



Firearm Suicide Beliefs and Practices: A Missouri Firearms Survey Report



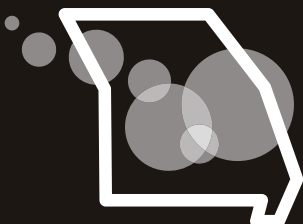
**INSTITUTE FOR FIREARM
INJURY PREVENTION**
UNIVERSITY OF MICHIGAN

March 2023

**Prepared by the University of Michigan
Institute for Firearm Injury Prevention and
Missouri Foundation for Health**

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Report Authors: Daniel Lee, PhD, Megan
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*Missouri Foundation
for Health*

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About the University of Michigan's Institute for Firearm Injury Prevention: The Institute for Firearm Injury Prevention at the University of Michigan fosters collaboration among researchers in disciplines ranging from the social sciences and the arts to engineering and public health to formulate and answer critical questions about firearm injury prevention. Learn more at firearminjury.umich.edu.

About Missouri Foundation for Health: Missouri Foundation for Health is building a more equitable future through collaboration, convening, knowledge sharing, and strategic investment. Working in partnership with communities and nonprofits, MFH is transforming systems to eliminate inequities within all aspects of health and addressing the social and economic factors that shape health outcomes. Learn more at mffh.org.

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EXECUTIVE SUMMARY

In July 2020, Missouri Foundation for Health (MFH) conducted the Missouri Firearms Survey (MFS) of over 1,000 Missouri adults to understand firearm-related beliefs, attitudes, perceptions, and behaviors within the state to inform the design and implementation of firearm injury prevention programs. The MFS included questions regarding beliefs around suicide risk in the home, who should talk to firearm owners about the risks of firearms and storing their firearms, and firearm suicide prevention training. The purpose of this report is to summarize the results of these questions, provide a national context for the results, and outline the next steps for practice and research. We identify **key trends and implications for research and practice** below:

Key Trends Related to Suicide and Firearms

- Most firearm owners (88%) and non-firearm owners (75%) living in Missouri do not believe household firearm access can increase the risk of death by firearm suicide.
 - **Implications:** Understanding what influences perceptions about the relationship between firearm access and suicide risk and potential behavioral changes to reduce the likelihood of firearm suicide is essential. Using theories of behavior change to explore socioecological factors that drive perceptions and associated behavioral intentions will allow researchers and practitioners to tailor education and interventions to address factors that hinder safety practices.

- Most firearm owners (81%) and non-firearm owners (77%) are open to discussing firearm safety with a healthcare provider if they or someone they know is experiencing behavioral, emotional, or cognitive problems. Many firearm owners are aware that mental health conditions elevate the risk for suicide by a firearm.
 - **Implications:** Credible messengers are crucial to elevating knowledge about firearm safety and changing norms around suicide and firearms (e.g., promoting safe storage). Healthcare providers are viewed as credible messengers for firearm safety information in the context of mental health crisis and well-positioned to discuss firearm safety with firearm and non-firearm owners. Other credible messengers need to be identified (e.g., gun shop owners, religious leaders).

- Firearm training is a promising avenue for disseminating evidence-based information about firearms and suicide, yet only one in five Missouri firearm owners receives any training in firearm suicide prevention.
 - **Implications:** More research is needed to understand what training content and messaging is best for firearm owning communities whose cultures and values may vary. Building relationships with individuals from firearm-owning communities, such as with firearm retailers or trainers, is important for developing culturally relevant content. The efficacy of safety training programs at the point-of-sale and subsequent formalized programs need to be established.

INTRODUCTION

Firearm suicide is a growing public health concern, with a 22% increase from 2020 to 2021 in the US (37% increase in Missouri). Missouri has the 12th highest suicide rate relative to other states (1,125 suicides in 2020) and an average of three Missourians die by firearm suicide each day.¹ The majority of suicides in the United States (US) involve a firearm (53%) and nine out of ten suicide attempts involving a firearm are fatal.⁴ Demographic trends in MO also suggest that white, non-Hispanic males have the highest rate of firearm suicide.³ However, the suicide rate among Black Missourians has increased by 30% from 2014 to 2020, signaling the need for proactive and culturally relevant firearm suicide prevention programs.³ This reflects similar rates nationally.^{2,5,6} In 2020, 191 older Missourians died by suicide; 71% of these suicides involved a firearm.³

Firearms are especially dangerous and are the most lethal method of suicide, with nearly 90% of firearm suicide attempts ending in death. For comparison, the next most lethal method for completed suicides is overdose/poisoning which has a considerably lower fatality rate (2%).⁷ In Missouri, firearms are the leading means of death by suicide (60%), followed by suffocation (<30%), and poisoning (<20%).⁸

Firearms are stored unlocked and loaded in many Missouri households; 53% of handgun owners store at least one firearm unlocked and/or loaded and 49% of long gun owners store at least one firearm unlocked and/or loaded ([See “Understanding Firearm Beliefs and Practices Among Missourians: A Missouri Firearm Survey Descriptive Report”](#)). The relative ease of firearm access and the increased lethality of firearms creates a higher likelihood of a lethal suicide outcomes. Temporarily limiting access to firearms during a high-risk time (e.g., a mental health crisis) is one evidence-based strategy for reducing the risk of a fatal suicide attempt and provides additional time for individuals to get access to necessary mental health services.⁹

The survey results will describe Missourians’ firearm suicide-related beliefs and suicide prevention practices. These findings can inform community-based suicide prevention efforts, prevention strategies across key community sectors (e.g., healthcare), and help identify demographic and contextual factors that influence firearm suicide prevention practices and beliefs.

