

Exploring Alcohol Policy Approaches to Prevent Sexual Violence Perpetration

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Abstract

Sexual violence continues to be a significant public health problem worldwide with serious consequences for individuals and communities. The implementation of prevention strategies that address risk and protective factors for sexual violence at the community level are important components of a comprehensive approach, but few such strategies have been identified or evaluated. The current review explores one potential opportunity for preventing sexual violence perpetration at the community level: alcohol policy. Alcohol policy has the potential to impact sexual violence perpetration through the direct effects of excessive alcohol consumption on behavior or through the impact of alcohol and alcohol outlets on social organization within communities. Policies affecting alcohol pricing, sale time, outlet density, drinking environment, marketing, and college environment are reviewed to identify existing evidence of impact on rates of sexual violence or related outcomes, including risk factors and related health behaviors. Several policy areas with initial evidence of an association with sexual violence outcomes were identified, including policies affecting alcohol pricing, alcohol outlet density, barroom management, sexist content in alcohol marketing, and policies banning alcohol on campus and in substance-free dorms. We identify other policy areas with evidence of an impact on related outcomes and risk factors that may also hold potential as a preventative approach for sexual violence perpetration. Evidence from the current review suggests that alcohol policy may represent one promising avenue for the prevention of sexual violence perpetration at the community level, but additional research is needed to directly examine effects on sexual violence outcomes.

Keywords

alcohol, policy, regulation, rape, sexual violence, prevention

Sexual violence is a widespread public health problem with serious consequences for individuals, communities, and nations (Basile, Chen, Black, & Saltzman, 2007; Black et al., 2011). As defined by the U.S. Centers for Disease Control and Prevention (CDC), sexual violence includes any sexual act committed against someone without their freely given consent or when the victim is unable to consent or refuse, including attempted or completed unwanted penetration (i.e., rape) through the use of force or alcohol/drug intoxication, sexual coercion (nonphysically pressured penetration), being forced to penetrate someone else, unwanted sexual contact, and noncontact sexual acts (Basile, Smith, Breiding, Black, & Mahendra, in press). Data from the 2010 National Intimate Partner and Sexual Violence Survey suggests that an estimated 1 in 5 women and 1 in 71 men in the United States have been raped in their lifetime, and 1 in 2 women and 1 in 5 men have experienced one or more of the other kinds of sexual violence at some point in their lives (Black et al., 2011). Internationally, the World Health Organization (2013) estimates that 7% of women globally have been sexually assaulted by a nonpartner. Society incurs significant costs associated with the long-term physical and mental health consequences of sexual victimization

(Banyard, Williams, & Siegel, 2001; McFarlane et al., 2005; World Health Organization, 2013).

Given the prevalence, impact, and costs of sexual violence, it is imperative to identify effective strategies to prevent it. The vast majority of existing prevention approaches focus on changing the behavior and attitudes of individuals (Clinton-Sherrod, Gibbs, Walters, Hawkins, & Williams, 2008). Complementary strategies that address risk and protective factors at the community and societal levels of the social ecology, including public policies, are also needed to improve the likelihood of achieving population-level reductions in sexual violence (DeGue et al., 2012). Unfortunately, few such strategies have been identified or evaluated.

The article begins to address this gap by exploring one potential opportunity for preventing sexual violence perpetration at

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the community level, namely alcohol policy. Broadly, alcohol policy refers to laws or regulations at the local, state, and national level intended to regulate or modify the production, sale, and consumption of alcohol (“Alcohol Policy Information System,” n.d.). Although numerous public policies exist with potential for impacting sexual violence, exploring alcohol policy stands out as a logical first step in this area for two reasons. First, as discussed in detail subsequently, research has found a consistent link between alcohol use and sexual violence perpetration, suggesting that strategies that modify alcohol access and use may result in reduced risk. Second, the social and health impacts of alcohol policy have already received considerable research attention. Although research does not support the efficacy or feasibility of all alcohol policies (e.g., prohibition; Babor et al., 2003), an overwhelming body of literature suggests that some alcohol policies are associated with reductions in alcohol consumption and related harms, including violence and crime (Babor et al., 2010; Campbell et al., 2009; Elder et al., 2010). Thus, the goal of this review is to identify alcohol policies with the greatest potential for impacting sexual violence perpetration based on existing empirical evidence and theoretical links between alcohol and sexual violence.

Relationship Between Alcohol and Sexual Violence Perpetration

Alcohol use is widely identified as a risk factor for sexual violence perpetration (Abbey, Wegner, Woerner, Pegram, & Pierce, 2014). Numerous studies have found a direct association between alcohol use and sexual violence perpetration in diverse populations, including high school and college students, adolescent and adult sex offenders, community men and women, and among individuals in same-sex relationships (Tharp et al., 2013). Roughly half of all sexual assaults (reported and unreported) involve the consumption of alcohol by the perpetrator, victim, or both (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2004). The literature suggests that between 34% and 74% of sexual violence perpetrators used alcohol at the time of the assault, and men who drank “heavily” (i.e., acted/felt moderately or extremely intoxicated) on their last date were more likely to report committing sexual assault on that date than men who did not (Abbey, Ross, & McDuffie, 1994). A number of theories have been proposed to explain the relationship between alcohol use and sexual violence perpetration, with most evidence suggesting that alcohol interacts with multiple characteristics of perpetrators and their environments to increase the risk for violence (Abbey et al., 2004). The current review focuses on two key mechanisms by which alcohol may increase the risk of sexual violence perpetration: excessive consumption and social disorganization. These mechanisms have particular relevance to existing alcohol policy interventions and, as such, guide the selection of policies examined in the current review.

Excessive Consumption. Excessive alcohol consumption is associated with a number of cognitive and social consequences that can increase an individual’s risk for sexual violence perpetration, including cognitive impairment and the misperception of social cues. Specifically, excessive alcohol use is directly linked to acute problems with abstract reasoning, planning, and judgment, impairments that can result in disinhibition, reduced empathy, and a limited capacity to consider long-term consequences or alternative behaviors (Abbey et al., 2004, 2014). Such effects may reduce cognitive functions that would otherwise inhibit aggressive and violent behavior among high-risk individuals, including sexual assault. Excessive alcohol consumption may also exacerbate the tendency for some men to misperceive the level of a woman’s sexual interest by reducing their capacity for higher order thinking (Abbey et al., 2004; Gallagher, Huddephol, & Parrott, 2010). By shrinking one’s perceptual field to only the most obvious information, alcohol makes it difficult to attend to multiple and complex social cues, such as those that may occur on a date or while talking to a potential sex partner. As a result, complex cues are often interpreted to support one’s initial expectations (Abbey et al., 2014). This is particularly problematic when these existing expectations are shaped by sociocultural norms that support aggressive sexual behavior or violence against women. For example, men exposed to messages about male sexual entitlement may be more likely, while intoxicated, to expect that interactions with potential sex partners will end in sex, and these expectations may be reinforced, in turn, by the misperception of social cues to support these expectations (Abbey, 2011).

