Smarter Solutions for Crime Reduction: The Illinois Criminal Justice Information Authority Strategic Planning Initiative

RISK ASSESSMENT TOOLS

Over the last 20 years, many efforts have been made by criminal justice practitioners and administrators to identify risks posed by offenders, including potential for violent institutional misconduct, risk of self-harm, and risk to public safety. These efforts have resulted in the development of specific assessment tools with succinct metrics to identify a variety of risk factors. These tools assist in case planning for offenders under the supervision of correctional agencies and community-based corrections programs.

Language of recidivism risk assessment

Recidivism risk assessment involves a unique set of terminology, such as static and dynamic risk factors, risk responsivity, and actuarial prediction.

Clinical versus actuarial prediction

Clinical risk prediction utilizes the clinical and professional judgment of professionals in the field to ascertain an offender's risk to public safety. Actuarial risk prediction refers to statistical prediction. Actuarial prediction is rooted in an extensive body of research studying groups of offenders and identifying patterns and factors that are associated with recidivism.

Static vs. dynamic risk factors

Risk factors are characteristics that are empirically associated with an increased likelihood of criminal behavior. Risk factors are considered to be static or dynamic. Static risk factors refer to characteristics that are not changeable or change in only one direction. They are largely historical in nature, such as criminal history and age. Dynamic risk factors refer to characteristics that are changeable such as criminal thinking, substance abuse, and peer associations. Studies have shown that dynamic risk predictors were often as strong as or stronger than static predictors for re-offending (Gendreau, Little, & Goggin, 1996). Other researchers identified four major risk factors: criminal history, antisocial attitudes and personality, and social support for crime (Andrews & Bonta, 1998).

Criminogenic need

While the term *criminogenic need* is often used interchangeably with dynamic risk factor, criminogenic needs are characteristics or deficiencies of an offender that are not directly associated with recidivism. Criminogenic needs may influence or compound other risk factors. Criminogenic needs are often as important to identify as risk factors since they can be highly influential. For example, education alone is not a risk factor, but may impact employability and other skill deficiencies that are risk factors.

Risk principle and risk responsivity

The risk principle, or risk responsivity, states that supervision and treatment levels should match an individual's risk level (Lowenkamp & Latessa, 2004). Higher-risk offenders have more risk factors and criminogenic needs, and, therefore, should receive more services and more supervision than lower risk offenders. Further, providing lower-risk offenders with stricter interventions, supervision, or more intensive services may increase their risk of recidivating by disrupting pro-social bonds (Lowenkamp, Latessa, & Holsinger, 2006).

General risk assessment

Historically, risk assessments were conducted by clinicians using interviews and their own professional judgment. However, after myriad studies indicated a lack of reliability and validity of clinical assessment methods (Grove, Zald, Lebow, Snitz, & Nelson, 2000), correctional agencies began to identify the limitations of this method, and the use of empirically-based actuarial risk assessment instruments became more common.

Actuarial risk assessments tools are standardized and use objective assessments of risk based on validated recidivism risk predictors. These instruments have undergone numerous revisions, creating four "generations" of the tools. Clinical assessment comprised the first generation. Second generation tools were more objective and empirically based, but they relied almost exclusively on static risk factors. Third generation tools built on the empirically based tools of the second generation, but incorporated criminological theory and dynamic risk factors (Andrews, Bonta, & Wormith, 2006). While all generations of risk assessment tools aim to identify an individual's level of risk, the fourth generation tools identify opportunities for treatment and rehabilitation to guide supervision planning (Andrews, Bonta, & Wormith, 2006).

There are few risk assessment tools that classify overall and general risk of recidivism. Although fourth generation instruments may enhance supervision planning, third generation tools are most extensively used by correctional authorities to classify client risk at the different stages of the criminal justice system (Andrews, Bonta, & Wormith, 2006).

Risk assessment tools

It is important to validate actuarial tools with the population it will be used for. The following provides brief descriptions of general risk assessment tools, including information regarding validity and reliability of the instruments.

Level of Service Inventory-Revised

One of the most commonly utilized third generation risk assessment tools is the Level of Service Inventory- Revised (LSI-R), which includes various static and dynamic risk factors (Andrews & Bonta, 1995). The original Level of Service Inventory was developed in Canada by Andrews and Bonta in the 1970s, based on social learning theory, and was revised in 1995. The LSI-R is scored using 54 items on 10 scales (criminal history, education and employment, finances, family and marriage, accommodation, leisure and recreation, companions, alcohol and drug problems, emotional and personal attributes, and attitudes and orientation). Each item is scored as *absen*t or *present*. Scores on the LSI-R vary from 0 to 54. These scores are then grouped into low risk (typically a score of 0 to 13), low/moderate risk (score of 14 to 23), moderate risk (score of 24 to 33), medium/high risk (score of 34 to 40), and high risk (score of 41 to 54). The LSI-R takes 30 to 45 minutes and can be administered by trained personnel.

