

CRIME & ACCESS TO ALCOHOL

SUMMARY

Community & Environmental Defense Services (CEDS) is assisting neighborhoods across the country with concerns regarding the proposed addition of off-sale, alcoholic beverage retail establishments – mostly, convenience stores - within their neighborhoods. “Off-sale” means a place where alcoholic beverages are purchased for consumption elsewhere.

Following is an initial review of scientific studies relevant to the potential effect of convenience stores with off-sale liquor licenses on crime and public health. The author has no particular expertise in this subject area. The intent of this document is to provide neighborhood residents with a starting point for a discussion of the science regarding alcohol beverage sales and neighborhood safety. We have contacted the many of the researchers who conducted these studies to confirm we accurately interpreted their findings.

The gist of these studies is that a positive relationship exists between crime as well as adverse health effects and the number of off-sale retail outlets in a given area. Hours of operation are also relevant. The *Key Relevant Findings* below note our interpretation of what the researchers found which may be most applicable to proposed convenience stores near neighborhoods. Clicking on each [blue title](#) will take you to the actual paper. We also included the abstract so you can judge the accuracy of our key findings.

These findings indicate that allowing off-sale of alcoholic beverages at a proposed convenience store will increase crime and other adverse health effects, especially if the store is open 24/7. [One study](#) indicated the presence of an off-sale, 24/7 establishment “may attract people at increased risk for involvement with violent crime.” In [another study](#), researchers concluded: “Children with an alcohol outlet on the route to school were more likely to be offered alcohol, tobacco, and other drugs as well as be exposed to drug selling and seeing people using drugs.” Keep in mind that the negative effects of alcohol outlets are most likely to occur in low-income and other stressed areas.

[ALCOHOL CONSUMPTION AND THE PHYSICAL AVAILABILITY OF TAKE-AWAY ALCOHOL: SYSTEMATIC REVIEWS AND META-ANALYSES OF THE DAYS AND HOURS OF SALE AND OUTLET DENSITY](#)

Key Relevant Findings: This paper shows limiting the hours of operation for retail off-sale of alcohol reduces alcohol consumption and, therefore, reduces adverse health effects.

Abstract

This study suggests that decreasing the physical availability of take-away alcohol will decrease per capita consumption. As decreasing per capita consumption has been shown to reduce alcohol-related harm, restricting the physical availability of take-away alcohol would be expected to result in improvements to public health.

Discussion

The results are generally consistent with previous systematic reviews relating physical availability and alcohol-related outcomes; however, we provide greater specificity by focusing on the physical availability of take-away alcohol and conducting novel meta-analyses regarding days of sale. Meta-analysis of high-quality days of sale studies provide compelling evidence that one additional day of sale will lead to increased aggregate and beverage-specific alcohol consumption. The small number of studies found suggests that increasing hours of sale and outlet density may lead to increased consumption.

ALCOHOL INVOLVEMENT IN HOMICIDE VICTIMIZATION IN THE U.S.

Key Relevant Findings: This paper shows a correlation between Blood Alcohol Content (BAC) and homicides.

Results—Among all homicide victims, 39.9% had a positive BAC including 13.7% with a BAC between 0.01%–0.79% and 26.2% of victims with a BAC \geq 0.08%. Males were twice as likely as females to have a BAC \geq 0.08% (29.1% vs. 15.2%; $p < 0.001$). Characteristics that were independent predictors of homicide victims having a BAC \geq 0.08 included male sex, American Indian/Alaska Native race, Hispanic ethnicity, history of intimate partner violence, and non-firearm homicides.

Conclusions—Alcohol is present in a substantial proportion of homicide victims in the U.S., with substantial variation by state, demographic and circumstantial characteristics. Future studies should explore the relationships between state-level alcohol policies and alcohol-involvement among perpetrators and victims of homicide.

COMPARATIVE APPROACHES FOR ASSESSING ACCESS TO ALCOHOL OUTLETS: EXPLORING THE UTILITY OF A GRAVITY POTENTIAL APPROACH

Key Relevant Findings: This paper introduces what may be a more valid basis for limiting the number of retail off-sale establishments rather than the three per Census Tract limit imposed by the California Alcohol Beverage Commission.

