5-2020

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ROLE OF GUNS IN CHILD MORTALITY

A Thesis Submitted

in Partial Fulfillment

of the Requirements for the Designation

University Honors with Distinction

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May 4, 2020
This Study by: Alexandria Bibbs

Entitled: The Role of Guns in Child Mortality

has been approved as meeting the thesis or project requirement for the Designation University Honors with Distinction or University Honors

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Purpose

Gun ownership is a topic which sparks controversy, regardless of what side a person is on. It is something that tends to elicit strong emotion from the public and is a prominent part of American society. But, with freedoms come responsibilities and that leaves room for risk. High levels of gun access and availability have resulted in a high level of gun-related incidents in the United States above other countries around the globe. Unfortunately, young children are a population included in the victims of gun mortality. This thesis analyzes all recorded gun-related deaths of children ages 0-11 years old from January 1, 2017 through July 31, 2018 (not including mass shootings). The data is organized by manner of death (accidental, homicide, suicide) and the statistics are given to compare each manner to one another. The purpose of this study is to fill in informational gaps of prior studies which lack in this specific age group and to formulate possible ways to lower the rate of mortality of this age group based on the findings. Prior research being done on this topic tends to take into account all data from ages 0-20 and incorporating ages 12-20 skews the data because adolescents have increased exposure to external factors outside of the home. According to the references in discussion, an overwhelming number of accidental and filicidal deaths stem from mishandling and improper storage of guns as well as insufficient background checks and safety training for gun owners among children aged 0-11. In a time when gun control is a point of contention, it is important to have accurate data to present so that preventative measures may adequately address the issues.
Literature Review

Gun related mortality and safety implementations have been a subject of concern for decades and have spawned many research studies. Research done on adolescents is often generalized too broadly from ages 0 to 20 to adequately address smaller age ranges. Ages 0 to 11 typically remain in contact with primary circles of people: parents, grandparents, siblings, caregivers. They lack independence so their exposure to elements outside of the home is limited. Once children near their teen years, 12-14, there is an influx of factors that affect the rate of gun mortality. Children gain more independence and are allowed more freedoms. They have a decrease in supervision and an increase in time spent with secondary influences, such as peers. The purpose of my data collection is to compare my findings on manner of death, specific to the designated age group, to that of prior studies which have examined adolescents as a whole. To do this, I reviewed studies conducted in recent years which were applicable to my research topic. The studies discussed investigate rates of mortality among children, manners of death among children, and success of possible preventative measure.

Trends Among Mortality Rates

Johns Hopkins internal medical intern Ashish Thakrar, Drexel University medical student Alexandra Forrest, Children’s Hospital of Philadelphia biostatistician and professor of pediatrics Mitchell Maltenfort and Christopher Forrest noted that the U.S. has poorer child health outcomes than other wealthy nations, yet spends more on child healthcare, per capita. To better understand this, they used publicly available data to conduct a trend analysis from 1961-2010, examining patterns of child mortality. They conducted a cross-sectional analysis of mortality rates among
children ages 0-19 residing in the United States or residing in one of nineteen other developed nations. One result indicated that from 2001 to 2010, an individual between 15 and 19 years old was eighty-two times more likely to die from gun homicide in the US than any of the other wealthy nations (Thakrar et al, 2018). This is an important statistic because the risk of death among this group due to homicide could be a major outlier I am trying to identify in my own analysis. Many previous studies on gun violence in relation to child mortality have included this age group and this exemplifies why it is important to examine smaller age ranges instead of adolescents as a whole.

A common finding in my own data collection was the overwhelming number of child deaths caused by mishandling of a gun or, in other words, unintentional firearm deaths. For children of this age group, in terms of gun-related death or injury, there have been many events in which the shooting of the child is because said child, or another child in their vicinity, gained access to a gun that was not properly stored away. Unintentional gun deaths are important to examine because if there is a recurring factor in these deaths, that is something which needs to be addressed when discussing possible preventative measures.

