



A cross-sectional examination of US gun ownership and support for gun control measures: Sociodemographic, geographic, and political associations explored

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ABSTRACT

Public opinion regarding gun ownership and control coincide with deep political and sociodemographic divisions in the US population. The study objective was to analyze the prevalence and predictors of gun ownership and support for gun control policy using a national representative sample of US adults. Nationally representative data from the General Social Survey (2010 to 2016) were used to examine sociodemographic, geographic, and attitudinal differences in gun ownership and views towards laws requiring police permits before gun purchases (N = 6184). Prevalence ratios and 95% CIs were calculated using logistic regression models. Among US adults, 22.1% reported owning a gun (n = 1358) and 72.5% favored presale gun permit laws (n = 4445). Adults who were aged 65+, male, non-Hispanic white, and politically conservative; earned \$35,000+ annually; and did not reside in the Northeast region of the US were significantly more likely to own guns (p < 0.05). Adults who were aged 65+, female, non-Hispanic blacks/other or Hispanics, college graduates, politically liberal, and resided in the Northeast were significantly more likely to favor presale gun permit laws than their counterparts (p < 0.05). Gun safety and prevention efforts must address political and sociodemographic divisions that have stymied the passage of meaningful legislation.

1. Introduction

In 2016, there were a total of 38,658 gun deaths in the United States (US) at a rate of 11.8 per 100,000 (Ahmad and Bastian, 2018). The firearm homicide rate in the US has been as high as 20 times that of 22 other high-income nations (Murphy et al., 2017). Firearms are the leading cause of homicide and second leading cause of suicide among adolescents aged 10–19 (Curtin et al., 2018). Firearm deaths and injuries disproportionately affect Black and Latino Americans who accounted for over 57% of firearm deaths in 2013 (Schuster et al., 2012; National Register of Health Service Psychologists, 2015). The direct and indirect costs of gun violence are estimated to cost Americans between \$100 billion and \$229 billion annually (Follman et al., 2015). Needless to say, gun violence is a public health crisis in the US. The increasing frequency of mass shootings and number of deaths and injuries has been the catalyst for divisive political debates in recent years. While deadly mass shootings represent only 2% of all firearm-related deaths between 1982 and 2018, the rate of mass shooting incidents and deaths

increased annually in that period (Follman et al., 2017).

Gun-related deaths caused by mass shootings, homicides, violent crime, and accidental and negligent injuries, have engendered massive public support for the passage of gun control legislation; however, gun rights advocates have opposed these efforts, arguing that guns can be used for self-protection and to deter violent crime, thereby reducing crime (Baker, 1992). Gun rights advocates also argue that limiting access to guns by law-abiding people makes them more vulnerable to armed criminals, who are the least likely to obey firearms laws (Kleck, 2015). While the conversation on gun reform has become highly politicized and divisive, most Americans, including gun owners, support a variety of gun control policies. In 2013, 2015, and 2018, Barry and colleagues examined public support for over 30 policies designed to reduce gun violence, including assault-weapon and ammunition bans, background checks, and firearms sales (Barry et al., 2013; Barry et al., 2015; Barry et al., 2018). These policies were generally supported by most Americans regardless of gun ownership. However, support for permit-to-purchase laws differed significantly and were supported by

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81% of non-gun owners, compared with 63% of gun owners.

According to Johns Hopkins Center for Gun Policy and Research, permit-to-purchase laws, usually require prospective gun purchasers to apply directly to state or local law enforcement agencies for a purchase permit before a gun can be legally purchased (Johns Hopkins Center for Gun Policy and Research, 2015). Permit-to-purchase laws allow law enforcement to conduct more comprehensive background checks compared with those conducted by licensed gun sellers and prohibit any licensed or unlicensed sales to anyone without a purchase permit. Such laws require direct contact with law enforcement, ensure verification of a purchasers' identity, and deters purchases or criminal transactions whereby a firearm is bought on behalf of a disqualified purchaser. Permit-to-purchase laws have been shown to prevent the diversion of guns to criminals and reduce firearm homicide rates (Webster et al., 2009; Webster et al., 2013; Fleegler et al., 2013; Webster et al., 2014; Rudolph et al., 2015).

