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

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

LATENT TRANSITION ANALYSIS (LTA)
• Established CS method
• Increasingly popular
• Well-suited to CS
• Tests outcomes simultaneously
• Can include predictors

RISK CATEGORY
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 baseline to 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.

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

RISK GROUPS WERE SIMILAR IN CHARACTERISTICS ACROSS THE TIMEPOINTS (BASELINE AND POSTTEST).

FINDINGS: LATENT TRANSITION ANALYSIS
Four status groups were similar in characteristics across the timepoints (baseline and posttest).

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.

Note: Bolding indicates probabilities above 50%.

This study was conducted by Prevention Research Institute (PRI), the private nonprofit organization that developed and sells the PRIME For Life® intervention. Authors Beadnell, Stafford, and Rosengren are PRI employees; Crisafulli is a PRI graduate assistant; and Casey was a PRI contractor.

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