

Gun violence as a public health issue: Media advocacy, framing and implications for communication

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Abstract

Following a recent push to reframe gun violence as a public health issue, an online survey (N = 510) helped explore frame salience and frame adoption through the lens of media advocacy. Findings revealed that gun control and gun rights frames are salient, and television, social media and newspapers are the most popular sources of gun violence information. Individuals are being held responsible, while background checks were the most salient and adopted solution among Americans. Three gun rights organizations were the most salient organizations from media coverage related to gun violence. Theoretical and practical implications are discussed.

Keywords

gun violence, frame salience, frame adoption, media advocacy, survey

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Gun violence is the leading cause of premature death in the United States, killing more than 38,000 per year (American Public Health Association, 2021). In response to rising rates of gun violence, there has been a call for reframing gun violence as a public health issue. In 2013, following the mass shooting of 26 people at Sandy Hook Elementary School in Newtown, Connecticut, articles titled, “Public Health Approach to the Prevention of Gun Violence” and “Curbing Gun Violence: Lessons from Public Health” appeared in the *Journal of the American Medical Association (JAMA)* and *The New England Journal of Medicine* (Hemenway & Miller, 2013; Kellermann & Rivara, 2013; Mozaffarian et al., 2013).

According to these articles, the public health approach involves five components. First, the approach needs to be population-based and rarely involves identifiable individuals. Second, it focuses on prevention and changing the environment in which the problem occurs. Third, public health uses a systems approach, working to create a system in which it is difficult to make mistakes or behave inappropriately and even if/when one does so, those mistakes or behaviors should not lead to serious injury. Fourth, the approach should be broad and inclusive, examining all possible interventions, including changing norms, passing laws and engaging individuals and institutions in multi-faceted ways. Fifth, the approach should emphasize shared responsibility over blame (Hemenway & Miller, 2013). The public health approach has been successful in reducing motor vehicle deaths, reducing tobacco use, preventing unintentional poisonings and more (Mozaffarian et al., 2013).

Some media coverage has also pushed for a public health frame for gun violence. In 2014, the *Washington Post* published an article in which the author noted the need to change minds and habits related to guns in America. He states: “Until we change how we frame the debate through our messaging and strategy, the landscape for common-sense gun laws will only become increasingly hostile” (Franklin, 2014, para. 4). In 2017, *Fortune* published an article with the title, “The Las Vegas Shooting: A Public Health Crisis,” following a deadly mass shooting at a concert. In 2018, the magazine published a second piece titled, “Framing Gun Violence as a Public Health Crisis—Part 2,” following the mass shooting at Marjory Stoneman Douglas High School in Florida (Leaf, 2017, 2018). The same year, the *New York Times* published an in-depth article titled, “How to Reduce Shootings,” referring to the public health approach used to make car travel safer in America (e.g., seat belts, speed limits and airbags) as a model for what could be done to make guns safer to use (Kristof, 2017).

Despite this recent media attention to framing gun violence as a public health issue, research shows that gun violence has not been framed this way by most media (Jashinsky et al., 2017). Moreover, questions about whether these perspectives are reaching or resonating with the general public remain unanswered. This study attempts to answer this broad question, along with related questions about possible solutions that might help those pushing for gun violence prevention determine how to communicate more effectively about this issue to improve public health. Beyond providing practical implications, this research adds to the existing framing literature and is relevant to scholars interested in frame salience and frame adoption.

Literature Review

Although framing has been studied extensively in mass communication and social science research related to various topics, including gun violence (see, e.g., Birkland

& Lawrence, 2009; McGinty et al., 2014), an area of study that still seems to be under-explored is how frames become embedded in society and how frames influence thinking (Matthes, 2009, 2012). Some scholars have long argued that framing should be studied from the perspective of audience effects, with a focus on issue awareness or salience (Scheufele, 1999; Scheufele & Tewksbury, 2007). In today's media environment, where there is more preference-based information seeking and resulting media effects, we need to understand where individuals are getting information and whether preference-based reinforcement is taking place (Cacciatore et al., 2016).

