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ORIGINAL RESEARCH

Injury Prevention

Public perspectives on firearm sales in the United States during the COVID-19 pandemic

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Abstract

Objective: Amidst the COVID-19 pandemic crisis, firearm sales surged to record-breaking levels in the United States. The purpose of this study was to conduct a national assessment of the views of Americans on the change in firearm sales, the perceived impact of the changes in sales, and how these perceptions differ by a recent purchase of a firearm.

Methods: A multi-item valid and reliable questionnaire was deployed online via mTurk and social media sites in the last week of May 2020 to recruit adult Americans in the general population across the United States.

Results: Among the total sample of study participants (n = 1432), almost a fifth (18%, n = 263) reported buying a firearm during the pandemic. Firearm buyers differed statistically significantly ($P < 0.01$) from non-buyers based on sex, age, ethnicity, marital status, education, having children at home, employment status, income, political orientation, location, and region of residence in the United States. Those who did not buy firearms during the pandemic were significantly ($P < 0.01$) more likely to believe that firearm sales and first-time ownership/buying of firearms had increased during the pandemic. Similarly, those who did not buy a firearm during the pandemic were significantly more likely to believe that the surge in firearm sales would result in increased firearm access for children, mentally ill, drug users, criminals, and older adults. In relation to perceived changes in selected public health outcomes attributed to the surge in firearm sales, firearm buyers were significantly less likely ($P < 0.01$) to believe that an increase in sales could result in adverse public health outcomes such as a higher number of suicides, homicides, mass shootings, and crimes in society. In multiple regression analyses, significant predictors of pandemic purchase of firearms were: having children at home, owning firearms before the pandemic, planning to buy firearms in the next year, knowing someone who was shot or killed with a firearm, and personally experiencing firearm violence in the past (ie, threatened or shot with a firearm).

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Conclusions: This study delineated the characteristics of those who purchased a firearm during the pandemic and the reasons for such purchases during the COVID-19 pandemic. Additional research is needed to understand the long-term impact of firearm sales during the pandemic on public health.

KEYWORDS
coronavirus, COVID-19, firearms, injury, pandemic, violence

1 | INTRODUCTION

1.1 | Background

The first case of coronavirus disease 2019 (COVID-19) was confirmed in the United States on January 21, 2020 and a national emergency was declared by the President of the United States on March 13, 2020. By the end of September 2020, >7 million Americans tested positive for COVID-19, and >200,000 had succumbed to the infection.[1,2] During the COVID-19 pandemic, several reports and polls reported on the toll the pandemic had on the health and life of individuals and the community-level impact on the social and economic segments of society in the United States. In an April 2020 Kaiser Family Foundation poll, the majority of American adults reported that their lives had been disrupted (72%) and they were worried about losing their jobs (52%), that someone in their family would get sick of coronavirus infection (53%), and that the worst of the disease outbreak was yet to come (74%).[3] Other polls in the United States had similar findings among the public concerning the negative impact the pandemic had on mental health, disruption of life, fear and stress about finances, sleep and lifestyle behaviors, and the general outlook about the future.[4–6]

1.2 | Importance

Amidst this national crisis, firearm sales witnessed a major surge and received widespread media attention.[7–9] Absent a national database to confirm actual sales of firearms, a few tangential measures of firearm sales were used to confirm the surge in sales. For example, according to the US Federal Bureau of Investigation, the National Instant Criminal Background Check System conducted >3 million screenings in March 2020, breaking all the monthly records since the National Instant Criminal Background Check System establishment in 1998.[7] Similarly, Small Arms Analytics and Forecasting, a research consulting firm, and others estimated that these background checks would extrapolate to >2 million firearms being purchased in March 2020, significantly higher than in March 2019.[8,9] This was followed by many expert views and media reports on the increase in firearm sales across the nation and the implications of rising firearm sales on public health.[9–12]

1.3 | Goals of this investigation

Although there were speculations on the reasons for the increase of firearm sales during the pandemic, no systematic study has examined the publics' perceptions of the changes in firearm sales and the impact that the change in firearm sales may have on various public health outcomes. Thus, the purpose of this study was to conduct a comprehensive national assessment of the views of the general public in the United States on change in firearm sales, the perceived potential impact of the changes, and how these perceptions differ by a recent purchase of a firearm.

