

An Analysis of the Relationship Between Income, Gender, and Perception of Gun Violence in

One's Local Community

by

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Master of Public Health, California Baptist University, 2019

Thesis Submitted in Partial Fulfillment

of the Requirements for the Degree of

Master of Public Health

California Baptist University

April 2019

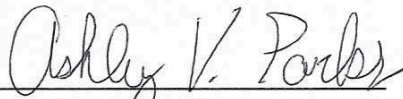
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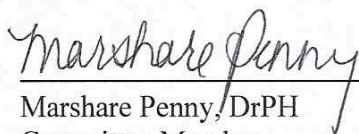
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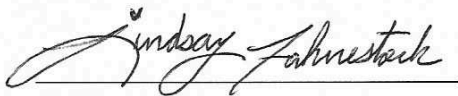
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Abstract

Gun violence has significant impacts on an individual's health and well-being. In 2017, Pew Research Center conducted a national probability-based online survey titled the American Trends Panel (ATP) Wave 25. The survey targeted adults living in households in the United States (Pew Research Center, 2017). This cross-sectional research study utilized the Pew Research Center's American Trends Panel to examine differences in local communities' perceived problem of gun violence between genders and income levels.

In this study, a Pearson Chi-Square was calculated analyzing gender and income level as variables predicting an individual's perception on the degree of the problem of gun violence in one's local community. It was found that perception of local community gun violence did not differ between genders. However, perception of local gun violence did significantly differ among income levels.

Key Words: gun, violence, policy, gender, income

Acknowledgments

First I would like to express my gratitude to my advisor Dr. Ashley Parks for her immense knowledge, support, patience and motivation. I would also like to deeply thank my committee members, Dr. Marshare Penny and Dr. Lindsay Fahnestock, for their thoughtful and insightful comments throughout my thesis project. To my family and friends, I want to thank you for your love, support and continuous motivation. I would not have been able to accomplish this without any of you.

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Review of Literature

Introduction

In the United States, violence and death from firearms increases year after year (Center for Disease Control and Prevention [CDC], 2016). Christoffel (2007) characterizes firearm violence as an endemic in the United States. In 2016, firearm deaths accounted for 38,658 deaths nationally (CDC, 2017). According to the CDC, in 2017 the death rate due to firearms reached a twenty year high with a total death count of 39,773 (CDC, 2019). Many political campaign promises from governors, senators, and presidential candidates prominently focus on crime, gun violence, and prevention of unintentional and intentional injuries (Lemieux, 2015). Lobbyists argue for protecting the Second Amendment, which states that “the right of the people to keep and bear Arms, shall not be infringed.” Others lobby for restricting access to various types of guns available to be sold or owned by the general public (Lemieux, 2015). The issue of gun violence and the severity of the problem are greater than the data; there is importance in an individual’s perception of the degree of gun violence.

Volume of Firearms and Violence

According to the Smalls Arms Survey (Karp, 2018), American civilians own 393 million guns, which is 83% of the US population (United States Census Bureau, 2019). More specifically, there are 64,380,440 million more guns than people. The US leads other countries in the crude rate of firearms in circulation among civilians (Karp, 2018). The US has 120.5 guns per 100 people (Karp, 2018). According to Parker, Horowitz, Igielnik, Oliphant, and Brown (2017), two-thirds of gun owners report owning more than one firearm and three out of ten gun owners report owning five or more firearms. Domestically, guns kill more people than any other weapon (Federal Bureau of Investigation, 2017). The rate of death and injury due to firearms is

higher in the United State than any other industrialized nation (Fleegler, Lee, Monuteaux, Hemenway & Mannis, 2013). Though gun ownership rates are higher in rural areas, homicide rates are disproportionately higher in urban areas, which is attributed to easier accessibility of both illegal and legal guns (Downey, Zun, Burke & Jefferson, 2013).

In the US, 44% of adults report knowing someone who has been shot, either intentionally or accidentally (Parker et al., 2017). Additionally, 23% of US adults report that either they themselves or someone in their family has been victimized by someone with a gun (Parker et al., 2017). Non-fatal and fatal injuries caused by firearms are increasing annually, particularly among youth (Madenci & Weldon, 2013). According to Madenci and Weldon (2013), over the last decade, deaths of children due to firearms increased by 60% and hospitalization of adolescents due to firearms increase by 80%. Additionally, 5.3% of adolescents grade 9-12 reported carrying a gun within the last 30 days, with prevalence higher in males at 8.7% than females at 1.6% (CDC, 2016). Lastly, in 2014 86% of victims ages 10 to 24 were killed with a firearm (CDC, 2016).

