

# Preventing Excessive Alcohol Consumption: Dram Shop Liability

## Summary Evidence Table

Study Characteristics	Population Study period	Intervention & Comparison	Analysis Outcome	Reported Findings	Review Effect size
<p><b>Author (year):</b> Benson et al. (1999)</p> <p><b>Design description (Suitability):</b> Prospective data collection with comparison population (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Good (1)</p>	<p><b>Population:</b> U.S. population in contiguous states</p> <p><b>Study period:</b> 1984- 1992</p>	<p><b>Intervention:</b> Implementation of alcohol-control policies, including dram shop liability.</p> <p><b>Comparison:</b> States and time periods in which state(s) did not have these laws.</p>	<p><b>Intensity of alcohol-related traffic deaths in a state</b> – measured by driver involvement associated with specific levels of blood alcohol. The modeling includes multiple alcohol policies, demographics, and ethanol consumption per capita.</p>	<p>- Alcohol consumption is significant and positively related to the driver involvement rate</p> <p>- Vehicle miles traveled per driver and proportion of the population that is male and between the ages of 16 and 24 are also significantly related to the driver involvement rate.</p> <p>- A higher legal drinking age, dram-shop laws, and open-container laws are more effective than other legislatively mandated policies that were analyzed.</p> <p>- Tests of group effects showed that subsets of deterrence variables reveal that alcohol control variables (legal drinking age and dram-shop laws) make significant contributions to the explanatory power of the model.</p>	<p>ALC MVF, BAC &gt;0.1 = <u>-6.4%</u> 95% CI: -12.9%, -0.2%</p>
<p><b>Author (year)</b> Chaloupka et al. (1993)</p> <p><b>Design description (Suitability):</b></p>	<p><b>Population:</b> Contiguous states in the U.S.</p> <p><b>Study period:</b> 1982-1988</p>	<p><b>Intervention:</b> Implementation of alcohol-control policies, including dram shop liability.</p> <p><b>Comparison:</b> States and time periods in</p>	<p><b>Outcomes</b></p> <p>1) Total motor-vehicle-accident fatalities</p> <p>2) Night-driver fatality rate – limited to drivers who died</p>	<p>In the model which includes control variables and a limited set of drunk-driving laws, the dram shop law coefficient for both night-driver fatality rate and alcohol-involved driver</p>	<p>Night-driver fatality rate</p> <p><i>All ages:</i> = <u>- 2.5%</u> ; <i>p</i> &lt; .01</p>

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<p>Prospective data collection with comparison population (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Good (0)</p>		<p>which a state did not have these laws.</p>	<p>between 12:00midnight at 3:59am.</p> <p>3) Alcohol-involved driver fatality, BAC <math>\geq</math>0.05%</p> <p>4) Youth fatality rate - totally 18-20 year old driver deaths in motor-vehicle accidents per 100,000 population ages 18-20</p> <p>5) Youth night-driver fatality rate - Total 18-20 year old driver deaths between 12:00 midnight and 3:59am in motor-vehicle accidents per 100,000 population ages 18-20</p> <p>All outcomes derived from the National Highway Traffic Safety Administration's (NHTSA) Fatal Accident Reporting System (FARS)</p>	<p>fatality rate is significant at the 0.01 level.</p> <p>In the age specific model, however, the dram shop law coefficient was not significant at the .05 level for either night-driver and alcohol-involved fatality rates.</p> <p>Simulations of policies showed that for all ages, dram shop-laws would have a significant reduction in the change in fatalities per year for both night driver and alcohol-involved driver fatality rates (<math>p &lt; .01</math>)</p> <p>Simulations of policies showed that for ages 18-20, dram shop-laws would NOT have a significant reduction in the change in fatalities per year for both night driver and alcohol-involved driver fatality rates (<math>p &gt; .05</math>)</p>	<p><u>18-20 yr olds:</u> <u>= -5.3%;</u> <math>p &lt; .01</math></p> <p>Alcohol-involved driver fatality rate <u>All ages:</u> <u>= -3.7%;</u> <math>p &lt; .01</math></p> <p><u>18-20 yr olds:</u> <u>=-5.7%;</u> <math>p &lt; .01</math></p>
<p><b>Author (year)</b> Mast et al. (1999)</p> <p><b>Design description (Suitability):</b> Prospective data collection with comparison population (Greatest)</p> <p><b>Study execution</b></p>	<p><b>Population:</b> Contiguous states in the U.S.</p> <p><b>Study period:</b> 1984-1992</p>	<p><b>Intervention:</b> Implementation of alcohol-control policies, including dram shop liability.</p> <p><b>Control:</b> States and time periods in which a state did not have these laws</p>	<p>All outcome measures are from NHTSA's <i>Fatal Accident Reporting System</i> (various years)</p> <p>Total fatality rate, driver-involvement rate, beer consumption</p>	<p>- Dram shop liability laws adoption by states are a significant and effective means for reducing drunk driving.</p> <p>- Beer consumption is significantly related to the driver-involvement rate in all regressions.</p>	<p>Alcohol MVF <u>= -8.8%</u></p>