2 | METHODS

2.1 | Participants and procedures

A web-based cross-sectional study was conducted in the United States using Amazon mTurk in the last week of May 2020. Given the lockdowns and the proven ability of mTurk to recruit nationwide random samples of adults who receive incentives to participate in studies, the survey was deployed online in the last week of May.[13] Also, to ensure broader samples, the survey was posted on social media sites and networks (eg, Facebook and Twitter). The questionnaire could be taken online using a secure HTML interface where all security and privacy conditions for data and personal information were provided to potential study participants. Each questionnaire could be completed only once per device. The online questionnaire was developed based on a comprehensive literature review and expert panel guidance to ensure face and content validity. Participants were informed about the purpose of the study, and it was emphasized that their participation was voluntary and anonymous. The study protocol and procedures were approved by the Institutional Review Board at Ball State University.

An a priori power analysis was conducted to estimate the required sample size for the study.[14] Based on the total population of adults in the United States (n = ≈200 million), a conservative 3% margin of error, and 99% confidence levels, we found that a total of 1383 individuals would be needed for the study to make adequate inferences to the beliefs and behaviors of the total US population and for reasonable external validity and generalizability of study results.[13,14]

The Bottom Line

It is no surprise that firearm sales in the United States have increased during the COVID-19 pandemic, but like any good study, it brings up other questions, such as why the young, single, urban dwellers, healthcare professionals, and Hispanics were more likely to have purchased a firearm during these difficult times.

2.2 | Measures

There were 36 items on the questionnaire. Participants were requested to provide their sociodemographic information (eg, race, age, sex, education, employment status, geographic region, income, marital status, and political orientation). Each participant was also asked whether he or she purchased a firearm during the pandemic (February–May 2020). Also, participant behaviors and beliefs on firearms were examined via standard questions (eg, personally knew someone who was shot or killed, experienced firearm violence, owned firearms in the year 2019, beliefs about firearm laws in the United States, whether firearm stores should be considered essential services, and if wearing a mask in public places could increase the risk of being shot with a firearm).

Participants' perceptions about changes in firearms sales during the pandemic were examined by a set of 11 questions wherein the participants were asked to select changes they believed occurred related to pandemic firearm sales. To assess the internal consistency reliability of this scale, a Cronbach α was computed, and the reliability of the scale was found to be high ($\alpha = 0.79$). Similarly, participants were asked about their perceptions of the impact on access to firearms for 7 groups of individuals as a result of the change in firearm sales during the pandemic (eg, adults, children, mentally ill, criminals). To assess the internal consistency reliability of this scale, a Cronbach α was computed and was found to be high ($\alpha = 0.81$). Finally, participants were asked about their perceptions of the impact of changes in firearm sales on 13 selected public health outcomes (eg, fear in the society, suicides, homicides, mass shootings, safety in society). To assess the internal consistency reliability of this scale, a Cronbach α was computed, and the reliability of the scale was found to be high ($\alpha = 0.90$).

2.3 | Data analysis

Descriptive statistics (frequencies, percentages, and means) were computed to describe the study population, participants' exposure to firearm violence, and firearm ownership and purchases before and during the pandemic. Inferential statistics (eg, χ^2 tests) were computed to assess group differences based on whether an individual bought a firearm during the COVID-19 pandemic. Multiple regression analyses were conducted to compute adjusted odds ratios with 95% confidence intervals for assessing the relationship between the predictor variables and outcome (purchase of firearms during the COVID-19 pandemic). Nagelkerke R^2 was computed to explore the variability in firearm purchases during the pandemic, and Hosmer–Lemeshow goodness-of-fit tests were used to ensure that models adequately fit the data. Statistical significance for all tests and analyses was assumed a priori at $P < 0.01$.