Perception of Violence

Lian, Abiero and Kamara (2017) conducted a Gallup poll of adolescences in low-income communities. Lian et al. found a statistically significant relationship between the presence of a gun in the home of an adolescent and the participant's attitude toward general violence. Additionally, male and female participants who reported guns in the home also self-reported a higher prevalence of physical fighting and suspension from school in comparison to those who reported no gun in the home (Lian, Abiero, & Kamara, 2017). Furthermore, female adolescents who reported a gun in the home also reported a lower level of self-worth but higher score towards attitude for violence as compared to females who did not report a gun in the home (Lian

et al., 2017). The research conducted by Lain et al. illustrates the relationship between the presence of a firearm in a home and youth perception and attitude towards violence.

Perception of neighborhood safety is recognized to have a strong association on health (Zuberi, 2018). Additionally, feeling unsafe is related to social isolation, distrust, and decreased personal freedom (Zuberi, 2018). Likewise, feeling safe is related to positive effects on wellness (Farver, Ghosh, & Garcia, 2000). According to Diaz and Whitaker (2013), individuals living in neighborhoods that are perceived to be unsafe or dangerous suffer adverse effects on their physical and mental health. A dangerous neighborhood is characterized by many factors, which include the local drug activity, resident victimization, gun related violence, the presence of disorder, and poor conditions (Zuberi, 2018). Thus, communities with a low-level risk of danger are often considered safe (Zuberi, 2018).

Wilson and Killing (1982) theorized that disorder in communities make them vulnerable to fear and crime, like gun violence. Disorder in the neighborhood or victimization are associated with increased levels of fear (Ross & Jang, 2000). Farver et al. (2002) found children between the ages of 7 and 11 did not feel safe to play outside when living in neighborhoods with higher levels of violence, which illustrates the relationship of violence in the community and the perception of safety. Lastly, individual perception of gun violence is contextual to the community in which the individual lives (Merkowitz & Dyck, 2017). This, along with political affiliation and socioeconomic status, drive the attitudes toward gun control (Merkowitz & Dyck, 2017).

Socioeconomic Status and Firearms

Socioeconomic status shapes the perceptions of one's community safety (Orr et al., 2003). As previously discussed, two-thirds of gun owners report owning more than one firearm

(Parker et al., 2017); however, this statistic is challenging because low-income individuals are less likely to report owning a gun as compared to higher-income individuals (Vacha & McLaughlin, 2004). The US Department of Health and Human Services (2019) indicated that an annual income of \$25,000 for a family of four is considered poverty. Orr et al. (2003) found that moving families from public housing and low socioeconomic communities to new communities where the poverty rate was less than 10%, experienced improvements in their perception of community safety. This was accomplished by offering the families housing vouchers, which allowed them to lease housing in low crime areas (Kling, Ludwig, & Katz, 2005).

During 2000 and 2008 Popkin et al. (2019) found that demolishing public housing by moving families to mixed income housing decreased gun crimes by 70%. According to the CDC (2016), the leading cause of death for African American ages 10 to 24 years old in low-income and urban environments is homicide due to gun violence, and gun violence is the second leading cause of death for Latinos in low-income communities (CDC, 2016). Walker, McLone, Mason, and Sheehan (2016) argue that race, specifically African American and Latino, can be viewed as proxies for low socioeconomic status and suggest public health efforts focus on reducing firearm violence by alleviating poverty.

Gender and Firearms

In 2000, Miller, Azael, and Hemenway found that gun owners are disproportionately white non-Hispanic (87%) and male (76%). Additionally, firearm related violence is more likely to be perpetrated by men (Miller, Azael & Hemenway, 2000; Violence Policy Center [VPC], 2017). Women report fears of being victimized while in their own homes, when living in a community with perceptible gun violence (Graves, 2019). According to Miller et al. (2000) women were less likely to feel safe when their neighbors owned or were thought to own guns.

Women who had been threatened by a gun disproportionately feared easy access to guns (Miller et al., 2000). Additionally, Miller et al. (2000) found women who have experienced gun-related victimization reported increased fear of gun acquisition by others and feeling less safe in their community as compared to men. Additionally, women are 18% more likely than men to attribute prevalence of gun violence to television, movies, and video games (Parker et al., 2017).

