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Underage drinking continues to be a major public health concern, partially due to the ease in which adolescents obtain alcohol and consume it in private locations. States and municipalities have implemented a variety of strategies to counteract this, including adopting public policies focused on underage alcohol use in residential settings, termed social host policies. The purpose of this study was to 1) conduct a critical analysis of social host policies and the factors they are intended to change; and 2) examine social host policies focused on hosting underage drinking parties as an environmental predictor for drinking location, peer drinking group size, heavy episodic drinking and associated non-violent consequences.

Three waves of cross sectional data from 11,205 14-20 year olds, nested within 68 communities in five states, who participated in the national evaluation of the Enforcing Underage Drinking Laws Randomized Community Trial (EUDL-CT), was analyzed using multi-level modeling. Social host policy status was categorized as passed prior to the EUDL-CT intervention, passed during the intervention, or no policy. Pre-existing social host policies or policies passed during the intervention were not associated with drinking location, decreasing heavy episodic drinking or decreasing alcohol related, non-violent consequences among adolescents. However, youth from communities that had a pre-existing social host policy had lower odds of drinking in large groups compared to youth from communities without a policy at baseline (OR=0.827, CI:0.69-0.99; p=0.04). At follow-up, youth from communities that passed a social host policy during the

intervention had higher odds of drinking in large groups compared to youth from communities without a policy (OR=1.26; CI=1.05-1.51; p=0.009) and youth from communities with a pre-existing policy (OR=1.23; CI=1.01-1.49; p=0.034).

Findings suggest that these policies require additional attention before conclusions can be drawn about their effectiveness. Additional research should focus on the differences in state versus local policies, liability associated with the policies, as well as the intensity of policy implementation by local communities. Future studies should also consider behavior change, not just of adolescents, but of other stakeholders, such as parents and local law enforcement.

AN EXAMINATION OF SOCIAL HOST POLICIES:

RELATIONSHIP WITH SOCIAL DRINKING

CONTEXT AND ALCOHOL USE

AMONG ADOLESCENTS

by

Kimberly G. Wagoner

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Approved by

_____

Committee Chair

This dissertation is dedicated to my family for their support, confidence and uplifting words that carried me through these last four years. My graduate work would not have been possible without their support and encouragement. Thank you to:

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Two roads diverged in a wood, and I —

I took the one less traveled by,

And that has made all the difference.

~ Robert Frost

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I

INTRODUCTION

Underage alcohol use has been a public health concern for decades, demanding attention and resources from families, communities and the field of public health. Despite years of underage drinking prevention programs and laws in all 50 states restricting alcohol possession by those under 21, alcohol is the most heavily abused substance by adolescents in the United States (U.S.) (Johnston, O'Malley, Bachman, & Schulenberg, 2009). It is the nation's number one drug problem among youth and is associated with the three leading causes of death among teens: unintentional injuries, homicides, and suicides (Centers for Disease Control and Prevention, 2006). The Surgeon General estimates that approximately 5,000 underage deaths are due to injuries experienced as the result of underage drinking each year (United States Department of Health and Human Services, 2007).

Despite public health advances, such as raising the drinking age from 18 to 21, underage alcohol use continues to generate attention from federal agencies such as the National Institutes of Health (NIH), Centers for Disease Control (CDC), U.S. Department of Health and Human Services (US DHHS), and Office of Juvenile Justice and Delinquency Prevention (OJJDP). These agencies, along with many other national, state and local organizations, have made reducing underage drinking a high priority. For example, publications by the US DHHS [*Healthy People 2010*, (November, 2000)], the

Surgeon General [*The Surgeon General's Call to Action to Prevent and Reduce Underage Drinking* (2007)] and the Institute of Medicine [*Reducing Underage Drinking: A Collective Responsibility*,(2004)] call for collaborative approaches to establish comprehensive plans to reduce drinking among adolescents and associated alcohol-related consequences.

While it is encouraging that more attention is focused on reducing underage alcohol use, alcohol plays an integral role in our society. Alcohol is a part of our community festivals and sporting events, advertised on billboards and during television shows, and easily accessible to underage youth. Our traditional public health efforts have attempted to counteract this by focusing on individual-level changes, which attempt to stop or reduce alcohol use through educational efforts or treatment programs for those addicted to alcohol (Larimer & Cronce, 2002). While important, these efforts alone cannot produce long-term reductions in underage drinking (Tobler, 1992; Toomey et al., 2008; Toomey & Wagenaar, 2002). To increase effectiveness, efforts are being coupled with prevention approaches that aim to prevent and reduce alcohol use and related consequences of the entire population because most of the problems from underage alcohol use are a result of light or moderate drinkers who sometimes engage in high-risk drinking, not from drinkers who are dependent on alcohol (Kreitman, 1986; Wagenaar & Perry, 1994). In addition, most population-level approaches attempt to account for the social environment with which individuals interact, thereby increasing the likelihood of sustained changes in decreased alcohol use among youth (Toomey & Wagenaar, 2002).

Communities concerned about underage alcohol use are recognizing that individual behavior is connected to a larger social environment that promotes, and often facilitates, underage alcohol use. They are addressing the larger environment by implementing strategies that attempt to change local conditions which contribute to underage alcohol use. One key strategy that can influence the social environment and change cultural norms around underage alcohol use is to modify public and institutional policies that target availability of alcohol, how it is marketed and where it can be consumed (Marin Institute, 2006).

One such public policy that states and local communities have enacted is social host law for alcohol-related injuries. These laws hold servers, clerks, and other adults accountable for furnishing alcohol to underage drinkers for harm inflicted to themselves and others as a result of their drinking (Marin Institute, 2006; National Institute on Alcohol Abuse and Alcoholism, 2009). While this is the traditional meaning of social host laws, a new wave of policies, also referred to as social host laws, go beyond furnishing alcohol to minors, and have become increasingly popular among states and local communities. These innovative laws hold those who have dominion over a property, such as property owners, renters, and even children of the property owners, accountable for underage drinking parties that occur on their property, regardless of the alcohol source or if anyone was injured (Marin Institute, 2006). The purpose of these laws is to reduce underage alcohol use by deterring underage drinking parties where easy access to alcohol and high-risk use occurs (National Institute on Alcohol Abuse and Alcoholism, 2009).

The purpose of this paper is to provide a critical analysis of the published research on social host laws that states and communities are using to address alcohol availability and drinking in residential settings among adolescents. Because these laws are designed to deter social availability of alcohol and change the drinking context, specifically focusing on residential settings, the paper will begin with an overview of adolescent alcohol use and a summary of alcohol sources and the social drinking context of adolescents.

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CHAPTER II

REVIEW OF THE LITERATURE

Introduction

By the age of 15, almost half of boys and girls in the United States (U.S.) have consumed a whole drink of alcohol (United States Department of Health and Human Services, 2007). Use increases with age and peaks at age 21 (Pemberton, Colliver, Robbins, & Gfroerer, 2008). Underage drinkers consume 19.7% of the alcohol purchased in the U.S., accounting for $22.5 billion dollars of the over $116 billion spent on beer, wine, and distilled spirits in 1999 (Foster, Vaughan, Foster, & Califano, 2003). Consequences of underage drinking, including work lost, medical care, youth violence, and pain and suffering, cost the U.S. over $60 billion in 2005 (T. Miller, Levy, Spicer, & Taylor, 2006). According to the 2007 Youth Risk Behavior Survey, a national school-based survey that monitors health-risk behaviors among youth in grades 9 through 12, 75% of respondents had alcohol in their lifetime. Almost one in two high school students (44.7%) reported drinking alcohol in the past 30 days, and over one quarter (26%) reported past 30-day heavy episodic drinking defined as five or more drinks in a row on their last drinking occasion (Centers for Disease Control and Prevention, 2007).

Source of Alcohol among Adolescents

Because experimentation with alcohol begins at an early age and the consequences of use can be severe, youth access to alcohol must be addressed in a

manner that proactively prevents acquisition. Much of the effort in the past two decades to reduce youth access has focused on commercial establishments, such as bars, restaurants, liquor stores and grocery stores, primarily due to weak enforcement of the Minimum Drinking Age Law (MLDA) across the U.S. in the early 1990's (Toomey, Lenk, & Wagenaar, 2007; Wagenaar & Wolfson, 1995). The limited enforcement that was conducted was not directed at the adult who provided or sold the alcohol illegally, but instead on the underage youth, resulting in a system where youth could easily access alcohol. Depending on location, purchase surveys showed that 30% to 90% of commercial establishments would sell to underage youth or those who appeared to be under 21 (Forster et al., 1994; Forster, Murray, Wolfson, & Wagenaar, 1995; Preusser & Williams, 1992; Wagenaar, 1993; Wolfson et al., 2006).

