



Published in final edited form as:

J Adolesc Health. 2011 January ; 48(1): 106–108. doi:10.1016/j.jadohealth.2010.05.012.

The Utility of Keg Registration Laws: A Cross-Sectional Study

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Introduction

There is considerable empirical evidence of the effectiveness of public policies that are designed to prevent adolescent alcohol use and abuse [1]. Keg registration, which constitutes one policy that many states adopted beginning in 2002, is designed to reduce the high volume of beer that adolescents can consume at social events [2]. This policy typically requires the attachment of unique markers to beer kegs and specifies that the adults who rent these kegs must provide their names and key contact information [3]. Keg registration policies enable law enforcement officials to determine the identity of providers who rent beer kegs directly to underage persons, as well as of adults who rent the kegs from providers and then make them available to underage youth [4].

The effects of keg registration policies on adolescents' binge drinking have yet to be assessed [1,5]. In this exploratory study we examined the association between states' keg registration laws and their (1) beer consumption *per capita*, as well as the 30 day prevalence of: (2) adolescent binge drinking, and adolescents who (3) drive after drinking and (4) ride with a driver who has been drinking. We hypothesized that the comprehensiveness and stringency of states' beer keg registration laws would be inversely associated with each of these outcomes. Note that whereas the minimum drinking age in the United States is 21, in some states adolescents may begin driving as young as age 15.

Data sources

Data concerning state-level keg registration laws through June 2006 were provided by the Alcohol Policy Information System (APIS), and the strength of keg policy ratings were calculated by Fell and colleagues [6]. States were coded as having such laws if they required that identification markers be attached to all beer kegs sold. One point each was assigned for states that had enacted keg registration laws that required providers to (1) collect a deposit on each keg rented and record the: (2) keg's identification number, (3) renter's name, address, and date of birth, and (3) specify where the keg would be consumed. An additional point was awarded to states that penalized providers or renters (4) in possession of an unregistered or unlabeled keg and (5) those who destroyed a marker on a keg. Two further points were awarded to states (6) that required a verbal warning to renters of the penalties for infractions, and one point if (7) that warning was given only in writing. Any state with a blanket prohibition against all beer kegs was assigned a score of 8. Thus states that

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permitted keg rentals could be awarded scores that ranged from 0 (for no pertinent law) to 7 (for those that enacted all the provisions specified above) [6].

The study's dependent variables were drawn from two sources. The Brewers Almanac provided 2007 *per capita* beer sales data for each state and the District of Columbia (DC) [7]. In addition, prevalence estimates for past 30 day binge drinking, drinking and driving, and riding with a driver who had been drinking (RWDD) were obtained from the 2007 Youth Risk Behavior Survey (YRBS), completed by students aged about 15 through 18 [8]. YRBS 2007 prevalence data for binge drinking and DUI were available for 39 states and DC, while RWDD prevalence data were available for 37 states and DC.

Results

Table 1 displays descriptive characteristics of the five variables specified in the previous section. Altogether, 21 states had no policies that addressed keg registration. Among 19 states with such a policy, the modal rating was 3. Results of preliminary t-tests revealed no differences between these two groups of states in levels of *per capita* beer consumption and youth drinking variables. As hypothesized, states' ratings of the comprehensiveness of their keg registration policies were moderately and negatively ($r = -.31$ to $-.41$) associated with all the outcomes examined.

Table 2 indicates that, when controlling for *per capita* beer consumption, inverse relationships between state keg policy registration scores and youth drinking variables were attenuated, and only the association with riding with a drinking driver remained statistically significant.

Comparisons of states that did and did not participate in the 2007 YRBS indicated differences in the presence of a keg registration policy (48% of YRBS states vs. 64% of non-YRBS states) and of keg registration policy ratings (mean [SD] = 1.7 [2.1] in YRBS states vs. 2.4 [2.5] in non-YRBS states). These differences were not statistically significant, which likely reflects the limited number of states in each group.

Discussion

In this exploratory study we found that the existence of states' keg registration laws *per se* were unrelated to a variety of outcomes related to *per capita* beer consumption, the prevalence of adolescent binge drinking, and the prevalence of adolescents who drove after drinking or rode in cars whose drivers had done so. It thus appears inadequate for states to enact laws that are limited to just one or two of the provisions rated by the APIS tool.

However, we found that the stringency and comprehensiveness of state level keg registration laws were moderately and negatively associated with all outcomes assessed. That said, we recognize that because we conducted this study using cross-sectional data the direction of causality cannot be determined. States with lower rates of adolescent binge drinking may have adopted the policies as a means to maintain the *status quo*, or states with comprehensive keg registration policies and lower levels of beer consumption may have longstanding norms that are antithetical to adolescent drinking. Our finding that all but one of the significant relationships specified in Table 1 attenuated when we controlled for overall *per capita* beer sales suggests the need for further caution in attributing state-level differences in adolescent-level outcomes to the stringency of states' keg registration laws.

Our study is the first to explore the potential effects of states' keg registration policies. Future studies should evaluate the effects of these policies by means of interrupted time series analyses, examining pertinent archival and survey data at multiple points in time both

prior to and following the law's enactment in those states that have adopted it, and comparing these trends to those of states without keg registration laws. Additionally, future studies should examine how the strength of keg registration policies may be related to changes in levels of adolescent alcohol consumption, hazardous drinking, and driving after drinking.

Acknowledgments

This manuscript was supported by NIAAA Grant # P60 AA006282

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Table 1

Descriptive statistics and correlations (N=40 for all variables except RWDD)

Variable	Mean (SD)	Range	1	2	3	4	5
1. Keg registration policy score	1.7 (2.1)	0-8	1.0				
2. <i>Per capita</i> beer consumption	23.3 (4.0)	13.4-32.4	-.37*	1.0			
3. Binge drinking	25.4 (4.9)	11.7-32.7	-.31*	.38*	1.0		
4. Driving after drinking	10.9 (2.8)	4.7-18.7	-.33*	.58**	.77**	1.0	
5. Riding with drinking driver (N=38)	27.0 (4.0)	14.8-35.6	-.41*	.41*	.32*	.63**	1.0

* $p < .05$ (2-tailed)** $p < .01$ (2-tailed)

Table 2

Results of linear regression analysis, standardized beta coefficients

Variable	Binge drinking	Driving after drinking	Riding with drinking driver
Keg registration policy score	-.20	-.13	-.31 *
<i>Per capita</i> beer consumption	.31	.53 **	.32 *
R ²	.18	.35	.26

* $p < .05$,** $p < .01$