

The Utility of the JSORRAT-II

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The Juvenile Sexual Offense Recidivism Risk Assessment Tool-II (JSORRAT-II) is one of the primary tools for the assessment of risk for juveniles who have sexually offended (Epperson, 2013; Epperson & Ralston, 2014; Ralston, Epperson, & Edwards, 2014; Ralston, Sarkar, Philipp, & Epperson, 2015). In California it is mandated by the State sex offender board (see www.saratso.org), and in California it is the most widely used risk assessment tool used in juvenile treatment programs (California Coalition on Sexual Offending Research Committee, 2012). This instrument was developed using best practices for risk scale development. A large set of initial possible items for the scale were included regarding static factors based on existing research. This item set was used on an exhaustive sample of all male juveniles in Utah with adjudicated sexual offenses (N=636) from 1990 to 1992, and the sexual recidivism rate was 13.2%. A subset of 12 items were selected for the scale based on multivariate statistical criteria which distinguished those who recidivated. This scale was subsequently validated with a separate sample of 538 male juveniles who had adjudicated sexual offenses in Utah from 1996 to 1997 where the sexual recidivism rate was 12.8%. The scale was again validated with a sample of 529 males juveniles with adjudicated sexual offenses in Iowa from 2000 to 2006 where the sexual recidivism rate was 6.4%. In the validation samples the AUC statistic¹ was overall .65 for Utah, and .70 for Iowa, which would be equivalent to a medium effect size. Interrater reliability was described as excellent.

The methodology employed in the development of the JSORRAT-II has several advantages. The use of an exhaustive sample of male juveniles adjudicated for sexual offending rather than a sample of convenience eliminated the issue of whether the results could be considered representative of the total population. While the recidivism rates in the Iowa sample were about half that of the Utah samples, higher JSORRAT-II scores were associated in each sample with higher risk of sexual recidivism.

The results from the most recent sample, Iowa, can be used, to delineate risk levels which are shown in Table 1 and the recidivism rates for each level are tabulated. The odds ratio of a given category is calculated relative to the sexual recidivism base-rate which is 6.4% for this sample. For the Iowa sample a score of Risk Level 3 which had a score of 7+ had a recidivism rate of 18.25%, in contrast to Risk Level 1 which had a score of 0-1 which had a 1.54% recidivism rate, an 18-fold difference. How can the JSORRAT-II be interpreted in states other than Iowa or Utah? One approach might be to use the results of Caldwell's study (2016) which found since 2000 sexual recidivism rates for juveniles was 2.75 percent. If the Iowa odds ratios are used, which of the most recent and more consistent with current recidivism rates, with this base-rate

¹ AUC (Area Under the Curve) is a statistic to assess how accurate a given test is for identifying a characteristic of an individual ranges from 0 to 1. An AUC above .50 means better than chance and below .50 means worse than chance.

(2.75%), an estimate can be made of the sexual recidivism for different risk levels.² For Risk Level 1 the sexual recidivism rate would be 0.34% and for Risk Level 3, 6.28%, an 18-fold difference. Of note is that the highest sexual recidivism estimate rate that could be derived from the JSORRAT-II would be 6.28%. The assumptions of this approach are that the odds ratios are valid with samples other than Utah and Iowa, and that Caldwell's estimate of sexual recidivism of 2.75% is approximately accurate in various states now. Having trained 15 counties in California, and discuss their sexual recidivism rates, this rate appears reasonable at least in California.

In my clinical practice in California, I frequently see the results of the JSORRAT-II used with youth with a medium risk level, where the results are used in isolation and without reference to existing base rates. These results are then used as a basis to suggest that the youth should be sentenced to the states secure prison system for juveniles and be registered as a sexual offender. This is problematic given using the methodology above that the highest risk level for youth would be approximately 6.28%, and reliance on any one measure is not consistent with best practices guidelines (ATSA, 2017).

In summary, the JSORRAT-II has demonstrated high reliability and moderate predictive validity in three samples. Across these samples, with different base-line rates, the instrument has been able to predict higher levels of recidivism with higher scores. Cautious use of the instrument and this methodology for the approximate estimate of sexual recidivism for juveniles appears reasonable, noting appropriate limitations and assumptions. Requiring specific validation of the instrument in any state in which it is used, at least to this researcher, appears an overly rigorous requirement, not reflected in comparable biomedical research.

² In this calculation, the odds ratio is used to estimate the relative risk which is appropriate when outcome occurs in less than 10% of the unexposed population, the odds ratio provides a reasonable approximation of the relative risk (Viera, 2008).

References

ATSA Adolescent Practice Guidelines Committee. (2017). Practice Guidelines for Assessment, Treatment, and Intervention with Adolescents who Have Engaged in Sexually Abusive Behavior. Retrieved from http://www.atsa.com/Members/Adolescent/ATSA_2017_Adolescent_Practice_Guidelines.pdf

Caldwell, M. F. (2016). Quantifying the Decline in Juvenile Sexual Recidivism Rates. *Psychology, Public Policy, and Law*. Advance online publication. <http://dx.doi.org/10.1037/law000009>

California Coalition on Sexual Offending Research Committee. (2012). An Online Survey of JSO Practice Characteristics and Methods. Retrieved from: <https://ccoso.org/sites/default/files/CCOSO%20JSO%20Survey%2010%208%2012.pdf>.

Epperson, D. (2013). Development, reliability, validity, and scoring of the JSORRAT-II. Retrieved from <https://s3-us-west-2.amazonaws.com/ivat/intl2013/TP8-Epperson.pdf>.

Epperson, D. L., & Ralston, C. A. (2014). Development and Validation of the Juvenile Sexual Offense Recidivism Risk Assessment Tool-II. *Sexual Abuse: A Journal of Research and Treatment*, 27(6), 529-558. doi:10.1177/1079063213514452

Ralston, C. A., Epperson, D. L., & Edwards, S. R. (2014). Cross-Validation of the JSORRAT-II in Iowa. *Sexual Abuse: A Journal of Research and Treatment*, 28(6), 534-554. doi:10.1177/1079063214548074

Ralston, C. A., Sarkar, A., Philipp, G. T., & Epperson, D. L. (2015). The Impact of Using Documented but Uncharged Offense Data on JSORRAT-II Predictive Validity. *Sexual Abuse: A Journal of Research and Treatment*. doi:10.1177/1079063215582011

Viera, A.J. (2008). Odds ratios and risk ratios: what's the difference and why does it matter? *The Southern Medical Journal*. 101:730-734.

Table 1
 Risk Categories for the Iowa Sample for the JSORRAT-II

Risk Level	Score Range	Recidivists/ Selected	Recidivism Rate	Odds Ratio*
1	0 -1	1/65	0.0154	0.125
2	2 – 6	27/271	0.0996	1.125
3	7 +	25/137	0.1825	2.281

N=529 and base-line recidivism rate 6.4%

* Odds Ratio (OR) in this context represents the odds of a recidivism of a given category compared to the base rate for recidivism.