Commercial Sources

Commercial establishments continue to be a source of alcohol for youth. A study of alcohol source among youth in the Midwest found that 3% of 9th graders, 9% of 12th graders, and 14% of 18-20 year olds obtained alcohol from a commercial source (Wagenaar et al., 1996). A more recent study of 11th graders in the northwest revealed that 30% of current drinkers obtained alcohol from a commercial source (Dent, Grube, & Biglan, 2005). The National Survey on Drug Use and Health (NSDUH) found a similar trend, with 30.6% of current underage drinkers reporting that they paid for the last alcohol they consumed (Pemberton, Colliver, Robbins, & Gfroerer, 2008). However, it is unclear from this report if the alcohol was purchased from a retail establishment or if it was purchased in a private setting where guests were required to pay in order to drink

from a provided alcohol source (i.e., keg). It appears that commercial sources are a major source of alcohol among youth that has been increasing over the past decade. Reasons for this may include ineffective server training and little or no enforcement by local or state authorities to ensure commercial providers are not selling to or serving minors.

In an effort to reduce commercial availability to youth, states and communities have attempted to limit how, where and when alcohol is sold. Many have accomplished this through state and local policies that, for example, restrict the density of alcohol outlets, limit days of alcohol sales, require implementation of server training and licensing, and hold licensed establishments accountable for harm inflicted by their patrons through server liability laws (Toomey et al., 1999).

Another strategy widely used to reduce commercial availability to youth join together state and local law enforcement with underage youth to conduct compliance checks, which are enforcement operations conducted to determine an establishment's compliance with the minimum purchase age laws. The undercover youth attempts to purchase or order an alcoholic beverage, thereby testing the compliance of the establishment, while the enforcement agent observes from a distance (University of Minnesota, 2009). While compliance checks can be used to enforce state statutes or local ordinances, they can also be an effective tool to identify outlets that sell to youth, provide warnings for selling to underage youth, while also educating the clerks, servers and owners of the alcohol establishments about the penalties for violating the minimum purchase age laws.

Social Sources

While these efforts are needed to prevent access to alcohol through commercial sources, they do little to address the social sources from which most underage drinkers acquire their alcohol, including peers, parents, and other adults over the age of 21. Studies consistently report that youth primarily obtain alcohol through social sources (Dent, Grube, & Biglan, 2005; Harrison, Fulkerson, & Park, 2000; Hearst, Fulkerson, Maldonado-Molina, Perry, & Komro, 2007; Smart, Adlaf, & Walsh, 1996; Wagenaar et al., 1996). One study found that four out of five underage alcohol users, regardless of age, obtain alcohol exclusively from social sources (Harrison, Fulkerson, & Park, 2000), while Dent and colleagues (2005) reported that 70% of youth obtained alcohol from a social source.

Much debate centers on parents as a source of alcohol for adolescents. Surprisingly, they are a common source of alcohol for many underage youth. A study conducted by the American Medical Association (2005) of youth ages 13 to 18 found that one third reported being able to easily obtain alcohol from their consenting parents. Among those who obtained alcohol in the past six months, parents supplied alcohol an average of three instances over the time period. In a study of Midwest 9th and 12th graders, Mayer and colleagues (1998) found that 9% of 12th graders and 18% of 9th graders reported drinking with their parent on the last drinking occasion.

Graham and colleagues (2006) examined parental motivations for providing alcohol to adolescents and found that most parents furnished alcohol to adolescents as a strategy to minimize the risks associated with use. Their primary reason for these actions

was to provide a "safe drinking environment" to prevent the short-term harms of alcohol consumption, such as drinking and driving, accidents and risky behaviors, like binge drinking. Of less concern were the long-term risks of alcohol use, such as future alcohol dependence. Additionally, parents perceived alcohol as less harmful than illicit drugs, contributing to their willingness to provide to their underage children. Other strategies they reported using include transporting underage drinkers to and from parties, providing underage drinkers with a mobile phone, and setting clear guidelines about alcohol use.

Foley and colleagues (2004) found that adults' approval of alcohol use was highly correlated with youth drinking behavior. Youth who obtained alcohol from parents or adult relatives reported drinking fewer drinks on the last drinking occasion compared to youth who obtained from underage friends, commercial sources or who took it from their parents' or friend's home without permission. Additionally, they were less likely to report binge drinking in the past two weeks. However, adolescents who obtained alcohol from a parent, either their own or a friend's, at a party reported consuming more drinks on their last drinking occasion and were twice as likely to report past 30-day alcohol use and binge drinking. Youth who reported obtaining alcohol from a non-adult relative (i.e. underage sibling) reported higher levels of alcohol consumption and overall use. Other studies reported similar findings, with underage drinkers who reported heavy drinking less likely to report drinking with their parents and more likely to report drinking with their friends or strangers (Donnermeyer & Park, 1995; Mayer, Forster, Murray, & Wagenaar, 1998).

Another primary social source of alcohol for adolescents is from non-relative adults. Youth ask adults outside of licensed retail outlets to purchase alcohol for them, a practice called "shoulder taps"(Pacific Institute for Research and Evaluation, 2004). (Pacific Institute for Research and Evaluation, 2004) Adults who purchase alcohol and illegally provide to youth can be cited or arrested. Youth believe this is a less risky and more practical way to obtain alcohol because they don't purchase the alcohol illegally; they ask someone to purchase it for them. In a recent study, Toomey and colleagues (Toomey, Fabian, Erickson, & Lenk, 2007) found that between 8% and 19% of adults agreed to provide alcohol to pseudo-underage (i.e., age 21 or older, but appeared to be between the ages of 18-20) when approached outside an alcohol establishment. Shoulder tap interventions are one strategy recommended by the Institute of Medicine report (2004) to reduce social availability of alcohol in local communities.

Large underage drinking parties are another major source of alcohol for underage drinkers. In a study conducted by Harrison and colleagues (2000) examining source of alcohol among adolescents, 32% of 6^{th} graders, 56% of 9^{th} graders and 60% of 12^{th} graders reported obtaining alcohol at a party. These parties are typically held in a private setting, such as a friend's home, and are frequently unsupervised, provide easy access to alcohol and involve large groups (Jones-Webb, Toomey, Miner et al., 1997; Wagenaar et al., 1993). Additionally, they are associated with increased alcohol-related problems such as sexual assaults, drinking and driving, violence and property damage (Mayer, Forster, Murray, & Wagenaar, 1998; Shaffer & Ruback, 2002).

Beer is the primary beverage at large parties, with access most commonly through a beer keg. The large amount of alcohol available at a low cost may encourage increased consumption among adolescents. Therefore, efforts to restrict this source of alcohol, such as keg registration, have emerged. Upon purchase, the keg is registered with a unique identifier that is placed on the keg. If it is confiscated from an event where underage drinkers are present, authorities use the unique identifier to link the keg with its purchaser and hold the individual accountable (Pacific Institute for Research and Evaluation, 2005). Thirty-one states and the District of Columbia have enacted keg registration laws as of January 1, 2009, but levels of enforcement, as reported by state alcohol control agency respondents, are low (Wagenaar, Harwood, Silianoff, & Toomey, 2005). In addition, new products, such as disposable kegs, make enforcement of keg registration laws even more problematic. Since they are designed to be thrown away when empty, they are often not easily tagged or traced (National Institute of Alcohol Abuse and Alcoholism, 2009).

Another strategy that has emerged to reduce underage drinking is party patrols. With these efforts, law enforcement attempt to detect and shut down underage drinking parties (Stewart, 1999). Law enforcement responds to the party and attempts to close it through controlled party dispersal in order to minimize the number of attendees who leave the party. Although enforcement can cite underage drinkers at the party, as well as the person who provided the alcohol, it is often difficult to locate or pinpoint the provider (Applied Research Community Health and Safety Institute, 2009) This has lead to some states and communities passing social host laws focused specifically on underage

drinking parties. This removes the burden of identifying the provider of alcohol and allows law enforcement to hold the owner of the property (or any other person who controls the property) accountable for allowing underage drinking to occur on the property. These laws will be discussed in depth later in the paper.

