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Exploring College Students' Perceptions of College Gun Violence: A Meta-Analysis

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ABSTRACT

Perceptions of college gun violence among college students:
A meta- Analysis

College gun violence has been one of our nation's most forefront issues in recent years. The present meta-analysis reviewed studies reporting college students' perceptions about school/college gun violence in order to summarize the total effect and direction of these research findings. There were only two studies identified for this research topic: Study A and Study B. Combining the effect sizes from both studies could not be accomplished because there was not enough data from Study A to calculate the correlation coefficient(r) or standardized mean difference (SMD). The summary of the results of the two studies as a meta-analysis was more a descriptive analysis. With the exception of the more conservative study participants, participants in both studies felt the most significant variable in the occurrence of school/college gun violence was the mental health of the individual perpetrator.

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EXLORING COLLEGE STUDENTS' PERCEPTIONS OF COLLEGE GUN VIOLENCE: A META-ANALYSIS

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CHAPTER ONE: INTRODUCTION

Gun violence on college campuses in the United States is a serious, long-standing national public health issue. According to Papi's report in 2011, the record of deadly incidents on different college and university campuses across the country dates back as early as 1908. During this time period, more than 130 students have lost their lives from handgun violence (Papi, 2011). Between 2001 and 2005, there were 76 reported homicides on college campuses nationwide. Of the 76 victims, 51 were students. Thus, handguns killed an average of ten students each year. The majority of these murders involved acquaintances or drug dealings and were not rampages or random shootings (Patten, Thomas and Wada, 2013).

At the turn of the 21st century, the frequency and intensity of campus shootings increased significantly, with dreadful consequences, which have affected thousands of individuals, families, and communities across the country. On April 16, 2007, on the Virginia Tech campus, a 23-year-old male college student killed 32 people, including himself and left 17 others wounded. The horrendous shooting began early in the morning at one of the dormitories on campus, when two students were shot and killed by the gunman as they were on their way to their morning class. Some two and a half hours later, the lives of 30 more people were taken, including students, faculty, and staff in a classroom building. This incident was the deadliest campus shooting in US history (New York Times, 2007).

In May 24th of last year, a 22-year-old college male stabbed three of his roommates to death in his apartment. He then went on to shoot bystanders in the busy streets of Isla Vista near UC Santa Barbara, killing three people and wounding 13 others (New York Times, 2007). These incidents highlight the observation that gun violence has become a more frequent occurrence on and around college campuses.

Princeton University has declared gun violence a public health epidemic (Kabbany, 2013). At the "Culture of Violence Summit" that was held on May 28, 2013 at Princeton University, the former president of Princeton, Shirley Tilghman, stated that, in the context of public health, this violence can be considered an epidemic that society currently faces. She further emphasized that this issue needs to be approached, not in terms of the abstract second amendment, but in terms of epidemic that society currently faces. She further emphasized that this issue needs to be approached, not in terms of the abstract second amendment, but in terms of the more concrete concept of national wellbeing in order to save lives and reduce injuries. She also added that gun violence should be treated as smoking in a public setting was, in that a law .was passed for the protection of public health and collective safety (Kabbany, 2013). Given the increasing frequency and intensity of campus gun violence in the past decade, Tilghman's statements were crucial and timely.

Campus gun violence is a multifaceted issue, and many factors have been presented as potential contributions to this problem. Gun control and gun owners propose different legislation that each side believes would help reduce the occurrence and impact of college gun violence. Some argue that mental health services and its need for broader insurance coverage are contributing factors. Others blame the prevalence of video games, a lack of religious foundation in our

educational system, irresponsible parenting, unprepared college/university campuses, a shortage of pediatric/adolescent mental health providers in this country and an individualistic society that isolates people from their neighbors and community (Aronowitz and Vaughn, 2013). Some college health professionals further felt the need to frame these violent occurrences as a public health emergency just like we would an outbreak of influenza or other public health issues (Aronowitz, 2013). They felt that not only do we need to examine the constructs that are potentially contributing to campus gun violence, but also more importantly advance the discussions of different parties with credible and evidence-based approaches without political biases (Aronowitz, 2013).