METHODS

Results presented in this report come from the MFS, which was conducted by Ipsos on behalf of MFH in July and August of 2020. The MFS was an online survey of 1,045 Missouri adults; 37% of whom reported personally owning firearms. Statistical weighting was used to ensure that the survey data and trends represent firearm-related beliefs, attitudes, and behaviors of Missouri adults (age 18 or older). Additionally, firearm-owners and rural Missourians were both oversampled to generate reliable insights about their firearm-related beliefs, attitudes, and behaviors. While most survey questions were close-ended (multiple choice), a few open-ended questions (written answers) were also utilized in the survey to gain deeper insights into firearm-related beliefs and practices among Missourians. Data analysis involved summarizing the prevalence of beliefs, attitudes, and behaviors related to firearm suicide prevention among adults living in Missouri. To provide context to the survey results, we also examined whether attitudes and behaviors varied based on individual (e.g., veterans vs. non-veterans), family (e.g., people who grew up with firearms in the home), and community characteristics (e.g., perceptions of neighborhood safety). Additional information about sampling, weighting, and data analysis is included in Appendix A in the introductory report ([See: Lee, D. B., Simmons, M. K., Rauk, L., Crimmins, H. M., Portugal, J., Carter, P. M., & Zimmerman, M. \(2022\). Understanding Firearm Beliefs and Practices Among Missourians: An Introduction to the Missouri Firearm Survey. University of Michigan & Missouri Foundation for Health.](#))

DATA CONSIDERATIONS

Firearms can be a highly divisive topic in the United States. As a result, some survey respondents may feel pressure to respond in a way that they think is socially acceptable. Lack of trust and skepticism about discussing firearms may also prevent people from disclosing their true attitudes or practices. While this is a potential limitation, questions were asked using a web-based platform and confidentiality was assured to enhance the likelihood of respondents providing truthful answers to the survey questions. Such measures have been shown to reduce the potential for such bias in survey responses. Caution should be used when interpreting the results of the MFS, as they reflect the views of respondents and may not fully capture the nuance of experiences, attitudes, and beliefs of other Missourians.

Most respondents disagree that having a firearm in the home increases risk of dying for suicide, regardless of firearm ownership.

Firearms & Suicide Risk Perceptions

As shown in Figure 1, most participants did not agree with the statement that “having a gun at home increases the risk that a member of the household will die by suicide.” Disagreement with this statement was largest among firearm owners and those who received formal training in preventing firearm suicide.

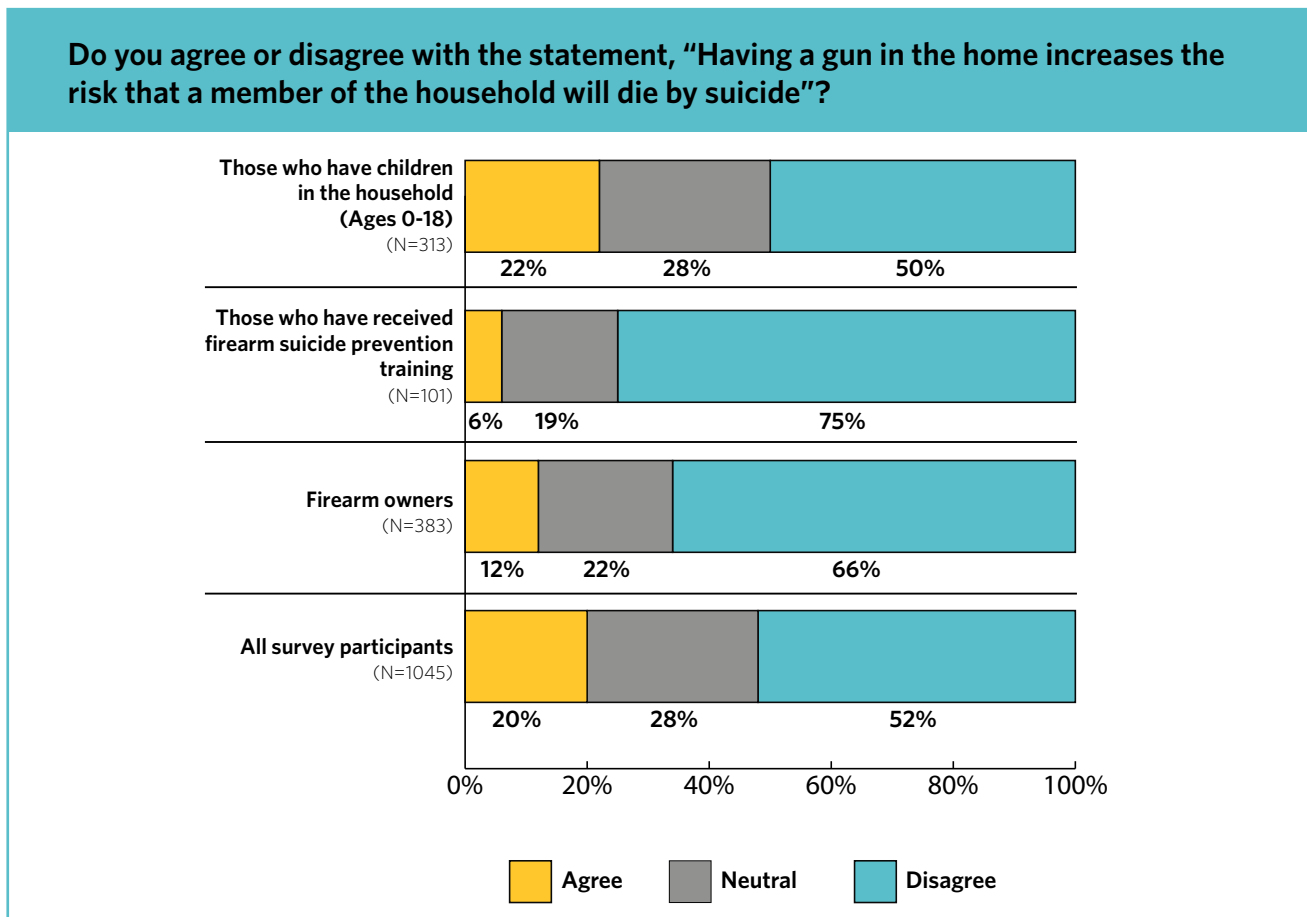


Figure 1

We also examined individual, family, and community level factors that influence perceptions about whether “having a gun at home increases the risk that a member of the household will die by suicide” using logistic regression (see Table 1). Individuals who have a gun at home, those who live in rural areas, people who had a firearm in the home while growing up, and those who received formal firearms training were significantly less likely to agree with this statement than those who do not own a firearm and those with less firearm exposure. In contrast, people who identified as male, those who earned a bachelor’s degree or higher, people living in urban areas, and those with children in the home were significantly more likely to agree with this statement compared to their respective counterparts. No other individual, family, or community characteristics were found to significantly influence responses.

Having a gun in the home increases the risk that a member of the household will die by suicide (all survey participants) *

Less likely to agree	More likely to agree
<ul style="list-style-type: none"> Non-firearm owner living in a household with firearms Lives in a rural area Grew up with a firearm in the household Received firearms training with or without suicide prevention component 	<ul style="list-style-type: none"> Has children in the household Bachelor’s degree or higher Lives in an urban area

Table 1

Among firearm owners, veterans, and those who received formal firearms training that included suicide prevention were significantly less likely to agree that having a firearm in the home increases the risk of suicide by a firearm. In contrast, firearm owners living in an urban area and participants with a Bachelor’s degree or higher were significantly more likely to agree (see Table 2). No other variables were statistically significant.