Results: Significant statistical and spatial variability exists between measures of alcohol access, and these differences have meaningful practical implications. In particular, standard measures of outlet density (e.g., spatial, per capita, roadway miles) can lead to biased estimates of physical availability that over-emphasize the influence of the control variables. Employing a gravity potential approach provides a more balanced, geographically-sensitive measure of access to alcohol outlets.

Conclusions: Accurately measuring the physical availability of alcohol is critical for understanding the causes and consequences of its distribution and for developing effective evidence-based policy to manage the alcohol outlet licensing process. A gravity potential model provides a superior measure of alcohol access, and the alcohol access-based taxonomy a helpful evidence-based heuristic for scholars and local policymakers.

DESIGNING DRUNKENNESS: HOW PUBS, BARS AND NIGHTCLUBS INCREASE ALCOHOL SALES

Key Relevant Findings: This paper examined methods used to increase alcohol consumption in bars and nightclubs.

Abstract: Using ethnographic data, this paper investigates the techniques used inside pubs, bars and nightclubs to solicit and sustain alcohol consumption among patrons. Focus is on venues with the majority of patrons belonging to the age group of approximately 15–35 years. The paper identifies a number of techniques, both overt and covert, including: alcohol advertising; special offers (e.g. ‘Happy Hours’ and ‘all you can drink’ specials); bartenders’ use of strategic intimacy, flirtation, and encouragements to buy more; speed drinking devices (e.g. shot glasses, ‘beer bongs’ and large pitchers); and architectural features that hamper moderate drinking while accelerating the purchase and intake of alcohol. These techniques were used most extensively in low-priced venues with the youngest patrons (e.g. themed chain pubs) and less so in more expensive venues with more adult patrons (e.g. craft beer bars). The paper argues that youth-oriented drinking venues may be conceived as staged atmospheres of consumption where individuals are seduced and compelled into purchasing alcohol. A team of 12 researchers collected the data through interviews and observations in pubs, bars and nightclubs in four cities across Denmark.

LIMITING ALCOHOL OUTLET DENSITY TO PREVENT ALCOHOL USE AND VIOLENCE: ESTIMATING POLICY INTERVENTIONS THROUGH AGENT-BASED MODELING

Key Relevant Findings: While limiting alcohol outlet density in New York City decreased the number of light drinkers but there was no change in alcohol related homicides or nonfatal violence.

Abstract: Increasing alcohol outlet density is well-documented to be associated with increased alcohol use and problems, leading to the policy recommendation that limiting outlet density will decrease alcohol problems. Yet few studies of decreasing problematic outlets and outlet density have been conducted. We estimated the association between closing alcohol outlets and alcohol use and alcohol-related violence, using an agent-based model of the adult population in New York City. The model was calibrated according to the empirical distribution of the parameters across the city’s population, including the density of on- and off-premise alcohol outlets. Interventions capped the alcohol outlet distribution at the 90th to the 50th percentiles of the New York City density, and closed 5% to 25% of outlets with the highest levels of violence. Capping density led to a lower population of light drinkers (42.2% at baseline vs. 38.1% at the 50th percentile), while heavy drinking increased slightly (12.0% at baseline vs. 12.5% at the 50th per-centile). Alcohol-related homicides and nonfatal violence remained unchanged. Closing the most violent outlets was not associated with changes in alcohol use or related problems. Results suggest that focusing solely on closing alcohol outlets might not be an effective strategy to reduce alcohol-related problems.

METHODS FOR EVALUATING THE ASSOCIATION BETWEEN ALCOHOL OUTLET DENSITY AND VIOLENT CRIME

Key Relevant Findings: Proximity, mean distance and spatial access methods yielded the best correlation between alcohol outlets and violent crimes.