Previous studies have reported that guns are most likely to be owned by white, middle-aged and older men who identify politically as conservative and reside in the Southern or Midwestern regions of the US (Smith and Son, 2015). Empirical evidence illustrating socio-demographic trends in gun ownership and support for presale gun permit laws (or permit-to-purchase laws) are necessary to guide national efforts to reduce firearm deaths and injuries. We addressed this knowledge gap by using General Social Survey (GSS) data, collected from 2010 to 2016, to examine the prevalence and sociodemographic correlates of gun ownership and views towards presale gun permit laws (or permit-to-purchase laws) among US adults.

2. Methods

2.1. Data source and participant selection

The GSS is an in-person, biennial survey of the US civilian, non-institutionalized population (Smith et al., 2017). Representative samples of households and non-institutional quarters are included via multistage probability sampling. The GSS collects information from the public on a variety of subjects, including demographic information, political views, and gun ownership. Data were aggregated from the 2010 to 2016 to increase sample size and statistical reliability. Surveys were collected from a total of 9423 men and women, 18 years of age or older, and had an average response rate of 70% (Smith et al., 2017). The analytical sample was restricted to respondents who provided definitive answers to survey questions regarding gun ownership (N = 6184).

In this study, gun ownership was defined using the GSS question, "Do you happen to have in your home any guns or revolvers, and if so, do any of these guns personally belong to you?" Respondents who answered "Yes" were defined as owning a gun, and those who answered "No" were defined as not owning a gun. Views on presale gun permit laws were defined using the GSS question, "Would you favor or oppose a law which would require a person to obtain a police permit before he or she could buy a gun?" Responses of "Favor" or "Opposed" were defined as favoring or opposing laws requiring a police permit before the purchase of a gun, respectively.

Demographic and health-related covariates included in the GSS were noted as: age (18 to 24, 25 to 44, 45 to 64, and 65 or older); gender (male and female); race/ethnicity (non-Hispanic White, non-Hispanic Black, non-Hispanic Other, and Hispanic); education (less than a high school diploma, high school graduate, some college, and college graduate or more); family annual income (less than \$35,000 and \$35,000 or more); region of residence (Midwest, South, West, and Northeast); and political views (extremely liberal, liberal, slightly liberal, moderate, slightly conservative, conservative, and extremely conservative). Race/ethnicity was included as an independent variable because racial/ethnic differences in the US population are associated with disparities in sociodemographic status and political affiliation

(Murray et al., 2006).

2.2. Statistical analysis

SAS-Callable SUDAAN software version 10.0.1 was used to conduct the data analysis. Data from 2010 to 2016 were aggregated to increase statistical power and reliability of estimates. All analyses accounted for the complex GSS survey design and data weights (Smith et al., 2017). Population distributions by age, gender, race/ethnicity, education, income, and region of residence were weighted relative to nationally representative estimates from the US Census Bureau. Logistic regression analyses were used to calculate prevalence, prevalence ratios (PRs) and 95% confidence intervals (95% CIs) for each independent variable to assess the association with gun ownership and views on gun permit laws. For the multivariable analyses, significant study variables ($p < 0.05$) were controlled for when calculating the adjusted prevalence ratios (APRs).

3. Results

3.1. Demographic and behavioral characteristics

Demographic and behavioral characteristics of US adults are presented in Table 1. An estimated 22.1% (95% CI: 20.9 to 23.4) of US adults reported owning a gun, and 72.5% (95% CI: 71.2 to 73.9) were in favor of presale gun permit laws. About half (55.4%; 95% CI: 52.4 to 58.3) of adults who reported owning a gun also favored presale gun permit laws, and 78.8% (95% CI: 77.4 to 82.0) of adults who did not own a gun were in favor of presale gun permit laws (data not shown). Population distributions were similar for adults with liberal or conservative political views (27.4% vs. 33.9%); however, the majority of respondents reported moderate political views (38.7%).

