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Gun Violence Screening in the Adolescent Setting

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Gun Violence Screening in the Adolescent Setting

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University of Kentucky

College of Nursing

Spring 2019

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Dedication

I dedicate this project to Daniel, my husband, my rock, and my biggest supporter. I also wish to dedicate this to the most perfect little humans, Miles, Anna, and Parker.

Acknowledgements

I would like to thank Dr. Dianna Inman for serving as my advisor throughout my time in the DNP program. Her advice and guidance was essential for my success. A special thanks to Karen Butler for being an amazing teacher, but most importantly a compassionate mentor throughout this process. I owe a great deal of thanks to my coworkers in the Adolescent Medicine Clinic for supporting me for the past four years and working with my crazy schedule to make this all possible.

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Gun Violence Screening in the Adolescent Setting

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing
Practice at the University of Kentucky

By:

Amy Burnett

Lexington, Kentucky

Abstract

Objective: The purpose of this project was to implement a routine gun violence screening tool into practice in order to assess the need for this type of screening in the Adolescent Medicine Clinic at the University of Kentucky.

Methods: This study used a quasi-experimental one group posttest design to examine the impact of the implementation of a gun violence screening tool on the proportion of patients screened and the proportion of patients referred for intervention that screen positive.

Results: There were 44 adolescent patients that participated in this study (n=44). Twelve out of 44 participants screened positive, which means they scored a 1 or higher on the screening tool. Of the 27% that screened positive, 10 of the 12 declined referral to meet with a mental health professional. Of the two that agreed to a mental health referral, only 1 kept their scheduled appointment.

Conclusion: Over a quarter of the participants in the study screened positive on the SaFEty screening tool used in this study. This percentage is significant for concern for gun violence in the Adolescent Medicine patient population. Further research is needed in this area, including how to best screen patients, assessing their resistance to mental health referral, and the screening results in various local neighborhoods.

Gun Violence Screening in the Adolescent Setting

Introduction

Gun violence is a pervasive problem in today's society. It is difficult to look at the news without hearing of serious acts of harm toward individuals, with guns most commonly being the weapon of choice. The United States has a disproportionately high problem compared to most other developed countries, but there are growing issues around the globe. This form of violence is very frustrating for all sides involved due to the complexity of the problem. There seem to be many opinions on how to address this significant concern, but no effective solutions have been identified. The rates of gun violence within the adolescent population, ages 10 to 25, are significantly increasing. Without addressing gun violence in the adolescent age group, there will continue to be a disproportionate level of morbidity and mortality in this population and related costs will continue to increase in the U.S. healthcare system.

Background/Literature Review

The Centers for Disease Control and Prevention (CDC, 2017) define youth violence as an individual between the ages of 10-25 using physical force or power to intimidate or injure another individual. Worldwide, an average of 200,000 adolescents die from gun violence each year (WHO, 2016). The United States has disproportionately high rates of youth gun violence compared to most other developed countries, with over 4,300 adolescent deaths and over 500,000 gun related injuries annually (CDC, 2016b). Kentucky has a firearm death rate of 17.5 per 100,000 each year (CDC, 2016a). There are roughly three times the number of non-fatal injuries compared to fatal injuries due to gun violence annually in the U.S., which leads to significant physical, psychological, social, and financial burden to the individuals and families involved (WHO, 2016). In addition to human suffering, youth homicides and assault-related injuries cost the United States about \$18 billion annually (CDC, 2017).

In the U.S., gun violence research has been controversial over the past two decades. In 1996, researchers at the Centers for Disease Control were advised to stop all work on gun related research. This informal ban was thought to be due to the power of the American gun lobbyists and their influence on lawmakers, so all funding was stopped (Frankel, 2017). In 2012, the National Institutes for Health (NIH) were informed by Congress that no government funding be used to support research related to gun control. Since this time, the NIH has focused on research as it relates specifically to violence and not gun control, which would have been in conflict with the previous ban from Congress (Rubin, 2016). Due to the complexities of the gun violence problem, more research is desperately needed to explore various factors surrounding the issue to create better strategies for violence reduction.