Impact

The Pacific Institute for Research and Evaluation is a non-profit organization that provides cost estimates of illness and injuries for U.S. Centers of Disease Control and Prevention. According to this institute, the societal cost averages $5 million per single gun homicide. This cost includes $1.6 million in lost work, $29,000 in medical care, $11,000 for surviving families' mental health treatment, $397,000 in criminal justice, incarceration and police expenses, $9,000 in employer losses and $3 million in pain, suffering and lost quality of life (2006). The impact of gun violence goes well beyond the pain suffered by those affected; the damage to the economy is profound, and the loss of lives who deserve bright future is impossible to measure. The grief endured by families, friends, and communities is long lasting.

Problem statement

Gun violence among college students, particularly when it occurs on campus, is an issue that tends to provoke strong reactions and opinions. When the media expresses public opinions regarding gun violence on college campuses, it tends to focus on a single variable as the reason for the violence (Frisby, Kim and Wolfmeyer, 2005). This tendency to express a one-dimensional view obscures the complexity of school gun violence (Frisby, et al., 2005). With the frequent campus gun shootings and resulting tragedies, college students either directly or indirectly involved often feel much more vulnerable and uncertain about their safety on campus.

A study was conducted a few months after the Virginia Tech shooting to assess posttraumatic stress disorder (PTSD) using the Trauma Screening Questionnaire (Hughes, Chiu, Jones, Rothwell, Brymer, Fairbank, Pynoos and Steingberg, 2011). The results of the study demonstrated that 15.4 percent of respondents experienced probable PTSD (a high level of posttraumatic stress) at the time of the survey. The high levels of posttraumatic stress symptoms were associated with a loss of a close friend/acquaintance and short-term uncertainty about the safety of a close friend.

The findings of this study showed that only a small portion of students with posttraumatic stress symptoms were under direct threat (Hughes et al., 2011). The majority of students with such symptoms were informed about warning signs of PTSD through universal educational programs or other accessible channels (Hugh et al., 2011). The results suggested that the nature of social networks among college students has led to a wide dispersion of PTSD effects. The results also

demonstrated that the prevalence of probable PTSD was significantly higher among women than among men (Hugh et al., 2011).

It is reasonable to consider how each tragedy from campus gun violence may affect individual college students across the country at different levels. There is a need to scrutinize and understand how gun violence on college campuses is perceived by college students to better understand this complex issue. However, there were fewer studies specifically exploring college students' perceptions of gun violence on campus. In contrast, there were more studies that emphasize college students' attitudes regarding concealed weapons on campus.
The intent of this project is to explore students' responses in this regard, which may reveal some new insights that are worth addressing. By conducting a meta-analysis in this area, the summarized findings should bring more accurate responses from this population and attempt to answer the question: What are college students' perceptions of campus gun violence?

Purpose

In 2009, the American College Health Association (ACHA) Task force invited colleagues from higher education professional organizations to participate in the ACHA Healthy campus coalition. As a result of the collaboration of different disciplines, Healthy Campus 2020 has evolved to promote an action model using an ecological approach and provided a toolkit for implementation. The Healthy Campus 2020 provided 10-year objectives to improve the health of college students, faculty and staff nationwide. This set of objectives was derived

from Healthy People 2020 (U.S. Department of Health and Human Services, 2010).

The objectives were selected based on their relevance to college health. Injury and violence prevention was a major priority and was at the top of the list of topic areas focused on by Healthy Campus 2020 (ACHA). In addition, one of the overarching goals that the American College Health Association (ACHA) aims for is to "attain high-quality, long lives free of preventable diseases, disability, injury and premature death" (ACHA Webinar, 2013).

Given the tragedies that have resulted from multiple episodes of gun violence on university and college campuses across the country in recent years, students directly and indirectly exposed to these tragedies have experienced vicarious trauma (Fallahi, 2009). Analyzing and understanding the studies done in this area may contribute to the developments of an effective violence prevention plan on college campuses, thereby better achieving the goals of Healthy Campus 2020.

Theoretical Framework

According to Whetsell, Gonzalez and Moreno-Fergusson (2011), systems science is an interdisciplinary field encompassing the physical, chemical and psychological structures of nature and society. They further emphasize that a system can be a single organism, an object, an organization, or a society.

Biologist Ludwig von Bertalanffy proposed that a system is characterized by the interactions of its components and that the interactions are not linear (Whetsell, 2011). Studying perceptions of gun violence among college students allows for a better understanding of differences among individuals. Individuals

may present different responses involving different fundamental assumptions about human nature, personal responsibility, the appropriate role of the college campus, and its responsibility for college gun violence (Frisby, 2005).