Social Drinking Context

Numerous studies have indicated that the social context in which drinking occurs is related to alcohol consumption levels and related consequences (Harford, Wechsler, & Seibring, 2002; Paschall & Saltz, 2007). Specifically, the drinking context includes the drinking location, existence of high-risk drinking activities, such as drinking games, size of the peer group, and the actual number of people drinking. All of these factors can impact the availability of alcohol and influence adolescents to drink heavily.

Studies to date have mainly focused on college populations. For example, higher consumption levels have been associated with drinking in the evenings and on weekends, in large groups, and with other heavy drinkers (Single, 1993). Other studies have found that drinking location is associated with consumption levels. For example, Clapp and colleagues (2006) examined the relationship between alcohol consumption, and private parties versus public drinking locations among college students and found that consumption levels varied depending on the drinking location. The highest levels of consumption were associated with drinking in a public setting, such as a bar. The study also examined contextual factors of the drinking location, such as the number of students drinking and the playing of drinking games. Higher levels of alcohol consumption were associated with 1) the presence of 'many intoxicated students' at both private parties and

in public drinking locations and 2) the presence of drinking games in private locations. In a study of Canadian undergraduate students, Demers and colleagues (2002) reported higher levels of consumption in off-campus locations and public drinking locations, compared to drinking at home. Another study reported similar findings in that drinking location, specifically drinking in public settings, was associated with increased alcohol consumption among underage drinkers, ages 16-18 (Jones-Webb, Toomey, Short et al., 1997).

While the role of drinking context has been well documented in the literature for college students and adults, fewer studies have been conducted looking at situational factors in adolescents (with Jones-Webb et al., 1997 being an exception). Most attention for the adolescent population has focused on demographic and psychosocial variables to examine associations or predict alcohol use, instead of situational characteristics. In a study of 15-year old New Zealand youth, Connolly et al. (1992) reported that situational variables, such as drinking outside of the home and drinking with peers, were associated with increased alcohol consumption. In addition, the situational context appeared to alter interpersonal influences, with drinking in peer-only groups diminishing the effects of parental influence on drinking behavior. Similar findings were reported for a U.S. 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.

A study of Canadian high school students examined prevalence of drinking and driving after attending an outdoor party and found that over a third (38%) attended a "bush party" (i.e., outdoor gathering of youth) in the past 12 months. Among attendees, over 70% reported drinking at the events and almost 17% reported driving after drinking at the parties (Stoduto, Adlaf, & Mann, 1998). Similar findings were reported by Lee and colleagues (1997) for a U.S. adolescent population. Survey data from high school seniors in the Upper Midwest were analyzed to examine environmental predictors of drinking and driving, such as alcohol source and drinking location. Drinking location, especially if it was an outside location, was associated with increased risk of drinking and driving.

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, approximately half of all underage drinkers in a Canadian study of undergraduate college students (49%) reported drinking in groups of 3-10 people. Attending a party with a group size of more than 10 was associated with increased 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 5 or more drinks on the last drinking occasion more likely to report being in a large group of 11 or more.

Studies have also examined high-risk activities occurring at the drinking location. Kenney and colleagues (2009) examined high-risk drinking contexts, such as pre-partying (i.e., drinking before going out with friends) and playing drinking games, during high school, and their association with high-risk drinking during the first year of college.

Their findings indicated a high prevalence of pre-partying among high school students (45%). Moreover, students who participated in these high-risk activities drank significantly more than those who did not.

Common among the findings, regardless of the population focus, is that drinking location and the context in which the drinking occurs are important factors associated with obtaining alcohol, consumption and consequences. Drinking occurs in a social and cultural environment that may reinforce high-risk alcohol use. Drinking behavior and alcohol-related consequences may vary by drinking location due to a number of factors, including 1) differential regulation imposed by policies in various settings (e.g., dram shop laws impose liability on servers in alcohol establishments for serving minors or intoxicated guests); 2) varying enforcement of existing laws by local law enforcement; 3) various levels of knowledge of existing policies and associated penalties; and 4) variation in the strength of informal social control and the nature of situational norms. Additionally, there is evidence that the drinking location may also influence potential risk reduction behaviors. For example, Collins and Frey (1992) reported that college freshmen were more likely to stop friends from driving after drinking when the drinking occurred in a public location, such as a bar or party, compared to private residential locations, suggesting that peers are more likely to arrange for a designated driver when drinking occurs in a public location. Additionally, it may suggest that when drinking occurs in residential settings, drinkers have an option of staying at the private location instead of driving home.

Conceptual Model

Based on the critical analysis of the literature, a conceptual model was constructed to highlight the targets of social host policies in the larger context of adolescent alcohol use **(Figure 1)**. The key factors targeted by the policies include *Alcohol Source* and *Social Context for Drinking*. These factors were presented in the larger context of adolescent alcohol use to conceptually demonstrate how they can influence *Adolescent Drinking*. In addition, *Intrapersonal and Interpersonal Characteristics* associated with underage alcohol use were included in the model because of their associations with the models factors.

As Figure 1 shows, there are a number of intrapersonal factors, such as age, gender, and race, as well as interpersonal factors, such as parental approval of alcohol use and peer influence, that are associated with alcohol use (US DHHS, 2007). These factors are also associated with the source of alcohol for underage drinkers and with the social context for drinking, including drinking location and characteristics of the drinking context. For example, younger adolescents are more likely to obtain alcohol from social sources, and thus drink in private settings, as compared to older adolescents who may try to purchase alcohol from a commercial source. Intrapersonal and Interpersonal factors are also associated with adolescent drinking outcomes, which has been well-documented in the literature (Dennis, Cox, Black, & Muller, 2009; Fang, Schinke, & Cole, 2009; Foley, Altman, Durant, & Wolfson, 2004; Fisher, Miles, Austin, Camargo, & Colvitz, 2007).

The second key factor included in the model is *Alcohol Source*. Alcohol is obtained from one of two major sources: commercial establishments or social providers. Commercial establishments include bars, restaurants and grocery stores that are licensed to sell alcohol. Social sources of alcohol, as described earlier, include parents, peers, and strangers that provide alcohol to underage youth. The source of alcohol is related to drinking location, because alcohol availability often influences where adolescents drink. For example, if a local restaurant will serve alcohol to underage drinkers, some are likely to drink at the restaurant. If parents provide alcohol and a location for their underage children and peers to drink, then adolescents are likely to drink in that private residence.

In this model, *Drinking Location* is one of two main components of the factor, *Social Context of Drinking*. The other component, *Context Characteristics*, is separated into three parts: high-risk activities, number of people with, and the number of people drinking who are under the age of 21. These have all been shown to be associated with increased drinking in adolescents. *Drinking Location* was separated from the *Context Characteristics* for two reasons: 1) drinking location is the direct target of social host policies, and 2) it is hypothesized that drinking location influences the context characteristics of a drinking episode. For example, if a youth purchases alcohol from a restaurant, he is less likely to be drinking in a large group and to play drinking games while in the commercial establishment. However, if a youth obtains alcohol while at a party in a private residence, he is more likely to be with many other underage drinkers and participate in high-risk drinking activities.

The final components of the model are *Adolescent Drinking* and *Alcohol Related Consequences.* In this model, adolescent drinking is defined as quantity of alcohol consumed and frequency of alcohol consumption. These are associated with intra- and inter-personal factors, as well as the social drinking context. It is well established in the literature that adolescent alcohol use, especially high-risk use such as binge drinking, is associated with a multitude of consequences such as unintentional injuries, violence, sexual assault, and drinking and driving (Arata, Stafford, & Tims, 2003; Chatterji, Dave, Kaestner, & Markowitz, 2004; Hingson, Assailly, & Williams, 2004; J. W. Miller, Naimi, Brewer, & Jones, 2007). Efforts to decrease use thereby indirectly affect the severity and frequency of alcohol-related consequences.

State laws and local ordinances are example of efforts that attempt to decrease underage drinking by changing social norms and increasing enforcement operations. In this model, state laws and local ordinances are one type of intervention to reduce underage alcohol use by targeting alcohol source and drinking location. While there are many interventions that have a similar goal (i.e. reducing underage alcohol use) such as individually-focused (e.g. educationally-focused, brief motivational interviewing), family-centered (Thatcher & Clark, 2006) and environmental strategies (e.g. social norms campaigns, increased law enforcement efforts)(Dent, Grube, & Biglan, 2005), this model focuses on policy change, specifically social host laws.