One way that health care providers can become involved with this issue is to identify those that are at risk for becoming perpetrators or victims of gun violence. One evidence-based solution to help with this identification is the implementation of a screening tool in routine

practice with the adolescent population. A screening tool is simply one way to ask the questions pertinent to a problem to obtain the desired data. A standardized tool enables providers to obtain much more accurate information and results can be monitored and compared over time (Goldstick et al., 2017). The American Academy of Pediatrics (AAP) recommends routine firearm screenings and education to all patients (AAP, 2009). It has been found that not all providers are comfortable with having these discussions with patients and that the actual screening rates are very low (Roszko, 2016).

When reviewing the research, there were four studies that assessed different gun violence screening tools specifically for the adolescent population (Figure 1). These four studies looked retrospectively at available data to develop screening tools based on pertinent risk factors (Goldstick, et al., 2017; Hayes & Sege, 2003; Sege et al., 1999; Sigel et al. 2011). From each of these studies a screening tool was developed and thought to be beneficial in identifying high risk individuals in the adolescent setting. The screening tools varied from three to fourteen item surveys and showed promise for routine use in identifying those at risk for becoming either victims, perpetrators, or both.

The tool chosen for this project was the SaFETy Score screening tool, which is a gun violence screening tool developed by researchers at the University of Michigan and is geared toward the adolescent population (see Appendix A). The SaFETy Score screening tool was found to be an effective way to identify those at risk for becoming victims or perpetrators of gun violence (Goldstick, et al., 2017). The SaFETy Score screening tool was developed for use in adolescents in the emergency department setting, but it seems applicable for screening adolescents in the primary care setting as well. For example, the tool consists of only four questions and takes only one to two minutes to administer, it is easy to understand, and it covers the various domains of violence (Goldstick et al., 2017). Due to the success of use in the emergency setting, this screening tool will also be beneficial in the primary care setting.

The theoretical framework that was used in the guidance of this project is the Plan-Do-Study-Act (PDSA) model. This framework is used widely throughout the University of Kentucky and is a good framework to use to implement change in the healthcare setting (AHRQ, 2015).

Purpose/Objectives

Implementing a routine youth gun violence screening at the Adolescent Medicine Clinic at the University of Kentucky is relevant to the patient population that is served. Currently, the clinic does not provide regular violence screening and the attitudes regarding the proper way to ask these questions vary greatly among health care providers in this setting. The proposed project was to implement a standardized gun violence screening tool in the Adolescent Medicine Clinic. This will also satisfy the recommendations for routine violence screening by the AAP (AAP, 2009). Implementing a routine gun violence tool will help to identify those at risk,

identify those with significant psychosocial stressors, and identify those that may be at risk becoming victims or perpetrators of gun violence.

The specific objectives were to:

1. Educate all clinic staff and providers on the gun violence screening tool that will be administered to patients within the Adolescent Medicine.
2. Perform gun violence screening on 75% of the adolescents, ages 12 to 25, that were seen in the Adolescent Medicine Clinic.
3. Counsel, provide written material, and schedule 100% of the patients that screen positive on the gun violence screening for an appointment with a therapist during the trial period of November 1, 2018 to December 31, 2018.
4. Evaluate the screening tool's effect on the rate of referral to mental health counseling for those subjects that scored positive on the gun violence screening tool.
5. Evaluate the rate of completion of mental health referrals for those participants that scored positive on the gun violence screening tool.

This project is relevant to the adolescent population served in this clinical setting. By identifying those at high risk, counseling and interventions may be provided early in hopes of improving short and long-term outcomes for the patients that are at high risk. This intervention will give providers a way to engage adolescents in discussions about firearms and gun violence and will facilitate better care in the Adolescent Medicine Clinic.

Methods

Setting

The screening tool implementation project was carried out in the Adolescent Medicine Clinic at the University of Kentucky in Lexington, Kentucky. This clinic falls under the Department of Pediatrics, whose goal is to provide comprehensive and innovative care to all children in the region (Day, 2018). The population primarily served in the Adolescent Medicine Clinic is adolescents ages 10-25 from the central Kentucky area. This is a primary care clinic that serves approximately 4,000 patients each year from both urban and rural areas. Patient care is delivered by four medical doctors and 4 advanced practice providers. Multiple nurses, patient care technicians, therapists, social workers, psychologists, a dietician, and a psychiatrist are all part of the care team that interacts with this patient population.