Annually 1,200 Americans die as a result of a murder-suicide (VPC). The VPC (2015) reports that of these 1,200 murder-suicides, 332 were carried out by a gun. The majority of the victims (76%) who died from firearms in a murder-suicide were female, while 21% of the victims who died from a firearm during a murder-suicide were male (VPC, 2015).

Lastly, both men and women reported that the top contributor to gun violence is the access to illegal guns (Parker, Horowitz, Igielnik, Oliphant & Brown, 2017). A telephone survey found 66% of women to be supportive of stricter and stronger gun laws, whereas 45% of men who responded to the same survey supported stronger gun laws (Miller et al., 2000).

Conclusion

Perceptions of gun violence in a local community have significant public health implications (Zuberi, 2018). Increased perception of violence in one's community leads to higher levels of stress, which increases an individual's cortisol levels, especially in African American women (Johnson, Shestov & Saadatmand, 2017). These increased cortisol levels impact individuals' sleep, insulin regulation, and cardiovascular health (Johnson et al., 2017).

Perception of safety is also impacted by social connections, like violence and victimization in the local community (Zuberi, 2018). Fear of victimization, knowing someone who has been victimized, or perception of the prevalence of crime in a community impacts an individual's perception on neighborhood safety, especially in low-income communities (Pettit, 2004).

Exposure to gun violence and firearms impacts one's attitude toward violence as well as levels of self-worth (Lian, Abiero, & Kamara, 2017). Historically gun control legislation has been introduced following a major or mass tragedy, making it a reactive process versus a proactive process (Barry, Webster, Sone, Crifasi, Vernick & McGinty, 2018). Attitudes and perceptions on gun violence and gun control policies are influenced by gender and socioeconomic status (Barry et al., 2018)

This study will examine gender differences on perception of gun violence in one's local community. Additionally, it will also study how income level differences affect perceptions of gun violence in one's local community. Understanding the differences in gender and income on perception of gun violence is valuable for the development of gun control policies and legislation (Barry et al., 2018).

Purpose of the Study

The purpose of this study was to examine differences on perception of gun violence in one's local community. This study will further explore differences in that perception across gender and income.

Research Questions

The aim of this study is to answer the following research questions:

1. Does perception of gun violence in a local community differ by gender?
2. Does perception of gun violence in the local community differ by income level?

Hypothesis

The hypothesis for the first research question is there is a statistically significant difference in perception of gun violence in one's local community based on gender. For the

second research question, the hypothesis is there is a statistically significant difference in perception of gun violence in one's local community based on income levels.

Method

Design

This study utilized data from The American Trends Panel (ATP) Wave 25 which is a cross-sectional, nationally representative, probability-based survey conducted by the Pew Research Center (Schalk, Segura, Ackerman, Nishimura, Williams, & Gaalswyk, 2017). In 2014, the Pew Research Center created a panel that randomly selected adults in the United States to participate in web-based self-administered surveys (Pew Research Center, 2019). The survey was conducted in 2014, 2015, 2017, and 2018, during which a total of 19,718 adults were surveyed (Pew Research Center, 2019).

Procedures

The ATP Wave 25 is conducted annually, multiple times a year with varying frequencies and topics. The ATP Wave 25 survey was available in both English and Spanish (Pew Research Center, 2018). The survey is completely voluntary and confidential; the dataset received from the Pew Research Center did not include any identifiable participant information. Access to the dataset was granted through the Pew Research Center by creating an account and is protected with a password. The ATP Wave 25 was conducted March 13-27, 2017, during when 4,151 participants were surveyed (Pew Research Center, 2018). The ATP Wave 25 is a voluntary random sample survey of adults over the age of 18 years living in United States households (Pew Research Center, 2018).

Data collection for the ATP Wave 25 was performed via a web-based survey (Schalk et al., 2017). For participants who did not have access to the Internet, tablets and wireless Internet connection was provided. Reminders to complete the ATP Wave 25 survey were sent to participants via postcard, email, and push notifications between March 13-24, 2017; the survey

closed March 27, 2017 (Schalk et al., 2017). The ATP participants who completed the Wave 25 survey in Spanish, along with those who received a tablet, were offered a \$20 post-paid incentive (Schalk et al., 2017). Additionally, a \$10 post-paid incentive was offered to participants who completed the survey in English and reported being Hispanic, African American, not registered to vote, between the ages of 18 and 29, and/or had a high school education or less (Schalk et al., 2017). The post-paid incentives were offered to respondents based on their form of preference: check or Amazon.com gift card (Schalk et al., 2017). The goal and design of these incentives was to increase participation among these groups, who traditionally have the propensity of low survey response (Schalk et al., 2017).

