



## Determining who healthcare providers screen for firearm access in the United States

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### ARTICLE INFO

#### Keywords:

Suicide  
Healthcare  
Healthcare providers  
Firearms  
Firearm access

### ABSTRACT

Healthcare providers are well positioned to screen for firearm access to reduce risk of suicides, yet there is a limited understanding of how often and for whom firearm access screening occurs. The present study examined the extent to which providers screen for firearm access and sought to identify who has been screened in the past. The representative sample included 3510 residents from five US states who reported whether they have been asked about their access to firearms by a healthcare provider. The findings demonstrate that most participants have never been asked by a provider about firearm access. People who have been asked were more likely to be White, male, and firearm owners. Those with children under 17 years old in the home, that have been in mental health treatment, and report a history of suicidal ideation were more likely to be screened for firearm access. Although there are interventions for mitigating firearm related risks in healthcare settings, many providers may be missing the opportunity to implement these because they do not ask about firearm access.

### 1. Introduction

Suicide is the twelfth leading cause of death in the US (WISQARS (Web-based Injury Statistics Query and Reporting System)|Injury Center|CDC, n.d.). Firearms account for over 50% of these deaths and are the most lethal modality (WISQARS (Web-based Injury Statistics Query and Reporting System)|Injury Center|CDC, n.d.). In addition to suicide, firearm access increases risk for unintentional shootings (Levine and McKnight, 2017) and homicides (Studdert et al., 2022). In 2020, there were an average of 124 daily gun-related deaths, a single year increase of 13.9% (WISQARS (Web-based Injury Statistics Query and Reporting System)|Injury Center|CDC, n.d.). Thus, this public health concern demands continued attention.

Research has not definitively demonstrated that increasing safe firearm storage reduces firearm injuries and deaths; however, evidence supports the potential of this approach. Safe firearm storage education, distribution of cable locks, and lethal means counseling have been shown to positively change storage behaviors (Anestis et al., 2021; Bandedaly et al., 2020; Barber et al., 2022; Khazem et al., 2015). Lethal

means counseling involves screening for firearm access, and discussing ways to increase secure storage that meet individual client needs and preferences. More work is needed, however, to identify additional intervention points that may prompt population change in firearm storage practices.

Healthcare providers are well-positioned to screen for environmental risk. Mental health providers frequently treat patients contemplating suicide (McAdams, 2000) and, if trained to do so, are significantly more likely to provide firearm counseling to these patients. However, it is unclear how consistently mental health providers screen patients for firearm access and if screening is reserved for patients considered to be at high risk of self-harm (Roszko et al., 2016). One recent study indicated safe firearm storage counseling may be lacking specifically among mental health patients (Horn et al., 2021).

The American Academy of Pediatrics (AAP) was the first major organization to recommend routine screening for firearm access for parents during well-child visits (Dowd and Sege, 2012). The literature, however, suggests pediatricians avoid discussing firearm safety during well-child visits due to discomfort with the topic (Hinnant et al., 2021),

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lack of time, and insufficient training (Bandealy et al., 2020). Pediatricians are more consistent in discussing firearm safety with families of adolescent patients who are depressed and/or suicidal in both primary care and emergency settings (Bandealy et al., 2020; Hinnant et al., 2021; Webb et al., 2022).

Like pediatricians, adult primary and emergency healthcare providers have not routinely screened patients for firearm access. Instead, they often reserve firearm screening and safe storage discussions for patients experiencing a mental health crisis and/or identified as being at risk for suicide, though even in these circumstances implementation is inconsistent (Roszko et al., 2016). One large retrospective study revealed that only 18% of adult emergency patients identified as exhibiting elevated suicide risk were screened for firearm access or provided with lethal means counseling (Betz et al., 2018). Explanations for hesitancy among emergency department providers include lack of confidence delivering the intervention, lack of training, and not feeling convinced that restricting access to firearms will prevent suicide (Betz et al., 2013; Diurba et al., 2020).

