

Social Host Policies and Underage Drinking Parties

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Abstract:

Social host policies focused on underage drinking parties are implemented to reduce social availability of alcohol and high-risk drinking by adolescents in private locations. We examined the policies' relationship with drinking location, peer-group drinking size, heavy episodic drinking, and nonviolent consequences. Cross-sectional data from 11,205, 14–20-year olds, were analyzed using multilevel modeling. Policies were not associated with drinking location, decreased heavy episodic drinking, or nonviolent consequences. However, adolescents from communities with a preexisting policy had lower odds of drinking in large peer groups compared to those from communities without a policy at baseline. Additional research is needed to examine their effectiveness. The study's limitations are noted.

Keywords: adolescent | alcohol use | environmental strategy | heavy episodic drinking | public policy | social drinking context | social host policy | underage drinking

Article:

INTRODUCTION

Alcohol is the most misused substance by American adolescents (Johnston, O'Malley, Bachman, & Schulenberg, 2009), despite laws in all 50 states that restrict possession of alcohol for those under 21 (National Institute on Alcohol Abuse and Alcoholism, 2011). Underage alcohol use is associated with a variety of alcohol consumption-related consequences, including sexual assault, violence, and drinking and driving (Mayer, Forster, Murray, & Wagenaar, 1998; Shaffer & Ruback, 2002). According to the 2011 National Youth Risk Behavior Survey (YRBS), a national school-based survey that monitors health-risk behaviors among youth in grades 9–12, 70.8% of respondents have tried alcohol in their lifetime, 38.7% have had at least one drink in the previous 30 days, and 21.9% reported heavy episodic drinking in the past 30 days (Centers for Disease Control and Prevention, 2011).

Underage drinkers acquire most of their alcohol through social sources, such as peers, parents, and even strangers (Harrison, Fulkerson, & Park, 2000; Jones-Webb, Toomey, Miner, et al., 1997; Smart, Adlaf, & Walsh, 1996; Wagenaar et al., 1993; 1996). One study found that 80% of underage alcohol users, regardless of age, obtained alcohol exclusively from social sources (Harrison et al., 2000). Youth also frequently obtain alcohol at underage drinking parties. In a study conducted by Harrison et al. (2000) examining adolescent sources of alcohol, 32% of 6th graders, 56% of 9th graders, and 60% of 12th graders reported obtaining alcohol at a party. These gatherings are typically held in a private setting, such as a friend's home, are frequently unsupervised, provide easy access to alcohol, and involve large groups (Jones-Webb, Toomey, Miner, et al., 1997; Wagenaar et al., 1993).

Focus groups have revealed that large underage drinking parties provide a unique context where young drinkers are introduced to heavy drinking by older, more experienced drinkers (Wagenaar et al., 1996). For example, in one study of Canadian undergraduates, attending a party with a group size of more than 10 was associated with increased alcohol consumption (Demers et al., 2002). Similar findings were reported by Mayer and colleagues (1998) in a sample of high school students, with those who consumed five or more drinks on the last drinking occasion more likely to report being in a group of 11 or more.

Studies have also shown that drinking location is associated with consumption levels. Jones-Webb, Toomey, Short, et al. (1997) reported drinking in a public location was associated with increased alcohol consumption among underage drinkers, ages 16–18. In a study of 15-year-old New Zealand youth, Connolly, Casswell, Stewart, & Silva (1992) reported that drinking outside the home and with peers was associated with increased alcohol consumption. In addition, the situational context appeared to alter interpersonal influences, with drinking in peer-only groups diminishing the influence of parents on drinking behavior. Similar findings were reported for a US sample of junior and high school students by Harford and Spiegler (1983), who found that youth drank more when the drinking location was outside their home and with less adult supervision. Additionally, the heaviest consumption occurred when adolescents were in peer-only drinking situations. These studies highlight the importance of the drinking context as a social and cultural environment that may reinforce high-risk alcohol use.

Strategies to Address Social Availability

Communities, in cooperation with local law enforcement agencies, are using various strategies to address social availability of alcohol and underage drinking in residential settings, including shoulder tap operations, party patrols, and public policy (Applied Research Community Health and Safety Institute, 2009; National Research Council and Institute of Medicine, 2004; Toomey, Fabian, Erickson, & Lenk, 2007). Social host laws are public policies that focus on restricting the social availability of alcohol. These laws hold noncommercial providers of alcohol responsible for furnishing alcohol to underage persons or obviously intoxicated adults. Several studies have examined social host tort laws focused on those who furnish alcohol to intoxicated guests. Stout, Sloan, Liang, & Davies (2000) examined the effects of state regulation on legal aged individuals' decisions to engage in heavy episodic drinking and drinking and driving. Respondents living in states that recognized social host tort liability were significantly less likely to report heavy episodic drinking and drinking and driving than individuals living in states that did not have this law. Whetten-Goldstein, Sloan, Stout, & Liang (2000) found somewhat conflicting results in their study examining associations between alcohol control policies and motor vehicle fatality rates among 18–64- year olds. Findings revealed that social host tort liability was not associated with lower adult or minor death rates, an interesting outcome given Stout et al. (2000) finding of social host's impact on reduced self-reported heavy episodic drinking and driving.

