Perceived Racial Disparity in Police Use of Lethal Force

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Abstract

This study used seven analyses to examine predictive factors associated with race and age in police use of lethal force and differences in age and gender of subjects engaged in lethal force incidents with police. The analyses conducted include multinomial logistic regression (MLR), general linear model ANOVAs (GLM ANOVA), Welch F tests, chi-square, and eta correlation. The theoretical overlay of the analyses was reflective of two opposing, predominating themes in the literature regarding police use of lethal force. One is institutional or systemic racism results in the targeting of young black males with lethal force. The other is police work, including lethal force, is precipitated by crime. The results suggest that killings of Black subjects and subjects from other races are disproportionate to those of their White counterparts, but that difference, although statistically significant, accounts for a small amount of variance, approximately 15%, in the race of subjects. Additional results indicate that the variance in age of subjects killed by police among other contextual factors is less than 7%, which indicates that neither model has strong predictive strength. Further, the age of minority subjects killed by police differs by approximately four to eight years when compared to White subjects, with Black subjects being nearly eight years younger than White subjects, and there are minimally discernable differences by proportion in the gender of subjects killed by police, regardless of race, armed status, weapons involved, threat level, mental illness, and location of the lethal force incident. Although the study produced many statistically significant results, variances and effect sizes were small, rendering them less reliable for influencing law enforcement policy but a sound starting point for related future dialogue. Finally, neither theory about police use of lethal force was solidified, pointing toward the need for more research on the topic for policy changes in law enforcement to be validly implemented.

Chapter I

INTRODUCTION

Concerns about police use of lethal force with minorities have been rising considering recent high-profile cases involving the shooting deaths of African American males at the hands of police. Because this concern continues to grow, judging by its widespread media coverage and a related, collective anti-police sentiment, and from it theories of racial bias in policing are emerging or being revived from decades past, exploring it with an empirical lens is warranted. Therefore, the goal of this research was to determine if a statistically significant relationship exists between police use of lethal force and race. This potential relationship was examined while holding constant variables that could skew the results, such as age, gender, geographical location of the incident, presence of mental illness in the suspect, whether the suspect was armed, and threat level of the suspect.

The policy implications for sound research in this area have the potential to be far-reaching as they relate to the public perception of police and police work, race relations in law enforcement, and respect for law and order. If anti-police sentiment based on the race narrative continues to grow (Lim, 2017, p. 307), respect for the law could diminish (Vick, 2016), police officers may become hesitant to react to threats of danger to themselves or the public in fear of being cast as racist, and crime could increase, leaving law-abiding citizens and communities at risk (MacDonald, 2017, p. 56). Given the current racial tension and division in this country around this subject, the potential for problems related to a growing anti-police sentiment to spiral out of control and further fuel racial unrest, particularly between police and racial minorities, appears real. Perhaps sound research will shed light on the nature of this problem and provide the foundation for interventions to confront it.

Statement of the Problem

Race and police relations have been strained in recent time due to what has been characterized by activist groups, the media, and political leaders as an increase in racially motivated police use of force resulting in death. Sorting out facts about deaths caused by police based on the belief among those alleging racial motivation and those who oppose the racial viewpoint has not been an easy task, particularly because the topic is emotionally laden and difficult to examine impartially, and therefore, to some extent lacks empirical support in either direction. Interestingly, in recent time organizations, including police departments, have been collecting data on law enforcement related deaths that emphasize possible influential factors such as race and age of the person killed, the type of threat to the officer, and type of weapon used by the alleged assailant, among others, in an effort to examine patterns in the motivations of officers using deadly force. Although these data exist, they are relatively new and have not been empirically examined to any great extent. Most notably, several authors have used the data to evaluate possible predictors of police shootings, one of them being race, and others have examined the data at face value, with content analyses (e.g., Alang et al., 2017; Embrick, 2015; Nix et al., 2017; Robinson, 2017). Few empirically sound studies of these new data have been conducted, but their presence in the literature is beginning to grow (e.g., Hopkins 2015; Klingler & Slocum, 2017; Ross, 2015; Stein & Griffith, 2017). Because race is the factor in incidents of police use of deadly force often covered by the media and used as a platform by legislators to influence public safety policy, its significance should be validated if media reporting and policy bases are to be factually sound. The consensus among more judicious researchers studying this phenomenon is that its media portrayal should be moved beyond partisan hyperbole and addressed as a topic independent of politics, as difficult as that may be, because facts should be driving the narrative for the people (Lim, 2017, p. 305), the majority of whom genuinely want to

support the police (Vick, 2016, p. 11). Given the ubiquity and growing volume of primarily content analyses and correlational research on the topic of police use of lethal force against minorities, particularly young African American males, an examination of the factors accounting for the variance in race of lethal use of force by police appears logically supported. To this end, this study attempted to determine what factors predict the race of persons killed by police in addition to what factors are associated with and different among the age and gender of subjects. The intent of the research was to more accurately test the public claim that being young, African American and male increases the chance of being killed by police when compared to young males from other races, while controlling for the potential effects of and examining the associations and differences among other factors. Therefore, the statistical significance of this claim was examined with Multinominal Logistic Regression (MLR) analysis to substantiate the predictors of lethal police force by race, various applications of GLM ANOVAs, Welch F tests, and eta correlation to examine predictors of and differences in age, and chi-square to evaluate factors associated with gender. MLR is best suited as the primary analysis for this study because it allows for an in-depth examination of the association between race and lethal police force, among other factors. The other analyses supplement the MLR findings in a manner that more thoroughly informs readers about characteristics of lethal force incidents with subjects engaged in crime.

Theoretical Basis

This research was guided by the dominant contemporary theory that young African American males are fatally shot solely due to race at rates higher than those of young men from other races who have encounters with the police (Buehler, 2017). This theory stems from the broader foundational paradigm that institutional racism is ubiquitous in policing (e.g., Adler, 2015; Armacost, 2016; Bornstein, 2015; Chaney, 2015; Jeje, 2016; Johnson & Bennet, 2017;

Lynch, 2011) across the nation. Many political actors, media opinion journalists, partisan think tanks, and universities, among other entities, embrace the institutional racism theory. Some have even supported the notion that race fuels police use of lethal force and pledged their support for the anti-police sentiment of late (Clark, 2017; MacDonald, 2017; Owsinski, 2019). However, despite the strongly held perception by some that race fuels lethal force by police, there is strong opposition to this notion, suggesting that decisions about lethal force made by police officers are not racially motivated. The position of the opposition is that police work, including the decision to use lethal force, follows crime. Their primary argument is that the media disproportionately report on isolated incidents of police shootings of African American males, sensationalize those incidents with accompanying partisan political rhetoric, and demand wholesale changes in law enforcement policy based on those cases before knowing their facts (Clark, 2017). They further argue that this type of sensationalizing of police shootings is unfair, paints an untrue characterization of police, and is dangerous for police and communities. When police officers are under this type of unfair scrutiny, they can become hesitant to react with necessary force when warranted and in some instances refuse to police high crime areas altogether, leaving members of those communities at risk for becoming victims of crime (MacDonald, 2017). These opposing viewpoints held by academics, politicians, activist groups, opinion journalists, other media figures, the police community, and researchers have been the subject of much debate about policing in America in the past several years, particularly since 2013, when lethal police shootings of African American males initially came under high-profile scrutiny. The scrutiny centered on the sentiments of each opposing viewpoint—institutional racism versus justified use of lethal force in police encounters with young African American males, which will be discussed in the following paragraphs.

Institutional Racism

The charge of institutional racism in the legal system is no novel concept (Carter & Corra, 2016). Institutional racism is an economic, social, and justice system designed to protect whiteness (Popielarz, 2019) through implementation of policies that do not openly target racial differences but intensify racial disparity (Bornstein, 2015). The application of such polices in the criminal justice system is evident and those who participate in implementing them may not be aware of it or their complicity in hurting Black people (Jeje, 2016). For decades, it has been suggested that African Americans, males in particular, have faced harsher legal consequences for their crimes, have been targeted for routine stops by police at rates greater than non-African Americans, and have had inadequate legal representation in defense of their innocence (Kahn & Martin, 2016). Criminal justice reform to address this perceived racial bias has been a topic of discussion by legislators from both sides of the isle since the middle 1960s (Adelman, 2015), but no real progress in this area has been made, which reinforces the argument that institutional racism in the criminal justice system is an American trend that is difficult to expel (Vick, 2016) and might even have political value (Donnelly, 2017) of some kind. Although there is apparent unanimity of agreement that the legal system is not equally just for African American males and nothing discernable has been done to change it, there is little factual evidence that police officers disproportionately target minorities or African American males for lethal use of force, or that institutional racism in the legal system causes more police shootings of African American males. However, the two are often conflated. This conflation of issues was evident in the Michael Brown case. For example, most of the outrage surrounding the death of Michael Brown was due to the widely held belief that he was shot while surrendering with his hands up. The “hands up” movement at that point commenced and quickly became the gesture representing the anti-police sentiment that triggered the Ferguson riots and consequential increased use of force by police to

quell the riotous chaos. The anti-police sentiment born from the Michael Brown case spread like wildfire, sparking a renewed interest in the topic of racism in policing (Carter & Corra, 2016). The problem with the "hands up" movement, however, is that it was based on a false account of the incident. According to an investigation of the incident conducted by the Department of Justice (DOJ) (United States Department of Justice, Civil Rights Division, 2015), Brown's hands were not up and he was not surrendering when he was shot. The DOJ concluded that he was shot during a struggle with the officer, while reaching for the officer's gun. The shooting death of Brown was subsequently blamed by the media on institutional racism during their continual reporting of the incident. In addition, their subsequent reporting on the proportion of African American male shootings by police, triggered by the aftermath of the Brown case, offered little impartiality in recognition of a multitude of possible contributing factors. So, the conclusion drawn thereafter by the media was that institutional racism is the cause of disproportionate police shootings of African American males, using Michael Brown as the representation of this notion. The opposing argument to this notion is that much like in the case of Michael Brown, police officers use lethal force when necessary against males of all races during the commission of a crime, and the Michael Brown incident was mischaracterized by the media, partisan politicians, and activist groups (MacDonald, 2017) who did not fairly deliberate on the facts of the case.

