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Early Alcohol Use as a Risk Factor for Drug Use and Dependence



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ABSTRACT

- Early alcohol use has the potential to affect an individual's risk of later alcohol dependence and/or illicit drug use/abuse/dependence
 - The present analyses assess the risk of substance use, abuse, and dependence in a sample of 752 Vietnam-era twin pairs discordant for early alcohol use (i.e., one drank regularly before age 17)
 - Analyses indicate that:
 - Early alcohol users are at increased risk of illicit drug use (MJ, STM/COC, SED, OP, HALLU)
 - Early alcohol users are at increased risk of alcohol dependence, MJ abuse/dependence, and STM/COC abuse/dependence
 - Increased risk is not attenuated by the inclusion of additional covariates (e.g., conduct disorder, early nicotine use, depression, service in Southeast Asia, PTSD)
-

INTRODUCTION

- Adolescent deviance has the potential to impact adult development
 - Adolescent alcohol use is an interesting measure since, although deviant in adolescence, the behavior becomes normative in adulthood
 - The present analyses explore whether early regular alcohol use (i.e., drinking at least once per month for six or more months before age 17) is related to adult substance use, abuse, and dependence
-

SAMPLE

- 3415 twin pairs (6830 individuals) in the Vietnam Era Twin (VET) Registry, a national registry of male-male twin pairs in which both individuals were in the military during the Vietnam era
 - All completed a telephone diagnostic interview in 1992
 - 96% also completed a self-report questionnaire in 1987
 - The respondents had a mean age of 41.9 years at the time the 1992 interview
 - The respondents had a mean age of 19.3 years at the time of entry into the military
-

SAMPLE, cont.

Race

Caucasian	94%
African-American	6%
Other	< 1 %

Marital Status

Married	77%
Widowed	< 1%
Separated	2%
Divorced	13%
Single	7%

Educational Level

< High school	3%
High school	31%
Some college	26%
Voc./Tech. degree	16%
Bachelor's degree	13%
Some graduate work	4%
Graduate degree	7%

NOTE: race and educational level were asked in 1987;
marital status was asked in 1992

MEASURES

1992 Telephone Interview

- Alcohol use:
 - Regular (at least once a month for 6+ months)
 - Early (regular use before age 17)
 - DSM-III-R dependence
 - Illicit drug use:
 - 5 drug classes were assessed individually (marijuana, stimulants/cocaine, sedatives, opiates, hallucinogens)
 - Ever tried
 - DSM-III-R abuse/dependence
 - See Table 1 for percentages of respondents who have used the substances and the mean age of initiation
-

TABLE 1

	Percent of sample (n=6830)	Mean age of initiation	Percent who first used		
			Before military	During military	After military
Regular alcohol use	88% (n=6040)	18.5	54%	42%	4%
Early alcohol use	17% (n=1134)	14.9	100%	0%	0%
Ever tried marijuana	48% (n=3245)	20.0	28%	59%	13%
Ever tried stimulants/cocaine	23% (n=1560)	21.9	16%	52%	31%
Ever tried sedatives	12% (n=847)	21.8	15%	53%	32%
Ever tried opiates	7% (n=511)	21.4	9%	68%	23%
Ever tried hallucinogens	13% (n=888)	21.0	16%	59%	25%

Measures, cont.

1992 Telephone Interview

- DSM-III-R Depression (lifetime)
- DSM-III-R PTSD (lifetime)
- DSM-III-R Conduct disorder (before age 15)

1987 Self-report Questionnaire

- Early nicotine use (100+ cigarettes before age 17)
 - Southeast Asia service during the Vietnam era
-

ANALYSES

- Pairs were classified according to whether none/one/both members used alcohol early (i.e., before age 17):
 - 191 pairs were concordant for early alcohol use
(37% began using regularly at the same age; 30% were 1 year apart)
 - 752 pairs were discordant for early alcohol use
(0% began using regularly at the same age; 13% were 1 year apart)
 - 2472 pairs were concordant for not using alcohol before age 17
(28% began using regularly at the same age; 33% were 1 year apart)
 - Preliminary analyses:
 - Comparisons of respondents using alcohol and illicit drugs
 - Comparisons of respondents meeting alcohol dependence and/or illicit drug abuse/dependence
 - Examination of covariates
 - Early regular alcohol use as a predictor of later alcohol dependence as well as illicit drug use, abuse/dependence
-

RESULTS

Preliminary Analyses

- The observed patterns of alcohol and illicit drug use and abuse/dependence were consistent with the hypothesis that early alcohol use is related to later drug use and dependence (i.e., the highest risk group was pairs concordant for early use, next in risk were the early using individuals from discordant pairs, third in risk were the non-early-using individuals from discordant pairs, and the lowest risk group was pairs concordant for not using alcohol early)
 - See Table 2 for substance use statistics
 - See Table 3 for substance abuse/dependence statistics
 - See Table 4 for covariance statistics
-

