Alcohol consumption and protective behavioral strategies as predictors of school performance among college students

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Alcohol Use among College Students

- Alcohol Consumption Rates
  - 70% report drinking during the past 30 days (O'Malley & Johnston, 2002)
  - Approximately 44% of college students participated in binge drinking in the past year and 23% did so frequently (3+ times in the past 2 weeks) (Wechsler et al., 2002)

Alcohol Use among College Students (cont.)

- Alcohol-related Correlates and Consequences
  - *Education difficulties*
  - Psychosocial problems, antisocial behaviors, overdoses, high-risk sexual behaviors and alcohol-impaired driving (Wechsler et al., 2000)
  - Approximately 1,700 college students are killed and an additional 500,000 students injured from unintentional alcohol-related injuries each year (Hingson et al., 2005)

Reducing Alcohol-Related Consequences

- **Protective Behavioral Strategies (PBS)** (Martens et al., 2004)
  - Behaviors that individuals can engage in while drinking alcohol in order to limit negative alcohol-related consequences
  - Commonly used protective strategies include
    - *alternating non-alcoholic with alcoholic beverages*
    - *determining in advance not to exceed a certain number of drinks*
    - *using a designated driver*
    - *eating before an/or during drinking*
    - *keeping track of the number of drinks consumed*
    - *pacing drinks*
    - *avoiding drinking games*

Reducing Alcohol-Related Consequences (cont.)

- **Protective Behavioral Strategies (PBS)**
  - Students who consumed at least six drinks when they partied were less likely to experience negative consequences, including *poor academic performance*, if they engaged in self-protective strategies (Benton et al., 2004)

Purpose

- Explore the relationship among **alcohol consumption**, **protective behavioral strategies** and **school performance** in a sample of college students who reported drinking alcohol in the past 30 days

Participants

- National College Health Assessment (NCHA)
  - Public University in the Southeast, Fall 2004
  - N = 720; Drinkers = 406
  - Random selection of 100, 200, 300 & 400 level classes
  - Mean age = 20.72
  - Majority were males (56.3%) and Caucasians (91.1%)

Variables

- Latent Independent Variable #1: **Drinking Behavior** (of those who have consumed alcohol in the past 30 days)
  - Observed Measures
    - "Days": Drinking days (past 30 days)
    - "Hours": Hours drinking (most recent occasion)
    - "Drinks": # of drinks (most recent occasion)
    - "Binge": Binging (last 2 weeks)

Variables (cont.)

- Latent Independent Variable #2: **Protective Behavioral Strategies (PBS's)**
  - Observed Measures
    - "Alternate": How often the respondent alternated alcoholic and non-alcoholic drinks when drinking
    - "Eat": How often the respondent ate before and/or during a drinking episode
    - "Pace": How often the respondent paced him or herself to 1 or fewer drinks per hour
- Latent Dependent Variable: **School Performance**
  - Observed Measure
    - GPA (self-report) – "What is your approximate cumulative GPA?"