3.2. Prevalence and APRs

Table 2 presents the weighted prevalence in addition to the unadjusted and APRs for gun ownership among US adults. The prevalence of gun ownership was significantly higher among respondents who were aged 65 and older (31.5%), were male (35.5%), had obtained up to a high school education (25.4%), had an annual income of more than \$35,000 (26.8%), and resided in either the South (26.2%) or Midwest (38.5%). The prevalence of gun ownership among non-Hispanic white adults (28.2%) was over two times higher than the prevalence among non-Hispanic blacks (13.2%), Hispanics (10.2%), and adults of other non-Hispanic race (6.2%). In addition, approximately one third of adults with either conservative (35.5%) or extremely conservative political views (28.3%) reported owning a gun. In the adjusted model, men (APR: 3.15; 95% CI 2.76 to 3.58), adults with a high school diploma (APR: 1.31; 95% CI 1.15 to 1.450) or some college education (APR: 1.34; 95% CI 1.27 to 1.53), and adults residing in the Midwest (APR: 1.58; 95% CI 1.32 to 1.89), South (APR: 1.86; 95% CI 1.55 to 2.23) or West (APR: 1.41; 95% CI 1.16 to 1.71) were significantly more likely to own a gun compared to women, adults with a college degree or more, and residents of the Northeast region of the US. Non-Hispanic blacks (APR: 0.56; 95% CI 0.46 to 0.68), Hispanics (APR: 0.48; 95% CI 0.38 to 0.61), adults of other non-Hispanic race (APR: 0.32; 95% CI 0.320 to 0.51) and adults earning less than \$35,000 (APR: 0.64; 95% CI 0.56 to 0.73) annually were less likely to own a gun compared to non-Hispanic whites and adults earning more than \$35,000 annually. In addition, adults with extremely liberal (APR: 0.70; 95% CI 0.51 to 0.98) or liberal (APR: 0.69; 95% CI 0.56 to 0.85) political views were significantly less likely to own a gun than adults with moderate political views. In the same trend, adults with conservative (APR: 1.39; 95% CI 1.22 to 1.59) political views were significantly more likely to own a gun compared to adults with moderate political views.

Table 3 presents the prevalence in addition to the unadjusted and

Table 1
Demographic and behavioral characteristic of US adults, General Social Survey 2010–2016.

| Variables | N | Weighted % | 95% CI |
|--|------|------------|-----------|
| Total | 6184 | 100% | – |
| Age | | | |
| 18–24 | 435 | 9.3 | 8.3–10.3 |
| 25–44 | 2234 | 36.4 | 34.9–38.0 |
| 45–64 | 2223 | 36.8 | 35.3–38.3 |
| 65 and older | 1270 | 17.5 | 16.4–18.6 |
| Gender | | | |
| Male | 2765 | 45.6 | 44.2–47.1 |
| Female | 3419 | 54.4 | 52.9–55.8 |
| Race/ethnicity | | | |
| Non-Hispanic white | 4103 | 65.3 | 63.4–67.2 |
| Non-Hispanic black | 939 | 14.3 | 13.1–15.7 |
| Hispanic | 848 | 15.1 | 13.5–17.0 |
| Non-Hispanic other | 294 | 5.2 | 4.4–6.1 |
| Education | | | |
| Less than high school graduate | 926 | 15.1 | 13.9–16.4 |
| High school graduate/GED | 1696 | 27.7 | 26.3–29.0 |
| Some college | 1591 | 26.3 | 25.0–27.6 |
| College graduate or more | 1962 | 31.0 | 29.4–32.7 |
| Income | | | |
| Less than \$35,000 | 2180 | 30.1 | 28.5–31.7 |
| \$35,000 or more | 3398 | 59.0 | 57.3–60.7 |
| Missing | 606 | 10.9 | 10.0–11.9 |
| Region of residence | | | |
| Midwest | 1459 | 22.8 | 20.9–24.9 |
| South | 2298 | 37.7 | 34.5–41.0 |
| West | 1377 | 22.9 | 20.6–25.3 |
| Northeast | 1050 | 16.6 | 15.0–18.4 |
| Political views | | | |
| Extremely liberal | 250 | 4.0 | 3.5–4.7 |
| Liberal | 772 | 12.2 | 11.3–13.2 |
| Slightly liberal | 670 | 11.2 | 10.3–12.1 |
| Moderate | 2269 | 38.4 | 37.1–39.8 |
| Slightly conservative | 790 | 13.9 | 12.9–15.0 |
| Conservative | 938 | 15.9 | 14.8–17.0 |
| Extremely conservative | 246 | 4.4 | 3.8–5.0 |
| Own gun | | | |
| Yes | 1358 | 22.1 | 20.9–23.4 |
| No | 4644 | 77.9 | 76.7–79.1 |
| Position on laws which would require a person to obtain a police permit before he or she could buy a gun | | | |
| Favor | 4445 | 72.5 | 71.2–73.9 |
| Oppose | 1660 | 27.5 | 26.1–28.8 |