Having a gun in the home increases the risk that a member of the household will die by suicide (firearm owners only)*

Less likely to agree	More likely to agree
<ul style="list-style-type: none"> Veterans Received formal firearms training that included suicide prevention 	<ul style="list-style-type: none"> Bachelor’s degree or higher Urban

Table 2

Finally, MFS participants were asked to rank the frequency of firearm homicide and firearm suicide. Most participants believed that firearm homicide was most common (64%), when in reality 53% of all firearm deaths in the state are the result of suicide.³ Only 12.7% of participants correctly identified firearm suicide as the most frequent form of firearm death in Missouri.

* For all logistic regression models in this report, predictors included factors including gender (0 = female, 1 = male), age groups (0 = 18-29 years old, 1 = 30-44 years old, 2 = 45-59 years old, 3 = 60+ years old), racial/ethnic group identity (0 = White, 1 = Black, 2 = Hispanic and races/ethnicities other than white), educational attainment (0 = less than a high school degree, 1 = graduated high school, 2 = completed some college or an Associate degree, 3 = completed a Bachelor’s degree or higher), veteran status (0 = not a veteran, 1 = veteran), firearm ownership status (0 = not a firearm owner, 1 = firearm owner), firearm at home (0 = no firearms at home, 1 = firearm(s) at home), formal firearm training (0 = No training, 1 = formal training without suicide prevention training, 2 = formal training with suicide prevention training), community type (0 = suburban, 1 = rural, 2 = urban), grew up with a firearm in the home (0 = no, 1 = yes), fear of community violence (0 = never afraid to 4 = always afraid), and children present in the household (0 = no, 1 = yes). For predictors with more than 2 categories (e.g., community type, educational attainment), variables were dummy-coded and the category corresponding to “0” was the reference group. For models estimated on firearm owners only, we did not include firearm ownership or firearm at home as a predictor as these variables have a variance of zero.

Missouri Data in Context: Easy access to lethal means such as a firearm significantly elevates the risk that a person experiencing a mental health crisis will die by suicide.¹⁵ For instance, in a nationally representative sample of adults in the U.S., people with access to firearms were three times more likely to die by suicide than those without access.¹⁶ While more firearm owners in Missouri (20%) than the US (6.3%) agreed that a firearm in the home increases the risk of dying by suicide,⁷ agreement with this statement is still low. It is important, therefore, to increase awareness about the link between firearm access and firearm suicide risk during mental health crises among firearm owners and those living in households with firearms. Moreover, although the majority of firearm fatalities in the US are attributed to suicides, most US adults, including adults from Missouri believe that homicides are the leading cause of firearm fatalities.¹⁷ This may reflect the pervasiveness of media coverage of interpersonal violence and under-representation of suicide due to stigma.

Among firearm owners and non-firearm owners in Missouri, those who grew up in a household with firearms, own a firearm currently, received formal firearms training, or lived in a rural area were less likely to agree that firearms increase the risk of suicide. Among firearm owners, veterans and those who have received formal firearm training were less likely to agree that firearms in the home increase the risk of suicide. These findings suggest that familiarity with firearms (e.g., veterans, access to firearms in the home, training experience) may lead some to underestimate the risks of having a firearm in the home, especially regarding suicide.¹⁸ Additional research is needed to determine why certain groups (e.g., firearm owning veterans) are less likely to think that firearms in the home increases the risk for suicide. This can inform effective public health messaging and education around firearm access and suicide risk.

Implications for research and practice: The overwhelming disagreement with the statement, “Having a gun in the home increases the risk of a member of the household may die of suicide” could reflect a gap in knowledge about the link between firearm access and firearm suicide. This signals the need for interventions that promote public awareness about the public health significance of firearm suicide, as well as the need for better integration of firearm suicide prevention information into formal training programs. Doing so may inform and encourage firearm safety practices that can prevent suicide by a firearm (e.g., mental health support seeking, temporary removal of firearms or changes in storage practices when a member of the household is experiencing a mental health crisis).

Alternatively, low agreement with this statement may reflect misinterpretation of the survey question by respondents. Some respondents may have thought that the question was suggesting that firearms may cause people to attempt suicide. Easy access to firearms in a moment of crisis makes attempted suicide more lethal and reduces the possibility of intervention. In the future, the question could be rephrased as “Having a gun in the home increases the risk that a member of the household will die by suicide in the event that they experience a mental health crisis (e.g., depression; suicidal thoughts)” to better assess whether people believe their gun is a risk. To ensure that survey questions are interpreted as intended, researchers can seek to better understand the respondents’ interpretation of the question and the rationale for their response through methods such as cognitive interviewing.

Firearm Suicide Prevention Training

Among firearm owners, approximately 60% had received some sort of formal firearms training. However, only 1 in 5 received formal firearms training that included firearm suicide prevention (20.7%). Figures 2 and 3 show differences in the percentage of those who received firearm suicide prevention training across a variety of demographic and contextual factors. Notably, a higher percentage of participants who identified as male, white participants, veterans, those who grew up with a firearm in the home, those who live in rural areas, those with a bachelor’s degree or higher, and young adult participants (ages 18-19) received formal training on firearm suicide prevention compared to their respective counterparts.

