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THE ROLE OF THE COMMUNITY IN REDUCING TEEN SUBSTANCE USE

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Introduction and Purpose

- Communities have a long tradition of attempting to intervene in teen substance use behaviors, through both direct and indirect prevention activities
 - Direct activities might include anti-drug coalitions or students who join together to prevent use
 - Indirect activities might include after-school activities or facilities where students can spend free time
- Research question: What is the role of direct and indirect community programs and activities in reducing teen substance use?
- Looking at big picture – non-program specific

Background

- **Direct Prevention Activities**
 - Many studies have explored the impact of specific prevention programs on youth drug use, but few have examined the presence of any prevention program across a relatively large number of schools
 - We are unaware of any studies looking at the differential effect of prevention programs across different substances
 - Peer-led prevention activities show some effectiveness in reducing drug use, with the social influence strategy being most promising

Background

- **Indirect Prevention Activities**

- Purpose - give kids opportunities for recreation and enrichment, as well as keep them out of trouble (3-6 p.m. primetime)
- After-school programs show effectiveness at reducing crime, increasing school success, and reducing drug use, but results vary according to the quality of the program (Miller, 2001)
- Current policy issues – 40% budget cut proposed by Bush Administration for after-school programs

Sampling and Methods

- 518 communities in catchment areas surrounding public schools in a nationally representative sample of students (n = 134,747) in 8th, 10th and 12th grades in the coterminous U.S. in 1999, 2000, & 2001 (Monitoring the Future study, NIDA)
- CATI telephone interviews using modified snowball sampling technique to identify key informants with knowledge of community and its substance use and prevention activities – health dept. official, police chief, police officer, prosecutor, and substance abuse coalition coordinators
- Community-level (aggregated up from individual-level) MTF data on youth alcohol, tobacco, and marijuana use (prevalence and heavy use)

Methods Continued

- Ordinary Least Squares Regressions conducted to examine the relationships between each of the following variables:
 - **Community Harm Reduction**
 - **Student Organizations** to prevent a) alcohol, b) tobacco, & c) marijuana
 - **Unsupervised Facilities**
 - **Supervised After-school Activities**
 - Including control variables in all regressions

AND

- 30-day prevalence rates for alcohol, tobacco, and marijuana (*use* and *heavy use*)

Independent Variables

Direct Prevention Activities

- Community harm reduction strategies:
 - Night clubs w/ designated teen night
 - Free rides home from events to prevent drunk driving
 - Removal of buildings that serve as centers for illicit drug activities
 - Zoning laws to ban or restrict # of community alcohol outlets
 - Alcohol-free after-prom, graduation & homecoming activities

Independent Variables Cont.

Direct Prevention Activities

- Student-led organizations to prevent substance use:
 - Student organizations to prevent alcohol abuse (e.g. SADD)
 - Student organizations to prevent tobacco use (e.g. Students Together Against Tobacco (STAT))
 - Student organizations to prevent drug abuse

Independent Variables Cont.

Indirect Prevention Activities

- Unsupervised facilities for youth to spend free time:
 - Game arcades
 - Teen centers
 - Ice or roller skating rinks
 - Indoor sports facilities (e.g. YMCA, etc.)
 - Playgrounds, parks, inc. night-lit parks
 - Movie theaters
 - Coffee houses/shops
 - Teen programs at places of worship
 - Shopping malls (indoor or outdoor)
 - Other unsupervised places (clubs, dance areas, etc.)

Independent Variables Cont.

Indirect Prevention Activities

- Supervised after-school activities:
 - School-based athletics
 - Athletic opportunities not associated w/ school
 - Part-time employment
 - Tutoring or other academic enrichment
 - Mentoring programs
 - Volunteer opportunities

Community Variables

N = 518

Independent Variables	Mean	Std. Dev.
Community Harm Reduction* (5-item scale)	3.17	0.85
Student-led Organizations – Alcohol	0.81	0.28
Student-led Organizations – Tobacco	0.49	0.32
Student-led Organizations – Drugs	0.64	0.30
Unsupervised Facilities* (10-item scale) (N=367)	8.22	1.46
Supervised After-school Activities* (6-item scale)	5.80	0.33

*We summed independent variable sub-measures and took the average to develop scale variables (weighted by community)

Dependent Variables

- **School prevalence in past 30 days*** for alcohol, tobacco, and marijuana
- **School heavy use prevalence in past 30 days**
 - Heavy alcohol use is defined as being drunk at least once in last 30 days
 - Heavy cigarette use is defined as 10 or more cigarettes per day in the last 30 days
 - Heavy marijuana use is defined as use on at least 20 occasions in the last 30 days

*Represents aggregated MTF school prevalence rates

Substance Use Variables*

Dependent Variables	Mean	Std. Dev.
Smoking Prevalence Past 30 days	0.230	0.122
Heavy Smoking Past 30 days	0.069	0.067
Drinking Prevalence Past 30 days	0.367	0.153
Heavy Drinking Past 30 Days	0.205	0.139
Marijuana Use Prevalence Past 30 days	0.170	0.094
Heavy Marijuana Use Past 30 days	0.058	0.047

