

3-1-2012

# Adolescent Alcohol Use: Do risk and protective factors explain rural-urban differences?

John A. Gale MS

*University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center*

Jennifer D. Lenardson MHS

*University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center*

David Lambert PhD

*University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center*

David Hartley PhD, MHA

*University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center*

Follow this and additional works at: [https://digitalcommons.usm.maine.edu/behavioral\\_health](https://digitalcommons.usm.maine.edu/behavioral_health)



Part of the [Substance Abuse and Addiction Commons](#)

## Recommended Citation

Gale, J. A., Lenardson, J. D., Lambert, D., & Hartley, D. (2012). Adolescent alcohol use: Do risk and protective factors explain rural-urban differences. (Policy Brief No.48). Portland, ME: University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center.

This Policy Brief is brought to you for free and open access by the Maine Rural Health Research Center (MRHRC) at USM Digital Commons. It has been accepted for inclusion in Behavioral Health by an authorized administrator of USM Digital Commons. For more information, please contact [jessica.c.hovey@maine.edu](mailto:jessica.c.hovey@maine.edu).

# Research & Policy Brief

March 2012

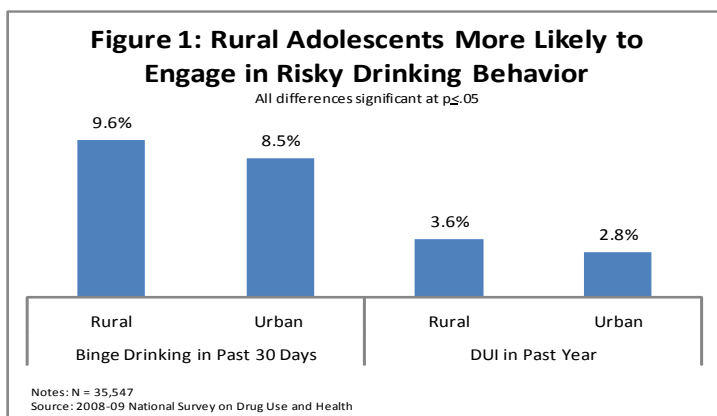
## Adolescent Alcohol Use: Do Risk and Protective Factors Explain Rural-Urban Differences?

### Overview

Adolescent alcohol use is a significant public health problem among U.S. adolescents, with 26% of 12-17 year-olds reporting past month drinking in 2010.<sup>1</sup> During the month preceding the 2009 Youth Risk Behavior Survey, 42% of high school students drank alcohol, 24% engaged in binge drinking, 10% drove after drinking, and 28% rode in a car with a driver who had been drinking.<sup>2</sup> Past studies have found that rural adolescents were more likely to use alcohol than urban adolescents. Research has not yet determined whether the presence of protective or risk factors differ between youth in rural and urban areas. Using data from the CDC's 2008-2009 National Survey of Drug Use and Health, this study examines the factors associated with adolescent alcohol use, comparing rural and urban populations, and the extent to which differences between the two populations account for rural-urban variations in adolescent alcohol use. This knowledge is crucial to the development of rural-specific prevention strategies, targeted research on rural adolescent alcohol use, and long-term policy approaches. Rural and urban areas are identified based on the Office Management and Budget metropolitan and nonmetropolitan county designations. For this study, we conducted bivariate and multivariate analyses of the prevalence of alcohol use and abuse across rural and urban areas and the relationships between alcohol use and potential protective or risk factors including parent relations, peer relations, school relations, and religious involvement.

### Findings

Rural adolescents are more likely to engage in binge drinking (past month,  $p < .05$ ) and driving under the influence (past year,  $p < .01$ ) than urban adolescents (Figure 1). In analyzing patterns of youth drinking by age group, we observed higher rates of past year alcohol use among rural than urban 12-13 year olds (10.4% vs. 9.1%,  $p < .10$ ). Evidence indicates that a lower age of first use is associated with an increased risk of problem drinking behaviors and alcohol use disorders in later adolescence and adulthood. Higher rates of drinking among the youngest adolescents may partially explain rural-urban variations in binge drinking and driving under the influence.



### Fast Facts

- Rural adolescents are more likely to binge drink and drive under the influence than urban adolescents.
- Rural youth ages 12-13 are somewhat more likely than urban youth at that age to have used alcohol in the past year.
- Even when protective factors are present, rural adolescents drink more than urban adolescents.