Following calls for nonexperimental framing effects research and research that focuses on frame adoption or frame salience (Edy & Meirick, 2007; Wettstein, 2012), this study sought to determine frame salience and frame adoption related to the issue of gun violence. Through a survey, this research uncovered where Americans get information about this issue and what frames are salient or have been adopted. This study also sought to determine how framing might influence individuals' perceptions of solutions regarding gun violence, as framing and solutions are an important part of media advocacy.

Media Advocacy

Media advocacy has been described as "influencing public debate and putting pressure on policymakers by increasing the volume of the public health voice and, in turn, by increasing the visibility of values, people, and issues behind the voice" (Wallack et al., 1993, p. 2). Media advocacy often involves re-framing a problem as a public health issue, changing the focus from individual behavior change to promoting policy and/or economic solutions and using the power of people, groups and institutions to respond to social problems. More specifically, media advocacy consists of three steps: (a) setting the agenda; (b) framing the issue; and (c) advancing a solution (Gibson, 2010).

Since the concept of media advocacy was introduced, it has been studied mostly by looking at media coverage of issues and by tracking that coverage related to policy changes (e.g., McKeever, 2013; Thrasher et al., 2014). For instance, Askelson et al. (2009) studied media coverage of binge drinking and determined that media and communication campaigns needed to focus more on the consequences of the problem, as well as parental strategies to prevent binge drinking, to create social change.

Gibson (2010) wrote about the following limits of media advocacy: (a) it focuses too much on traditional media and overestimates the power of traditional media to create social change and (b) its emphasis on policymakers and other elites limits democracy and leaves out important voices, such as the members or constituents that organizations and policymakers serve. The author argues that there are groups of stakeholders having conversations about issues, and organizations should participate in those conversations and provide tools for stakeholders to promote change (Gibson, 2010). Some of these conversations are happening online and through social media, and it is important to continue expanding the concept of media advocacy through research. This point may be particularly true for controversial issues such as gun violence, around which groups and communities develop to communicate, share important news or personal experiences and advocate for further change.

For instance, Thrasher et al. (2014) studied news coverage related to a campaign to promote a tobacco tax to help curb smoking in South Carolina. The authors found that

the tone of media coverage was mostly in favor of the tobacco tax (59%), while only 7% of articles were unfavorable. This research suggests that media coverage may have influenced the success of this campaign by helping to set the agenda, frame the tobacco tax as a favorable solution and influence public opinion in favor of it (Thrasher et al., 2014). This study shows how individuals as well as organizations can play a part in the media advocacy process, often appearing in and/or being influenced by media coverage.

Recent efforts to frame gun violence as a public health issue seem to fall under the umbrella of media advocacy. In addition to individuals, professional organizations and groups such as the American Medical Association (AMA) and the American Academy of Pediatrics (AAP) have spoken out about the issue of gun violence and its detrimental effects on public health and on children and adolescents (Associated Press, 2018; Fox, 2018). The National Rifle Association (NRA) has a long history of being vocal about the issue of gun rights, while newer groups such as Everytown for Gun Safety, founded by former New York City Mayor Michael Bloomberg, have been called a formidable opposition to the NRA (Mak, 2019). As some research suggests, groups such as these should be involved in pushing for policy change related to public health (Knight et al., 2016). Thus, as a first step to identify framing effects, this study assessed where people get information related to gun violence and what organizations are salient from that information:

RQ1:

Among members of the American public, what sources of information are being used related to the issue of gun violence?

RQ2:

What organizations are salient to Americans from media coverage related to gun violence?

Framing Gun Violence

As noted, framing is an important part of media advocacy, and there is significant research surrounding news framing of gun violence including mass shootings (e.g., Chyi & McCombs, 2004; Morin, 2016; Muschert & Carr, 2006; Park et al., 2012). A classic definition of framing is the process of selecting some aspects of an occurrence and making them “more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation” (Entman, 1993, p. 52). Framing research often begins with content analysis to understand what frames are presented in news coverage. For example, in a content analysis following a shooting at a movie theater in Aurora, Colorado, researchers found national newspapers were more likely than local newspapers to include a gun control frame (Holody & Daniel, 2017). In an earlier study of an infamous shooting that also took place in Colorado, Birkland and Lawrence (2009) found the Columbine shooting news coverage did not focus on policy or politics, because journalists and advocates at the time used frames of gun violence and pop culture (i.e.,

violent music and video games) as possible causes of the shooters' behavior. In a study by Park et al. (2012), the Virginia Tech shooting was framed to focus on the shooter's ethnicity, with media coverage including racial references in prominent places. As these studies show, media coverage often tries to find reasons or assign blame for individual shooters' behaviors related to gun violence, which goes against the public health approach described above.