While social host laws have traditionally focused on serving alcohol, states and communities are also applying liability to those who host or allow underage drinking on property they own or lease (CSLEP, 2005). This has led to a second “type” of social host law focused on hosting underage drinking parties. The primary purpose of these laws is to deter underage parties, because these settings are associated with increased risk of binge drinking and alcohol-related consequences (National Research Council and Institute of Medicine, 2004). These laws prohibit gatherings where underage drinking and disorderly behavior occurs, holding individuals accountable for parties and gatherings in residential settings or other private property. Social hosts include the property owner and any other person responsible for the setting, which may include youth, parents, tenants, or landlords. In most cases, the responsible party of the property does not have to be present at a gathering in order to incur a penalty.

As of January 1, 2011, 27 states and over 150 communities had a social host law or ordinance addressing underage drinking parties (Mothers Against Drunk Driving, 2009; National Institute on Alcohol Abuse and Alcoholism, 2011). Despite the number of states and communities that have passed or are currently trying to pass social host laws and ordinances, there are no published studies on their effectiveness. More research is needed to assess the effects of social host laws focused on underage drinking parties. To our knowledge, no studies have examined social host laws designed to alter the situational context and reduce large underage drinking parties by holding individuals accountable for actions on property they control.

Purpose of This Study

The purpose of this study is to contribute to the published literature by examining the effect of social host laws, specific to underage drinking parties, on the last drinking location, peer drinking group size, heavy episodic drinking, and associated nonviolent consequences.

Design of the Study

Data for this study were collected as part of the evaluation of the Enforcing Underage Drinking Laws Randomized Community Trial (EUDL-CT), a US Office of Juvenile Justice and Delinquency Prevention (OJJDP)-funded study conducted in 68 communities in five states. The goal of the study was to evaluate the impact of increased enforcement of underage drinking laws, using a coalition-based approach that promoted the implementation of the best and most promising practices.

To participate in EUDL-CT, eligible states responded to a solicitation, providing a list of at least 14, and no more than 28 cities/towns, that were willing to participate in EUDL-CT, if the state was funded. Communities were eligible to participate if they (1) were an incorporated city or town with a population between 25,000 and 200,000; and (2) had not participated in certain programmatic activities to reduce underage drinking in the previous 2 years (Office of Juvenile Justice and Delinquency Prevention, 2003).

Five states were funded to participate. Within each state, communities were matched on population, median family income, and the percentage of the population that were Black, Hispanic, spoke Spanish, and currently enrolled in college. After creating pairs, communities were randomly assigned to the intervention or comparison condition, resulting in a good balance on a number of community-level characteristics. Thirty-four communities served as intervention communities, and 34 served as comparison communities.

Intervention communities were required to complete the following activities during the 2-year implementation phase: (1) conduct at least two compliance check operations in at least 90% of off-premise alcoholic beverage outlets per year; (2) conduct at least one driving while intoxicated (DWI) enforcement operation, with a focus on youth; (3) conduct at least one additional enforcement operation to be selected from a list of “best and most promising”; and (4) adopt at least one new institutional or public policy (or improvement in at least one existing policy) related to underage drinking.

Population and Sample

A repeated cross-sectional sample of youth, aged 14–20, completed the Youth Survey (Total $N = 18,063$) in 2004, 2006, and 2007. The Youth Survey, administered via telephone by trained interviewers at the University of South Carolina Institute for Public Service and Policy Research (USC), the University of New Hampshire, and the Wake Forest University Survey Research Center, included questions on self-reported alcohol use, sources of alcohol, perceived availability of alcohol, characteristics of last drinking occasion, and health-risk behaviors. The surveys were fielded between January and August of each year. An age-targeted sample from each community was used with a goal of obtaining at least 100 youth per community, per wave.

Community-level data for each community were obtained from the 2000 US Census Summary Files 1 and 3 (United States Census Bureau, 2002). Community data on community demographics, socioeconomic status (SES), and family structure were compiled and merged with the Youth Survey data using Federal Information Processing Standards (FIPS) codes.

Public policy adoption and amendments focused on underage drinking were tracked in all 68 EUDL-CT communities. The study team searched on-line municipal codes for 21 specific policies (including social host laws focused on hosting underage drinking parties) that had previously been identified as the best and most promising practices. When some were found to exist, passage date and policy language were entered into a database. When municipal codes were not available, city clerks were contacted to request clarification. Because intervention communities were required by the study to log information monthly about policy progress and changes into an online data collection system, the study team cross-referenced online municipal codes with policy outcomes that were entered into the study data collection system. Additionally, online codes were cross-referenced with qualitative data collected during evaluation site visits. Discrepancies were checked with city clerks.