Prior to the time of the Ferguson, Missouri, events it was conceptually easy to make the argument that White officers target Black males for use of force because many police forces were comprised primarily or exclusively of White police officers. Indeed, that narrative could stand as it related to Ferguson snice that police force was then disproportionately White. However, as incidents of police killings of African American males across the nation were gaining public attention, the White cop-on-Black suspect narrative naturally lost steam simply

because the police forces in many of the cities where those incidents took place are equally or disproportionately Black and minority. For example, the racial demographics of Chicago and Atlanta at 63% minority to 37% White (Hurley, 2019) and 51% minority to 48% White (U.S. Department of Labor, 2016), respectively, most notably illustrate racial diversity in large, urban police forces. The Los Angeles Police Department (LAPD) is more diverse than it has ever been with a ratio of 55% minority to 45% White officers (Chiles, 2015). The New York Police Department (NYPD) is not far behind with a nearly even split between minorities and Whites. Minorities make up 49% of the police force compared to 51% White (New York City Civilian Complaint Review Board, n.d.). Miami and Washington DC are the most diverse to date. The proportion of Black officers in Miami, not counting other minority groups, is 51% (Prazan, 2020). Washington DC exceeds that number by nearly 25%, with a racially demographic breakdown of 2,647 minority to 1,172 White police officers. The greater proportion of the 2,647 minority officers are Black. Some large cities like Cleveland and Minneapolis are not yet as racially diverse, but that is changing. The Cleveland police force is 31% minority versus 67% White but hiring trends since 2018 reflect efforts by the Cleveland Police Department (CPD) to diversify the race of recruits (MacDonald, 2019). Minnesota lags farthest behind with a force historically comprised primarily of White officers. In 2014 that number was 79% White to 9% Black and 11.8% total minority (McKinney, 2014). There is an aggressive campaign in place to change those proportions (Williams, 2014), despite a widespread exodus of Minneapolis police officers amid all of the recent anti-police strife (Williams, 2021), in addition to their loss in numbers as a result of the defunding of police by public demand following the George Floyd incident (Gross & Eligon, 2020).

The shift, therefore, to a new theory—that of systemic or institutional racism in policing—to characterize police killings of Black suspects, was fitting and accepted by anti-police pundits, politicians, and activists since assumptions about the existence of systemic racism in other American institutions are fairly pervasive.

Opposing Viewpoint to Institutional Racism-Justified use of Lethal Force

Although there is wide consensus that African American males have for decades been treated less fairly by the legal system than their non-African American counterparts, the assumption that institutional racism is routinely the impetus for fatal shootings of young African American males by police officers is not supported by sound evidence (Buehler, 2017). This is not to say that there have not been incidents of fatal police shootings that were obviously unjustified or that racism among some police officers does not exist. However, to view these isolated incidents in the aggregate is misleading (Lim, 2017) and feeds the anti-police sentiment. The most compelling argument against institutional racism in policing put forth by subscribers to this opposition is that the proportion of police shootings of African American males is related to the frequency of engagement they have with police and the proportion of violent crimes they commit (Klinger & Slocum, 2017). They cite the Federal Bureau of Investigation (FBI) Uniform Crime Report (UCR) as the place to find evidence for the factual basis of their argument. The particular emphasis is on the FBI UCR finding that African Americans comprise 13% of the population but are responsible for 51% of violent crime (FBI, 2015). This disproportion in race to crime, according to the opposition, provides some foundation for the logic that African American males are more likely to be fatally shot by police. The argument is that because they engage in violent crime at a higher rate than non-African Americans, they are more likely to violently engage with police or are more likely to be fatally shot by police while presenting a threat of violence or resisting arrest (Clark, 2017). Indeed, these facts are easily ignored largely

because of the emotions elicited by this and most topics dealing with race. However, there may be many benefits to an impartial evaluation of this topic, especially possibly bringing attention to the root causes of both disproportionate crime rates and police use of lethal force.

Conceivably, because much of the literature strongly favors the distinctly dichotomous opposing theoretical viewpoints on race and police use of lethal force, other possible contributing factors are ignored, to some extent. For example, although variables such as age, gender, and whether a subject killed by the police was armed, are mentioned in some studies, their significance is often overshadowed by the broader thematic message the authors appear to want to convey. Those alleging that race motivates police use of lethal force nearly invariably suggest that institutional racism exists in policing. The opposition, whose presence is noticeably smaller in the professional literature, pushes back with equal fervor, opining on their position that police work follows crime, regardless of race.

The coherent consideration of the influence of a somewhat partial body of literature on public perception of police use of lethal force seems important to this type of study. While much of the voluminous literature on this topic strongly favors the institutional racism construct of police use of lethal force with young African American males, some authors are astute to recognize the importance of an impartial approach to addressing this problem. The consensus among the more astute authors appears to be that blaming police use of lethal force with young African American males solely on institutional racism is as misleading as suggesting that their fatalities are the result of their disproportionate engagement in crime.

Purpose of the Study

The purpose of this study was to explore factors that predict police use of lethal force by race. Specifically, this study investigated the influence of various factors on deaths of persons from different races caused by police. These factors include age, gender, alleged weapon type,

alleged threat level (type), geographical location, and symptoms of mental illness. Because most attention is paid in the literature to deaths of minorities, particularly young African American males, caused by police use of lethal force, *race* was the dependent variable and *gender, alleged weapon type, alleged threat level (type), geographical location*, and *symptoms of mental illness* were the independent variables in the MLR. *Age* was the dependent variable in the GLM ANOVAs, Welch F tests, and eta correlation and the independent variables were various combinations of *race, gender, alleged threat level (type), alleged weapon, cause of death, armed status, alleged weapon, geographical location*, and *symptoms of mental illness*. *Gender* was the dependent variable in the chi-square tests. The independent variables were *cause of death, armed status, alleged weapon, alleged threat level (type), geographical location, symptoms of mental illness*, and *race*.

From the results, the significance of the model as a predictor of police use of lethal force by race was readily extrapolated and more convincingly supported or refuted in the context of other predictive factors. In this light, the results of this study have added to the existing literature empirically valid information on police use of lethal force and race and has answered the call by Lim (2017) for more research on this topic, which was done with intent to examine the available data in varied ways to reliably increase its empirical knowledge base. This type of research could benefit the public, the police, and police and race relations, particularly with African American males, if the results are responsibly used to shape public policy related to law enforcement.

Significance of the Study

If public safety policy, police and race relations, and public sentiment about law enforcement are to improve, accurate and fair representation of the facts surrounding perceived disproportionate use of deadly force by police against minorities, particularly young African American males, has to be addressed. This study attempted to test the notion that deaths caused

by police are associated with race, absent of other factors. It was done in an effort to help equitably shape public safety policy and opinions about police work and police and race relations because empirically validated discussions of their future appear to be of paramount importance. Without factually based civil discourse on this sensitive topic, tensions among police and minorities could rise to even greater levels. In addition, or alternatively, police work could dramatically change in ways that decrease the safety of citizens if police officers are hesitant to do their job for of fear of public scrutiny or compromise in their own safety. Finally, the potential for stricter policing seems possible if tensions among police and citizens broaden and lawlessness prevails, which invariably would affect the lives and liberties of all citizens, regardless of their race. Conversely, with responsible civil discourse on this sensitive topic, police and race relations can possibly be repaired. In addition, the causes of disproportionate commission of crimes by race could be impartially explored, perceived notions of the degradation of police and race relations similar to that of the pre-Civil Rights era could be factually addressed, and mutual respect for the law and individual liberties could be established. The intent of this study was to contribute to the latter, while adding an impartial, worthy contribution to the existing literature.

Limitations

As is the case with all social science research, this study was subject to various limitations. The most prominent of them is the limited ability to operationalize institutional racism as a construct to be explicitly measured. Although this limitation did not interfere with the direct evaluation of the predictor variables, it is important to mention since institutional racism is the conceptual theme that overlays the research. Another construct in this category, for the same reason, is implicit bias. Next, the conclusions drawn from the results are devoid of empirical explanations of the influence of individual personality traits or motivations of officers who have

used lethal force against young African American males or the influence of personality traits or motivations of the young African American males who were shot and killed by police. Finally, this research did not explore numerous potential contributing factors to police use of lethal force due to the limited availability of or access to data on those other factors, including, for example, varying police department cultures, mental health of officers engaged in lethal shootings, and the psychological state of mind of officers during high stress situations when discharging a firearm.

In addition to such conceptual limitations, there are various limitations with the dataset. There are arguments for and against the validity and reliability of open-source data. This is especially true when it applies to politically charged research, such as that dealing with police use of lethal force. There has been a growing emphasis on determining how best to study this emotionally ladened topic considering the quality of the data, or lack thereof, that have historically been available. In such an effort, since around 2013 several open-source databases have been launched and introduced to the professional and research communities. The short list, in order of the most well-known to the relatively obscure, is *The Washington Post*, *The Guardian*, *FatalEncounters.org*, and *Mapping Police Violence*, and the lesser known *The Counted* and *Gun Violence Archive*. Criticism of and support for these sources abound, every researcher has the obligation to use valid and reliable data when and where available and provide rationale for using data that are or appear to be inferior. To address the potential limitations of open-source data as they apply to this study, a careful analysis of *Mapping Police Violence* was conducted by evaluating their statements about the validity and reliability of their data, examining the original sources of their data for consistency, and reviewing the relevant literature on the validity and reliability of such open-source databases, including the aforementioned.

