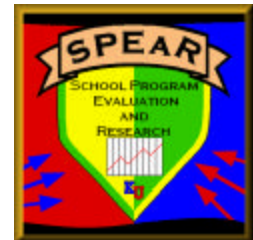# Validity of the Risk & Protective Factor Model

The Use in Evaluation

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Background

- Drug and alcohol use as well as other delinquent behaviors among adolescents remain a focus and area of concern for many communities across the United States

  (Arthur, Hawkins, Pollard, Catalano, and Baglioni, 2002)

- One way to target preventive interventions for these problems is to examine the risk and protective factors associated with them, with risk factors defined as those characteristics or behaviors that predict future problem behaviors and protective factors as those indicators associated with reducing or preventing the likelihood of such problems

  (Hawkins, J.D. and Catalano, R.F., 1992)

The Question of Validity

- Models such as the one proposed by Hawkins and Catalano (1992) provide a framework for understanding the risk and protective factors most often associated with the use of drugs, alcohol, tobacco and violence among teens. While many states make use of data collected via survey instruments based on such a model, an empirical verification of the theoretical factor structure should also be considered in order to better understand the predictive relationship among factors and behaviors.

Three Approaches

Study #1
- Factor Analysis of *Communities that Care*
  - Oregon
    - Arthur, Hawkins, Pollard, Catalano & Baglioni (2002)

Study #2
- Drug Involvement Structural Model
  - Florida
    - Frey (1996)

Study #3
- Predictive Nature of Risk & Protective Factor Domains
  - Kansas
    - Schmitt, Dunham, & Carman (2004)

Study #1
Factor Analysis of *Communities that Care*

- Goal:
  - Examine the unidemensionality of the subscales representing twenty-nine specific theoretical risk or protective factors from the *Communities that Care Youth Survey*
- Method
  - 11,000 students 6th, 8th and 11th grade Oregon students
  - Subscales = Coefficient alphas across the three grade levels ranged from .50 to .93, with most in the high .70s or low .
  - Moderate to strong correlations found between most factor scale scores and self-reported cigarette, alcohol and marijuana use
- Secondary-Analysis
  - Correlations between factor scale scores and cigarette, alcohol and marijuana use were summarized and compared.

Study #2
Factor Analysis of *Communities that Care*

Risk and Protective Factors' Mean Relationship with Levels of Drug Use

| Criterion	Mean Correlation	95% Confidence Interval
Use in Last 30 Days		
Cigarettes	.29	.25 to .34
Alcohol	.30	.25 to .35
Marijuana	.27	.22 to .31
Lifetime Use		
Cigarettes	.32	.28 to .37
Alcohol	.27	.23 to .31
Marijuana	.32	.28 to .38

Study #2
Drug Involvement Model

- Goal:
  - Examine the utility of a risk and resiliency model for identifying population levels of risk.
- Method
  - 85-item drug use and attitude survey
  - 23,000 6th -12th grade students in Florida
  - Risk factors consistent with the work of Hawkins and Catalano (1992) and a set of
  - Resiliency factors derived from a review of the literature (Frey, 1995).
  - Good reliability
  - Criterion-based evidence of validity (Frey, 1995).
  - Structural equation analysis used to produce a "best" model for accounting for the variance in drug involvement.