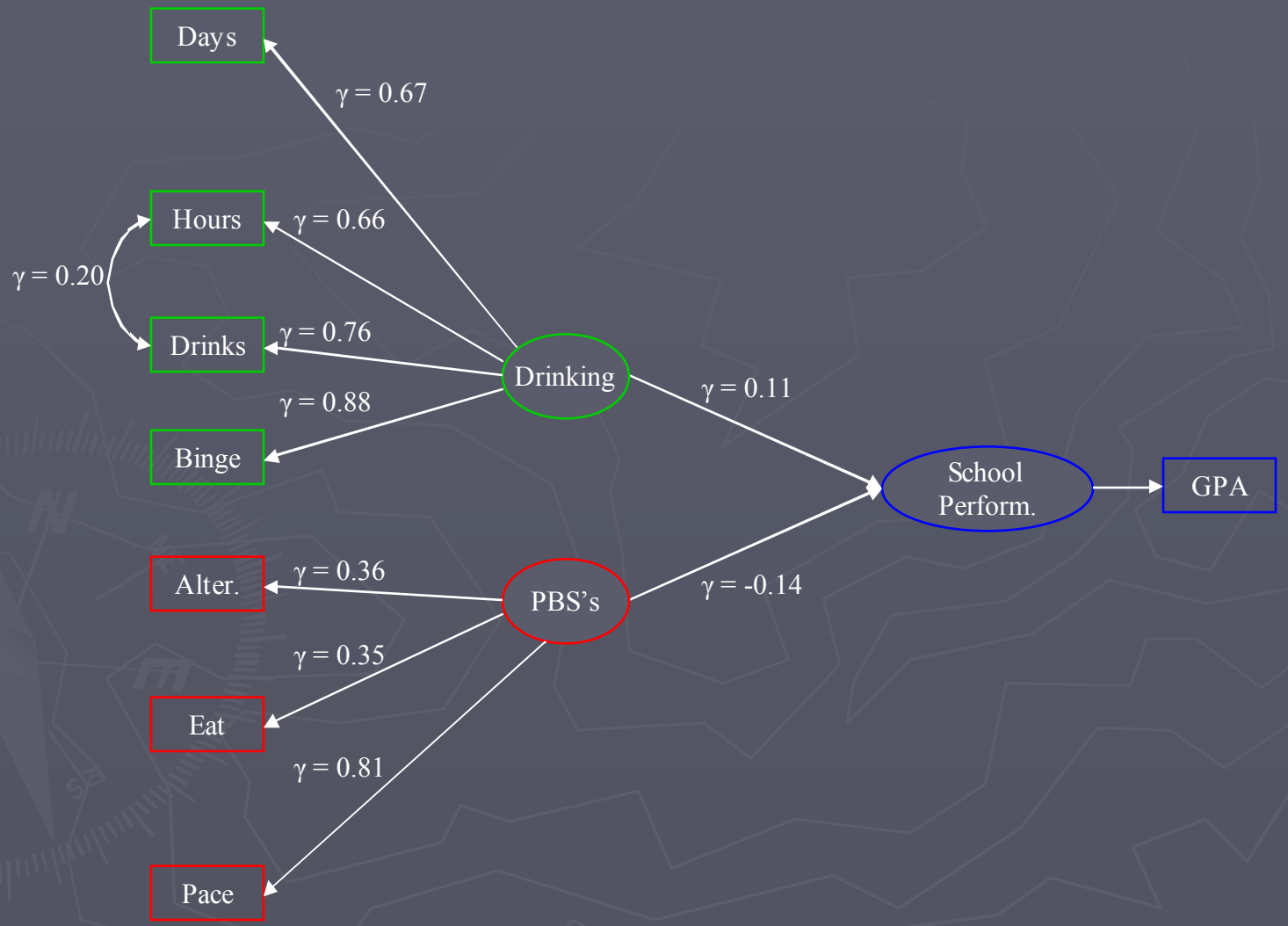
Analysis

- Data were analyzed using covariance modeling in LISREL 8.54
  - Participants with missing data were not included in analyses (n=12)
- Model fit was assessed using the chi-square statistic, RMSEA, SRMR, CFI, & combinatory rules (Hu & Bentler, 1999)
- A two-step approach was used to test a series of models using confirmatory factor analysis and structural equation modeling
  1. A measurement model with two latent factors (drinking amount & protective drinking behaviors) was tested
     - Modification: allowed uniqueness among 2 drinking amount indicators to correlate
       - Hours spent drinking on last outing
       - Number of drinks consumed
  2. Structural equation modeling was used to examine the relationships among drinking amount, protective drinking behaviors and school performance

Results
Goodness of Fit

- This model represented a good fit to the data based on the combinatory rules for standardized root mean square residual (RMSEA) and comparative fit index (CFI)
  - X^2 =36.05, df=17, p<.004
  - RMSEA=0.05
  - SRMR=0.03
  - CFI=0.98

Structural Model



Summary

- Structural Equation Model
  - Alcohol consumption amount was *negatively correlated* with school performance
  - Protective drinking behaviors were *positively correlated* with school performance
  - Specifically, the less alcohol consumed and the more protective drinking behaviors a participant engaged in, the better his/her school performance

Implications

- For Universities with an interest in reducing alcohol-related consequences, such as poor school performance:
  - Implement and promote interventions and/or campaigns that focus on increasing the awareness of protective behavioral drinking strategies.
- Future research is needed to further examine these relationships
  - Across time
  - Using actual GPA and additional school performance indicators