To achieve their potential, policies must be implemented and enforced by law enforcement on a regular basis to have a deterrent effect (OJJDP, 2006). Therefore, the policies must be enforceable and law enforcement must routinely implement them in

order to achieve the desired effect on deterring alcohol use, decreasing availability, and changing the social norms of the community.

Social host polices attempt to reduce underage drinking by controlling alcohol availability and the social context for drinking, which have been shown to be related to high-risk alcohol use. The policies target those who 1) furnish alcohol to underage drinkers and 2) host underage drinking gatherings. Since the furnishing laws are targeting providers of alcohol, they, in theory, reduce the source of alcohol for underage drinkers. Laws and ordinances that hold the host accountable for actions that occur on property they control are attempting to decrease underage drinking by targeting the setting, or location. Therefore, these laws, when enforced, can stop underage drinking from occurring at private locations, which have shown to be associated with high-risk drinking and large underage drinking parties.

Alcohol Policy as a Strategy

Alcohol policies have been defined by the World Health Organization as a set of measures that control the supply of alcohol to promote public health while minimizing alcohol-related harm (World Health Organization, 2004). As Babor and colleagues (2003) emphasize, the main purpose of alcohol policies is to influence health and social determinants, such as drinking context, alcohol availability, and services for those addicted to alcohol. They can be effective tools to modify social and cultural norms that communities have around alcohol, exerting a powerful influence on achieving long-term changes in underage alcohol use. While alcohol control policies can be implemented

through public policy or through institutional policies of local organizations, such as law enforcement agencies and schools, most of the studies to date have focused on the effects of alcohol policy at the national and state levels. One of the more commonly investigated policies is the minimum legal drinking age. Wagenaar and Toomey (2002) examined 132 published studies on the drinking age from 1960 to 1999. Their findings indicate that the federal policy, increasing the minimum legal drinking and purchase age of alcohol to 21, has been the most effective strategy to reduce alcohol consumption among teenagers and college students. It is credited with saving approximately 900 lives of people of all ages each year. Additionally, it is estimated that it has saved the lives of 25,509 young drivers (i.e., ages 18-20) between 1975 and 2006 (National Highway Traffic Safety Administration, 2008). In addition, zero tolerance or graduated licensing appear to be additional effective public policies to reduce alcohol availability and associated consequences (Grube & Nygaard, 2005).

These types of policies fall within WHO's framework for alcohol policy development in its recent document "Framework for Alcohol Policy in the WHO European Region" (World Health Organization, 2005), as they focus on identified areas of concern such as decreasing drinking and driving, controlling alcohol availability and responsible service by the hospitality sector. Interestingly, however, policies targeting social hosts are not included in the recommendations, presumably because studies examining their effectiveness have been limited.

Alcohol control regulation at the national, state and local level

Alcohol control policy is implemented at various levels in the United States, with states having the responsibility of regulating alcohol availability, marketing and consumption. While all 50 states prohibit possession of alcohol by those under 21, states provide exceptions to the law. For example, 25 states provide exception to possession of alcohol by minors when the alcohol is provided by a parent, guardian or spouse, and 23 states allow exceptions when the alcohol is provided in a private or residential location (National Institute on Alcohol Abuse and Alcoholism, 2009). In addition, not all states prohibit the consumption of alcoholic beverages by underage persons.

Social host liability is one type of policy that states have used to restrict alcohol availability. Social host laws can hold non-commercial providers of alcohol responsible for furnishing alcohol to underage persons or obviously intoxicated adults. In addition, social host laws can focus on underage drinking parties, holding property owners, or any person who controls the property, liable for underage drinking that occurs on the property.

Social Host Policy

History of Social Host Policy

Social host liability laws in the US were originally focused on commercial servers. In 1849, Wisconsin enacted the first **dram shop law.** These laws hold commercial establishments liable for serving underage persons or obviously intoxicated adults. Laws in other states did not specify the selling of alcohol in their policy language, leaving the opportunity for future application of liability to non-commercial servers.

Courts did not use the laws in this way, most likely due to the body common law precedent, which reasoned that consuming alcohol, not the act of serving, was the cause of injury (Goldberg, 1992). The hosting liability landscape changed in 1959, when the New Jersey Supreme Court held tavern owners liable for serving alcohol to an intoxicated underage person who subsequently killed an individual in a car accident (Goldberg, 1992). Since that ruling 50 years ago, 42 states have enacted dram shop laws or made court rulings that hold commercial servers and establishments liable (Emerson & Stroebel, 2000).

The first social host civil (tort) liability was imposed in 1984, again by the state of New Jersey (Kelly versus Gwinell, 96 N.J.538, 476 A.2d 1219). Social hosts in states that have social host tort liability can be held liable for negligence in a lawsuit by a third-party who experienced harm as a result of his' or hers' drinking (CSLEP, 2005). The premise of social host liability is similar to dram shop liability, in that social hosts should be in a position to monitor alcohol consumption among guests. However, social host liability is contested more often than dram shop liability with arguments that social hosts are less capable than staff of licensed commercial establishments of monitoring the alcohol consumption of their guests (CSLEP, 2005).

States with social host laws vary in their target audience, with more states focusing on restricting alcohol use by underage guests compared to use by adults, based on belief that underage persons require special treatment due to their youth and inexperience in both drinking and driving (Dick, 1992). In addition, states vary as to whether they have tort and/or criminal liability associated with their social host laws. In

Rhode Island, for example, social hosts face criminal liability for furnishing alcohol to minors or hosting a gathering where underage drinking occurs. An adult who "knowingly permits minors to consume alcohol in his or her home" faces misdemeanor charges with fines on the first offense and escalating fines with jail time on repeat offenses (OJJDP, 2006).

Social Host Liability Focused on Furnishing Alcohol

Social host liability, in the broadest sense, is the legal term which holds adults accountable for irresponsible serving to an underage person or obviously intoxicated individuals that causes damages, injury or death to a third-party (University of Minnesota, 2009). There are two distinct types of hosting liability against an individual under social host**: civil** or **tort liability** and **criminal liability** (Center for the Study of Law and Enforcement Policy, 2005). The first, tort liability, allows individuals to bring lawsuits against alcohol providers for damages and injuries sustained or caused by the underage drinker or obviously intoxicated adult (Grube & Nygaard, 2005). Tort liability can take two forms: 1) **dram shop liability**, in which commercial servers and alcohol establishments are held responsible or 2) **social host tort liability**, which holds non-commercial providers accountable. As of 2008, 42 states have statutory or case laws for dram shop liability and 34 states have social host tort liability (Mothers Against Drunk Driving, 2009; National Institute on Alcohol Abuse and Alcoholism).

The second type is criminal social host liability which imposes penalties on anyone who serves alcohol to underage persons. Most state social host laws have criminal penalties, which can include imprisonment or fines. Communities may also pass

social host ordinances that include criminal penalties. These penalties can be in the form of a criminal misdemeanor, which may include jail time, or a criminal infraction, which imposes a monetary fine (CSLEP, 2005; Mothers Against Drunk Driving, 2009).

Social Host Liability: Hosting Underage Parties

Social host liability is intended to prevent alcohol-related tragedies, such as drinking and driving crashes, by controlling the availability of alcohol through commercial and social sources. While these laws have traditionally focused on the serving of alcohol, states and communities are moving to close loopholes in the laws by also applying liability to those who host or allow underage drinking on property they own or lease (CSLEP, 2005). The primary purpose of social host laws focused on hosting underage drinking parties is to deter the 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, giving law enforcement a tool to hold adults 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.

Social host laws focused on hosting underage drinking parties can have similar penalties as the social host furnishing laws described earlier, including state-level tort and criminal liability. However, these laws are often closely tied to the furnishing laws. Social host laws focused on underage drinking parties may impose other types of liability

at the local level, including 1) city or county criminal sanctions 2) city or county civil and administrative penalties and 3) city or county response cost recovery. Under city/county criminal sanctions, social hosts can be charged with a misdemeanor, which carries jail time or an infraction that includes a monetary fine. Under city/county civil and administrative penalties, as well as civil response cost recovery, the underage drinking party is considered a public nuisance, and thus a threat to public safety. Social hosts are not criminally liable, but can be held responsible for monetary fines and/or for the cost of police or other emergency service response to the property.