The home institution provided Institutional Review Board, human participant review, and study oversight.

MEASURES

Dependent Variables

Location of last drinking occasion, peer drinking group size on last drinking occasion, heavy episodic drinking on last drinking occasion, and alcohol-related, nonviolent consequences over the past year were the four outcomes. Location of last drinking occasion was collected using the question, “The last time you drank any alcohol, where were you when you did most of your drinking?” Respondents who reported drinking at home, including an apartment or dorm, or in another person’s home were coded “1” (i.e., residential). Any other location (i.e., bar, restaurant, school, beach) was coded “0” (i.e., nonresidential).

Peer drinking group size on last drinking occasion was collected using the question, “The last time you drank any alcohol, about how many people were you with, if any?” The outcome was run separately, first as a dichotomous variable, splitting peer drinking group size into small and large groups. If respondents answered that they were with 11 or more people on the last drinking occasion, they were coded “1” (i.e., large group). If they responded that they were with 1–10 people, they were coded “0” (i.e., small group).

Heavy episodic drinking on last drinking occasion was assessed by asking participants “The last time you drank any alcohol, how many (of each type) did you have: (1) cans, bottles, or glasses of beer, (2) bottles of wine coolers, (3) glasses of wine, (4) mixed drinks or shots of liquor, or (5) other (specify)?” The sum was calculated over all types. Females who responded that they consumed four or more drinks and males who responded they consumed five or more drinks, received a score of “1.” Females who reported 1–3 drinks and males who reported 1–4 drinks received a score of “0.”

Alcohol-related, nonviolent consequences were assessed by asking participants if they had experienced any of the following in the past year: cited or arrested for drinking, possessing, or trying to buy an alcoholic beverage; cited or arrested for driving under the influence of alcohol;

missed school due to drinking; warned by a friend about your drinking; passed out; unable to remember what happened while drinking; broke or damaged something; had a headache or hangover; punished by own parents or guardian for drinking alcohol; had sex without using a condom while drinking; and had been involved in a motor vehicle crash. Responses were dichotomized by coding a “yes” response to any of the consequences as “1.”

Independent Variables

Individual-Level Characteristics

Demographic information was collected as part of the Youth Survey. Age was included as a continuous variable. The following variables were dichotomized and received a score of “1”: gender (female), race (White), and mother’s college education. Race was dichotomized into White and non-White due to small sample sizes of other racial/ethnic groups in the sample. Survey year referred to the year in which the Youth Survey was completed by the individual. Surveys completed in 2007, at the end of the intervention period, received a score of “1.” Those who completed in 2006, received a “2.” Those completed at baseline, in 2004, received a score of “3.”

Community-Level Characteristics

Community-level characteristics were selected based on the initial bivariate analyses based on the previous literature showing associations between community level factors and alcohol use (Allison et al., 1999; Brook, Nomura, & Cohen, 1988; Eitle & Eitle, 2004; Song et al., 2009). Community-level characteristics are described in Table 1. Population and income were dichotomized based on the median distribution of the 68 communities. Population over 47,216 and income above \$54,751.50 were coded “1.” Treatment condition was dichotomized as Intervention versus Comparison communities, with Intervention communities receiving a score of “1” and Comparison communities receiving a score of “2.”

The social host policy variable was created using the study’s policy database. In an effort to account for length of policy exposure in communities in relation to the annual survey assessments, social host policy status was categorized using the following: A score of “1” was given to sites that passed a local policy or whose state passed a policy focused on hosting underage drinking parties during the EUDL-CT intervention (i.e., 2005 or 2006). Sites that passed a policy or whose state passed a policy prior to EUDL-CT (i.e., 2004 or before) were given a score of “2.” Sites were given a score of “3” if the policy passed after the EUDL-CT intervention was completed (i.e., 2007 or later) at the state or local level. In addition, sites that had no policy at the state or local level were given a score of “3.”

ANALYSIS

Multilevel modeling was used to account for the nesting of youth within communities, as youth from the same community are more alike than youth from different communities (Murray & Short, 1996). Bivariate and multivariate analyses were used to determine if social host policy status was related to the social drinking context, drinking behavior, and alcohol-related

nonviolent consequences. This process was repeated for each of the four outcomes with generalized estimating equations (GEE) (Zeger & Liang, 1986) using PROC GENMOD with REPEATED statement. Odds ratios (OR) and 95% confidence intervals (CI) were calculated. Data were analyzed using the Statistical Analysis Software (SAS) version 9.2 (SAS Institute Inc., 2009).

Due to large correlations between several community-level variables, three variables were excluded (see Table 1). The nine community-level variables included in the model-building process included median household income, college education, employment status, married couple family, grandparents as caregivers, White, population, treatment condition, and social host policy status. Individual and community level variables were removed from the model-building process if $p > .25$. Treatment condition, social host policy status, and survey year were included in each of the models. In addition, an interaction term, time by social host policy status, was included in each model.