It is important to emphasize that alcohol use itself does not “cause” or account for sexual violence, and the sociocognitive effects of alcohol do not place all drinkers at equal risk for sexual violence perpetration. Instead the effects of alcohol consumption interact with existing individual-level risk factors for sexual aggression (e.g., general aggressiveness, belief in rape myths, hostility toward women, or exposure to violence in childhood; Tharp et al., 2013) and sociocultural norms about alcohol and gender in ways that can encourage or facilitate male sexual aggression. For example, beliefs about the effects of consuming alcohol, or alcohol expectancies, are shaped by social messages that often describe alcohol as increasing one’s sociability, aggressiveness, and even serving as an aphrodisiac (Abbey et al., 2004). Laboratory studies have found that alcohol expectancies alone can lead individuals to act more aggressively when they believe they have consumed alcohol but actually have not (George & Stoner, 2000). In many cultures, alcohol consumption also occurs in a context supportive of traditional gender role norms. Traditional norms such as male sexual entitlement, the expectation that men are sexual initiators and women passive recipients, and the sexual objectification of women all prescribe a sexual script in which male sexual aggression may be more likely (Locke & Mahalik, 2005). Thus, the behavioral impact of alcohol is a product of its direct sociocognitive effects and the individual, community, and cultural context in which the drinking occurs. Reducing alcohol use by potential perpetrators will not address the etiological roots

of sexual violence, but it may mitigate a potent proximal risk factor and reduce perpetration rates.

Social disorganization. A growing body of research points to the density and characteristics of alcohol outlets and access to alcohol in communities as strong predictors of neighborhood violence rates, including rape in some studies (e.g., Gorman, Speer, Gruenewald, & Labouvie, 2001; Toomey et al., 2012). One potential mechanism by which alcohol access might influence violence in general and sexual violence in particular is through effects on social disorganization (Treno, Gruenewald, Remer, Johnson, & LaScala, 2007). Social disorganization is defined by a decrease in social controls, collective efficacy, and resident participation in communities resulting from the disruption of informal networks and community structures like family, schools, and religious institutions (Cunradi, 2010; Sampson & Groves, 1989). This loss of control and collective efficacy can lead to a host of community-level problems, including crime and violence (Nielsen, Hill, French, & Hernandez, 2010).

The density and characteristics of alcohol outlets and access at the community level may impact social disorganization in several ways. For one, areas with a higher concentration of alcohol outlets may attract antisocial individuals who are at greater risk for a number of problematic behaviors, including violence and crime perpetration (Gruenewald & Remer, 2006; Kypri, Bell, Hay, & Baxter, 2008; Treno et al., 2007). This, in turn, may negatively impact social connections, norms, and controls among residents (Livingston, Chikritzhs, & Room, 2007; Treno et al., 2007). Greater density of alcohol outlets may also increase social aggregation and violence around outlets (Campbell et al., 2009; Hahn et al., 2010). Further, the signs of physical disorder that accompany certain outlet types (e.g., trash, loiterers) may contribute to a perception of social disorder in the area, indicating a lack of social controls that may deter low-risk and attract high-risk individuals and further increase crime and violence (Cunradi, 2010).

Although research on social disorganization and sexual violence perpetration is limited, Baron and Straus (1987) found a significant positive association between levels of social disorganization (using indicators such as level of geographical mobility and number of female-headed households in an area) and rates of reported rape in state-level analyses. Further, several studies have found a relationship between social disorder (e.g., indicated by levels of concentrated poverty, residential instability, and ethnic diversity; signs of physical disorder; or level of social cohesion and control among neighbors) and adolescent delinquency and deviant behavior (Chung & Steinberg, 2006; Sampson, Raudenbush, & Earls, 1997; van der Merwe & Dawes, 2007), both of which are risk factors for sexual violence (Tharp et al., 2013). Thus, the relationship between alcohol and sexual violence perpetration might be mediated by neighborhood factors, such as disorganization. Although more research is needed, social disorganization may represent an additional way alcohol policies may impact rates of sexual violence perpetration, that is, by impacting the environmental and social contexts in which violence occurs.

Current Review

The current review utilizes primary empirical research, systematic reviews, and meta-analyses from the peer-reviewed literature as well as reports by governmental and nongovernmental agencies to identify evidence of the effects of a subset of alcohol policies on sexual violence perpetration. Because sexual violence perpetration itself is rarely examined as an outcome in this literature, the current review also considered evidence of the impact of policies on related risk behaviors and potential mediators of sexual violence perpetration. The review included evidence on the following outcomes, when available: (1) sexual violence victimization or perpetration, (2) potential mediators (e.g., excessive consumption and social disorganization), and (3) related risk behaviors (i.e., behaviors with shared risk factors or evidence of co-occurrence with sexual violence). The related risk behaviors examined most often in the literature include general aggressiveness, criminal behavior, intimate partner violence, risky sexual behaviors, and sexual health outcomes (e.g., sexually transmitted infections [STIs]), all of which have been linked to risk for sexual violence perpetration (Ozer, Tschann, Pasch, & Flores, 2004; Tharp et al., 2013).

This review focuses on a subset of alcohol policies selected for their potential to impact excessive consumption or social disorganization. Although we generally excluded policies focused on specific subgroups in the interest of broader generalization, we include college-specific policies due to strong interest in the field and recent calls for sustained action at the federal level to address sexual violence on college campuses (The White House, 2014). Data sources were identified through searches in social science, economics, and law databases; online resources such as the Alcohol Policy Information System (<http://alcoholpolicy.niaa.nih.gov>); and by reviewing reference lists of other relevant articles.

Evidence Linking Alcohol Policy and Sexual Violence

Six policy areas were identified for examination in this review: alcohol pricing, sale time, outlet density, drinking environment, alcohol marketing, and college policies. In each section subsequently, we describe the policy area, the mechanisms by which the policies may impact risk for sexual violence perpetration, and existing evidence of effects on relevant outcomes. The evidence identified for each policy area is summarized in Table 1.

Alcohol Pricing Policies

For the purpose of this review, alcohol pricing policies include any policies that produce variation in the price of alcoholic beverages, including beer, wine, and liquor, per volume or serving. Such policies can include state or local laws that restrict the use of free, very low cost, or unlimited drink specials in bars (e.g., “happy hour” restrictions; National Highway Traffic

Table 1. Summary of Evidence for Alcohol Policies on Sexual Violence and Related Outcomes.