Recently, physician and public health professional organizations have called for firearm screening and lethal means counseling to extend to the primary care setting (McLean et al., 2019). This is important because very few firearm owners contemplating suicide utilize mental services before they die (Bond et al., 2022). However, people experiencing suicidal thoughts often utilize primary and emergency care leading up to a suicide attempt. One large-scale study revealed that 90% of people who died by suicide had contact with a primary or emergency physician within one year of their death and over 50% were in contact within the prior month (Ahmedani et al., 2019).

Data on the frequency or efficacy of universal firearm screening among adults in outpatient healthcare settings is limited. One study examined firearm screening in the Veteran's Health Administration (VHA), with a sample of over 760,000 Post-9/11 Veterans in their first year of VHA care. Researchers reviewed charts from primary, urgent, or emergent care clinics and found that <10% of the sample had a documented firearm screening (Brandt et al., 2021). Within the VHA sample, women had the lowest number of documented firearm screenings and Veterans who identified as Black or Hispanic had less documented screenings for firearm access than Veterans who identified as White. Further, Veterans aged 30–49 were less likely to have a documented firearm screening than Veterans <30 years and older than 50 years (Brandt et al., 2021). The VHA study highlights the need for further investigations to understand if similar gaps in screening are present within civilian populations and to identify how consistently firearm screening occurs.

The present study broadens the VHA inquiry to a representative primarily civilian sample ( $n = 3510$ ) across five states within the U.S – Colorado, Minnesota, Mississippi, New Jersey, and Texas – that vary widely in their geographic location, culture, demographic composition, and firearm access and gun violence rates, with data collected between April 29 and May 15, 2022. We sought to determine to what extent healthcare providers screen adults for firearm access and to identify who is being screened. This study examines healthcare provider firearm screening by demographics such as race/ethnicity, sex, income, age, and education level. Given the dearth of prior research on this issue, we did not put forth a priori hypotheses and instead conceptualize these results as exploratory and descriptive. By highlighting the frequency with which certain communities have been asked about firearm access within a healthcare setting, we hope to call attention to areas in which increased frequency of clinical conversations might yield meaningful changes in firearm storage behaviors.

## 2. Method

See Table 1 for sample descriptive statistics.

**Table 1**

Sample Characteristics of the total sample, firearm owning subsample, and non-firearm owning subsample.

	Overall sample	Firearm owners	Non-firearm owners
	N = 3510	N = 1165	N = 2294
	N (%)	N (%)	N (%)
Age			
Mean (SD)	55.67 (15.8670)	57.60 (14.658)	54.55 (16.35)
Range	18–94 years old	19–92 years old	18–94 years old
Sex			
Male	1790 (51.0%)	795 (68.2%)	969 (42.4%)
Female	1720 (49.0%)	370 (31.8%)	1325 (57.8%)
Race			
White	2860 (81.6%)	1002 (86.1%)	1818 (79.3%)
Black	288 (8.2%)	75 (6.4%)	207 (9.0%)
American Indian/Alaskan native	22 (0.6%)	5 (0.4%)	17 (0.7%)
Asian	94 (2.7%)	16 (1.4%)	77 (3.4%)
Native Hawaiian/Pacific islander	2 (0.1%)	0 (0.0%)	2 (0.1%)
Indo Caribbean	7 (0.2%)	2 (0.2%)	5 (0.2%)
Caribbean black	8 (0.2%)	0 (0.0%)	8 (0.3%)
Other	224 (6.4%)	64 (5.5%)	157 (6.8%)
Rurality			
Rural	1421 (40.5%)	626 (53.7%)	767 (33.4%)
Metropolitan rural	1034 (29.5%)	288 (24.7%)	732 (31.9%)
Urban	1044 (29.7%)	150 (21.5%)	785 (34.2%)
Education			
Less than high school	98 (2.8%)	27 (2.3%)	70 (3.1%)
High school diploma or equivalent	540 (15.4%)	162 (13.9%)	371 (16.2%)
Associate's degree	1071 (30.5%)	391 (33.6%)	657 (28.6%)
Bachelor's degree or higher	1801 (51.3%)	585 (50.2%)	1196 (52.1%)
Marital status			
Never married	666 (19.0%)	129 (11.1%)	531 (23.1%)
Widowed	207 (5.9%)	67 (5.8%)	138 (6.0%)
Separated	45 (1.3%)	10 (0.9%)	35 (1.5%)
Divorced	458 (13.0%)	140 (12.0%)	316 (13.8%)
Married	2134 (60.8%)	819 (70.3%)	1274 (55.5%)
Kids in home			
No	2666 (76.0%)	887 (76.1%)	1734 (75.6%)
Yes	844 (24.0%)	278 (23.9%)	560 (24.4%)