3 | RESULTS

3.1 | Purchase of firearms during the pandemic

A total of 1432 adults with a median age of 33 years responded to the questionnaire (range, 18–85 years). As a first step to delineate our sample, we computed the extent of firearm purchases during the pandemic. Almost a fifth of all respondents (18%; N = 263) purchased a firearm during the pandemic. Those who purchased a firearm during the pandemic were statistically significantly younger (mean age = 34.7 years) than those who did not (mean age = 37.8 years; t = −3.39; $P < 0.001$). Among those who purchased the firearms, the major reasons for purchase were the following: protection of self and family (N = 140; 53%), recreational/target shooting (N = 100; 38%), gift for self/someone else (N = 84; 32%), and because firearms will be difficult to purchase in future (N = 71; 27%). Among those buyers who mentioned protection as a reason for purchase (n = 140; 53%), we asked "What was it that you needed protection from?" and the responses were the following: criminals in general (N = 102; 73%), individuals I know (N = 59; 42%), crime in my neighborhood (N = 56; 40%), concerns about what may happen as the pandemic continues (N = 56; 40%), and other (N = 14; 10%, eg, racism, being an African-American, people targeting Asians, etc). The respondents differed significantly ($P < 0.001$) on numerous sociodemographic characteristics based on whether they did or did not buy a firearm during the pandemic (Table 1).

3.2 | Pandemic and firearm-related behaviors and beliefs

Firearm-related behaviors and beliefs varied significantly ($P < 0.001$) based on whether the respondents did not or did purchase a firearm during the pandemic (Table 2). Those who purchased a firearm during the pandemic were significantly more likely to have personally experienced firearm violence (ie, threatened or shot), know someone who was shot or killed with a firearm, have plans to buy a firearm in the next year or owned a firearm before the pandemic, believe that businesses that sell/buy/trade firearms should be considered an essential service, and felt that wearing a face mask in public places increases the risk of being shot. In contrast, those who did not buy a firearm during the pandemic were significantly more likely to believe that firearm laws in the United States should be stricter (Table 2).

Respondents were asked what they thought had happened to firearm sales from March to May 2020 compared with the same time

TABLE 1 Demographic characteristics of study participants (N = 1432)

Measures	Did not buy during the pandemic, n = 1169, N (%)	Bought firearms during the pandemic, n = 263, N (%)	*P*
Sex			<0.001
Man	499 (43)	167 (65)	
Woman	665 (57)	92 (35)	
Race			0.22
White	839 (72)	178 (68)	
African American	118 (10)	26 (10)	
Asian	154 (13)	38 (14)	
Other	58 (5)	21 (8)	
Age			<0.001
≤33 years	560 (48)	157 (60)	
≥34 years	607 (52)	105 (40)	
Ethnicity			<0.001
Hispanic	123 (11)	117 (45)	
Non-Hispanic	1084 (89)	146 (55)	
Marital status			<0.001
Married	415 (36)	50 (19)	
Single/never married	576 (49)	193 (73)	
Cohabitating/living with partner	84 (7)	13 (5)	
Divorced/widowed	94 (8)	7 (3)	
Children at home			<0.001
Yes (1 child)	247 (21)	117 (44)	
Yes (≥2 children)	242 (21)	89 (34)	
No children living in home	680 (58)	57 (22)	
Employment			<0.001
Full-time	757 (65)	225 (86)	
Part-time	182 (15)	29 (11)	
Not working	230 (20)	9 (3)	
Education			<0.001
≤High school diploma	75 (6)	15 (6)	
Some college experience	232 (20)	26 (10)	
Bachelor's degree	508 (44)	152 (58)	
Master's degree or higher	354 (30)	70 (27)	
Healthcare professional			<0.001
Yes	221 (19)	176 (67)	
No	948 (81)	87 (33)	
Location			<0.001
Rural	217 (19)	92 (35)	
Urban	454 (39)	133 (51)	
Suburban	498 (42)	38 (14)	
Income			0.004
≤$30,000	207 (18)	44 (17)	
$30,001-60,000	333 (29)	89 (34)	
$60,001-99,999	331 (28)	89 (34)	
≥$100,000	298 (25)	41 (15)	
Region			0.007
Northeast	160 (14)	35 (13)	
Midwest	369 (32)	59 (22)	
South	388 (33)	91 (35)	
West	252 (22)	78 (30)	
Political orientation			<0.001
Democrat	594 (50)	85 (32)	
Republican	232 (20)	121 (46)	
Independent	251 (22)	48 (18)	
Other	92 (8)	9 (4)	

N (%) indicates frequency and percentages. *P* value indicates significance levels for group differences.

last year (March to May 2019). There was a significant difference between those who did not buy a firearm and those who purchased a firearm during the COVID-19 pandemic (Table 3). Individuals who did not purchase a firearm during the pandemic were significantly more likely to believe that firearm sales increased a lot (legal, illegal, and online), first-time firearm buyers increased, and private trading of firearms had increased.

