Effect of the Stable-2007 on the Probability of Sexual Recidivism Risk as Determined by the Static-99R: A Closer Inspection of Data from Looman and Goldstein (2015)

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In my practice with SVP cases, I regularly review reports from government evaluators who apply the clinically adjusted actuarial approach("CAAA") when assessing sexual recidivism risk. A major premise of the CAAA is that the addition of risk factors presumed to be external to an actuarial measure produces incremental predictive validity ("IPV") and, when IPV has been established, the evaluators conclude it also increases the probability of sexual recidivism beyond that determined by the actuarial measure. Studies using the Stable-2007 (Hanson et al., 2015; Looman & Goldstein, 2015; Eher et al., 2012) SRA-FV (Thornton & Knight, 2013), and SOTIPS (McGrath et al., 2012) have established IPV when the instruments have been considered beyond the Static-99R. It is important to note that little research has been conducted as to IPV outside of the three measures referenced. Some evaluators will select certain risk factors from studies, which they believe increase sexual recidivism potential as applied to the individual and claim, without scientific validation, these factors are external to the Static-99R. The evaluators further claim this method achieves IPV and increases the probability of sexual recidivism beyond that determined by the Static-99R. This approach lacks research and any claims of IPV or increased probability of sexual recidivism are simply speculative.

IPV is a statistical concept that quantifies the extent to which the data from a second instrument explains additional sources of sexual recidivism risk beyond what was accounted for by the first instrument that was administered such as the Static-99R. A finding of statistically significant IPV means that the two measures together explain more sources of sexual recidivism risk than the Static-99R alone. It cannot be assumed that IPV translates into a higher probability of sexual recidivism that what is observed at the Static-99R score assigned to the individual. The probability of sexual recidivism based on the results of both measures must be computed separately from the statistic that establishes IPV. [1] This paper briefly explores this issue using a data set of sexual offenders presented by Looman and Goldstein at the 2015 ATSA annual conference.

I contacted Dr. Looman to provide frequency data that would allow me to compute the sexual recidivism rate for the Static-99R alone and the sexual recidivism rate based on the combined effects of the Static-99R and Stable-2007. I then conducted the Fisher's Exact Test to determine if the probability of sexual recidivism from the combined measures was significantly different than the probability of sexual recidivism reported the Static-99R alone. I set the level of significance at $p = .05$.

The sexual offenders in the sample consist of 350 individuals assessed and/or treated in the Ontario Region of the Correctional Service of Canada. The average follow-up time was 6.1 (sd = 2.9) years (range = 6 days to 12.9) years. Using cox regression, Looman and Goldstein found that the Static-99R was a significant predictor of sexual recidivism (Exp. = 1.20; Wald = 8.16; $p = .004$). When adding the effect of the Stable-2007 in combination with the Static-99R, the researchers found that additional variance (i.e., sources of sexual recidivism risk) was explained beyond that determined by the Static-99R alone (Exp = 1.11; Wald = 6.85; $p = .009$). The question remains, however: Does

[1] Typically, IPV is tested using logistic regression or cox regression.

statistically significant IPV produce sexual recidivism rates greater than observed at each Static-99R risk bin? The data in the table below examines this issue.

Static-99R Bin & Associated Total Scores	N (Risk Estimate)	N	Stable-2007 Score Groups	Priority Category	Risk Estimate	Number of Recidivists	N
Low Score ≤ 1	4 (2.4%)	165	Low & moderate	Low	2. 5%	4	163
			High	Mod-Low	0.0%	0	2
Moderate-low 2, 3	3 (4.6%)	65	Low	Low	0.0%	0	10
			Moderate	Mod-low	4.7%	2	43
			High	Mod-high	8.3%	1	12
Moderate-High 4, 5	1 (1.7%)	60	Low	Mod-low	0.0%	0	36
			Moderate	Mod-high	4.3%	1	23
			High	High	0.0%	0	1
High ≥ 6	7 (11.7%)	60	Low & moderate	High	0.0%	0	26
			High	Very High	20.6%	7	34

The observed sexual recidivism rate at a three-year fixed period is reported in the left most panel of the table for each of the four Static-99R risk bins (low, moderate-low, moderate-high, and high). The column headed "Stable-2007 Score Groups" describes the Stable-2007 score groups to which the offenders were assigned based on their Stable-2007 total scores.[2] The column entitled "Priority Category" refers to the revised risk category based on the combination of the total scores from the Static-99R and Stable-2007 (Fernandez, Harris, Hanson, & Sparks, 2014, October). For example, there are 165 sexual offenders in the Static-99R low score category. These individuals were assigned Stable-2007 scores within the low, moderate, and high Stable-2007 score categories. Based on the combined Static-99R and Stable-2007 scores, 163 sexual offenders were assigned to the low priority category and 2 were placed in the moderate-low priority category. The number of recidivists and total number of offenders for each priority level were used to calculate the observed sexual recidivism rate. The same method was used for each Static-99R risk bin. This analytic strategy directly assesses the effect of the Stable-2007 on the sexual recidivism rate only among the offenders comprising each Static-99R risk bin.

The data in last three columns of the table pertain to each priority category associated with the Static-99R risk bin. After computing the risk estimates for each priority category, I then tested the differences between each Static-99R risk bin sexual recidivism estimate and the corresponding priority category sexual recidivism risk estimate using the Fisher's Exact Test. None of the comparison achieved statistical significance, which means that the consideration of the Stable-2007 did not produce meaningful differences in the sexual recidivism rates

[2] The following specifies the Stable-2007 total scores associated with each score category: Low (0-3), Moderate (4-11), High (≥ 12).

determined by the Static-99R alone. In other words, the probability of recommitting a sexual offense when considering the combination of the Static-99R and Stable-2007 was not meaningfully different than the observed Static-99R sexual recidivism rate alone.

The results from this analysis demonstrate that IPV had no statistically meaningful effect on the probability of sexual recidivism as determined by the Static-99R alone. The findings highlight the importance for government evaluators to provide scientific data to support claims that IPV found with the Stable-2007 or other variables considered beyond the Static-99R increases the probability of sexual recidivism beyond that determined by the actuarial measure.