### 2.1. Participants and procedures

All procedures were approved by the appropriate ethics review board. Participants ( $n = 3510$ ) were adult US residents from five states: Colorado ( $n = 415$ ), Minnesota ( $n = 673$ ), Mississippi ( $n = 178$ ), New Jersey ( $n = 540$ ), and Texas ( $n = 1704$ ), recruited from KnowledgePanel (KP) between April 29 and May 15, 2022. KP is a probability-based web panel designed to be representative of the US. Inclusion criteria were being aged 18 or above and residing in one of the five recruitment states. A total of 6710 responses were fielded, of which 91% were qualified and 58% completed. Selected panel members were invited to participate in the survey via email, with reminders sent to non-responders every three days. Those who completed the survey were entered into the KP sweepstakes.

KP sweepstakes allows for members of KP aged 13+ to be compensated for their time, more information can be found at:

[https://members.knowledgepanel.com/pdffiles/KP\\_Monthly\\_SweepstakesRules\\_US\\_EN.pdf](https://members.knowledgepanel.com/pdffiles/KP_Monthly_SweepstakesRules_US_EN.pdf)

The data weighting process involved three steps. For the first step, design weights for all KP assignees were computed to reflect selection probabilities. In the second, design weights for KP screened respondents were raked to geodemographic distributions (race/ethnicity, gender by age, race/ethnicity by state, gender by state, education by state, and household income by state) of the five states, with finer geodemographic adjustments within states, and with benchmarks obtained from the 2019 American Community Survey. In the final step, resulting weights were trimmed and scaled to add up to the total number of qualified respondents. Each participant received both a total sample weight and a state weight that corresponded to their state of residence. For these analyses, the total sample weight was utilized, since analyses considered the entire sample simultaneously rather than comparing results by state.

## 2.2. Measures

### 2.2.1. Demographics

Demographics were assessed using KP standard demographic items. Our team adjusted the racial identity assessment to include two additional identities not otherwise included: Caribbean Black and Indo Caribbean. We calculated rurality using ZIP code data from KP profiles.

### 2.2.2. Suicidal ideation

History of suicidal thoughts was assessed using the self-report version of the Self-Injurious Thoughts and Behaviors Interview – Revised (SITBI-R) (Fox et al., 2020). The SITBI-R assesses lifetime ideation by asking participants which of eight different suicide-relevant thoughts they have experienced. Participants were considered to have experienced suicidal ideation if they endorsed any of the eight thoughts.

### 2.2.3. History of mental health treatment

History of mental health treatment was assessed using a single item, which asked “Have you ever received mental health services from a professional, like a psychologist or psychiatrist?” Participants were asked to select all that apply from the following list: “Yes, individual therapy,” “Yes, group therapy,” “Yes, prescription medication,” “Yes, psychological assessment or testing services,” “Yes, other (please specify),” and “No.”

### 2.2.4. Firearm ownership

Firearm ownership was assessed via a single item that asked, “Do you currently own a firearm?”

### 2.2.5. Screening for firearm access by a healthcare provider

Participants were assessed using a single item that asked, “Has a healthcare provider ever asked you if you have access to firearms?”