Policy	Description	Summary of Findings
Pricing policies		
"Happy hour" restrictions	Prohibit sales practices (including happy hours, drink specials, and promotions) that effectively reduce alcohol prices	<ul style="list-style-type: none"> • <i>Alcohol use:</i> Harmful effects of drink specials on rates of actual or planned consumption in six studies (Babor et al., 1978; Christie et al., 2001; Kuo, Wechsler, Greenberg, & Lee, 2003; Thombs et al., 2008, 2009; Wechsler, Lee, et al., 2003); null effects of a city-wide "happy hour" ban on per capita consumption in one study (Smart & Adlaf, 1986)
Excise tax	Increase alcohol tax rates (usually excise tax), which increase price	<ul style="list-style-type: none"> • SV: Beneficial effects on rates of SV based on self-report and law enforcement data in four studies (Cook & Moore, 1993; Desimone, 2001; Grossman & Markowitz, 1999; Zimmerman & Benson, 2007); null effects on self-reported rates of SV in two studies (Herttua, Mäkelä, Martikainen, & Sirén, 2008; Markowitz, 2005) • <i>Assault:</i> Beneficial effects on assault and injury rates based on law enforcement and hospital data as well as STIs and risk sexual behaviors in two systematic reviews (Elder et al., 2010; Wagenaar et al., 2010) • <i>Alcohol use:</i> Beneficial effects on consumption in two systematic reviews (Elder et al., 2010; Wagenaar et al., 2009)
Sale time policies		
Days of sale	Reduce or maintain current limits on days of sale	<ul style="list-style-type: none"> • <i>IPV:</i> Mixed effects on IPV rates in law enforcement data in one systematic review (Middleton et al., 2010) • <i>Assault:</i> Beneficial effects on physical assault rates in law enforcement data in one systematic review (Middleton et al., 2010) • <i>Alcohol Use:</i> Beneficial effects on per capita consumption in one systematic review (Popova, Giesbrecht, Bekmuradov, & Patra, 2009)
Hours of sale	Reduce or maintain current limits on hours of sale	<ul style="list-style-type: none"> • <i>Assault:</i> Mixed effects on assault and injury in hospital data in one systematic review (Hahn et al., 2010) • <i>Alcohol Use:</i> Beneficial effects on per capita alcohol consumption in one systematic review (Popova et al., 2009)
Alcohol outlet density policies		
Privatization	Increase density by increasing sale of certain alcoholic beverages by private off-premise outlets	<ul style="list-style-type: none"> • <i>Alcohol Use:</i> Harmful effects on consumption of privatized beverages in two systematic reviews (Campbell et al., 2009; Hahn et al., 2012)
Permissive licensing	Increase density by permitting sale of more types of alcoholic beverages at more premises	<ul style="list-style-type: none"> • <i>Alcohol Use:</i> Harmful effects on per capita alcohol consumption in one systematic review (Campbell et al., 2009)
Bans	Decrease density by banning sale or consumption at outlets in an area (e.g., town, county)	<ul style="list-style-type: none"> • <i>Injury:</i> Beneficial effects on alcohol-related medical visits (in isolated communities only) in one systematic review (Campbell et al., 2009) • <i>Alcohol Use:</i> Beneficial effects on per capita alcohol consumption in one systematic review (Campbell et al., 2009)
General outlet density (not policy specific)	Increase in the number of alcohol outlets per capita or in a defined geographic area	<ul style="list-style-type: none"> • SV: Harmful effects of higher density on rape rates using law enforcement data (Toomey et al., 2012) and rape/sexual assault victimization rates using self-report data (Markowitz, 2005); null effects on male sexual victimization by an intimate partner in one study (Waller, Iritani, Flewelling, et al., 2012) • <i>Assault:</i> Harmful effects of higher density on assault, violent crime, and injury rates using law enforcement data in two studies and one review (Campbell et al., 2009; Liang & Chikritzhs, 2011; Pridemore & Grubestic, 2012) and hospital admissions data in three studies (Gruenewald & Remer, 2006; Livingston, 2011a; Mair, Gruenewald, Ponicki, & Remer, 2013) • <i>IPV:</i> Harmful effects of higher density on IPV using law enforcement data in four studies (Cunradi et al., 2011; Cunradi et al., 2012; Livingston, 2011b; McKinney, Caetano, Harris, & Ebama, 2009); mixed effects on self-reported IPV victimization for males and females in three studies (McKinney et al., 2009; Waller, Iritani, Christ, et al., 2012; Waller, Iritani, Flewelling, et al., 2012)

(continued)

Table 1. (continued)

Policy	Description	Summary of Findings
		<ul style="list-style-type: none"> • <i>Norms</i>: Harmful effects of higher density on self-reported hostility and norms supporting aggression in one study (Treno, Gruenewald, Remer, Johnson, & LaScala, 2007) • <i>Alcohol Use</i>: Harmful effects of higher density on per capita alcohol consumption and self-reported binge drinking in one review (Campbell et al., 2009)
Drinking environment policies		
Enhanced enforcement	Increased enforcement of laws prohibiting "overservice" to intoxicated or underage patrons	<ul style="list-style-type: none"> • <i>Violence</i>: Mixed effects on violence-related outcomes using law enforcement and hospital data in three systematic reviews (Brennan, Moore, Byrne, & Murphy, 2011; Jones, Hughes, Atkinson, & Bellis, 2011; Rammohan et al., 2011)
Dram shop liability	Holding owners and/or servers at on-premise outlets liable for criminal behavior of overserved patrons	<ul style="list-style-type: none"> • <i>Alcohol Use</i>: Null effects on self-reported heavy drinking in two studies (Sloan, Reilly, & Schenzler, 1995; Stout, Sloan, Liang, & Davies, 2000)
Responsible beverage service	Training (sometimes mandated) to increase ability of servers to prevent overservice	<ul style="list-style-type: none"> • <i>Aggression</i>: Beneficial effects on observed physical aggression in bars in one study (Graham et al., 2004) • <i>Alcohol Use</i>: Beneficial effects on patrons subjectively rated as extremely drunk in one study (Lang, Stockwell, Rydon, & Beel, 1998); null effects on BAC in one systematic review (Brennan et al., 2011)
Marketing policies		
Ban on billboard and alcohol price ads	State and local bans of alcohol ads on billboards or ads that list alcohol price	<ul style="list-style-type: none"> • <i>Child Abuse</i>: Null effects on self-reported child abuse perpetration in one study (Markowitz & Grossman, 1998) • <i>Alcohol Use</i>: Mixed effects of banning ads of alcohol prices and null effects of banning billboard ads on per capita alcohol consumption in one study (Nelson, 2001)
Marketing exposure (not policy specific)	General exposure to alcohol advertising	<ul style="list-style-type: none"> • SV: Harmful effects of exposure to sexist alcohol advertising on rape, sexual assault, and exposure offenses against women using law enforcement data in one study (Parker, Alaniz, & Cartmill, 2013) • <i>Alcohol Use</i>: Harmful effects of advertising exposure on self-reported drinking initiation and levels and patterns of consumption in two reviews (Anderson, de Bruijn, Angus, Gordon, & Hastings, 2009; Smith & Foxcroft, 2009)
College policies		
Ban alcohol in certain dorms	Prohibit presence of alcohol in certain student housing residences	<ul style="list-style-type: none"> • SV: Beneficial effects on self-reported sexual assault victimization (Wechsler, Lee, Nelson, et al., 2002) and unwanted sexual advances (Wechsler, Lee, Nelson, et al., 2001; in substance free dorms only) in two studies • <i>Delinquency</i>: Beneficial effects on self-reported delinquency in last 30 days in one study (Wechsler, Lee, Nelson, et al., 2001) • <i>Alcohol Use</i>: Beneficial effects on self-reported drinking on 10+ occasions in last 30 days (Wechsler, Lee, Nelson, et al., 2001) and binge drinking (Wechsler, Lee, Nelson, et al., 2002; substance-free dorms only); mixed effects on frequency of heavy drinking in two studies (Wechsler, Lee, Nelson, et al., 2001; Williams, Pacula, Chaloupka, & Wechsler, 2004)
Ban alcohol on campus	Prohibit alcohol on campus for all students	<ul style="list-style-type: none"> • SV: Beneficial effects on self-reported experience of unwanted sexual advances, but null effects on self-reported sexual assault victimization in one study (Wechsler, Lee, Gledhill-Hoyt, et al., 2001) • <i>Injury</i>: Beneficial effects on self-reports of being hurt or injured and having property damaged in one study (Wechsler, Lee, Gledhill-Hoyt, et al., 2001) • <i>Alcohol Use</i>: Beneficial effects on binge drinking and remaining abstinent from alcohol in two studies (Wechsler, Lee, Gledhill-Hoyt, et al., 2001; Williams et al., 2004)
Social Norm Campaigns	Marketing campaigns to correct students' misperceptions of alcohol consumption on campus	<ul style="list-style-type: none"> • <i>Alcohol Use</i>: Mixed effects on self-reported consumption in two studies and one review (DeJong et al., 2006, 2009; Toomey, 2007)