TABLE 1. Community-level characteristics of study communities ($N = 68$)

Community-level characteristic	Definition	Median
<i>2000 census city/town level data</i>		
Median household income	Income in 1999 (\$)	\$54,751.50
^a Poverty	Poverty status in 1999 (%)	5.4%
% College education	Educational attainment: >Bachelor's degree (%)	27.9%
% Employed	Employed civilian population, 16 years and over (%)	60.6%
^a Housing	Renter-occupied housing units (%)	35.4%
% Married couple family	Households by type-married couple family (%)	49.2%
% Grandparents as caregivers	Grandparent responsible for grandchildren (%)	38.9%
^a Female head of household	Female household, no husband present (%)	11%
% White	Race—Caucasian (%)	78.7%
Median population size	Size of city/town	47,216
<i>EUDL-CT data</i>		
Social host policy status	Passed social host policy, either at local or state level, focused on hosting underage drinking parties	24 sites: Pre-intervention policy passage 22 sites: Passed policy during intervention 22 sites: No policy
Treatment condition	Community was randomized to intervention or comparison condition for the EUDL-CT study	Intervention sites: 34 Comparison sites: 34

^aNot included in final model due to multi-collinearity.

Post Hoc Analyses

Post hoc analyses were run to examine peer drinking group size and alcohol-related, nonviolent consequences as continuous outcomes. However, no significant differences were detected for either outcome. Therefore, the dichotomous outcome is reported in the paper.

RESULTS

Description of the Sample

The full sample for EUDL-CT included 18,063 participants between the ages of 14 and 20. However, the sample for this study was restricted to youth who reported ever-consumption of

alcohol ($N = 11,205$), approximately 62% of the full EUDL-CT sample. Participants in this sample had a mean age of 16.7 years ($SD = 1.64$) and were predominantly White (81.4%). Forty-nine percent of participants were female. Approximately, 50% reported alcohol use in the past 30 days and 40.4% reported heavy episodic drinking on the last drinking occasion (see Table 2).

TABLE 2. Individual-level characteristics of study participants ($N = 11,205$)

Variable	Number	Percent
<i>Age</i>		
14	1,046	9.3%
15	1,875	16.7%
16	2,328	20.8%
17	2,544	22.7%
18	1,737	15.5%
19	928	8.3%
20	745	6.6%
<i>Race</i>		
White	9,091	81.1%
Non-White	2,074	18.5%
<i>Gender</i>		
Female	5,488	49.0%
Male	5,717	51.0%
<i>Mother's college education</i>	6,062	54.1%
<i>Survey year</i>		
2007	3,219	28.7%
2006	3,656	32.6%
2004 (Baseline)	4,330	38.6%
<i>Alcohol use</i>		
Past 30-day use	5,596	49.9%
Heavy episodic drinking, last drinking occasion; (males: five or more; females: four or more)	4,531	40.4%

Social Host Policy Status

Among the 68 communities, 24 sites had a social host policy in place at either the state or local level at the beginning of the EUDL-CT intervention. Twenty-two sites passed a local ordinance or their state passed a law during the EUDL-CT (i.e., during 2005 or 2006). Twenty-two sites had no policy in place at the end of the intervention. Social host policy groupings (i.e., passed prior to the intervention, passed during the intervention, no policy) were compared at baseline to determine if any differences existed between the groups. There were significant differences between the groups for race, population size, median household income, and treatment condition (Intervention versus Comparison) (see Table 3).

TABLE 3. Social host policy status group comparisons

Variable	Social host policy status			p value
	Passed prior to intervention	Passed during intervention	No law	
<i>Age</i>				.76
14	10.1%	9.8%	9.0%	
15	16.4%	16.8%	16.9%	
16	19.2%	20.8%	21.3%	
17	22.0%	21.4%	23.8%	
18	16.8%	16.9%	14.7%	
19	8.6%	8.0%	8.1%	
20	7.0%	6.4%	6.1%	
<i>Gender</i>				.10
Female	47.8%	46.0%	50.0%	
Male	52.2%	54.0%	49.9%	
<i>Race</i>				<.001
White	83.6%	86.0%	79.2%	
Non-White	16.3%	14.0%	20.8%	
<i>Mother's college education</i>				.36
Yes	51.7%	53.0%	54.4%	
No	48.3%	47.0%	45.6%	
<i>Treatment condition</i>				<.001
Intervention	46.5%	59.9%	43.5%	
Comparison	53.5%	40.1%	56.5%	
<i>Median household income</i>				<.001
High	35.7%	57.7%	61.9%	
Low	64.4%	42.3%	38.1%	
<i>Population size</i>				<.001
High	55.2%	39.4%	52.3%	
Low	44.8%	60.6%	47.7%	
<i>Past 30-day drinking</i>				.07
Yes	50.3%	52.3%	47.9%	
No	49.7%	47.7%	52.1%	
<i>Binge drinking (last drinking occasion)</i>				.49
Yes	60.6%	59.2%	58.4%	
No	60.6%	59.2%	58.4%	

Note: Boldface values indicate the significant variables.