Besides race/ethnicity and culture, mental health has been a focus in news coverage of mass shootings. In a 16-year study on news coverage of mental illness and mass shootings, it was reported that the way the media framed these issues promoted negative views about mental health among the public (McGinty et al., 2014). In a related experimental study about media content and mass shootings, the authors found respondents had negative attitudes toward people with mental illness even when the content did not mention mental illness, and the study connected negative attitudes with less support for the government or public health policies such as increased funding for mental health (Wilson et al., 2016).

Episodic and Thematic Frames; Responsibility and Solutions

Another factor that may shape the public's perception of gun violence as a public health issue is whether the story is framed as an individual or societal issue. Decades ago, Iyengar (1991) described individual or episodic framing as a practice whereby journalists tell stories of single events or individuals. However, societal or thematic frames require more data collection for in-depth storytelling and often provide population-level statistics. An example of an episodic frame related to gun violence would be a news story that focuses on interviews with a victim's family. A thematic frame might include journalists focusing on mass shootings as a common occurrence due to the availability or prevalence of guns. Iyengar's (1991) early study on poverty found that journalists were more likely to use episodic approaches in their reporting. He argued that the continued use of episodic frames in television news coverage led people to blame individuals for their own situations, lessening support for government intervention or support.

Regarding the issue of gun violence, thematic framing would fall more in line with the public health approach. However, a substantial amount (70%) of news coverage of mass shootings has been found to be event-focused, involving a person with a serious mental illness (McGinty et al., 2014). This type of coverage is episodic in nature, and while the articles mention health, this is not a public health approach and often leads to less support for public health services (Wilson et al., 2016). Similarly, DeFoster and Swalve (2018) examined newspaper coverage over a 20-year period and while they found that discussion of mental health increased, there was a limited discourse of public health more broadly. Holody and Daniel (2017) found local newspapers were fairly unbiased on the issue of gun control, while national newspapers focused on shootings more from a societal level. However, both local and national outlets framed the issue of gun control around the specifics of the Aurora shooting. National papers were also more likely to focus on the gunman, while local papers focused on the victims (Holody & Daniel, 2017). While these content analyses are helpful for explaining media coverage of gun violence, they do not tell us anything about frame salience or frame adoption among the general public, which could affect public opinion, voting and other behaviors related to this issue.

Frame Salience and Frame Adoption

As mentioned, framing research often focuses on content or presents specific frames and assesses effects through experiments. However, Druckman (2004) and others have challenged some framing research because experimental effects have been found to be unstable and short-lived. Edy and Meirick's (2007) study went beyond frame setting, a cognitive response to encountered frames, to focus on frame adoption, which incorporates frame salience or accessibility into a way of thinking and responding that is compatible with dominant frames in the news. However, they added that other factors (gender, income, political ideology) are important in whether people adopt frames. The authors argue that the process of frame adoption is complicated and found respondents did not necessarily adopt frames but instead combined them with their morals to assess and build their own conclusions about the war in Afghanistan (Edy & Meirick, 2007).

Wettstein (2012) also tested framing effects outside of a laboratory by conducting a content analysis and survey and found that respondents adopted frames from media coverage about immigration issues in Europe. However, this study found no evidence for a hypothesis that the adoption of frames depended on frames aligning with personal beliefs. The author also found only some support for the idea that demographics and ideology influenced frame adoption. For example, one frame was adopted more by conservative people, with low political interest, and slightly more by older and female respondents (Wettstein, 2012). However, overall Wettstein (2012) concluded that accessibility and salience were key to individuals adopting frames from media coverage. In the current study, it was not known whether media framing of gun violence will align with personal beliefs about the issue, or whether framing will affect perceptions of solutions for gun violence. Thus, following the literature on media advocacy and framing, this study asks the following final research questions:

RQ3:

Among members of the American public, what media frames are salient regarding the issue of gun violence?