Results: The inference depended on the measurement methods used. Eight models that used a count of alcohol outlets and/or violent crimes failed to detect an association between outlets and crime, and three other count-based models detected an association in the opposite direction. Proximity, mean distance, and spatial access methods consistently detected an association between outlets and crime and produced comparable model fits.

Conclusion: Proximity, mean distance, and spatial access methods yielded the best model fits and had the lowest levels of error in this urban setting. Spatial access methods may offer conceptual strengths over proximity and mean distance. Conflicting findings in the field may be in part due to error in the way that researchers measure alcohol outlet density.

RELATING OFF-PREMISES ALCOHOL OUTLET DENSITY TO INTENTIONAL AND UNINTENTIONAL INJURIES

Key Relevant Findings: This study conducted in Australia documented a positive relationship between injury rates and the density of off-sale retail establishments, particularly those that are larger and sell less expensive alcoholic beverages. Another chain outlet factor of significance is that they tend to do more advertising.

Findings In univariable analyses, chain outlets were larger ($r = 0.383$; $p < 0.001$) and sold cheaper alcohol ($r = -0.484$; $p < 0.001$) compared with independent outlets. In Bayesian spatial Poisson models, off-premises outlet density was positively related to both intentional (Incidence Rate Ratio = 1.38; 95% Credible Interval: 1.19, 1.60) and unintentional injuries (IRR = 1.18; 95% CI: 1.06, 1.30). After disaggregation by outlet characteristics, chain outlet density was also related to both intentional (IRR = 1.35; 95% CI: 1.11, 1.64) and unintentional injuries (IRR = 1.20; 95% CI: 1.08, 1.38).

Conclusions Greater off-premises outlet density is related to greater incidence of traumatic injury, and chain outlets appear to contribute most substantially to traumatic injury risk.

Quotes from This Study:

- “In absolute terms, each additional chain was associated with 0.28 additional intentional injuries in local areas compared to 1.09 additional unintentional injuries per year.”
- “For example, off-premises outlets may attract people at increased risk for involvement with violent crime.”
- “Relationships may also be confounded by the tendency of outlets to be located in disorganised neighbourhoods, and for disorganised neighbourhoods to have greater incidence of traumatic injury (where disorganisation refers to the ‘inability of a community

structure to realise the common values of its residents and maintain effective social controls’.”

RISK FOR EXPOSURE TO ALCOHOL, TOBACCO, AND OTHER DRUGS ON THE ROUTE TO AND FROM SCHOOL: THE ROLE OF ALCOHOL OUTLETS

Key Relevant Findings: Children with an alcohol outlet on the route to school were more likely to be offered alcohol, tobacco, and other drugs as well as be exposed to drug selling and seeing people using drugs.

Abstract: Despite the national push encouraging children to walk to school, little work has been done to examine what hazards children encounter on the route to school. This study examined the association between the presence of alcohol outlets on children’s route to school and perceived safety on the route to school as well as exposure to alcohol, tobacco, and other drugs (ATOD). Data come from a community-based epidemiological study of 394 urban elementary school students. Participants’ residential address, school location, and alcohol outlet data were geocoded and the route to school was mapped. The route to school layer and the geocoded alcohol outlet data were joined to determine the number of alcohol outlets children pass on the route to school. Logistic regression models estimated the association between the presence of alcohol outlets on the route to school, alcohol and drug exposure, and self-reported safety. Children with an alcohol outlet on the route to school were more likely to be offered ATOD (OR= 2.20, p=.02) as well as be exposed to drug selling (OR=1.72, p=.02) and seeing people using drugs (OR=1.93, p=.02). After adjusting for individual-level variables the relationship between presence of alcohol outlets and being offered ATOD and seeing people using drugs remained significant. However, after adjusting for individual-level control variables and a proxy for the larger neighborhood context, the association between the presence of alcohol outlets and exposure to ATOD was no longer significant. As national campaigns are encouraging children to walk to school it is essential to consider what children are exposed to on the route to school.