Abbreviations: 95% CI - 95% Confidence Interval.

Note: estimates represent weighted averages across the GSS survey cycles 2010–2016.

APRs of US adults who favor presale gun permit laws. The prevalence of US adults who favor gun permit laws was significantly higher among women (77.2%), college graduates (76.5%), adults living in the Northeast region of the US (81.8%), and those with liberal political views (83.8%). The prevalence of non-Hispanic white adults who favor presale gun permit laws (69.2%) was significantly lower than every other racial/ethnic group. After controlling for significant study variables, non-Hispanic blacks (APR: 1.16; 95% CI 1.11 to 1.22), Hispanics (APR: 1.18; 95% CI 1.12 to 1.24), and non-Hispanic others (APR: 1.17; 95% CI 1.08 to 1.26), in addition to those with liberal political views (APR: 1.12; 95% CI 1.06 to 1.17), were significantly more likely to favor presale gun permit laws than non-Hispanic whites and those with moderate political views. Men (APR: 0.88; 95% CI 0.85 to 0.91); those with less than a college degree ([less than high school] APR: 0.92; 95% CI 0.87 to 0.98; [high school graduate] APR: 0.92; 95% CI 0.88 to 0.96; [some college] APR: 0.93; 95% CI 0.89 to 0.96); and those residing in the Midwest (APR: 0.90; 95% CI 0.85 to 0.95), South (APR: 0.85; 95% CI 0.81 to 0.90), and West (APR: 0.87; 95% CI 0.82 to 0.93) were less likely to favor presale gun permit laws compared to women, adults with a college degree or more, and residents of the Northeast region of the

US.

4. Discussion

Study findings indicate that the prevalence of Americans in favor of presale gun permit laws (78%) was over three times higher than the prevalence of US gun owners (22%), and the majority (55%) of gun owners also favored presale gun permit laws. These findings are similar to Barry and colleagues' findings which reported large majorities of Americans support a range of gun violence prevention policies which include universal background checks and bans for people with domestic violence restraining orders (Barry et al., 2013; Barry et al., 2015; Barry et al., 2018). Substantial sociodemographic differences by gun ownership status, and by favor of presale permits, were observed. Respondents who reported owning a gun were more likely to be aged 65 and older, male, and non-Hispanic white; earn \$35,000 or more annually; reside in the West, Midwest or South; and have varying levels of conservative political views. Respondents who supported presale permits were more likely to be aged 65 and older, female, non-Hispanic black/other or Hispanic, college graduates, politically liberal, and reside in the Northeast.

Regional location and annual income may impact gun ownership, especially among respondents who earned more than \$35,000 per year or live in the Southern or Midwestern US. Gun ownership could be a function of greater amounts of disposable income or gun-related recreational activities like hunting or sports shooting that are more common in rural areas (Kahan and Braman, 2003). Increased rates of gun ownership among men and non-minorities may be attributed to fear of victimization and the view that owning a gun contributes to crime prevention (Kahan and Braman, 2003; Skogan, 1995; Celinska, 2007; Cook and Ludwig, 1997). On a broader level, this study found that the range of political associations in relation to gun ownership followed a definitive trend where conservatives were more likely to own guns than their liberal counterparts. These differences may be explained by the divergent views of each political affiliation. Conservatives tend to favor greater individual rights, including the Second Amendment right to bear arms, and oppose any social or legislative limitations on their ability to protect their families and the interests of those with whom they closely affiliate, associate, or identify (Skogan, 1995).