Study #1
Drug Involvement Model
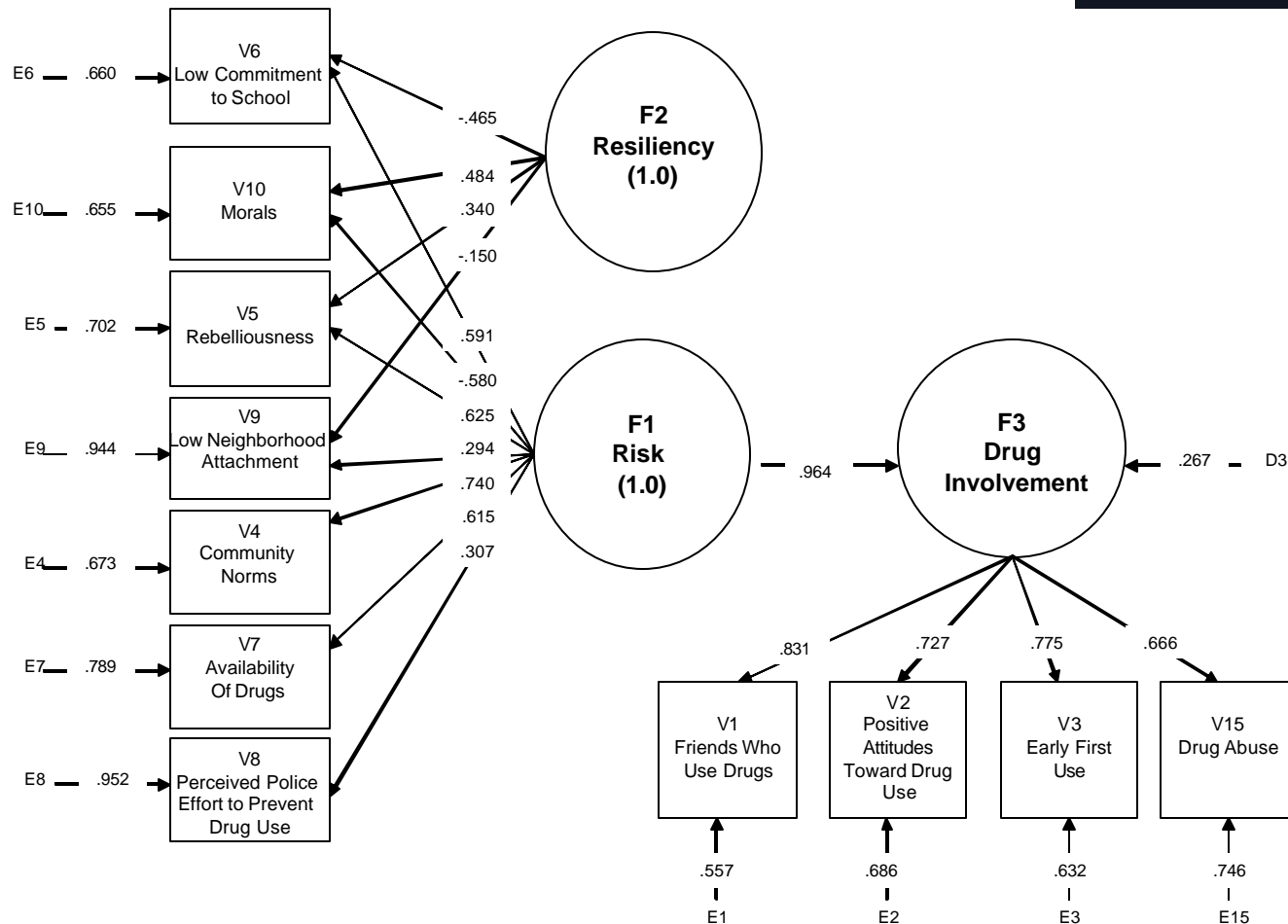
Study #3
Risk & Protective Factor Domains

- Goal
  - Confirm the factor structure of three of the four domains and within the Communities That Care Survey
  - Examine the factors structure across younger (6th-8th grade) adolescents and older (10th-12th grade) adolescents
  - Examine the predictive nature of these domains to self-reported outcome factors
- Method
  - 11,000 students 6th, 8th , 10th and 12th grade Kansas students
  - Confirmatory analysis of outcomes
  - Confirmatory analysis of individual domains across older and younger adolescents
  - Latent variable regression for each domain to outcomes identified

Study #3
Analysis of Outcomes

- Confirmatory Factor Analysis
  - Original CFA with three outcome factors was modified to allow the "Lifetime Usage" Factor to become two separate factors.
  - The Four Factor Model includes:
    - Popular Drug Use (3 items: cigarettes, marijuana, alcohol)
    - Hard Drugs (7 items)
    - Positive Behaviors (3 items)
    - Positive Feedback (4 items)

Model Fit: ?2(113) = 1262.041
RMSEA = .0670; NNFI = .937; CFI = .948
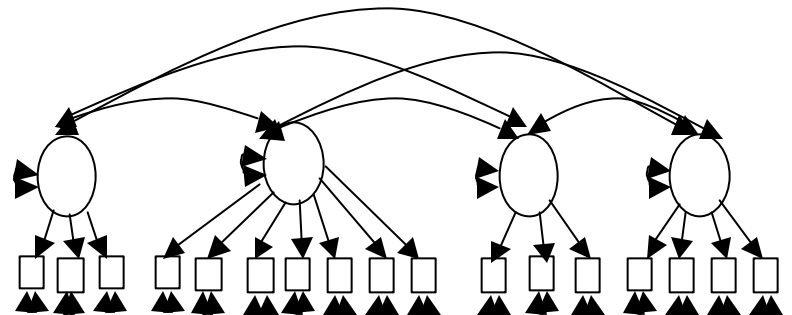
Study #3
Risk & Protective Factor Domains

- **School Domain**
  - Risk Factors
    - Academic Failure
    - Lack of Commitment to School
  - Protective Factors
    - Opportunities for Positive Involvement
    - Recognition for Involvement

- **Peer/Individual Domain**
  - Risk Factors
    - Alienation and Rebelliousness
    - Friends Who Engage
    - Favorable Attitudes Toward Problem
    - Early Initiation of Behavior
    - Anti-Social Behavior
    - Sensation Seeking
    - Perceived Risk of Drug Use
  - Protective Factors
    - Social Skills
    - Impulsiveness
    - Healthy Beliefs / Clear Standards