RQ4:

What is the relationship between salient frames and personal beliefs related to (a) responsibility and (b) solutions for the issue of gun violence?

RQ5:

Controlling for other factors (political ideology, perceived issue importance and participant demographics), what is the relationship between the most salient media solutions and personal beliefs about solutions related to gun violence?

Method

A national survey was conducted in 2019. Survey participants were recruited and compensated through a nationwide online Qualtrics panel of potential respondents

($N = 510$). This non-probability sampling frame was constructed using the following age group quotas: 18 to 24 ($n = 54$), 25 to 34 ($n = 93$), 35 to 44 ($n = 93$), 45 to 54 ($n = 94$), 55 to 64 ($n = 89$) and 65 or older ($n = 87$). An additional quota was employed for gender: females ($n = 271$, 53%), males ($n = 239$, 47%).¹ A university institutional review board approved all study procedures. Many of the measures in this study were adapted from previous research on framing and gun violence (Jashinsky et al., 2017; Wettstein, 2012).

Measures

Sources of information

Survey participants were asked, “Where do you get most of your information about the issue of gun violence?” The following sources were provided, and participants were told they could select up to three, marking them one to three in order of how much/how frequently they use them: television news; newspapers; radio news; social media (Twitter, Facebook, etc.); other online news sources; email; word of mouth (friends, family, colleagues, etc.); PSA or ads; and other, please specify. A second open-ended item asked the same question but requested that participants “please list up to three sources by name (e.g., CNN, Fox News, NPR, etc.).”

Frames

Several questions asked about framing of gun violence. For example, one question asked: “When you see or hear stories in the news about gun violence, what are the most prominent themes or what is the focus of the story?” Participants were asked to rank up to three items (see Table 1) “in order of what you see most in media coverage, with 1 being the most prevalent in media coverage of gun violence.”

To assess frames, participants were asked to indicate the extent to which they agree or disagree (1 = *strongly disagree*; 7 = *strongly agree*) with multiple statements. Each statement started with, “When I see or hear stories about gun violence in the news. . .” and ended with the following: “they are generally filled with facts, figures and statistics” (thematic framing); “they generally tell the story of one individual or family” (episodic framing); “they generally focus on the causes of the problem”; “they generally focus on possible solutions for the problem” (focus of news coverage: cause or solution); “they generally focus on the victims involved”; “they generally focus on the person or people who committed the crime(s)” (focus of news coverage: victim or shooter).

Responsibility and solutions

Perceptions of responsibility for gun violence were assessed both in terms of what is salient in media coverage (independent variable in **RQ4**) and individuals’ personal beliefs (dependent variable in **RQ4**). Respondents were asked “When you see or hear stories in the news about gun violence, who is typically held responsible for the issue?” as well as “Who do you believe should be held responsible for the issue of gun violence?” Respondents ranked the options listed in Table 2.

Perceptions of solutions were assessed with the following two questions: “Which of the following do you believe are featured most in media coverage as the best ways

Table 1
Descriptive Statistics for Salient Frames

<i>Variable</i>	<i>N</i>
1. Gun control	304
2. Culture of violence	218
3. Gun rights (e.g., second amendment)	206
4. "Guns do not kill people, people do"	175
5. Public safety	162
6. Political contests	141
7. Sensible legislation	100
8. Special interests	98
9. Public health	37
10. Guns deter crime	37
11. Other	3

Note. The total number of salient media frames is larger than the total number of participants because values represent the number of times each media frame was selected among the three most salient media frames by participants.

