

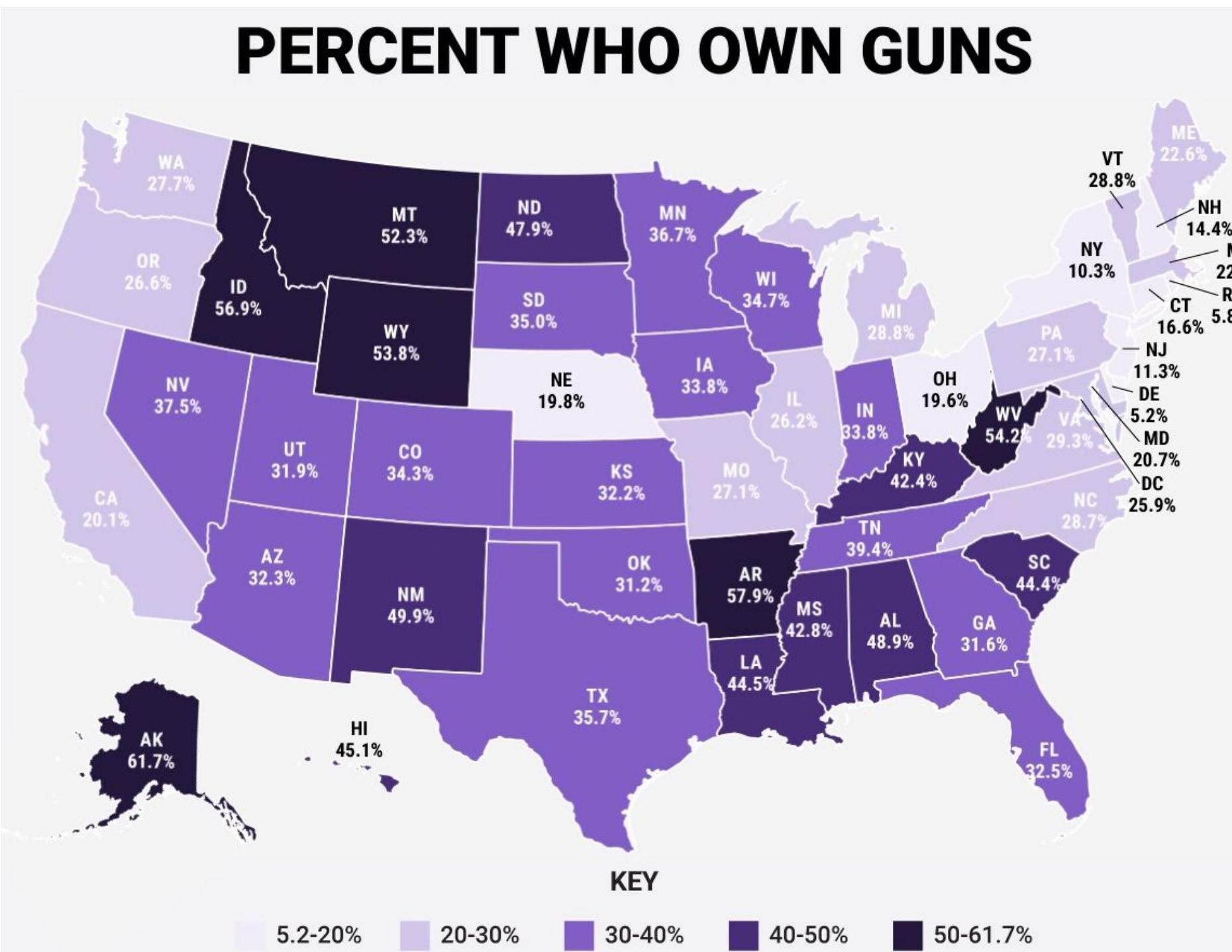


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Background & Purpose

- An estimated 30% of all U.S. households, and 46% of rural households, contain at least one firearm.¹
- In 2017, nearly 40,000 persons died of firearm injuries in the U.S. The majority of firearm deaths are due to suicide, with homicide as the second factor and accidental injury as the last.²
- Safe gun storage can reduce the risks of accidental injury and self harm,³ but many gun owners do not take these steps.⁴
- We estimated the prevalence of gun ownership and safe storage practices among adults in three states, examining these by residence, presence of a vulnerable individual in the home, and reported risky behavior.