3.3 | Perceived impact of changes in firearm sales during the pandemic

Those who did not buy firearms when compared with those who purchased a firearm during the pandemic differed significantly ($P < 0.001$) on all 20 items about selected public health outcomes (Table 4). Those who did not purchase firearms during the pandemic perceived all 7 groups of individuals would have greater access to firearms compared with those who purchased firearms during the pandemic. They also perceived that all 11 potentially negative outcomes of purchasing a firearm during the pandemic would increase more than did those who purchased firearms (Table 4).

3.4 | Predictors of pandemic purchase of firearms

Although key differences were found between those who did and did not buy firearms during the pandemic, we conducted a multiple

TABLE 2 Firearm-related behaviors and beliefs of study participants (N = 1432)

Item	Did not buy during the pandemic (n = 1169), N (%)	Bought firearms in the pandemic (n = 263), N (%)	*P*
Firearm ownership			<0.001
I own 1 or more firearms	218 (19)	141 (54)	
I live with someone who owns 1 or more firearms	218 (19)	100 (38)	
I and others in my home own 1 or more firearms	46 (4)	17 (6)	
There are no firearms in my home	687 (58)	5 (2)	
Experienced firearm violence (shot or threatened with a gun)			<0.001
Yes	215 (18)	194 (74)	
No	954 (82)	69 (26)	
Know someone who was shot or killed with a firearm			<0.001
Yes	410 (35)	200 (76)	
No	759 (65)	63 (24)	
If yes, who was this person			
Friend	193 (17)	98 (37)	
Someone in my neighborhood	134 (12)	57 (22)	
Relatives, distant family members	99 (9)	90 (34)	
Immediate family member	75 (7)	99 (38)	
Coworker/colleague	79 (8)	70 (27)	
Fiancé/dating partner	38 (3)	88 (34)	
Others	133 (11)	25 (10)	
You or someone in your home plan to buy a firearm in the next year			<0.001
Yes	197 (17)	221 (84)	
No	784 (67)	31 (12)	
Not sure	188 (16)	11 (4)	
Businesses and stores that sell/buy/trade firearms and ammunition should be considered as essential services			<0.001
Yes	255 (22)	205 (78)	
No	764 (65)	39 (15)	
Not sure	150 (12)	19 (7)	
Firearm laws in the United States should be			
More strict	846 (72)	150 (57)	<0.001
They are about right	250 (21)	93 (35)	
Less strict	73 (6)	20 (8)	
Wearing face masks in public places may increase the risk of being shot with a firearm			<0.001
Yes	259 (22)	176 (67)	
No	591 (51)	63 (24)	
Not sure	319 (27)	24 (9)	
Did you or someone in your home own a firearm in 2019?			<0.001
Yes	414 (35)	230 (88)	
No	755 (65)	33 (12)	

N (%) indicates frequency and percentages. *P* value indicates significance levels.

