



Article

Happiness is a warm gun? Gun ownership and happiness in the United States (1973–2018)

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ABSTRACT

Although there is no empirical evidence linking gun ownership with happiness, speculation is widespread. In this paper, we assess the association between gun ownership and happiness. We use 27 years of national cross-sectional data from the General Social Survey (1973–2018) and logistic regression to model self-rated happiness as a function of gun ownership ($n = 37,960$). In bivariate and partially adjusted models, we observed that the odds of being very happy were *higher* for respondents who reported having a gun in their home. This association persisted with adjustments for age, gender, race/ethnicity, education, employment status, household income, financial satisfaction, financial change, number of children, religious attendance, political affiliation, urban residence, region of interview, and survey year. In our fully adjusted model, gun ownership was *unrelated* to happiness. The original association between gun ownership and happiness was entirely confounded by marital status. In other words, gun owners only appeared happier because they are more likely to be married, which increases happiness. In the first study of gun ownership and happiness, we found that people who own guns and people who do not own guns tend to exhibit *similar* levels of happiness. This general pattern was consistent across nearly three decades of national surveys, a wide range of subgroups, and different measures of happiness. Our analyses are important because they contribute to our understanding of the epidemiology of happiness. They also indirectly challenge theoretical perspectives and cultural narratives about how guns contribute to feelings of safety, power, and pleasure.

Introduction

Are people who own guns happier than people who do not own guns? Although there is no empirical evidence linking gun ownership with happiness, speculation is widespread. In 1968, The Beatles recorded “Happiness is a Warm Gun” on *The White Album*. The lyrics are plain: “When I hold you in my arms, and I feel my finger on your trigger, I know nobody can do me no harm.” Over the years, these basic sentiments have seemingly merged with gun culture. If you search “happiness is a warm gun” on *Google* or *Pinterest*, you will see a range of t-shirts, tattoos, and crocheted holsters that are unrelated to The Beatles. Even social media posts on *Twitter* and *Reddit* tie gun ownership to the experience and “pursuit of happiness”:

“Guns make me happy, why would the government ever want to take them?;”

(McToph@TophJenkins, June 2015)

“Happiness = Guns, Guns = Happiness” (Brownells, Inc.@BrownellsInc, Feb 16, 2016)

“Life, liberty, and the pursuit of happiness are secured by the Second Amendment.”

(Senator Rand Paul@RandPaul, May 2016)

“Guns make me happy, and I’ll be damned if I let someone take away my happiness ...”(devon_lane@devon_lane, June 2016).

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“Shooting guns make [sic] me happy. Its [sic] like a different kind of anti depressant [sic] ...” (Cëë@Cee_Falcon, May 2016)

“I like guns.. I need more guns.. guns make me happy..”

(Troy@troyhlady721, March 2017)

“People say ‘money can’t buy you happiness.’ True. However, money can buy guns, and guns make me happy, so I like money.” (Big_Wehner@Alec_Wehner, February 2019)

“So guns make me happy! Why should you dictate my happiness? Serious”

(Trumpicorn@jimbo199999, September 2019)

“I shot my first gun today. The look of happiness doesn’t even describe how I feel!”

(u/Stripeylord, September 2019)

In this paper, we formally test whether gun owners are, in fact, happier than non-gun owners.

Background

There are several ways that guns could promote happiness. First, gun owners believe that guns help them to feel safe (Branscombe, Weir, & Crosby, 1991; Celinska, 2007; Cunningham, Henggeler, Limber, Melton, & Nation, 2000; Dowd-Arrow, Hill, & Burdette, 2019; Shapiro, Dorman, Burkes, Welker, & Clough, 1997; Warner, 2019). The “palliative perspective” proposed by Dowd-Arrow et al. (2019:2) suggests that firearms help their owners and families to “feel safe, secure, and protected in a world they perceive to be uncertain and potentially dangerous.” Their analysis of national survey data showed that people who own guns tend to report *lower* levels of victimization fears and phobias than people who do not own guns. These patterns dovetail with recent national polls indicating that most gun owners view “protection” as the “major” reason why they own a gun (Parker, Horowitz, Ruth, Oliphant, & Brown, 2017).

