

# Predictive Risk Factors for Substance Use

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# Data available from the meta-analysis

- 119 studies reporting 7,962 longitudinal correlations between a risk variable and a substance use variable measured later
- Sample characteristics
  - 69% primarily white; 26% primarily minority
  - 36% primarily low/working class; 25% primarily middle class
  - Mean proportion male = .51
  - Mean age at first wave = 14.5
  - Mean interval between waves = 38 mos.
- Major sources for the risk and outcomes measures
  - Child reports: 88% of the risk measures and 99% of the outcome measures
  - Teacher or peer reports: 6% of the risk measures

# Identifying the construct categories for substance use outcomes

- Substance use (SU) measures inductively sorted into four categories based on conceptual similarity
  - Tobacco use
  - alcohol use
  - marijuana use
  - other mixed substance use
- MR models used to standardize cross-sectional correlations between different SU measures for a consistent profile of sample and measurement characteristics
  - Age, gender, SES, ethnicity, risk
  - Source (child, parent, etc.), scaling (binary, continuous)
- Mean cross-sectional correlations across constructs examined to ensure that inclusion in the mixed SU construct category was empirically justified

# Substance use outcome constructs

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Constructs & construct categories	Mean cross-construct correlation
<i>Tobacco Use</i>	.58
<i>Alcohol Use</i>	.67
<i>Marijuana Use</i>	.82
<i>Mixed Substance Use</i>	
Other substance use	.59
Mixed minor substance use	.57
Mixed major substance use	.62

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# Number of Longitudinal Correlations in Major Risk Categories Predicting Substance Use Outcomes

Risk Variable Category	Substance Use Outcome			
	Tobacco Use	Alcohol Use	Marijuana Use	Mixed Substance Use
Prior substance use	446	738	478	332
Antisocial behavior	60	187	152	206
School motivation & attitudes	168	231	227	128
Drug exposure & attitudes	232	374	130	192
Peer behaviors & influences	158	282	198	192
Parenting behaviors	75	195	155	232

# Adjustments to the longitudinal correlation coefficients

- Step 1: MR models used to produce standardized longitudinal correlation coefficients for a consistent profile of measurement characteristics:
  - Scaling (e.g., dichotomous, continuous)
  - Reporting source (e.g., self vs. parent)
  - Form of data collection (e.g., standardized test, observation)
- Step 2: Second stage MR models used to predict the standardized correlation coefficients from age, age<sup>2</sup>, interval between waves, and age x interval for each combination of risk-outcome categories
- Risk-outcome correlations for given Time 1 and Time 2 ages estimated from the second stage models

# Mean correlations for major risk categories at age 16 and SU outcomes at age 20

Risk Construct Category	Substance Use Outcome			
	Tobacco Use	Alcohol Use	Marijuana Use	Mixed Substance Use
Prior substance use	.18	.38	.41	.29
Antisocial behavior	.29	.28	.30	.26
School motivation & attitudes	.31	.20	.22	.40
Drug exposure & attitudes	.44	.18	.26	.13
Peer behaviors & influences	.40	.32	.29	.23
Parenting behaviors	.16	.18	.17	.22

<sup>a</sup> Estimated from weighted regression models that included age at Time 1, age<sup>2</sup>, Time 1-Time 2 interval, and age\*interval; means calculated from the models for age= 16 and interval= 4 (age 20).

**Within a risk construct category, micro constructs have about the same risk-outcome correlations: E.g., Prior SU and antisocial behavior as predictors of alcohol use**