Over three times as many US adults favor presale gun permit laws compared to those who own guns, and over half of gun owners also favor presale permits. Substantial sociodemographic disparities were observed among US adults who favor presale gun permit laws. Sociodemographic groups who have historically been victims of firearm-related injuries such as women and minorities, in addition to college graduates, residents in the Northeast region of the US, and adults with liberal political views were more likely to favor presale permits and less likely to own guns. Overwhelming favor for presale permits within these populations does not account for the disproportional differences in Americans who approve of presale permits compared to those who own guns, nor does being a gun owner imply opposition to presale permit legislation. Study findings illustrate that despite a substantial proportion of Americans in favor of presale gun permits the overwhelming popularity of these policies has not resulted in the passage of meaningful legislation at the federal level.

Given the increasing number of mass shootings each year, epidemic levels of firearm-related deaths and injuries, and the disproportionate support presale gun permits, it is unclear why the US has been slow to adopt meaningful national gun reform policies. Since Gabrielle Giffords and 18 other people were shot in Tucson, Arizona in January 2011, there have been > 100 gun control proposals in Congress. Not one of them has been passed into law, except for the recent law banning the sale of bump stocks (Shabad, 2016). Special interest groups like the National Rifle Association (NRA) have directly lobbied against the passage of gun control legislation since 1975 and have been heavily

Table 2
Prevalence and adjusted prevalence ratios of gun ownership among US adults, General Social Survey 2010–2016.

| Variables | Weighted prevalence | Prevalence ratio | 95% CI | Adjusted prevalence ratio | 95% CI |
|--------------------------------|---------------------|------------------|-----------|---------------------------|-----------|
| Age | | | | | |
| 18–24 | 10.0 | 0.32 | 0.23–0.44 | 0.38 | 0.27–0.53 |
| 25–44 | 17.8 | 0.56 | 0.49–0.65 | 0.64 | 0.56–0.74 |
| 45–64 | 25.3 | 0.81 | 0.72–0.91 | 0.80 | 0.71–0.90 |
| 65 and older | 31.5 | Reference | | Reference | |
| Gender | | | | | |
| Male | 35.5 | 3.22 | 2.84–3.66 | 3.15 | 2.76–3.58 |
| Female | 11.0 | Reference | | Reference | |
| Race/ethnicity | | | | | |
| Non-Hispanic white | 28.2 | Reference | | Reference | |
| Non-Hispanic black | 13.2 | 0.47 | 0.38–0.57 | 0.56 | 0.46–0.68 |
| Hispanic | 10.2 | 0.36 | 0.29–0.46 | 0.48 | 0.38–0.61 |
| Non-Hispanic other | 6.2 | 0.22 | 0.13–0.36 | 0.32 | 0.20–0.51 |
| Education | | | | | |
| Less than high school graduate | 15.5 | 0.73 | 0.60–0.88 | 1.03 | 0.85–1.24 |
| High school graduate/GED | 25.4 | 1.19 | 1.04–1.37 | 1.31 | 1.15–1.50 |
| Some college | 23.4 | 1.10 | 0.96–1.26 | 1.34 | 1.17–1.53 |
| College graduate or more | 21.3 | Reference | | Reference | |
| Income | | | | | |
| Less than \$35,000 | 14.6 | 0.54 | 0.48–0.62 | 0.64 | 0.56–0.73 |
| \$35,000 or more | 26.8 | Reference | | Reference | |
| Missing | 16.7 | 0.62 | 0.52–0.75 | 0.74 | 0.61–0.88 |
| Region of residence | | | | | |
| Midwest | 24.9 | 1.75 | 1.41–2.16 | 1.58 | 1.32–1.89 |
| South | 26.2 | 1.84 | 1.49–2.28 | 1.86 | 1.55–2.23 |
| West | 18.4 | 1.29 | 1.04–1.61 | 1.41 | 1.16–1.71 |
| Northeast | 14.2 | Reference | | Reference | |
| Political views | | | | | |
| Extremely liberal | 13.6 | 0.66 | 0.46–0.94 | 0.70 | 0.51–0.98 |
| Liberal | 13.5 | 0.65 | 0.52–0.82 | 0.69 | 0.56–0.85 |
| Slightly liberal | 18.3 | 0.89 | 0.72–1.09 | 0.93 | 0.77–1.11 |
| Moderate | 20.6 | Reference | | Reference | |
| Slightly conservative | 24.4 | 1.18 | 1.00–1.40 | 1.02 | 0.87–1.20 |
| Conservative | 35.5 | 1.72 | 1.49–2.00 | 1.39 | 1.22–1.59 |
| Extremely conservative | 28.3 | 1.38 | 1.07–1.76 | 1.13 | 0.91–1.41 |