Percent of firearm owners who received firearm training that included suicide prevention components

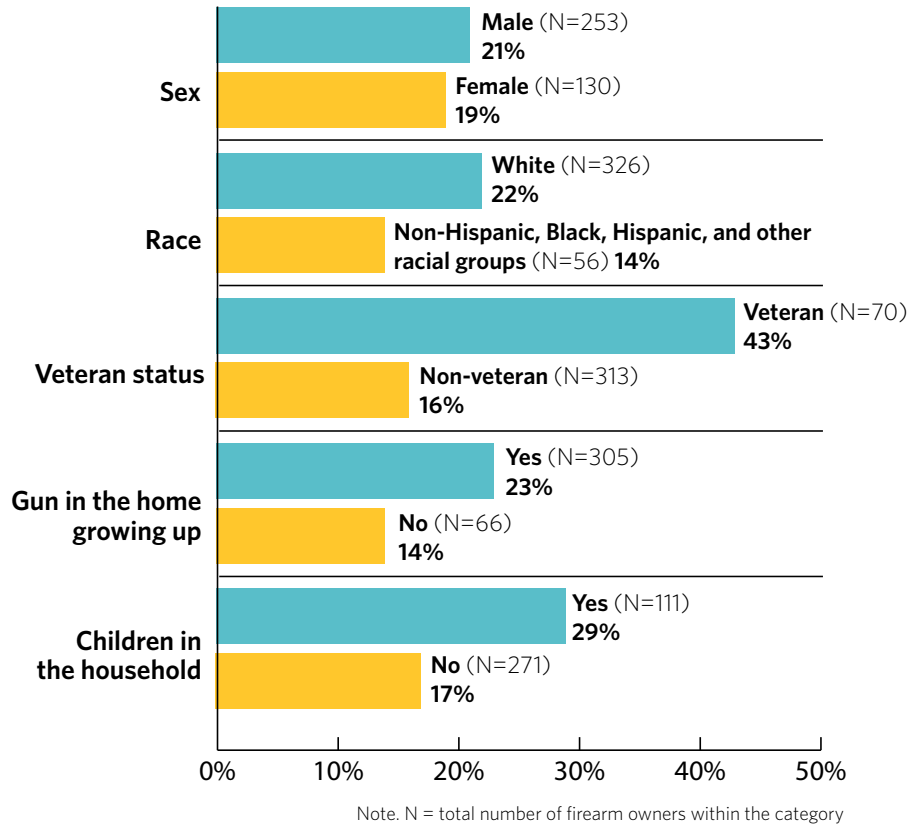


Figure 2

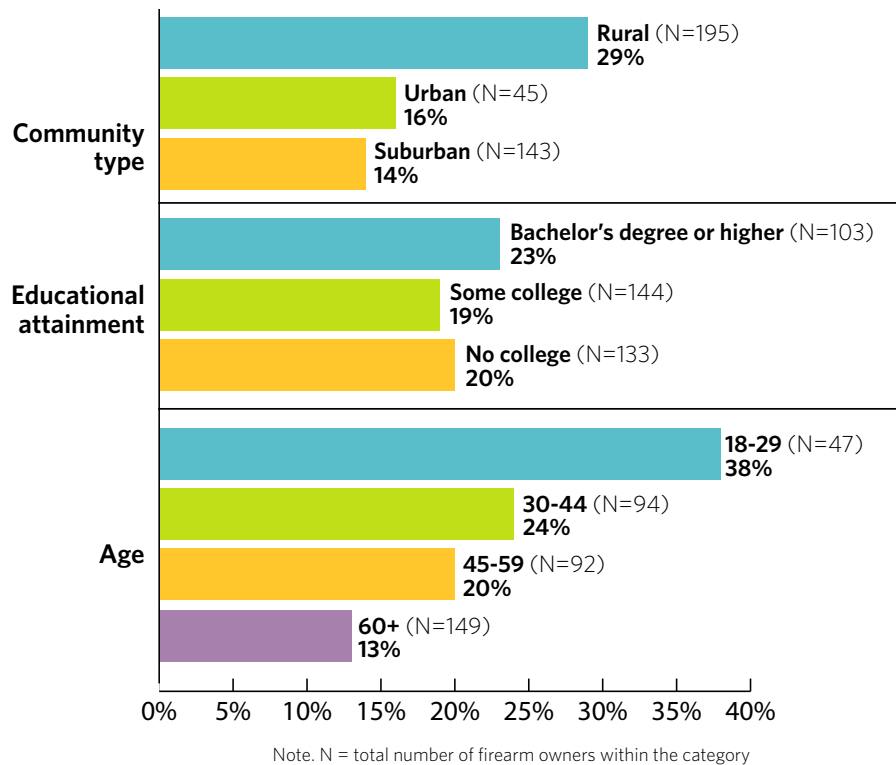


Figure 3

Suicide prevention content in firearm trainings varied and most frequently included information about mental health resources.

Respondents were also asked to briefly describe what information about suicide was included in their training. Within the 93 responses from those who received suicide prevention training, five major themes emerged (see Figure 4):

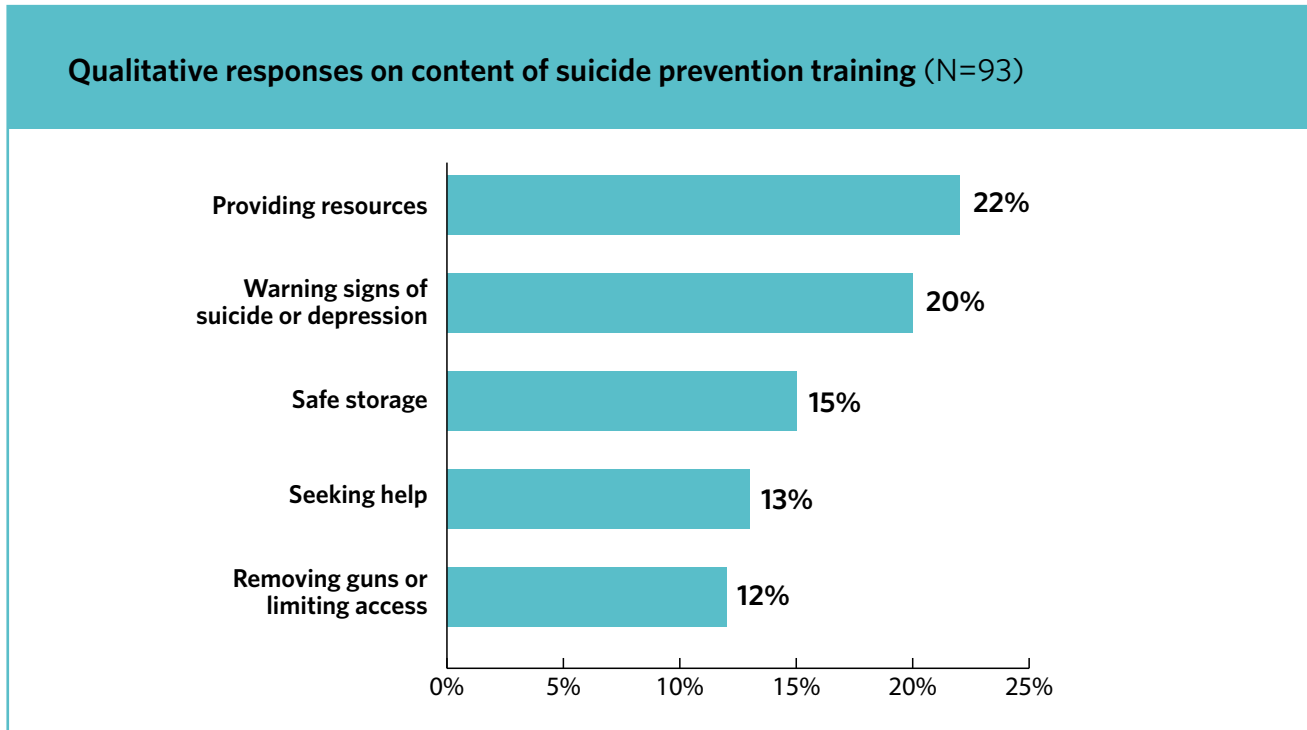


Figure 4

Sample responses about suicide prevention content included in firearm trainings:

Providing resources & removing guns:

“They just gave us the number to the hotline and said if we ever had thoughts to tell someone and remove all firearms from our possession.”

Providing resources:

“If you are feeling depressed or suicidal to call the 1-800 number for suicide help.”

Safe storage & seeking help:

“They talked about if you’re have those thoughts to have someone else lock up the guns and try talking or getting help.”

Safe storage & warning signs of suicide or depression:

“The traits to look for in a person that might be suicidal and how it related to the idea of having firearms in your house and keeping them safely stored.”

Missouri Data in Context: While firearm suicide is a significant public health concern especially among older adults,³ the likelihood of receiving firearm suicide prevention training decreased with age. This suggests the need for firearm suicide prevention training both at the time of purchase and throughout the course of life. According to national estimates from 2015, 61% of firearm owners reported receiving training in safe handling, safe storage, and preventing accidental injury, while only 15% of firearm owners reported receiving training in suicide prevention.¹⁰ In Missouri, a slightly larger percentage (21%) of firearm owners received training in firearm suicide prevention. Suicide attempts using a firearm are much more likely to be fatal compared to alternate means,⁷ so targeted outreach to these specific groups of firearm owners and those who live with them is important to address disparities. Moreover, firearm suicide is also a significant public concern in urban centers, among youth, and veterans in the US.¹¹⁻¹³ Thus, Missouri has a critical need for firearm suicide prevention training programs that are tailored to address the needs and experiences of diverse communities in the state.

Implications for research and practice: The limited availability of firearm suicide prevention training is concerning, given the well-established link between firearm access and death by suicide. Firearm safety training programs that include content on suicide risk awareness and firearm suicide prevention practices have the potential to shift attitudes and behaviors, given the widespread acceptance of firearm safety training among firearm owners. It is essential, however, that training programs be tailored to address cultural norms around discussing mental health. Firearm training may be most effective if conducted by messengers trusted by specific firearm-owning communities, which can enhance the acceptability of suicide prevention messaging.¹⁴ Additionally, training programs must acknowledge potentially competing priorities for firearm storage (e.g., the need for quick access during emergencies and the need to keep guns away from people experiencing suicidal thoughts). Firearm suicide prevention training should emphasize multiple ways to lower risk including, but not limited to, seeking mental health resources, storing ammunition out of the home, temporary removal of the firearm from the home, removal of the trigger during high-risk times, and/or locked and unloaded storage practices. Identifying and offering a variety of firearm-related suicide prevention practices gives firearm owners the ability to choose practices that align with their priorities while reducing the likelihood of some dying from firearm suicide.

It is also important to engage those living in households with firearm owners in firearm suicide prevention training programs so that all members of the household contribute to firearm safety practices during high-risk times (e.g., limiting access to firearms and keeping firearms locked and unloaded during high-risk times). Non-judgmental intervention approaches are necessary for developing acceptable messaging and elevating accurate information about firearm suicide and strategies for suicide prevention among those with access to firearms. Specifically, rather than singularly emphasizing the dangers of firearm access, messaging could align with participant values around protecting family members and loved ones from potential harm/injury by recognizing the signs of an escalating mental health crisis (e.g., depression, suicidal thoughts), the benefits of harm reduction measures that reduce firearm access during these high-risk time periods, and the tools to enact a range of potential safety measures to reduce the danger for a household member at risk for suicide.¹⁹ Despite this, more research is needed to understand if such approaches will confer a safety benefit through changes in firearm behaviors.

Lastly, there is a dire need for efficacy evaluations for emerging firearm suicide prevention training programs. Data are needed to identify gaps and evaluate standardized training programs and suicide prevention methods. Partnering with training providers to integrate suicide prevention content into their firearm training curricula may be a promising avenue for increasing suicide prevention knowledge among those with regular access to firearms.

Healthcare Suicide Prevention Measures

Most firearm and non-firearm owners agreed that, as part of routine care, physicians and other healthcare professionals should talk with patients about firearm safety if patients are at risk for suicide, mental health or behavioral problems, addiction to alcohol and drugs, has Alzheimer’s disease or another forms of dementia, and/or is going through a hard time (see Figure 5). For example, the vast majority (>75%) of firearm owners and non-firearm owners indicated that healthcare professionals should talk to patients about firearm safety if the patient is at-risk for suicide, has mental health or behavioral problems, and/or is abusing or addicted to drugs**.