Sample

The sample for this study consisted of new and established patients seen in the Adolescent Medicine Clinic at the University of Kentucky. Inclusion criteria were all adolescent patients ages 12-25 that present for a new patient appointment, an annual physical exam, or a

follow up visit. Exclusion criteria were patients that were less than 12 or greater than 25 years of age, those presenting for acute visits, and those that had intellectual or developmental disabilities. Also excluded from the study were non-English speaking individuals. Individuals from all ethnic backgrounds were included. A written survey was provided for patient completion (Appendix A).

Data Collection

This study used a quasi-experimental one group posttest design to examine the impact of the implementation of a gun violence screening tool on the proportion of patients screened and the proportion of patients referred for intervention that screened positive. Measures included demographic variables such as age, gender, ethnicity, and type of insurance. The screening tool scores were assessed, as were the number of patients that screened positive who were referred for intervention. The number of patients referred for intervention that kept those follow up appointments were also monitored.

Data Analysis

In analyzing the data obtained from the study, independent t-tests were performed to assess at the age of the participants that had positive screening tool scores. Chi-square analysis was used to look at the relationships between positive scores and gender, ethnicity, and type of insurance for each participant. All data was placed into frequency tables to obtain basic statistics on the population studied.

Results

There were 44 adolescent patients that participated in this study (n=44). Of those 44 participants, the mean age was 19.7. Eighty-four percent of participants were female. Of the total participants, 61% were African American and 39% Caucasian. Seventy-seven percent of these participants had Medicaid as their primary insurer (see Table 1). These patients all receive their primary care in the Adolescent Medicine Clinic at the University of Kentucky.

When analyzing at the results of the screening tool, 12 out of 44 participants screened positive, which means they scored a 1 or higher (see Figure 2). Of the 27% that screened positive, 10 of the 12 declined referral to meet with a mental health professional. Of the two that agreed to a mental health referral, only 1 kept their scheduled appointment.

There were statistically significant correlations noted in the data. The age of participants that screened positive was 20.83. Of those that screened positive, 83% were females and 17% males (see Table 2). Just over half (58%) of all positive screens were African American participants (see Table 3). The majority of participants that screened positive (83%) had Medicaid as their primary insurer (see Table 4).

All participants in this study received a gun safety handout created by healthychildren.org and endorsed by the American Academy of Pediatrics (Appendix B). Each of the individuals that screened positive on the screening tool were counseled on gun violence and gun safety. All these individuals that screened positive were asked if they felt that they were in any immediate danger, if they felt safe in their homes, and if they needed any assistance in assuring their safety at this time. Each of those twelve individuals that screened positive felt they were completely safe at the present time and did not need any assistance.

Limitations

There were two significant limitations with this study. Time for data collection and consent process was the main limitation. Parents had to give consent for those individuals under the age of eighteen, so they were present when the participant answered the questions. When parents are present the responses may not be accurate due to fear that their parent will see their answers.

Discussion/Implications for Practice/Future Research

The results from this project showed clinical significance for this patient population. This was a small sample, but over a quarter of the adolescents screened had a positive screening. The majority of those that screened positive were females and just over half were African American. A large percentage of those that screened positive also had Medicaid as their primary insurance. These demographics are fairly consistent with the general population cared for in the Adolescent Medicine Clinic. Of the patients that were screened, 27% screened positive which indicates that there is a need for gun violence screening efforts in this population at the University of Kentucky.

When studying a topic as significant as youth gun violence, it is essential to have a plan in place to report concerns to ensure the safety of all participants. It is essential to have a notification plan in place for those that did express concerns for their safety. The plan for those that are minors would be to notify parents, school officials, social workers, child protective services and/or police if there is potential harm to self or others.

There are many opportunities for further study regarding youth gun violence in the adolescent population. For example, the best way to administer the tool in a busy adolescent practice (ie. paper, verbal, or electronic survey administration) and which method would yield the most accurate results. Over a quarter of these participants did screen positive on the gun violence survey, but only two of those twelve agreed to a referral with a mental health provider. It would be interesting to explore this resistance further. Themes to explore further regarding resistance for mental health assessment would be if the patients do not feel they are at higher risk for being a victim or perpetrator of gun violence, if they do not want professionals to know the activities that they are involved in, if they fear their parents or law enforcement being made aware, or if they are ambivalent about the long-term consequences of living a high-risk lifestyle.

