

The US Public's Preference for Safer Guns

Every year, gun violence imposes an unacceptable toll on people in the United States. In 2014, the most recent year for which final data are available, 33 599 people died from gun violence; the majority of these deaths were suicides (>21 000 deaths), and firearm homicides accounted for more than 11 000 deaths.¹ Unintentional shootings, in which children are often the shooter or victim,^{2,3} comprised more than 500 deaths in 2013.¹ In addition to firearm fatalities, in 2013, more than 84 000 people in the United States suffered from nonfatal gunshot wounds, including both injuries resulting in hospitalization and injuries that were treated in emergency rooms but did not require admittance to the hospital.¹

Handguns that operate only for authorized users (called childproof, personalized, or “smart” guns) make the gun inoperable to anyone not authorized to use it. Such guns have the potential to reduce morbidity and mortality from firearms. If household guns were personalized to adult, authorized users only, youths would be unable to use them in suicidal crises, young children would be unable to unintentionally shoot playmates and siblings, and guns stolen from homes would not work (and as a result, have little to no value on the streets).

Current technologies to make guns personalized to one or more individuals use either

radio frequency identification or biometric recognition such as a fingerprint reader. With radio frequency identification technology, the authorized users wear a tiny transmitter that can be embedded in a wristwatch, ring, or bracelet. This transmitter communicates with a receiver built into the handgun, which then unlocks the gun's firing mechanisms. Fingerprint reading chips built into a handgun similarly discriminate between authorized and unauthorized users by unlocking the gun only when a fingerprint is recognized. These technologies that now exist, are both reliable and durable enough to be employed in handguns, and are likely to be relatively inexpensive when they come to market.⁴ Despite the readiness of the technology and decades of advocacy for personalized guns, the product is not yet widely available to consumers in the United States.

It is known that the American public has a high interest in purchasing handguns in general. Gun makers, in recent years, have earned record profits because of increasing sales. In 2013, US gun makers produced more than five million new handguns, compared with an annual production of about 1.1 million handguns the decade before.⁵ Available evidence from a 2013 survey conducted by the National Shooting Sports Foundation (NSSF, the trade association

of gun makers) suggests very low willingness to purchase smart guns.⁶ However, credible and peer-reviewed data on this question are missing, and whether the public has sufficient interest in personalized guns to warrant the financial investment needed to produce them has been an open question.

To examine public interest in purchasing childproof guns, we conducted a nationally representative,⁷ Web-based survey in January 2015. We sent an invitation to participate to 7318 adults recruited from a panel of approximately 50 000 respondents maintained by GfK, a survey firm commonly used for academic research, using equal-probability sampling from a sample frame covering 97% of US households. The survey completion rate was 55%, comparable to other surveys administered by GfK, resulting in a final sample size of 3949 (after eliminating 49 respondents who were active duty military).

We asked respondents, “If you were to purchase a new handgun, how willing would you be to purchase a childproof gun that

fires only for authorized users?” Responses were based on a five-point Likert scale from “very unwilling” to “very willing.” For analysis, we collapsed the five-point scale into three categories: (1) willing to purchase (combining “very willing” and “willing”), (2) undecided, and (3) unwilling to purchase (combining “very unwilling” and “unwilling”). Results are presented in Figure 1.

Overall, we found that 59% of Americans, if they were to purchase a new handgun, were willing to buy a childproof gun, 23% were undecided, and 18% were unwilling to buy a childproof gun. Among gun owning Americans, 43% were willing to purchase a childproof gun and 33% were undecided. Almost two thirds of non-gun-owning Americans (65% of those with guns in their households, and 63% of those in non-gun households) expressed willingness to purchase childproof guns. Interest in childproof guns was highest among politically liberal Americans (71%), but was also high among political moderates (56%) and conservatives (56%). People with children younger than 18 years at home were more interested in purchasing childproof guns than