### 2.2.6. Data analytic plan

In our primary analysis, we utilized a logistic regression to examine which factors were associated with having been asked about firearm access by a healthcare provider. We then repeated this analysis when considering select subsamples: firearm owners, individuals who identify as White, individuals who identify as Black, females, males, and those with prior military experience.

## 3. Results

Within the full sample, 17.1% of participants had been asked about firearm access by a healthcare provider, including 20.1% of those with children 17 years old and younger, and 25.5% of those who had received mental health treatment. Within the sample of firearm owners, 21.4% have been asked about firearm access.

Results from the primary analysis (Table 2) indicate that, within the full sample, having a lifetime history of suicidal ideation (OR = 1.361 [1.102, 1.681]), being male (OR = 1.282 [1.1058, 1.552]), identifying as White (OR = 1.575 [1.211, 2.048]), having children under 17 years

**Table 2**

Single logistic regression examining demographic and intrapersonal variables associated with healthcare providers screening for access to firearms.<sup>a</sup>

	Total sample			Firearm owners		
	p	OR	CI	p	OR	CI
Suicidal ideation	0.004	1.361	1.102, 1.681	0.202	1.259	0.884, 1.792
Rurality <sup>a</sup>						
Suburban	0.532	1.074	0.859, 1.344	0.772	0.948	0.661, 1.359
Urban	0.903	1.014	0.809, 1.271	0.277	1.219	0.853, 1.741
Sex	0.011	1.282	1.058, 1.552	0.428	1.134	0.831, 1.548
Age	0.449	0.997	0.991, 1.004	0.416	0.995	0.984, 1.007
White	0.001	1.575	1.211, 2.048	0.065	1.524	0.973, 2.386
Kids in home	<0.001	1.605	1.290, 1.995	0.007	1.634	1.141, 2.341
Mental health	<0.001	2.054	1.686, 2.503	0.017	1.477	1.074, 2.341
Firearm owner	<0.001	1.801	1.476, 2.197	–	–	–

<sup>a</sup> Rurality was compared to the rural subgroup.

old in the home (OR = 1.605 [1.290, 1.995]), having been in mental health treatment (OR = 2.054 [1.686, 2.503]), and owning a firearm (OR = 1.801 [1.476, 2.197]) were associated with increased odds of being asked about firearm access by healthcare providers. Among firearm owners, having children under 17 years old in the home (OR = 1.634 [1.141, 2.341]) and having been in mental health treatment (OR = 1.477 [1.074, 2.341]) were associated with increased odds of being asked about firearm access by healthcare providers. <sup>1</sup>Results from exploratory analyses can be found in Table 3.

## 4. Discussion

Healthcare providers frequently encounter those at risk for suicide and serve an important role in increasing safe firearm storage. The present study sought to examine the extent to which healthcare providers screen for firearm access and determine the demographic characteristics of those who were screened.

Overall, healthcare providers are rarely screening for firearm access (17.1%). It may be that providers do not feel it is their responsibility to discuss firearms, do not know how to promote safe storage, or are uncomfortable with the topic. However, healthcare providers are well-positioned for these discussions because they frequently interact with

<sup>1</sup> Additional analyses were conducted for each state. Minnesota had the highest percentage of individuals being screened for firearm access (31.2%), followed by Colorado (22.7%), Mississippi (13.0%), Texas (13.0%), and New Jersey (10.0%). A chi squared was conducted and determined that significant differences ( $X^2 = 143.106$ ,  $p < .001$ ) exist between the states. New Jersey's percentage of healthcare providers screening for firearm access was significantly lower than Minnesota and Colorado; New Jersey did not significantly differ from Texas. Minnesota's percentage was significantly higher than all other states. Colorado and Mississippi did not significantly differ from one another. Within New Jersey, owning a firearm was the only variable that was significantly associated with being screened for firearm access. Within Minnesota, having received mental health treatment, owning a firearm, and having children under 17 years old in the home were significantly associated with being screened for firearm access. Within Texas, having received mental health treatment, owning a firearm, and having children under 17 years old in the home were significantly associated with being screened for firearm access. Within Colorado, owning a firearm, and having children under 17 years old in the home were significantly associated with being screened for firearm access. Lastly, within Mississippi, no variables were significant.