Note. SV = sexual violence; IPV = intimate partner violence; STI = sexually transmitted infection; BAC, blood alcohol concentration. Sexual violence outcomes are in boldface.

Safety Administration, 2005) or alcohol taxation policies at the state level that result in higher alcohol prices. State tax policies often address individual beverage types separately, resulting in different tax rates for each beverage type across states (Elder et al., 2010). Policies that increase the price of alcohol or prevent large price reductions have been shown to reduce demand for the targeted beverages (Elder et al., 2010) and may reduce excessive consumption and its related health consequences.

“Happy hour” restrictions, or policies that regulate the use of promotional drink pricing that lowers alcohol prices substantially or encourages purchasing in bulk (e.g., selling beer by the pitcher, quantity discounts), have not been studied with regard to their impact on sexual violence. However, such pricing practices have demonstrated harmful effects on rates of actual or planned consumption in six studies (Babor, Mendelson, Greenberg, & Kuehnle, 1978; Christie et al., 2001; Kuo, Wechsler, Greenberg, & Lee, 2003; Thombs et al., 2008, 2009; Wechsler, Lee, Nelson, & Lee, 2003). One such study, for example, examined the effects of various drink specials on patron consumption in a college bar district and found that “all-you-can-drink” promotions, in particular, were associated with significantly higher blood alcohol concentration (BAC) levels. Other promotions did not have a significant effect on intoxication in this sample, in part because patrons who did not take advantage of the drink specials tended to consume more drinks prior to entering the bar (Thombs et al., 2009). Notably, a study that examined effects of a citywide “happy hour” ban on per capita consumption found null effects (Smart & Adlaf, 1986).

Six studies were identified that examined the impact of alcohol tax and price on sexual violence outcomes (Cook & Moore, 1993; Desimone, 2001; Grossman & Markowitz, 1999; Herttua, Mäkelä, Martikainen, & Sirén, 2008; Markowitz, 2005; Zimmerman & Benson, 2007). As illustrated in Table 1, most used U.S. state-level data on beer taxes, examining associations with rape and sexual assault crime data (Cook & Moore, 1993; Desimone, 2001; Zimmerman & Benson, 2007) or self-reported rape and sexual assault victimization data (Markowitz, 2005). The majority of studies concluded that higher alcohol prices and taxes were associated with lower rates of sexual violence at the state level (Cook & Moore, 1993; Desimone, 2001; Grossman & Markowitz, 1999; Zimmerman & Benson, 2007). Markowitz (2005) did not find a statistically significant relationship between sexual violence and higher taxes but did report lower rates of general physical assaults overall. Looking at a nationwide reduction in alcohol taxes in Finland, Herttua, Mäkelä, Martikainen, and Sirén (2008) did not find any significant impact on sexual violence outcomes; however, the authors attributed this null finding in part to a weaker connection between alcohol consumption and violence in Finland.

Multiple reviews have described evidence of an inverse relationship between alcohol prices and alcohol consumption. A meta-analysis of 112 studies found consistent beneficial effects of alcohol taxes and pricing on the sale and consumption of alcohol (Wagenaar, Salois, & Komr, 2009). Similarly, a systematic review of more than 70 studies conducted by the Community Preventive Services Task Force (“Community

Guide,” <http://www.thecommunityguide.org/index.html>) concluded that higher alcohol prices are associated with reductions in excessive alcohol consumption (Elder et al., 2010). The authors estimated that a 10% increase in alcohol prices is associated with a 3–10% reduction in alcohol consumption. The authors also found that higher prices were associated with reductions in violent crime and self-reported perpetration of violence against children at the state level. Another systematic review (Wagenaar, Tobler, & Komro, 2010) found a significant inverse relationship between alcohol price and state-reported rates of STIs, self-reported risky sexual behaviors, and self- and police-reported criminal and violent behavior. The review concluded that doubling the alcohol tax from current rates would reduce the prevalence of STIs by an estimated average of 6%, violence by 2%, and crime by 1.2%. Supporting these findings, a recent study by Markowitz et al. (2012) concluded that increasing the excise tax on beer is the most effective alcohol policy approach to curbing self-reported general assault victimization rates.

Sale Time Policies

Sale time policies include state and local policies regulating the hours and/or days of alcohol sales (Alcohol Policy Information System, n.d.). These policies range widely between jurisdictions in terms of how they regulate different types of beverages and on- and off-premises alcohol outlets (Alcohol Policy Information System, n.d.; Hahn et al., 2010). On-premises outlets refer to retailers that sell alcohol to be consumed at the point of sale (e.g., bars and restaurants). Off-premises outlets refer to retailers where the alcohol is purchased and consumed elsewhere (e.g., liquor stores and convenience stores). Consistent with other reviews (Hahn et al., 2010; Middleton et al., 2010), we include policies that reduce current hours/days of sales as well as policies that maintain existing limits, given that the current legal trend is toward expanding sale times.

Increasing the hours and days of alcohol sales (e.g., pushing back the closing time of bars and liquor stores or allowing the sale of alcohol on Sundays) increases the availability of alcohol and opportunities to purchase it, which may lead to higher levels of consumption (Hahn et al., 2010; Middleton et al., 2010). Thus, enacting or maintaining policies that restrict the hours and days of sales may reduce levels of consumption and related health consequences. Sale time policies may also affect social disorganization by increasing or decreasing the potential effects of alcohol outlets on their surrounding communities.