Are these data valid and reliable? There is no simple *yes* or *no* answer. When compared to the National Violent Death Reporting System (NVDRS), contemporary open-source data on police killings are more robust, comprehensive, and broad. Most importantly, they are collected in real-time, providing to researchers an up-to-date snapshot of the data they seek to analyze (Conner et. al., 2019). Conversely, the data are incomplete in that they cannot account for the voluminous contextual factors in the incidents of police killings on which they collect data. In addition, providing descriptions of and coding the data for analysis can be challenging, and is largely subjective, which leaves their validity and reliability open to question, doubt, and criticism, even as those same critics use the data in their own studies. To that end, some of those researchers often support the validity and reliability of the data at face value, as is evident in the many content analysis papers contained in the literature. Criticism of and support for use of these data often align with the motives of researchers and their beliefs about police killings. The biased misuse of the data, whether it is intentional or unintentional, has been recognized by researchers from both camps as perhaps the major flaw in studies on police killings (e.g., Fryer 2018; Nix & Lozada, 2019). To illustrate this point, in a rebuttal to public criticism offered by Nix and Lozada (2019) about the coding of the data contained in the *Mapping Police Violence* datasets, Samuel Sinyangwe (2020), an author of those datasets, defends the source while also recognizing its weaknesses. His position is that although different opinions exist about how the data should be coded, open dialogue rather than broad criticism of the effort to collect and provide such information should be the impetus for improving the quality of the data. He further asserts that the motivation for the criticism offered by Nix and Lozada appears to be disingenuous. This is interesting because Nix and his other colleagues indeed used open-source data in their study that

supports the narrative shared by Sinyangwe (e.g., Nix et al., 2017), namely that police violence is a serious and prolific national problem.

Sinyangwe's fervent defense of the validity and reliability of his data warrants recognition since his efforts to define it are clearly spelled out on the *Mapping Police Violence* website (Sinyangwe, 2013). The definitions are clear, regardless of whether one disagrees with them, and are descriptively operationalized on the downloadable dataset that is neatly organized, apparently for ease of use. It also seems that Sinyangwe is open to fair critiques of the data in support of improving the collective understanding of the national problem he identifies as police violence. An attempt by this author to contact Sinyangwe at his publicized address to discuss the validity and reliability of his data has been made. That discussion did not occur, because Sinyangwe did not respond, and therefore his personal defense of his dataset was not available to be included in the relevant sections of this study.

It seems clear that the consensus from both sides is that these data are incomplete. This interpretation tends to be shared by those who have the already strongly held belief that disparity exists in police killings and those who do not. Nonetheless, the authors of the open-source datasets available on police killings appear to do their best with collecting, describing, and coding their data. They also recognize the flaws therein, while simultaneously emphasizing the greater good of their efforts.

Perhaps it makes sense that the most substantial criticism of these datasets in terms of them being incomplete is the inability of their authors to identify, code, and record the voluminous amount of potential contextual variables involved in incidents of police use of lethal force. This is understandably true for those researchers who reject the notion of disparity in police use of lethal force, but also seems to be the case in studies by authors who believe

disparity exists and support open-source data as being valid and reliable. Nix et al. (2017), for example, note incompleteness of data as the major limitation of their study that did find widespread discrepancies in police use of lethal force based on race, being armed or unarmed, and type of threat during incidents. They go on to note, however, that their findings are relevant because the data they used are the most well vetted, up to date, and reliable that are currently available. Another example is a study conducted by Shane and Swenson (2019), using *Washington Post* data. They support their use of the national data by citing its noted strengths, primary among them being the restricting of analyses to only reflect killings by officers on duty. The other strength is that the data appear to capture more instances of lethal force when compared to official federal or state sources who routinely underreport or misreport data on lethal force incidents. Shane and Swenson appear to have appropriately vetted the open-source data used in their study to exclude cases not containing enough information since those may have invalidated their results. They also, to that end, recognized the limitations of relying solely on secondary sources for data collection in this type of research.

The most feasible way to reconcile this apparent limiting gap in the data when conducting this type of research is to clearly define and operationalize those being used in the analysis, which to the credit of the authors of most of the open-source datasets has been done, despite the fact that their definitions have been reasonably challenged. Of course, the next best way to address the gap is to make clear in both the methodology and results sections of the study the limitations in defining, operationalizing, and coding the data and recognize the absence of many potential contextual variables that if factored into analyses could substantially alter results. Both were done here. The data used are defined in precisely the same way they are defined by

Mapping Police Violence. Additionally, their limitations are recognized in the methodology section and are discussed in the results section of the study.

Review of the Following Chapters

Chapters two, three, four, and five focus respectively on the current information available in the professional community on the topic of police shootings and use of lethal force with minorities and African American males, the methodology used for this study, the results of the study, and the discussion of the implications for its results. Specifically, chapter two examines the historical notions of institutional racism in policing, various theories of policing, including broken windows theory, Community Policing, and Professional Policing that have largely dominated methods of policing and influenced public safety policy, and the results and recommendations of contemporary studies on police shootings and lethal use of force with African American males and other racial minorities. It also examines the other variables included in the regression models and other data analyses. Chapter three describes the logistic regression methodology used for examining the associations among predictor variables and race of subjects killed by police. The independent variables held constant are age, gender, alleged weapon type, alleged threat level (type), geographical location, and symptoms of mental illness in the suspects. The dependent variable is race of subjects killed by police. Race is defined as White, Black, Hispanic, Unknown, Pacific Islander, Native American, and Asian. The predictor variables are defined as follows: age (age of the subject), gender (gender of the subject—male or female; transgender was included in the MLR only because it represented only 8 subjects in total), alleged weapon type (gun, knife, vehicle, no object, undetermined, multiple, and miscellaneous), alleged threat level (type) (attack, other, or undetermined), geographical location (type of location of the lethal incident—rural, suburban, or urban), and symptoms of mental illness in the subject (whether the subject presented with symptoms of a mental illness—yes, no, unknown, or

Drug/Alcohol use). It also describes the GLM ANOVAs, Welch F tests, eta correlation, and chi-square tests uses to explore associations among and differences between configurations of some of the predictors used in the MLR, in addition to cause of death (gun, gunshot and taser, vehicle, no object, undetermined, or multiple) and armed status (allegedly armed, unclear, vehicle, or unarmed), and age and gender. The data were selected based on completeness from *Mapping Police Violence*, a source that has been collecting and compiling data on police use of lethal force since 2013 from the crowdsourced databases *FatalEncounters.org*, the *US Police Shootings database*, and *KilledbyPolice.net*. The rationale for the use of logistic regression, GLM ANOVAs, Welch F tests, eta correlation, and chi-square to test the hypotheses of the study is that they respectively allow for the significance of the association between race and police use of lethal force to be examined while controlling for other variables and the exploration of various configurations of relationships and differences among the predictor variables and the race, age, and gender of subjects killed by police. The results of the analyses are thoroughly summarized in chapter four, describing in detail their statistical significance, practical significance, and the rationale for the acceptance or rejection of the null hypotheses. Finally, chapter five discusses the conclusions of the results of the study, fully elaborates on the relevance of the findings with an emphasis on past police work theory, research on police use of force, policy implications, stakeholder influence, and practices in American policing. In addition, the implications for future research in the areas of policing and race, police use of lethal force, disproportionate crime and policing, and institutional racism in policing are examined, and topics are recommended. Terms used throughout the study are defined in Appendix A, *Definition of Terms*, to provide clarity on language commonly used in the field.

Chapter II

REVIEW OF LITERATURE

Introduction

The literature on police use of lethal force against minorities is vast, especially that which dates back to approximately 2013, when shooting deaths of African American males came into the media spotlight. The research on police use of force against minorities beginning in that era does not necessarily reflect efforts by academic writers to study a new phenomenon begging for attention. However, it does mark the beginning of the anti-police sentiment said to be born from new conflicts among police and racial minorities (Lim, 2017), with an emphasis on the perceived increase of police violence toward such populations that is believed to be grounded in institutional racism (Chaney, 2015). For this reason, the academic literature on the topic generated since then appears ground-breaking enough to be considered seminal work for the purposes of this study. Therefore, much of this review focuses on police and minority race relations, police use of lethal force, and related trends in policing in the context of the period of time beginning then to the present. Of course, the earlier history of tensions between police and minorities is discussed, but more as the foundation of past paradigmatic thinking on the topic than as a reflection of its contemporary themes. In this regard, the early origins of the police and their purpose is reviewed, police use of force and lethal force in former eras is highlighted, and relevant theories of policing are examined. Building on but also departing from historical perspectives on police and race relations and police use of lethal force with minorities, this chapter explores current perspectives representing two opposing viewpoints—institutional racism versus police work follows crime—on these topics, with an emphasis on police killings of African American males, in an effort to align with public claims of targeted use of lethal force by police with this population.

Police Use of Lethal Force against Minorities

Controversy about the use of lethal force by police against minorities has long resided in America's periphery in the contemporary, post-civil rights era but has more recently come into plain view as cases of police shootings of African American males are routinely profiled by the media. Sensational as the cases may be, and whether or not the motivation behind their coverage is politically influenced, the topic demands attention from scholars, policy makers, law enforcement leadership, and the general public alike.

Police Use of Lethal Force with Minorities by Shootings

Threat perception and implicit bias are the alleged causes of the majority of police shootings of minorities, according to much of the contemporary literature. Failure by police to accurately assess imminent threat by unarmed minorities, particularly African American males, during lethal shootings is the single greatest cause of these deadly conflicts (Klingler & Slocum, 2017). These errors in judgement made by police are compounded by their implicit bias toward minorities, whom they perceive as greater threats than non-minorities in the commission of crime (Fridell, 2016). Fridell (2016) also contends that this occurs without awareness by police, even if the officers are well-intended in their encounters with minority suspects. Errors in threat perception and implicit bias are directly tied to stereotyping of minorities with regard to their propensity to break the law. Negative stereotyping of minorities has been shown to be a behavioral stimulus for officers to draw their weapons on minorities in their routine police work. The consequences of stereotyping in these situations should be obvious, but efforts to address this problem through training may also have unintended consequences. For example, over control, over vigilance, and under vigilance often occur with officers following training to control stereotyping and bias and have implications for successful law enforcement activity. When officers succumb to over control, they are reluctant to use lethal force due to fear of

appearing biased, even if it is justifiable. Of course, this places the officers' lives at risk. Over vigilant and under vigilant officers tend to misjudge the risk level of situations, also putting at risk their lives and those of minority subjects (Fridell, 2016).