Abbreviations: 95% CI - 95% confidence interval

Note: estimates represent weighted averages across the GSS survey cycles 2010–2016.

criticized for stymieing national gun control efforts. For example, the NRA's lobbying efforts resulted in the passage of the Dickey Amendment in 1996, which mandated that “none of the funds made available for injury prevention and control at the Centers for Disease Control and Prevention may be used to advocate or promote gun control.”(104th Congress. Public Law 104–208, n.d.) As a result, \$2.6 million of federal funding originally allocated for firearms research was used instead for traumatic brain injury-related research (Shabad, 2016). Moreover, for the past 20 years, federally funded, national surveillance surveys have not been permitted to include any questions that could be used for gun control research.

The passage of the Dickey Amendment succeeded in prohibiting the collection of data necessary to conduct research and surveillance. The US Congress recently revised the Dickey Amendment to now permit gun-related research, and there are a small number of nationally representative data sources (Hart, 2013). However, the effects of the near two-decade dearth of peer-reviewed research into the nationally representative sociodemographic trends of gun ownership and their relation to gun violence are being felt today. Study findings were based on one of the few remaining data sources and illustrate that a national consensus regarding approval of some form gun control is possible and that those views are shared among gun owners and US citizens who do not own guns.

This study reinforces previous research findings that most Americans, including gun owners, support some form of gun control. Future research should investigate why certain population groups favor gun control more than others. Despite this widespread support, the government has not been able to pass gun control laws at the federal level, for reasons previously mentioned. Fortunately, states have been

making progress on their own. For example, 10 states and Washington D.C. have permit-to-purchase laws, some more comprehensive than others (Johns Hopkins Bloomberg School of Public Health Center for Gun Policy and Research, 2015). Missouri repealed its permit-to-purchase law in 2007, resulting in an increase in firearm homicides (Webster et al., 2014). California, Connecticut, Indiana, Oregon, Rhode Island, and Washington state have red flag laws, that allow relatives or the police to ask judges to temporarily strip gun rights from those showing warning signs of violence, which are being considered by several other states (Goodin, 2018). Several states are considering laws that would raise the gun purchase age to 21, including Florida, California, Illinois, and Washington state (Goodin, 2018).

4.1. Limitations of the study

Study participants may have provided socially desirable responses to survey questions, especially questions related to gun ownership and views on gun control measures. The GSS data are cross-sectional and therefore causal relationships between the variables examined cannot be determined. The variable “favoring or opposing laws requiring a police permit before the purchase of a gun” does not address all questions regarding legislative measures for gun control and only serves as a proxy for respondents' views for viable measures of gun control. Interpretation of the results is also limited by the lack of information about respondents' criminal background, use of nonlethal firearms, and other factors that might influence respondents' ability or desire to own a gun. Despite these limitations, an overarching strength of this analysis is its use of nationally representative, probability-based data among US residents, which helps reveal important characteristics of gun owners

Table 3
Prevalence and Adjusted Prevalence Ratios of US Adults in Favor of Laws Requiring a Police Permit Before Gun Purchase, General Social Survey 2010–2016.