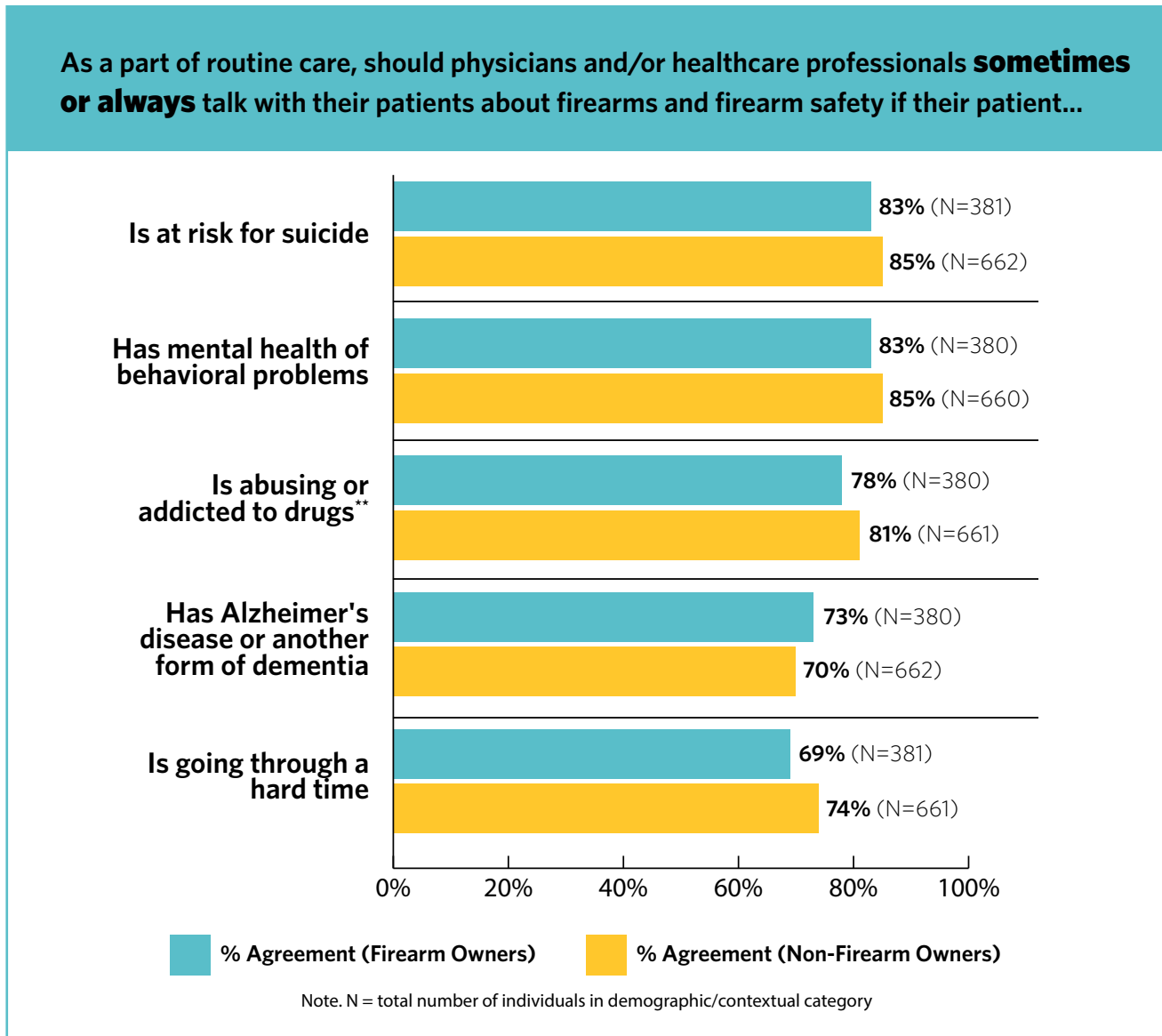


Figure 5

Results of logistic regression analyses found that individual, family, and community-level factors influenced whether participants agreed with whether healthcare professionals should talk with their patients about firearm safety as part of routine care if patients were at risk for suicide (see Table 4). Male participants, those who identified as Non-Hispanic Black, Hispanic, or races other than white, and participants who had firearms training that did not include suicide prevention, were significantly less likely to agree that healthcare professionals should talk to patients about firearm safety if patients are at risk for suicide. In contrast, participants who completed at least some college and those with a firearm in the home were significantly more likely to agree. No other variables were statistically significant.

**This language reflects the original wording of the National Firearms Survey and does not represent Missouri Foundation for Health's views on substance use.

Participants who identified as male, as a race or ethnicity other than white, and those who had received varying types of firearms training were less likely to agree that physicians should talk to patients about guns.

As part of routine care, physicians and/or other healthcare professionals should sometimes or always talk with their patients about firearms and firearm safety if at risk for suicide*

Less likely to agree	More likely to agree
<ul style="list-style-type: none"> Male Non-Hispanic Black Hispanic & Race other than white Received firearms training a suicide prevention component 	<ul style="list-style-type: none"> Some college or higher Non-firearm owner living in a household with firearms

Table 4

Similar results were observed when participants were asked whether healthcare professionals should talk to patients about firearm safety if patients were experiencing **emotional, behavioral, and cognitive issues***** (see Table 5). Male participants, those who identified as Black, Hispanic, or races other than white, and participants who had firearms training with or without suicide prevention were significantly less likely to agree that healthcare professionals should talk to patients about firearm safety if patients are at risk for suicide. In contrast, participants who completed at least some college were significantly more likely to agree. No other individual, family, or community characteristics were found to significantly influence responses.

As part of routine care, physicians and/or other healthcare professionals should sometimes or always talk with their patients about firearms and firearm safety if experiencing emotional, cognitive, or behavioral problems***

Less likely to agree	More likely to agree
<ul style="list-style-type: none"> Male Non-Hispanic Black Hispanic & Race other than white Received firearms training with or without a suicide prevention component 	<ul style="list-style-type: none"> Some college or higher

Table 5

***Emotional, behavioral, and cognitive problems include patients who are at risk for suicide, have mental or behavioral problems, is abusing or addicted to alcohol or drugs, has Alzheimer's disease or another form of dementia, and is going through a hard time.

Missouri Data in Context: Similar to Missouri adults, the majority of adults (66%) and firearm owners in the US (54%) thought that it was “sometimes” or “always” appropriate for healthcare providers to speak with patients about firearms.²⁰ Additionally, more than three-fourths of firearm owners in the US believed that discussions about firearms were sometimes appropriate if a patient is at-risk of suicide, experiencing a mental health or behavioral problem, addicted to drugs, going through a hard time, or were diagnosed with Alzheimer’s disease. This nationally representative data, alongside the MFS data suggests that firearm owners, in general, are open to talking to their healthcare professional about firearm safety if they or their loved ones are suffering from an emotional, cognitive, or behavioral problem.²⁰ Other studies suggest that while most believe it is important for healthcare providers to talk to certain patients about firearm safety, misconceptions about the relation between firearm safety practices and suicide risk can operate as barriers to engaging in firearm safety discussion in healthcare settings. For example, although most veterans receiving treatment for a mental health problem found it acceptable for clinicians to raise the topic of firearm access and safety,²¹ a separate study found that veterans generally believed that their firearm storage practices were unrelated to suicide risk, and that this belief was a barrier to engaging in lethal-means counseling.²² These findings, in combination with results from the MFS, suggest that educating patients about the link between mental health and firearm safety may promote openness to firearm safety discussions delivered by healthcare providers.