No studies were identified that examined the effects of sale time policies on sexual violence perpetration outcomes. However, multiple systematic reviews recommend the use of sale time restriction policies to reduce consumption and related harms (including injuries, motor vehicle crashes, violence, and medical conditions). A systematic review by Middleton et al. (2010) examined 14 studies on policies affecting days of sales. The authors found that increasing days of sale by removing bans increased consumption and related harms (e.g., motor vehicle injuries, violence, crime, and physical health effects),

and conversely that imposing bans and reducing days of sale reduced consumption and harms. Most of the related harms examined by studies in the review were motor vehicle related; however, four studies explored violence and crime outcomes related to the ban of Saturday sales at off-premise outlets in Norway and Sweden, with mixed results (summarized in Table 1). Specifically, these studies found declines in reported domestic disturbances (Norlund, 1985; Olsson & Wikstom, 1982, as cited in Middleton et al., 2010) and outdoor physical assaults (Olsson & Wikstom, 1982) but increases in other reported violence (Norlund, 1985), following implementation of a ban on Saturday sales. When these bans were later repealed in select pilot communities in Sweden and then throughout the country, assaults did not increase, as might be expected (Norström & Skog, 2003, 2005). However, the authors attributed these null effects to low statistical power since lifting the ban resulted in only a modest increase in alcohol sales (less than 4%).

Several reviews have also examined the effects of restricting the hours of alcohol sales. A systematic review by Popova, Giesbrecht, Bekmuradov, and Patra (2009) examined 15 studies that explored the effects of changing the hours of alcohol sales. The authors found a strong association between changes in sales hours and consumption and related harms. As with day-of-sale policies, however, most studies examined only motor vehicle-related outcomes. Hypothesizing a dose-response relationship between change in sales hours and consumption, a systematic review by Hahn et al. (2010) found a similar relationship between sale hours and consumption; however, they concluded that increasing hours of sale by at least 2 hr is necessary to produce a significant increase in consumption. Their review included eight studies that examined violence and crime outcomes with mixed findings (summarized in Table 1). For example, one study examined a change in British law that resulted in modest increases in sales times for the majority of pubs in the United Kingdom and found a significant increase in alcohol-related assaults and injuries (Newton, Sarker, Gurjinderpal, van den Bergh, & Young, 2007). In contrast, two other studies found that the same law was associated with a reduction in head and neck traumas resulting from alcohol-related assaults (El-Maaytah et al., 2008).

Alcohol Outlet Density

Outlet density policies regulate, at the state or local level, the number of on- and off-premise alcohol outlets within a geographic area (Campbell et al., 2009). The three most studied policies impacting outlet density are privatization, licensing, and bans. Privatization policies permit the sale of alcohol by private retailers at off-premise outlets, eliminating government monopolies that restrict sellers to government-owned entities. Within the United States, these policies mostly pertain to sales of wine and liquor (Campbell et al., 2009) and usually specify the privatization of only one type of beverage (e.g., wine) at a time. Privatization is associated with an increase in outlet density because it typically increases the number of retailers with a

license to sell alcohol. Licensing policies may also impact outlet density by permitting or restricting sales at certain outlet types (e.g., convenience and grocery stores) or sales of specific types of alcoholic beverages at on-premise outlets (e.g., the sale of liquor at restaurants, also known as liquor by the drink). Policies that ban alcohol sales or consumption at on- or off-premise outlets (e.g., dry counties or towns) decrease outlet density in the affected areas but may increase density in surrounding areas (Campbell et al., 2009). Other policies, such as zoning laws, may also affect outlet density but are not reviewed here due to a limited evidence base regarding their impact.

Changing the number of on- and off-premises outlets impacts the availability of alcohol by affecting its price, the distance consumers must travel to purchase it, and the exposure to alcohol marketing in and near outlets (Campbell et al., 2009). By affecting access to alcohol, these policies may impact overall levels of consumption (Livingston et al., 2007). These policies may also impact social disorganization. Specifically, policies that reduce the concentration of alcohol outlets may decrease the number of high-risk individuals (Treno et al., 2007) and social aggregation around outlets (Hahn et al., 2010) and may reduce visual blight in communities (Cunradi, 2010).

Two systematic reviews examining the effects of privatization on consumption and harm (Campbell et al., 2009; Hahn et al., 2012) found that privatization significantly increases the consumption of included beverages but not nonprivatized beverages. In their review of licensing policies, Campbell et al. (2009) found a positive relationship in four studies between more permissive licensure laws, the number of on- and off-premises outlets, and alcohol consumption. Although studies of both privatization and licensing policies suggest consistent effects on consumption, only motor vehicle-related health outcomes were examined. In the same review, Campbell et al. (2009) also examined studies of jurisdiction-wide bans on the sale and consumption of alcohol. The authors found that the availability of alcohol in nearby communities determines the impact of these bans. That is, alcohol bans can significantly decrease consumption and related harms (including violence) in isolated communities; however, bans have mixed evidence of effectiveness and may actually increase motor vehicle-related harms in communities where alcohol is available nearby.

More research explores cross-sectionally the relationship between outlet density, consumption, and related health consequence broadly, not evaluating the impact of a specific density-related policy. Unlike evaluations of specific density policies, many of these studies examine the impact of outlet density on sexual violence and sexual violence-related outcomes. Using rates of self-reported rape and sexual assault from the National Crime Victimization Survey, Markowitz (2005) found that the number of licensed outlets in an area was positively related to the likelihood of rape victimization. The author estimated that every 1% increase in the number of outlets was associated with a 1.24% increase in the probability of rape.

Toomey et al. (2012) examined the association between neighborhood alcohol outlet density and police-reported violent crimes, including rape. The authors found that rates of reported rape were positively associated with the density of on-premise but not off-premise outlets (Toomey et al., 2012). Finally, using data from the National Longitudinal Study of Adolescent Health, Waller, Iritani, Flewelling, et al. (2012) examined young adult men's self-reported experience of intimate partner violence victimization, including sexual victimization, perpetrated by female partners. In this study, alcohol outlet density was positively correlated with male physical violence victimization by a female partner (reported by 16% of the sample) but not male sexual victimization by a female partner (reported by 6.4% of men; Waller, Iritani, Flewelling, et al., 2012).

Additional cross-sectional, nonpolicy-specific research examines the association between outlet density and sexual violence perpetration-related outcomes more generally. Campbell et al. (2009) found that most of the nearly 75 cross-sectional studies they reviewed reported that outlet density is related to alcohol consumption and related harms. In addition, several studies examined violent crime outcomes, with almost all finding a harmful relationship between outlet density and violence (Campbell et al., 2009). A handful of more recent studies further support these results, reporting a harmful association between outlet density and perpetration and experience of intimate partner violence (Cunradi, Mair, Ponicki, & Remer, 2011; Cunradi, Mair, & Remer, 2012; Livingston, 2011b; McKinney, Caetano, Harris, & Ebama, 2009) and violent assaults (Liang & Chikritzhs, 2011; Livingston, 2011a; Mair, Gruenewald, Ponicki, & Remer, 2013; Pridemore & Grubestic, 2012). Many of these studies identify important moderating variables that impact the connection between outlet density and violence, including neighborhood characteristics, type of outlet (bar vs. restaurant), and couple characteristics (in the case of intimate partner violence).