Second, gun owners claim that guns are empowering and contribute to a subjective sense of independence and personal control over one’s life (Branscombe et al., 1991; Celinska, 2007; Cooke & Puddifoot, 2000;2017; Shapiro et al., 1997; Warner, 2019; Warner & Thrash, 2019). Cooke and Puddifoot (2000:424) offer a psychoanalytic perspective of guns as “phallic symbols of virility and power.” Warner and Thrash (in press:4) explain that “firearms are appealing because they are intimidating and can bestow on the carrier feelings of power.” According to Shapiro et al. (1997:315), many people believe that “holding a loaded gun” or “carrying a gun” would make them “feel really powerful” or “powerful and strong.”

Third, gun owners will tell you that guns are pleasurable. These ideas are linked to strong hunting and sporting traditions and recreational subcultures (Celinska, 2007; Cooke & Puddifoot, 2000; Cunningham et al., 2000;2017; Shapiro et al., 1997). Shapiro et al. (1997:315) note that it is common for people to believe that it is “fun to play around with a real gun” and that it is “exciting to hold a loaded gun.” Guns may be especially stimulating when they are fetishized by their owners or become elements of fantasy. A fetish is any object that inspires erotic or sexual feelings. Along these lines, one man offered the following personal experience: “Taking my guns from the safe was a rare treat; the sensual pleasure of handling guns is a big part of the habit. Elegantly designed and exquisitely manufactured, they are deeply satisfying to manipulate, even without shooting” (Baum, 2010, p. 30). The same man went on to suggest that guns serve as the foundation for fantasy: “I’m more alert and acute when I’m carrying my gun. If I’m in a restaurant or store, I find myself in my own little movie” (Baum, 2010, p. 33). “There’s no denying that carrying a gun has made my days a lot more dramatic. Suddenly, I’m dangerous. I’m an action figure. I bear a lethal secret into

every social encounter. I have to remind myself occasionally that my gun is not a prop, a political statement, or a rhetorical device, but an instrument designed to blow a ragged channel through a human being” (Baum, 2010, p. 38).

In this paper, we use nearly three decades of national survey data collected from U.S. adults to examine the link between gun ownership and happiness. Because previous research shows that feelings of safety, power, and pleasure can contribute to feelings of happiness (Abdel-Khalek, 2006; Argyle, 2003; Huang & Humphreys, 2012; Kuroki, 2013; Larson, 1989; Lu, Shih, Lin, & Ju, 1997; Lu & Shih, 1997; Lyubomirsky & Lepper, 1999; Staubli, Killias, & Frey, 2014; Veenhoven, 2003), our primary hypothesis is that people who own guns will tend to be *happier* than people who do not own guns. We nevertheless acknowledge that the suspected benefits of guns could be more ideological than true indications of human experience (Dowd-Arrow et al., 2019). Under these conditions, people who own guns and people who do not own guns would exhibit *similar* levels of happiness.

Methods

Data and sample

In order to formally assess our hypotheses, we use *General Social Survey* (GSS) data obtained from the National Opinion Research Center. The annual GSS is based on a national probability sample of non-institutionalized U.S. residents 18 years of age and older living in the 48 contiguous states. The data used for this study cover 27 survey years from 1973 to 2018. Gun ownership was not assessed in five GSS surveys (1972, 1975, 1978, 1983, and 1986). These surveys were systematically excluded from our analyses. Since 1987, the GSS has used a split-ballot design for data collection that omits selected variables from randomly selected subsets of respondents. Because gun ownership was not asked of all respondents in split-ballot surveys, sample sizes vary across years, as noted in the tables.

