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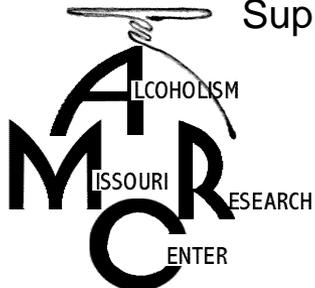
Genetic and Environmental Influences on Perceived Peer Alcohol Use During Adolescence

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ABSTRACT

- Peer alcohol use is one of the best predictors of an adolescent's alcohol use
 - Involvement with peers who drink may be influenced by genetic and/or environmental factors
 - The present analyses assessed:
 - Which adolescent characteristics are predictive of having friends who drink
 - To what extent having friends who drink is attributable to familial factors
 - Age, having older friends, conduct problems, and depression are significant risk factors; more frequent church attendance is protective
 - Having friends who drink during adolescence appears to be substantially influenced by shared environmental factors and minimally influenced by genetic factors
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INTRODUCTION

- Having friends who drink is one of the best predictors of an adolescent's alcohol use
- Involvement with peers who use alcohol can be influenced by genetic and/or environmental factors
- Understanding:
 - what adolescent characteristics contribute to having friends who use alcohol, and
 - the extent to which genetic and environmental factors influence the likelihood of having friends who drink

are important first steps in the prediction and prevention of adolescent alcohol use

RESEARCH QUESTIONS

- To what extent can perceived peer alcohol use be predicted by adolescent characteristics?
 - What are the relative contributions of genetic, shared environmental, and nonshared environmental factors to perceptions of peer alcohol use?
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SAMPLE

- Participants in the Missouri Adolescent Female Twin Study (MOAFTS), a population-based study of adolescent female twins born in Missouri to Missouri-resident parents
- 1283 Missouri-born female twin pairs (2566 individuals)

MZ = 739 DZ = 544

- Mean age = 15.48 years (range = 13-21)
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MEASURES

Adolescent Report

- How many of your friends drink alcohol? Would you say...

None	Some	Most	All
34%	38%	20%	8%
(n=866)	(n=970)	(n=517)	(n=207)

- Do any of your closest friends drink alcohol?

No	Yes
54%	46%
(n=1386)	(n=1168)

MEASURES, cont.

- Friends are mostly:

Younger	Same age	Older
2%	82%	15%
(n=58)	(n=2104)	(n=396)

- School grades: M=8.97 (range: 1-11), where 1=mostly Ds & Fs and 11=mostly As
 - Conduct problems: M=3.47 (range: 0-40), sum of 18 problem behaviors, with more deviant behaviors given extra weight
 - DSM-IV lifetime depression diagnosis: 9% (n=236)
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MEASURES, cont.

Parental Report of Twins' Behavior

- Oppositional-defiant symptoms: $M=1.52$ (range=0-8)
- Inattentive symptoms: $M=1.54$ (range=0-9)
- Hyperactive symptoms: $M=1.61$ (range=0-9)
- Twins' church attendance:

Never	< 1 x per month	Once per month	A few times per month	Once a week	> 1 x per week
12% (n=310)	22% (n=547)	6% (n=147)	13% (n=328)	26% (n=665)	21% (n=529)

DATA ANALYSIS

- Univariate and multivariate prediction of perceived peer alcohol use
 - Twin correlations for adolescents' perceptions of peer alcohol use
 - Familial logistic regression predicting perceived peer alcohol use
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RESULTS

- Univariate regression analyses indicated that several adolescent characteristics predict having friends who drink alcohol (see Table 1)
 - Multivariate regression analyses indicated that most characteristics had some unique predictive power (see Table 2)
 - Significant and substantial MZ and DZ correlations and odds ratios indicated substantial shared environmental influence and little genetic influence on perceptions of peer alcohol use (see Table 3)
 - Familial logistic regression suggested that individual characteristics are predictive of perceived peer alcohol use above and beyond the familial influences (see Table 4)
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TABLE 1

Univariate Prediction of Perceived Peer Alcohol Use

		Most friends drink	Any closest friends drink
Risk factors	Adolescent's age	*	*
	Friends are older	*	*
	Oppositional-defiant Sx	*	*
	Conduct problems	*	*
	Inattentive Sx		
	Hyperactive Sx		
	DSM-IV depression	*	*
Protective factors	School grades	*	*
	Friends are younger	*	
	Church frequency	*	*

* Indicates $p < .05$

TABLE 2

Multivariate Prediction of Perceived Peer Alcohol Use

	<u>Most friends drink</u>		<u>Closest friends drink</u>	
	Odds ratio	95% CI	Odds ratio	95% CI
Adolescent's age	6.25*	5.10 – 7.67	6.05*	4.98 – 7.37
Friends are older	1.57*	1.20 – 2.06	1.70*	1.28 – 2.27
Conduct problems	1.68*	1.50 – 1.88	2.02*	1.77 – 2.31
DSM-IV depression	1.48*	1.06 – 2.07	1.62*	1.11 – 2.36
School grades	1.07*	1.01 – 1.13	n.s.	---
Friends are younger	0.26*	0.26 – 0.64	n.s.	---
Frequency of church attendance	0.80*	0.67 – 0.97	0.70*	0.59 – 0.83

* indicates $p < .05$

TABLE 3

Familial Influences on Perceived Peer Alcohol Use

	<u>Most friends drink</u>		<u>Closest friends drink</u>	
	<u>Correlation</u>	<u>Odds Ratio</u>	<u>Correlation</u>	<u>Odds Ratio</u>
MZ	0.73*	4.85*	0.82*	8.28*
	(+/- .04)	(3.20 – 7.37)	(+/- .03)	(5.51 – 12.44)
DZ	0.74*	5.49*	0.76*	5.47*
	(+/- .04)	(3.34 – 9.01)	(+/- .04)	(3.46 – 8.66)

* indicates $p < .05$

TABLE 4

Familial Regression Predicting Perceived Peer Alcohol Use

	<u>Most friends drink</u>		<u>Closest friends drink</u>	
	Odds ratio	95% CI	Odds ratio	95% CI
Adolescent's age	4.20*	3.09 – 5.70	3.54*	2.61 – 4.79
Friends are older	1.52*	1.02 – 2.27	1.59*	1.02 – 2.47
Conduct problems	1.52*	1.31 – 1.75	1.77*	1.46 – 2.14
DSM-IV depression	n.s.	---	1.79*	1.00 – 1.99
Prevalence by zygosity	1.04	0.55 – 1.96	1.08	0.59 – 1.99
Cotwin's response	5.22*	3.76 – 7.23	6.93*	5.09 – 9.44

* indicates $p < .05$

CONCLUSIONS

- Adolescents' perceptions of peer alcohol use can be predicted from a number of adolescent characteristics (primarily conduct problems, depression, having older friends, frequency of church attendance)
 - Perceived peer alcohol use has a substantial familial component, which is attributable largely to shared environmental influences
 - There is some evidence of additional genetic influence for closest friends' alcohol use, since the correlation between twins and the Odds Ratio (predicting one twin's response from the other twin) are somewhat larger for MZ pairs than for DZ pairs
 - Further examination with siblings of different ages (i.e., full, half, step, and/or adoptive siblings), who do not share friends to such a high degree, may be needed in order to assess genetic influences on peer selection adequately
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