Table 2
Correspondence Between Perceived Media Frames and Personal Beliefs About Responsibility

<i>Variable</i>	<i>Perceived media frames</i>	<i>Personal beliefs</i>
Individuals	217	274
Police	49	39
Families	18	31
Entertainment media	21	12
Lawmakers	36	60
Gun manufacturers	51	20
Executive government	31	25
Gun distributors	34	20
Institutions (schools, churches, etc.)	5	1
Special interests/lobbyists (NRA, etc.)	25	14
Other	23	14

Note. NRA = National Rifle Association.

Table 3
Correspondence Between Perceived Media Frames and Personal Beliefs About Solutions

<i>Variable</i>	<i>Perceived media frames</i>	<i>Personal beliefs</i>
Background checks	344	379
Safe storage	111	117
Increasing severity of punishment	178	186
Increased funding for research	55	35
Legislation to reduce gun trafficking	207	136
Lethality reduction	48	33
Metal detectors in schools	147	109
Safety engineering	48	48
Mental health services	141	156
Improve medical response	43	36
Better enforcement of existing laws	157	185

Note. The total number of frames and beliefs is larger than the total number of participants because values represent the number of times each variable was selected among the three most salient frames and beliefs by participants.

to prevent gun violence in the future?” (independent variable in **RQ4** and **RQ5**) as well as, “Which of the following methods do you believe are most important or might be most effective in preventing future gun violence?” (dependent variable in **RQ4** and **RQ5**) Respondents ranked their top three choices (see Table 3).

Typical demographic information was assessed including age, gender, education, income and race/ethnicity. Political ideology was also assessed by using a five-point scale from “very conservative” to “very liberal.” To help answer **RQ5**, perceived issue importance was assessed with two items adapted from Matthes (2013). Finally, related to **RQ2**, participants were asked to select organizations (up to three, with 1 being the most prevalent) they see mentioned in stories about gun violence. The names of 11 organizations were listed ranging from the NRA, which works to protect gun rights, to Everytown for Gun Safety, which works to end gun violence. Data analyses were performed in SPSS (Version 25.0). Demographic data appear in Table 4.

Findings

RQ1 asked about where respondents get information related to the issue of gun violence. Overall, television news was selected most ($n = 423$), followed by social media ($n = 269$), newspapers ($n = 171$), word-of-mouth ($n = 165$), radio ($n = 162$), other online news sources ($n = 160$), email ($n = 72$), PSAs or ads ($n = 60$) and other ($n = 6$). When asked to list up to three sources more specifically, ABC, CBS, CNN, FOX News, MSNBC, NBC and “local news” were frequently mentioned.

Table 4
Descriptive Statistics for Key Demographics

<i>Variable</i>	<i>N</i>	<i>%</i>
1. Age		
18–24	54	10.6
25–34	93	18.2
35–44	93	18.2
45–54	94	18.4
55–64	89	17.5
65–	87	17.1
2. Gender		
Male	239	46.9
Female	271	53.1
3. Race		
Caucasian	377	73.9
African-American	60	11.8
Hispanic/Latino	32	6.3
Asian	23	4.5
Other or did not respond	18	3.5
4. Education		
Some high school or less	13	2.5
High school graduate	149	29.2
Some college	158	31.0
College graduate	144	28.2
Graduate degree	46	9.0
5. Income		
Under US\$25,000	139	27.3
US\$25,000–US\$50,000	157	30.8
US\$50,000–US\$75,000	96	18.8
US\$75,000–US\$100,000	60	11.8
US\$100,000–	58	11.4

RQ2 asked what organizations people recognize from media coverage related to gun violence. Overall, the NRA was mentioned most ($n = 375$), followed by Gun Owners of America ($n = 167$), Second Amendment Foundation ($n = 141$), Moms Demand Action ($n = 115$), Brady Campaign ($n = 108$), Sandy Hook Promise ($n = 100$), Coalition to Stop Gun Violence ($n = 82$), Giffords Law Center ($n = 76$), AMA ($n = 75$), Everytown for Gun Safety ($n = 64$), AAP ($n = 43$), Other ($n = 12$).

RQ3 asked about the most salient frames among members of the general public regarding the issue of gun violence. Overall, the gun control frame ($n = 304$) was most

salient, followed by the culture of violence frame ($n = 218$) and gun rights frame ($n = 206$).