Measures

Happiness is measured with a single item. Respondents were asked, “Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?” Original response categories for this item included (1) very happy, (2) pretty happy, and (3) not too happy. In preliminary analyses of the ordinal specification of happiness, the chi-squared test of parallel lines was statistically significant ($\chi^2 = 517.16$, $p < 0.001$). This test rejects the proportional odds assumption and the likelihood that the slope coefficients are constant across categories of happiness. Under these conditions, we re-specified ordinal happiness as categorical. To isolate “very happy” respondents, we recoded this item (1) very happy and (0) pretty happy or not too happy. Although this single item is low in reliability, it is a valid measure of happiness. This measure of self-reported happiness has been used in studies conducted in Sociology, Psychology, and Public Health (e.g., Lee, Seccombe, & Shehan, 1991; Maselko and Kubzansky, 2006; Oishi, Kesebir, & Diener, 2011). In supplemental analyses (not shown), we confirmed the construct validity of our happiness measure through associations with a range of theoretically related concepts. In 2016, the GSS included five items from the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977). Using the full mean index ($\alpha = 0.76$) and individual items, we observed that the odds of being very happy were *reduced* by *higher* depression scores (odds ratio [OR] = 0.11, $p < .001$), feeling sad (OR = 0.35, $p < .001$) and depressed (OR = 0.21, $p < .001$) *more often* and happy (OR = 0.28, $p < .001$) *less often* in the past week. In 2010, 2014, and 2018, the GSS included a measure of trouble going to sleep or staying asleep in the past 12 months. The odds of being very happy were *reduced* for respondents who reported more trouble sleeping (OR = 0.72, $p < .001$). In most survey years, the GSS included a standard measure of general health status. The

odds of being very happy were also reduced for respondents who reported fair or poor health (OR = 0.43, $p < .001$).

Gun Ownership is measured with a single item. Respondents were asked, “Do you happen to have in your home any guns or revolvers?” Responses to this item were coded (1) yes and (0) no.

In accordance with previous studies, our multivariate models include adjustments for a range of known correlates of happiness and gun ownership (Celinska, 2007; Dowd-Arrow et al., 2019; Maselko and Kubzansky, 2006; Oishi et al., 2011; Yamane, 2016, 2017; Yang, 2008). These background variables include *age* (years), *gender* (1 = male; 0 = female), *race/ethnicity* (dummy variables for black and other races, with white serving as the reference), *education* (1 = college degree or higher; 0 = less than a college degree), *employment status* (1 = employed full- or part-time; 0 = other), *family income* (1 = annual income < \$1000 to 26 = ≥ \$170,000 in constant dollars), *financial satisfaction* (1 = not at all satisfied with present financial situation; 0 = more or less satisfied and satisfied), *financial change* (1 = personal financial situation worse in the last few years; 0 = financial situation the same or better), *marital status* (1 = married; 0 = otherwise), *number of children* (0–5+ top-coded), *religious attendance* (0 = never to 8 = more than once per week), *political affiliation* (dummy variables for Democrat and Independent, with Republican serving as the reference), *region* (dummy variables for West, Midwest, and Northwest, with South serving as the reference), *urban residence* (1 = living in a large and medium-sized central city with more than 50,000 residents; 0 = otherwise), and *survey year* (higher values are more recent years).

Statistical procedures

Our analyses begin with descriptive statistics for all study variables, including variable ranges, means, and standard deviations (Table 1). We use binary logistic regression to model our dichotomous happiness outcome. Table 2 assesses the association between gun ownership and happiness in the cumulative file, which combines all 27 years of available GSS data. In Table 3, we assess the association between gun ownership and happiness within each available survey year. In Tables 2 and 3, we present odds ratios and 95% confidence intervals. Odds ratios are interpreted as the estimated difference in the odds of being “very

Table 1
Descriptive statistics (general social survey 1973–2018).