Another interesting thing to study within this patient population is the neighborhoods in which those that screen positive live and if there is a correlation.

Research projects such as this can highlight concerns in the population studied and identify areas for improvement in the health of our youth. Gun violence is a growing public health problem. Screenings are a great tool to help identify those at risk in a clinic setting, but there needs to be much larger initiatives at the community level to help address the real issues. Community and neighborhood based efforts, including increased social programs and community policing, have shown to have positive impacts on the rate of violence in localized areas (Braga, 2008). If these types of programs were created at the local level, health care providers could refer concerning patients to these programs in order for them to receive local and targeted intervention.

Conclusion

In conclusion, youth gun violence is a serious public health concern in today's society. This issue is affecting all parts of the globe and little is being done to help resolve the problem. To decrease the rates of gun violence among youth, it will take a collaborative effort from parents, school officials, community members, and health care providers. With better research performed on the topic, these key players would be better equipped to develop effective prevention, screening, and intervention programs. It is hoped that there will be new understanding in the near future and the rates of youth gun violence will begin to decline.

Figure 1. Literature Review

| Study | Tool | Validated | Setting | Prediction Focus |
|---------------------------|------------------------------|----------------|---|-------------------------------|
| Goldstick, et al., (2017) | 4 item survey (SaFETY Score) | Not externally | Emergency Department | Victim Perpetrator Both |
| Hayes & Sege, (2003) | 13 item survey (FiGHTS) | Not externally | High School setting | Fire-arm carrying |
| Sege, et al., (1999) | 3 item survey (unnamed) | Not externally | Family practice health center with satellite high school clinic | Victim |
| Sigel, et al., (2011) | 14 item survey (unnamed) | Not externally | Primary care clinic | Perpetrator |

Table 1. Demographic Characteristics of Gun Violence Screening Participants (N = 44)

| Demographics | Mean (SD) or n (%) |
|------------------|--------------------|
| Age | 19.73 (2.039) |
| Gender | |
| Male | 6 (36.6%) |
| Female | 37 (84.1%) |
| Transgender | 1 (2.3%) |
| Ethnicity | |
| White | 17 (38.6%) |
| African American | 27 (61.4 %) |
| Other | 0 |
| Insurance | |
| Private | 10 (22.7%) |
| Medicaid | 34 (77.3%) |
| None | 0 |