In addition to assessing specific frames, a series of Likert-type statements sought to determine salience of episodic and thematic frames, a focus on causes and/or solutions and a focus on victims and/or shooters in media coverage of gun violence. Episodic frames ($M = 4.65$, $SD = 1.43$) appeared to be more salient than thematic frames ($M = 4.04$, $SD = 1.68$). A paired-sample t -test showed the difference was statistically significant ($t = 7.77$, $p < .001$, Cohen's $d = .39$). Between causes and solutions, causes appeared to be more salient than solutions, but the difference was not statistically significant ($t = .84$, $p = .40$). Participants also perceived that media coverage of gun violence focuses more on shooters or criminals ($M = 4.87$, $SD = 1.48$) than victims ($M = 4.71$, $SD = 1.53$). A paired-sample t test indicated the difference was statistically significant ($t = 2.13$, $p < .05$, Cohen's $d = .12$).

RQ4 asked about the relationship between salient frames and personal beliefs related to (a) responsibility and (b) solutions for the issue of gun violence. Before looking at the relationship between salient frames and personal beliefs, descriptive analyses are reported related to responsibility and solutions. Regarding salient media frames related to responsibility, respondents selected individuals ($n = 217$) as being most responsible, followed by gun manufacturers ($n = 51$) and police ($n = 49$). Respondents were also asked their personal beliefs about who should be held responsible for gun violence. Again, most respondents selected individuals ($n = 274$) as being most responsible, but this time lawmakers ($n = 60$), police ($n = 39$), families ($n = 31$) and executive government ($n = 31$) followed.

When it comes to salient media frames related to solutions for gun violence, respondents selected background checks ($n = 344$) most, followed by legislation to reduce gun trafficking ($n = 207$) and increasing severity of punishment ($n = 178$). When asked about their personal beliefs related to solutions for gun violence, again respondents selected background checks ($n = 379$) most, but this time increasing severity of punishment ($n = 186$) and better enforcement of existing laws ($n = 185$) followed.²

Analyses related to assessing relationships between salient frames and personal beliefs (**RQ4**) were conducted using Spearman's rank-order correlations. Findings related to (a) responsibility for the issue of gun violence indicated there was a statistically significant association between salient frames and personal beliefs ($r_s = .28$, $p < .001$). When it comes to (b) solutions for the issue of gun violence, there were statistically significant associations between salient frames and personal beliefs related to background checks ($r_s = .36$, $p < .001$), safe storage laws ($r_s = .53$, $p < .001$), increasing severity of punishment ($r_s = .40$, $p < .001$) and metal detectors in schools ($r_s = .31$, $p < .05$).

RQ5 asked about the relationship between the most salient media solutions and personal beliefs about solutions when controlling for other factors (political ideology, perceived issue importance and participant demographics). Analyses related to this question were conducted using three binary logistic regression models (see Table 5). The three most prominent personal beliefs about solutions (background checks, severity of punishments and enforcement of existing laws) served as the dichotomous dependent variable in each of the models, which were regressed on participant demographics as well as the corresponding salient media solutions derived from participant responses to the survey. For the purpose of these analyses, a dichotomous predictor

Table 5
Logistic Regressions Predicting Beliefs about Solutions

<i>Independent Variables</i>	<i>Background checks</i>	<i>Increased severity of punishment</i>	<i>Better enforcement of laws</i>
	<i>B (SE)</i>	<i>B (SE)</i>	<i>B (SE)</i>
Income	-.09 (.08)	-.08 (.14)	-.01 (.14)
Education	-.14 (.11)	.01 (.17)	.39 (.19)*
Age	.07 (.07)	.03 (.11)	.52 (.13)***
Gender	-.03 (.21)	.21 (.35)	-.20 (.37)
Political ideology	.05 (.08)	-.20 (.13)	-.32 (.14)*
Issue importance	.03 (.07)	.04 (.12)	-.05 (.12)
Salient media frame	1.59 (.20)***	.93 (.47)*	.31 (.58)
Constant	.70 (.73)	-2.19 (1.21)	-5.74 (1.38)***
% cases correctly classified	68.00%	91.40%	92.00%
Nagelkerke R^2	$R^2 = .18$	$R^2 = .03$	$R^2 = .14$
χ^2	75.85***	6.72	31.84***