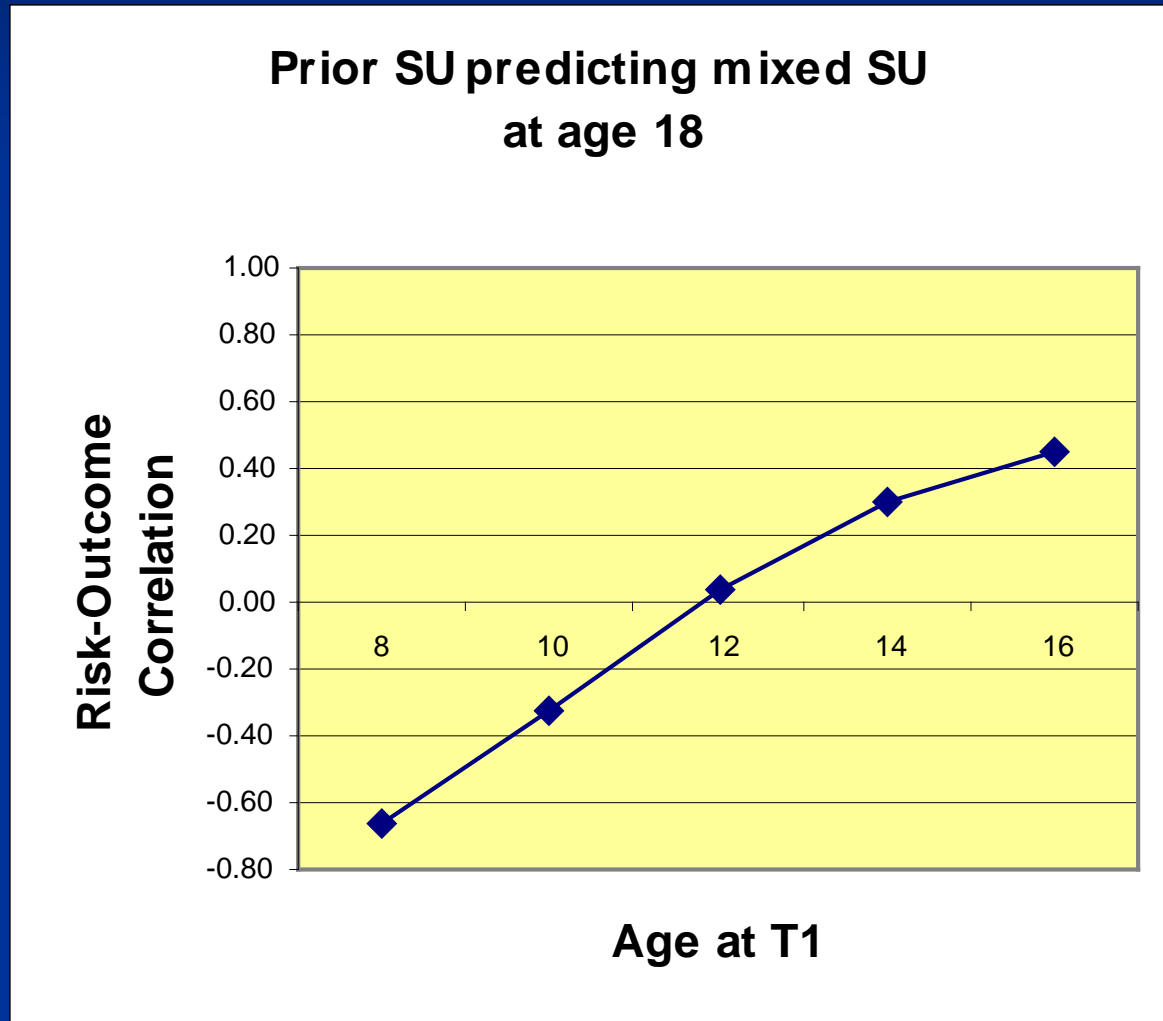
<b>Risk Constructs &amp; Categories</b>	<b>T1=14 T2=16</b>	<b>T1=16 T2=20</b>	<b>Nes (Nss)</b>
<b><i>Prior Substance Use</i></b>			
Tobacco use	.21	.33	106 <sup>(25)</sup>
Alcohol use	.32	.43	425 <sup>(101)</sup>
Marijuana use	.23	.35	152 <sup>(39)</sup>
Mixed substance use	.15	.28	55 <sup>(20)</sup>
<b><i>Antisocial Behavior</i></b>			
Delinquent/illegal behavior	.34	.29	82 <sup>(18)</sup>
Violence/aggression	.31	.26	17 <sup>(4)</sup>
Low level problem behavior	.34	.28	47 <sup>(18)</sup>



**Within a risk category, micro constructs have about the same risk-outcome correlations: E.g., drug exposure and peer influences as predictors of alcohol use**