Many states have passed Child Access Prevention Laws (CAP Laws) to try and prevent accidental deaths. CAP laws hold gun owners responsible if a child is able to gain access to their gun which has been improperly stored or has not been secured. In past years, studies of this law have only looked at incidents in which the child died from their injuries. A 2013 study by Desimone, Markowitz, and Xu claimed that most incidents do not end in death and, therefore, they should examine gun related injuries, as well. They used annual hospital discharge data to investigate whether CAP laws were associated with a decrease in nonfatal gun injuries. Their results indicate that CAP laws are associated with reductions in nonfatal gun injuries among
children under age 18. The data they examined spanned from 1988 through 2003 across 11 states. The gun injury data came from the Agency for Healthcare Research and Quality’s Nationwide Inpatient Sample (NIS). Their findings showed that CAP laws are associated with a statistically significant 5% reduction in non-self-inflicted gun injuries (assaults, unintentional, and of undetermined). This meant a reduction of 11 total injuries per year across the sample of 11 states.

An additional study by Harvard professor of Health Policy David Hemenway and University of Vermont economics professor Sara Solnick, examining the correlation between children and unintentional firearm deaths in 2015. They used data from the National Violent Death Reporting System across 16 states from 2005-2012. They separated the children into five age groups: 0-1; 2-4; 5-10; 11-12; and 13-14. They estimated that there were about 110 unintentional firearm deaths of children 0-14 per year during that eight-year time period. In their findings, two-thirds of all shootings were other-inflicted and the overwhelming majority of these were friends of the victim or a sibling. It was rare, in their data, for an adult to be shot by a child or the child to be shot by an adult. Their conclusion showed an overwhelming amount of unintentional firearm deaths are caused by children gaining access to guns and either shooting themselves or shooting other children around them (Hemenway & Solick, 2015).

*Preventative Measures*

There is a recurring theme among guns and child mortality: accessibility. Whether the shootings were intentional or unintentional, findings suggest that the overwhelming majority of these injuries and deaths are children shooting themselves or other children. Whatever the intent
behind the shootings, children are gaining access to guns that they should not have access to. An important part of my thesis is discussing possible implementations of safety measures that might decrease the risk of mortality of children. In order to do this, I reviewed studies that examined the correlation between different safety implementations and gun related incidents to find what has been attempted in the past and if it was statistically significant in reducing mortality.

A common factor identified in the correlation between gun violence and child mortality is the practice of gun storage and safety. Crifasi, Doucette, McGinty, Webster, Daniel, and Barry (2018) examined gun storage practices and factors influencing those practices among gun owners. They conducted a nationally representative online survey of US gun owners with a sample size of 1,444 participants in 2016 to assess practices and attitudes surrounding gun storage, factors influencing owners’ storage practices, and influence groups that might effectively communicate the importance of safe storage. Forty-six percent of gun owners reported safely storing all of their guns; the presence of children in the home positively contributed to this. There were also reports that their storage decisions were influenced by participating in a gun safety course. The most respected groups identified as influencers of gun safety were law enforcement, hunting or outdoors groups, active-duty military, and the National Rifle Association (NRA). The study was conducted through the internet from an address-based sampling which incorporates 97% of US households. Survey participation was encouraged through small cash rewards or gifts and three reminders were sent in a two-week span for those who did not respond. They designed a survey with 38 questions about gun storage. The questions asked about the location of the guns in the home, how they stored their guns, the storage of their ammunition, what factors influenced their storage decisions and which factors were most important in their decisions. Very few gun owners reported storing all or some of their guns on
their person (12%) or in their car (11%) when they are in the home. In terms of storage containers, 24% reported storing all of their guns in an unlocked location in the home and 22% reported storing all their guns in a gun safe or cabinet while an additional 6% reported storing all their guns in a locked gun case. Forty-four percent reported storing all their guns fully assembled but unloaded while 71% stored their ammunition in a gun safe or other locked location. An additional 9% stored their ammunition in an unlocked location but physically separate from the gun. The most common factors respondents reported as influences to their gun storage were concerns about home defense (43%), a gun safety training course (35%), family discussions (30%), and gun safety training from a family member (27%). Thirty percent of respondents identified concerns about home defense as most strongly influencing their gun storage practices (Crifasi et al., 2018).