THE EFFECT OF A BAN ON LATE-NIGHT OFF-PREMISE ALCOHOL SALES ON VIOLENT CRIME

Key Relevant Findings: This study conducted in the German state of Baden-Wurttemberg, found that banning late-night, off-sale retail outlets reduced late-night simple and aggravated assault.

Abstract: The question whether alcohol consumption affects violent crime is a crucial one, and may lead to a demand for alcohol availability regulation. In this study, we explore the effects of a state-level ban on late-night off-premise alcohol sales on recorded violent crime incidents. We study the ban that was in effect from 2010 to 2017 in the German state Baden-Württemberg. The results show that that the policy reduced both late-night simple assault and aggravated assault, but had no significant effect on late-night rape or robbery.

THE SPATIO-TEMPORAL RELATIONSHIP BETWEEN ALCOHOL OUTLETS AND VIOLENCE BEFORE AND AFTER PRIVATIZATION

Key Relevant Findings: “For each additional off-premises and on-premises alcohol outlet in a given census block group, we found a significant increase of 8% and 5% for aggravated assaults and 6% and 5% for non-aggravated assaults, respectively.” A census block group has about 1,500 people.

Abstract: Alcohol-related violence is a well-documented public health concern, where various individual and community-level factors contribute to this relationship. The purpose of this study is to examine the impact of a significant policy change at the local level, which privatized liquor sales and distribution. Specifically, we explored the relationship between alcohol and violence in Seattle, WA, 2010-2013, via hierarchical spatio-temporal disease mapping models. To measure and map this complex spatio-temporal relationship at the census block group level (), we examined a variety of models using integrated nested Laplace approximations and used the deviance information criterion to gauge model complexity and fit. For each additional off-premises and on-premises alcohol outlet in a given census block group, we found a significant increase of 8% and 5% for aggravated assaults and 6% and 5% for non-aggravated assaults, respectively. Lastly, our maps showed variation in the estimated relative risks across the city of Seattle.

THE USE OF REGULATORY POWER BY U.S. STATE AND LOCAL ALCOHOL CONTROL AGENCIES TO BAN PROBLEMATIC PRODUCTS

Key Relevant Findings: Agencies charged with the responsibility for regulating alcohol sales may have difficulty balancing adverse public health effects of excessive alcohol beverage sales with the short-term economic benefits of reduced regulation.

Results: Control jurisdictions have banned/restricted different products (e.g. grain alcohol and alcoholic energy drinks) for a variety of reasons (e.g. flavorings/packaging appealing to underage drinkers, blurring of distinctions between alcoholic and non-alcoholic drinks, and judgment that the product was not socially responsible).

Conclusions/ Importance: Although U.S. control jurisdictions universally have the authority to limit access to problematic alcohol products, they vary in the degree to which they use it. These states need to take action, and as of now, there is no systematic reasoning behind when and how states make decisions to ban/restrict these products. Greater exploration of regulatory authority in this arena could be protective of public health.

THE VIOLENCE PREVENTION POTENTIAL OF REDUCING ALCOHOL OUTLET ACCESS IN BALTIMORE, MARYLAND

Key Relevant Findings: “For preventing homicides, the strategy of removing liquor stores in residential zones was preferred because it was associated with substantial reductions in homicides without closing unacceptably high numbers of outlets. It is possible that policies that close the bars/taverns operating as liquor stores would be associated with decreases in other types of violent crime.”

ABSTRACT

Objective: There are few cost-effectiveness analyses that model alcohol outlet zoning policies. This study determines the potential decreases in homicides, disability-adjusted life years (DALYs), and victim and criminal justice costs associated with four policy options that would reduce the alcohol outlet access in Baltimore.

Method: This cost-effectiveness analysis used associations between on-premise (incidence rate ratio [IRR] = 1.41), off-premise (IRR = 1.76), and combined on- and off-premise outlet density (IRR = 1.07) and homicide in Baltimore. We determined the potential change in the level of homicide that could occur with changes in the density of alcohol outlets, assuming that 50% of the association was causal.