Twenty four states have enacted laws prohibiting underage drinking parties, holding individuals accountable for hosting such events (NIAAA, 2009). Of those, seven states have criminal statutes in the form of "*Open House Party*" laws, which specifically address gatherings and parties on private property by underage youth (CSLEP, 2005; NIAAA, 2009). Statutes can also be in the form of *general laws* or statutes that address adults permitting underage drinking on their property. Seventeen states have these types of laws, which are broader than the Open House Party laws in that they can prohibit underage drinking at parties, as well as in other social contexts (CSLEP, 2005).

Because the penalties associated with tort and criminal laws are severe, strong evidence is required that shows the host provided alcohol to the underage person or that the host knew the underage person was consuming alcohol on the property and took no action to stop it. Anecdotal evidence suggests that enforcement of these laws is difficult because the burden of proof is high for law enforcement (ARCHS Institute, 2009). Therefore, many communities have begun to address hosting underage drinking parties at

the local level, as evidenced by the over 150 cities and counties in 21 states that have passed social host ordinances (MADD, 2009). Some communities have followed state law and treat hosting underage drinking parties as a misdemeanor, which carries jail time as a possible penalty, while other communities have chosen to treat social host as an infraction. To reduce the burden of proof required for conviction of violation of criminal law, other communities have enacted social host using civil response cost recovery ordinances (MADD, 2009).

Table 1 provides a summary of the states with social host liability laws for furnishing alcohol to an underage person, criminal laws for hosting underage drinking parties, and local communities that have implemented social host ordinances focused on underage drinking parties.

Addressing alcohol policy at the local level can be problematic because alcohol is regulated at various levels (i.e., federal, state and local), and there may be times when laws conflict. Therefore, a system of preemption is in place that denies the regulatory authority of local governments and affords it to a higher level jurisdiction, such as states, or in some cases, the federal government. Federal laws can preempt state laws, and state laws can preempt local regulation, as long as they are in the same regulatory area (e.g., alcohol, tobacco, fire arms) (American Medical Association, 2001; Gorovitz, Mosher, & Pertschuk, 1998).

Preemption affects alcohol regulation at the local level in that communities may not be able to pass local ordinances that address hosting underage parties, for example, because the state has expressed or implied preemption. Express preemption occurs when

state statutes explicitly lay out the state's intent to control a field of regulation. Implied preemption occurs when there is no room for local regulation because the state regulation is very broad. In some states, such as North Carolina, the state controls all alcohol regulation, including language that covers possession and consumption of alcohol (NC General Statute 18B-100)(North Carolina General Assembly, 2009). Therefore, local communities cannot pass ordinances that directly address alcohol consumption and possession. Communities with preemptive state regulation can address possession and consumption in other ways, though. Some communities have passed local noise ordinances or focused on loud and unruly parties to give law enforcement tools to deal with the nuisance, leaving out any explicit mention of alcohol.

Preemption is important because many communities have realized the power of local regulation to address community-specific issues around underage drinking, and have thus begun addressing alcohol use through local policy. Alcohol adversaries, such as the alcohol industry, also realize the power that local policy has, and as a result, have pushed campaigns in state legislatures that could override the work of local grassroots efforts. In preemption states, one state law sponsored by alcohol advocates can override all of the local ordinances in the state that have been shaped by community-organizing efforts that address their community-specific risks (Gorovitz, Mosher, & Pertschuk, 1998).

Effectiveness of Social Host Policies

Despite the number of states and communities that have passed or are trying to pass social host laws and ordinances, there are few published studies on their

effectiveness. In a sense, practice is at the forefront of this issue. No published studies have evaluated social host laws for hosting underage drinking parties. However, several studies have examined social host liability laws for those who serve alcohol to intoxicated guests. Stout and colleagues (2000) examined the effects of state regulation on legal age individuals' decisions to engage in heavy episodic drinking and drinking and driving. Respondents living in states that recognized social host civil liability were significantly less likely to report heavy episodic drinking and drinking and driving compared to individuals living in states that did not have this policy. Dram shop liability had no effect on heavy episodic drinking. However, it did significantly decrease the probability of drinking and driving, a finding similar to one reported by Chaloupka and colleagues (1993). The article by Stout and colleagues showed that social host civil liability was one of the more effective policies in deterring heavy episodic drinking and drinking and driving under the influence.

Whetten-Goldstein and colleagues (2000) found somewhat conflicting results, specific to social host civil liability, in their study examining associations between alcohol policies and motor vehicle fatality rates among 18-64 year olds. Findings revealed that dram shop laws were associated with lower underage and adult motor vehicle fatality rates for total deaths and alcohol-related deaths. However, social host civil liability was not associated with lower adult or minor death rates, an interesting outcome given the previous finding of social host's impact on reduced self-reported heavy episodic drinking and driving.

While these studies have investigated the impact of social host liability for providing alcohol on alcohol-related consequences, such as drinking and driving under the influence and motor vehicle fatality rates, they do not examine the process by which social host liability may change behavior. Findings may reflect the absence of an effectively disseminated message to drinkers and hosts about the judicial ruling and liability for providing alcohol to minors and intoxicated individuals. In addition, it may also indicate that enforcement of social host liability is lacking. Future research should investigate drinker and host knowledge of case law or state law, perceptions of enforcement, and barriers to the enforcement of the laws.

While these studies are important in establishing evidence for the effectiveness of social host liability for providing alcohol, more research is needed to assess the effects of social host liability on individuals who allow underage drinking on their property. To our knowledge, no studies have examined social host laws designed to alter the situational context and reduce large underage drinking parties by holding the party host accountable for actions on his or her property.

Considerations for Future Work

Considerations for Researchers

Because practice is ahead of research on social host laws, a wide range of opportunities exist for research in this area. First, studies are needed to determine if these policies create the intended behavior change: reducing social provision of alcohol from adults, as well as reducing the number of large parties on private property. In addition,

by changing the drinking location, studies should examine how other situational factors are affected, such as high-risk activities and the number of people drinking.

More research is also needed to specifically evaluate social host laws that are focused on prohibiting underage drinking parties. The primary purpose of these laws is to deter large parties where high-risk drinking is common (National Institute on Alcohol Abuse and Alcoholism, 2009). Studies have documented the relationship between drinking location, context and alcohol consumption, leading federal agencies to promote policies restricting such events (Centers for Disease Control and Prevention, 2006; National Institute on Alcohol Abuse and Alcoholism, 2009). However, no studies have examined policy effects on drinking location, situational characteristics, alcohol consumption and associated consequences. Because much of the research conducted on drinking context has focused on adult and college populations, more research is needed on situational effects for underage drinkers.

Studies have documented strong public support for alcohol policies aimed at reducing underage drinking (Harwood, Wagenaar, & Bernat, 2002; Wagenaar, Harwood, Toomey, Denk, & Zander, 2000). A recent nationwide telephone survey of adults examined opinions about dram shop and social host liability and found that approximately 72% of respondents supported imposing penalties on parents who provide alcohol to minors. Specifically, 70% thought that parents providing alcohol should face criminal liability, while 61% felt that civil liability, such as lawsuits for damages, was appropriate. Greater support (85%) was given for penalties for alcohol establishments that provided alcohol to minors (Richter, Vaughan, & Foster, 2004). However, social host

laws focusing on hosting underage drinking parties were not included in the survey. Additional research on this area could assist state and local policymakers in enacting policies by showing the level of public support for the policy and the liability associated with it. More importantly, it could provide a gauge of how willing the public is to accept the policy and facilitate the societal change for which the laws are designed.

Finally, the National Highway Transportation Safety Administration (National Highway Traffic Safety Administration, 2008), along with task forces from numerous states, including Arkansas, California, Montana, and Oklahoma, recommend adopting social host laws or revising existing ones, as part of a comprehensive underage drinking prevention program (Grand Futures Prevention Coalition, 2009). One of the six goals set forth by the Surgeon General's *Call to Action* focuses on enactment of policies at the national, state and local levels to prevent and reduce underage alcohol use. While social host policies hold potential for being effective tools to reduce underage alcohol use, details in the policy wording can make a substantial difference in how the law is enforced. Therefore, more research is needed to determine key components of those policies found to be effective. Strategies must be developed for effectively measuring the policy's strength, similar to studies conducted in the fields of tobacco control and clean indoor air, which have created scales to assess policy strength (Alciati et al., 1998; Chriqui et al., 2002). An overall score is assigned to the policy, giving stakeholders and policymakers a tool in developing a strong policy for their state or community. Existing social host provision and social host laws at the state and community level should be

examined to determine core concepts of the laws, in addition to variation in liability and focus.