Although police shooting deaths of minorities, particularly African American males, have been widely criticized as being critical mistakes by police, motivated by implicit bias and stereotyping, the evidence to support this notion is not convincing. The major criticism of this apparently common notion falls into an exclusive category. Much of the information upon which these claims are made, including those offered by opinion journalists, is largely misrepresentative in how it portrays the risk suspects pose to officers who use lethal force by shooting (MacDonald, 2017, Ch. 6). For example, the research based on the *Washington Post* data fails to recognize in their characterizations of shooting deaths of unarmed African American males that those who were shot and killed still posed grave risk to the officers, regardless of whether or not they were carrying a gun (Klingler & Slocum, 2017). This is illustrated in the most well-known study, conducted in 2015 by Nix et al. and published in 2017, based on the *Washington Post's* data. Nix et al. (2017) suggested that more unarmed African American males were killed than Caucasian males, and that implicit bias and threat perception were evident. They did not emphasize in their analysis that the unarmed African American males who were not armed with a gun could have been armed with another lethal weapon or that they were posing a risk to the officers' lives. Further, their threshold for risk of danger to the officers' lives was whether or not the suspect was "attacking" the officers and provided no real alternative to describe risk. Arguably, a suspect does not have to be attacking an officer to pose a grave life risk, and if this measure of risk were normative, many more officers would likely be injured or killed in the line of duty. Indeed, lunging toward an officer with a knife or going for an officer's

gun are examples of threats of harm outside the bounds of an attack that would justify the use of lethal force. Another flaw in the Nix et al. (2017) study is the lack of empirical validation of the construct of implicit bias. In other words, their definition is subjective and not held to the scrutiny demanded by the research community when introducing other constructs to be studied. This is, in their defense, however, common in the literature on implicit bias, perceptively because it would be a difficult construct to measure and empirically validate without honest disclosure by its supposed perpetrators, especially if they are not aware of their engagement in it, which is implied in its name and subjective descriptions. Nonetheless, the argument that African American males are shot and killed proportionally more than their Caucasian counterparts can be made and supported when the data are examined at face value. When held to the rigor of sound research, however, this claim is being and has largely been successfully challenged (Klingler & Slocum, 2017).

The discussion of police use of lethal force with minorities does not begin or end, however, with studies of the *Washington Post* data. Many other media sources, including print media, public news outlets, and major national news networks, routinely cover this popular topic. In the past half-decade, in fact, media coverage of the topic has been growing substantially. For example, Cable News Network (CNN) not only reports on every high-profile police shooting but typically introduces them. Their editorial research body recently comprehensively summarized the known past and recent cases of police encounters that resulted in protests and riots, on all of which they have reported, dating back to the Rodney King case in 1991 and ending with the George Floyd case ("Controversial Police Encounters Fast Facts," 2020). The general position of CNN regarding police encounters that result in the deaths of minorities has consistently been that systemic racism is the cause and the lethal force used by police officers was unjust. They further

argue that police are rarely held accountable for the deaths of minorities during encounters, even when they are in the wrong (Park, 2018). These sentiments are generally shared by the rest of the mainstream media such as the *New York Times*, *Los Angeles Times*, and National Broadcasting Company (NBC). The *New York Times* reporting can be characterized by a recent article they published about police killings of Blacks, citing individual cases without information about context and pointing to face value correlations between arrests and police shootings of Blacks to support their position that police killings are racially motivated (Mullainathan, 2015). The *Los Angeles Times*, while recognizing the limited availability of data on police use of lethal force, reports as fact that police shootings of Black suspects are disproportionate (Goldberg, 2020). According to NBC, the standard for shooting unarmed Black males was set in 1974 with the shooting death of Edward Garner. Although the tragic incident provoked change in how police deal with fleeing suspects and use force, the author suggests the problem with police shootings of unarmed Black males still exists because the police have simply changed how they report events of arrests in ways that justify their use of force during lethal encounters (Ross, 2020). An earlier report by NBC suggested that young male minorities are disproportionately killed by police, which substantially decreases their life expectancy (Fox, 2018). These sentiments, however, despite their fervent mutual support by the majority of the mainstream media, are not always shared by other media outlets, including the Public Broadcasting Service (PBS), who reported that police shootings may not be implicitly racially biased, especially for police officers who have appropriate training, according to several recent studies (Cummins, 2016). PBS more recently reported that according to available crowdsourced data, police killings of African American males has declined in the past several years. They further asserted that police departments have to improve their own reporting on use of lethal force to balance the argument

about its disproportionate use with racial minorities (Frazee, 2019). The suggestion by PBS for police agencies to report on incidents of lethal force is loudly echoed by USA Today. According to Bovard (2020), an opinion columnist, Federal regulations mandating the collection of these statistics by police agencies have largely failed. He goes on to confirm that these failures date back more than two decades under both political parties and several administrations. The consensus on the importance of maintaining accurate statistics on police use of lethal force is clear, especially when trying to substantiate claims of institutional racism in policing. As an example, it is difficult to argue, even when using data generated by organizations that are openly against police, that institutional racism motivates police shootings when Whites, by direct comparison, are far more likely than Blacks to be shot and killed by police (McCarthy, 2020). In addition, many of the reports on police shootings of Black males fail to include context, which unarguably renders them flawed (Hosko, 2018). This is the basis of much of the criticism of studies conducted using the *Washington Post* data on police shootings (e.g., Frazee, 2019; Fryer, 2018; Hosko, 2018). Not only have they been considered flawed research with the potential for creating a dangerous situation for police and race relations, but Kerik (2019) suggests it is entirely politically motivated. He wrote in a Newsmax piece that the reporting of the numbers is extremely flawed and grossly out of context. As an example, he indicated that the police interact with the public nearly fifty million times per year, make ten million arrests, and on average engage in fewer than one thousand lethal encounters. Of those suspects involved in lethal encounters with police, the greater majority are White, including those who are unarmed, according to the Washington Post data routinely used to make the claim that police shootings are racially motivated. To further illustrate the illusion of the racial bias claim, he adds, fewer than one tenth of one percent of suspects arrested in 2018 were shot to death by police, and only 47 of

them were unarmed with a gun and about one third were Black. The stark differences in perspectives on police use of lethal force born from reviews of descriptive statistics, convincing as they may be, sharply illustrate the importance of and need for sound empirical research on this topic lest the public be soundly misinformed.

Regardless of where one stands on the argument for or against the claim that minorities are shot and killed more than Caucasians, there are some police practices that can be examined and, in some instances, criticized with fairness. The culture of police agencies influences the practices much like it does in other types of organizations. In a top-down fashion, the tone of the culture is set, and the practices therein follow suit (Pugh, 1973). Perhaps the most recognized cultural practice in police agencies, familiar because of its catchy nomenclature, is the commitment by police officers to carry out their duties behind the "blue wall," which protects them from public scrutiny or accountability in some instances. The purpose of the blue wall, however, is not nefarious, nor does it exist to protect bad officers. Rather, it symbolizes a mutual comradery among a largely homogenous group whose members share a dangerous occupational lifestyle. Being a member of a group in this or any context decreases the sense of isolation and ensures belonging and support, which in this context helps police officers face potentially grave danger day in and day out and perform at their highest level (Kirschman et al., 2014). Nonetheless, like many things the blue wall is at times exploited by police officers or administration to hide bad or questionable behavior that occurs in the line of duty. The blue wall is arguably the most familiar example of police culture but is not the only phenomenon that characterizes or influences the nature of police practices in law enforcement agencies. Maskaly and Donner (2015) suggested that police officers are taught that self-preservation on the streets requires an "us versus them" mentality, encouraging officers to see all situations as potentially

dangerous, further legitimizing these perceptions of their subculture. This paradigm, compounded by implicit bias supporting the belief that minorities are more dangerous than non-minorities, could logically increase the possibility of errors in threat perception and subsequent unnecessary use of lethal force. Another factor said to contribute to the apparently unjustified shootings of African American males, particularly younger individuals, is the characterization of them as being "thugs or gangstas," and therefore more dangerous (Moore et al., 2016), which indeed is at least in part influenced by a pop-culture that glorifies these labels and the behaviors that earn them (MacDonald, 2017). The related subculture of sorts created in this population begs for and rewards its members for interactions with the police. To that end, much like the blue wall, implicit bias and errors in threat perception are seen as the factors influencing police culture and, by extension, police shootings. It may be said that the glorified thug and gangsta subculture of young African American males, punctuated by pop-culture influence, could be factors influencing their violent interactions with the police. This concept is further examined in sections that follow addressing the opposing viewpoints that are the theoretical foundation of this study. Next, police use of non-shooting lethal force against minorities will be reviewed.

Police Use of Lethal Force with Minorities by other Means

In the midst of the heightened attention to police shooting deaths of African American males, police use of force by things such as using a taser, denial of medical attention during an arrest, and asphyxiation have been largely ignored, perhaps because they are not as sensational. Coverage of police shooting deaths of minorities has proven to bring high ratings to the media outlets who report on them, which reinforces their perpetual coverage in the twenty-four-hour media cycle (MacDonald, 2017). The stories are covered in such a manner that promotes conjecture, hyperbole, and opinions by reporters. They must be sensationalized in order for

ratings to soar and for those ratings to be maintained. What are often lost in the media coverage of police shootings are the facts of each individual case in favor of sensationalizing their component parts to paint the more salacious and newsworthy narrative, regardless of the potential social consequences. In addition, by focusing exclusively on police shootings, the incidence and nature of other forms of lethal police force are sparsely examined (Donner et al., 2017) by the media and academic entities alike, the very institutions who introduced the apparent problem (Fryer, 2018). This distinction is important because in order to put forth credible information about police use of lethal force, all types of it should be examined. The prominence of police shootings of minorities notwithstanding, a deeper exploration of other types of police use of lethal force is therefore warranted because it will complete the discussion here in the appropriate context.