Initial studies on the predictive validity of the LSI-R were validated to Canadian offender populations and supported the LSI-R's ability to predict recidivism outcomes (Andrews, 1982 as cited in Flores, Lowenkamp, Holsinger, & Latessa, 2006; Gendreau, Little, & Goggin, 1996; Loza & Simourd, 1994). While the LSI-R shows promise for Canadian offender populations, the body of research examining the validity of the LSI-R for American offenders is less conclusive with some studies finding the LSI-R to be a significant predictor. Flores, Lowenkamp, Holsinger, and Latessa (2006) found that some of the inconsistency of the tool with American offenders was explained by inadequate training and experience on how to administer the tool. Overall, the tool appears to have adequate to high validity for predicting future recidivism, and moderate to excellent reliability (Campbell, French, & Gendreau, 2009).

More research is warranted, as the predictive accuracy of the LSI-R appears to diminish for black and Hispanic offenders, over-classifying black offenders in higher risk categories and under-classifying Hispanic offenders in lower risk categories (Fass, Heilbrun, DeMatteo, & Fretz, 2008; Schlager & Simourd, 2007; Whiteacre, 2006). Additionally, a meta-analysis found there to be inconsistent validity for female offenders, with females tending to be over-classified (Holtfreter & Cupp, 2007).

Level of Service/Case Management Inventory

Level of Service/Case Management Inventory (LS/CMI) is a fourth-generation instrument that provides not only a classification of risk, but also treatment recommendations for case planning and supervision strategies. The LS/CMI contains 43 risk assessment questions and an additional 10 sections to assist in case planning including program targets, intervention plans, progress reports, interview guides, and case management forms. The LS/CMI takes approximately 20 to 30 minutes to administer and can be administered by trained personnel. The instrument categorizes offender risk at very low, low, medium, high, and very high (Wormith, Olver, Stevenson, & Girard, 2007).

The LS/CMI has shown similar validity and reliability to previous LSI versions, particularly that of the LSI-R. Predictive accuracy for recidivism has shown to be moderate to high (Wormith, Olver, Stevenson, & Girard, 2007; Campbell, French, & Gendreau, 2007).

Correctional Offender Management Profiling for Alternative Sanctions

The Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) developed by Northpointe Institute for Public Management is a general risk and needs assessment. The COMPAS is available as a web-based software suite and contains case management and inmate classification modules (Northpointe, 2010). The COMPAS may be completed through self-report, file reviews, and/or guided interviews. COMPAS outputs provide graphical summaries of risks and strengths. The COMPAS is gender responsive, normed differently for males and females, and shows acceptable validity for both genders. Further the reliability of the tool has been established as acceptable to high (Brennan, Dieterich, & Ehret, 2009). While findings on the validity of the instrument for ethnic groups have been inconclusive, there is a small pool of validation studies on the instrument outside of those done by the developers of the tool with the jurisdictions the COMPAS is currently in use. Therefore, additional validation studies are warranted.

Risk assessment tools for women and ethnic groups

General risk assessment instruments do not always accurately identify risk among certain groups. For example, general risk assessment tools tend to over-classify female offenders into higher risk categories than they truly are. As a result, supplemental scales may be used for specific subpopulations, such as women. Additionally, some general assessment tools may not accurately predict specific types of re-offending risk, such as sexual or violent offending.

Recidivism risk assessments for sex offenders

Efficacy of recidivism risk assessment tools

In a recently published meta-analysis of 118 prediction studies involving 45,398 sex offenders spanning 16 countries, Hanson and Morton-Bourgon's (2009) findings revealed the strongest predictive approaches to determine sexual recidivism were actuarial measures, such as the Static-99, RRASOR, MnSOST-R, and SVR-20.

Moderate to strong predictive approaches to determine violent recidivism were actuarial measures specifically designed for prediction of sexual recidivism (Static-99, RRASOR), and actuarial measures specifically designed for prediction of violent or violent and sexual recidivism (VRAG, RM2000).

Moderate to strong predictive approaches to determine any recidivism were actuarial measures specifically designed for prediction of sexual recidivism (Static-99, SACJ-Min), and actuarial measures specifically designed for prediction of violent and sexual recidivism (RM2000).