The complexity of students' perceptions towards gun violence is derived from the unique systems that they represent as well as their continuous interactions with the environment. According to Whetsell, the use of systems thinking demands flexibility in order to meet the challenges associated with this complex societal issue (Whetsell, 2009).

Whetsell also explained Neuman's system model that considers the client, in this case a college student, as an open system. This open system encompasses continual cycles of input, processing, output and feedback to make up an active organizational pattern (Whetsell, 2011). In reality, a college student is also a part of a group, a family, or a community.

According to the author, Newman's system model considered all variables affecting a client's response to environmental stressors. When the system becomes more complex, the internal condition of regulation of an individual becomes more complicated. The increasing frequency and complexity of campus gun violence in recent years are considered tremendous stressors to college students (Hughes, 2011).

From Neuman's holistic point of view in the systems model, this indicates that the stressors that college students have encountered have affected them not only psychologically, but also physiologically, socially, culturally, developmentally, and spiritually. When the instability of college students' systems results from the negative impact of college gun violence, the outcome of these

effects depends on the system's perceptions and ability to negotiate these effects (Whetsell, 2011).

CHAPTER 2: LITERATURE REVIEW

There was relatively little literature on college students' perceptions of gun violence. A survey done at the Central Connecticut University three weeks after the Virginia Tech Tragedy demonstrated that, according to students, the most highly rated causes of violence included mental illness, lack of social support or friendship, poor parental monitoring, bullying, and disconnection from responsible and caring adults (Fallahi, et al., 2009). However, faculty/staff considered violent video games and violent media as more significant, potential causes of school violence than did students. Students also rated poor parental monitoring and poor parental relationships, as well as the race of the killer and the race of the victim, significantly higher than did the faculty/staff as possible causes of violence (Fallahi, et al, 2009).

Another study used the Profile Analysis via Multidimensional Scaling (PAMS) approach to provide a means for the authors to study individual differences in a way that has the person's data collected on multivariate instruments with a smaller number of "core" profiles that underlie the data. This data suggested that there were two very different prototypes of attitudes, each involving different fundamental assumptions about human nature, personal responsibility, and the appropriate role of colleges (Frisby, et al, 2005). The subjects whose profiles resembled the first core profile saw mass media playing a large role in aggravating violence, while the second core profile saw the easy accessibility of handguns as a significant enabler of violence on college campuses (Frisby, et al., 2005).

A recent meta-analytic review examined the role of school climate in relation to school violence. Violent behaviors ranging from kicks and punches to

the use of weapons were identified. The school climate was grouped into three categories: teacher-student relationships, perceptions or feelings toward school, and school rules and security. The authors found that the meta-analysis emphasized the impact of environmental factors on violent behavior. Although this meta-analysis included studies that focused on elementary, middle, and high school students (Steffgen, Rechia & Viechtbauer, 2013), the implications of the social climate in schools may be meaningfully translated to college campuses.

With this in mind, it is therefore meaningful to research and explore the perceptions of gun violence among college students in order to better understand the ways in which campus violence can be affected (Fallahi, Austad, Fallon and Leishman, 2009). The purpose of conducting a meta-analysis for this project was to identify relevant studies in an attempt to gain a more complete picture of college students' perceptions toward college gun violence. An identified area included concealed guns on college campuses and the perceptions of police chiefs, university presidents and college students/faculty about them. One of the studies that examined college students and faculty opinions on two college campuses about their attitudes toward private citizens carrying concealed guns on campus. The result indicated that over 70 percent of respondents against the option of carrying concealed gun on campus (Pattern, Thomas & Wada, 2012).

Two studies were conducted after the Virginia Tech shooting and focused on posttraumatic stress and fear of crime on campus. A cross-sectional survey of 4639 Virginia Tech students was conducted the following summer/fall after the shooting in April to assess posttraumatic stress disorder (PTSD) symptoms. According to the study results, there was 31.7- 45.2 % prevalence among participants at the highest level of PTSD symptoms. The other study addressed the

impacts of the Virginia Tech and Northern Illinois University shootings on fear among university students. The major findings were that both shootings significantly increased fear of crime on campus in general and fear of being a victim of crime or murder on campus (Kaminski, Koons-Witt, Thomson, & Weiss, 2010).