Drinking Environment Policies

The three major policies often used to increase the safety of drinking environments are enhanced enforcement, responsible beverage service training, and dram shop liability policies. All three policies target "overservice," or the sale of alcohol to intoxicate or underage patrons at on-premise outlets, and they can be implemented separately or in combination. By preventing overservice, these policies may decrease the overall levels of alcohol consumption and thus related health consequences (Rammohan et al., 2011). Enhanced enforcement policies increase the involvement of law enforcement to enforce existing laws prohibiting "overservice" (Rammohan et al., 2011). Sometimes implemented simultaneously with enhanced enforcement policies, responsibility beverage service policies require the training of managers and staff at on-premise outlets to increase their knowledge and skills to prevent "overservice" (Babor et al., 2003). Dram shop liability laws hold the owner and/or servers at on-premise outlets liable for criminal behavior perpetrated by individuals who were served when intoxicated

or underage at their drinking establishment. A final, and less common, drinking environment policy involves training and barroom management violence prevention strategies (Babor et al., 2003; Graham et al., 2004). These strategies differ from responsible beverage service training by focusing specifically on preventing violence, not just overservice, in the drinking environment. As a result, this policy may affect sexual violence by increasing the social controls and thus social organization of on-premise outlets.

No studies were identified that examined the direct effects of drinking environment policies on sexual violence outcomes. Three recent systematic reviews (Brennan, Moore, Byrne, & Murphy, 2011; Jones, Hughes, Atkinson, & Bellis, 2011; Rammohan et al., 2011) examined the evidence for enhanced enforcement efforts and dram shop liability, with findings that were largely inconclusive for violence-related outcomes. However, the use of law enforcement data as an outcome in many of these evaluations is potentially problematic because the increase in law enforcement presence likely leads to an increase in arrests, confounding the data (Graham, 2011). The majority of studies examining dram shop liability policies measured drunken driving-related outcomes (Rammohan et al., 2011). Only two studies examined the effects of dram shop liability laws on alcohol consumption and neither found significant effects (Sloan, Reilly, & Schenzler, 1995; Stout, Sloan, Liang, & Davies, 2000).

Most server training programs primarily address either overservice or barroom aggression. In a review of overservice programs, Brennan, Moore, Byrne, and Murphy (2011) found mostly null results for consumption outcomes. However, one study found beneficial changes in server behavior (Gliksman et al., 1993) and another found a decrease in the number of patrons subjectively rated as extremely drunk (Lang, Stockwell, Rydon, & Beel, 1998). The review identified only one evaluation of a training program focused on barroom management and violence prevention. The Safer Bars Programme, evaluated using a randomized controlled trial in Canada, was found to be effective in reducing severe and moderate physical aggression in bars implementing the program (Graham et al., 2004). This program includes a workbook for owners to assess environmental factors that can increase the risk of aggression in their establishment and a training to build staff skills to prevent and diffuse aggression in bars (Graham et al., 2004).

Marketing Policies

There are a variety of ways that federal, state, and local governments can regulate alcohol marketing on television, billboards, and in print as well as through less traditional forms of advertising like event sponsorships, product placement, and advertisements on the Internet (Center on Alcohol Marketing and Youth, 2012). Policies may prohibit the content in ads (e.g., false or misleading content, content targeting minors, or that mentions pricing information) or the location of ads (e.g., college campuses, retail outlet windows, billboards, areas where children frequent; Center on Alcohol Marketing and Youth,

2012). U.S. studies on the impact of alcohol marketing often focus on state-level policies banning advertisements of alcohol prices and the use of billboard advertisements.

By creating positive associations with alcohol and affecting social norms about alcohol and drinking, marketing may increase demand and consumption of alcohol (Babor et al., 2010), including excessive consumption (Cunradi, 2010). Thus, policies that restrict exposure to alcohol marketing may decrease the demand for and consumption of alcohol, reducing related health consequences. Restricting advertisements in alcohol outlet windows and near outlets may also reduce the visual presence of alcohol outlets and blight on the local community (Center on Alcohol Marketing and Youth, 2012), which may decrease perceptions of social disorganization. Additionally, many alcohol advertisements include patriarchal and misogynistic themes that may reify problematic gender and sexual norms as they relate to alcohol (Babor et al., 2003). However, regulation of such content via public policy has not been attempted in the United States to date.

This review uncovered only one study examining the impact of marketing on sexual violence outcomes. Parker, Alaniz, and Cartmill (2013) content-analyzed advertisements targeting Latino populations in the alcohol outlets of one California community to determine the proportion of ads that portrayed Latina models in “sexist” or objectified ways. Using law enforcement data, the authors found that areas with higher densities of sexist alcohol ads had significantly higher rates of rape, sexual assault, and exposure offenses against both Latina and non-Latina women, but not higher rates of nonsexual victimization. The authors concluded that sexist alcohol advertisements are associated with increased rates of sexual violence in communities (Parker, Alaniz, & Cartmill, 2013).

With regard to other outcomes, Nelson (2001) reviewed seven studies of state-level marketing policies and found consistently null effects for billboard advertising bans and mixed effects for bans on advertising alcohol price on consumption measured at the state level. Only one study examined violence outcomes, and it found no effects for marketing restrictions (including bans on billboards, window displays, and price advertising) on physical child abuse; however, the authors noted that the bans were of limited scope (Markowitz & Grossman, 1998). Saffer (2002) suggests that bans of only one or two forms of media likely lead to greater use of nonbanned media, limiting the ability of these policies to achieve overall reductions in advertising exposure.

College Policies

College campuses are recognized as having a high prevalence of both problematic alcohol use and sexual violence perpetration (Abbey, 2002). Many of the policies described above may also impact college students (Toomey, Lenk, & Wagenaar, 2007). However, universities are in a unique position to implement additional campus-specific policies and programs to reduce student drinking and improve related health and safety outcomes on their campuses. These often include policies that

prohibit alcohol use on campus or in specific residence halls, or policies that mandate campus-wide campaigns to address problematic social norms about alcohol use among students (Lenk, Erickson, Nelson, Winters, & Toomey, 2012; Toomey et al., 2007). A major goal of these policies is to decrease students’ access to and thus consumption of alcohol (Toomey et al., 2007). College policies may also impact the campus environment and neighboring communities (Wechsler, Lee, Hall, Wagenaar, & Lee, 2002; Wechsler & Nelson, 2008; Williams, Chaloupka, & Wechsler, 2005) in ways that can increase social organization.

Multiple cross-sectional studies have examined the indirect effects on sexual violence outcomes of college alcohol policies that ban alcohol in residence halls or campus wide. Wechsler, Lee, Nelson, et al. (2001) compared students living in substance-free (banning alcohol and tobacco), alcohol-free, and unrestricted dorms and found that students living in substance-free dorms reported lower rates of receiving unwanted sexual advances than students living in unrestricted dorms. However, there were no differences between alcohol-free and unrestricted dorms, and no differences in rates of self-reported sexual violence victimization across dorm type. A subsequent study by Wechsler, Lee, Nelson, and Kuo (2002) found that unwanted sexual advances and sexual violence victimization were reported less often by students in substance-free housing than in unrestricted dorms or Greek housing, but significance testing did not directly compare these housing options.