Aside from proper gun storage, another preventative measure that has been studied is the use of safety devices added to the guns themselves. Vernick, O'Brien, Hepburn, Johnson, Webster, and Hargarten (2003) conducted a study to determine what proportion of unintentional and undetermined firearm related deaths within a given timespan would have been preventable through the use of three suggested safety devices: personalization devices which only allow the proper owner to use it, loaded chamber indicators to tell the user when the gun contains ammunition, and magazine safeties which prevent the gun from firing if the magazine has been removed. All of the information used in their study was collected from the office of the chief medical examiner of Maryland and the Wisconsin Firearm Injury Reporting System from 1991-1998. The data contained information about the victim, shooter, weapon, and the circumstances of the event. The deaths were then categorized into preventable, possibly preventable, and not preventable by each of the three possible safety devices. In the time frame they studied, there
were a total of 117 firearm related deaths. Thirty-seven percent of these deaths were classified as preventable had there been a personalized gun. Twenty percent were classified as preventable by LCI and 4% were determined preventable had there been a magazine safety. Their final conclusion was that 44% of these deaths could have been prevented had there been at least one of these preventions in place. They also found that deaths involving children 0-17 were more likely to be prevented and they projected that 442 deaths might have been prevented in the year 2000 had guns been equipped with these safety features (Vernick et al., 2003). By adding personalization devices, loaded chamber indicators, and magazine safeties to firearms, a statistically significant number of mortalities would have been prevented and could be prevented in the future.

Reich and Behrman (2002) published a journal analyzing gun violence in relation to children and youth before providing their own recommendations on what should be done. A main purpose of my thesis is to provide possible recommendations to lower the death rate of children, so reading prior suggestions made provided more insight into what has been said as well as providing further ideas of my own. One important point made is guns are only made more lethal by how easily available they are. As my research will show, more than half of the deaths in an 18-month period were accidental, and a majority of those deaths were children gaining access to a gun. Not only is it relatively simple for adults and youth to gain access to a gun, but I would further this argument by pointing out that children are clearly having too much access to firearms based on unsafe practices of adults in their environment. As with most research in this area, their data analyzes ages 0-20, including all that they would consider to be children and youth. In their findings, 58% of firearm deaths for those under 20 in 1998 were homicides, and 33% were suicides while about 9% were accidental. This greatly differs from the
data in the current study which is partially due to environmental circumstances of 1998 versus 2017-2018, but a majority of this difference is explained by the inclusion of adolescents in their data. Policymakers, along with health experts and educators, should evaluate existing approaches and add onto them to try and encourage stronger parental monitoring of children’s exposure to guns as well as safe storage of guns in the home. A second recommendation was Congress extending the jurisdiction of the Consumer Product Safety Commission to regulate guns as a consumer product and to establish regulations requiring product safety features on guns. State governments would be recommended to extend a similar authority to their own consumer product safety agencies (Reich & Behrman, 2002).

Monuteaux, Azrael, and Miller (2019) published an article examining the relationship between household firearm storage and firearm suicide and unintentional deaths among US youths. Their research question was “How many suicide and unintentional firearm deaths among US residents 0-19 could be prevented by a modest increase in safe household firearm storage?” They performed a modeling study using Monte Carlo simulation of youth firearm suicide and unintentional firearm mortality in 2015. Monte Carlo simulation is a technique utilized to understand the possible impact of risk and uncertainty in a given model; it helps to better visualize the risk of decision. Results of this study showed that 6%-32% of deaths were estimated to be preventable depending on the probability of owners being motivated for safe storage. They concluded that relatively modest uptake of straightforward safe storage recommendation, such as locking away all firearms, would result in meaningful reductions in deaths (Monuteaux et al., 2019).

Gun mortality of adolescents is not an untouched topic; it is something that has been called into question for years in an attempt to decrease the mortality rate. The intention of the
current study is to pull apart prior research and apply it to a specific population; children 0-11. Prior research shows accidental deaths are more prominent in younger children than in older adolescents where homicide and suicide are seen at higher rates. The provided studies also repeatedly demonstrated the statistically significant impact preventative measures could have made on the rate of mortality. These factors need to be addressed directly to better serve this younger population and prevent future deaths.

