr>
<td>Family Circumstances/Parenting</td>
<td>3.36</td>
<td>1.66</td>
<td>0-7</td>
<td>0.66</td>
</tr>
<tr>
<td>Education/Employment</td>
<td>4.69</td>
<td>1.75</td>
<td>0-7</td>
<td>0.54</td>
</tr>
<tr>
<td>Peer Relations</td>
<td>2.63</td>
<td>1.05</td>
<td>0-4</td>
<td>0.66</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>3.54</td>
<td>1.72</td>
<td>0-5</td>
<td>0.82</td>
</tr>
<tr>
<td>Leisure/Recreation</td>
<td>1.83</td>
<td>1.09</td>
<td>0-3</td>
<td>0.74</td>
</tr>
<tr>
<td>Personality/Behavior</td>
<td>3.82</td>
<td>1.88</td>
<td>0-7</td>
<td>0.57</td>
</tr>
<tr>
<td>Attitudes/Orientation</td>
<td>2.34</td>
<td>1.46</td>
<td>0-5</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Note: SD = Standard Deviation; α = alpha.
Table 2.

Correlations between SAVRY and YLS/CMI Total and Domain Scores.

<table>
<thead>
<tr>
<th>YLS/CMI Subscales</th>
<th>Total Score</th>
<th>Risk Rating</th>
<th>Historical</th>
<th>Socio/Contextual</th>
<th>Individual</th>
<th>Protective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Score</td>
<td>.865**</td>
<td>.765**</td>
<td>.756**</td>
<td>.660**</td>
<td>.812**</td>
<td>-.673**</td>
</tr>
<tr>
<td>Prior &amp; Current Offenses</td>
<td>.339**</td>
<td>.305**</td>
<td>.352**</td>
<td>.177*</td>
<td>.318**</td>
<td>-.256**</td>
</tr>
<tr>
<td>Family Circumstances</td>
<td>.692**</td>
<td>.548**</td>
<td>.695**</td>
<td>.643**</td>
<td>.479**</td>
<td>-.426**</td>
</tr>
<tr>
<td>Education/Employment</td>
<td>.638**</td>
<td>.540**</td>
<td>.593**</td>
<td>.437**</td>
<td>.601**</td>
<td>-.526**</td>
</tr>
<tr>
<td>Peer Relations</td>
<td>.471**</td>
<td>.409**</td>
<td>.373**</td>
<td>.516**</td>
<td>.358**</td>
<td>-.445**</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>.547**</td>
<td>.441**</td>
<td>.515**</td>
<td>.364**</td>
<td>.512**</td>
<td>-.361**</td>
</tr>
<tr>
<td>Leisure/Recreation</td>
<td>.615**</td>
<td>.551**</td>
<td>.491**</td>
<td>.540**</td>
<td>.571**</td>
<td>-.616**</td>
</tr>
<tr>
<td>Personality/Behavior</td>
<td>.684**</td>
<td>.664**</td>
<td>.543**</td>
<td>.463**</td>
<td>.743**</td>
<td>-.493**</td>
</tr>
<tr>
<td>Attitudes/Orientation</td>
<td>.554**</td>
<td>.561**</td>
<td>.373**</td>
<td>.415**</td>
<td>.649**</td>
<td>-.497**</td>
</tr>
</tbody>
</table>

*p < .05.  **p < .01.  ***p < .001.
Table 3.

The contribution of SAVRY Domains and YLS/CMI Subscales to the prediction of General and Violent Recidivism.

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>p</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Recidivism</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YLS/CMI: Prior and Current Offenses</td>
<td>.356</td>
<td>.152</td>
<td>5.483</td>
<td>.019</td>
<td>1.428</td>
</tr>
<tr>
<td>YLS/CMI: Peer Relations</td>
<td>.559</td>
<td>.247</td>
<td>5.117</td>
<td>.024</td>
<td>1.749</td>
</tr>
<tr>
<td>SAVRY Protective Factor Domain</td>
<td>-.402</td>
<td>.134</td>
<td>9.001</td>
<td>.003</td>
<td>0.669</td>
</tr>
<tr>
<td><strong>Violent Recidivism</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YLS/CMI: Prior and Current Offenses</td>
<td>.314</td>
<td>.125</td>
<td>6.320</td>
<td>.012</td>
<td>1.368</td>
</tr>
<tr>
<td>SAVRY Protective Factor Domain</td>
<td>-.406</td>
<td>.118</td>
<td>11.888</td>
<td>.001</td>
<td>0.667</td>
</tr>
</tbody>
</table>
Running head: Are youth violence risk instruments interchangeable?

Author Note: This manuscript has not been published elsewhere nor has it been submitted simultaneously for publication elsewhere.