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<b>(no. of limitations):</b> Fair (2)					
<p><b>Author (year)</b> Ruhm et al. (1996)</p> <p><b>Design description (Suitability):</b> Prospective data collection with comparison population (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Good (1)</p>	<p><b>Population:</b> Contiguous states in the U.S.</p> <p><b>Study period:</b> 1982-1988</p>	<p><b>Intervention:</b> Implementation of alcohol-control policies, including dram shop liability.</p> <p><b>Comparison:</b> States and time periods in which a state did not have these laws</p>	<p>Motor-vehicle fatality rate:</p> <ul style="list-style-type: none"> <li>- Vehicle fatality rates per 10,000 persons</li> <li>- Total vehicle fatality rate</li> <li>- Night-time vehicle fatality rate (12:00-3:59AM)</li> <li>- Total vehicle fatality rate: 18-20 year olds</li> <li>- Vehicle fatality rate per 100,000,000 miles driven</li> </ul>	<p>Dram shop laws have a stronger negative impact on night-time vehicle fatality rates than on total deaths.</p> <p>The drinking age has a substantial and significant negative impact in all specifications (total vehicle fatality rate and night-time vehicle fatality rate).</p>	<p>Night-time vehicle fatality rate = <u>-7.49%</u></p> <p>Decline in Underage mortality - 0.0082/.37 = <u>-2.2%</u>; CI cannot be calculated</p>
<p><b>Author (year)</b> Sloan et al. (1994a)</p> <p><b>Design description (Suitability):</b> Prospective data collection of exposure and outcome data in states (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Fair (2)</p>	<p><b>Population:</b> Contiguous states in the U.S.</p> <p><b>Study period:</b> 1982-1988</p>	<p><b>Intervention:</b> Alcohol price policies, criminal and civil sanctions against excessive alcohol use, dram shop laws and civil sanctions against careless driving, and criminal sanctions against misuse of weapons.</p> <p><b>Comparison:</b> States and times without the policies in question.</p>	<p>Alcohol-related deaths were derived from the National Center for Health Statistics. Cause of death was classified according to ICD-9-CM (9<sup>th</sup> Revision of the International Classification of Diseases). Deaths attributable to alcohol were divided into 6 categories:</p> <ol style="list-style-type: none"> <li>a) Diseases where alcohol is the primary cause</li> <li>b) Motor vehicle traffic accidents</li> <li>c) Homicides</li> <li>d) Suicides</li> <li>e) Diseases where alcohol is an important contributor</li> <li>f) Other accidents frequently caused by alcohol use</li> </ol>	<p>Only dram shop laws consistently had a statistically significant, negative impact on alcohol primary cause and traffic accident deaths.</p> <p>The effect of alcohol price on traffic accident mortality almost reached statistical significance; signs on the jail term parameter estimates are always negative.</p> <p>Dram shop law coefficients imply that these laws reduce traffic vehicle death rates by about 10% from the national mean of 0.19 per 1,000 population.</p>	<p>Alc primary cause of death = insufficient data</p> <p>MVF = -4.8%; <math>p &lt; .01</math></p> <p>Homicide = insufficient data</p> <p>Suicide = insufficient data</p>