Participants

Participants in the ATP Wave 25 were recruited from an overlapping landline and random dial surveys conducted by the Pew Research Center (Schalk et al., 2017). Following the Pew Research landline and random dial surveys, the participants were asked if they were interested in participating in future surveys (Schalk et al., 2017).

The participants were non-institutionalized adults living in the United States (Schalk et al., 2017). A total of 4,151 participants were available from the ATP Wave 25 dataset. The sample size required to answer the research questions was calculated using G*Power Software Version 3.1.9.3. An alpha level of 0.05, power of 80%, and a medium effect size were used to determine a minimal sample size of 143. To ensure a Type II error was avoided, a random sample of 10% from the ATP Wave 25 dataset was selected. This resulted in a random sample size of 432.

Independent Variables and Dependent Variables

The independent variable for the first research question is gender. Gender was measured as “male” or “female.” The independent variable for the second research question is income. Income is measured by the following survey question, “What is your annual income?” The response options were: “less than \$30,000,” “\$30,000-74,999,” or “greater than \$75,000.” According to the United States Department Health and Human Services (HHS) (2019), a low income for a family of four is \$25,750 annually. Utilizing this data from HSS the income categories were collapsed to create two categories. The first category was “less than \$30,000” and the second category was “greater than \$30,000,” which included the two previous categories “\$30,000-74,999” and “greater than \$75,000.”

The dependent variable for the first and second research questions is the participants’ perception of gun violence in their local communities. This dependent variable is measured by the following question: “How big of a problem do you think gun violence is in your local community?” The response options for this question were: “A very big problem,” “A moderately big problem,” “A small problem,” or “Not a problem at all.” These responses were also collapsed into two categories: “Not a problem at all to a small problem” and “A moderately big problem to a very big problem.”

Data Analysis

Data in this study was analyzed using the IBM Statistical Package for Social Sciences (SPSS) software, version 26. A Pearson Chi-Square Test of Independence was used to analyze participants’ responses to gender “male” and “female” and “how big of a problem do you think gun violence is in your local community?”. According, to University of California, Los Angeles

Institute for Digital Research and Education (2019), a Pearson Chi-Square Test of Independence is the most appropriate statistical procedure to analyze categorical data.

For the second research question, a Pearson Chi-Square Test of Independence was computed. This analyzed the participants' responses to "What is your annual income?" and "How big of a problem do you think gun violence is in your local community?". Additionally, a Risk Analysis was computed to obtain the Odds Ratio (OR) with Confidence Interval (CI).

Research Ethics

On April 22, 2019, this study was reviewed and approved by the Institutional Review Board at California Baptist University, located at 8432 Magnolia Ave, Riverside, CA 92504.

Results

The total numbers of participants in this study was 432. Table 1 illustrates the demographics details of the sample (see Appendix A). The majority of participants (77.8%) identified as white non-Hispanic. The next largest majority was Hispanic at 8.1% followed by Black non-Hispanic at 5.79% of the sample. Female participants accounted for 51.51% of the sample. One participant did not answer the gender question and was removed from analysis. Age groups for this sample were: 18-29 (13%), 30-49 (30%), 50-64 (31%), 65+ (24%). Additionally, 82.01% of the sample reported an annual income greater than \$30,000 while 18% reported an annual income less than \$30,000.

Gender and Perception of Gun Violence

A Pearson Chi-Square Test of Independence was performed to examine the first research question “*Does perception of gun violence in the local community differ between gender categories?*”. The results of this analysis revealed that there is no significant difference in the degree of the perception of the problem of gun violence in local communities between genders ($X^2(1) = 1.88, p = 0.170$).

As seen in Table 2, 57.66% of female participants indicated gun violence in their local community to be “not at all to a small problem” (see Appendix A). In comparison, 64.11% of male participants indicated gun violence to be “not at all to a small problem” in their local community. Additionally, 42.34% of female respondents indicated gun violence in their local community to be “a moderate to very big problem,” while 35.89% of male participants indicated gun violence in their local to be “a moderate to very big problem.”