Figure 1. Gun ownership among adults in the US, 2015⁵



Methods

- Data source:** 2017 BRFSS public use data for states that included the Firearms Module (Idaho, Oregon & Texas; n = 22,519)
- Studied population:** those who answered firearm questions and for whom demographic and health information was present (15,802).
- Definitions:**
 - Gun ownership:** one or more firearms kept in or around the home, with garages, storage areas and motor vehicles included as "home."
 - Safe storage:** no loaded weapons in the house *OR* any loaded weapons locked.
 - Residence** was measured by BRFSS at the county level and reported as metropolitan (urban, n = 6,185), nonmetropolitan (rural, n = 1,720), and suppressed (n=7,944).
 - Vulnerable household:** presence of a child or of an adult with depression or poor mental health
 - Risky behavior:** inconsistent seat belt use, smoking, or binge drinking.
- Analysis:** Conducted in STATA, accounting for weighting. Differences between the groups tested using Wald Chi Square tests.

Home & Guns: Rural-Urban Differences in Firearm Storage

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Figure 2. Firearm ownership and storage, 3 states, by residence. 2017 BRRFSS

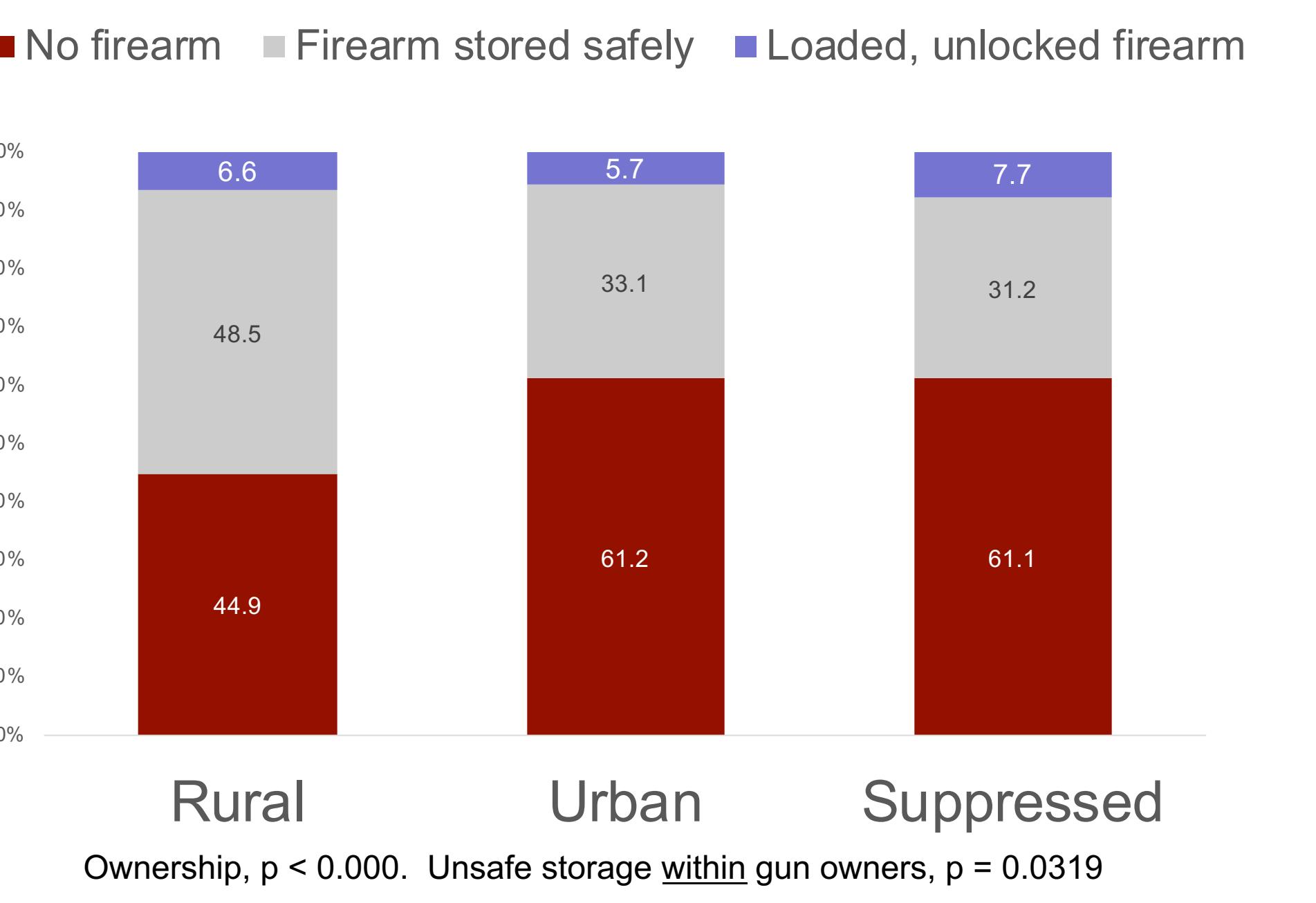


Figure 3. Proportion of adults reporting unsafe gun storage, by potential vulnerability, all respondents, 2017 BRFSS