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				Dram shop laws also reduced mortality from falls, fires, and other accidents only when the time variables are excluded.	
<p><b>Author (year)</b> Sloan et al. (1994b)</p> <p><b>Design description (Suitability):</b> Prospective data collection with comparison population (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Good (1)</p>	<p><b>Population:</b> Contiguous states in the U.S.</p> <p><b>Study period:</b> 1982-1990</p>	<p><b>Intervention:</b> Implementation of alcohol-control policies, including dram shop liability.</p> <p><b>Comparison:</b> States and time periods in which a state did not have these laws.</p>	<p>Motor vehicle fatalities per 1,000 population for three age groups: 18-20; 21-24; 25-64</p> <p>Data ascertained from the Fatal Accident Reporting System (FARS) operated by the National Highway Traffic Safety Administration.</p>	<p>In all the regressions, the coefficients on the dram shop liability variable are negative and statistically significant at <math>p &lt; .05</math> or better.</p>	<p>MVF 18 - 20 yrs = <u>-6.7%</u></p> <p>MVF 21 - 24 yrs = <u>-5.7%</u>;</p> <p>95% CI: -10.2%, -1.2%</p> <p>MVF 25 - 64 yrs = <u>-4.4%</u>;</p> <p>95% CI: -7.5%, -1.3%</p>
<p><b>Author (year)</b> Sloan et al. (1995)</p> <p><b>Design description (Suitability):</b> Serial cross-sectional (Least)</p> <p><b>Study execution (no. of limitations):</b> Fair (2)</p>	<p><b>Population:</b> States that participated in the BRFS</p> <p><b>Study period:</b> 1984-1990</p>	<p><b>Intervention:</b> Alcohol price policies, compulsory liability insurance, dramshop liability, civil liability no-fault automobile insurance, contributory vs. comparative negligence</p> <p><b>Comparison:</b> Individuals in states without the policies in question.</p>	<p>All outcomes were defined for the month before data were collected from Behavioral Risk Factor Surveys (BRFS), and are based on individual responses.</p> <p>Alcohol consumption – Whether or not the individual reported consuming alcohol at all</p> <p>Binge drinking – the number of times the person binge drank (among those who binge drank at all)</p> <p>Drinking and driving – probability of drinking and</p>	<p>- Where no-fault laws barred victims from suing, the number of binge episodes increased</p> <p>- Imposing dram-shop liability did not influence binge drinking in any of the regressions.</p> <p>- Compared to states with contributory negligence, the number of binge-drinking episodes per month was 0.28 higher in states with pure and with modified comparative negligence.</p>	<p>Adult binge drinking = <u>-2.4%</u>; 95% CI: -7.1, 1</p> <p>Binge drinking episodes = <u>-8.4%</u>; 95% CI: -39.8, 23.0%</p>

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			driving conditional on those who reported some binge drinking; the number of times the person reported drinking and driving per binge episode reported		
<p><b>Author (year)</b> Stout et al. (2000)</p> <p><b>Design description (Suitability):</b> Serial cross-sectional (Least)</p> <p><b>Study execution (no. of limitations):</b> Fair (2)</p>	<p><b>Population:</b> States that participated in the BRFS</p> <p><b>Study period:</b> 1984-1995</p>	<p><b>Intervention:</b> Individual state dram shop laws and mandatory state requirement of bodily injury compulsory insurance. (Variables such as whether injured drinkers were allowed to bring a suit, a bar could use a responsible business practice defense where bars can escape liability if they can prove good serving practices, a social host could be held liable for an accident caused by someone drinking in their home, and a state used contributory negligence standard in its application of tort law).</p> <p><b>Comparison:</b> States without dram shop laws and mandatory state requirements of bodily injury compulsory insurance</p>	<p>All outcome measures were ascertained from the annual Behavioral Risk Factor Survey.</p> <p>1) Heavy episodic drinking</p> <p>2) Drinking and driving</p> <p>3) Drinking and driving if also a heavy episodic drinker</p>	<p>- Dram shop liability laws adoption by states significantly decreased the probability of drunk driving among all drinkers, but had no effect on heavy episodic drinking.</p> <p>- Extending dram shop laws to enable adult drinkers to sue bar for injuries sustained increased the likelihood of heavy drinking and drinking and driving.</p>	<p>1) Heavy episodic drinking OR = 0.988 CI = 0.96-1.02</p> <p>2) Drinking and driving OR = 0.962* CI = 0.93-0.99</p> <p>3) Drinking and driving if also a heavy episodic drinker OR = 0.961 CI = 0.92-1.01</p>
<p><b>Author (year)</b> Wagenaar et al. (1991)</p> <p><b>Design description (Suitability):</b> Interrupted time-series with control</p>	<p><b>Population:</b> Intervention-Texas state population</p> <p>Comparison- Population in the remaining 47 U.S. contiguous states</p>	<p><b>Intervention:</b> Substantial change in the liability exposure in Texas was the intervention. The January, 1983 and November, 1984 filings of major sever liability court cases were the intervention.</p>	<p>Frequency of single-vehicle nighttime injury producing traffic crashes was the outcome. Data extracted from a database that tracks all reported crashes in Texas maintained by the University of Michigan Transportation Research Institute.</p>	<p>Final time-series model parameter estimates reveal significant reduction in the frequency of single-vehicle nighttime injury traffic crashes following the Jan 1983 and Nov 1984 filings of major server liability court cases.</p>	<p>After the first 1983 liability suit was filed, crashes decreased 6.5%. They decreased an additional 5.3%</p>