TABLE 2

Substance Use

	191 prs. conc. for early use (n=382)	752 discordant pairs		2472 prs. conc. for not using early (n=4944)
		Early users (n=752)	Not early users (n=752)	
Regular alcohol use	100%	100%	93%	85%
MJ ever	71%	64%	58%	42%
STM/COC ever	45%	38%	32%	17%
SED ever	33%	21%	16%	9%
OPI ever	23%	14%	10%	5%
HALLU ever	31%	22%	18%	10%

TABLE 3

Substance Abuse/Dependence

	191 prs. conc. for early use (n=382)	752 discordant pairs		2472 prs. conc. for not using early (n=382)
		Early users (n=752)	Not early users (n=752)	
Alcohol dependence	63%	57%	42%	29%
MJ abuse/dep.	16%	14%	10%	5%
STM/COC abuse/dep.	15%	9%	6%	3%
SED abuse/dep.	5%	3%	2%	<1%
OPI abuse/dep.	4%	2%	1%	<1%
HALLU abuse/dep.	5%	2%	2%	<1%

TABLE 4

Covariates

	191 prs. conc. for early use (n=382)	752 discordant pairs		2472 prs. conc. for not using early (n=382)
		Early users (n=752)	Not early users (n=752)	
Conduct disorder (before age 15)	24%	18%	12%	6%
Early nicotine use (before age 17)	57%	46%	30%	18%
Depression (lifetime)	16%	14%	9%	8%
PTSD (lifetime)	23%	13%	12%	8%
Southeast Asia service	42%	39%	39%	38%

RESULTS, cont.

Regression Analyses

- All regression analyses were conducted using the statistical package STATA
 - 752 pairs discordant for early alcohol use were further analyzed through conditional logistic regression analyses
 - Conditional logistic regression was used to test for increased risk of later drug use and dependence for early alcohol users compared to their non-early-using cotwins
 - Because preliminary analyses indicated that the interaction between zygosity and early alcohol use was not significant, the analyses were collapsed across zygosity
 - Conditional logistic regression analyses indicated that early alcohol users were at increased risk of trying all illicit drugs; the risk was not attenuated when covariates were included in the model (see Table 5)
 - Conditional logistic regression analyses indicated that early alcohol users were at increased risk of alcohol dependence, and abuse/dependence for MJ and STM/COC; suggestive evidence was obtained for SED and OP abuse/dependence (see Table 6)
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TABLE 5

Drug Use Risk for Early Alcohol Users

	Unadjusted Conditional Odds Ratio	Adjusted Conditional Odds Ratio	Covariates
MJ ever	1.51* (1.17-1.94)	1.65* (1.21-2.25)	CD*, PTSD*, DEPR ^t , SE Asia ^t
STM/COC ever	1.53* (1.17-2.01)	1.47* (1.07-2.03)	PTSD*, CD ^t
SED ever	1.58* (1.16-2.16)	1.59* (1.09-2.31)	DEPR ^t , SE Asia ^t , PTSD ^t
OP ever	1.59* (1.12-2.25)	1.63* (1.05-2.53)	SE Asia*, DEPR ^t , PTSD ^t
HALLU ever	1.42* (1.04-1.93)	1.55* (1.08-2.23)	PTSD*

* indicates $p < .05$

^t indicates $p < .20$

TABLE 6

Drug Abuse/Dependence Risk for Early Alcohol Users

	Unadjusted Conditional Odds Ratio	Adjusted Conditional Odds Ratio	Covariates
Alcohol dependence	2.19* (1.72-2.79)	2.33* (1.74-3.10)	PTSD*, SE Asia ^t
MJ abuse/dep.	1.59* (1.10-2.30)	1.83* (1.17-2.86)	DEPR*, SE Asia ^t
STM/COC abuse/dep.	1.66* (1.09-2.52)	1.57 (0.96-2.56)	DEPR*
SED abuse/dep.	2.00 (0.97-4.12)	1.96 (0.78-4.93)	CD ^t , PTSD ^t
OP abuse/dep.	2.50 (0.97-6.44)	3.00 (0.97-9.30)	---
HALLU abuse/dep.	1.07 (0.52-2.22)	1.10 (0.45-2.67)	SE Asia ^t , CD ^t

* indicates $p < .05$

^t indicates $p < .20$

CONCLUSIONS

- The present analyses indicate that early regular alcohol use does increase the risk of adult substance use, abuse, and dependence
 - Early regular alcohol use increased the risk of trying marijuana, cocaine/stimulants, sedatives, opiates, and hallucinogens
 - This increased risk was not attenuated when covariates were included in the model
 - Early regular alcohol use increased the risk of alcohol dependence, and abuse/dependence for marijuana and stimulants/cocaine
-