	Range	Mean	Standard Deviation
Very Happy	0–1	0.31	
Gun in Home	0–1	0.40	
Age	18–89	46.09	17.53
Female	0–1	0.56	
White	0–1	0.80	
Black	0–1	0.14	
Other Race	0–1	0.06	
Education	0–20	12.87	3.17
Employed	0–1	0.60	
Household Income	\$363.00 – \$180,386	\$45,053.48	\$34,876.85
Dissatisfied with Financial Situation	0–1	0.27	
Financial Situation Worse	0–1	0.23	
Married	0–1	0.53	
Number of Children	0–5+	1.86	1.56
Religious Attendance	0–8	3.76	2.73
Republican	0–1	0.25	
Democrat	0–1	0.37	
Independent	0–1	0.38	
Urban	0–1	0.31	
South	0–1	0.35	
West	0–1	0.20	
Midwest	0–1	0.26	
Northwest	0–1	0.19	

Notes: $n = 37,960$. Shown are variable ranges, means, and standard deviations. The cumulative data file excludes data from 1975, 1978, 1983, and 1986.

Table 2
Multivariate logistic regression of happiness (general social survey 1973–2018).

	Model 1	Model 2	Model 3
Gun in Home	1.37*** (1.31, 1.43)	1.16*** (1.10, 1.22)	1.03 (0.98, 1.08)
Age		1.00 (1.00, 1.03)	1.00*** (1.00, 1.00)
Female		1.08** (1.03, 1.13)	1.12*** (1.07, 1.18)
Black		0.68*** (0.63, 0.74)	0.76*** (0.70, 0.82)
Other Race		0.94 (0.85, 1.05)	0.93 (0.84, 1.04)
Education		1.01** (1.00, 1.02)	1.01** (1.01, 1.02)
Employed		0.93* (0.88, 0.98)	0.93** (0.88, 0.98)
Household Income		1.00*** (1.00, 1.00)	1.00*** (1.00, 1.00)
Dissatisfied with Financial Situation		0.49*** (0.46, 0.52)	0.49*** (0.46, 0.53)
Financial Situation Worse		0.64*** (0.59, 0.68)	0.63*** (0.59, 0.67)
Number of Children		1.04*** (1.02, 1.05)	0.98* (0.96, 0.99)
Religious Attendance		1.09*** (1.08, 1.10)	1.08*** (1.07, 1.09)
Democrat		0.93* (0.88, 0.99)	0.92* (0.87, 0.98)
Independent		0.89*** (0.84, 0.94)	0.88*** (0.83, 0.94)
Urban		0.92** (0.88, 0.97)	0.96 (0.91, 1.01)
West		0.96 (0.90, 1.03)	0.97 (0.91, 1.04)
Midwest		0.91** (0.86, 0.96)	0.91** (0.86, 0.97)
Northwest		0.87*** (0.81, 0.93)	0.86*** (0.81, 0.92)
Survey Year		0.99*** (0.99, 0.99)	0.99 (0.99, 1.00)
Married			2.14*** (2.03, 2.26)

Notes: $n = 37,960$. Shown are odd ratios with 95% confidence intervals (in parentheses) and two-tailed significance tests (* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$). Reference groups include male, white, Republican, and southern residence. The cumulative data file excludes data from 1975, 1978, 1983, and 1986.

happy” for those who are one unit apart on a predictor variable, adjusting for other predictors in the model.

Results

Descriptive analyses

According to Table 1, 31% of respondents reported being very happy, and approximately 40% reported having a gun in their home. The average age of the sample was 46 years. Over half of the respondents identified as female (56%). The sample included whites (80%), blacks (14%), and respondents of other races and ethnicities (6%). The average respondent reported nearly 13 years of formal education. A majority of respondents (60%) reported being employed full- or part-time. Average family income in constant dollars was \$45,053.48. Approximately one-quarter of the sample reported being “not at all satisfied” with their present financial situation (27%) and that their personal financial situation has grown worse in the last few years (23%). A slight majority reported being married (53%). The average respondent reported nearly two children and attending religious services several times per year. The sample included Republicans (25%), Democrats (37%), and Independents (38%). At the time of the interview, nearly one-third of respondents lived in the south (35%) and in a large or medium-sized central city with more than 50,000 residents (31%).

Table 3
Multivariate logistic regression of happiness by survey year (general social survey 1973–2018).