Figure 2. Gun Violence Screening Tool Results

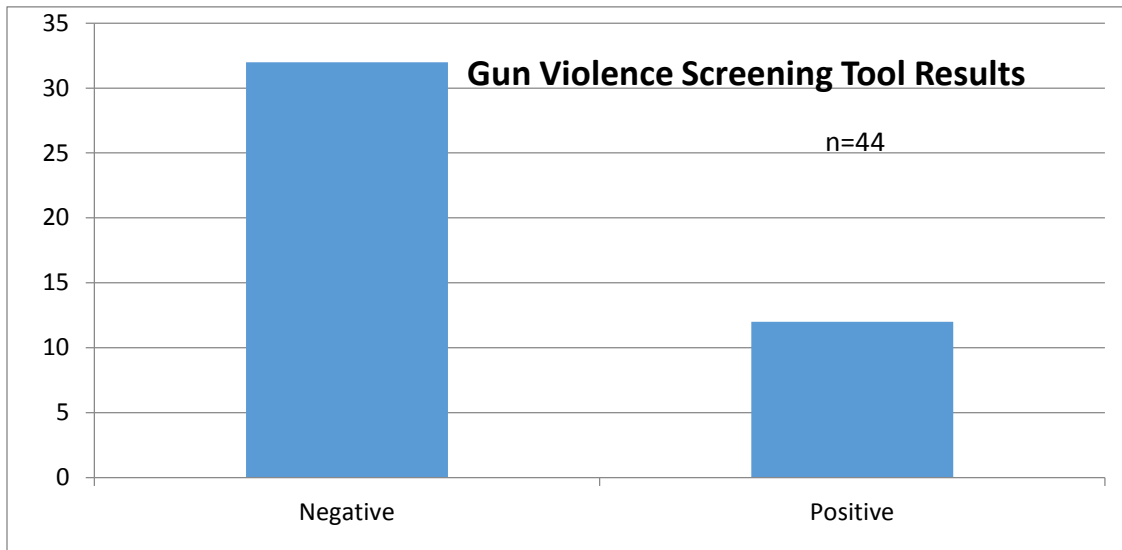


Table 2. Screening Tool Results by Gender

| Results by Gender | | |
|-------------------|------------|------------|
| Gender | Positive | Negative |
| Female | 10 (83.3%) | 27 (84.4%) |
| Male | 2 (16.7%) | 4 (12.5%) |
| Transgender | 0 (0%) | 1 (3.1%) |

Table 3. Screening Tool Results by Ethnicity

| Results by Ethnicity | | |
|-----------------------------|-----------------|-----------------|
| Ethnicity | Positive | Negative |
| White | 5 (41.7%) | 12 (37.5%) |
| African American | 7 (58.3%) | 20 (62.5%) |
| Other | 0 | 0 |

Table 4. Screening Tool Results by Insurance Type

| Results by Insurance Type | | |
|----------------------------------|-----------------|-----------------|
| Insurance | Positive | Negative |
| Medicaid | 10 (83.3%) | 24 (75%) |
| Private | 2 (16.7%) | 8 (25%) |
| None | 0 | 0 |

Appendix A

Youth Gun Violence Screening

Name _____

DOB _____

Gender _____

Ethnicity _____

SaFETy Screening Tool

| Mnemonic | Category | Question/Scale Levels | SaFETy Contribution |
|----------|------------------------|--|---------------------|
| S | Serious Fighting | In the past 6 mo, including today, how often did you get into a serious physical fight? | |
| | | 0 (never) | 0 |
| | | 1 (once) | 1 |
| | | 2 (twice) | 1 |
| | | 3 (3-5 times) | 1 |
| | | 4+ (6 or more times) | 4 |
| F | Friend Weapon Carrying | How many of your friends have carried a knife, razor, or gun? | |
| | | 1 (none) | 0 |
| | | 2 (some) | 0 |
| | | 3+ (many, most, or all) | 1 |
| E | Community Environment | In the past 6 mo, how often have you heard guns being shot? | |
| | | 0 (never) | 0 |
| | | 1 (once or twice) | 0 |
| | | 2 (a few times) | 0 |
| | | 3 (many times) | 1 |
| T | Firearm Threats | How often, in the past 6 mo, including today, has someone pulled a gun on you? | |
| | | 0 (never) | 0 |
| | | 1 (once) | 3 |
| | | 2+ (twice or more) | 4 |

SaFETy = Serious fighting, Friend weapon carrying, community Environment, and firearm Threats.

For provider use only:

Insurance type _____

Referred _____ No referral needed _____

Appointment for intervention _____

Appointment for intervention attended _____

GUN SAFETY

and CHILDREN

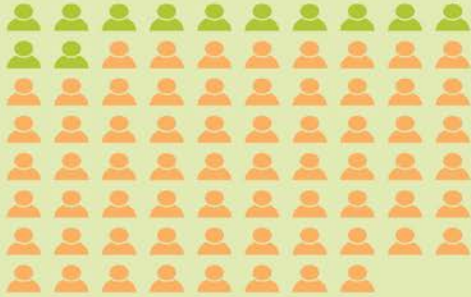
If you own a firearm, the AAP recommends it be **stored unloaded, locked up** (lock box, cable lock, or firearm safe), with the ammunition stored separately.



About **1/3 of the homes with children** in the United States have a gun. Many are stored **loaded and/or unlocked**.



Every day,
78 children,



teens and young adults are **injured or killed** by guns in the United States.

= death = injury

Source: CDC WISQARS database including data for all races, ages 0-21, from 2013-2016.

The risk of dying by suicide is **4 to 10 times higher**

in homes with guns. If you have **a teen who is at risk for suicide**, remove guns and ammunition from your house.



Children as young as **3 years** may be strong enough to **pull the trigger** on a handgun.



The **safest home** for children and teens is one without guns.



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