*Data presented are the proportion of students in schools who used these substances

N = 518

Control Variables

- Grades 8, 10, & 12
- Race – White, Black, Asian, Hispanic, Other
- Median household income
- Presence of father in household
- Religious service attendance – weekly or more

Control Variables

Control Variables	Mean	Std. Dev.
Grade 8	0.37	0.48
Grade 10	0.33	0.47
Grade 12	0.30	0.46
Race - White	0.64	0.30
Race - Black	0.13	0.22
Race – Hispanic	0.12	0.19
Race - Asian	0.04	0.07
Race – Other	0.07	0.07
Median Household Income	\$46,315	\$17,985
Presence of Father in Household	0.77	0.12
Religious Service Attendance	0.55	0.14

N = 518

Main Regression Effects***

Variables N = 518	Smoking		Drinking		Marijuana Use	
	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use
Community Harm Reduction	-0.017**	-0.006*	-0.003	-0.010	-0.002	-0.005*
Student Org. – Tobacco	-0.038**	-0.010	--	--	--	--
Student Org. – Alcohol	--	--	-0.024	-0.035*	--	--
Student Org. - Drugs	--	--	--	--	-0.016	-0.013*
Unsupervised Facilities (N = 367)	-0.008*	-0.003	-0.002	-0.0004	0.004	0.001
Supervised After-School Activities	-0.029*	-0.010	-0.037**	-0.027*	0.013	0.014**

***Controlling for: grade, ethnicity, religion, income, family structure

*=<.05

**=<.01

Summary

Community Measures

- **Community Harm Reduction** is significantly related to a decrease in the prevalence of smoking, heavy smoking, and heavy marijuana use
- **Student-led Organizations** are significantly related to reduced smoking, heavy drinking, and heavy marijuana use
- **Unsupervised Facilities** are significantly related to reductions in smoking
- **Supervised After-school Activities** are significantly associated with reductions in smoking, drinking and heavy drinking, and increases in heavy marijuana use

Summary

Control Variables

- The control variables account for a fairly high proportion of the variance
- **Grade**
 - students in higher grades are more likely to use all substances
- **Ethnicity**
 - Black, Asian, Hispanic students are, on average, significantly less likely to use all substances (compared to Whites)
- **Religion**
 - students who attend weekly religious services are significantly less likely to regularly use alcohol and marijuana (heavy cigarette smoking in some instances)

Summary

Control Variables

- **Family Structure**

- students who have a father in the household are significantly less likely to smoke cigarettes heavily and use marijuana regularly or heavily (relatively stronger effect)

- **Income**

- students with a higher than average median income are, in general, less likely to use cigarettes and more likely to use marijuana and alcohol

Limitations

- We don't know what's in the black box in terms of different approaches to prevention
- Reliability of the sampling frame needs continued improvement (response rates, representativeness, jurisdictional concerns)
- Aggregate-level data may inflate significance of findings
- Only three years of data so trend analysis is difficult
 - One variable (Unsupervised Facilities) for only two years
- Some items were deleted from each scale due to lack of consistent data across all three years
- All items in each scale were given the same weight

Implications

- In terms of overall strategies to reduce substance use:
 - Community support networks appear to have the most consistent impact on smoking reduction
 - For reducing alcohol use, supervised after-school activities appear most effective (both use & heavy use); student-led organizations appear to reduce heavy drinking
 - Marijuana use was least sensitive to community-level strategies - only heavy use was deterred by student-led organizations aimed at reducing drug use; none of these strategies worked to deter occasional use
- Policy implications – while effect sizes are relatively small, both direct and indirect prevention activities show differential impact on various substances.

Future Directions

- Examine individual scale items to look at relative importance of each factor (e.g. physical vs. non-physical activities)
- Conduct factor analyses on scales to determine whether items within scales hang together
- Add school variables & controls
- Future data collection includes variables more directly associated with community social capital
- Bring analysis to individual level



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Bridging the Gap: Practice for Healthy Youth Behavior



*A Policy Research Partnership
to Reduce Youth Substance Use*

Frank Chaloupka
University of Illinois at Chicago
Health Research and Policy Centers