Income and Perception of Gun Violence

To answer the second research question, “*Does perception of gun violence in the local community differ across income level?*”, a Pearson Chi-Square Test of Independence was performed. It was hypothesized that the perception of gun violence in one’s local community is statistically significant across income levels. As seen in Table 3, there is a statistically significant difference in perception of gun violence in the local community by income ($\chi^2 (1) = 7.60, p = .006$) (see Appendix A).

As seen in Table 3, 64.37% of participants who reported an annual income greater than \$30,000 indicated gun violence in their local communities to be “not at all to a small problem.” In comparison, 47.37 % of participants who reported an annual income less than \$30,000 indicated gun violence in their local communities to be “not at all to a small problem.” Additionally, 35.63% of participants with an annual income level greater than \$30,000 indicated gun violence in their local community to be “a moderate to very big problem.” The majority of participants (52.62%) who reported an annual income less than \$30,000 annually indicated gun violence to be “a moderately to very big problem” in their local community. Additionally, a Risk Analysis was computed which found individuals making less than \$30,000 annually are two times more likely to perceive gun violence in their local community to be “a moderate to very big problem.”

Discussion

Summary of Major Findings

In the United States, about four million new guns enter the market annually (Goldberg, 2012). Gun control continues to take center stage in debates between policymakers in the US. However, there is a bipartisan agreement that guns should remain out of the hands of those who have, can be, or will be inclined to use the guns to do harm to themselves or others (Sen & Panjamapirom, 2012). This study examined if there are differences across genders on perception of gun violence in one's local community. Additionally, this study examined differences of perception of gun violence in one's local community across income levels.

This study did not find a significant difference between genders on perception of gun violence in one's local community. This is inconsistent with So, Gaylord-Harden, Voisin and Scott (2018), who found differences among genders and perceived exposure to community violence. One can gather from the results of this study that women do not perceive gun violence to be a greater issue in local communities as compared to men.

This study also found a significant difference in the perception of gun violence in one's local community across income levels. This study showed individuals with a higher socioeconomic status usually perceived gun violence to be not a problem at all in their local community. Additionally, this study found that individuals who report an income less than \$30,000 annually are two times more likely to perceive gun violence to be a moderately big problem in their local community. This is consistent with Orr et al. (2003) who found individuals moving from neighborhoods with low socioeconomic status to neighborhoods where the poverty rate was less than 10% perceived the community to have decreased crime and increased safety. Additionally, Santilli et al. (2017) found that individuals with an annual income of less than

\$30,000 were 76% more likely to report hearing a gun shot more than once than those who report an annual income \$50,000 or more. Additionally, Santilli et al. also found that 33% of individuals who reported an income less than \$30,000 also reported being present when someone was shot.

Public Health Implications

The public health implications of this study shows there are differences in perception of gun violence in one's local communities across income levels. The findings of this study support previous research, which have found socioeconomic status influences an individual's perception on local community safety and security. Additionally, this information can be used by policymakers to influence and utilize the perceptions of these individuals during the creation of gun laws.

Policy implications for this study are various. According to Popkin et al. (2013), decreasing public housing and using a mix-income model community has a significant effect on the rate of gun violence, decreasing it by 70%. This current study shows individuals making less than \$30,000 annual consider gun violence to be a moderately to very big problem in their local communities. Utilizing this information, local governments can develop and implement policy changes to mandate new construction builders, real estate firms, and property management companies to employ a mixed-income housing model. The local government can also supply incentives through expedited construction permits, a slightly lower taxation on building materials, or slightly lower income tax on participating organizations.

Additional policy implications could be firearm buyback programs. Multiple cities throughout the US have implemented firearm buyback programs where vouchers for food, transportation, or housing are provided. The budget for these vouchers is provided through

various means: city budget, seized money from illegal drug activity, or state grant programs (Craver, 2014).

Lastly, it is important to provide education on gun safety to low-income and rural areas. Perhaps mandating gun owners and the most at-risk populations to complete a free safety program, firearm violence prevention, or education program prior to the purchase of a firearm may reduce unnecessary gun violence. Unfortunately, this would not account for illegally obtained firearms. However, this could be address by incorporating firearms violence prevention and educational programs in schools, elementary through twelfth grade, since children and young adults are the most at-risk for gun violence.

Study Limitations

This study has various limitations. First, a cross-sectional research design has its weaknesses (Salazar, Crosby, & DiClemente, 2015). The cross-sectional design is limited in establishing cause and effect (Salazar et al., 2015). Though cross-sectional design is frequently used due to the efficiency, cost-effectiveness, and low to no attrition rates, this type of study design is unable to establish directionality (Salazar et al., 2015).

