

Incorporating Change Information into  
Sexual Offender Risk Assessments  
using the

## Violence Risk Scale: Sexual Offender Version (VRS:SO)

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information into sexual offender risk assessments using  
the Violence Risk Scale: Sexual Offender Version  
(VRS:SO). *Sexual Abuse: Journal of Research & Treatment*.

## Overview

- Sex offender risk assessment – a brief introduction
- Violence Risk Scale: Sexual Offender Version (VRS:SO)
- The new study (*Olver et al., in press*)
- Clinical implications: incorporating treatment change into risk assessments

## Sex Offender Risk Assessment

*A brief intro...*

- High public and political interest
- A crucial role aspect for correctional psychologists
- Pre-requisite for effective intervention and appropriate management

## Sex Offender Risk Assessment

*A brief history...*

- First generation – Unstructured clinical judgement
- Second generation – Empirically driven actuarial instruments (static)
- Third generation – Incorporating treatment-related information (dynamic)
- Fourth generation – Incorporating change information; guides service from intake to case closure

## Why assess changes in risk?

- Core assumptions underpinning treatment:
  - risk is dynamic (changeable), and
  - effecting positive changes in need areas should result in decreased recidivism



## The VRS:SO

### *Violence Risk Scale: Sexual Offender Version*

- Dynamic factors
  - Sexual deviancy
  - Criminality
  - Treatment responsivity
- Scores yielded – static, dynamic pre-, dynamic post-, total pre-, total post-, pre- and post- factor scores, and change scores
- Risk categories – High, Medium-High, Medium-Low, Low



## The Study

### *Olver et al. (in press)*

#### Rationale

- Previous research support for the VRS:SO
- Advancements in communication of risk in applied settings
- Logistic regression at fixed follow up periods
  - Hanson, Helmus, & Thornton (2010) – Static-2002
  - Thornton (2011) – Static-99-R plus dynamic (STABLE 2007)
  - Could be applied to change data?
- More clinical utility and practicality for decision-making purposes, while reducing bias



## The Study

### *Olver et al. (in press)*

- N = 539
- Combined NZ and Canadian treated groups
- Heterogenous re risk and victim type
- Followed up average of 15.5 years post-release
- 22.4% sexual reconviction



## VRS:SO predictive validity

- Moderate to high predictive accuracy
- Post-treatment generally more so than pre-treatment



Measure		<i>r</i>	<i>AUC</i>	95% C. I.
Static-99		.31	.71	.66, .76
VRS:SO Static		.34	.73	.69, .78
VRS:SO Dynamic	Pre	.33	.73	.68, .78
	Post	.37	.75	.70, .80
VRS:SO Total	Pre	.38	.76	.71, .81
	Post	.41	.77	.73, .82
Sexual Deviance	Pre	.11	.57	.51, .63
	Post	.20	.62	.56, .68
Criminality	Pre	.28	.69	.64, .74
	Post	.31	.71	.65, .76
Tx Responsivity	Pre	.27	.69	.64, .74
	Post	.28	.70	.65, .75

## Change analyses

### *Effect sizes of change across treatment*

VRS:SO Measure	Pre-tx <i>M (SD)</i>	Post-tx <i>M (SD)</i>	Change Effect <i>d</i>
Dynamic Total	23.6 (7.1)	20.2 (7.5)	.46
Sexual Deviance	7.5 (3.8)	6.2 (3.4)	.35
Criminality	7.9 (3.6)	7.1 (3.4)	.22
Treatment responsivity	5.6 (2.5)	4.6 (1.0)	.38

- All pre-post differences significant

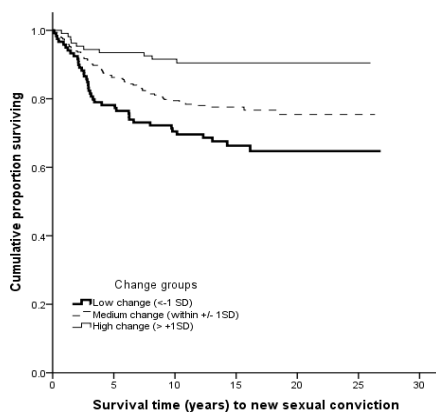


## Change analyses

*Predictive validity of change for sexual recidivism*

VRS:SO Measure	<i>r</i>	<i>d</i>
Dynamic Total	-.18***	-.37
Sexual Deviance	-.22***	-.44
Criminality	-.06	-.12
Treatment responsivity	-.11*	-.22

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



## Change analyses

- Cox regression survival analyses to test the predictive ability of **change** in relation to sexual recidivism, while controlling for:
  - sample (Canadian or NZ)
  - follow-up time
  - static risk
  - pre-treatment dynamic risk



## Change analyses

*Predictive validity of change - survival curves*

- Sample divided into three groups based on change score:
  - Low change ( $\geq 1SD$  below mean,  $n = 119$ )
  - Med change (within 1 SD of mean,  $n = 313$ )
  - High change ( $\geq 1SD$  above mean,  $n = 107$ )
- Kaplan-Meier survival analyses conducted to examine rates of sexual recidivism over time among the groups