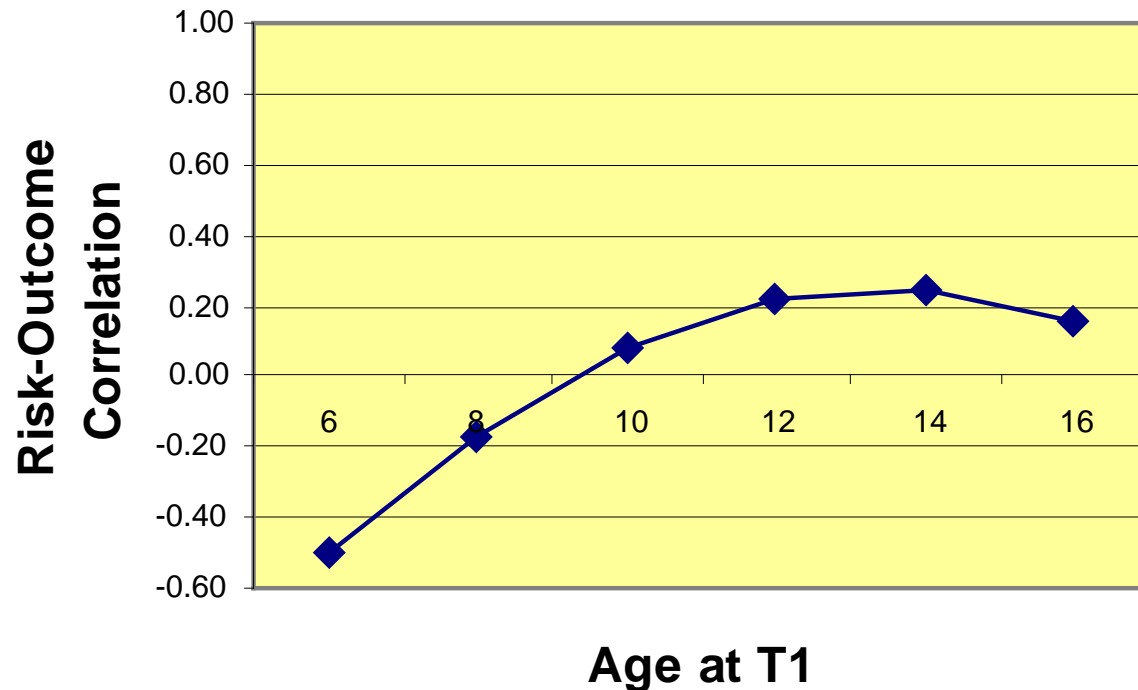
<b>Risk Constructs &amp; Categories</b>	<b>T1=14 T2=16</b>	<b>T1=16 T2=20</b>	<b>Nes (Nss)</b>
<b><i>Drug Exposure &amp; Attitudes</i></b>			
Availability of drugs	.25	.21	9 <sup>(3)</sup>
Drug attitudes	.22	.17	214 <sup>(44)</sup>
Intention to use drugs	.34	.30	14 <sup>(4)</sup>
Family antisocial behavior/su	.22	.18	125 <sup>(30)</sup>
<b><i>Peer Behaviors &amp; Influences</i></b>			
Peer school performance	.29	.33	23 <sup>(8)</sup>
Peer antisocial behavior/su	.32	.36	62 <sup>(17)</sup>
Peer substance use orientation	.28	.32	174 <sup>(50)</sup>

# Risk age differences: For prior SU, risk at later ages is stronger predictor of mixed SU



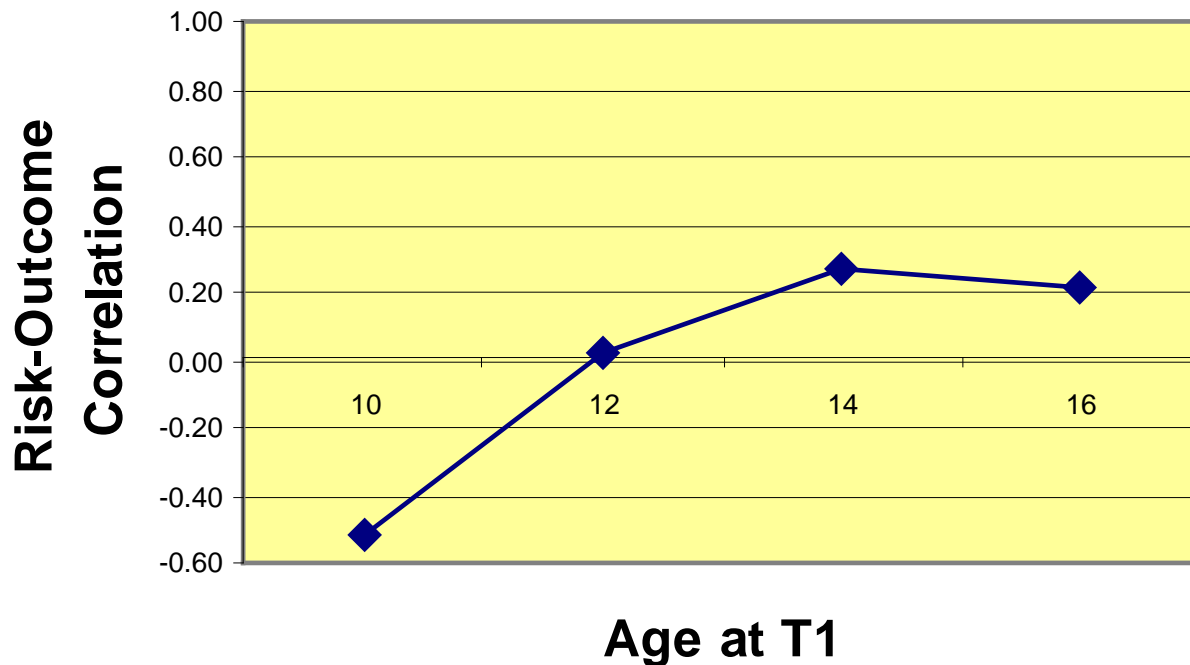
# Drug exposure risk at later ages is a stronger predictor of mixed SU

Drug exposure/attitudes predicting mixed SU at age 18



# Peer influence at later ages is a stronger predictor of mixed SU

Peer behavior/influences predicting mixed SU at age 18



# School motivation at earlier ages is a stronger predictor of mixed SU