Risk assessment tools for the prediction of sexual or violent recidivism

Minnesota Sex Offender Screening Tool - Revised

The Minnesota Sex Offender Screening Tool (MnSOST) was developed in 1995 in response to a call by the Minnesota Department of Corrections to systematically identify predatory and violent sex offenders (Epperson, Kaul, Huot, Hesselton, Alexander, & Goldman, 1995). The MnSOST was created as a predictive instrument that could be easily scored by correctional case managers using only information routinely available to them from correctional records. Initial reliability and validity studies demonstrated that the MnSOST increased the accuracy of predictions substantially above chance levels, particularly in predicting sexual recidivism. However, while the MnSOST produced a total score that was used in an actuarial manner to determine risk of recidivism, the scoring of individual items was based on clinical judgment of trained professionals. Thus, the MnSOST was revised (MnSOST-R; Epperson, Kaul, Huot, Hesselton, Alexander, & Goldman, 1998) to establish empirical methods for item selection and scoring, given the strong support of systematically derived empirical risk assessments over clinicians' intuition or hypothesized predictions.

Subsequently, in 2003, Epperson, Kaul, Huot, Goldman, and Alexander conducted a study to evaluate the reliability and validity of the MnSOST-R by assessing its ability to predict sexual recidivism in a sample of nearly 400 offenders who had been released from a Minnesota Correctional Facility at least six years prior to the study. MnSOST-R items reflecting both static and dynamic risk factors were included and scored empirically based on clearly defined criteria. Results revealed that the 16 items that comprised the MnSOST-R maximized the positive predictive power of the instrument, and performed significantly better than previous versions of the MnSOST.

The MnSOST-R is used by the Minnesota Department of Corrections as a referral screening tool for commitment under the state's Sexual Psychopathic Personality and Sexually Dangerous Person laws, and as part of the state's Community Notification Act.

Risk Matrix 2000

The Risk Matrix 2000 (RM2000) was developed from an earlier framework for assessing risk posed by sex offenders, known as the Structured Anchored Clinical Judgment (SACJ; Thornton, 2007). The RM2000 is a statistically-derived risk classification process intended for males at least 18 years of age who have been convicted of a sex offense. The tool applies simple factual information about offenders' past history and places them into categories that differ substantially in their rates of reconviction for sexual or other violent offenses. The RM2000 consists of three scales. The RM2000/S is a prediction scale for sexual offending. The RM2000/V predicts non-sexual violence engaged in by sex offenders and the RM2000/C is a combination of the first two scales and predicts sexual or other violence.

Rapid Risk Assessment for Sex Offense Recidivism

The Rapid Risk Assessment for Sex Offense Recidivism (RRASOR; Hanson, 1997) was developed in response to a need for a brief, efficient actuarial tool that could be used to assess the risk for sexual offense recidivism. Hanson and Bussiere (1996) published a meta-analysis on predictors of sexual offense recidivism (prior sex offenses, stranger versus non-related victims, prior offenses, age, marital status, male victims), which served as the foundation for the development of the RRASOR. The best predictors of sexual offense recidivism were then selected using stepwise regression and translated into an easily scored risk scale. The predictive validity of the RRASOR was then tested on an independent sample. The overall aim was to develop an easily administered scale that was likely to be valid for a range of settings.

Structured Anchored Clinical Judgment - Minimum Criteria

The Structured Anchored Clinical Judgment-Minimum criteria (SACJ-Min), formerly known as the Structured Anchored Clinical Judgment, was developed, although never formally published, by David Thornton (Grubin, 1998; Hanson & Thornton, 2000). Initially, the SACJ was created within the context of the national prison Sex

Offender Treatment Programme (SOTP) at the HM Prison Service in London, England, and was designed to predict sexual and violent recidivism using a three-stage risk classification approach.

The first stage concerns the offender's official convictions, including current or prior sex offenses, current or prior non-sexual violent offenses, and more than three previous convictions of any sort. The second stage considers a number of potentially aggravating factors. *Set A* risk factors involve any prior stranger victims, male victims, marital status, and convictions for non-contact sex offenses. *Set B* include substance abuse, placement in residential care as a child, deviant sexual arousal, and psychopathy. Stage1 and Stage 2 *Set A* risk factors are considered the minimum criteria required for a valid assessment, and use of these items resulted in a reduced scale known as the SACJ-Min.

The final stage of the SACJ utilizes information that is unlikely to be obtained unless the offender enters a treatment program, and subsequently fails. While, the final stage of the SACJ classification system has not been cross-validated, given the moderate efficacy of SACJ-Min in predicting sexual and/or violent recidivism, numerous revisions to the SACJ-Min were conducted and eventually completed in 2000 (Thornton, 2007). The model was re-conceptualized and subsequently renamed the Risk Matrix 2000 (RM2000).