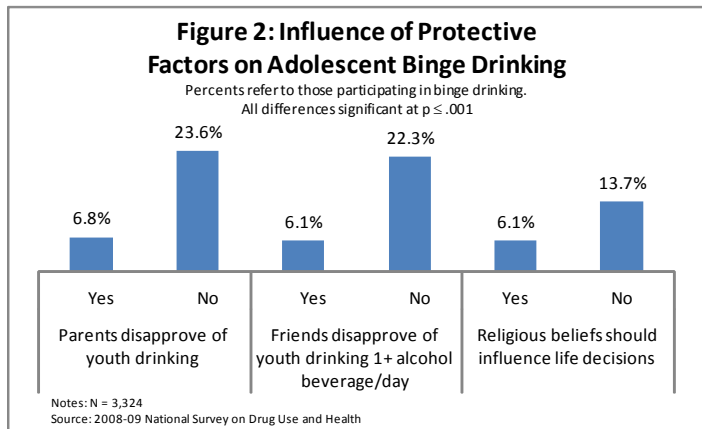
### Authors

John Gale, MS  
Jennifer Lenardson, MHS  
David Lambert, PhD  
David Hartley, PhD

Links to several interventions are provided in the full-length report, available at <http://muskie.usm.maine.edu/ihpl/ruralhealth/papers.jsp>.

For more information about this study, contact John Gale at (207) 228-8246 or [jgale@usm.maine.edu](mailto:jgale@usm.maine.edu)

Adolescents are less likely to binge drink when selected protective factors (including parent disapproval of drinking, parent help with homework, youth likes school, youth disapproves of peers drinking alcohol, friends disapprove of youth drinking alcohol, and religious beliefs influence life decisions) are present (Figure 2). Many of these protective factors are less common among rural youth, e.g. parents disapprove of drinking and friends disapprove of drinking;



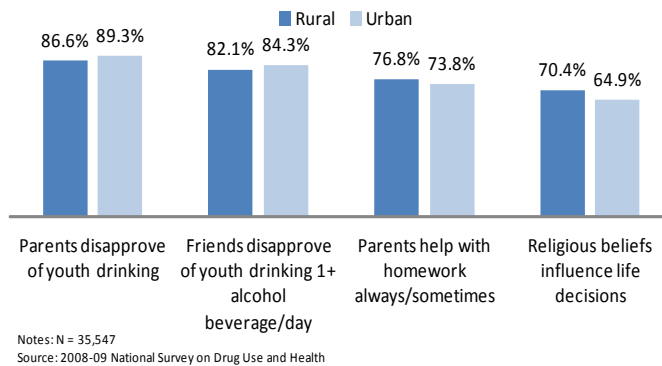
while others are more common among rural youth, e.g. parents help with homework and religious beliefs influence life's decisions (Figure 3). However, rural residence is associated with increased odds of binge drinking (OR 1.16,  $p < .05$ ) and driving under the influence (OR 1.42,  $p < .001$ ) even when these factors are taken into account (Table).

### Policy Implications

Rural adolescent alcohol use is a complex social problem. After controlling for a broad range of key risk and preventive factors, it is clear that an unexplained rural effect persists. Although we are unable to explain fully the cause of higher rural adolescent drinking, we identify rural

**Figure 3: Protective Factors Vary by Residence**

All differences significant at  $p \leq .001$



differences in a number of risk and protective factors that, when viewed together, may help to account for a portion of the differences in rural adolescent alcohol use and suggest opportunities for intervention. Given the multiple protective and risk factors at work in rural areas and higher rates of drinking among very young rural adolescents, our research suggests that prevention strategies should target pre-teens and younger adolescents and directly involve parents, peers, schools and churches. Our research also suggests that multiple intervention strategies with consistent messages should target different community organizations and populations.

### References

- Center for Behavioral Statistics and Quality. Results From the 2010 National Survey on Drug Use and Health: Summary of National Findings. Washington, D.C.: US DHHS: SAMHSA; September 2011.
- Eaton DK et al. Youth Risk Behavior Surveillance-United States, 2009. MMWR Morb Mortal Wkly Rep. 2010; 59(SS05): 1-142.
- Hawkins JD et al. Exploring the Effects of Age of Alcohol Use Initiation and Psychosocial Risk Factors on Subsequent Alcohol Misuse. J Stud Alcohol. 1997; 58(3): 280-90.

**Table. Risk and Protective Factors Associated with Adolescent Alcohol Use**

Control Variables	Binge Drinking in the Past 30 Days Odds Ratios <sup>^</sup>	Driving Under the Influence in the Past Year O.R. <sup>^</sup>
Rural Residence	1.16 *	1.42 ***
Age (included as an ordinal variable)	2.88 ***	5.73 ***
Family income below 100% of FPL	0.77 ***	0.59 ***
Parents disapprove of youth drinking	0.47 ***	0.66 ***
Parents help with homework always/sometimes	0.74 ***	0.65 ***
Youth liked school a lot or kind of liked school	0.57 ***	0.53 ***
Participated in two or more youth activities	1.10	1.39 **
Youth disapproves of peers drinking 1+ alcohol beverage/day	0.45 ***	0.49 ***
Friends disapprove of youth drinking 1+ alcohol beverage/day	0.60 ***	0.66 **
Attended religious services 25+ times in past year	0.69 ***	0.93
Religious should beliefs influence life decisions	0.68 ***	0.58 ***

Differences significant at  $p \leq .05^*$ ;  $p \leq .001^{***}$ .

<sup>^</sup> Odds ratios over 1.0 are risk factors, while those less than 1.0 are protective factors.