regression analysis to examine factors that could predict firearm purchases during the pandemic. First, we ran a regression model with pandemic purchase as an outcome and all sociodemographic variables from Table 1 that were considered as predictors (model 1, not shown). In this multiple regression model, the adjusted odds ratios (AORs) of buying a firearm were statistically significantly higher for men, Hispanics, those employed full-time, those who had children at home, and healthcare professionals (compared with their counterparts). The Nagelkerke R^2 value for this model was 0.30 (indicating 30% variability in firearm purchase was explained by the predictors in this model). Subsequently, we ran another multiple regression model with all predictors from model 1 and the addition of variables about beliefs and behaviors on firearms (from Table 2). The Nagelkerke R^2 value for this model was 0.58 (indicating 58% variability in firearm purchase explained by the predictors in this final model). In this final multivariate model (Table 5), the following were the statistically significant ($P < 0.01$) participant predictors of pandemic purchase of firearms: children at home (AOR = 2.83), employed in healthcare professions (AOR = 1.89), ownership of firearms in the year 2019 (AOR = 3.01), plans to buy a firearm in the next 1 year (AOR = 4.74), personal experience of being threatened or shot with a firearm (AOR = 2.34), and a belief that businesses selling and trading firearms should be considered essential services (AOR = 2.38). Knowing someone who was shot or killed with a firearm was associated with 1.63 times higher odds of buying a firearm during the pandemic at $P < 0.02$.

4 | DISCUSSION

Individuals who have access to firearms are at increased risk for unintentional firearm mortality, firearm homicides, and firearm suicides.[10–12] Compared with other high-income countries, the US unintentional firearm deaths are 5.2 times higher, 19.5 times higher

TABLE 3 Perceived change in firearm sales during the pandemic (N = 1432)

Item	Did not buy during the pandemic (n = 1169), N (%)	Bought firearms during the pandemic (n = 263), N (%)	*P*
Compared with last year (ie, March–May 2019), what do you think has happened to firearm sales from March to May 2020?			<0.001
Increased a lot in the year 2020	598 (51)	113 (43)	
Increased a little bit in the year 2020	370 (32)	89 (34)	
Remained the same as last year	192 (9)	48 (18)	
Decreased a little in the year 2020	73 (6)	9 (3)	
Decreased a lot in the year 2020	26 (2)	4 (2)	
Which of the following represents your opinion of firearm sales since January 2020?			
Legal firearm sales have increased	795 (68)	152 (58)	0.002
Online sales of firearms have increased	656 (56)	112 (43)	<0.001
First-time firearm buyers/ownership has increased	669 (57)	95 (36)	<0.001
Illegal firearm sales have increased	508 (44)	94 (36)	0.02
Sales of assault or deadly firearms has increased	436 (37)	90 (34)	0.33
Number of background checks have increased	356 (31)	110 (42)	<0.001
High-capacity firearm magazine sales have increased	308 (26)	69 (26)	0.93
Exchange of firearms between individuals/private trading has increased	322 (28)	48 (18)	0.002
Build-it-yourself firearm sales have increased (ie, ghost guns/or parts to make)	269 (23)	53 (20)	0.31
Number of firearm owners in my neighborhood has increased	231 (20)	68 (25)	0.06
None of the above has happened	69 (6)	8 (3)	0.07

N (%) indicates frequency and percentages. *P* value indicates significance levels for group differences.

for firearm homicides, and 5.8 times higher for firearm suicides.[15] The COVID-19 pandemic has added to the prevalence of firearms in the United States. The Firearm Industry Trade Association claims in the first 4 months of the year 2020, there were >6.5 million background checks, up 48% above the rates of 2019.[16] This increase was reported to result in ≈2.5 million new gun owners. This increase in the prevalence of household ownership of firearms combined with the stresses of COVID-19 increases the risk of firearm-related morbidity and mortality.[10–12]

COVID-19–induced firearm buying has resulted in almost a fifth (18%) of our sample buying a firearm during the pandemic, and the leading reason was for the protection of self and family. This is not surprising because this was the leading reason reported for buying a firearm before the pandemic.[9] More so, the buying of firearms has been pronounced in times of mass shootings, terrorist attacks, and major economic and political events in the United States.[17,18] However, it is disconcerting that firearms bought for protection may contribute to a potential increase in firearm suicides. Firearms are the most common method used in adult American completed suicides.[10,18,19] The risk factors for suicide include feelings of being alone, feelings of being depressed, substance use disorders, relationship difficulties, death of a partner or someone close, diagnosis of a potentially fatal disease, financial problems, natural disasters, and unemployment, just to name a few especially related to COVID-19.[11,12,19,20] COVID-19 population spread mitigation warranted the use of public health measures of mask wearing, social distancing, avoidance of group encounters, physical distance from others, and quarantine if exposed to a person with the potential infection. Such methods to minimize the spread of COVID-19 may have increased loneliness, feelings of depression, and higher rates of suicidal ideation in many groups.[10,21] Also, according to a recent estimate, the COVID-19 pandemic may cause between 3235 and 8164 excess suicides (3.3%–8.4%) between 2020 and 2021.[22] Thus, public health professionals and clinicians must advocate for and play a key role in increasing awareness of firearm safety techniques. Especially, first-time buyers should practice greater caution and should be provided resources on firearm safety. Individuals at risk for suicide should have their firearms removed from household premises. If removal is not possible, safe storage and locking guns at home so that at-risk individuals do not have easy access are alternate options. Law enforcement officials and healthcare clinicians must play a key role in helping prevent firearm-related suicides in such individuals.[10,23,24]