Static-99

The Static-99 was developed in 1999 by renowned sex offender recidivism researchers R. Karl Hanson and David Thornton. Development consisted of combining two previously created brief actuarial measures that were utilized as screening instruments for sexual offense recidivism—the Rapid Risk Assessment for Sex Offence Recidivism (RRASOR; Hanson, 1997), and the Structured Anchored Clinical Judgment-Minimum criteria (SACJ-Min; Grubin, 1998).

Preliminary statistical analyses suggested that the RRASOR and the SACJ-Min were assessing related, but not identical constructs and that both contributed unique variance to regression equations when their total scores were used to predict sexual recidivism. Consequently, these findings led to the conclusion that a combination of the two scales may better predict sexual recidivism than either original scale. Thus, the Static-99 was created and named accordingly to indicate that it only includes static risk factors.

Sexual Violence Risk - 20

The Sexual Violence Risk-20 (SVR-20) was developed in 1997 by sex offender recidivism researchers from the Mental Health, Law, and Policy Institute at Simon Fraser University (Boer, Hart, Kropp, & Webster, 1997). The SVR-20 is a 20-item checklist of risk factors of sexual violence identified throughout sex offender recidivism literature. It was generally developed to improve the accuracy of assessments for the risk of future sexual violence, and is useful in making decisions about the management of sex offenders. The 20 factors essential in a comprehensive sexual violence risk assessment fall into categories of Psychosocial Adjustment, History of Sexual Offenses, and Future Plans. Coding of the SVR-20 involves determining the presence or absence of each factor and whether there has been any recent change in the status of the factor. This item-level information is integrated into a summary judgment of the level of risk (Low, Moderate, or High). The SVR-20 manual provides information about how and when to conduct sexual violence risk assessments, research on the risk factors associated with sex offender recidivism, and key questions to address when making judgments about risk.

Violence Risk Appraisal Guide

The Violence Risk Appraisal Guide (VRAG) is a 12-item actuarial scale widely used to predict risk of violence within a specific time frame following release in violent, mentally disordered offenders. Originally developed by Quinsey, Harris, Rice, and Cormier (1998) based on their work at Penetanguishene Mental Health Care Centre, a maximum-security psychiatric hospital in Ontario, Canada, the VRAG is an empirically based tool that is intended to be a proxy for interviews or

questionnaires, as it can be completed via inspection of a person's clinical record.
An interesting feature of the VRAG is that the total score from the Hare Psychopathy Checklist-Revised is incorporated into the VRAG calculations of risk. The complete list of items, scoring criteria, and interpretative information of the VRAG can be found by clicking on the link below. For a more detailed account of scoring and interpretative information, see the updated version of *Violent offenders: Appraising and Managing Risk* by Quinsey, Harris, Rice, and Cormier (2005).

REFERENCES

Andrews, D.A., & Bonta, J. (1995). *The Level of Service Inventory-Revised.* Toronto, Canada: Multi-Health Systems.

Andrews, D.A., Bonta, J., & Wormith, J.S. (2006). The Recent Past and Near Future of Risk and/or Need Assessment. *Crime and Delinquency*, 52(1), 7-27.

Boer, D. P., Hart, S. D., Kropp, P. R., & Webster, C. D. (1997). *Manual for the Sexual Violence Risk–20: Professional guidelines for assessing risk of sexual violence.* Burnaby, BC: Simon Fraser University, Mental Health, Law, and Policy Institute.

Brennan, T., Dieterich, W., & Ehret, B. (2009). Evaluating the predictive validity of the COMPAS risk and needs assessment system. *Criminal Justice and Behavior*, 36(1), 21-40.

Campbell, M.A., French, S., & Gendreau, P. (2009). The prediction of violence in adult offenders: A meta-analytic comparison of instruments and methods of assessment. *Criminal Justice and Behavior*, 36(6), 567-590.

Epperson, D. L., Kaul, J. D., Huot, S. J., Goldman, R., & Alexander, W. (2003). *Minnesota Sex Offender Screening Tool – Revised (MnSOST-R)* technical paper: Development, validation, and recommended risk level cut scores. St. Paul, MN: Minnesota Department of Corrections.

Epperson, D. L., Kaul, J. D., Huot, S. J., Hesselton, D., Alexander, W., & Goldman, R. (1995). *Minnesota Sex Offender Screening Tool (MnSOST).* St. Paul, MN: Minnesota Department of Corrections.