* $p < .05$. ** $p < .01$. *** $p < .005$.

was computed using the media frames each participant indicated as the most salient (ranked first among their top three) to improve the compatibility of each predictor with the dependent variables in their respective models.²

Results from the analyses indicated the model predicting beliefs about background checks was statistically significant, $\chi^2(7, 502) = 75.85, p < .005$ and explained 18.4% (Nagelkerke $R^2 = .184$) of the variance in the dependent variable, while correctly classifying 68% of the cases in the data set. As shown in Table 5, the background check frame was a significant predictor of participants' beliefs about background checks as a solution to gun violence. However, the model predicting beliefs about increased severity of punishment was not statistically significant, $\chi^2(7, 502) = 6.72, p = .46$, accounting for 2.9% (Nagelkerke $R^2 = .029$) of the variance in the dependent variable, and correctly classifying 91.4% of the cases in the data set. The final model, which predicted beliefs about better enforcement of laws as a solution to gun violence, was statistically significant, $\chi^2(7, 502) = 31.84, p < .005$ (Nagelkerke $R^2 = .14$), with the overall model correctly classifying 92% of the cases in the data. Education ($B = .39, p < .05$) and age ($B = .51, p < .005$) were the sole significant predictors in this model, while media frames were not a statistically significant predictor of beliefs about better enforcement of laws ($B = .31, p = ns$).

Discussion

The findings from this study add to existing research on media advocacy, framing and gun violence in a number of ways. First, this study adds to media advocacy

research by telling us the frames and solutions that are salient or have been adopted by the public related to gun violence. Frame salience and frame adoption have not necessarily been a focus of media advocacy research, but perhaps they should be a focus moving forward related to issues where public opinion could influence policy. This research also tells us where people are getting information related to this issue, which tells us about preference-based information seeking (Cacciatore et al., 2016), as well as which organizations are salient to the public regarding the issue of gun violence. This information is important for gun violence prevention advocates.

Second, it adds to the literature related to frame setting, frame salience and frame adoption. As mentioned previously, most studies look at framing in terms of what is presented in media coverage or at experimental effects following exposure to a particular frame. Although this study did not assess content, it drew upon previous content analyses of news coverage of gun violence (Jashinsky et al., 2017, in particular) to determine which frames might be most salient in the audience's minds. It also explored the idea of frame adoption (Edy & Meirick, 2007; Wettstein, 2012), and the relationship between salient media frames and personal beliefs about gun violence, finding that salient media solutions were related to personal beliefs about these solutions, more so than other factors such as perceived issue importance and political ideology.

Theoretical and Practical Implications Related to Media Advocacy

Media advocacy focuses on framing issues as societal-level, public health issues, but it also focuses on advancing solutions. Important considerations in understanding perceived frames and solutions include knowing where people get information and which organizations, or individuals, might be prominent in people's minds. Frequently used sources were TV news, social media and newspapers. Newspaper coverage of this topic may be particularly valuable in the media advocacy process because there is more space and time for the nuances necessary to frame this issue from a public health perspective. This study underscores the importance of newspapers and other media in covering complex and controversial issues such as gun violence.

The first three organizations people selected as being prominent in media coverage of gun violence are essentially gun rights organizations. Gun safety organizations need to secure a larger share of media coverage and also keep working to make an impact in other places. Nonpartisan health organizations like the AMA and AAP could also try to influence media and the public more to influence public health framing of gun violence. In addition, reporters could quote organizations like the AMA and AAP more; including these critical voices, statistics and thematic framing would emphasize the public health approach to this issue.

Theoretical and Practical Implications Related to Framing

The fact that gun control and gun rights were in the top three frames highlights that this is still a highly politicized issue, which does not align with the public health approach. However, "public safety" was among the top five frames in terms of media salience, so maybe that is synonymous with public health in some people's minds or maybe it shows a way that public health advocates can focus on making guns safer for

people to use (e.g., safe gun storage), which is part of reframing this highly political issue as a public health issue/risk (Franklin, 2014).