Implications for research and practice: Discussions about firearm safety with healthcare providers within the context of emotional, behavioral, or cognitive issues are generally viewed as acceptable among firearm owners and non-firearm owners. Although the majority of respondents are accepting of this practice, it is important that healthcare providers receive adequate training in firearm safety counseling and the technical aspects of firearm safety, develop culturally tailored messaging, and integrate this practice in diverse clinical settings (e.g., outpatient clinics, acute care hospital settings). Incorporating culturally relevant firearm messaging into counseling has a promising evidence base.²³ For example, a suicide prevention message that affirmed a firearm owners’ right to bear arms worked better than standard suicide prevention messages at promoting firearm safety practices such as temporarily restricting access to firearms for a friend, family member, or themselves if at-risk for suicide.²⁴

Research has identified several groups with low levels of support for patient-provider discussions about firearm safety (e.g., people who identify as male, members of marginalized racial and ethnic groups) and attributed the low level of support to mistrust in healthcare.^{25,26} Among people of marginalized racial and ethnic groups, experiences of discrimination in the healthcare setting could influence their likelihood of being willing to discuss sensitive topics like mental health and firearm safety. Additionally, men who embrace rigid forms of masculinity in which expression of emotion is frowned upon are less likely to seek preventive care, including mental health care, compared to men with less rigid masculinity attitudes.²⁷ Upstream interventions and research may benefit from addressing the intersection of masculinity, suicide, and firearm behaviors. Communications campaigns directed at firearm owners could specifically address stigma and prejudice related to mental illness and help-seeking.

Further research is needed to identify credible messengers to talk about mental health and firearm safety, especially among groups that express greater discomfort around conversations about mental health or firearms. Healthcare providers may not be the most trusted messengers for this information.²⁰ To build trust, when providers counsel patients on firearm safety and suicide prevention, they should be well-informed of the technical aspects of firearm ownership (e.g., what safety measures are available, what safety devices are best for long guns or handguns) and present a range of firearm safety practices, prioritizing patient autonomy over safety decisions for themselves and their family.²⁸

Participants broadly supported reducing gun access for household members who might be suicidal.

PERSONAL FIREARM SUICIDE PREVENTION PREFERENCES

Participants were asked what steps they would likely take if they were worried a household member might be suicidal. The top three steps included (1) making sure that the person cannot access guns in the home, (2) locking up dangerous medications in the home, and (3) urging the person to talk with a clergy person, counselor, or medical provider (see Table 6). More firearm owners than non-firearm owners indicated that they would ensure that the person at-risk for suicide cannot access any guns and dangerous medications in the home. Fewer firearm owners than non-firearm owners, however, indicated that they would ask if the person was thinking about suicide, urge the person to talk with a clergy person, counselor, or medical provider, call a suicide hotline for advice, or to help make sure the person is not left alone. Overall, fewer male participants than female participants indicated that they would take any steps to help prevent suicide risk if worried about a household member who might be suicidal.

If you were worried a member of your household might be suicidal, what steps, if any, would you be likely to take?					
Steps	Entire sample	Firearm owners	Non-firearm owners	Males	Females
Help make sure the person cannot access any guns in the home	75%	80%	72%	72%	79%
Urge the person to talk with a clergy person, counselor, or medical provider	74%	70%	76%	65%	81%
Lock up any dangerous medications in the home	70%	71%	69%	64%	75%
Help make sure the person is not left alone	66%	64%	66%	61%	70%
Ask the person if they were thinking about suicide	59%	59%	60%	55%	64%
Call a suicide hotline for advice	55%	50%	58%	50%	60%

Table 6

Using logistic regression, we found that individual, family, and community-level factors were also associated with whether participants would ensure that firearms are inaccessible in the home if they are worried that a household member might be suicidal (see Table 7). Participants who identified as male and those who identified as a racial group other than Black, Hispanic, or white were significantly less likely to say they would make guns inaccessible in the home if someone was thinking of suicide. To the contrary, participants who earned a bachelor's degree or higher, those who had a firearm in the home (currently), and those who grew up with firearms in the home were significantly more likely to say that they would limit access to firearms if a household member is at-risk for suicide. No other variables were statistically significant.

Likelihood that participants would help make sure the person cannot access any guns in the home, if the person was suicidal**

Less likely	More likely
<ul style="list-style-type: none"> Racial groups other than Black, Hispanic, or white 	<ul style="list-style-type: none"> Bachelor's degree or higher Grew up with a firearm in the household Non-firearm owner living in a household with firearms

Table 7

Most participants indicated that they would make guns inaccessible in the home if worried that a household member might be suicidal (75%). The most-to-least frequently endorsed methods for making guns inaccessible are shown in Figure 6. Notably, 28% of participants indicated that they would make no changes since firearms are already inaccessible, which was also the most frequently selected option. Of the participants who indicated that they would make "no changes, guns are already inaccessible," 85% stored at least one firearm in or around their home and 64% stored at least one of their firearms either unlocked or unloaded.

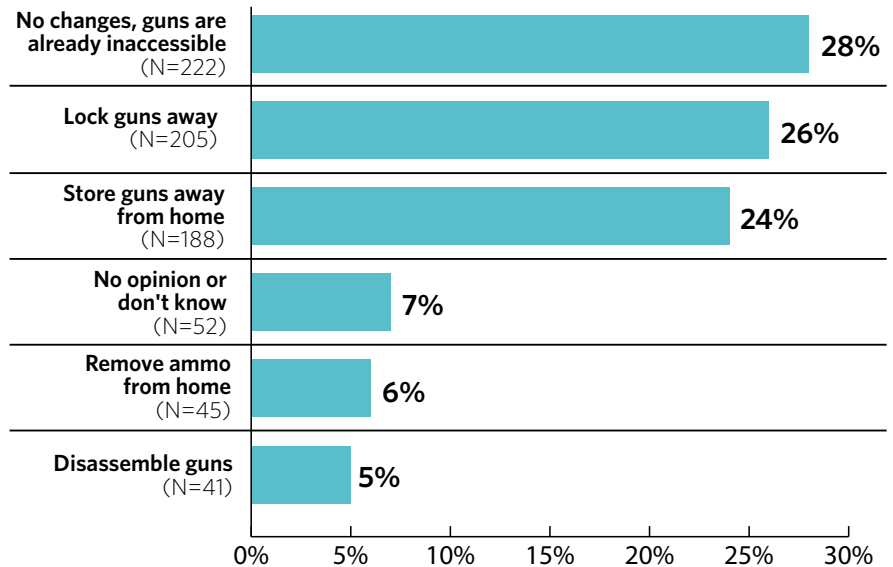


Figure 6

In write-in responses, participants noted other ways they would make sure guns are not accessible if a household member is at-risk for suicide. Three major themes emerged among 15 respondents who live in a household with one or more firearms:

Lock up gun (33%)

"I would purchase a gun safe and store the guns and ammo in the safe at all times."