The data on racial disparities in police use of lethal force appear to be somewhat inconclusive, depending on the source. For example, Fryer (2018) found no statistically significant difference in use of force by police against minorities and Caucasian subjects. The results of his study have been challenged from a methodological perspective by other authors, including Buehler (2017), who suggested that they represent only outcomes of police encounters but not from the population-level perspective. Buehler (2017) also cites as evidence, contrary to Fryer (2018), of racial disparity in police use of lethal force the study by Sikora and Mulvihill (2002) that found higher rates of deaths from legal police interventions in African American males than in their Caucasian counterparts. Further, Buehler found in his 2017 study that the percentages of deaths of subjects resulting from injuries sustained by police use of lethal force were far greater for African Americans and Hispanics, respectively, than for Caucasians. The majority of subjects in Buehler's study were younger, residing in or near metropolitan areas or

high crime areas, and were therefore more likely to have interactions with the police. The intent of his study was to update information on racial disparities in police use of lethal force with greater perspective on population-based factors. To his credit, he emphasized the importance of using sound methodology when studying this sensitive topic, which should apply to studies conducted by believers and non-believers of the racial disparity theory. What appears clear, however, in many of the studies addressing this topic is that using sound methodology was not necessarily the priority of the authors and if sound methodology was used and did not empirically validate the author's position, the position was still presented as valid with little regard for empirical rigor. In this sense, it is reasonable for Buehler and others to scrutinize Fryer's results in the same way the results of studies supporting the notion of racial disparities in police use of lethal force should be scrutinized. This theme will be revisited secondarily throughout this review because it is on display, although not directly emphasized, in much of the academic literature on police use of lethal force. The opposing camps on this topic are heavily divided to the extent that the empirical accuracy of assertions from either side evades the research and practice communities. It represents the process gap more than the content gaps in the literature that will have to be addressed by scrupulous researchers if the empirical truth about disparities in police use of lethal force will be told.

Police use of lethal force understandably has many potential consequences ranging from poor police-community relations to full blown anti-police sentiment. When communities do not trust the police, the police have difficulty doing their work, which puts citizens at unnecessary risk. More dangerous is the anti-police sentiment, fueled by self-serving agendas, that not only interferes with police work but puts the lives of officers in real danger. Neither situation yields positive experiences or results for those who want and value police protection, namely those in

high-crime areas where many encounters with police by young, African American males typically take place (MacDonald, 2017). In addition, and equally important, police use of lethal force puts its usual targets at risk for harm. They are at such risk, according to several authors, that police brutality results in their poor overall health. They suggest that young African Americans males are at direct risk for poor health because they are more likely to be assaulted by police or injured while in police custody or while being taken into custody. Psychological damage occurs in the form of perceived inferiority due to persistent harassment and brutality perpetrated by police and the related experience of negative emotions and stress, leading to debilitating physical or life-threatening conditions (Alang et al., 2017). To further bolster this argument, some allege that society views African American lives as inferior and expendable, which places them at high risk for psychological damage in the form of emotional problems or behavioral acting out secondary to their own perceived inferiority, and physical harm because police officers will more readily engage African Americans in violence if their lives are viewed by police as less important or less human (Embrick, 2015). Embrick (2015) also notes that police target other minorities, namely Native Americans and Latinos, at similar rates due to racism stemming from Jim Crow laws as the primary means of racial control. Convincing as it may be with fair reference to real history, Embrick's study is a content paper that reflects his opinion based on his review of history and lacks methodological sophistication for accurately measuring the supposition that police use of lethal force is associated with or caused by racism or racial control. There are authors, however, who agree with Embrick and whose studies are based on descriptive statistics, making them somewhat more methodologically sound. The study in this category most aligned with Embrick's is Hirschfield's (2015) work on American lethal policing. In his study, he asserts that data on police violence has historically been limited to voluntary

reports on justifiable homicides submitted by police agencies to the Federal Bureau of Investigation (FBI), significantly limiting access to true numbers of accounts of police use of lethal force. He further asserts, with accuracy, that public sources are documenting police use of lethal force, both by reporting by police agencies and their own investigative tracking. Demographic data from these sources are more robust, accurately categorical, and more easily accessible to the public than the FBI's database. This has invited many interested researchers to examine for themselves the disparities in police use of lethal force against minorities. Hirschfield, himself one of these researchers, used the data to validate his assumptions that African American males are shot and killed at higher rates than Caucasians and that Jim Crow laws, racism, and racial control are at the root of the cause. Although he used real data in his study, the methodology appears lacking in that there was no empirical validation of associations among variables, no statistically significant conclusions about differences among variables, and no examination of variance in outcomes. The author goes further to suggest that problems with gun control, suicide, divorce and separation, and poverty all relate to and predict police killings (Hirschfield, 2015) but does not indicate how he arrived at those conclusions from an empirically based research perspective.

Although it is difficult to empirically validate assumptions and opinions, they may still be quite valuable to consider in the broader context of an issue and may introduce topics appropriate for empirical research. This is, of course, the case with the topic of apparently disproportionate police use of lethal force, and in this regard, Embrick and Hirschfield have raised awareness about this important topic. In fact, the work done by these authors has sparked research activities aimed at empirically validating their points, specifically since access to information about police use of lethal force has increased through public databases, including those published by the

Washington Post and Mapping Police Violence. For example, Hopkins (2015) examined with an empirical lens the *Washington Post* database and an older report by Human Rights Watch on police brutality and accountability and found that when information about police use of lethal force is reported accurately, the disparities are evident. In addition, Hopkins (2015) noted that accurate and timely information about police use of lethal force can lead to more robust and relevant training of officers and punitive actions for agencies that do not comply with reporting requirements or recommended changes stemming from reports. It is important to reiterate, because it is relevant to this section, that the aforementioned authors examined not only police shootings but other forms of lethal force against minorities, which is another benefit of having access to the relatively new databases on incidents of police use of lethal force. In order to develop a complete picture of police and minority relations with regard to lethal force, incidents of shooting deaths should not be given precedence, if for no other reason than to try to prevent the sensationalizing of the broader problem under review. It seems that the academic and professional research communities will be the trailblazers of this effort. If the media were to follow their example, perhaps real progress in this area could be made.

The importance of policy makers having access to accurate data on various types of police use of lethal force should not be underestimated, according to Katz (2015). His argument appears sensible in that it emphasizes the reality that governance of police practice depends on the legitimacy of the use of force. The current practice of police, according to his argument, is that of deterrence threat and severe sanctions born from the broken windows theory, which makes minorities targets. Broken windows policing is centered on the principal belief that addressing minor crimes will prevent the occurrence of larger crimes. Police officers address minor crimes by patrolling high-crime areas with more scrutiny, while paying attention to those

engaging in minor crimes such as loitering, vagrancy, and trespassing, and by questioning those whom they believe are suspicious individuals in an attempt to deter more serious crime. Her position essentially supports the notion that broken windows deterrence practices result in racial profiling since racial and ethnic minorities more typically reside in high crime areas than do non-minorities and this places them at risk for succumbing to implicit bias and errors in threat perception. As was suggested in previous paragraphs, many authors believe that implicit bias and threat perception are at the root of police violence against minorities (Chaney, 2015; Embrick, 2015). If this type of police practice is legitimized, which it largely has been in the past several decades, minorities will remain at risk (Katz, 2015) for being targeted with lethal force because public values will be aligned with those of the police. Further, public trust and legitimacy are necessary for uniform compliance with the law (Katz, 2015; Terpstra, 2011). If minorities do not trust the police and society legitimizes current police practices, which these authors believe are grounded in implicit bias and errors in threat perception, resistance to broken windows deterrence practices by minorities in efforts at self-preservation could be deemed as non-compliance, further supporting the stereotype that they are dangerous. If they are deemed dangerous, they remain at high risk for police use of lethal force.

These factors comprise the overarching theme of institutional racism said to be responsible for police actions against minorities. Institutional racism allegedly occurs in most institutions in America, but the interest here is in its influence on and presence in policing. The next section will review the historical and contemporary perspectives on the idea of institutional racism as viewpoint one in this study that is assumed to be at the core of police use of lethal force against minorities. Later sections will more thoroughly discuss the component parts of the

concept—implicit bias and errors in threat perception—which in part comprise the theoretical overlay of this study.

Viewpoint 1: Police Use of Lethal Force as a result of Institutional Racism

The history of institutional racism in policing in America cannot be fully understood without at least a remedial understanding of the history of American policing. It probably comes as no surprise that American policing, like many American traditions and institutions, descends directly from European influence. In this tradition, with regard to policing, voluntary watchmen were tasked with protecting their communities from perceived or impending danger. It was purely an attempt at controlling crime that was not particularly successful. That approach, however, did persist well into the early part of the nineteenth century, when the first government sanctioned police agency in America was formed in Boston, Massachusetts. Following suit, New York City, Chicago, and Philadelphia, among other growing metropolises, established their own police forces. In that then contemporary model of policing, a bureaucratic structure was in place with paid officers, formal procedures, and government oversight (Potter, 2013). This new way of policing, although more successful at controlling crime, was wrought with corruption, largely because officers and administrators were hand selected and appointed by political operatives and were essentially insulated from public or legal scrutiny in light of their wrong doings. Their corruption included things such as taking bribes, extortion, brutality, and general abuse of authority. These types of corruption began to improve as policing evolved and steps were taken to remove political influence from the selection and hiring of police officers. Parenthetically, in the early years, even before policing fully evolved, officers provided many types of humanitarian and social services (Weisheit et al., 2013). At that time, crime control methods were minimal, and the focus began to shift to crime prevention.

All contemporary models of policing are aimed primarily at preventing crime, and although defensibly successful (Lehrer, 2002), many forms have been criticized in recent years for promoting racial profiling and unfair targeting of minorities for law enforcement interventions (Howell, 2014). Despite the attempted reforms in policing in America, which will be more thoroughly discussed in later sections, many still believe it is unfair and discriminatory against minorities. The related, strongly held contemporary belief is that discriminatory practices by police against minorities, particularly African American males, in this country have their real origins in slavery (Robinson, 2017).