Results: Reducing alcohol outlet density in Baltimore City by one quintile was associated with decreases of 51 homicides per year, \$63.7 million, and 764 DALYs. Removing liquor stores in residential zones was associated with 22 fewer homicides, which would cost \$27.5 million and lead to 391 DALYs. Removing bars/taverns operating as liquor stores was associated with a decrease of one homicide, \$1.2 million, and 17 DALYs. Removing both the liquor stores in residential zones and the bars/taverns operating as liquor stores was associated with 23 fewer homicides, which translated to \$28.7 million and 409 DALYs.

Conclusions: For preventing homicides, the strategy of removing liquor stores in residential zones was preferred because it was associated with substantial reductions in homicides without closing unacceptably high numbers of outlets. It is possible that policies that close the bars/taverns operating as liquor stores would be associated with decreases in other types of violent crime. (J. Stud. Alcohol Drugs, 81, 24–33, 2020)

[USING ZONING AS A PUBLIC HEALTH TOOL TO REDUCE OVERSATURATION OF ALCOHOL OUTLETS: AN EXAMINATION OF THE EFFECTS OF THE NEW '300 FOOT RULE' ON PACKAGED GOODS STORES IN A MID-ATLANTIC CITY](#)

Key Relevant Findings: This study has minimal relevance to the Fresno neighborhoods.

Abstract

The oversaturation of alcohol outlets can have disastrous public health consequences. The goal of this study was to evaluate the potential impact of new zoning legislation, TransForm Baltimore on locations of alcohol outlets. More specifically, the study sought to determine the effect of the new zoning code on the potential re-distribution of alcohol outlets and also provide empirical support for the need to actively monitor redistribution of outlets to avoid further inequitable oversaturation in disadvantaged neighborhoods.

Methods Data on off-premise alcohol outlets (e.g. packaged goods stores) were obtained from the Board of Liquor License Commissioners for Baltimore City. The alcohol outlets were geocoded and assigned to zoning parcels. Churches and schools were also geocoded. The alcohol outlets were also assigned to Census tracts to calculate socioeconomic statuses.

Results 172 of the 263 off-premise packaged goods stores (PGS) were in violation of the new zoning law. TransForm will reduce the land parcels available to alcohol outlets by 27.2%. Areas containing non-conforming PGS were more likely to have a higher percentage of Black residents,

single parent families, unemployment, household poverty, and vacancy compared to Baltimore City averages and areas without non-conforming PGS.

Conclusions Planning enforcement efforts need to accompany related laws to prevent/reduce overconcentration of PGS in disadvantaged neighborhoods.

[VIOLENT CRIME REDISTRIBUTION IN A CITY FOLLOWING A SUBSTANTIAL INCREASE IN THE NUMBER OF OFF-SALE ALCOHOL OUTLETS: A BAYESIAN ANALYSIS](#)

Key Relevant Findings: Increasing the number of off-sale outlets is related to greater rates of violent crime.

ABSTRACT

Introduction and Aims. This study examined whether the introduction of a large number of off-premise alcohol outlets into a city over a brief period of time could affect rates of violent crime.

Design and Methods. The study analysed annual counts of violent crime across 172 US Census block groups in Lubbock, Texas from 2006 through 2011. Spatial Poisson models related annual violent crime counts within each block group to off-premise and on-premise alcohol outlets active during this time period as well as neighbourhood socio-demographic characteristics. The effects of alcohol outlets were assessed both within block groups and across adjacent block groups.

Results. On-premise outlets had a small, significant positive association with violence within a given block group. A similar well-supported local effect for off-premise outlets was not found. However, the spatially lagged effect for off-sale premises was well-supported, indicating that greater densities of these outlets were related to greater rates of violent crime in adjacent areas.

Discussion and Conclusions. While these analyses confirmed a previous time-series analysis in finding no city-wide effect of the increase in off-premise outlets, they do suggest that such outlets in a local area may be related to violence in nearby geographic areas. They indicate the importance of examining neighbourhood-specific effects of alcohol outlets on violence in addition to the city-wide effects. They also present further evidence supporting the need to examine the differential effects of on-sale and off-sale premises.

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