- **Community Domain**
  - Risk Factors
    - Availability of Drugs, Alcohol, and Firearms
    - Laws/Norms Favorable to Drug Use
    - Transitions/Mobility
    - Low Neighborhood Attachment
  - Protective Factors
    - Opportunities for Positive Involvement
    - Recognition for Involvement

- **Family Domain**
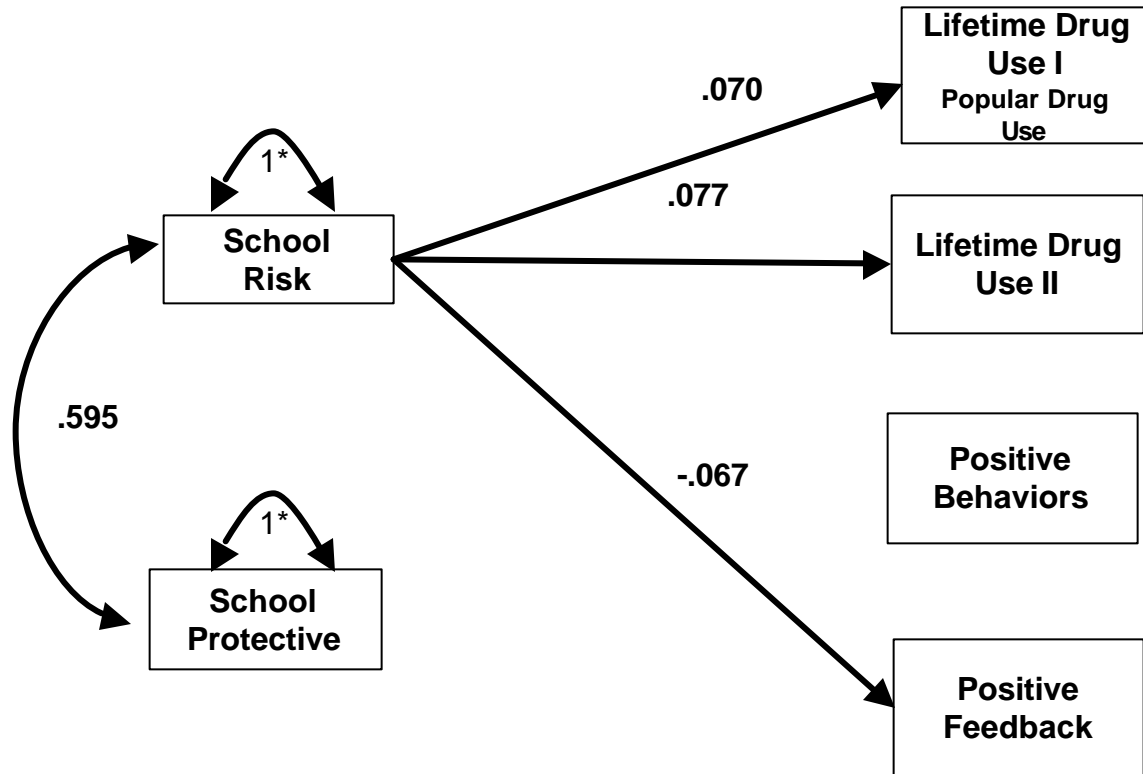 - Risk Factors
    - History of Problem
    - Management Problems
    - Conflict
    - Favorable Parental Attitudes
  - Protective Factors
    - Family Attachment
    - Opportunities for Involvement

Study #3
Analysis of Domains

- **School Domain**
  - **Theoretical Model Supported**
    - RMSEA = .0597; NNFI = .943; CFI = .951
    - Younger Adolescents: RMSEA = .0325, NNFI = .981, CFI = .985
    - Older Adolescents: RMSEA = .0531, NNFI = .946, CFI = .957
- **Community Domain**
  - **Theoretical Model Supported**
    - RMSEA = .0634, NNFI = .956, CFI = .963
    - Younger Adolescents: RMSEA = .0452, NNFI = .967, CFI = .973
    - Older Adolescents: RMSEA = .0495, NNFI = .959, CFI = .967
- **Peer/Individual Domain**
  - **Theoretical Model Supported**
    - NNFI = .932; CFI = .944
    - Difficulty establishing model fit across groups
- **Family Domain**
  - **Not Examined**

School Domain Model

Community Domain Model

(Note: Only significant paths are illustrated)

1.0

Laws and Norms

1.0

Low Neighborhood Attachment

1.0

Community
D

Disorganization

1.0

Opportunity for Positive Involvement

1.0

Rewards

Lifetime Use I Popular Drugs

Lifetime Use II

Positive Behavior

Positive Feedback