

Changes in alcohol-related travel behavior due to an under 21 ordinance

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Objective

To study alcohol-related arrests during the time surrounding the introduction of an alcohol-related ordinance in the Iowa City, IA, area.

Introduction

Alcohol abuse is one of the major leading causes of preventable mortality in the United States (1). Binge drinking or excessive alcohol consumption, categorized as a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 (2), has become a major cause for concern, especially in the 18- to 20-year-old population. Iowa City is home to the University of Iowa, a large public university of 30,000 students. On June 1, 2010, the city council enacted a new ordinance prohibiting persons under 21 from entering or remaining in bars (establishments after 10:00 PM whose primary purpose is the sale of alcoholic beverages) after 10:00 PM (3). Prior to the ordinance, Iowa City was the only municipality in the region where underage patrons were allowed on premises. The new ordinance was enacted largely in response to public safety concerns, including perceptions of increased violence and sexual assaults, especially at bar closing time.

Our hypothesis is that the under 21 ordinance also resulted in changes to travel behavior, where prior to the ordinance, the campus bar culture constituted an 'attractive nuisance', attracting a volatile mix of college students and nonlocals of all ages.

Methods

Arrest records were obtained from the University of Iowa Police Department containing all alcohol-related citations from January 1, 2004 to June 26, 2011. As the University of Iowa Police Department is one of the 4 local law enforcement agencies (Iowa City Police, Coralville Police and Johnson County Sheriff), these 7002 records represent a sample of alcohol-related arrests, albeit one focused on the downtown bar area frequented by college students. Each record contains the date of the arrest as well as the age and home address of the offender, allowing us to compare 'in town' offenders (i.e., from within Iowa City, Coralville and transients) with 'out of town' offenders. Records corresponding to football Saturdays, where some 50,000 people come to Iowa City to tailgate and attend the Big10 football game, were excluded from the analysis as not representative of the usual bar culture. A total of 1490 alcohol-related arrest records remained in the analysis.

A Fisher's exact test was used to test the hypothesis of whether the proportion of arrests of out of town patrons versus in town patrons is independent of the under 21 ordinance.

Results

Data analysis confirms that, following the ordinance, the proportion of arrests involving out of town patrons to in town patrons was significantly reduced (Fisher's exact test, $p \leq 0.0001$). Similar results were obtained for only under 21 arrests (Fisher's exact test, $p = 0.0095$) and over 21 arrests (Fisher's exact test, $p = 0.0058$), suggesting that the campus bars were equally attractive to all age groups prior to the ordinance.

Conclusions

Immediately following the ordinance, the average weekly number of alcohol-related arrests increased from 9.3 to 16.3. Since over 21 arrests also increased, the change cannot be attributed solely to the new ordinance; indeed, additional police resources were deployed in a deliberate attempt to change the drinking culture. Of course, since the arresting officer cannot generally detect residency prior to arrest, arrest data still represent a geographically unbiased sample of bar patrons and can be used to explore changes in the mix of patrons.

We hypothesize that the changes detected in the proportion of arrests of in town and out of town patrons reflect a more homogeneous student clientele, where town-gown tensions are less likely to arise. Of course, any reduction in out of town patrons also corresponds to a reduction in the risk of DUI-related fatalities, since students walk to the bars.

There are several shortcomings to this study. First, our data are incomplete as data from other enforcement agencies was not available. Second, we were unable to directly confirm the link with violence or sexual assault, as additional data would be required to do so: these are our next steps.

Keywords

Alcohol; binge drinking; college binge drinking

References

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