As described in the beginning of this chapter, there were only two studies were found for the purposes of this project. These two studies have been identified through a literature search of published and unpublished research. Both of them were identified with similar research questions (see Table 1). Study A aimed in identifying core profiles in attitudes of college students and others toward school gun violence while Study B surveyed their perceptions of the Virginia Tech Tragedy.

The study design of Study A was a cross sectional design with survey as data collection method. The extensive study methods further involved Profile Analysis via Multidimensional Scaling (PAMS) to understand the extent to which responses toward different items regarding school gun violence can co-vary together as reflected in "core" profiles (Frisky, 2005).

Internal consistency reliability estimates computed on the eight components demonstrated moderate to large effects on seven components. The seven components are: Bad Media, Religion Is Important, Gun Control, Kids Need Help, Zero Tolerance, Irresponsible Parents and Ineffective School. Although the author did not specifically explain which component was dropped from the analysis due to its small effect, it seemed related to the component of "peer pressure" according to the available data.

The two core profiles were grouped into liberal and conservative prototypes. As described previously, the seven attitudes toward the school

violence variable are as follows: Bad Media, Religion Is Important, Gun Control, Kids Need Help, Zero Tolerance, Irresponsible Parents, and Ineffective Schooling.

Study A used a convenient sample of 456 people, consisting of university students, public school teachers and administrators, school psychologist and others. Although this violated the simple random sampling assumption for power analysis (Hayat, 2013), the rigorous process implemented in the interpretation of core profiles and its relationship with simple multidimensional scaling demonstrated significant implications in answering the research question of this project.

Subjects' profile resembling the first core profile viewed mass media as the largest contributor to school violence and favor the return of Judeo-Christian principles in schools. Subjects profile resembling the second core profile saw the easy access of guns as playing a large role linked to school gun violence. In contrast to core profile 1 respondents, they are more sensitive to troubled youth's need for personal help (Frisby, 2005).

The study design for Study B was also cross sectional with survey instrument as method. Two sets of surveys were developed for college students and university faculty/staff separately. The 40 survey questions for the university students probed their perceptions of school gun violence as well as their views about university policies and environment. The survey questions for faculty/staff covered similar topics as the student instrument except with 18 questions only. There were 312 students and 237 faculty/staff participated through either in class or online survey program.

Participants in Study B rated a list of possible explanations for college gun violence using the Likert Scale. According to the results, both students and faculty/staff agreed that mental illness and a lack of friendship were the most

possible causes for the Virginia Tech shooting. Student participants also highly rated the lack of parental involvement and quality relationships as a contributing variable to the shooting.

It was not possible to calculate the sample size, mean age and standard deviation from this college student sample alone based on the data given in study A. The sample size, mean age and standard deviation of college students were available in Study B. (see Table 2).

CHAPTER 3: METHODOLOGY

META-ANALYSIS

According to Melnyk and Fineout-Overholt, a meta-analysis generates an overall summary statistic that represents the effects of the interventions throughout multiple studies (Melnyk, 2011). The studies that were targeted were, ideally, randomized, controlled trials with objective, blinded outcome assessments. The inclusion criteria used to select studies were that they must include college students in the study, the focus of the study was related to gun violence on college or university campuses and college students' perceptions, attitudes or responses to campus gun violence were addressed.

Those studies pertaining to college students, include certain other people, students, articles that were not peer reviewed, and studies that were not published in English were excluded.

The topics that were covered in the literature search include areas from general gun violence to gun violence on college and university campuses and students' perceptions of gun violence on campus. To search articles with related topics, the terms searched were include "gun," "firearm," "college," "students," "attitudes," and "perception," with a filter for peer reviewed articles. They were all available in EBSCO.

The databases that were used initially include PsycINFO, Education Research Complete, and Criminal Justice, CINHL, socINDEX, Political Science Complete and Google Scholar. In addition to searching published peer reviewed studies with electronic databases, several hard copies of periodicals such as the

Journal of American College Health or the American Journal of Criminal Justice from the library of San Jose State University, Fresno State University or the University of Southern California were searched.

The combination to be used for the search was (gun or firearm*) AND (college* AND student*) AND (attitude OR perception) with the scholar/peer reviewed filter. Data extraction were based on the topic of the articles, study design and characteristics of the participants.