	1973 (n = 1404)	1974 (n = 1417)	1976 (n = 1446)	1977 (n = 1458)	1980 (n = 1419)	1982 (n = 1789)	1984 (n = 1393)	1985 (n = 1497)	1987 (n = 1736)
Gun Ownership	1.24 (0.96, 1.60)	1.17 (0.91, 1.50)	1.09 (0.85, 1.40)	0.99 (0.77, 1.26)	1.07 (0.83, 1.39)	1.21 (0.96, 1.51)	0.99 (0.77, 1.28)	1.05 (0.82, 1.36)	1.03 (0.82, 1.31)
	1988 (n = 938)	1989 (n = 1005)	1990 (n = 867)	1991 (n = 938)	1993 (n = 1020)	1994 (n = 1891)	1996 (n = 1839)	1998 (n = 1802)	2000 (n = 1745)
Gun Ownership	0.94 (0.69, 1.30)	1.27 (0.94, 1.72)	0.99 (0.71, 1.39)	0.83 (0.60, 1.14)	1.07 (0.79, 1.47)	0.94 (0.75, 1.18)	0.99 (0.79, 1.25)	0.87 (0.68, 1.11)	1.04 (0.81, 1.33)
	2002 (n = 894)	2004 (n = 864)	2006 (n = 1942)	2008 (n = 1297)	2010 (n = 1212)	2012 (n = 1245)	2014 (n = 1618)	2016 (n = 1795)	2018 (n = 1489)
Gun Ownership	0.93 (0.66, 1.31)	1.13 (0.80, 1.60)	0.99 (0.79, 1.24)	1.22 (0.91, 1.64)	0.88 (0.64, 1.21)	1.10 (0.83, 1.47)	1.19 (0.92, 1.53)	1.06 (0.83, 1.35)	0.93 (0.71, 1.22)

Notes: Shown are odd ratios with 95% confidence intervals (in parentheses). All associations are null ($p > 0.05$). All models control for age, gender, race/ethnicity, education, employment status, household income, financial satisfaction, financial change, marital status, number of children, religious attendance, political affiliation, urban residence, and region of interview.

Regression analyses

Table 2 assesses the association between gun ownership and happiness in the cumulative file. In Model 1, we observe a statistically significant bivariate association ($OR = 1.37$, $p < .001$). The nature of the association suggests that having a gun in the home *increases* the odds of being very happy. Odds ratios (ORs) can be manipulated ($[OR - 1] \times 100$) to describe the percent difference in the odds of being very happy for each one-unit change in an independent variable. In this case, the odds of being very happy are 37% ($[1.37 - 1] \times 100$) *higher* for respondents who report having a gun in their home. Model 2 confirms this association with adjustments for age, gender, race/ethnicity, education, employment status, household income, financial satisfaction, financial change, marital status, number of children, religious attendance, political affiliation, urban residence, region of interview, and survey year. In Model 2, the odds of being very happy are 16% *higher* for respondents who report having a gun in their home ($OR = 1.16$, $p < .001$).

Although Models 1 and 2 indicate that people who own guns tend to be happier than people who do not own guns, Model 3 suggests that this association is entirely confounded. Once marital status is controlled, the association between gun ownership and happiness becomes null ($OR = 1.03$, $p > .05$). In other words, gun owners only appear happier because they are *more* likely to be married, which increases happiness. In Model 3, being married *increases* the odds of being very happy by 114% ($OR = 2.14$, $p < .001$).

Table 3 assesses the multivariate association between gun ownership and happiness within each of the 27 years of GSS data. These models are easily interpreted. There are no period variations. The null association between gun ownership and happiness is consistent across survey years. Gun ownership is *unrelated* to happiness ($p > .05$) in all 27 years of GSS data, with adjustments for age, gender, race/ethnicity, education, employment status, household income, financial satisfaction, financial change, marital status, number of children, religious attendance, political affiliation, urban residence, and region of interview. Overall, people who own guns and people who do not own guns tend to exhibit *similar* levels of happiness.