Policing Slaves

The protection of slave labor from internal or external threats was the primary purpose of policing slaves in an organized and often brutal manner. Internal threats involved potential slave revolts or protests, which delayed or interrupted productivity (Hansen, 2019). External threats were potential theft or enticement of slaves by rival slave masters to leave their existing master with the promise of living under better conditions. Many of these slaves became runaways after realizing no bondage would bring them happiness. Runaways often had to steal to survive, and some disgruntled slaves would express their frustrations by destroying White-owned structures and poisoning Whites. That resulted in slaves being characterized as dangerous criminals whose actions must be met with severe punishment (Reichel, 2013). It was the job of slave patrols to initiate this carriage of justice by rounding up runaway slaves and returning them to their owners, by whom they would surely be brutally punished and disciplined for their dissent (Hansen, 2019) and were deemed to be dangerous to Whites (Reichel, 2013), therefore deserving of immediate justice beyond the bounds of the legal system (Hansen, 2019). Much like the informal policing that occurred prior to police reform in the late nineteenth and early twentieth century, the

policing of slaves was informal and actually expected of average citizens. This gave them the authority to subjectively identify and take any necessary action to prevent threats posed by slaves, or to punish slaves they were sure had broken the rules (Reichel, 2013). Those are the events that many believe introduced the bias of stereotyping African Americans as dangerous and the subsequent blind acceptance of brutal police practices with this population. This aligns with current theories of errors in threat perception and implicit bias in policing African American males and, according to Kappeler (2014), has influenced the historical police violence against other minorities. The argument made by Kappeler (2014) is that slave patrols protected the interests of slave owners then by controlling slaves, and modern policing protects the interests of White society now by controlling all minorities of color. Although he does not empirically validate his claim in his piece, his account of how historical factors might influence current policing is worth considering, particularly in light of the recent availability of incidental data on police use of lethal force with minorities that may be analyzed to support or refute his belief. Such research is being conducted, and soon there should be an influx of empirical studies into the professional literature capable of shedding light on the accuracy or inaccuracy of these types of definitive assertions.

Not surprisingly, slave patrols were not successful in controlling the dissent and revolt of slaves, especially because many slaves characterized being ruled under the patrols as being worse than slavery and acted in kind with heightened resistance. Slowly but gradually thereafter, slave patrols came under welcomed scrutiny by slave owners who charged the patrols with damaging their property and primary source of labor when causing injury to their slaves. The scrutiny, however, did not immediately or significantly decrease the violence perpetrated by slave patrols. That customary violence would continue until the formal abolition of slavery and

the slave patrols (Reichel, 2013) after the Civil War, but their replacement—the Ku Klux Klan—was waiting to resume the brutal control of African Americans, particularly males (Kappeler, 2014). The Klan's presence was strong during that time and into the 1960s civil rights era, when they served as the informal police force of the opposition to the civil rights movement, whose self-ascribed role was to intimidate and brutally control African Americans in the spirit of the duties of the slave patrols. Parenthetically, many police forces in the south, during the civil rights era, supported the Klan and operated under the same belief system that categorized African Americans as a lesser class (Kappeler, 2014), resulting in their sanctioned brutalization in the name of the law (Alang et al., 2017). This has persisted to an extent into the current time, according to Moore et al. (2016), evidenced by the notion that young African American males are far more likely to be killed by the police than young Caucasian males. Their conclusion is drawn from descriptive statistics on counts of killings of young African American males by police in comparison to their Caucasian cohorts in the same age range. This fact itself raises reasonable questions about the validity of their claim but it should nonetheless be considered in the context of the larger issue of perceived racial disparities in police use of lethal force if for no other reason than their claim, and claims like it, have inspired the recent fervent inquiry into the subject. One such claim stemming from the belief that slavery continues to influence racial disparities in police use of lethal force is that African Americans do not have the same rights as Caucasian Americans in contemporary time. From this perspective, the rights of the financially superior Caucasians are threatened by the potential actions of members of the lesser African American class (Robinson, 2017). Therefore, police practices are shaped by the necessity to routinely target the threat posed by these individuals. That supposition aligns fittingly with the errors in threat perception and implicit bias in policing theoretical perspectives. The flaw in

Robinson's (2017) study, however, is in its methodology. Like many of the authors publishing studies in this area, he conducted his research with the use of content analysis of data obtained from *The Washington Post* and *The Guardian* databases. Although content analysis as an initial exploratory method can yield important information about topics, it is not sophisticated enough to use for drawing inferential conclusions about them or testing research hypotheses. To that end, his work, like the work of other authors submitting similar types of studies to the literature, will be considered qualitatively informative to empirical findings of shared research. In light of the empirical weaknesses of content analysis, studies like Robinson's are important in that they often provide the inroad for more rigorous research on topics that beg for exploration in order to improve society. It should be assumed, indeed, that this is one of those important topics. Shedding light on apparent social injustices should always be welcomed by research and professional communities. The beliefs of those in this camp, regardless of the fact that they are largely informed by content analyses, are valuable in their own right because they can bring attention to phenomena resting below the collective consciousness of societies. If societies become far removed from recognizing such phenomena, they might persist to the detriment of existing and future generations. This might be evident, at face value, when considering that only half a century ago, during the civil rights era African Americans were permissibly treated differently than Caucasians by the police. From this perspective, the influence of that era on contemporary American policing, similar to the era of slave patrols, warrants further exploration.

Policing in the Civil Rights Era

Although racial tension between police and African Americans has roots in early American history dating back as far as slavery, tension during the Civil Rights era is more visceral in the psyche of citizens. Images of events and stories about police violence toward

African Americans during that time are readily available for review, keeping them fresh and relevant. Parenthetically, media images and reports of police violence during that time introduced to the public the seriousness of the problem. Prior to then, police activity went largely unchecked and policing practices were rarely publicly scrutinized (Archbold, 2012) in the same manner they are today, owing to the media. The civil rights riots are perhaps most illustrative of the culmination of the tension between police and minorities during that period, and although things have greatly improved since then (Clark, 2017), many believe there is much more work to do to improve police interactions with African American populations. The sentiment is that police violence toward minorities, although better cloaked and less publicly acceptable, has not changed in form or fashion since the Civil Rights era, notably evidenced by higher rates of stops by police of African Americans (Howell, 2014), disproportionate incidents of lethal force with their young men (Kahn et al., 2017a), and the frequency and duration of incarcerations of minorities when compared to other races (Moore, et al., 2016). The theoretical framing of contemporary police violence as stemming from and actively representing Civil Rights era policing sensibly allows for conclusions about their similarities to be drawn. However, such conclusions would fail to fully consider the progress that has been made since then with civil rights, legal protections, and police accountability and perhaps demonstrates the limitations of viewing police and race relations more through a theoretical lens than from an empirical perspective (Donnelly, 2017). The latter succeeds at leaving many factors to consider, such as disproportionate crime rates, characteristics of individual encounters with police (Fryer, 2018), and accurate data on incarceration proportions (MacDonald, 2017), when examining the issue.

Although comparing police and race relations between then and now from a panned-out view can be convincing to those who see widespread similarities, when viewed at a more

granular level, the similarities become less apparent and the imperative for deeper exploration into police use of force with minorities cannot be ignored. The period in policing that possibly best illustrates the importance of considering various factors when drawing conclusions about police and race relations is the 1980s and 1990s era. It was during that time policing practices changed in ways that resulted in an increase in use of force, militarization of police forces, and racially motivated police encounters.

Policing in the Gangland 1980s and 1990s Era

The proliferation of crack cocaine in the inner cities, increased and related gang violence, the war on drugs, and rampant crime in major metropolises around the country in the 1980s and 1990s necessitated changes in police work (Celona & Golding, 2017). Military tactics began being used with seeming inexorableness in police responses to epic levels of violence on the streets of Los Angeles (Romero, 2014) and New York (Celona & Golding, 2017), which soon would be replicated in other major American cities. The situation only worsened when droves of citizens relocated out of the cities because they did not feel safe, leaving them populated with street gangs and other criminal elements and law-abiding citizens who were financially unable or unable for other reasons to escape the violence by moving away (Anderson, 2016). As innocent people were routinely injured and killed, so were police officers responding to violent crime, criminals engaging police with violence, and gang members from their battles with each other over territory for drug sales (Levinthal, 2012) and encounters with the police. Those especially at risk not only for violence, injury, or death but also economic stress, were poor African Americans simply because they had no other option but to remain in their violent communities (Anderson, 2016). That period in time has been likened to the wild west by former police officers and officials (Celona & Golding, 2017), and what stemmed from them with regard to police and

race relations, in part because most gang members were and are minorities, is the deepening of racial bias based on stereotypes of African American males as being dangerous thugs (Smiley & Fakunle, 2016). This perception of African American males, according to Dukes and Gaither (2017), is associated with racial bias in policing and racially motivated disproportionate shootings by police.

It seems fair to suggest that policing in the 1980s and 1990s changed police practices from what they were decades before when violence against minorities more surrounded civil rights struggles, social factors, and unscrutinized police activity than a response to rampant violence on the streets. However, despite the similarities in both how African Americans were perceived by police during those years and are currently perceived by police (Dukes & Gaither, 2017), it is difficult to conclusively tie events from that era to current disparities in police use of lethal force, particularly with young African American males, based on theoretical assumptions. It is more appropriate to contemplate from various theoretical perspectives the possible influence police practices of former eras have on current police practices with racial minorities.

Current Perspectives on Institutional Racism in Policing

By definition, institutional racism is a social, political, and environmental system set up to maintain the prosperity of the dominant class while oppressing minorities. Examples include things such as poor minorities having fewer opportunities for an adequate free education, disproportionate incarcerations of Black and brown people (Jeje, 2016), and the proliferation of ghettos that perpetuate generations of poverty, drug use, community violence, and crime (Johnson & Bennet, 2017, p. 7). It stems back to the slavery (Alang et al., 2017) and Jim Crowe eras (Embrick, 2015), when broad racial discrimination was allowed and legally supported. Laws, polices, and practices favored the advancement of White culture, hinged primarily upon the socially accepted notion that African Americans were a lesser class of people who did not

deserve equal treatment or social positioning to the dominant class (Chaney, 2015). This trend has continued, but in less apparent forms, cementing its place in contemporary society despite the fact that racial discrimination post-slavery (Alang et al., 2017) and Jim Crowe (Hirschfield, 2015) is rejected and no longer socially acceptable (Jeje, 2016). Racial discrimination in this sense is now evident in more subtle forms, although in the same spirit of those former eras, known as it is defined here as institutional racism (Chaney, 2015). In other words, racial discrimination still exists with the purpose of protecting White superiority, although it is carried out in more subtle, socially hidden and hence acceptable ways, with legal, political, and economic protection.