Looking at campus-wide alcohol bans, Wechsler, Lee, Gledhill-Hoyt, et al. (2001) found that students at schools that ban alcohol on campus self-report significantly lower rates of unwanted sexual advances and rates of being hurt or injured. However, the differences in rates of sexual assault victimization were not statistically significant. In terms of alcohol consumption outcomes, both alcohol- and substance-free dorms are associated with lower levels of consumption (Wechsler, Lee, Nelson, et al., 2002; Wechsler, Lee, Nelson, & Lee, 2001; Williams, Pacula, Chaloupka, & Wechsler, 2004) as are policies prohibiting alcohol on college campuses. For example, students at colleges that ban alcohol report less alcohol use (Williams et al., 2004), are less likely to binge drink, more likely to abstain from alcohol, and report fewer secondhand effects of alcohol (i.e., effects experienced by individuals who are not drinking, such as sleep or study disturbances or property damage; Wechsler, Lee, Gledhill-Hoyt, & Nelson, 2001). However, these policies may be more effective for students who are at lower levels of risk (Williams et al., 2005). Notably, given the cross-sectional design, these studies could not conclude if the differences result from the housing policies or self-selection to these living arrangements.

Social norms campaigns about alcohol use may be implemented in universities as a matter of policy in an effort to change students’ perceptions about alcohol consumption and norms (Toomey et al., 2007). These strategies typically involve the use of posters or other means of disseminating positive messages that highlight existing healthy drinking norms in a

given population. For example, posters might emphasize the fact that most students on campus do not binge drink (Wechsler et al., 2003). In their review of 16 studies on university social norms campaigns, Toomey et al. (2007) concluded that this approach should be used cautiously because a number of studies produced null findings, and some even found an increase in alcohol use after the implementation of these campaigns. DeJong et al. (2006, 2009) examined the effects of a social norms campaign on drinking in two multisite randomized trials with mixed results. The findings suggest that these strategies might be less effective on campuses with greater initial levels of drinking and in areas with greater alcohol outlet density (DeJong et al., 2009). Similarly, Scribner et al. (2011) also found that the density of alcohol outlets near a university significantly moderated the effects of campus-based social norms campaigns.

Summary and Discussion

The current review addresses the limited availability of community- and societal-level prevention strategies for sexual violence perpetration by considering the available empirical and theoretical evidence for one potential approach, that is, alcohol policy. The consistent links between alcohol use and sexual violence perpetration, as well as the availability of a relatively large literature examining the effects of alcohol policies on other health and behavior outcomes, make this a useful starting place for dialogue around population-based approaches for the prevention of sexual violence perpetration.

Despite the breadth of alcohol policy research available, there is limited direct evidence of the impact of these policies on sexual violence outcomes. Therefore, the current review considered not only evidence on sexual violence outcomes but also evidence of the impact of these policies on related outcomes and potential mediators of sexual violence. We identified six key policy areas with the potential to impact sexual violence perpetration: alcohol pricing, sale time, alcohol outlet density, drinking environment, marketing, and college policies. Conclusions and considerations in each key area are summarized subsequently and in Table 1.

Alcohol Pricing Policies

Research suggests that policies which increase alcohol prices through taxation may have beneficial effects on the rates of sexual violence perpetration. Higher prices are also associated with lower rates of alcohol consumption, general violence and crime, and related health outcomes (e.g., STIs, risky sexual behavior) at the population level. However, the effects of pricing policies vary by the size of the price increase, the type of beverage, and differences in price elasticities, that is, the extent to which changes in alcohol price correlate with changes in demand and consumption of alcohol (Babor et al., 2003). Overall, the evidence in this area supports a consistent link between policies that increase price through taxation or prevent large decreases in price through drink promotions and relevant

health outcomes, including sexual violence perpetration. More research is needed to examine the effects of so-called happy hour laws that restrict the use of drink specials offering alcohol for free, at deep discounts, or on an unlimited basis over a certain time period. Such drink specials have been found to encourage binge drinking. Because these policies are typically implemented via state licensing boards or local regulations, as opposed to state tax law, they may also be more modifiable than other approaches to price control and more practical as a prevention strategy within communities.

Sale Time Policies

No studies to date have examined the effects of sale time policies on sexual violence perpetration, and the few studies examining the effects on other types of violence have showed mixed results. However, there is consistent evidence supporting the beneficial effects of sale time restrictions on rates of alcohol consumption, suggesting some potential for these policies to impact the risk for sexual violence perpetration. The studies included in this review were conducted predominantly in non-U.S. countries; thus, more research is needed to understand the use and impact of these policies in the United States. Given the current trend toward increased sale times in the United States (“Alcohol Policy Information System,” n.d.), additional research may be most useful for informing decisions by policy makers and the public regarding new proposals introduced to increase hours and days of sales. In general, more research is also needed to understand the specific mechanisms by which sales time changes might affect sexual violence perpetration risk to inform the development of sale time policies (e.g., closing time laws) or other interventions (e.g., law enforcement presence after closing time) that might address those potential risks.

Alcohol Outlet Density

Research consistently illustrates the harmful effects of privatization and permissive licensing policies—which increase the density of alcohol outlets in an area—on rates of alcohol consumption. Higher outlet density, irrespective of any specific policies to modify it, has been linked in several studies to higher rates of sexual violence victimization in communities; however, future studies should examine inconsistencies in the research relating to the type of outlet (on- or off premise) and the sex of the victim and perpetrator. Additional studies have found consistent positive associations between greater outlet density and several related outcomes, including rates of alcohol consumption, assault, violent crime, and intimate partner violence. Outlet density may also have a broader impact on communities as a whole, contributing to social disorganization and an increased risk for crime and violence, including sexual violence. Although the current review did not identify any research that examined the effects of specific policies aimed at modifying outlet density in a community on sexual violence perpetration or related violence outcomes, additional research examining the effects of

these policies on sexual violence perpetration rates is warranted and supported by the existing evidence.

Drinking Environment Policies

The effects of drinking environment policies, such as those that seek to reduce overservice through server training or enforcement, have not yet been studied with regard to sexual violence outcomes, and the limited evidence of effectiveness for reducing patron consumption is mixed. Thus, to date, support for the use of overservice programs and enforcement to prevent sexual violence perpetration is lacking. However, preliminary evidence supports the use of barroom management strategies to reduce environmental risk factors for aggressive behavior, with evidence of reductions in assault and physical aggression in these settings from one study. Much more research is needed, but these findings suggest that such approaches may also hold promise for reducing the risk of some forms of sexual violence perpetration in drinking establishments, such as sexual harassment or unwanted touching, through environmental change and server trainings. Some localities are already implementing similar programs and policies designed to reduce risk for sexual violence perpetration specifically in bar settings (see, for example, the Safe Bars project in the District of Columbia, <http://www.collectiveactiondc.org/programs/safe-bars/>; and the Arizona Safer Bars Alliance, Arizona Dept of Health Services, 2013), but they have yet to be evaluated. Because these programs are relatively inexpensive to implement and can be regulated by alcohol licensure boards or adopted voluntarily by businesses, they may represent an opportunity for implementation and rigorous evaluation within local communities.