Epperson, D. L., Kaul, J. D., Huot, S. J., Hesselton, D., Alexander, W., & Goldman, R. (1998). *Minnesota Sex Offender Screening Tool – Revised (MnSOST-R).* St. Paul, MN: Minnesota Department of Corrections.

Fass, T.L., Heilbrun, K., DeMatteo, D., & Fretz, R. (2008). The LSI-R and the Compas: Validation data on two risk-needs tools. *Criminal Justice and Behavior*, 35(9), 1095-1108.

Flores, A.W., Lowenkamp, C.T., Holsinger, A.M., & Latessa, E.J. (2006). Predicting outcome with Level of Service Inventory-Revised: The importance of implementation integrity. *Journal of Criminal Justice*, 34, 523-529.

Gendreau, P., Little, T., & Goggin, C. (1996). A Meta-Analysis of the Predictors of Adult Offender Recidivism: What Works! *Criminology*, 34(4), 575-607.

Grove, W.M., Zald, D.H., Lebow, B.S., Snitz, B.E., & Nelson, C. (2000). Clinical Versus Mechanical Prediction: A Meta-Analysis. *Psychological Assessment*, 12(1), 19-30.

Grubin, D. (1998). *Sex offending against children: Understanding the risk.* (PRSP Publication No. 99). London: England. Research, Development, and Statistics Directorate.

Hanson, R. K. (1997). *The development of a brief actuarial risk scale for sexual offense recidivism* (SGC Publication No. 1997-04).

Ottawa: Canada. Department of the Solicitor General of Canada.

Hanson, R.K, and Thornton, D. (2000). Improving risk assessment for sexual offenders: A comparison of three actuarial scales. *Law and Human Behaviour, 24*, 119-136.

Hanson, R. K., & Thornton, D. (1999). *Static-99: Improving actuarial risk assessments for sex offenders* (SGC Publication No. 99-02). Ottawa: Canada. Department of the Solicitor General of Canada.

Hanson, R. K., & Thornton, D. (1996). *Predictors of sexual offender recidivism: A meta-analysis* (SGC Publication No. 1996-04). Ottawa: Canada. Department of the Solicitor General of Canada.

Holtfreter, K., & Cupp, R. (2007). Gender and Risk Assessment: The empirical status of the LSI-R for women. *Journal of Contemporary Criminal Justice*, 23(4), 363-382.

Loza W., & Simourd, D.J. (1994). Psychometric Evaluation of the Level of Supervision Inventory (LSI) Among Male and Canadian Federal Offenders. *Criminal Justice and Behavior*, 21(4), 468-480.

Lowenkamp, C.T., Latessa, E.J., Holsinger, A.M. (2006). The Risk Principle in Action: What have we learned from 13,676 offenders and 97 correctional programs? *Crime and Delinquency*, 52(1), 77-93.

Quinsey, V. L., Harris, G. T., Rice, M. E., & Cormier, C. A. (1998). *Violent offenders: Appraising and managing risk.* Washington DC: American Psychological Association.

Quinsey, V. L., Harris, G. T., Rice, M. E., & Cormier, C. A. (1998). *Violent offenders: Appraising and managing risk.* (2nd ed.). Washington DC: American Psychological Association.

Schlager, M.D., & Simourd, D.J. (2007). Validity of the Level of Service Inventory-Revised (LSI-R) among African American and Hispanic Male Offenders. *Criminal Justice and Behavior*, 34(4), 545-554.

Thornton, D. (2007). *Scoring guide for risk matrix 2000.9/svc.* Retrieved from http://www.cfcp.bham.ac.uk/Extras/SCORING%20GUIDE%20FOR%20RISK%20MATRIX%202000.9-%20SVC%20-%20(ver.%20Feb%202007).pdf

Willis, G. M., & Grace, R. C. (2009). Assessment of community reintegration planning for sex offenders: Poor planning predicts recidivism. *Criminal Justice and Behavior, 36*(5), 494-512.

Whiteacre, K.W. (2006). Testing the Level of Service Inventory-Revised (LSI-R) for Racial/Ethnic Bias. *Criminal Justice Policy Review*, 17(3), 330-342.

Wormith, J.S., Olver, M.E., Stevenson, H.E., & Girard, L. (2007). The long-term prediction of offender recidivism using diagnostic, personality, and risk/need approaches to offender assessment. *Psychological Services*, 4(4), 287-305.

This project was supported by Grant #2009-SU-B9-0055, awarded by the Bureau of Justice Assistance, Office of Justice Programs, U.S. Department of Justice. Opinions contained in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.