Once the studies have been identified, the final step of conducting a meta-analysis was the use of statistical methods to calculate the overall effects. Unfortunately, it was not possible to calculate the sample size, mean age and standard deviation from this college student sample alone based on the data given in study A. The sample size, mean age and standard deviation of college students were available in Study B. (see Table 2). Combining the effect sizes from both studies could not be accomplished because there was not enough data from Study A to calculate the correlation coefficient (r) or standardized mean difference (SMD).

Procedures

According to Dr. Egger and his colleagues (1997), there are a few steps in the process of analysis once the studies are identified. The steps are as follows:

- Standardized recording forms will be used to collect data from each study. The quality of these studies is then rated with a specifically designed scale.

- A standardized format may be used to compare the differences among studies. In this stage, standard deviation, odds ratio, risk ratio, relative risk ratio and absolute risk ratio may be used for comparison among studies.
- The final step of conducting a meta-analysis is the use of statistical methods to calculate the overall effects. It uses a weighted average to evaluate the results. The larger the trial, the greater the sample size of the study, or the larger the treatment effects, the more weight is given to these studies during the statistical analyses.
- Either fixed effects or random effects will be calculated and assessed for substantial differences from the combined effects.
- Sensitivity tests will be applied to demonstrate that the results from the meta-analysis are rigorous given the choice of statistical method. It also suggests that the findings are not likely to be distorted by publication bias or the selection of poor quality studies (Egger, Smith & Phillips, 1997).

Evaluation

Although the combined results through meta-analysis have a greater possibility of generating meaningful findings and avoiding type 1 and type 2 errors, a cautious approach is important when evaluating the summary results through rigorous statistical procedures. Heterogeneity, odds ratios, and relative risk should be considered.

Sensitivity analysis should be used to assess the different assumptions that are derived from different findings. Sensitivity analysis is also able to identify

confidence intervals and methodology quality, such as how patients were allocated to active treatment and how outcomes were assessed (Egger, 1997).

As described previously, this meta-analysis was not able to combine the effect sizes of both studies due to missing data in Study A. Given the limitations of the study presented, the summary of the results of the two studies as a meta-analysis was more of a descriptive analysis.

Data Extraction

A form titled "Standardized Recording Form" for data extraction was developed as seen in the Appendix page in the end of this paper. The Standardized Recording Form was used for data collection. The data entered in the form consists of 16 characteristics of the studies. These characteristics were: ID assigned for the study, name of the first author, source of the paper, year of publication, comparable control group, study period of the study, type of study, other information that may cause heterogeneity, study design, definition of study outcome, number of participants, definition of perception or attitude toward gun violence, definition of gun violence or campus gun violence, number of males and females, and mean standard deviation of subject ages. Other information could be included, such as any subject sub groupings mentioned in the paper. This standardized format was organized to allow for comparison of different studies. Two studies collected for a meta-analysis of this project were named Study A and Study B. The 16 items were entered for each study in separate standardized recording forms.

CHAPTER 4: RESULTS AND DISCUSSION

There were few studies reported in the literature that focus on college students' perceptions of gun violence. Two studies were found for the purposes of this project. These two studies have been identified through a literature search of published and unpublished research. Both of them were identified with similar research questions (see Table 1). Study A aimed in identifying core profiles in attitudes of college students and others toward school gun violence while Study B surveyed their perceptions of the Virginia Tech Tragedy.

TABLE 1 Overview of the included studies main purposes

Study	Study's purpose
A Identifying Core Profiles in Attitudes Toward School Violence (Frisky, Kim & Wolfmeyer, 2005)	To use PAMS to study individual differences in the degree to which a person's data on multivariate instruments correspond with "core" profiles that underlie the data
B A survey of perceptions of the Virginia Tech Tragedy (Fallahi, Austad, Fallon & Leishman, 2009)	To survey college students and faculty/staff about their perceptions of the Virginia Tech shooting three weeks after the incident

It was not possible to calculate the sample size, mean age and standard deviation from this college student sample alone based on the data given in study A. The sample size, mean age and standard deviation of college students were available in study B (see Table 2). Given the limitations of each of the studies presented, the summary of the results of the two studies as a meta-analysis was more of a descriptive analysis.