Although ostensibly vast and pervasive in contemporary American society in businesses, educational institutions, and government agencies (Popielarz, 2019), institutional racism is said to be most arrant in the criminal justice system (Armacost, 2016; Chaney, 2015; Jeje, 2016). From proactive policing activity to disproportionate incarcerations of racial minorities, particularly young African American males, institutional racism is said to be widely pervasive in the American legal system. Broken windows and zero-tolerance policing have notoriously targeted young African American males in the form of racially biased policies aimed at aggressively policing high crime areas, which are typically poor and minority (Bornstein, 2015). Deeply embedded, top-down cultures of aggressive, numbers-driven policing result in greater arrest proportions of African Americans for minor crimes that sometimes escalate into lethal encounters, out of protests to their seeming unfairness and the perception by police that Blacks are dangerous (Armacost, 2016). Police officers are generally highly regarded by society even though African Americans often experience them as racist and corrupt, which consequently suggests that law enforcement as a system furthers racism (Chaney, 2015). Additionally, because

the criminal justice system is openly profit-driven in a network of private prisons (Jeje, 2016), agencies generating revenue from issuing tickets, and overtime pay for officers (Lynch, 2011), aggressive policing can be lucrative for organizations that own and operate prisons (Jeje, 2016), police agencies, and police officers who are paid overtime, especially for going to court (Lynch, 2011). The profit-driven practices of police and the criminal justice system were substantially enhanced during the war on drugs, particularly during the crack cocaine epidemic. Crack use proliferated among poor minorities, who were consequently subject to severely harsh penalties, more often than not, and long prison terms (Johnson & Bennett, 2017) due to mandatory minimum sentences (Lynch, 2011), which have since been abolished. That practice perpetuated further crime, violence (Johnson & Bennett, 2017), and aggressive police activity (Armacost, 2016), resulting in compounding criminal offenses for minorities and prisons filled with African American males (Jeje, 2016).

Although the problems for minorities allegedly stemming from institutional racism have been well documented (Chaney, 2015), recommendations for its remediation have been presented in various forums (Bornstein, 2015; Klinger & Slocum, 2017; Lynch, 2011), and activism on behalf of ceasing the practice is greater now than ever before (Moore et al., 2016; Jeje, 2016), it remains pervasive throughout society (Popielarz, 2019), particularly in the criminal justice system (Johnson & Bennett, 2017). Perhaps together, recommendations for change and the related copious activism of late will prove successful in breaking down this apparently deeply embedded practice (Armacost, 2016). Until then, efforts at change in this area will likely continue, bringing to the fore yet further refined topics under the institutional racism umbrella. From that perspective, the topics of implicit bias and errors in threat perception have been extrapolated as relevant focal points.

Implicit Bias

It seems fairly safe to suggest that common sense dictates that bias exists in everyone to some extent, both implicit and explicit. Bias in any form is the product of human experiences. It is culturally informed at the micro, meso, and macro levels (Santrock, 1999) and embodies derivatives from belief systems formed early in psychological development and those influenced later in life (Sabatier & Weible, 2007). Bias can be social, political, racial, professional, and religious. Most importantly, bias can be unconscious or implicit, meaning it resides outside of awareness or is unavailable to the operating sentient psyche, and it continually motivates behavior (Auchincloss, 2015). The implications for police work are quite substantial, considering the varying sources and degrees of influence on individual and contextual experiences of police officers that drive their decisions. They may include cultural, family of origin, and societal influences, to name a few. These factors, individually or combined, have a role in influencing the self-control of officers during lethal encounters (Donner et al., 2017). Perhaps the most significant influence is that of the organizational culture of police agencies. The notion is that racial resentment and efforts to control racial minorities, particularly Blacks, is hidden in the name of justice and deeply embedded in police culture (Carter & Corra, 2016). The culture dictates that African Americans are dangerous and it is therefore necessary to control them to protect society through proactive policing characterized by frequent stops, random searches, and use of force (Kahn & Martin, 2016). Incidentally, there is little evidence to suggest that police officers intentionally discriminate against racial minorities, but evidence does indicate that African Americans are more likely to be perceived as criminals by police officers as an extension of the broader organizational perspective (Spencer et al., 2016).

At an even deeper level, policing may create racial meaning, stemming from foundational anxiety felt by Whites for their complicity in racial domination in addition to the pressure to maintain power (Whitehead, 2015) in an evolving racially diverse landscape. In essence, racialized policing, under the notion that Blacks are dangerous and therefore should be controlled, maintains White superiority while justifying White racial domination. When justified in such a manner, anxiety about racial domination is assuaged.

In alignment with the biased notion that African Americans are dangerous, police work is aimed at decreasing or eliminating threats they pose. This bias often results in aggressive policing of minorities, over-policing of minority communities, and lethal outcomes for African Americans, particularly young males, who are perceived to pose the greatest threat. Perceptions of threat held by police officers are heavily influenced by the implicitly biased police cultures that provide their law enforcement directives. Critical errors in how threat is evaluated by the police may have devastating outcomes that are often justified by society, police agencies, and the dominant race based on embedded, tacit cultural beliefs about the dangerousness of minorities. These errors are the visceral representation of implicit bias in police culture.

Errors in Threat Perception

Attitudes about candid racial discrimination have moved in the right direction since the days of slavery and Jim Crow but subtle racism still exists. This is perhaps most evident in differences by race of support for police use of force. Racial resentment of Whites toward Blacks has long historical roots in American society and, although less explicit in contemporary time, continues to influence attitudes about use of force (Carter & Corra, 2016). It was found that individual views by Whites of racial equality is associated with support of police use of force. In short, views of racial equality stem from racial resentment built on the belief that Blacks do not

exhibit traditional values of hard work or individualism, do not make efforts to overcome their own difficulties, and are inherently dangerous. Further, older, more conservative Whites tend to support police use of force more than other groups, and this support tends to remain stable over time and regardless of national events, such as the widely covered recent high-profile police shootings (Carter & Corra, 2016). The strong premise around which support for police use of force is built is primarily deeply rooted in the belief that Blacks are dangerous (Dukes & Gaither, 2017). This fuels more routine use of force with African Americans (Dukes & Kahn, 2017), earlier use of force with minorities during police encounters, the belief that less discretion for use of force with minorities is necessary, and the belief that certainty of danger from minorities is less necessary in decisions to use lethal force (Kahn & Martin, 2016). Such perceptions about Blacks and minorities lower the threshold for lethal use of force with these populations. This is evident in various ways when examining the course of regular police work, particularly in high-crime areas which are most often occupied by racial minorities. For example, Blacks are often seen by police as more aggressive, are believed to be armed when they are not, and are more routinely perceived to pose threats of violence (Moore et al., 2017), regardless of accompanying facts to the contrary. Moreover, young African American males are often perceived as dangerous due to their physical size. The larger they are, the greater the threat of dangerousness to police officers. In turn, police officers are more likely to respond with disproportionate force. This perception of Black threat is reportedly held primarily by Whites, who view muscular Black men as dangerous, and it consequently justifies use of lethal force against them. It is especially true for young Black males, who are believed more than young Caucasian males to be capable of causing serious physical harm (Rule, 2017).

Despite the upward social, political, and economic mobility by African Americans in contemporary American society, stereotypes of young Black males being dangerous still exist (Smiley & Fakunle, 2016). The stereotypes fuel perceptions that result in police use of lethal force and societal support for use of lethal force against minorities. However, the opponents of the theory of errors in threat perception argue that threat perception by police is motivated by factual evidence that young Black males engage in disproportionate levels of violent crime (MacDonald, 2017). These opponents generally subscribe to the school of thought that police work, including use of lethal force, follows crime.

Viewpoint 2: Police Use of Lethal Force as a result of Threat and Disproportionate Crime

Crime and violent crime in America began steadily rising as far back as 1900 in proportion to a growing population of young males, increasing racial tensions, and changing gender roles. During the early to mid-twentieth century, Blacks and immigrants were thought to be naturally prone to engage in crime, and conventional wisdom at the time was that race related violent crime was confined to the urban areas where immigrants lived (Adler, 2015). Although initially largely ignored, ambitious initiatives to address crime in urban centers eventually became the focus of law enforcement around the country (Dripps, 2015). Proactive policing instituted during the latter part of the century was the answer to rising levels of crime and violent crime, which subjected African American males to frequent stops, arrests for minor crimes, and lethal encounters with police because they often spent time on the streets being heavily patrolled (Dripps, 2015). Despite the negative consequences for African American males, crime rates dropped substantially, particularly violent crime (Lehrer, 2002) in most major cities and law and order was effectively restored (Anderson, 2016) for decades to follow, until the same large cities that saw major crime reductions with proactive policing began dialing back the practice (MacDonald, 2017). What followed was a steady increase in crime and violent crime in many

big cities in America, particularly Chicago, whose offenders and victims were largely young, African American males (MacDonald, 2017). The violence during that period—from about 2009 to 2016—continued to increase until it reached the point at which the streets of parts of Chicago were declared to be as dangerous as those of the war-torn cities of Afghanistan and Iraq (McCarthy, 2016). Of course, not every major American city was as plagued with Black-on-Black violence as Chicago, but the upward trending of similar types of violent crimes all throughout the country was nevertheless pervasive (MacDonald, 2017). This was happening simultaneous to attacks on police officers (Armacost, 2016) who were targeted in response to an anti-police sentiment sweeping the nation, grounded in media-driven racial tension between police and minorities (Clark, 2017). The anti-police sentiment was premised on the notion that police were killing unarmed, innocent African American males without provocation or justification for use of lethal force.