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<p>Prospective cohort (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Good (1)</p>	<p><b>Study period:</b> 1983-1988</p>	<p><b>Comparison:</b> The remaining 47 contiguous states in the U.S. served as the control.</p>	<p>Injury producing crashes occur when at least "one vehicle occupant is killed or receives an incapacitating/non-incapacitating injury, as reported by the police officer at the scene of the crash (Manual on classification of motor vehicle accidents, ed 4. Chicago, IL: National Safety Council, 1983; Wagenaar &amp; Holder, 1991)</p> <p>For all other states, data were extracted from the Fatal Accident Reporting System maintained by the National Highway Traffic Safety Administration.</p>	<p>Lawsuit effects were found at the time they were originally filed, most likely due to a sudden increase in publicity about liability that increased the level of awareness and concern of owners and managers of alcohol outlets. However, it is important to note that effects of the dram shop liability suits on crashes had a sudden but temporary effect that gradually decayed with a subsequent, gradually evolving permanent effect.</p>	<p>after the 1984 case was filed.</p>
<p><b>Author (year)</b> Whetten-Goldstein et al. (2000)</p> <p><b>Design description (Suitability):</b> Prospective data collection of exposure and outcome data in states (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Fair (2)</p>	<p><b>Population:</b> U.S. population</p> <p><b>Study period:</b> 1984-1995</p>	<p><b>Intervention:</b> Implementation of dram shop liability laws. Liability for serving a minor and an adult was differentiated. Two variants were assessed: contributory responsibility of claimants and demonstrations of responsible business practices on the part of bars.</p> <p><b>Comparison:</b> States and time periods in which a state did not have these laws.</p>	<p>Motor vehicle fatalities per 1000 population based on the appropriate age group - Fatal Analysis Reporting System (FARS) database</p> <p>Alcohol related deaths - crashes where a police officer reported that alcohol was a factor in the accident (also obtained from FARS database)</p> <p>Deaths were separately analyzed according to those under the legal drinking age (ages 15-20) and those aged 21-64.</p>	<p>Tort liability for serving underage drinkers was associated with lower motor vehicle fatality rates for total deaths and alcohol related deaths for minors.</p> <p>Total deaths were associated with social host liability and state mandated bodily injury liability insurance.</p> <p>Tort liability on bars for serving "obviously" intoxicated adults was associated with fewer motor vehicle fatality rates for all three dependent variables (single car nighttime driving death rate, total death rate,</p>	<p>There are insufficient data to compute an effect size.</p>

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				<p>and alcohol related death rate).</p> <p>The ability to sue the host was also associated with fewer alcohol related fatalities.</p>	
<p><b>Author (year)</b> Young et al. (2000)</p> <p><b>Design description (Suitability):</b> Prospective data collection with comparison population (Greatest)</p> <p><b>Study execution (no. of limitations):</b> Fair (2)</p>	<p><b>Population:</b> Contiguous states in the U.S.</p> <p><b>Study period:</b> 1982-1990</p>	<p><b>Intervention:</b> Alcohol price policies, taxes, dramshop liability laws, and DUI conviction laws</p> <p><b>Comparison:</b> Individuals who live in states without the policies in question.</p>	<p>All outcomes were ascertained directly from the U.S. Department of Transportation’s National Highway Traffic Safety Administration data tapes. Total motor vehicle fatalities per 1,000 population; estimated alcohol-involved driver deaths per 1,000 population; total motor vehicle fatalities of 18-20 year drivers per 1,000 populations (aged 18-20); estimated alcohol-involved deaths of 18-20 year old drivers per 1,000 population aged 18-20</p>	<p>-The dram-shop coefficients are consistently negative and always significant for alcohol-involved fatalities.</p> <p>- Real income is positively and significantly related to fatalities, except for alcohol-involved youth fatalities.</p> <p>- The percentage of the population living in dry counties is positive and significant for total fatalities.</p>	<p>Alcohol involved MVF = <u>-11.3%</u>; 95% CI: -18.0%, -6.0%; <math>p &lt; .01</math></p> <p>Alcohol-involved driver fatalities, ages 18-20 = <u>-13.3%</u></p>