*Research Question(s) to Be Answered*

The first question to be addressed is what is the most common manner of death of children ages 0 to 11 in circumstances where death is caused by a gun? And second, as a nation, what procedures might be implemented or better enforced in an attempt to lower the mortality rates of children of this age group? Having data that shows the most common circumstances and the most common manner of gun death will allow future research to use that information to target patterned mistakes or behaviors that are leading to these deaths and to have preventative measures in place to counteract them.

*Methodology*

My first step was recognizing the research question I wanted to examine. In my Guns and Crimes criminology course, we spent a substantial amount of time discussing violence related to guns. Each day, we would come into class and there would be a new story about a young child who had died or been devastatingly injured. Prior to this class, many of the stories I’d heard
about when it came to children were mass shootings or murder-suicides by parents. It came to my attention that many of the cases often most publicized by the media, the ones we see every once in a while, are only a tiny fraction of what is actually occurring on a consistent basis. Daily shootings of children aren’t always due to some violent outrage of an unstable individual. I came to realize that many of these deaths were not cause by malicious intent, but tragic mistakes. Media often presents horror stories on adolescents, but young children are not something commonly shown and I wanted to delve further into the topic.

Because I could not conduct an experiment given the heinous nature of this research, my research needed to come from data already collected on naturally occurring events that were reported. My next step to conduct my research was to find a reliable source containing the data specific to what I was looking for and I was able to find one with the help of my thesis advisor, Dr. Joe Gorton. The data I examined comes from gunviolencearchive.org, an archive dedicated to collecting data on any and all events dealing with gun violence in the US. They categorize this data by year, age range (0-11, teen, adult) and by a variety of circumstances (mass shootings, officer, self-defense, etc.). This data is collected and validated from about 6,500 different sources every day to ensure that the data is accurate and every single event recorded has a list of news sources which reported on each event as well as a general incident report stating information on the victims, their condition, and the perpetrator.

The next step was my personal data collection. I determined the specific data I wanted to examine and chose a time frame that was long enough to give me an adequate amount of incidents to report on. My time period was January 1, 2017 through July 31, 2018 from the category: children ages 0 to 11 years old. This category of data includes instances when children died as well as were injured or otherwise involved but I only examined circumstances in which
the child died. I created a spreadsheet with columns for the information I wanted to know about each case: date of the incident, street address, city, state, the name of the child (first, middle, last, possible nicknames), the age of the child, and the circumstances of the child’s death. I collected information on 332 deaths in this 18-month period.

The next step was reading prior studies done on the subject so I could have a better grasp on what has been done before, what I believe is missing, how my findings might possibly compare, and to discover any new ideas on the subject that I had not yet thought about. In this section, I found a variety of academic journals and publications which examined similar data to what I am researching. I went into my findings seeking out two types of articles. First, I wanted to find articles discussing prior studies done on the correlation between child death and gun usage. My purpose for this was to see how other researchers have collected their data, how frequently these instances occurred, and what they believe to be the main causes behind these deaths or what their findings might suggest. Besides wanting to see what information they found, I also wanted to discover what types of information were missing or what was being overlooked. I discovered “child” research encompassed all adolescents, usually from 0-20. Around age 12, a child’s environment changes as they are allowed more liberties and exposed to more secondary social groups, alongside biological and cognitive changes. I hypothesized inclusion of age 12-20 would skew data findings. The second type of research I wanted to focus on was preventative measures. I wanted to see what kinds of measures have been implemented in the past to try and lower mortality rates, the success rate of these measures, and to know what has yet to be done. The point of this part of the research was to answer my second research question: how might we lower mortality rates for children age 0 to 11 years?
The next step was organization of data. I sorted through the data to divide the events by the manner of death (accidental, homicide, suicide). Within those broad categories, I then further divided each category. For accidental, the information was divided into accidental self-shooting, accidental shooting by other (adult, child, stranger). For homicide, the data was divided into murder or murder-suicide by mother, murder or murder-suicide by father, murder or murder-suicide by parent’s significant other, murder or murder-suicide by both parents, and murder or murder-suicide by non-parental figure. Suicide, I decided to include only intentional suicides and to keep accidental self Shootings in the category of ‘accidental’. Once I subcategorized all of my data, I did a comparison between each category to determine what proportion of the 332 deaths each category covered.