Hide gun (33%)

"Physically place myself between [them] and the location of the gun so they can't access it without my knowledge."

Keep gun on me (26%)

"I would keep the handgun on my person and store all other guns away from home."

When asked about any additional steps they would likely take if worried a household member might be suicidal (beyond the steps listed in Table 5), four major themes emerged among 34 participants who live in a household with one or more firearms. The write-in responses also illustrated stigma around discussing suicide and mental health and resentment about conversations that center firearms within the context of suicide.

Hospitalize or seek medical help (35%)

"If absolutely necessary, I would have them placed on a 72 hours hold at a mental hospital"

Talk to them (35%)

"I'd discuss it with them. After that it's nobody's business. If they wanna kill themselves then it's their right to do so..."

"I would ask about ongoing events that I may not be aware of that might be linked to suicidal thoughts. I would urge outdoor activities or activities I know they usually enjoy. I would just be there as much as possible."

"I would talk to them and help them get through it like any good person would."

Expressed opinion or belief about guns and suicide (15%)

"Using a gun is not the only way to commit suicide. Common ways are hanging, using a knife, carbon monoxide poisoning, the list goes on. Don't try to make it look like guns are the only way commit suicide."

Talk to others (example: family member, law enforcement) (12%)

"Speak with someone who lives with them and make them aware of the situation."

Pray (6%)

"Pray for them"

Implications for research and practice: The MFS results and national trends reinforce the importance of suicide prevention programs for firearm owners and those living in households where firearms are present. Although firearm suicide prevention research is relatively limited among firearm owners, a Colorado study found that participants reported the need for appealing to the values of safety, responsibility, and agency within the firearm-owning community to promote the temporary, voluntary removal of firearms from the home during a mental health crisis.¹⁹ Participants also recommend emphasizing that times of high risk are usually brief, so limiting access by removing firearms will be temporary. Researchers also recommended putting firearms in the context of other lethal means (like medications) to avoid villainizing the community, establish legitimacy, and motivate action. They note that firearm owners responded positively to the neutral language and the inclusion of positive statements about responsible firearm ownership.¹⁹ Thus, creating and disseminating suicide prevention messages that appeal to and are accepted by the firearm owning community is crucial to addressing misconceptions about suicide, including the preventability of suicide.

Researchers have reported that including firearm owners in the design of firearm suicide prevention programs helps integrate the values and benefits of firearm ownership into the curriculum and increases the effectiveness of messaging for storage practices to reduce suicide risk.³¹ Community and stakeholder-engaged practices are needed to develop culturally relevant messages that emphasize firearm owners' values while also encouraging life-saving behaviors including firearm suicide prevention. Researchers have found that firearm owners tend to have a strong culture around protecting loved ones and handling firearms responsibly, which aligns with suicide prevention strategies.²⁴

FUTURE DIRECTIONS FOR RESEARCH & PRACTICE

Firearm suicide is a growing public health crisis in the United States. Successfully addressing this problem requires prevention programs, policies, and research that incorporate the values and expertise of affected communities. The MFS provides a first look at firearm suicide attitudes, beliefs, and practices among Missourians from across different demographic and contextual backgrounds. To develop effective and equitable firearm suicide prevention programs, we recommend the following directions for future research and practice:

- Evaluate the influence of mental health stigma and other underlying beliefs related to firearm safety practices (e.g., locked and unloaded storage) within the context of suicide prevention and firearm ownership.
- Identify socioecological risk and protective factors such as individual knowledge, perceived social norms, and environmental contexts that influence attitudes, perceptions, and behavioral intentions in order to tailor intervention strategies to be most effective at building awareness and promoting preventive behaviors.
- Identify credible messengers across community sectors (e.g., healthcare, schools, local businesses) who firearm owners are willing to talk to about mental health and firearm safety practices.
- Identify protective factors that promote firearm safety behaviors within the context of emotional, behavioral, and cognitive factors. Firearm suicide prevention efforts should focus on reducing risk factors (e.g., beliefs that suicide is not preventable), as well as strengthening protective factors (e.g., social connection).
- Evaluate the efficacy of training programs that include suicide prevention content for new firearm owners and members of their households, as well as the efficacy of "booster" training over the life course, especially among high-risk populations. Ideally, these trainings would take advantage of credible messengers and preferred messaging of firearm-owning communities.
- Ensure that language in surveys, focus groups, and interviews is interpreted as intended via cognitive interviewing prior to data collection.

LIMITATIONS

The current report has several limitations which are also potential areas for future research. First, a single item was used to measure firearm suicide risk attitude. As a result, our results can't speak to the wide array of attitudes and beliefs that influence firearm safety practices within the context of suicide risk (e.g., safe storage, removal of firearm from the home). For example, firearm safety behaviors may be influenced by internalized mental health stigma or other internalized social norms (e.g., beliefs about emotional vulnerability and masculinity). Despite this, our analyses provide a first look at whether our attitudes about firearm suicide risk vary across demographic and contextual factors. Second, we did not measure implementation factors related to the respondents' firearm suicide prevention training experiences. While the MFS characterizes the specific topics covered in firearm suicide prevention trainings, there is a dire need to identify implementation factors (e.g., intensity of intervention, credible messenger) to ensure that future prevention efforts are more effective. Lastly, while most Missouri firearm owners acknowledge that healthcare professionals need to discuss firearm safety practices with patients experiencing behavioral, emotional, and cognitive issues, we cannot ascertain whether participants were thinking about themselves or other people while responding. Responses may have varied if firearm owners were asked if they rather than patients would be open to having discussions about firearm safety and suicide with their healthcare provider.

Limitations related to overall survey methodology are included in the [Introductory Report](#). (See: Lee, D. B., Simmons, M. K., Rauk, L., Crimmins, H. M., Portugal, J., Carter, P. M., & Zimmerman, M. (2022). Understanding Firearm Beliefs and Practices Among Missourians: An Introduction to the Missouri Firearm Survey. University of Michigan & Missouri Foundation for Health).

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