Latent Transition Analysis Versus Traditional Methods for Assessing Clinical Significance

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WHY?

- Prevention researchers have called for examination of the practical impact of interventions, not just statistical significance and effect sizes
- Mixture modeling can add to the benefits of established clinical significance (CS) approaches

WHAT?

- CS tells what proportion of individuals show meaningful change
- This includes improvement *and* deterioration

HOW?

- We contrasted two CS methods using PRIME For Life® (PFL) program evaluation data
- PFL is a motivation-enhancing, indicated prevention program for substance users

Jacobson-Truax (JT) Approach	Latent Transition Analysis (LTA)
• Established CS method • Simpler • Tests outcomes separately	• Increasingly popular • Well-suited to CS • Tests outcomes simultaneously • Can include predictors

WHO?

- Baseline to posttest data from 2,717 individuals convicted of impaired driving or another substance-related offense
- 71% male, 78% white, 47% ≤ high school, Age *M* = 33 (*SD* = 12.6)

OUTCOME MEASURES: NUMBER OF DRINKS . . .

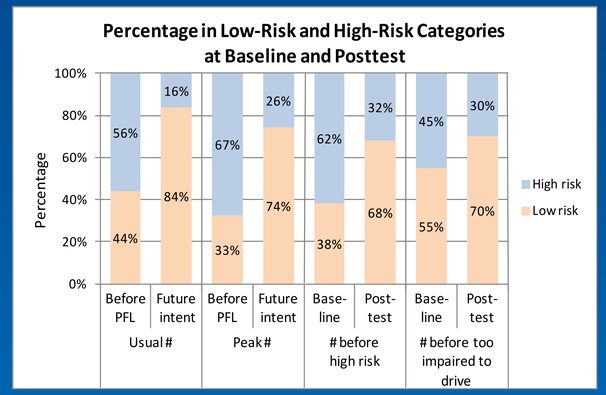
- Usual and Peak in a day (90 days prior)
- Intended Usual and Peak in a day (next 90 days)
- Before it is high risk (likely to cause injuries or problems)
- Before too impaired to drive safely

RISK CATEGORIZATION

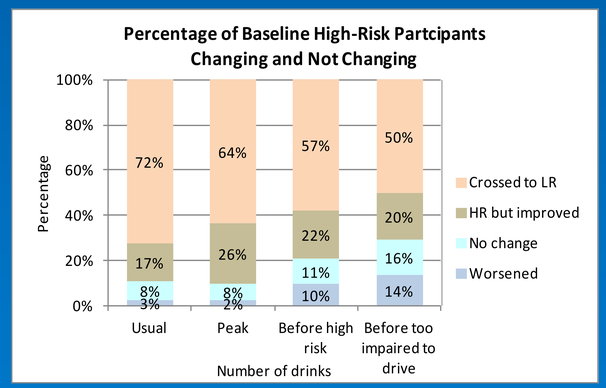
Dichotomized as Low Risk (LR, ≤ 3) versus High Risk (HR, ≥ 4) based on guidelines taught in program

FINDINGS: JACOBSON & TRUAX (JT) APPROACH

More participants were LR at posttest on each outcome.



Over 70% who were HR at baseline either improved or crossed to LR on each outcome.



Additional finding: Most (84% or more) who were LR at baseline remained so at posttest on all outcomes.

FINDINGS: LATENT TRANSITION ANALYSIS

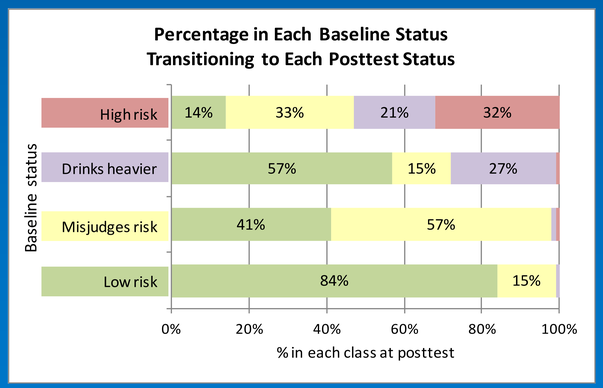
Four status groups were similar in characteristics across the timepoints (baseline and posttest).

Status Characteristics and Prevalence at Baseline

Indicators	Status Group: Low risk n = 399 (16%)	Misjudges risk n = 421 (17%)	Drinks heavier n = 766 (30%)	High risk n = 940 (37%)
Drank in past 90 days				
Usual number	0%	0%	**71%**	**92%**
Peak number	0%	20%	**94%**	**95%**
How many can you drink . . .				
In a day before it is high risk for you?	0%	**73%**	40%	**93%**
Before you are too impaired to drive?	0%	**58%**	12%	**81%**

Note: Bolding indicates probabilities above 50%.

Transition probabilities from each baseline status group typically showed movement to a less risk-prone group.



Additional finding: Having more alcohol/drug dependence indicators significantly predicted being in a more severe baseline status group, but not transition probabilities.

DISCUSSION

- Both approaches showed clinically significant improvements
- The JT approach is simpler and answers basic questions
- LTA is useful in examining multiple outcomes, predicting improvement /deterioration, or identifying people unlikely to benefit

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Questions?: Blair Beadnell at blair.beadnell@primeforlife.org

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