Ancillary analyses

In ancillary analyses (not shown), we compared personal gun owners to non-owners with full adjustments. Consistent with our main analyses, we observed that personal gun ownership was *unrelated* to happiness in the cumulative sample ($OR = 1.00$, $p = .96$) and in 23 individual surveys from 1980 to 2018 ($p > .05$). We note that personal ownership was not assessed in surveys conducted between 1973 and 1977.

We also tested whether the association between gun ownership and happiness varied by age, gender, race/ethnicity, education, employment status, household income, financial satisfaction, financial change, marital status, number of children, religious attendance, political

affiliation, urban residence, region of interview, and survey year. With one exception, we failed to observe any subgroup variations in the association between gun ownership and happiness. Although gun ownership is *unrelated* to happiness across a wide range of subgroups, we observed some variation by political affiliation. Among respondents who identified as Democrats, the odds of being very happy are 12% *higher* for respondents who report having a gun in their home ($OR = 1.12$, $p < .01$). This estimate persisted with adjustments for age, gender, race/ethnicity, education, employment status, household income, financial satisfaction, financial change, marital status, number of children, religious attendance, political affiliation, urban residence, region of interview, and survey year.

To explore potential period variations in the association between gun ownership and happiness among Democrats, we tested the interaction between gun ownership and survey year in the cumulative file. The interaction term was negative and statistically significant ($b = -0.008$, $p < .01$). This suggests that, among Democrats, the positive association between gun ownership and happiness is *waning* over time. With this trend in mind, we could expect some convergence with the null association between gun ownership and happiness observed for respondents who identified as Republicans ($OR = 0.96$, $p > .05$) and Independents ($OR = 1.01$, $p > .05$).

As noted above, the 2016 GSS included a measure of happiness from the CES-D scale. To assess the consistency of our findings, we replaced our measure of general happiness with this measure of happiness in the past week. Once again, we observed that gun ownership is *unrelated* to happiness with ($OR = 1.04$, $p > 0.05$) and without ($OR = 1.16$, $p > 0.05$) adjustments for control variables. In the end, we found little to no evidence of an association between gun ownership and happiness. This general conclusion is consistent across surveys, subgroups, and measures of happiness.

Discussion

In this paper, we formally tested whether people who own guns are happier than people who do not own guns. Drawing on research suggesting that guns contribute to feelings of safety, power, and pleasure, we expected that people who own guns would be happier than people who do not own guns. In bivariate and partially adjusted models, we observed that the odds of being very happy were *higher* for respondents who reported having a gun in their home. This association persisted with adjustments for age, gender, race/ethnicity, education, employment status, household income, financial satisfaction, financial change, marital status, number of children, religious attendance, political affiliation, urban residence, region of interview, and survey year. In our fully adjusted model, gun ownership was *unrelated* to happiness. The original association between gun ownership and happiness was entirely confounded by marital status. In other words, gun owners only appeared happier because they are more likely to be married, which increases

happiness. In the first study of gun ownership and happiness, we found that people who own guns and people who do not own guns tend to exhibit *similar* levels of happiness. This general pattern was consistent across nearly three decades of national surveys, a wide range of sub-groups, and different measures of happiness.

What might explain the null association between gun ownership and happiness? One possibility is that previous studies have overestimated the feelings of safety, power, and pleasure that people derive from owning guns. In the case of self-reported data, it may be impossible to separate the rhetoric of internalized gun culture from more direct human experience. It is interesting to us that people who own guns report less fear in their lives, but not greater happiness. Another related idea is that people may initially benefit from owning a gun, but then come to take their guns for granted over time. Finally, heterogeneity in gun ownership could contribute to offsetting effects on happiness. While some gun owners may be comforted by their weapons, more reluctant owners who purchased their weapons for protection may be genuinely concerned about having a gun in the home and the risks associated with armed confrontations. If owning a gun increases happiness for some owners and in some way undermines happiness for others, the null association between gun ownership and happiness could reflect the balance of these effects. In other words, the positive effects of owning a gun could be counter-balanced by any negative effects or personal risks associated with gun ownership.