## Change analyses

- However the preceding analyses have not taken **risk** into account
- Lower risk offenders could be reoffending at a lower rate irrespective of change (& vice versa)
- Higher risk offenders may show higher change as more ‘room to move’



## Change analyses

*Predictive validity of change controlling for risk*

- Treatment change significantly associated with decreased sexual recidivism, even after accounting for individual differences in risk level:
  - Total change
  - Change on **Sexual Deviance** dimension
  - Change on Criminality dimension
  - Change on Treatment Responsivity dimension



Cox regression model	e <sup>B</sup> (95% CI)	P	Predicted decrease
<b>1-2. Sample (all analyses)</b>	1.39 (.90 to 2.14)	.139	-
<b>Static (all analyses)</b>	1.14 (1.08 to 1.20)	<b>.001</b>	-
<b>Dyn Tot (pre) (all analyses)</b>	1.05 (1.03 to 1.08)	<b>.001</b>	-
<b>1-3. Dyn Tot Change</b>	.87 (.80 to .95)	<b>.001</b>	13%
<b>2-3. Sex Dev Change</b>	.66 (.54 to .82)	<b>.001</b>	34%
<b>3-3. Crim Change</b>	.78 (.63 to .98)	<b>.033</b>	12%
<b>4-3. Tx Resp Change</b>	.78 (.61 to 1.0)	<b>.048</b>	12%

Cox regression model	e <sup>B</sup> (95% CI)	P	Predicted decrease
<b>5-3. Sample</b>	.78 (.46 to 1.31)	.350	-
<b>Static</b>	1.14 (1.09 to 1.20)	<b>.001</b>	-
<b>Dynamic Tot (pre)</b>	1.06 (1.03 to 1.09)	<b>.001</b>	-
<b>Sex Dev Change</b>	.64 (.49 to .83)	<b>.001</b>	36%
<b>Crim Change</b>	.86 (.65 to 1.14)	.296	ns
<b>Tx Resp Change</b>	1.21 (.84 to 1.74)	.312	ns

## Change analyses

*Logistic regressions at fixed 5-year follow-up*

- Final analyses – to enhance the clinical utility of change information
- Provides projected estimates of rate of sexual recidivism for an individual as a function of:
  - pre-treatment risk, and
  - amount of change made

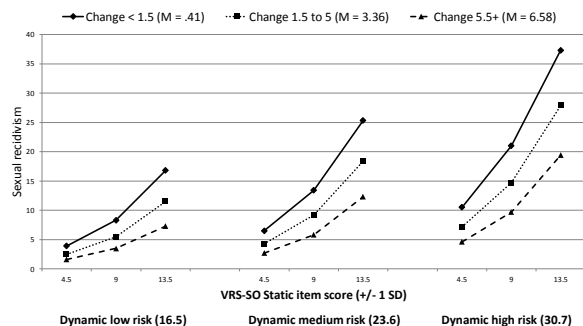
Pre-tx risk band	Overall sample						Change category					
	Pre-tx (time 1)			Low			Medium			High		
	act.	est.	n	act.	est.	n	act.	est.	n	act.	est.	n
<b>Low</b>	0.0	<b>2.2</b>	63	0.0	<b>3.1</b>	10	0.0	<b>2.1</b>	36	0.0	<b>1.3</b>	17
<b>Mod-low</b>	5.8	<b>5.6</b>	190	5.6	<b>7.5</b>	36	7.6	<b>5.1</b>	119	0.0	<b>3.3</b>	35
<b>Mod-high</b>	12.6	<b>13.7</b>	167	25.0	<b>18.0</b>	36	10.7	<b>12.7</b>	103	3.6	<b>8.5</b>	28
<b>High</b>	37.3	<b>36.0</b>	118	40.5	<b>43.6</b>	37	42.6	<b>33.8</b>	54	22.2	<b>24.6</b>	27

Note: Pre-tx (time 1) risk band: Low 0-20; Mod-low 21-30; Mod-high 31-40; High 41-72  
Change categories: Low < 1.5; Medium 1.5 to 5; High >5



## Logistic regression recidivism estimates

*as a function of VRS:SO risk and change*



## Summary and clinical implications

- Positive pre-post treatment changes linked with lower recidivism – most consistently for Sexual Deviance
- Demonstrated systematic decreases in predicted rates of sexual recidivism as a function of increasing change, at different levels of risk.
- Provides a clinically useful and systematic means of combining risk and change information into post-treatment risk appraisals.



## Clinical implications

### *Revising risk assessments on the basis of change*

- Risk-related change requires a stable and credible change agent
- Consider what observable behaviours constitute relevant change
- A comprehensive appraisal of risk can be systematically formulated incorporating relevant change-related information
- Caution when adjusting static actuarial risk appraisals



## Future....

- Forthcoming norms using logistic regression generated estimates for pre-treatment (Time 1) and post-treatment (Time 2), as well as percentile ranks for static, dynamic, and change components  
[www.psynergy.ca](http://www.psynergy.ca)
- Prospective study underway
- Further ideas include assessing at more than two time periods – post-release community follow-ups



*Thank you*

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