An additional limitation is the participants' local communities were not identified. A geographical location, like a zip code or description of the participant's local community would provide additional information on perceptions of gun violence in various types of communities. For example, future researchers can examine the data of perceptions of gun violence in urban communities versus suburban or rural areas. According to the CDC (2107), 60% of homicides due to firearms occur in metropolitan areas.

Finally, though this study was aligned with the current trends in perception of gun violence; it failed to represent the population most effected by gun violence. This study did not

have a good representation of each race-ethnicity with the majority of the ethnicity being white non-Hispanic (77.8%), nor did it survey the most affected age group, individuals 10-25 years old. This makes the results of the study difficult to generalize back to the population most at-risk. Additionally, collapsing income into two groups made it difficult to observe difference in the true poverty level. Furthermore, collapsing the response categories for “How big of a problem do you think gun violence is in your local community?” did not allow for representation of the degree in which the participants perceived the problem gun violence to be; for example, “not a problem at all” versus “a small problem.”

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Appendix A: Tables

Table 1

Demographic Table for American Trends Panel Wave 25
n = 432

		<i>n</i>	%
Gender	Male	209	48.38
	Female	223	51.62
Income	>\$30,000	348	82.01
	<\$30,000	76	18
Race-Ethnicity	White non-Hispanic	336	77.78
	Black non-Hispanic	25	5.79
	Hispanic	35	8.1
	Other	30	6.94
	Don't Know/ Refuse	6	1.39
Education	College Graduate +	212	49.07
	Some College	149	34.49
	High School or less	71	16.44
Age Groups	18-29	60	13.92
	40-49	131	30.39
	50-64	136	31.55
	>65	104	24.12

Note. *n* = sample size, % = percentage. Data Source: 2017 American Trends Panel Wave 25.

Table 2

Perception of Gun Violence in the Local Community by Gender

How big of a problem do you think gun violence is in your local community?			
	“A moderately to big problem” <i>n (%)</i>	“A small problem to Not a problem at all” <i>n (%)</i>	<i>n (%)</i>
Male	75 (64.11)	134 (35.89)	209 (48.49)
Female	94 (57.66)	128 (42.34)	222 (51.51)
<i>n</i>	169 (39.21)	262 (60.79)	431

$\chi^2 (1) = 1.883, p = .170$

Note. Data Source: 2017 American Trends Panel Wave 25.

Table 3

Perception of Gun Violence in the Local Community by Income

How big of a problem do you think gun violence is in your local community?				
	“A moderately to big problem”	“A small problem to Not a problem at all”		Adjusted OR
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	95% CI
>\$30,000	124 (35.63)	224 (64.37)	348 (82.08)	.498
<\$30,000	40 (52.62)	36 (47.37)	76 (17.92)	(.302, .822)
<i>n</i>	164 (38.68)	260 (61.32)	424	

$\chi^2(1) = 7.60, p = .006$

Note. *n* = Sample Size; OR = Odds Ratio; CI = Confidence Interval. Chi-Square Test of Independence to determine relationship between Income and Perception of Gun Violence in One’s Local Community. Data Source: 2017 American Trends Panel Wave 25.

Appendix B: IRB Approval

RE: IRB Review

IRB No.: 093-1819-EXM

Project: The Effects of Gender and Income on Perception of Firearm Violence

Date Complete Application Received: 4/11

Principle Investigator: Courtney Hinrichs

Faculty Advisor: Ashley Parks

College/Department: CHS

IRB Determination: Exempt Application Approved – Student research using de-identified secondary data; public access by permission and account creation from Pew Research (The American Trends Panel). Data analysis may begin, in accordance with the final submitted documents and approved protocol.

Future Correspondence: All future correspondence about this project must include all PIs, Co-PIs, and Faculty Advisors (as relevant) and reference the assigned IRB number.

Approval Information: In the case of an unforeseen risk/adverse experience, please report this to the IRB immediately using the appropriate forms. Requests for a change to protocol must be submitted for IRB review and approved prior to implementation. At the completion of the project, you are to submit a Research Closure Form.

Researcher Responsibilities: The researcher is responsible for ensuring that the research is conducted in the manner outlined in the IRB application and that all reporting requirements are met. Please refer to this approval and to the IRB handbook for more information.

Date: April 22, 2019