In ancillary analyses, we observed that the association between gun ownership and happiness could be moderated by political affiliation. Our finding was that having a gun in the home was associated with *greater* happiness for respondents who identified as Democrats, but not for Republicans or Independents. We suspect that these patterns may reflect unique patterns of gun ownership. For example, a recent study by Warner & Thrash, 2019, shows that while Democrats are *less* likely than Republicans to (1) own a gun for protection and (2) have a loaded and accessible weapon in the home, Independents were similar to Republicans on these same outcomes. If Democrats who own guns are less motivated by safety concerns than Republicans, why do Democrats own guns? One possibility is that Democrats *primarily* own guns to enhance their recreational lifestyles. If this is the case, the balance shifts from ominous motivations like fear to the more pleasurable aspects of sporting traditions.

We also noted that, among Democrats, the positive association between gun ownership and happiness is *waning* over time. One potential explanation is that the meaning of guns has changed over time for Democrats. Joslyn and Haider-Markel(2017:430) argue that gun ownership “represents an increasingly important political identity.” For example, their analysis of national survey data show that Democrats are *more* likely than Republicans and Independents to blame the availability of guns for mass shootings. It could be that political polarization surrounding gun violence may be contributing to political convergence with respect to the null association between gun ownership and happiness.

We acknowledge that our analyses are limited in several respects. First and foremost, because our analyses are based on a cross-sectional design, no causal or temporal inferences can be made. The ideal design would follow adults over time to assess changes in gun ownership and happiness, especially immediately before and after the gun purchase. Our second limitation is our measurement of happiness. Although our measure demonstrated construct validity through strong associations with depressive symptoms, other measures of happiness, sleep disturbance, and general health status, single items are generally low in reliability. Our happiness measure is also likely to reflect unmeasured cultural differences in responses to questions about well-being. As a consequence, our analyses may underestimate the association between gun ownership and happiness. We are nevertheless encouraged by the fact that our happiness outcome is predictably associated with a wide range of background variables. Finally, our measure of gun ownership does not distinguish between different types of gun owners (e.g., people

who own guns for protection or recreation). We recognize that the association between gun ownership and happiness could depend on ownership type. As noted above, guns could promote happiness when they are used to enhance recreational lifestyles.

Conclusion

In this paper, we provided the first empirical study of gun ownership and happiness. Our analyses consistently showed that gun ownership is unrelated to happiness. Our analyses are important because they contribute to our understanding of the epidemiology of happiness. They also indirectly challenge theoretical perspectives and cultural narratives about how guns contribute to feelings of safety, power, and pleasure. More research is needed to replicate our findings using longitudinal data and additional measures of happiness and gun ownership. Future work should also consider alternative conceptual models. Although there are no direct effects of gun ownership on happiness, there could still be indirect effects through, for example, indicators of perceived safety and the sense of control. The association between gun ownership and happiness could also be suppressed (e.g., by exposure to gun-related accidents). There could also be associations between gun ownership and happiness at different levels of analysis (e.g., the state- or city-level). We also know very little about how preexisting personality traits might impact the association between gun ownership and well-being. Research along these lines would provide a more thorough understanding of the link between gun ownership and happiness.

Financial disclosure

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Ethical statement

This study uses de-identified secondary data. Because the data were previously collected and de-identified, it was exempt from human subjects review.

Declaration of competing interest

No conflicts of interest.

CRediT authorship contribution statement

Terrence D. Hill: Conceptualization, Methodology, Formal analysis, Writing - original draft, Writing - review & editing. **Benjamin Dowd-Arrow:** Conceptualization, Writing - original draft, Writing - review & editing. **Andrew P. Davis:** Conceptualization, Writing - original draft, Writing - review & editing. **Amy M. Burdette:** Conceptualization, Writing - original draft, Writing - review & editing.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ssmph.2020.100536>.

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