Individuals are still predominantly being held responsible for the issue of gun violence. This finding also shows that the public health approach is not resonating with the public. This finding may relate to the fact that so many people are getting their information related to gun violence from episodic framing (Iyengar, 1991). It may also show that preference-based reinforcement is taking place (Cacciatore et al., 2016). In addition, respondents indicated that they perceive media coverage of gun violence to be more episodic in nature, which follows some content analyses related to gun violence (McGinty et al., 2014). Respondents also indicated a focus on shooters or the person/people responsible for gun violence, which follows other content analysis findings (Holody & Daniel, 2017). Clearly, some media frames are resonating with the public and being adopted or at least highly associated with personal beliefs about gun violence.

It was not surprising that background checks were selected as the most salient media solution as well as the most prominent among personal beliefs. It may be time now for media and health advocates to move beyond background checks and focus on other solutions, too, such as safe storage, safety engineering and other types of legislation or policies that could help improve public health. Like many problems in society, gun violence is a multi-faceted issue, and multi-faceted solutions will be necessary to have an impact.

Findings related to **RQ5** add a richness to this study not found in a lot of framing research. According to logistic regression results, media frames were the only significant predictor of personal beliefs regarding background checks, having more influence than gender, political ideology or other factors that have been found to be important predictors of frame adoption in other studies (Edy & Meirick, 2007). Regarding personal beliefs about better enforcement of laws, the media frame did not seem to be the driving force. In this case, age, gender and political ideology (i.e., being older, female, and more conservative) were significant contributors to personal beliefs about this solution. It may be because although better enforcement of laws was one of the top solutions in terms of salience and beliefs, there was a bigger discrepancy between the two regarding this solution. This particular solution was selected by many in terms of personal beliefs yet not as many in terms of media salience, which might explain why factors like age, gender and political ideology were more influential than media in influencing beliefs about this solution. This finding is similar to Wettstein's (2012) study, in which he found that one frame had been adopted more by people with the same demographic characteristics. This study adds to research on frame adoption, which has been underexplored, and calls for future research on this underexplored aspect of framing.

Limitations and Future Research

The limitations of this research should be noted. First, this study used a Qualtrics online panel, and individuals were paid for their participation, which could have influenced their responses; the sample size ($N = 510$) may limit the generalizability of the findings as well. Future research could explore the issue with larger and more random samples or via survey methods that may be more accessible to the general population.

Second, some items in the questionnaire could have been measured in different ways. For example, instead of asking respondents to select three media outlets for their information sources related to gun violence, each media outlet could have been measured by using Likert-type scales.

Content analysis of TV news and newspaper articles exploring the media advocacy efforts through agenda setting and framing could help. Future research should also focus on the evaluation of various media advocacy and framing efforts, including how those efforts might relate to behaviors, such as sharing information, getting involved in advocacy efforts or voting.

Overall, this study helps us understand how individuals perceive issues related to gun violence, including salient media frames, personal beliefs, prominent organizations involved with the issue, attributions of responsibility, possible solutions and more. Critically, it helps demonstrate the importance of framing solutions, which may shape individuals' perceptions, public discourse, policy and public health activities. The process of the media informing public perceptions and those perceptions informing policy is critical to understanding media advocacy, and in this case, possible paths forward for communicating about the issue of gun violence. This research shows that gun violence is not perceived as a public health issue (yet), but it also suggests some ways that health advocates, media and others can continue to make progress toward better communication and advancing solutions that might help with the problem of gun violence moving forward.

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Notes

1. Respondents for this survey were selected among those who have registered to participate in Qualtrics online surveys and polls, and all quotas were imposed on the data to reflect the demographic composition of U.S. adults. Thus, no estimates of sampling error can be calculated from these data.
2. Specifically, for this analysis, participants' rank-ordered solutions and salient media frame variables were recoded such that the most prominent solutions/salient frames (i.e., those that participants ranked first) were coded as having a value of 1, while all other values (including the second and third most-prominent solutions/salient frames) were coded with a value of 0.

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