**Table 3**

Multiple exploratory logistic regression examining demographic and intrapersonal variables associated with healthcare providers screening for access to firearms among those who identify as female, male, White, Black, and are currently or previously affiliated with the US military.<sup>a</sup>

	Female		Male		White		Black		Military	
	p	OR (CI)	p	OR (CI)	p	OR (CI)	p	OR (CI)	p	OR (CI)
Suicidal ideation	0.024	1.445 (1.050, 1.989)	0.072	1.297 (0.977, 1.723)	0.003	1.41 (1.123, 1.770)	0.645	0.788 (2.86, 2.171)	0.395	1.276 (0.727, 2.240)
Rurality <sup>a</sup>										
Suburban	0.793	0.957 (0.689, 1.330)	0.270	1.190 (0.847, 1.621)	0.653	1.057 (0.829, 1.349)	0.200	2.008 (0.692, 5.824)	0.766	1.085 (0.635, 1.851)
Urban	0.150	1.269 (0.918, 1.754)	0.230	0.823 (0.599, 1.131)	0.547	1.078 (0.845, 1.375)	0.369	1.672 (0.545, 5.131)	0.771	1.083 (0.632, 1.858)
Sex	–	–	–	–	0.008	1.322 (1.074, 1.628)	0.526	1.330 (0.551, 3.211)	0.759	1.096 (0.611, 1.964)
Age	0.549	1.003 (0.993, 1.013)	0.082	0.993 (0.983, 1.001)	0.328	0.996 (0.989, 1.004)	0.210	0.981 (0.952, 1.011)	0.097	0.984 (0.966, 1.003)
White	0.114	1.370 (0.927, 2.024)	0.001	1.817 (1.272, 2.595)	–	–	–	–	0.620	1.161 (0.644, 2.092)
Kids in home	0.018	1.483 (1.069, 2.057)	<0.001	1.735 (1.292, 2.329)	<0.001	1.633 (1.286, 2.072)	0.394	0.624 (0.232, 1.677)	0.544	1.205 (0.659, 2.203)
Mental health	<0.001	2.000 (1.495, 2.674)	<0.001	2.107 (1.606, 2.764)	<0.001	2.023 (1.634, 2.505)	0.011	3.203 (1.313, 7.814)	0.014	1.895 (1.138, 3.157)
Firearm owner	<0.001	2.075 (1.571, 2.741)	0.003	1.556 (1.158, 2.091)	<0.001	1.829 (1.475, 2.268)	0.015	3.071 (1.242, 7.596)	0.004	1.998 (1.246, 3.204)

<sup>a</sup> Rurality was compared to the rural subgroup.

eventual suicide decedents in the days and months leading up to their deaths (Ahmedani et al., 2014). Although the rate at which healthcare providers are screening for firearm access is low, there are specific patterns among those who are screened for firearm access.

Firearm access was associated with an increased chance of being screened for firearm access. This highlights that providers are accurately identifying a portion of firearm owners who present to healthcare. Although promising, it is important to consider that providers are only screening 21.4% of firearm owners; meaning that the vast majority of firearm owners are never asked.

Additionally, those who identify as male and White were more likely to be screened for access. The typical American firearm owner is a White male (Azrael et al., 2017; Hamilton et al., 2018). It is possible that providers profile White, male clients as potential firearm owners and therefore screen for firearm access. While many firearm owners fit these demographic characteristics, a greater number of women and Black individuals have become firearm owners since March 2020 (Miller et al., 2022). In early 2020, there was a 58.2% increase in firearm purchases among Black individuals compared to that time period in 2019 (NSSF Survey Reveals Broad Demographic Appeal for Firearm Purchases During Sales Surge of 2020 • NSSF, n.d.). Increasing the range of individuals screened for firearm access will allow more firearm owners to be reached and may result in a decrease in shooting and suicide rates among all races and genders.