Lloyd Johnston
University of Michigan
Institute for Social Research

Variables N = 518 * = <.10, **=<.05, ***=<.01	Smoking		Drinking		Marijuana Use	
	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use
Community Harm Reduction	-0.02***	-0.01**	-0.003	-0.01	-0.002	-0.005**
Grade 10	0.08***	0.03***	0.16***	0.13***	0.10***	0.04***
Grade 12	0.15***	0.07***	0.27***	0.23***	0.11***	0.05***
Race -- Black	-0.18***	-0.14***	-0.12***	-0.15***	-0.10***	-0.10***
Race -- Asian American	-0.30***	-0.09*	-0.33***	-0.28***	-0.21***	-0.10**
Race -- Hispanic	-0.13***	-0.12***	-0.01	-0.10***	-0.03	-0.03***
Race -- Other Race	-0.02	-0.10***	0.11*	0.09	0.31***	0.10***
Religious Services Attend.	-0.02	-0.04**	-0.14***	-0.09***	-0.14***	-0.06***
Presence of Father	-0.03	-0.11***	0.08	0.01	-0.19***	-0.11***
Median Household Income	-0.01***	-0.01***	0.003	0.001	0.01**	0.001
Constant	0.36***	0.24***	0.26***	0.18***	0.31***	0.17***
R-squared	0.47	0.50	0.67	0.60	0.48	0.40

Variables N = 518 * = <.10, **=<.05, ***=<.01	Smoking		Drinking		Marijuana Use	
	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use
Student Org. – Tobacco	-0.04***	-0.01	--	--	--	--
Student Org. – Alcohol	--	--	-0.02	-0.04**	--	--
Student Org. - Drugs	--	--	--	--	-0.02	-0.01**
Grade 10	0.08***	0.03***	0.16***	0.13***	0.10***	0.04***
Grade 12	0.15***	0.08***	0.27***	0.22***	0.10***	0.05***
Race -- Black	-0.18***	-0.14***	-0.12***	-0.15***	-0.08***	-0.06***
Race -- Asian American	-0.32***	-0.10*	-0.33***	-0.28***	-0.21***	-0.11***
Race -- Hispanic	-0.15***	-0.13***	-0.02	-0.11***	-0.03*	-0.03***
Race -- Other Race	-0.01	-0.10***	0.12*	0.10	0.32***	0.10***
Religious Services Attend.	-0.03	-0.04*	-0.14***	-0.10***	-0.15***	-0.06***
Presence of Father	-0.02	-0.12***	0.085	0.01	-0.19***	-0.12***
Median Household Income	-0.01***	-0.01***	0.003	0.002	0.01***	0.002
Constant	0.32***	0.23***	0.27***	0.19***	0.31***	0.17***
R-squared	0.46	0.49	0.67	0.60	0.48	0.67

Variables N = 518 * = <.10, **=<.05, ***=<.01	Smoking		Drinking		Marijuana Use	
	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use
Unsupervised Facilities (N = 367)	-0.01**	-0.003	-0.002	-0.0004	0.004	0.001
Grade 10	0.09***	0.03***	0.18***	0.14***	0.10***	0.04***
Grade 12	0.15***	0.07***	0.27***	0.23***	0.11***	0.05***
Race – Black	-0.22***	-0.13***	-0.17***	-0.20***	-0.11***	-0.07***
Race – Asian	-0.24**	-0.09	-0.32***	-0.27**	-0.18**	-0.10**
Race – Hispanic	-0.17***	-0.13***	-0.02	-0.12***	-0.06**	-0.05***
Race – Other Race	0.01	-0.09***	0.12*	0.12*	0.37***	0.12***
Religious Services Attend	0.01	-0.02	-0.13***	-0.09**	-0.12***	-0.05***
Presence of Father	-0.14	-0.14***	-0.07	-0.10	-0.25***	-0.14***
Median Household Income	-0.01***	-0.01***	0.01*	0.01	0.01**	0.002
Constant	0.41***	0.24***	0.36***	0.24***	0.30***	0.15***
R-squared	0.48	0.48	0.69	0.62	0.50	0.37

Variables N = 518 * = <.10, **=<.05, ***=<.01	Smoking		Drinking		Marijuana Use	
	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use	Prev. of Use	Heavy Use
Supervised After-School Activities	-0.029**	-0.010	-0.037***	-0.027**	0.013	0.014***
Grade 10	0.077***	0.030***	0.161***	0.130***	0.098***	0.041***
Grade 12	0.145***	0.073***	0.266***	0.222***	0.108***	0.049***
Race – Black	-0.200***	-0.141***	-0.120***	-0.153***	-0.092***	-0.067***
Race -- Asian American	-0.316***	-0.098*	-0.308***	-0.273***	-0.222***	-0.120***
Race – Hispanic	-0.153***	-0.131***	-0.011	-0.103***	-0.037*	-0.040***
Race -- Other Race	-0.010	-0.100***	0.112*	0.096	0.314***	0.100***
Religious Services Attendance	-0.029	-0.041**	-0.147***	-0.098***	-0.137***	-0.058***
Presence of Father	-0.039	-0.114***	0.086	0.011	-0.198***	-0.119***
Median Household Income	-0.011***	-0.007***	0.004	0.002	0.005**	0.001
Constant	0.486***	0.285***	0.470***	0.326***	0.230***	0.078**
R-squared	0.46	0.50	0.68	0.61	0.48	0.40