My next step was to compare my research to that of my literature review. I wanted to take into account the prior research and see how mine compared. I found where the data was similar and where it differed and whether or not the differences in data could be explained. I did find that most of the differences between my data and prior research seemed to be due to the difference in age range examined. My final step was to synthesize all of the information from both my research and research of others, to formulate a conclusion on the data shown, and to then use that information to propose possible preventative measures that I believe would help lower the rates of mortality for the age group in question.

Results

The intent of this research is to provide more information surrounding the mortality rates of children. I expect to find that a large proportion of these deaths are not due to that of school
shootings or murders by mentally unstable individuals but are often self-inflicted accidents by the child or other-inflicted by another child because of negligent supervision and improper gun storage. I believe an overwhelming amount of deaths will be due to accidental shootings. This will put into question the types of regulations we have surrounding gun ownership and the amount of proper gun care expected from individuals. I expect this to show that we need to enforce mandatory gun training and safety precautions when it comes to the proper storage and use of guns. I hypothesize that mandated safety training, requirements for proof of storage, and safety features added to guns would dramatically decrease the mortality rates of children.

**Final Results**

Between January 1 of 2017 and July 31 of 2018, 332 children between 0 and 11 years were shot to death. Of those 332 children, 181 (54.52%) deaths were considered accidental, and 149 (44.88%) were considered intentional homicides while 2 (.6%) we considered intentional suicides. Accidental deaths were divided into self-shootings (firsthand shootings by the child themselves) and other accidental (shootings unintentionally caused by other children, adults, strangers). Self-shootings were 70 of the 181 accidental deaths (38.67%) and other types of accidental deaths were 111 of the 181 deaths (61.33%). Thirty-six percent of the other accidental deaths were a result of other children gaining access to firearms; 22.5% were caused by adults close to the child (parents, other family members, neighbors); and 41.5% were strangers (unintended shootings while harming the parents, bystander in shoot outs or drive-by, etc.). With homicides, 27.52% were caused by the mother in a murder or murder-suicide; 42.3% were caused by the father in a murder or murder-suicide; 1.35% were both parents plotting together in
a murder or murder-suicide; 8.73% were caused by a significant other of the biological parent in a murder or murder-suicide; and 20.1% were by a non-parental figure (often home invasion or mass murder of family).

Given my personal data collection, one important finding is that accidental deaths account for more than half of the deaths among children 0 to 11 years old. A third of those deaths are by the child themselves and two-thirds are caused by someone other than the child. Another important point to be made is that homicide is just under half of the deaths, 79.9% of which are caused by a parent or stepparent.

- **Accidental:** 181/332 (54.52%)
  - Self-shooting: 70/181 (38.67%)
  - Accidental by other child or adult: 111/181 (61.33%)
    - Children other than victim: 40/111 (36%)
    - Adults intimate to the child: 25/111 (22.5%)
    - Stranger or non-intimate adult: 46/111 (41.5%)

- **Homicide:** 149/332 (44.88%)
  - Murder or Murder-Suicide mother: 41/149 (27.52%)
  - Murder or Murder-Suicide father: 63/149 (42.3%)
  - Murder or Murder-Suicide by both parents: 2/149 (1.35%)
  - Murder or Murder-suicide by partner of parent: 13/149 (8.73%)
  - Murder by nonparental figure (other family, strangers, etc.): 30/149 (20.1%)

- **Suicide:** 2/332 (.6%)
Discussion

The purpose of this study was to fill the possible gaps of information prior research might not fulfill. As shown throughout the literature review, most data included children and adolescents, usually ages 0 to 20. My intention was to show that the data is not properly representative of children and adolescents, respectively. If we plan to further our research upon the topic and to prevent future deaths, it is vital that we have a clear picture of the issues we are attempting to resolve. While certain preventative measures might lower the death rate for adolescents and the overall death of those 0 to 20, it might not present the same significance among the younger age group.