Owning a firearm was associated with being screened for firearm access. As mentioned above, it may be that White men are both more likely to be screened for access and to own a firearm. Additionally, it may be that firearm owners self-report their firearm ownership, prompting providers to ask additional questions about their access to firearms.

Endorsing a lifetime history of suicidal ideation was associated with greater odds of being screened for firearm access within the full sample. Although screening for firearm access is essential in determining suicide risk, only 23.7% of those with lifetime suicidal ideation have been asked about the presence of a firearm in the home. While many well-established suicide risk assessments inquire about potential methods for suicide (e.g., Columbia Suicide Severity Rating Scale) (Posner et al., 2011) they do not screen for access to lethal methods more broadly. Therefore, providers who utilize these assessments are not gathering enough information to accurately determine risk level. Providers are encouraged to screen for firearm access, in addition to completing standardized risk assessments with their clients. Additionally, future

work should aim to integrate the screening of lethal means, especially firearms, into well-established measures of suicide risk.

A lifetime history of mental health treatment was associated with being screened for firearm access. It may be that mental healthcare providers – compared to other providers – are more likely to screen for suicide risk and firearm access among their clients. Although significant, it is important to consider that only 25.5% of those receiving mental healthcare were screened for firearm access. It may be that a majority of those who present to mental health treatment are never screened for firearm access; and it is also possible that some participants did not consider mental healthcare as part of larger healthcare when answering the study question. Mental healthcare professionals are not mandated to receive formal training on means safety. It may be that, given their lack of training, some providers feel ill-equipped to engage in discussions related to firearms.

In addition to providers not being comfortable screening for firearm access, many healthcare facilities do not have the infrastructure to promote universal screening for firearm access. While adding an additional burden to already taxed healthcare providers is not ideal, screening for firearm access and engaging in lethal means counseling may help reduce the risk of firearm injury and death. Screening for firearm access can be added into commonly used demographic forms and health questionnaires. For example, when screening for smoking behaviors, providers often ask a single yes/no question and if yes, then they ask additional questions; creating a similar protocol for screening for firearm access may be a low-cost way to implement this practice into all healthcare settings.

#### 4.1. Public health implications

Lethal means counseling is one intervention that healthcare providers can use to engage in discussions about safe firearm storage. Some lethal means counseling encompasses techniques from motivational interviewing, which utilizes a non-confrontational discussion to better understand values and how to increase safe storage (e.g., Project Safe Guard). Previous research has found that this form of lethal means counseling increases safe firearm storage among firearm owning Mississippi National Guard service members (Anestis et al., 2021). Additionally, Counseling on Access to Lethal Means is an online program that has been found to increase provider confidence and comfort in discussing lethal means (Sale et al., 2018). Healthcare providers are encouraged to seek out training on lethal means safety to increase their comfort

and help integrate discussions of firearms into their daily practice. Additionally, emergency departments and inpatient hospital units are encouraged to add firearm access screening to their triage and admission process and provide lethal means safety information and resources in the printed discharge instructions to patients endorsing firearm access. Lock2Live is a free online resource designed for emergency department settings that assists patients with firearm and medication storage. Additionally, we suggest that mental health accreditation and licensure agencies require training on lethal means counseling.

While it is important for mental healthcare providers to more frequently screen firearm access, additional healthcare fields need to increase their work on firearm safety. Only 26.6% of those who die by suicide with a firearm had ever received mental health or substance use treatment (Bond et al., 2022), and even less were in treatment at the time of their death. However, 83.0% of those who die by suicide receive some form of healthcare in the year prior to their death (Ahmedani et al., 2014). Healthcare providers can provide critical information on safe firearm storage to the majority of those who die by suicide. A large percentage may not be in a suicidal crisis when they receive care and, as such, safe firearm storage should be discussed with clients before a suicidal crisis emerges. Beyond the implications for suicide, proper firearm screening by providers can also facilitate court petitions in certain instances to remove firearms from homes at high risk for domestic violence and homicide via extreme risk protection orders (Gondi et al., 2019; Zeoli and Webster, 2019). Finally, healthcare providers skillfully discussing firearm access with all clients may help to destigmatize and depoliticize conversations about firearms, which may help change social norms and promote a climate where safe firearm storage can be discussed openly.