Social Host Policies and the Social Drinking Context

Drinking Location

The final model for the odds of drinking in a residential setting included age, female, being White and survey year, and community-level variables treatment condition, employment status, population, and social host policy status (see Table 4). Individual-level variable being White and community-level variable employment status had significant and positive associations with the odds of drinking at a residential location on the last drinking occasion. Specifically, the predicted odds of drinking in a residential location were increased by about 20% for White youth than non-White youth. Age had a significant and negative association with the odds of drinking in a residential location. For every 1-year increase in age, youth had approximately 11% lower odds of drinking in a residential setting. For every 1% increase in employment in the community, youth had 1% increased odds of drinking in a residential location. Social host policy status and treatment condition were not associated with drinking location.

TABLE 4. Final multivariate model, residential location

Variable	Odds ratio	95% Confidence interval	p value
<i>Age</i>	0.89	0.86–0.92	<.0001
<i>Gender</i>			
Female	0.96	0.87–1.06	.47
Male ^a	–	–	–
<i>Race</i>			
White	1.20	1.06–1.36	.005
Non-White ^a	–	–	–
<i>Survey year</i>			
2007	1.07	0.91–1.28	.38
2006	1.07	0.88–1.30	.46
2004 ^a	–	–	–
<i>Treatment condition</i>			
Intervention	0.96	0.83–1.11	.57
Comparison ^a	–	–	–
<i>Population</i>			
>47,216	1.05	0.90–1.21	.54
≤47,216 ^a	–	–	–
<i>% Employment</i>	1.01	1.00–1.02	.005
<i>Social host policy</i>			
Passed during intervention	1.07	0.90–1.27	.38
Passed pre-intervention	1.07	0.89–1.30	.46
No law ^a	–	–	–
<i>Survey year * social host policy status</i>			.66

Note: Boldface values indicate the significant variables.

^aReference group.

Peer Drinking Group Size

The final model for the odds of drinking in a large peer group (i.e., 11 or more people in the group) included age, gender, mother’s college education, and survey year and community-level variables percent college educated, percent grandparents as caregivers, treatment condition, and social host policy status (see Table 5). Additional sub-analyses were run to compute predicted probabilities of survey year and social host policy status.

Multivariate regression analysis revealed that youth whose mother had a bachelor’s degree or higher had 11% higher for odds of drinking in large peer groups of 11 or more. In addition, for every 1-year increase in age, youth had 15% higher odds of drinking in a large group. Several variables were negatively associated with drinking in large groups including treatment condition and grandparents as caregivers. Specifically, youth from communities that participated in the study as an intervention site had approximately 11% lower odds of drinking in a large peer group.

TABLE 5. Final multivariate model, peer drinking group size

Variable	Odds ratio	95% Confidence interval	<i>p</i> value
<i>Age</i>	1.15	1.08–1.22	.001
<i>Gender</i>			
Female	0.98	0.90–1.06	.66
Male ^a	–	–	–
<i>Mother's college education</i>	1.11	1.01–1.20	.01
<i>Survey year</i>			
2007	0.94	0.81–1.07	.37
2006	0.74	0.62–0.89	.002
2004 ^a	–	–	–
<i>Treatment condition</i>			
Intervention	0.88	0.80–0.98	.02
Comparison ^a	–	–	–
<i>% Grandparents as caregivers</i>	0.99	0.99–0.99	.006
% College education	1.00	0.99–1.01	.11
<i>Social host policy</i>			
Passed during intervention	1.02	0.86–1.21	.78
Pre-intervention passage	0.83	0.69–0.98	.03
No law ^a	–	–	–
<i>Survey year * social host policy status</i>			.11

Note: Boldface values indicate the significant variables.

^aReference group.

Least square means and mean differences were run to explore the relationship between social host policy status by year. As shown in Figure 1, at baseline youth from communities that had a social host law in place at the beginning of the intervention had lower odds of drinking in large groups than youth from communities without a policy (OR = 0.827; CI = 0.69–0.99; *p* = .04). In addition, youth from communities that passed a policy during the intervention, and thus had no policy at baseline, had higher odds of drinking in a large group than youth from communities with a preexisting policy (OR = 1.24; CI = 1.06–1.44; *p* = .007). However, by follow-up, youth from pre-intervention policy passage communities had similar odds of drinking in a large group than youth from communities without a social host policy. Additionally, youth from communities that passed a social host policy during the intervention had higher odds of drinking in large groups than youth from communities without a policy (OR = 1.26; CI = 1.05–1.51; *p* = .009) and youth from communities with a preexisting policy (OR = 1.23; CI = 1.01–1.49; *p* = .034) (see Figure 1).