Thakrar et al (2018) demonstrated in their trend analysis that individuals 15-19 were drastically more likely to die from gun homicide which is found in their trend analysis from 1961-2010 that US individuals ages 15-19 were eighty-two times more likely to die from gun homicide than any other wealthy nations. This is important because it is a prime example of possible data skewing that could occur when incorporating the older age group into the study. It is this age difference in subjects examined that I believe caused their data to differ from that of the current study.

Hemenway and Solnick (2015) demonstrated in their study that, among age groups similar to that of the current study. They estimated that there were about 110 unintentional firearm deaths of children 0-14 and two-thirds of all shootings were other-inflicted and the overwhelming majority of these were friends of the victim or a sibling. Data of the current study is highly comparable because of 181 unintentional deaths, two-thirds were also other-inflicted and the majority was either another child or a stranger when the child was in the wrong place at
the wrong time. Similarities are shown in that both studies exhibit friends and siblings being the 
perpetrators, signifying that underage individuals are obtaining possession of a firearm that they 
do not own themselves. This is significant because it speaks toward the importance of limiting 
firearm accessibility to underage individuals. It exemplifies the importance of proper storage as 
well as the possible use of safety features on the firearm itself.

Reich and Behrman (2002) found 58% of firearm deaths for those under 20 in 1998 were 
homicides, and 33% were suicides while about 9% were accidental. This greatly differs from my 
personal data. In the current study; 45% of deaths were homicides; .6% were suicides; and 54.5% 
were accidental. These differences in suicides and accidental deaths, specifically, are incredibly 
significant and attest to my hypothesis that inclusion of older age groups greatly affects the data 
collected. Hemenway and Solnick’s (2015) data was the most comparable to mine and they also 
studied the age range closest to mine, which I believe accounts for our similar findings. Reich 
and Behrman (2002), as well as Thakrar et al (2018), had data drastically different from mine 
and this is likely due to their incorporation of adolescents in their research. Those ages 12-20 
have more independence, more social interactions, more awareness of self and are exposed to 
more individuals outside of the home. Their exposure to secondary social groups and their 
lessening of restrictions is likely what leads to an increase in homicide rates along as would their 
engagement in more reckless behaviors such as alcohol consumption. Their awareness of self-
increases the potential for self-incongruity and depression as they age, leading to an increase of 
suicides. And their increased mental capacity and understanding likely leads to a decrease of 
accidental deaths. It is logical that an older age range would have data different to that of 
children.
Parents or parental figures being responsible for 70.9% of homicides among ages 0-11 is something which needs to be addressed. It is unlikely that their suicide or murder of their children is the first example of mental or emotional instability displayed by these individuals. One preventative measure that needs to be in place, nationwide, is a standard of mental health when it comes to purchasing a gun. Often times, individuals are only submitted to a background check if purchasing a gun through a Federal Firearms Licensee but not online, through a gun show, or private sales. There needs to be restrictions on third-party sales that could potentially put a gun in the hands of someone dangerous. Second, being disqualified from buying a gun only occurs if convicted of domestic violence or a crime punishable longer than a year, if given a proper restraining order, or if the person is diagnosed mentally ill. It is important to note that many acts of domestic violence are not reported and many do not always seek treatment for mental health issues. I believe it is necessary for those purchasing guns to have mandated background checks, regardless of where they are purchasing the gun, and even a mental health check, if possible.

As shown, more than half of the deaths in the current study were accidental, and while many were the child being in an unfortunate place at the wrong time, 61% of accidental deaths or one-third of all child deaths were self-inflicted or due to another child gaining access to a gun. Clearly, proper gun storage is vital in prevention of future deaths. Desimone et al (2013) indicated that Child Access Prevention Laws (CAP) are associated with reductions in nonfatal gun injuries among children under age 18. Their results of a 5% reduction in non-self-inflicted injuries demonstrates that holding gun owners legally responsible for negligent ownership of their firearms does hold statistical significance. A preventative measure to put in place is a nationwide CAP law which enforces legal action if an adult is not properly storing a gun where
the child cannot easily access and fire it. Too often, young children gain access to guns that have been stored in a purse, in the console of a car, or left out where they can reach. Enforcing these laws, and promoting knowledge that the laws exist, could help to lessen the likelihood that these occurrences will happen.