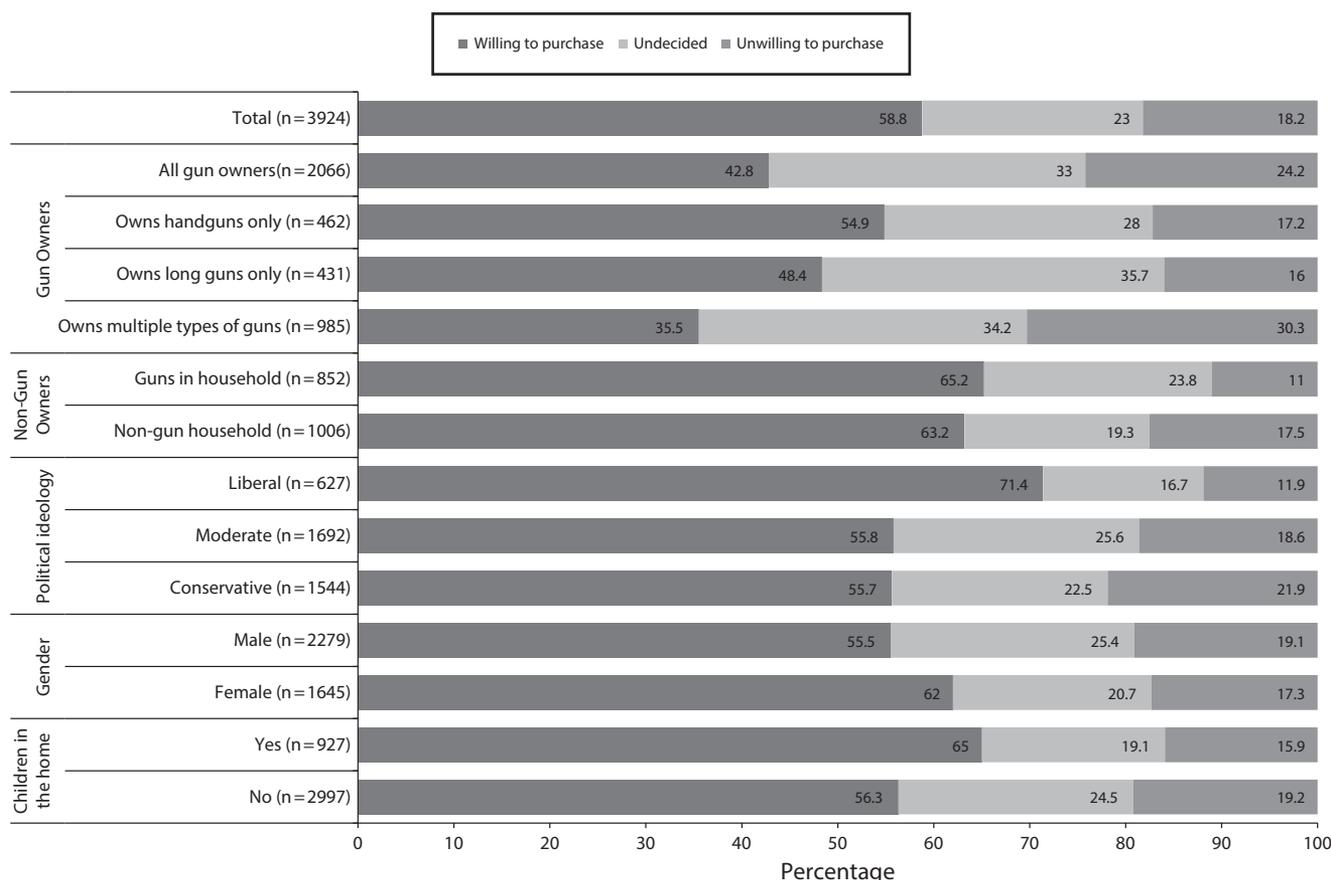
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Note. Respondents were asked, “If you were to purchase a new handgun, how willing would you be to purchase a childproof gun that fires only for authorized users?” Responses were based on a five-point Likert scale from “very unwilling” to “very willing.” Responses of “very unwilling” and “unwilling” were combined and responses of “very willing” and “willing” were combined. We oversampled veterans and adults living in homes with guns and used survey weights provided by GfK to generate nationally representative estimates. Notably, 49 respondents owned “other guns” only (other guns include pistols, revolvers, semiautomatic guns); 25 respondents refused to answer the question. Significant differences in the percentage of respondents willing to purchase a childproof gun versus undecided or unwilling to purchase were tested by gun owner status ($P < .001$), between gun owners and nonowners (combining nonowners in both gun and nongun households; $P < .001$), political affiliation ($P < .001$), gender ($P = .04$), and parental status ($P = .01$) by using the χ^2 test. The sample size was $n = 3924$.

FIGURE 1—Willingness to Purchase Childproof Guns Overall, by Gun Owner Status, Guns Owned, Political Ideology, Gender, and Presence of Children in the Home: National Firearms Survey, United States

those without children at home (65% versus 56%).

Among gun owners, approximately half of those who own handguns (55%) or long guns (48%) only were willing to purchase a childproof gun. One third of gun owners were also undecided about purchasing childproof guns, and their opinion could shift in favor of smart guns once they become more available. This suggests a substantial market exists for childproof guns among potential purchasers of new guns.

Our finding that a substantial majority of Americans would be willing to purchase smart guns contrasts with the NSSF 2013 estimates of interest in smart guns. The NSSF survey found that only 14% of those polled were somewhat or very likely to purchase a smart gun.⁶ Regardless of whether design of the NSSF survey produced underestimates of Americans’ willingness to purchase smart guns, or whether attitudes have undergone a sea

change since 2013 (which seems unlikely), our findings suggest that there is, in fact, a high level of public interest in smart guns, and widespread willingness to consider purchasing such guns. This interest has important implications for policy and commerce.

Domestic gun manufacturers have been slow to invest in research and development of childproof guns, perhaps because of interest group pressure, but possibly because they

misunderstand the depth of public interest in safer handguns. In our large, nationally representative survey, more than twice as many current gun owners said they would be willing to purchase a smart gun than would be unwilling, suggesting that a substantial market for childproof guns already exists in the United States. Investors, policymakers, and manufacturers should take note of the high level of consumer interest in safer guns and reexamine the potential for childproof or “smart”

guns not only to produce a profit, but also to lessen the toll of gun deaths in the United States. **AJPH**

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M. Miller and D. Azrael conceptualized the survey, and S. Teret wrote the key survey questions. J. A. Wolfson analyzed the data and wrote the first draft of the article. All of the authors contributed to the interpretation of the findings, revised the article, and approved the final article as submitted.

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