Considerations for States and Communities

While communities and states across the country are leading this effort to address social provision and hosting of underage drinking parties, there are some key steps that should be considered. First, communities must determine if their local conditions justify social host laws. These laws are specific in what they intend to prevent: providing alcohol to underage and hosting an underage drinking party. If data from the community shows that adolescents are obtaining alcohol via other mechanisms (e.g., purchasing at commercial establishments), then efforts might be better concentrated on those issues. In addition to examining local community conditions, communities should talk to and learn from other communities that have implemented social host laws. This will identify obstacles encountered and where they found support during their experience. This may also help in determining the preemption status of states, which could potentially impede the goal of passing a social host law.

In addition to talking with stakeholders in other communities, partnering with local stakeholders including law enforcement, advocacy groups, policymakers, alcohol retail establishments and research institutions ensures the policy is created by key stakeholders in the community. Not only is it more likely to target the unique issues of the community, it is also more likely to be enforced, and thus precipitate the intended behavior. In addition, these groups can assist in data collection so the policy can be evaluated at the local level.

Conclusions

Alcohol use among adolescents remains a public health concern, with 75% reporting ever use (Centers for Disease Control and Prevention, 2009). Adolescents report that it is easy to obtain alcohol, despite it being illegal for those under 21. Underage drinkers find well-known and familiar people, such as friends or their own parent, who are willing to provide alcohol, as well as total strangers, whom they approach and ask to buy alcohol for them. In addition, they find alcohol readily available at large parties from peers or a friend's parent.

Many states and communities have taken the lead on addressing the social provision of alcohol and the hosting of unsafe underage drinking parties through social host laws. Research is playing catch-up in documenting their effectiveness and value as a strategy in the arsenal against underage drinking. Researchers and communities should take this opportunity to work together to assess existing social host laws and determine which type of liability is associated with decreased availability, changes in location and other situational context in which drinking occurs, consumption behaviors, and subsequent alcohol-related consequences.

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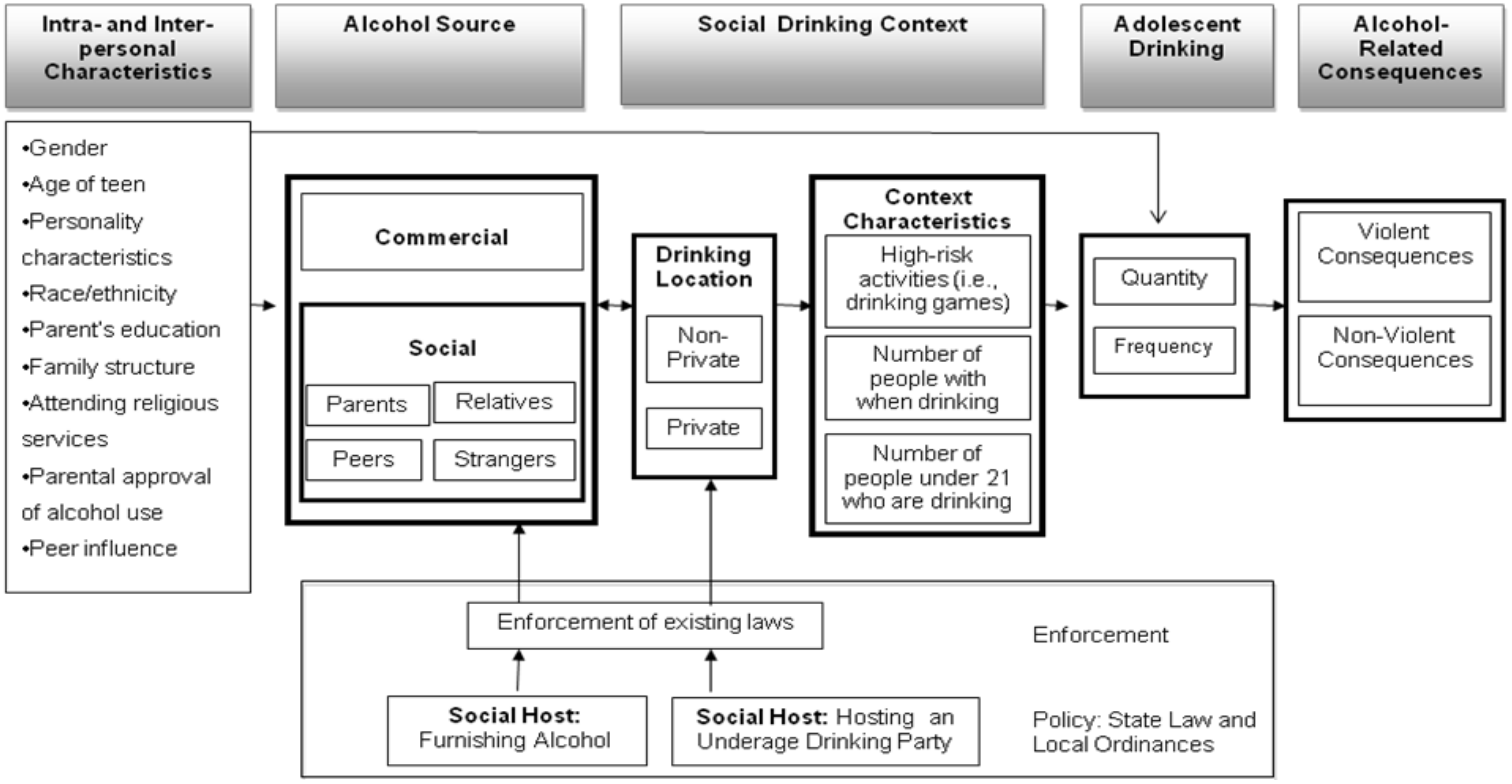
FIGURES

Figure 1. Conceptual Model: Social host policy influence on alcohol source, social drinking context, and drinking outcomes among adolescents



TABLES

Table 1. Social host laws, by state.

State	State Social Host civil liability: Serving a minor or intoxicated individual*	State Social Host criminal law: Hosting an underage drinking event **	City/County municipal ordinance: Hosting an underage drinking event
Alabama	X	X	
Alaska		X	
Arizona	X	X	
Arkansas			
California			X
Colorado	X		
Connecticut	X	X	X
Delaware			
District of Columbia	X		
Florida	X	X	
Georgia	X		
Hawaii	X	X	
Idaho	X		
Illinois		X	X
Indiana	X		
Iowa	X		X
Kansas		X	
Kentucky			X
Louisiana	X		
Maine	X	X	
Maryland		X	
Massachusetts	X	X	X
Michigan	X	X	X
Minnesota	X		X
Mississippi	X		
Missouri		X	X
Montana	X		X
Nebraska			

Nevada			X
New Hampshire	X	X	X
New Jersey	X	X	X
New Mexico	X		
New York	X		X
North Carolina	X		
North Dakota	X		Under consideration in one county
Ohio	X	X	X
Oklahoma		X	X
Oregon	X	X	X
Pennsylvania	X	X	X
Rhode Island		X	
South Carolina	X	X	
South Dakota			
Tennessee	X		
Texas			X
Utah	X		State bill pending allowing local ordinances
Vermont	X		
Virginia			
Washington	X	X	X
West Virginia			
Wisconsin	X	X	
Wyoming	X	X	X
TOTAL	33	24	21

* MADD, 2009; ** NIAAA, 2009

CHAPTER III

SOCIAL HOST POLICIES: AN ENVIRONMENTAL PREDICTOR OF SOCIAL DRINKING CONTEXT, ALCOHOL USE, AND ALCOHOL-RELATED CONSEQUENCES AMONG ADOLESCENTS?