| Variables | Weighted prevalence | Prevalence ratio | 95% CI | Adjusted prevalence ratio | 95% CI |
|--------------------------------|---------------------|------------------|-----------|---------------------------|-----------|
| Age | | | | | |
| 18–24 | 67.6 | 0.89 | 0.82–0.97 | 0.85 | 0.78–0.92 |
| 25–44 | 72.6 | 0.96 | 0.91–1.01 | 0.90 | 0.86–0.94 |
| 45–64 | 72.2 | 0.95 | 0.91–1.00 | 0.94 | 0.90–0.97 |
| 65 and older | 75.7 | Reference | | Reference | |
| Gender | | | | | |
| Male | 67.1 | 0.87 | 0.84–0.90 | 0.88 | 0.85–0.91 |
| Female | 77.2 | Reference | | Reference | |
| Race/ethnicity | | | | | |
| Non-Hispanic white | 69.2 | Reference | | Reference | |
| Non-Hispanic black | 78.7 | 1.14 | 1.09–1.19 | 1.16 | 1.11–1.22 |
| Hispanic | 78.1 | 1.13 | 1.11–1.18 | 1.18 | 1.12–1.24 |
| Non-Hispanic other | 81.6 | 1.18 | 1.10–1.26 | 1.17 | 1.08–1.26 |
| Education | | | | | |
| Less than high school graduate | 72.0 | 0.94 | 0.89–0.99 | 0.92 | 0.87–0.98 |
| High school graduate/GED | 69.7 | 0.91 | 0.87–0.95 | 0.92 | 0.88–0.96 |
| Some college | 71.3 | 0.93 | 0.89–0.98 | 0.93 | 0.89–0.96 |
| College graduate or more | 76.5 | Reference | | Reference | |
| Income | | | | | |
| Less than \$35,000 | 73.3 | 1.02 | 0.98–1.06 | | |
| \$35,000 or more | 72.1 | Reference | | | |
| Missing | 73.3 | 1.02 | 0.96–1.08 | | |
| Region of residence | | | | | |
| Midwest | 71.8 | 0.88 | 0.83–0.93 | 0.90 | 0.85–0.95 |
| South | 69.1 | 0.84 | 0.80–0.89 | 0.85 | 0.81–0.90 |
| West | 72.3 | 0.88 | 0.84–0.93 | 0.87 | 0.82–0.93 |
| Northeast | 81.8 | Reference | | Reference | |
| Political views | | | | | |
| Extremely liberal | 76.0 | 1.02 | 0.94–1.12 | 1.01 | 0.92–1.10 |
| Liberal | 83.8 | 1.13 | 1.08–1.18 | 1.12 | 1.06–1.17 |
| Slightly liberal | 79.5 | 1.07 | 1.02–1.13 | 1.05 | 1.00–1.11 |
| Moderate | 74.2 | Reference | | Reference | |
| Slightly conservative | 69.8 | 0.94 | 0.88–1.00 | 0.94 | 0.88–1.00 |
| Conservative | 59.9 | 0.81 | 0.75–0.86 | 0.83 | 0.77–0.88 |
| Extremely conservative | 59.1 | 0.8 | 0.70–0.91 | 0.82 | 0.73–0.93 |

Abbreviations: 95% CI - 95% confidence interval

Note: estimates represent weighted averages across the GSS survey cycles 2010–2016.

and views on gun control legislation. Tailored approaches responsive to these findings will result in more effective campaigns to that promote legislation sensitive to these demographic tendencies.

State policy makers and public health advocates should use the findings of this study to better understand how sociodemographic, political, and regional differences influence the public's views regarding permit-to-purchase laws. Researchers should also investigate socio-demographic differences regarding views of other gun control policies. By better understanding these multi-level nuances, policy makers and public health advocates can tailor their messages appropriately, work to minimize the gaps in perspectives between various groups, and better advocate for evidence-based policies that reduce gun violence. At the same time, researchers should focus their efforts on policies that already have a high level of support from both gun owners and non-gun owners, to help illustrate the reality that majority of all Americans are in favor of many policies that can reduce gun violence (Barry et al., 2018). Despite a significant majority of US residents in support of gun control legislation, special interest groups have successfully lobbied to block the passage of gun control legislation for decades. These actions have essentially subverted the democratic process by muting the voices of most Americans, and deepened the racial/ethnic, socioeconomic, and political divides in the US. Public health professionals can use these findings to develop tailored, culturally sensitive gun violence prevention campaigns and outreach efforts.

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