TABLE 2

Sample size, mean age, and standard deviation of two studies

	Group size	**Mean age**	**Standard deviation**
Study A	**456 (college students & others)**	**31**	**13.5**
Study B	**312 (college students)** **237 (faculty & staff)**	**19.56(college students)** **46.37(faculty & staff)**	**3.72 (college students)** **11.50 (others)**

Study A has shown that different attitudes towards the cause of school gun violence co-vary according to two patterns. The first pattern (core profile 1) reflected attitudes that blame school violence on the media, lack of religious values taught in school, and irresponsible parenting as the strongest indicators associated with school violence.

The second pattern (core profile 2) strongly endorsed gun control and increased efforts to help students with emotional problems. This data also demonstrated the two different core profiles of attitudes, which emphasize different fundamental values of human nature regarding personal responsibility and responsibility for school violence. According to the study results, people who felt strongly about parental irresponsibility as the key contributor to school gun violence also tended to felt that the popular media was out of control. To the contrary, persons who did not blame irresponsible parenting heavily as the cause of school gun violence tended to favor strict gun control, sensitive to children's emotional needs, and increasing counseling services for children in need (Frisby, 2005).

Study B surveyed college students' perceptions regarding causes of violence three weeks after the Virginia Tech tragedy. The study showed that students highly rated "mental illness," "lack of social support or friendship," "poor parental monitoring," "bullying," and "disconnection from responsible and caring adults" as the causes of school violence. Faculty and staff highly rated "mental illness," "lack of social support or friendships," "mentally ill people," "easy access to weapons/ammunition," and "gun control" as causes. Both groups indicated that mental health was the most significant variable in relation to the Virginia Tech shooting.

Unfortunately, there was not enough data in Study A to calculate the Correlation Coefficient (r) or Standardized Mean Difference (SMD) in order to combine the effect size from both studies. This missing data also limited the conduct of a meta-analysis.

However, the results of both studies shed some light on the complex issues of college gun violence. Both studies results demonstrated the significant implication of mental health issues in relation to college gun violence. Table 3 lists the ranking of variables in relation to the perceptions of causes of college gun violence across the two studies. The rankings of these variables implied the importance of their weight as perceived by college students and faculty/staff in relation to college gun violence at different times and contexts. Subjects in study A who had attitudes toward school gun violence similar to those in core profile 1 ranked Bad Media, Poor Parenting, and Need for Religion as the three highest contributing factors toward school gun violence. Subjects who had attitudes similar to core profile 2 ranked Helping Kids, Gun Control, and Inefficient Schools as the three causes most responsible for gun violence in schools. In study B, both university student and faculty/staff participants agreed that the most plausible causes of the Virginia Tech shooting were mental illness, lack of friendship/social support, and poor parenting.

The research period of Study A began from 1999 and lasted until 2004, after the nation encountered more frequent public school gun violence episodes between 1996 and 1999. Study B conducted its study in May 2007 three weeks after the Virginia Tech tragedy- the deadliest college campus shooting in the history of United States. The study period was from May through October 2007.

Although the variables between the two studies were worded differently, they had a similar approach when assessing potential causes of school gun

violence. For example, Study A use of Bad Media was similar to Violent Media/Violent Video Games in Study B, Helping Kids in Study A was similar to Mental Illness/Mentally Ill People, Need for Religion in Study A was similar to Lack of Religion in Study B, Gun Control were the same wording used in both studies except that Study B added a variable in this category as Easy Access to Weapons/Ammunition and finally Poor Parenting in Study A was similar to Poor Parental Monitoring/Poor Parental Relationship.

College students' presence in both studies also highlighted the importance of these study results. It was shown in Table 3 that mental health issues and support from parents, friends, school and a social network were strong indicators of college students' perceptions of the causes of school gun violence.

TABLE 3

Study **Variable rated in 5-point scale (1 the most, 5 the least)**

Study A	1	**2**	**3**	**4**	**5**
College students and others, core profile 1 (conservative)	Bad Media	Poor Parenting	Need Religion	Zero Tolerance	Help Kids
College students and others, core profile 2 (liberal)	Help Kids	Gun Control	Inefficient Schools	Zero Tolerance	Poor Parenting
Study B	1	**2**	**3**	**4**	**5**
College students	Mental illness	Lack of friendship and social support	Poor Parenting	Bullying	Easy access to weapons and Ammunition
Faculty/Staff	Mental Illness	Lack of Friendship and Social Support	Poor Parenting	Easy Access to Weapons and Ammunition	Bullying

CHAPTER 5: CONCLUSION

Study limitation

This study design assessed college students' perceptions of college gun violence through a meta-analysis. Due to the limited number of studies in this area, the two studies found had similar research questions. Data lacking in one of the studies further restricted the meta-analysis. Faculty/staff perceptions were also included in the analysis because of the limited information available on this topic. The use of a convenient sample in one of the studies was another limitation to the interpretation of the presented data.