Repeatedly throughout the research presented, it is made clear that proper gun storage can make a world of difference to lessen the likelihood of access gained to firearms. Crifasi et al (2018) examined gun storage practices and factors influencing those practices among gun owners. Results showed discussions and demonstrations of gun safety and proper storage made a major impact on the practices of the gun owners included in the study. The most respected groups identified as influencers of gun safety were law enforcement, hunting or outdoors groups, active-duty military, and the National Rifle Association (NRA). Gun safety courses, family discussions, and safety training from a family member were all factors that drastically affected gun storage. Another vital measure that must be put in place is extensive, mandatory safety training for anyone purchasing a gun. This should include proper handling, cleaning, and storage of a gun as well as the dangers of not storing a gun. The harm guns without proper storage cause should be presented and the laws regarding negligence should also be provided to encourage thinking twice before leaving a gun somewhere that it could cause harm. Trusted individuals and agencies such as police officers or NRA representatives should speak to those purchasing a gun before ever allowing them to walk out the door and I believe that having proper storage of guns heavily enforced would dramatically decrease the rates of death.

Proper background and mental health checks should be the first line of defense to try and prevent any dangerous individuals from gaining access to a firearm. The second line of defense should be thorough and proper training from someone with vast knowledge of gun ownership
and use in an attempt to instill proper gun safety in the mind of the person purchasing the gun. Laws enforcing proper gun storage should be another preventative measure to make individuals think twice about leaving their guns somewhere too easily accessed and, if all else fails, product design of a gun may hopefully prevent any unknowing child from harming themselves or others. Vernick, et al (2003) conducted a study which demonstrated personalization devices, loaded chamber indicators, and magazine safeties as significantly impactful means to prevent unintended harm. Their final conclusion was that 44% of these deaths could have been prevented had there been at least one of these preventions in place. All three preventative safety features should be incorporated. Having a magazine safety and an LCI will hopefully lower the risk of individuals “jokingly” waving a gun around or cleaning a gun around others and the gun personalization will prevent curious children from shooting the gun.

Conclusion

Child gun-related mortality is a rampant issue in the United States which needs to be addressed. The U.S. has a high availability of firearms across the nation and individuals are having easy access to them. While studies surrounding correlations between youth and gun violence have been conducted, gun-violence in relation to specifically children have not. In order to adequately focus on and protect this population, there must be a better understanding of the circumstances allowing for these deaths to occur. The purpose of the current study is to bring awareness to the information lacking in the realm of gun mortality research.

There were certain limitations to my research. One being the privacy often surrounding victims who are underage. Getting details of a death when involving young children is not
always very possible. So, when attempting to generalize how many deaths were preventable or when trying to solidify details, there was a lack of some information which might have been of use. Another limitation was trying to compare to prior research. Because this age range is not specifically represented in other research, trying to compare and find patterns was not as tidy as desired, but served an important role in demonstrating the alterations made when encompassing older ages. Another limitation was the size of the data pool. As a single person, collecting data over a lengthy period of time, as was done in the reviewed studies, was not practical. Incorporating a larger set of data would have enriched the information even further. For future research, I would recommend examining data over at least a ten year span to examine how consistent findings are over each year.

There is tragedy in knowing that the deaths of so many young children could have been prevented, that so many more children will likely die until more is done to protect them. But there is a silver-lining in that these deaths are preventable and data will show it. There are measures that can be taken to prevent unstable people from owning a gun that they may someday use to harm or kill innocent children. There are steps that can be taken to restrict these acts of violence, even if laws cannot prevent all of them. Regardless of who is properly or improperly obtaining a gun, we can also prevent many accidental deaths by encouraging safety and proper storage, by implementing small inconveniences to firearm buyers that would prevent many tragedies. My first hypothesis question has been answered. Accidental death is the most common manner of death among children 0 to 11, and homicide is second. As for my second question, preventative measures have been demonstrated, some incorporated, and even more have been suggested and hopefully further research on this topic will encourage more action. This current study is significant because it is bringing attention to a blindspot in past research. Calling
attention to this informational gaps surrounding the risks for young children and exemplifying the problems will allow for future research to more adequately address this group and implement more accurate preventative measures.
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