Introduction

Alcohol is the most abused 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, 2009). Underage alcohol use is associated with a variety of alcohol-related consequences, including sexual assault, violence, and drinking and driving (Mayer, Forster, Murray, & Wagenaar, 1998; Shaffer & Ruback, 2002). Approximately 5,000 underage deaths are due to injuries experienced as the result underage drinking (United States Department of Health and Human Services, 2007). According to the 2007 National Youth Risk Behavior Survey (YRBS), a national school-based survey that monitors health-risk behaviors among youth in grades 9-12, 75% of respondents have tried alcohol in their lifetime, 44.7% have had a least one drink in the previous 30 days, and 26% reported heavy episodic drinking in the past 30 days (Centers for Disease Control and Prevention, 2007).

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; Wagenaar et al., 1996). One study found that 80% of underage alcohol users, regardless of age, obtained

alcohol exclusively from social sources (Harrison, Fulkerson, & Park, 2000). Youth also frequently obtain alcohol at underage drinking parties. In a study conducted by Harrison and colleagues (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 5 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 and colleagues (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 et al. (1992) reported that drinking outside the home and drinking 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 U.S. 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 non-commercial 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 and colleagues (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 compared to individuals living in states that did not have this law. Whetten-Goldstein

and colleagues (2000) found somewhat conflicting results in their study examining associations between alcohol 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 and colleagues (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. Also called *Open House Party Laws* and *Teen Party Ordinances*, 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, 2009, 24 states and over 150 communities in 21 states had a social host law or ordinance addressing underage drinking parties (Mothers Against Drunk Driving, 2009; National Institute on Alcohol Abuse and Alcoholism, 2009). 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 non-violent 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 United States Office of Juvenile Justice and Delinquency Prevention (OJJDP) funded study conducted in 68 communities in five states (California, Connecticut, Florida, Missouri, and New York). 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 best and most promising practices (Wolfson et al., 2006).

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 two 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, speak 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 (Wolfson et al., 2006). 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 alcohol outlets per year; 2) conduct at least one 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, ages 14-20 years old, 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 (WFU), 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 U.S. Census Summary Files 1 and 3 (United States Census Bureau, 2002). Community data on community demographics, socioeconomic status, 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 best and most promising practices. When ones 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 on-line data collection system, the study team cross-referenced on-line municipal codes with policy outcomes that were entered into the study data collection system. Additionally, on-line codes were cross-referenced with qualitative data collected during evaluation site visits. Discrepancies were checked with city clerks.

The Wake Forest University School of Medicine Institutional Review Board (IRB) provided 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, non-violent 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" (Residential). Any other location (i.e., bar, restaurant, school, beach) was coded "0" (Non-Residential).

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 4 or more drinks and males who responded they consumed 5 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, non-violent 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 alcohol; cited or arrested for driving under the influence of alcohol; missed any 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; 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 initial bivariate analyses based on 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 2. 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

Multi-level 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, non-violent 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 and 95% confidence intervals 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 $p \geq 0.25$. 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.

Post hoc analyses

Post hoc analyses were run to examine peer drinking group size and alcohol-related, non-violent 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 14-20. 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).

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 Community Trial (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).

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 in 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 compared to non-white youth. Age had a significant and negative association with the odds of drinking in a residential location. For every one 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.

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 who 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.

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 compared to youth from communities without a policy (OR=0.827, CI:0.69-0.99; p=0.04). 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 compared to youth from communities with a pre-existing policy (OR: 1.24; CI: 1.06-1.44; p=0.007). However, by follow-up, youth from pre-intervention policy passage communities had similar odds of drinking in a large group compared to 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 compared to youth from communities without a policy (OR=1.26; CI=1.05-1.51; p=0.009) and youth from communities with a pre-existing policy (OR=1.23; CI=1.01-1.49; p=0.034) (see Figure 1).

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=0.13). White youth had approximately 33% higher odds of heavy episodic drinking compared to non-white youth. In addition, the predicted odds for heavy episodic drinking increased by approximately 30% for every one 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.

Alcohol-related, non-violent consequences

The final model for the odds of alcohol-related non-violent 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).

Age, being white, survey year median household income and percent employment were significantly associated with non-violent consequences. Specifically, white youth had approximately 34% higher odds of experiencing a non-violent consequence in the past year compared to non-white youth. In addition, the predicted odds increased by approximately 20% for every one year increase in age. Youth from communities with a

higher median household income had approximately 34% increased odds of experiencing a non-violent 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 non-violent consequence compared to baseline (2004). Additionally, for every 1% increase in community employment, youth had 1% decreased odds of experiencing an alcohol-related, non-violent consequence. Social host policy status was not associated with non-violent 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 pre-existing 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 non-violent 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 pre-existing 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 pre-existing 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 pre-existing 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 (APIS, 2009), which have been shown to be associated with increased alcohol consumption (Demers et al., 2002; Mayer, Forster, Murray, & Wagenaar, 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 location 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 non-residential. 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 non-violent consequences compared to youth who were younger, non-white, and from lower income communities. Our finding of increased alcohol use among higher socioeconomic status (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 and colleagues (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 (The Century Council, 2005).

While it is the expectation that social host policies can affect the indirect and more distant outcomes of heavy episodic drinking and alcohol-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 the there are other mediating factors within the social drinking context, that need to be measured that are influencing the outcomes. These may include high-risk drinking activities, such as playing drinking games (Kenney, Hummer, & Labrie, 2009) 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, Forster, Murray, & Wagenaar, 1998). Parents and other adults who allow drinking to occur in their home communicate that alcohol use is acceptable when done in 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 suppressed 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 four 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, seven months 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, non-violent 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.

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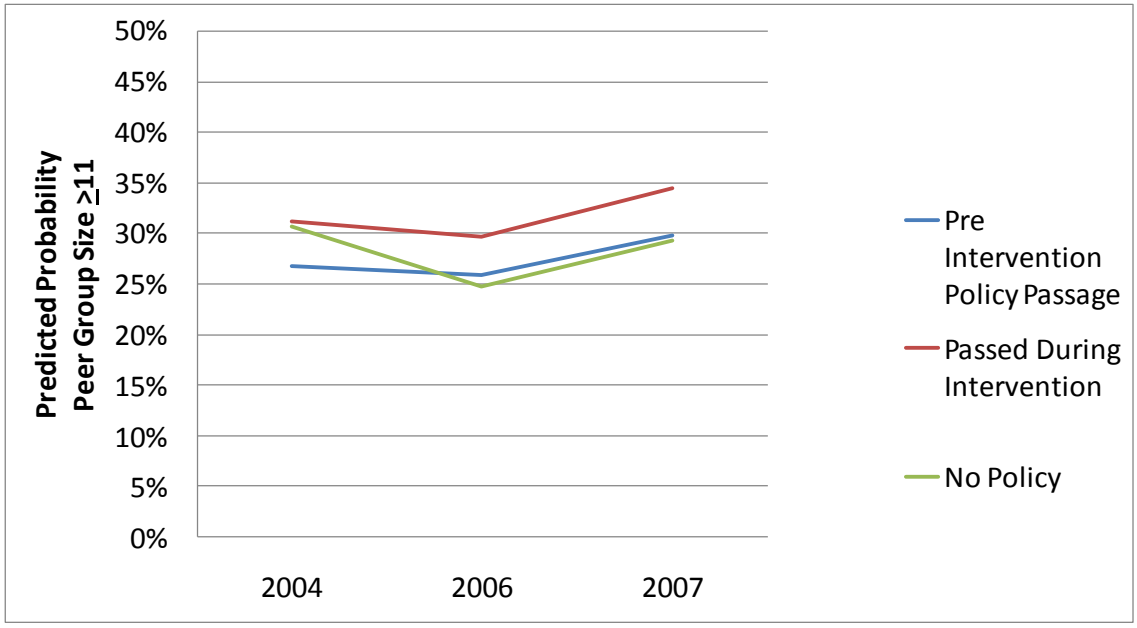
FIGURES

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



TABLES

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

Community-Level Characteristic	**Definition**	**Median**
2000 census city/town level data		
Median household income	Income in 1999 ($)	$54,751.50
*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%
*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%
*Female head of household	Female household, no husband present (%)	11%
% White	Race – Caucasian (%)	78.7%
Median Population Size	Size of city/town	47,216
EUDL-CT Data		
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

*Not included in final model due to multi-colinearity.