Marketing Policies

No studies to date have explored the impact of alcohol marketing policies on sexual violence perpetration. Although multiple systematic reviews support a positive association between exposure to marketing and alcohol consumption in general, studies examining policies that restrict the location or content of alcohol advertisements show inconsistent effects on state-level consumption and no effects on violence. However, these findings may reflect methodological challenges and the limited scope of the marketing policies evaluated (Meier, 2011). More alcohol advertising is occurring in unmeasured forms of media like sponsorships and product placement (Center on Alcohol Marketing and Youth, 2012), and evidence from the field of tobacco prevention suggests that policies may be more effective when they address as many measured and unmeasured forms of advertising as possible (Babor et al., 2010). More research on the effects of comprehensive marketing restrictions are needed to examine their potential impact on sexual violence. Preliminary evidence also suggests that marketing policies focused on reducing sexist content in alcohol

advertisements might have an impact on sexual violence perpetration rates; however, no such policies were identified in this review.

College Policies

Several studies found that college policies banning alcohol on campus or substance use in residence halls were associated with reduced rates of self-reported sexual violence victimization. This provides some support for the use of these policies to prevent sexual violence perpetration, and it suggests that they may work by both reducing consumption and impacting community-level factors. Current evidence on the effects of campus social norms campaigns regarding alcohol use on consumption is less consistent, with no studies examining the impact of these approaches on sexual violence perpetration or other related outcomes. Additionally, research suggests that the availability of alcohol in the surrounding community significantly moderates this approach (Scribner et al., 2011) and may ultimately negate its effects (DeJong et al., 2009). This finding also points to the potential impact of noncollege-specific alcohol policies, such as those regulating outlet density, on college student consumption and violence risk. Communities and colleges interested in reducing excessive consumption and other risk factors for sexual violence perpetration among college students may benefit from considering policies that affect not only college campuses but also the surrounding community (Toomey et al., 2007).

Limitations

The current review has several limitations that relate to the quantity and quality of the literature in this area. First, given the limited available literature on the use of alcohol policies to prevent sexual violence perpetration, this review took a qualitative, exploratory approach rather than employing systematic or meta-analytic methodology. Using an exploratory approach, the review aimed to broadly examine a range of alcohol policies, which required limiting the level of detail about the individual studies and reviews included.

Second, of the existing evidence on sexual violence included in this review, most focuses on sexual violence perpetrated by boys and men against women and girls. This overlooks the perpetration of sexual violence in a variety of other contexts, including by individuals of the same sex. As more research is conducted in this area, future reviews should explore how alcohol policies differentially affect sexual violence perpetration in these other contexts. Further, with few studies using sexual violence outcomes, the current review could not distinguish the effects of alcohol policies on different types of sexual violence (e.g., rape, sexual coercion, and unwanted sexual contact) or different types of perpetrators (e.g., intimate partner, acquaintance, or stranger). Finally, we selected the policies in this review based on our hypothesized mechanisms of impact on sexual violence: consumption and

Table 2. Implications of the Review for Practice, Policy, and Research.

Areas of Impact	Implications of the Review
Practice	<ul style="list-style-type: none"> • Preliminary evidence suggests that some alcohol policy approaches may be useful components of a comprehensive sexual violence prevention strategy to address individual and community-level risk factors for perpetration
Policy	<ul style="list-style-type: none"> • Policy makers interested in preventing sexual violence should be aware of the preliminary evidence suggesting that some alcohol policies, in addition to their effects on alcohol-related outcomes, may also affect rates of sexual violence • Policy areas with evidence of a direct association with sexual violence include those affecting price, outlet density, barroom management, sexist alcohol marketing content, and bans of alcohol on campus and in substance-free dorms
Research	<ul style="list-style-type: none"> • Incorporating sexual violence outcomes into alcohol policy evaluation research would provide much-needed evidence regarding the effects of these efforts on sexual violence • Policy areas with initial evidence of impact on risk factors for sexual violence or related outcomes would benefit from additional research examining effects on sexual violence. Such policies include “happy hour” pricing restrictions, sale time, privatization, and licensing policies • Research examining the mechanisms by which alcohol policy may affect sexual violence will assist in the identification of additional alcohol policy approaches with potential for preventing the perpetration of sexual violence

social disorganization. However, it is possible that other types of alcohol policies that we did not include (e.g., alcohol-impaired driving laws) could also impact sexual violence perpetration.

Conclusion and Future Directions

This review suggests several alcohol policy areas with preliminary empirical support for their potential to prevent sexual violence perpetration at the population level. In particular, as outlined in Table 2, several policy areas demonstrate initial evidence of a direct association with sexual violence, including those affecting price, outlet density, barroom management, sexist alcohol marketing content, and bans of alcohol on campus and in substance-free dorms. This evidence points to the potential utility of these approaches as part of a comprehensive sexual violence prevention strategy targeting individual and community-level risk factors for perpetration. However, more research is needed to better understand the nature of the association between these factors and sexual violence perpetration risk as well as the effects of specific policies on sexual violence outcomes. Additional alcohol policy areas with evidence of an impact on risk factors for sexual violence perpetration and/or related outcomes include happy hour pricing restrictions, sale time, privatization, and licensing policies. These areas would benefit from research examining their direct effects on sexual violence perpetration in order to assess their potential effectiveness as part of a community-level prevention strategy.

A considerable challenge to conducting research in this area involves the difficulty of measuring sexual violence perpetration at the community level. Most alcohol policy research, to date, that has examined sexual violence outcomes has utilized data from law enforcement or hospital records. Although these data provide some of the only available sources of community-level sexual violence data, they also underestimate victimization rates and provide a nonrepresentative sample of all sexual violence cases (DeGue et al., 2012). Community surveys and self-reports are alternative data sources; however, they can be costly and challenging to collect at the community level

(DeGue et al., 2012). Future research that triangulates data across these sources or identifies other indicators of sexual violence to assess change at the community level would be informative. Identifying reliable, valid, and practical measures or indicators of sexual violence rates at the state or local level would greatly facilitate research examining the effects of public policy interventions, including alcohol policy, on these important outcomes.

Additionally, much of the research to date has examined links between alcohol-related factors (such as outlet density, price, or marketing content) and sexual violence rates rather than examining the effects of policy approaches to modify those indicators. Future research examining how specific policy interventions affect sexual violence rates over time is still needed, and it could be accomplished in many areas simply by adding sexual violence data (e.g., law enforcement records or other community-level sexual violence indicators) as an outcome measure in planned or ongoing policy analyses. Thus, policy and prevention researchers evaluating these policies are strongly encouraged to include measurement of sexual violence in future work. With much research in this area already ongoing, the inclusion of additional violence outcome measures could greatly expand our understanding of the utility of these strategies for violence prevention at limited additional cost.

With so few evidence-based, community-level prevention strategies for sexual violence perpetration available, this review provides an important contribution to the field by exploring the potential utility of one such approach. Given the complex and multifaceted etiology of sexual violence perpetration, however, no single policy, program, or prevention strategy can operate in isolation. Significant theoretical and empirical work is needed to identify and evaluate other potential approaches to reduce sexual violence perpetration through community-level interventions (e.g., workplace, education, or criminal justice policies). However, preliminary evidence suggests that some alcohol policy approaches may be useful components of comprehensive sexual violence perpetration

prevention strategies. Ultimately, by continuing to expand our knowledge of existing strategies and discover new prevention strategies that span the social ecology, we will strengthen our capacity to decrease sexual violence and its detrimental impact on survivors, communities, and society.

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Authors' Note

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