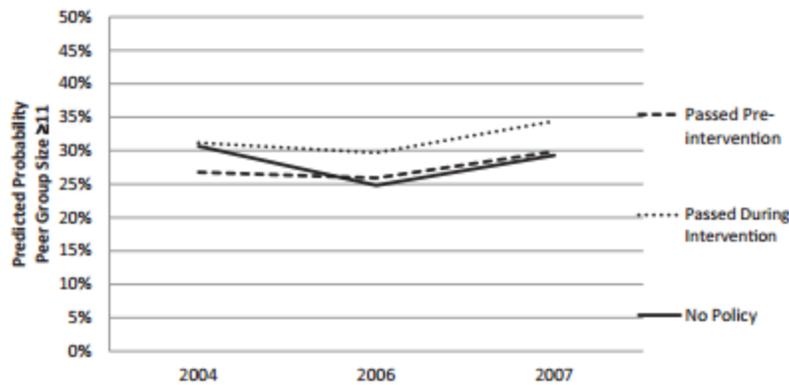


FIGURE 1. Predicted probability of drinking in peer group ≥ 11 people.

Social Host Policies and Adolescent Drinking Behavior

Heavy Episodic Drinking

The final model for the odds of heavy episodic drinking included age, gender, being White, survey year, and mother's college education, median family income, and social host policy status (see Table 6). The community's social host policy status did not significantly change heavy episodic drinking of youth over time ($p = .13$). White youth had approximately 33% higher odds of heavy episodic drinking than non-White youth. In addition, the predicted odds for heavy episodic drinking increased by approximately 30% for every 1-year increase in age.

Youth from communities with a higher median household income had 25% higher odds of heavy episodic drinking. Mother's college education was negatively associated with heavy episodic drinking, resulting in 11% lower odds.

TABLE 6. Final multivariate model, heavy episodic drinking

Variable	Odds ratio	95% Confidence interval	<i>p</i> -value
<i>Age</i>	1.30	1.27–1.33	<.0001
<i>Gender</i>			
Female	1.00	0.93–1.08	.84
Male ^a	–	–	–
<i>Race</i>			
White	1.33	1.16–1.52	<.0001
Non-White ^a	–	–	–
<i>Mother's college education</i>	0.89	0.82–0.97	.009
<i>Survey year</i>			
2007	1.08	0.98–1.18	.09
2006	0.98	0.91–1.07	.75
2004 ^a	–	–	–
<i>Treatment condition</i>			
Intervention	1.02	0.92–1.12	.68
Comparison ^a	–	–	–
<i>Median household income</i>			
>\$54,751.50	1.25	1.12–1.38	<.0001
≤\$54,751.50 ^a	–	–	–
<i>Social host policy</i>			
Passed during intervention	0.98	0.87–1.11	.82
Pre-intervention passage	0.94	0.82–1.09	.45
No law ^a	–	–	–
<i>Survey year * social host policy status</i>			.13

Note: Boldface values indicate the significant variables.

^aReference group.

Alcohol-Related, Nonviolent Consequences

The final model for the odds of alcohol-related, nonviolent consequences included age, gender, being White and survey year, median household income, population size, percent employed, percent grandparents as caregivers, treatment condition, and social host policy status (see Table 7).

TABLE 7. Final multivariate model, alcohol-related, nonviolent consequences

Variable	Odds ratio	95% Confidence interval	p value
<i>Age</i>	1.20	1.16–1.23	<.0001
<i>Gender</i>			
Female	0.94	0.87–1.00	.08
Male ^a	–	–	–
<i>Race</i>			
White	1.34	1.19–1.51	<.0001
Non-White ^a	–	–	–
<i>Survey year</i>			
2007	1.08	0.98–1.19	.10
2006	0.91	0.84–0.99	.03
2004 ^a	–	–	–
<i>Treatment condition</i>			
Intervention	0.99	0.92–1.08	.98
Comparison ^a	–	–	–
<i>Median household income</i>			
>\$54,751.50	1.34	1.19–1.50	<.0001
≤\$54,751.50 ^a	–	–	–
<i>Population</i>			
>47,216	0.92	0.84–1.01	.09
≤47,216 ^a	–	–	–
<i>% Employed</i>	0.99	0.97–0.99	.005
<i>% Grandparents as caregivers</i>	0.99	0.99–1.00	.09
<i>Social host policy</i>			
Passed during intervention	1.05	0.94–1.18	.31
Pre-intervention passage	0.96	0.86–1.08	.56
No law ^a	–	–	–
<i>Survey year * social host policy status</i>			.33

Note: Boldface values indicate the significant variables.

^aReference group.

Age, being White, survey year, median household income, and percent employment were significantly associated with nonviolent consequences. Specifically, White youth had approximately 34% higher odds of experiencing a nonviolent consequence in the past year than non-White youth. In addition, the predicted odds increased by approximately 20% for every 1-year increase in age. Youth from communities with a higher median household income had approximately 34% increased odds of experiencing a nonviolent consequence in the past year. Youth who completed the survey in 2006, the height of the EUDL-CT study, had an approximate 9% decreased odds of experiencing a nonviolent consequence compared to baseline (2004). Additionally, for every 1% increase in community employment, youth had 1% decreased odds of experiencing an alcohol consumption-related, nonviolent consequence. Social host policy status was not associated with nonviolent consequences.

