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Transitions in conjoint alcohol and tobacco use among adolescents

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Transitions in Conjoint Alcohol and Tobacco Use among Adolescents

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Introduction

- Alcohol and tobacco use co-occur
  - Social drinkers and alcoholics are more likely to smoke than are non-drinkers
  - Smokers are more likely than are non-smokers to drink and to develop alcohol use disorders
- Comorbidity could be due to directional influences between use of the two substances
- The relation between alcohol and tobacco use also may be due to common third variables (e.g., sex, race, personality)

Introduction

- Recent research has theoretically and empirically characterized developmental patterns of drinking and smoking
  - With 2 timepoints, we can consider stable versus unstable behavior
  - Chassin, Presson, Sherman, & Edwards (1991) categorized smoking into 4 patterns:
    - Stable nonsmoker
    - Late-onset smoker
    - Non-persistent smokers
    - Stable smokers
  - They found different correlates of the four patterns

The Current Study

- No research has considered alcohol-tobacco comorbidity when examining developmental patterns

- The current study examined the prospective (1-year) relation between developmental patterns of alcohol and tobacco use in a nationally representative sample of adolescents

Participants & Procedure

- National Longitudinal Study of Adolescent Health (AddHealth)
- N=20,745 (49.5% male; 52% White, 22% Black, 17% Hispanic)
- Current study sample N=14,466 (those who provided complete data at both waves)
- Students from 132 schools in grades 7-12 were assessed in 1994/1995
  - 45-60 minute school interview and 60-120 minute in-home interview
  - 14,738 students re-contacted/re-interviewed in 1996

Measures

- Alcohol consumption (Times 1 and 2)
  - Past-year reference
    - Drink at least once/week
    - Drink heavily (5+ drinks/occ.) at least once/week
    - Get drunk at least once/week
- Tobacco use (Times 1 and 2)
  - 30-day reference
    - Smoke
    - Smoke $\geq$ half-pack (10 cigarettes) per occasion
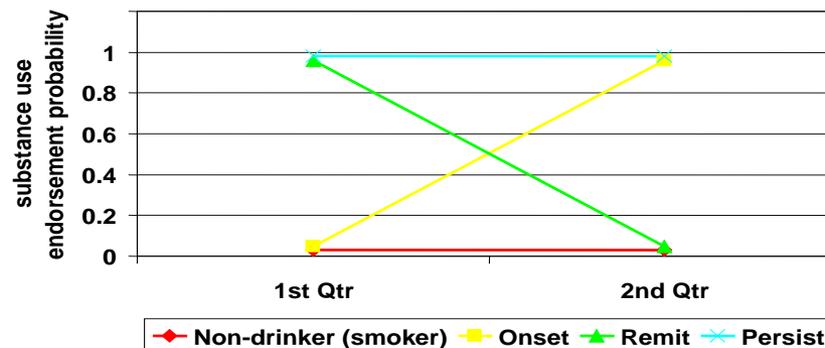   - Smoke daily

Measures (con'd)

- Demographics (Time 1 only)
  - Sex
  - Race
    - Dummy coded into Black, Hispanic, & Other
    - White as the reference group
  - Age (11 to 20)

A Priori Groupings

- Created 4-level (nominal) variables representing temporal patterns, based on responses at Years 1 & 2

	Year 1	Year 2
– Non-drinker (non-smoker)	NO	NO
– Onset	NO	YES
– Non-persistent	YES	NO
– Persistent	YES	YES

Analytic Procedure

- Examined relationship between 4-level drinking variable & 4-level smoking variable using multinomial logistic regression

- Controlled for sex, race, and age

- Complex sampling design
  - Clustering of observations
  - Stratification
  - Unequal probability of inclusion (e.g., oversampling of Blacks)
  - Adjusted for complex sampling and non-response using Stata

Prevalence of Drinking Patterns across Alternate Definitions of Drinking

Pattern Defined By:

Pattern:	Drink at least once/week	Drink heavily at least once/week	Get drunk at least once/week
Nondrinker	84.3%	88.6%	90.0%
Onset	7.1%	5.2%	5.0%
Non-persist	4.6%	3.6%	2.9%
Persistent	4.0%	2.7%	2.1%

Note. N's range from 13,104 to 13,193.

Prevalence of Smoking Patterns across Alternate Definitions of Smoking

	Pattern Defined By:		
	Smoke	Smoke half pack/ occasion	Smoke daily
Pattern:			
Nonsmoker	75.4%	88.1%	85.2%
Onset	8.0%	4.9%	5.9%
Non-persist	3.8%	1.7%	1.9%
Persistent	12.8%	5.4%	7.0%

Note. N's range from 13,104 to 13,193.

Smoking → Drinking
Range of Odds Ratios across Alternate Definitions

	Smoking		
	Onset	Non-persist	Persist
Drinking			
Onset	3.77-8.29	1.37-4.75	4.33-7.29
Non-persist	3.35-5.93	5.73-11.22	5.43-10.53
Persistent	6.16-9.17	4.08-6.70	6.55-13.55

Note. Controlling for sex, race, and age. Parameters were obtained from multinomial logistic regressions predicting the 4-level drinking variable from the 4-level smoking variable, with non-drinkers/non-smokers as the reference groups.

Drinking → Smoking
Range of Odds Ratios across Alternate Definitions

	Smoking		
	Onset	Non-persist	Persist
Drinking			
Onset	3.76-8.26	1.38-4.76	5.89-8.83
Non-persist	3.39-5.95	5.74-11.24	5.17-10.72
Persistent	5.89-8.83	4.00-6.55	6.41-13.42

Note. Controlling for sex, race, and age. Parameters were obtained from multinomial logistic regressions predicting the 4-level smoking variable from the 4-level drinking variable, with non-drinkers/non-smokers as the reference groups.

Summary of Findings

- Drinking and smoking were highly associated both cross-sectionally and prospectively

- Relative to non-smokers, persistent smoking predicted drinking more than did any other smoking group

- Alternate definitions of smoking and drinking yielded similar findings
  - Contrary to what might be expected, given a dose-dependent association between drinking and smoking (Madden, Bucholz, Martin, & Heath, 2000)
  - Sample may have been too young to show full dose range

Summary of Findings (con'd)

- Relative to non-drinkers, persistent drinking predicted smoking more than did any other drinking group
  - The only exception was that non-persistent drinking predicted non-persistent smoking most strongly, across all alternate definitions of smoking and drinking
- The alcohol-tobacco relation controlled for sex, race, and age, suggesting that the association was not due to these factors
  - Future research will consider the extent to which delinquency and negative affect account for the alcohol-tobacco relation

Limitations

- Different timeframes for drinking and smoking
  - Drinking was referenced to a 12-month timeframe
  - Smoking was referenced to a 30-day timeframe
- Time interval not long enough to be informative developmentally
  - Changes in substance use over one year might not be meaningful
- Unclear the extent to which unstable patterns were due to measurement error
  - Might have been further confounded by creating binary variables from continuous variables