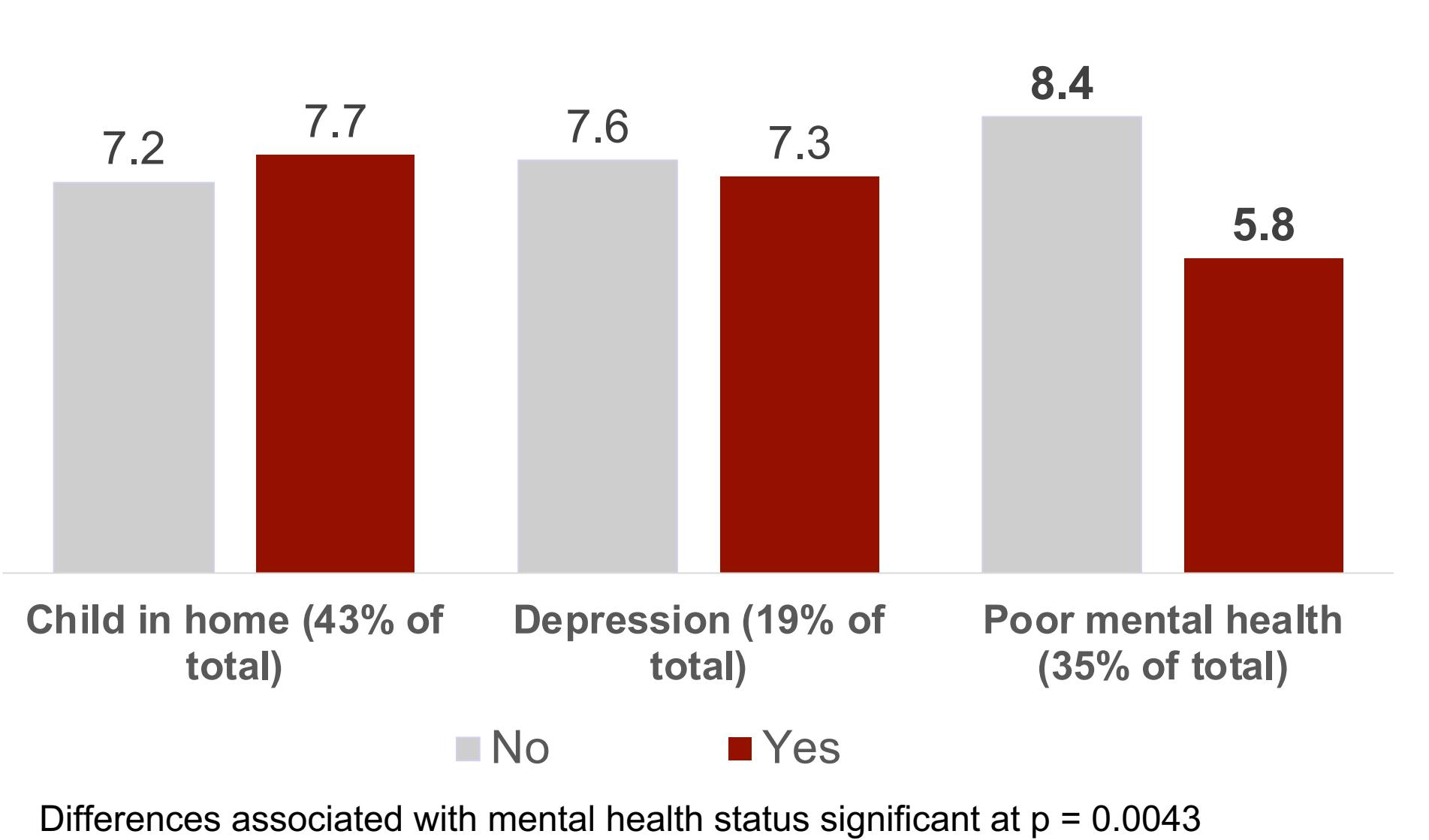


Table 1. Association of risk behaviors with firearm storage, 3 states, 2017 BRFSS

		No gun in home	Gun, safely stored	Gun, unsafely stored	p value
Seat Belt Use					
Consistent	Estimate	62.0%	31.0%	7.0%	0.0001
	(SE)	(1.0%)	(1.0%)	(0.5%)	
Inconsistent					
	Estimate	47.3%	41.2%	11.6%	
	(SE)	(3.4%)	(3.4%)	(2.3%)	
Smoking status					
Non smoker	Estimate	60.7%	32.1%	7.2%	0.6566
	(SE)	(1.1%)	(1.0%)	(0.6%)	
Current smoker	Estimate	60.3%	31.2%	8.5%	
	(SE)	(2.5%)	(2.4%)	(1.5%)	
Drinking habits					
No use of alcohol	Estimate	67.4%	26.5%	6.1%	0.0001
	(SE)	(1.4%)	(1.3%)	(0.7%)	
Moderate use of alcohol	Estimate	55.3%	36.5%	8.2%	
	(SE)	(1.6%)	(1.5%)	(0.9%)	
Binge drinking	Estimate	52.5%	38.3%	9.2%	
	(SE)	(2.5%)	(2.4%)	(1.4%)	

Results

- Rural residents were more likely to own a firearm than urban or other adults (Figure 2). Within gun owners, rural residents were less likely to report unsafe storage (12.2% of rural, 14.7% of urban, 19.8% of suppressed; p = 0.0319).
- Within all respondents, presence of a vulnerable individual in the home (child, adult reporting depression, adult reporting poor mental health) was not associated with unsafe firearm storage.
- Within all respondents, adults who reported inconsistent seat belt use and those who reported moderate to binge drinking were more likely to report unsafe firearm storage than their counterparts. Smoking was not statistically associated with firearm storage.
- Because data suppression leads to small cell sizes, it was not possible to analyze vulnerability or risk factors for unsafe gun storage within rural populations alone.

Discussion

- Rural adults were not more likely to report access to loaded, unlocked firearms than were other adults, and among gun owners, were less likely to report unsafe storage.
- Previous research has noted that risky behaviors in other spheres (e.g., binge drinking) are associated with unsafe gun storage.⁶ However, we did not find that unsafe behaviors were associated with unsafe gun storage after adjusting for personal characteristics.
- Unlike prior work,⁷ we did not find that presence of a child in the home was associated with safer gun storage.
- Data suppression makes it nearly impossible for researchers to examine risk factors for inappropriate gun storage among rural populations. The Centers for Disease Control and Prevention should consider techniques and strategies for making residence data, at least a the rural/urban dichotomy, more accessible for public health research.



Photo source: <http://www.dnr.sc.gov/magazine/articles/julyaug2014/12things.html>

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