DISCUSSION

This study examined the relationship between social host policies and adolescent's social drinking context, alcohol use, and associated consequences. Results indicated that preexisting social host policies or policies passed during a comprehensive intervention focused on enforcing underage drinking laws are not associated with changing drinking location or decreasing peer drinking group size, heavy episodic drinking, or nonviolent consequences.

While the findings of this study do not lend support for social host policies as a mechanism to change adolescent drinking behavior, we did find intriguing associations between policy status and peer drinking group size. At baseline, youth living in communities with a preexisting social host policy had lower odds of drinking in small groups compared to youth living in communities without a policy. We also found that youth from communities that passed policies during the intervention had higher odds of drinking in large peer groups at follow-up compared to youth from communities with a preexisting policy or no policy at all (see Table 5). Together, these findings suggest that policies have some level of time-dependence in order to begin having the intended consequence of reduced party size. This may be due to increased time that preexisting policies have had for promotion within the community and enforcement by local law officials, resulting in smaller drinking groups. This is an important finding as the main goal of these policies is to reduce large underage drinking parties (National Institute on Alcohol Abuse and Alcoholism, 2011), which have been shown to be associated with increased alcohol consumption (Demers et al., 2002; Mayer et al., 1998).

Social host policies were not associated with drinking location. Because these policies target social hosts of an underage drinking party, one might expect the laws to decrease alcohol use by underage drinkers on residential property. However, because the sample in this study was adolescents, it is not surprising that their drinking locations remained primarily residential because younger drinkers are less likely to drink in a commercial establishment. This is consistent with our finding that older adolescents had reduced odds of drinking in a residential location, a finding well documented in the literature (Dent, Grube, & Biglan, 2005; Wagenaar et al., 1996).

Perhaps, type of drinking location is not the best indicator of social host effectiveness for adolescent drinkers because their drinking locations are typically limited to residential settings. Instead, future research should consider if a residential location has been removed from an adolescent's "alcohol-friendly list." Over time, as knowledge of the policy and enforcement increases, more locations may be excluded from the drinkers' options. While those may be replaced with other residential settings, it is important to know if the policy can decrease the inventory of drinking locations for youth. In addition, law enforcement data could provide valuable information as we examine the effectiveness of social host laws. Examining patterns in calls for service for underage drinking parties could show locations within the community where residential partying is a problem and highlight locations that have had repeat calls for service. This may be the first evidence we see in support for social host laws and decreasing residential partying by underage drinkers.

The concept of drinking location must also factor in drinking displacement. In this study, we measured drinking location crudely as residential or nonresidential. Because youth can move

between communities, future research should measure constructs such as drinking displacement to other residential settings within the home community and to adjacent communities. Adolescents may be from a community with a social host law that reduces the number of drinking locations, but they can easily travel to a neighboring community that does not have the law or is not enforcing it. These are important considerations, as traveling to a drinking location outside of the home community could actually increase an adolescent's risk of consequences, such as drinking and driving.

This study found that youth who were older, White, and lived in upper median family income communities had higher odds of heavy episodic drinking and nonviolent consequences compared to youth who were younger, non-White, and from lower income communities. Our finding of increased alcohol use among higher SES youth is similar to that reported in the literature (Song et al., 2009) in that communities with high SES have increased adolescent alcohol use. Chuang, Ennett, Bauman, & Foshee (2005) also found this relationship mediated through parental drinking. High community SES was associated with parental drinking which, in turn, was associated with adolescent use. Putting this in the context of social host laws, parental use is an important consideration for future studies, as this may contribute to easy access to alcohol at home or a friend's home. Parental use may also contribute to liberal parental views on adolescent drinking and social norms of the community on allowing adolescents to drink at home or at someone else's home.

While it is the expectation that social host policies can affect the indirect and more distant outcomes of heavy episodic drinking and alcohol consumption-related consequences, it is more likely that effects will be observed first on the mediating factors, such as drinking location and peer group size and later on the more distal drinking outcomes, such as binge drinking. Future research should be adequately designed to measure the timing of policy effects on mediating factors, which are expected to be more immediate, and on long-term drinking outcomes, which may take more time for the policy to influence. In addition, it is possible that there are other mediating factors within the social drinking context that need to be measured that are influencing the outcomes. These may include highrisk drinking activities, such as playing drinking games (Kenney, Hummer, & Labrie, 2010) and drinking with a parent or guardian or having an adult-supervised party (Donnermeyer & Park, 1995; Foley, Altman, Durant, & Wolfson, 2004; Graham, Ward, Munro, Snow, & Ellis, 2006; Harford & Spiegler, 1983; Mayer et al., 1998). Parents and other adults who allow drinking to occur in their home communicate that alcohol use is acceptable when done at a private location and under supervision (Birckmayer, Boothroyd, Fisher, Grube, & Holder, 2008). This could influence how much alcohol the adolescent consumes and the consequences they experience.