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

Variable	Number	Percent
Age		
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%
Race		
White	9,091	81.1%
Non-White	2,074	18.5%
Gender		
Female	5,488	49.0%
Male	5,717	51.0%
Mother's college education	6,062	54.1%
Survey Year		
2007	3,219	28.7%
2006	3,656	32.6%
2004 (Baseline)	4,330	38.6%
Alcohol use		
Past 30 day use	5,596	49.9%
Heavy Episodic Drinking, last drinking occasion; (Males: 5 or more; Females: 4 or more)	4,531	40.4%

Table 3. Social Host Policy Status Group Comparisons

Variable	**Social Host Policy Status**			**p-value**
	Passed Prior to Intervention	**Passed During Intervention**	**No Law**	
Age				0.76
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	8.61%	8.0%	8.1%	
20	7.0%	6.4%	6.1%	
Gender				0.10
Female	47.8%	46.0%	50.0%	
Male	52.2%	54.0%	49.9%	
Race				**<0.001**
White	**83.6%**	**86.0%**	**79.2%**	
Non-White	**16.3%**	**14.0%**	**20.8%**	
Mother's college education				0.36
Yes	51.7%	53.0%	54.4%	
No	48.3%	47.0%	45.6%	
Treatment condition				**<0.001**
Intervention	**46.5%**	**59.9%**	**43.5%**	
Comparison	**53.5%**	**40.1%**	**56.46%**	
Median Household Income				**<0.001**
High	**35.7%**	**57.7%**	**61.9%**	
Low	**64.4%**	**42.3%**	**38.1%**	
Population size				**<0.001**
High	**55.2%**	**39.4%**	**52.3%**	
Low	**44.8%**	**60.6%**	**47.7%**	
Past 30 day drinking				0.07
Yes	50.3%	52.3%	47.9%	
No	49.7%	47.7%	52.1%	
Binge Drinking (Last drinking occasion)				0.49
Yes	60.6%	59.2%	58.4%	
No	60.6%	59.2%	58.4%	

Table 4. Final multivariate model, Residential location

Variable	Odds Ratio	95% Confidence Interval	p-value
Age	**0.89**	**0.86-0.92**	**<0.0001**
Gender			
Female	0.96	0.87-1.06	0.47
Male*	-	-	-
Race			
White	**1.20**	**1.06-1.36**	**0.005**
Non-White*	-	-	-
Survey Year			
2007	1.07	0.91-1.28	0.38
2006	1.07	0.88-1.30	0.46
2004*	-	-	-
Treatment Condition			
Intervention	0.96	0.83-1.11	0.57
Comparison*	-	-	-
Population			
>47,216	1.05	0.90-1.21	0.54
≤47,216*	-	-	-
% Employment	**1.01**	**1.00-1.02**	**0.005**
Social Host Policy			
Passed during intervention	1.07	0.90-1.27	0.38
Passed Pre- Intervention	1.07	0.89-1.30	0.46
No law*	-	-	-
Survey Year*Social Host Policy Status			**0.66**

*: Reference Group

Table 5. Final multivariate model, Peer Drinking Group Size.

Variable	Odds Ratio	95% Confidence Interval	p-value
Age	**1.15**	**1.08-1.22**	**0.001**
Gender			
Female	0.98	0.90-1.06	0.66
Male*	-	-	-
Mother's college education	**1.11**	**1.01-1.20**	**0.01**
Survey Year			
2007	0.94	0.81-1.07	0.37
2006	**0.74**	**0.62-0.89**	**0.002**
2004*	-	-	-
Treatment Condition			
Intervention	**0.88**	**0.80-0.98**	**0.02**
Comparison*	-	-	-
% Grandparents as caregivers	**0.99**	**0.99-0.99**	**0.006**
% College Education	1.00	0.99-1.01	0.11
Social Host Policy			
Passed during intervention	1.02	0.86-1.21	0.78
Pre-Intervention passage	**0.83**	**0.69-0.98**	**0.03**
No law*	-	-	
Survey Year*Social Host Policy Status			**0.11**

*: Reference Group

Table 6. Final multivariate model, Heavy Episodic Drinking.

Variable	Odds Ratio	95% Confidence Interval	p-value
Age	**1.30**	**1.27-1.33**	**<0.0001**
Gender			
Female	1.00	0.93-1.08	0.84
Male*	-	-	-
Race			
White	**1.33**	**1.16-1.52**	**<0.0001**
Non-White*	-	-	-
Mother's college education	**0.89**	**0.82-0.97**	**0.009**
Survey Year			
2007	1.08	0.98-1.18	0.09
2006	0.98	0.91-1.07	0.75
2004*	-	-	-
Treatment Condition			
Intervention	1.02	0.92-1.12	0.68
Comparison*	-	-	
Median household income			
> $54,751.50	**1.25**	**1.12-1.38**	**<0.0001**
≤ $54,751.50*	-	-	-
Social Host Policy			
Passed during intervention	0.98	0.87-1.11	0.82
Pre-Intervention passage	0.94	0.82-1.09	0.45
No law*	-	-	-
Survey year*Social Host Policy Status			**0.13**

*: Reference Group

Table 7. Final multivariate model, Alcohol-related, non-violent consequences.

Variable	Odds Ratio	95% Confidence Interval	p-value
Age	**1.20**	**1.16-1.23**	**<0.0001**
Gender			
Female	0.94	0.87-1.00	0.08
Male*	-	-	-
Race			
White	**1.34**	**1.19-1.51**	**<0.0001**
Non-White*	-	-	-
Survey Year			
2007	1.08	0.98-1.19	0.10
2006	**0.91**	**0.84-0.99**	**0.03**
2004*	-	-	-
Treatment Condition			
Intervention	0.99	0.92-1.08	0.98
Comparison*	-	-	
Median Household Income			
> $54,751.50	**1.34**	**1.19-1.50**	**<0.0001**
≤ $54,751.50*	-	-	
Population			
> 47,216	0.92	0.84-1.01	0.09
≤ 47,216*	-	-	-
% Employed	**0.99**	**0.97-0.99**	**0.005**
% Grandparents as caregivers	0.99	0.99-1.00	0.09
Social Host Policy			
Passed during intervention	1.05	0.94-1.18	0.31
Pre-Intervention passage	0.96	0.86-1.08	0.56
No Law*	-	-	-
Survey Year*Social Host Policy Status			**0.33**

*: Reference Group

EPILOGUE

The project examined social host policies focused on hosting underage drinking gatherings and their relationship with adolescent alcohol use. Findings indicated that pre-existing social host policies or policies passed during a comprehensive intervention focused on enforcing underage drinking laws were not associated with drinking location, decreased heavy episodic drinking or decreased alcohol related, non-violent consequences among adolescents. However, there were associations between pre-existing policies and smaller peer drinking group size, suggesting that policies need to be in place for some time to increase community exposure and begin having the intended results.

Strengths and Limitations

Strengths

1. While there are a few studies that have examined social host policies focused on furnishing alcohol, this is the first study to examine social host policies specific to hosting underage drinking gatherings.
2. This research uniquely contributes to the literature by examining the effectiveness of social host policies on adolescent drinking behaviors in the context of a randomized community trial with a large sample of adolescents over a four year period.

3. This study is the first to demonstrate that established social host policies focused on underage drinking gatherings are associated with smaller peer drinking group size.

Limitations

1. This study used self-reported data from youth. Supplemental data from adults, parents and law enforcement are needed to provide valuable insight into the influence of policy on their behavior.
2. 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 during the study.
3. While this study did control for community level factors such as income and population size, it did not account for the historical conditions in the communities related to the policy, such as media or policy advocacy at the community or state level.
4. Our measure for drinking location (residential setting versus other) did not consider drinking displacement of underage drinkers. For adolescent drinkers, their primary drinking locations are typically limited to residential settings. Therefore, measurements need to be able to detect change within the construct of residential setting.

Future Studies

The research community should continue to test the effectiveness of social host policies focused on hosting underage drinking gatherings to provide much-needed evidence to the practice community. Longitudinal studies of communities are needed in order to adequately investigate the effect of these policies on youth and adult behavior, as well as policy implementation and community social norms. Because a significant amount of time is required for promotion and policy implementation to affect the intended outcomes, such as party size, future studies should also be designed to follow participants and communities for an extended period of time.

Researchers and communities should take this opportunity to work together to assess existing social host policies in order to determine which core concepts of the policy (i.e. liability, language, jurisdictional level, implementation) is associated with decreased availability, changes in location and other situational context in which drinking occurs, alcohol consumption behaviors, and subsequent alcohol-related consequences. These findings would provide stakeholders and policymakers a tool in developing a strong, enforceable, policy for their state or community.