Recommendation

Given the potential for this project to impact one of the nation's current public health concerns, seeking deeper implications by analyzing these studies was important to find statistically significant effect sizes as part of this meta-analysis. Unfortunately, study in this subject was so limited and the missing data in the already identified two studies further restricted the meta- analysis to summarize the total effect and direction of this research finding.

Additional studies in college students' perception of college gun violence are needed before future meta-analyses can yield more useful information. Taken together, studies came from different research fields such as epidemiology, behavior science, criminal justice, psychology and college health. The aim of the studies were divergent. The focuses varied from posttraumatic stress, attitudes regarding concealed gun weapons on campuses, fear of crime on campus etc. Nevertheless, study has shown that students' ratings of their perceptions of violence and sense of safety at the school were among the most significant tools in

school violence assessment. Furlong & Morrison's report (as cited in Skiba, Peterson, Simmons & Forde, 2006). With this in mind, emerging college students' perspectives in examining this forefront issue of our nation substantially provide a realistic and direct views in this regard. This meta-analysis provided a significant indication that college students perceived supporting students' mental health as a strong indicator associated with college gun violence.

As the Farrell report cited in Fox and Savage, one third of college campus counseling centers nationwide hired new staff and allowed for an average of a 15% increase in their budget following the Virginia Tech shooting tragedy. In addition, our national average of student: counselor ratio is almost 2000 to 1, compared to the international ratio of 1500 to 1 as described in Farrell's report (as cited in Fox & Savaga, 2009).

The access to mental health care providers depends on the size of the mental health work force. Unfortunately, Advanced Practiced Psychiatric Nurses (APPN) account for a very small portion of the mental health workforce when compared to other mental health care providers. Data from Hanrahan and Hartley's study demonstrated a total of 8751 nationally certified APPNs practicing in United States, while there were 38,258 psychiatrists, 76,968 psychologists, and 96,268 social workers (Hanrahan & Hartley, 2011).

Mental health and behavioral health are very crucial components for all college students' wellbeing. Without healthy body and mind, they cannot learn well (ACE, 2014). Higher education has the upmost responsibility to cultivate an environment that promotes college students' wellbeing and fosters their learning. As a health care provider who provide services to college students, one must see students' whole health beyond the student health center. Outreach, education and collaboration with other disciplines in the campus community are also important

strategies for promoting health, and for early identification and intervention of students who have risk factors. Certainly, providers can take advantage of the time when students visit health centers for episodic illness as learning moments for teaching sleep hygiene, and stress management. They may also be able to identify undetected emotional disturbances.

Implication in Nursing

The extremely low ratio of 3.11 APPNs per a population of 100,000 for the nation as a whole, compared to current estimates of 11.3 psychiatrists, 27.5 psychologists, and 36.2 social workers, reasonably translates to college/university settings as well (Hanrahan, 2011). Nurses have played pivotal roles in community service, especially when other sources are limited. This extreme shortage of APPNs providing services to college students is indirectly reflected in the data. To bridge this gap in supporting college students' wellbeing and mental health care, the nursing profession must emphasize the recruitment of additional Advanced Practiced Psychiatric Nurses.

According to Hanrahan, Delaney and Merwin, the actual number of graduate program that recruit psychiatric mental health (PMH) specialty were far too slow. They further urged that in addition to increasing PMH graduate program or ones that provide distance online education will be the keys to its growth (Hanrahan, Delaney & Merwin, 2012). A Doctorate of advanced Nursing Practice (DNP) project that has designed an innovative delivery method and educational materials that were more affordable to consumers demonstrated well-received benefits. After reviewing its yearly outcome, this group wellness appointments within a recovery-based self-management program that emphasized improving relationships, coping, and life choice has shown improving access to wellness care as well as clients'

perceiving quality of life. This DNP project clearly illustrated the significant clinical services research that was accomplished by PMH DNP students and their faculty mentors (Delaney, 2011). This example also reflects the fact that doctorate prepared advanced nurses are in a pivotal position to apply evidence-based practice to improve the health of our nation including college students.