State governments in collaboration with law enforcement officials have a key role to play in ensuring that laws and standards for sales are applied to reduce morbidity and mortality from firearms.[9,10] Also, state and federal policymakers should consider more legislative

TABLE 4 Perceived impact of changes in firearm sales during the pandemic (N = 1432)

	Did not buy during the pandemic (N = 1169)		Bought firearms during the pandemic (N = 263)		
Group	Will have increased access to firearms, n (%)	Access to firearms will decrease, n (%)	Will have increased access to firearms, n (%)	Access to firearms will decrease, n (%)	*P*
Adult men	798 (68)	58 (5)	105 (40)	49 (19)	<0.001
Adult women	692 (59)	77 (7)	98 (37)	65 (25)	<0.001
Children	529 (45)	135 (12)	70 (27)	50 (19)	<0.001
Mentally ill people	528 (45)	150 (13)	64 (24)	70 (27)	<0.001
Criminals/convicts	569 (49)	108 (9)	82 (31)	62 (24)	<0.001
Drug users/dealers	600 (51)	101 (9)	78 (30)	57 (22)	<0.001
Older adults (>65 years)	476 (41)	122 (10)	63 (24)	70 (27)	<0.001
Public health outcomes	**Will increase (%)**	**Will decrease (%)**	**Will increase (%)**	**Will decrease (%)**	
Suicides	681 (58)	55 (5)	88 (34)	41 (16)	<0.001
Murder/homicides	647 (55)	104 (9)	64 (24)	72 (28)	<0.001
Mass shootings	530 (45)	161 (14)	77 (29)	56 (21)	<0.001
School bullying/dating violence	385 (33)	153 (13)	57 (22)	71 (27)	<0.001
School shootings	430 (37)	212 (18)	61 (23)	76 (29)	<0.001
Domestic violence	738 (63)	75 (6)	82 (31)	69 (26)	<0.001
Workplace harassment	332 (28)	164 (14)	56 (21)	79 (30)	<0.001
Accidental firing/unintentional injuries and deaths	716 (61)	100 (9)	80 (30)	68 (26)	<0.001
Police officers shooting citizens	504 (43)	98 (8)	66 (25)	68 (26)	<0.001
Citizens shooting police officers	445 (38)	105 (9)	54 (20)	75 (29)	<0.001
Crime in general	570 (49)	117 (10)	78 (30)	59 (22)	<0.001
Fear and hostility in the society	720 (62)	81 (7)	88 (33)	67 (26)	<0.001
Safety in the society	230 (20)	479 (41)	61 (23)	62 (24)	<0.001

N (%) indicates frequency and percentages. *P* value indicates significance levels.

options to reduce firearm-related morbidity and mortality given the following special concerns during the pandemic: according to studies, most crimes across regions in the United States dropped during the pandemic except firearm-related crimes and shootings;[25–27] many firearm-related businesses flouted state closure rules of the lockdown, calling for a discussion if firearm-related businesses are "essential services";[27,28] domestic violence–related and child abuse–related calls to crisis centers increased during the pandemic;[27–29] and because of the pandemic restraints, more children spent time at home where firearms are ubiquitous in US households, posing the risk of accidental firings and child mortality.[28–30] Even before the pandemic, several studies highlighted the dearth of research on firearms, especially as it relates to the effect of firearm ownership on various settings (eg, schools, workplaces, and communities).[31] Although our study found key differences in perceptions among participants based on firearm purchases during the pandemic for various public health outcomes (eg, domestic violence, crime and safety in society, police and school shootings, and so on [shown in Table 4]), additional research is needed to assess the long-term effects of the recent surge in firearm sales. Also, evidence-based policymaking would be required to deal with newer challenges such as ghost or build-it-yourself guns (in the current study, almost a fifth of the respondents believed sales of such items had increased).[32] Given the special challenges posed by the pandemic, greater impetus on firearm-related research is recommended with prospective studies to assess the social and economic impacts on public health in relation to firearm violence and crime.