The presence of children under the age of 17 in the house was the only demographic variable to increase odds of being screened for firearm ownership among both the total sample and the firearm owning subsample. As mentioned above, the AAP has promoted the use of routine firearm screening in pediatric practice (Dowd and Sege, 2012). AAP's guidelines may have resulted in more pediatricians feeling comfortable screening for firearm access among their patient's caregivers. Therefore, it is recommended that other healthcare organizations develop guidelines for their providers. The AAP's guidelines were drafted in 2012 and in 2020, firearms became the leading cause of death among those aged 1–19 years old (Lee et al., 2022). Even though these guidelines are a step in the right direction, they have been limited in their effectiveness to reduce firearm deaths among children, and only 20.1% of those with children under the age of 17 have been screened for firearm access. In addition to these guidelines, specific training on screening for firearm access and storage habits may be needed.

Our findings indicate that healthcare providers are rarely screen for firearm access, and when they do it may be because they are prompted by a specific circumstance (e.g., known suicide risk). Specifically, mental health treatment, suicidal ideation, and having children in the home are circumstances that prompt providers to screen for firearm access, but only rarely. However, healthcare providers - especially those outside of mental health - should screen all clients, regardless of their demographics or level of suicide risk. Additionally, research should examine the benefits and cost of universal screening for firearm access and determine ways to reduce the cost and potential burden of screening on healthcare providers.

While it is recommended that all healthcare providers screen all clients for firearm access, the conversation cannot stop there. We recognize that providers may have different abilities, time demands, and resources. However, all providers can take steps towards engaging in conversations on safe storage. For example, those with limited time and training can screen for firearm storage habits and provide materials on secure storage from trusted organizations (e.g., National Shooting Sports Foundation, Lock2Live). Additionally, in specific settings, such as behavioral health and primary care, we suggest lethal means counseling should frequently be incorporated into practice.

#### 4.2. Limitations and future directions

The present study is not without limitations. For instance, the specific type of providers participants were referring to was unclear. Participants were also not asked to specify the way in which firearm access was screened (e.g., written in an intake form, asked verbally) or at what point in their health encounter they were screened for firearm access. This study also relies on retrospective reports and does not consider providers' perspectives regarding screening frequency.

#### 5. Conclusion

This study sought to determine the frequency with which healthcare providers screen for firearm access, and the characteristics of those who are screened. Healthcare providers rarely screen for firearm access, thereby limiting their understanding of clients' risk for firearm injury and death. Healthcare providers screened for firearm access when prompted to do so by their patients' presenting problems (e.g., suicidal ideation) or home life (e.g., children under 17 in the home). Healthcare providers should inquire about firearm access among all patients and promote in-home safe firearm storage or temporarily storing firearms outside of home during times of crisis.

MDA receives personal income in the form of book royalties for a book related to firearms and suicide. He also receives personal income in the form of speaking fees, training fees, and consulting fees related to these topics. Lastly, Dr. Anestis receives salary support as a named investigator on several grants related to these topics.

#### Author contributions

AEB developed the aims for the study, conducted all data analyses, contributed to the writing and editing of the manuscript.

JMB contributed to the writing and editing of the manuscript.

TRR contributed to the writing and editing of the manuscript.

DS contributed to the editing of the manuscript.

MDA was the PI on data collection efforts and contributed to the writing and editing of the manuscript.

#### Declaration of Competing Interest

None.

#### Data availability

Data will be made available on request.

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