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Appendices

Appendix A: Data Collection Form A

1. *ID assigned for the study*: A
2. *Name of the first author*: Craig L. Frisbee
3. *Source of the paper*: Journal of School Violence
4. *Year of publication*: 2005
5. *Comparable control group*: **YES** NO
6. *Study period of the study*: 1999 to 2004
7. *Type of study*: A survey study that uses the Profile Analysis via Multidimensional Scaling (PAMS) approach to provide a way of studying individual differences through "core" profiles that underlie data.
8. *Other information that may cause heterogeneity*: The participants of this study consist of university students, public school teachers and administrators, school psychologists, and others. According to the author, roughly 12 percent of the sample was not college students or employees of the public school.
9. *Study design*: Methodology that involves all underlying assumptions, inventory construction and data analysis being based on, while also examining, human subjectivity
10. *Definition of study outcome (qualitative or quantitative)*: qualitative
11. *Number of participants*: 456
12. *Definition of perception or attitude toward gun violence*: One core profile reflects attitudes that blame school violence on the media, the lack of religious perspectives in schools, society, and irresponsible parenting. The second core profile reflects a strong endorsement of gun control and supports increased efforts to provide direct help to students with emotional problems.

13. *Definition of gun violence or campus gun violence*: Between 1996 and 1999, frequent gun violence within American public schools was demonstrated by several highly publicized incidences. The incidents of gun violence were committed by children and youth in elementary, middle/junior, and high school settings across America.

14. *Number (%) of males and females*:

- **a.** Male: 337
- **b.** Female: 119

15. *Mean and standard deviation of subject ages*:

- **a.** Mean: 31
- **b.** Standard Deviation: 13.5

Other information can be included such as any subject sub groupings mentioned in the paper (Tsoi, 2011): university faculty and

Appendix B: Data Collection Form B

1. *ID assigned for the study*: **B**
2. *Name of the first author*: Carolyn R. Fallahi
3. *Source of the paper*: Journal of School Violence
4. *Year of publication*: 2009
5. *Comparable control group*: **YES** NO
6. *Study period of the study*: The second week of May, 2007 and October, 2007.
7. *Type of study*: A survey instrument was administered to university students and faculty/staff
8. *Other information that may cause heterogeneity*: The survey not only asked university students, but also faculty and staff about their perceptions of the Virginia Tech shooting.
9. *Study design*: Two different surveys were developed: a 40-item instrument for student participants and a shorter, less comprehensive version that consisted of 18 questions for university faculty and staff. These questions asked about their perceptions of issues related to school violence as well as their view about university policies and the university environment.
10. *Definition of study outcome (qualitative or quantitative)*: qualitative and quantitative
11. *Number of participants*: There were 312 students, 130 faculty and 107 staff who participated in this study.
12. *Definition of perception or attitude toward gun violence*: Both students and faculty/staff rated mental illness and lack of social support or friendship as the two highest possible causal factors for school violence.

13. *Definition of gun violence or campus gun violence*: The Virginia Tech shooting that occurred in April 16, 2007 was the theme for this study

14. *Number (%) of males and females*:

- **a.** Male: 167: 54%(students), 95: 40% (faculty and staff)
- **b.** Female: 145: 46% (students), 142: 60% (faculty and staff)

15. *Mean and standard deviation of subject ages*:

- **a.** Mean: 19.56 years for students and 46.37 years for faculty/staff
- **b.** Standard Deviation: 3.72 for students and 11.50 for faculty/staff

16. *Other information can be included such as any subject sub groupings mentioned in the paper (Tsoi, 2011)*: Among the student participants, Caucasians composed 82.1%, African- American 9.2 %, Latino 5.1%, Asian 1.5 % and other 0.9%. Among faculty/staff participants, 34.6 % held doctorate degrees, 30.8 % master's degrees, 16.5 % bachelor's degrees and 10.5 % were high school graduates. Most of them self-identified as Caucasian (84.4%) and a smaller percentage as Black (3.8 %), Latino (6.8 %), Asian (1.3 %), or other (3.8 %).