Study Limitations

These results are subject to a number of limitations. First, the composition of the social host policy groupings could have resulted in selection bias. Underlying, unmeasured factors that led to social host policy status may explain the differential outcomes and suppress the social host policy effect. Additionally, even though communities were grouped by social host policy status in an attempt to account for the community's exposure to the policy, there were differential exposures within groups due to the varying times in which the policies were passed over the 4-

year study. For example, in comparing two communities that were grouped as “Passed during the intervention,” one community passed an ordinance in November 2006, during the final months of the intervention, resulting in, at most, 7-month exposure to the community before the follow-up. However, another community, also classified as “Passed during the intervention,” was exposed to an ordinance for over 24 months before follow-up. This difference in exposure within a single group could minimize any change in the expected outcome.

Regional differences in cultural norms and adolescent alcohol use could also be present and mask changes. In examining the differences at baseline for the social host policy groups, there were no significant differences in last 30-day use or past 2-week binge drinking (see Table 3). However, the racial composition of participants was significantly different between the groups, with more Whites in the “Passed prior to Intervention” and “Passed during the Intervention” compared to the “No Policy” communities. In addition, the “Passed prior to Intervention” group had a significantly higher median household income compared to the other groups, and the “Passed during the Intervention” group had a higher population and more Intervention communities compared to the “Passed prior to Intervention” and “No Policy” groups. Coupled with our findings that White, higher SES youth had higher odds of drinking in a residential location, heavy episodic drinking, and alcohol-related, nonviolent consequences, these differences at baseline could be masking the effect of social host policies.

Another important factor worth noting in how social host policy status was classified is that we did not take into account the type of liability (i.e., criminal versus civil penalties) or the level at which the policy was passed (i.e., state versus local). These are important considerations for future studies on social host laws, as policies with strict penalties, such as associated jail time, may not be as enforceable as a policy with a small monetary fine. This could be due to the high burden of proof required for law enforcement to achieve a conviction for a criminal law. Although accounting for these varying levels was beyond the scope of this study, future research should investigate the effectiveness of social host laws with these in mind, as it could provide much needed evidence to the practice community regarding policy penalties, jurisdictional level of the policy, and enforceability of the policy.

Another factor that could have affected our findings is historical conditions in each community. We did not control for any media or policy advocacy for the social host policies at the community or state level in this study. However, there were media and policy campaigns in many of the communities highlighting social host laws. For example, in examining one state from the study, one of its communities passed an ordinance during the intervention. Because the state did not have a social host law in place, the other 13 sites were classified as “No social host law.” However, the state was working on a state social host law and used media and policy advocacy to create support for the state law, resulting in support-building activities for the policy reaching many of the communities classified as “No social host law.”

Given the exposure to the policy, the findings from the “No social host law” group in this study may actually reflect what communities look like just prior to a policy passage. This may explain why “No social host policy” communities look similar to “Pre-passage” communities at follow-up for the peer group drinking size (see Figure 1). An influx of resources to build support for the policy may be able to change behavior of adults and adolescents, so that these communities have

similar findings to communities that have had a policy in place for an extended period of time. Communities that have passed the policy in the recent past may have exhausted resources in building its support and not have any resources for policy implementation. Therefore, additional research is needed to determine the amount of resources communities put toward passing a public policy in contrast to the resources used to support policy enforcement, and how this is associated with behavior change. Our crude measure of social host policy did not take into account if, or how, the policy was implemented by local enforcement. Anecdotal evidence suggests that poorly written laws or laws that have elevated penalties may not be enforced by local law enforcement (Applied Research Community Health and Safety Institute, 2009). Therefore, law enforcement data could provide important insight into the policy's implementation, as well as preliminary evidence of the policy's effect on party size and location. In addition to working with law enforcement and obtaining their feedback, the investigation of social host laws can be strengthened by adding supplemental data from parents and other community members to determine how their behavior has changed as a result of the policy.

Study Strengths

To our knowledge, this is the first study to examine social host laws focused on hosting underage drinking parties. This is an important topic as many states and communities are expending resources to pass such laws in an effort to reduce underage drinking and the associated consequences. These findings demonstrate that social host policies focused on underage drinking parties are associated with smaller party size in communities with an established policy. It also identifies key areas for future research on social host policies and adolescent drinking behavior, including examining how drinking location changes as a result of the policy, investigating varying characteristics of the policies, and examining policy enforcement.

DECLARATION OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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GLOSSARY

Community trial: A systematic experiment where communities are randomized to condition, to evaluate the effect of an intervention applied to the community level.

Social availability of alcohol: Access to alcohol through noncommercial sources.

Social host policies focused on underage drinking parties: State or local policies that are designed to deter underage drinking parties. These policies hold individuals liable for allowing underage drinking to occur on property they own, lease, or otherwise control.

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