5 | LIMITATIONS

The results of this study should be considered in light of the potential limitations. The study results are restricted by all limitations of a cross-sectional survey study design (eg, self-reported behaviors, recall bias in participants, socially desirable responses, and the inability to establish cause and effect relationships among study variables). A major threat to external validity is that the sample is limited in nature with selection bias as it relates to the total US population (eg, younger, those with a bachelor's degree or higher, and being self-selected). Similarly, the participants were limited to those who used

TABLE 5 Multiple regression model to predict firearm purchase during the pandemic

Predictor variables	Wald	*P*	AOR	95% CI	
				Lower	Upper
Age	1.753	0.185	0.98	0.97	1.01
Sex	0.043	0.835	0.96	0.63	1.46
Ethnicity	1.168	0.280	0.76	0.47	1.25
Employment status	2.705	0.100	0.74	0.53	1.06
Marital status	0.006	0.938	1.02	0.75	1.38
Level of education	0.336	0.562	0.93	0.72	1.21
Annual household income	0.030	0.863	1.02	0.82	1.28
Political orientation	1.740	0.187	1.17	0.93	1.47
Region	0.008	0.928	0.99	0.82	1.22
Children at home (yes vs no)	20.481	**0.000**	2.83	1.81	4.45
Healthcare professional (yes vs no)	6.900	**0.009**	1.89	1.18	3.03
Views on firearm laws in the United States	0.015	0.902	0.98	0.72	1.34
Wearing face masks in public places may increase the risk of being shot with a firearm (yes vs no/not sure)	0.564	0.453	0.89	0.65	1.22
Owned firearms in the year 2019 (yes vs no)	19.813	**0.000**	3.01	1.86	4.88
Businesses selling firearms should be considered essential services (yes vs no/not sure)	14.128	**0.000**	2.37	1.52	3.72
Plan to buy a firearm in the next 1 year (yes vs no/not sure)	42.248	**0.000**	4.74	2.97	7.57
Personally experienced firearm violence (yes vs no)	12.560	**0.000**	2.34	1.47	3.75
Knew someone shot or killed with firearm (yes vs no)	4.871	**0.027**	1.63	1.06	2.49

AOR indicates adjusted odds ratio for the likelihood of the outcome (ie, pandemic purchase of firearms = yes or no). 95% CI indicates 95% confidence intervals for adjusted odds ratios. *P* value indicates significance levels. Bold indicates significantly higher odds for the outcome. Predictor variables include variables from Tables 1 and 2 that had group differences depending on whether an individual did or did not purchase firearms during the pandemic.

the internet or understood the online survey environment. Despite these limitations, our study is one of the first of its kind in the United States, our final sample exceeds the required sample size and resembles the total US population in several ways (eg, almost a quarter of participants lived in rural areas, the majority were women or White, and there was an equal split of our sample by US median household income = $60,000).[13,33]

In conclusion, this study delineated the characteristics of those who purchased a firearm during the pandemic and the reasons for such purchases during the COVID-19 pandemic. Those who purchased a firearm during the pandemic differed from those who did not on sociodemographic characteristics. Also, those who purchased firearms during the pandemic were significantly more likely to have children at home, personally experienced firearm violence in the past, knew someone who was a victim of firearm violence, owned firearms in the past, or planned to buy additional firearms in the near future.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Jagdish Khubchandani and James Price designed the study. Jagdish Khubchandani performed data collection and statistical analysis. James Price wrote the initial drafts of the article. Both the authors provided critical input on the final draft and have approved the article as submitted.

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