The objective put forth by the subscribers to this school of thought is not to portray African American males as violent or dangerous, in kind to assumptions made by proponents of the theory of errors in threat perception. Rather, it is to shed light on a measurable phenomenon essentially ignored by the media and others claiming to be interested in the causes of police use of lethal force with this population. To speculate about the causes of violent behavior and criminal activity in and among young African American males would not necessarily be fruitful for the purposes of this research, but the opinions of some authors on the topic are noteworthy, if for no other reason than to provide some basis of rationale that differs from historical characterizations of young Black males as being full of angst (Smiley & Fakunle, 2016) and dangerous (Dukes & Gaither, 2017). In other words, it is important to recognize that those in this camp do not make claims that young African American males are inherently dangerous or prone

to crime or violence. There are reasons, they know, for acting out in such ways that perpetuate negative consequences, particularly with authorities. Those most notable are parenting styles, living in poverty, and enduring a fatherless development. For example, authoritarian parenting, largely characterized by physical punishment, often leads to anti-social behavior and this parenting style is more common in families with lower socioeconomic status or those living in poverty (Streit et al., 2017). Further, poverty and crime have been inextricably linked for decades (Bartol & Bartol, 2011). Being raised in poverty often exposes children to verbal and physical abuse, suppressed aggression, family problems, and anger. Those factors, in addition to having no father in the home, were rated highly in one study as the main causes of teen violence (Collins & DeRigne, 2017).

Considering the trend of criminality and violence in young African American males, due to various contributing factors beyond race (Fryer, 2018), it makes sense that they have higher frequencies of engagement with the police. That supposition is the basis of disagreement with the notion that institutional racism, implicit bias, and errors in threat perception are the causes of police use of lethal force with this population.

Disproportionate Violent Crime Rates

There are still strongly held beliefs that institutional racism and White supremacy motivate police use of force with minorities (Tolliver et al., 2016). However, despite success with change in areas that fuel those beliefs, including decreased proactive policing, better ethnic representation on police forces, and citizen oversight of police (Ward & Menifield, 2017), the engagement between African American males and police remains high. This is not due to failures in progressive institutional change, particularly in law enforcement, but rather to disproportionate violent crime rates of young African American males (FBI, UCR), especially

Black-on-Black crime (Clark, 2017), when compared to males of other races. To illustrate, between the years of 2013 to 2015, proportions of murder rates among Blacks and Whites remained stable, at approximately 52% and between 41% and 44%, respectively, where African Americans comprise about 13% of the total population. Similar trends exist with robbery and to a lesser extent, aggravated assault (see FBI, 2015). The overwhelming majority of those crimes were committed by males (see FBI, 2015). To ignore these facts when discussing arrest rates, rates of incarceration, and police use of lethal force may be negligent if the truth about racially based disproportions of police encounters is sought. Of course, some police officers may hold racist beliefs, some police agencies may be corrupt, and various police organizations may operate with implicit racial bias. However, those factors alone could not reasonably account for all disproportions in lethal incidents among the widely variable contextual factors in individual encounters African Americans have with the police. For example, when an incident of force occurs, regardless of whether or not it is with a minority, factors such as the level of violence threat or danger the suspect presents to the officer or public, the type of crime that precipitated the incident, and other factors related to the behavior of the suspect are important to consider. To deliberate race at face value in such an incident as the only motivating factor is not realistic but is precisely what has been happening in much of the contemporary research (Fryer, 2018). In addition, because criminal violence can be the result of various social, environmental, economic, and situational factors (Schouten & Brennan, 2016), making such one-sided inferences about police encounters with minorities can be misleading. It has been further argued that crime rates have risen in the past five years secondary to the anti-police sentiment of late in response to what is now known to be the false narrative of the Michael Brown shooting case (MacDonald, 2017).

Before discussing the pertinent details thereof, it is prudent to reflect on the quantity of the related increase in violent crime.

Since 2014, the approximate year of the instatement of the anti-police sentiment, violent crimes such as homicides, shootings, and robberies, have increased by as much as ninety percent in major American cities, including Cleveland, Saint Louis, Nashville, Milwaukee, Chicago, and Washington DC (MacDonald, 2017). Similar rates were seen in New York City, New Orleans, and Dallas, while police reacting to this new nationwide crime wave were being characterized by activists and much of the media as perpetrators of police brutality (Clark, 2017, p. 30, 104) and subsequently became targets of retaliatory violence (Armacost, 2016). The media and activists, of course, cannot be directly blamed for the crime surge ostensibly born from the Michael Brown case and anti-police sentiment, but the indirect effects of the racially negative characterization of police motives and their fear of being targeted with retaliatory violence influenced a more cautious, new way of policing that resulted in less enforcement of the law and, in turn, more crime (MacDonald, 2017). This new way of policing and related outcomes of increased crime and lawlessness, known as the Ferguson Effect, is the response to the activist led, media supported anti-police movement.

The Michael Brown Case and the Ferguson Effect

If police officers were targeting young, unarmed, African American males with lethal force it would arguably be shocking, if not downright appalling. Certainly, what would be even more appalling is an officer shooting an unarmed, African American young man in the back while his hands were up in surrender. This is indeed the narrative of the Michael Brown case that sparked nationwide resentment, disgust, and disdain for the police, as it should if it were true (Clark, 2017). But according to the Department of Justice (DOJ) Ferguson Report (2015), it is

not. Despite confirmation by the DOJ that witness accounts of the incident, particularly that Brown had his hands up and was shot in the back, were false, the image of him being gunned down in perceived innocence instigated the already burgeoning anti-police sentiment. The anti-police sentiment was rising at the same time violent crime rates were on the rise, according to the highest ranking, Federal law enforcement officer at the time, who blamed increased crime on the decrease in proactive policing in major cities across the country (MacDonald, 2017). The FBI director's message about rising violent crime was buried in the media frenzied coverage of the Michael Brown case and others like it, including those of Trevon Martin, Eric Gardner, and Tamir Rice (Clark, 2017), all of whom were characterized by opinion journalists in the twenty-four-hour-news cycle as innocent victims killed by the police. In fact, none was innocent (MacDonald, 2017). Michael Brown assaulted a store owner and stole Cigarillos, on video for all to see, and struggled with the arresting officer for control of his firearm; Trevon Martin, although not shot by police, was killed by a community watch citizen in a brutal physical altercation he started; Eric Gardner was illegally selling individual cigarettes and resisted arrest—it was later determined that he died from an underlying condition rather than a legal choke hold; and Tamir Rice was brandishing a toy gun that looked real when he refused to comply with orders to drop his weapon and was shot by police (Clark, 2017, pp. 72-78). Although these facts were available to the media to include in their reporting, they were at best briefly mentioned, if at all honestly revealed during their coverage of the cases. Instead, the police were accused of racist targeting of innocent young Black males for violence (Chaney, 2015), and some even argued that these incidents reflect an all-out war on young Black males. When the media breaks about these incidents in this manner, nationwide public opinion is shaped by the negative characterizations of police, especially when similarities among the cases are drawn based solely on the factors of race

and lethal force. Ignoring the facts of each individual case by city, rather than grouping the cases together to shape a nationwide narrative, contaminates public views of police. This creates further tension between police and minority communities, allowing tension to be politicized. When politicized, guilt for criminal activity is projected onto the police, unjust treatment by police during single incidents characterizes law enforcement in general, and police use of lethal force is easily blamed on race (Weitzer, 2015). The most recent notable examples of the fallout arising from this type of tension are the riots in Ferguson and other major cities.

Public unrest from the activist led anti-police sentiment, based primarily on the Michael Brown case, upheld by academics, politicians, and media figures, led to riots and violent protests that were met with military-like responses from police (Wilson & Wilson, 2015), and subsequent calls for the deaths of "pigs" that resulted in violent ambushes on police throughout the country (Armacost, 2016) and assassinations of police officers in New York and Dallas (Clark, 2017). Incidentally, the media coverage of the riotous behavior in protest of alleged police violence has been vast, while reporting on the targeted deaths of police officers stemming from the riots was negligible and brief. Furthermore, despite limited factual evidence that police shootings are racially motivated, activists, politicians, and academics continue to opine on their belief that shooting deaths of unarmed Black males is an epidemic in this country and criticize FBI UCR statistics on violent crime proportions by race because they are voluntary and do not accurately characterize threats from unarmed Black suspects (Zwach, 2015).

The recent death of George Floyd in Minneapolis at the hands of a White police officer while in custody has added to the tension between police and minorities and exacerbated the Ferguson Effect. As protests of Floyd's murder turned violent in Minneapolis and spread to other major American cities, police officers have become the targets of heavy scrutiny by the media,

political leaders, and anti-police activists in their routine work, including their necessary use of force. They also are being targeted for violence, being disrespected, and face grave danger while on duty, as has been evidenced by media images of them being assaulted, spit on, and forced by groups of riotous protestors out of their precincts. Their reaction has been yet more cautious policing, refusal to engage criminals, and the widespread exodus from police work, all of which have left citizens at risk, especially those in poor, minority communities. Further complicating the situation is the related "defund police" movement. Critics of the movement argue that it has only emboldened criminals because they do not expect consequences for their behavior and do not see the police as legitimate, thereby greenlighting their criminal activity (Zeldin, 2020). Because defunding the police has support from elected leaders, has been embraced by pop-culture elites, and appears to be a topic of legitimate discussion, its effects on crime are likely to continue. Indeed, since the movement was introduced, crime has increased in major cities where it has support. Those who oppose it routinely point out this fact, and to them the discussion of cutting police department budgets in efforts to reform police work makes no sense (Kaplan, 2020). In fact, rhetoric around defunding the police appears to have become politically valuable for different reasons on either side of the isle. The great misfortune in the racial and political aftermath of the Floyd case is that citizens around the country, including police officers, were essentially unanimously united around the injustice of his death, but his name and the purpose of the initial protests of his murder have since been largely lost in and exploited by an apparent opportunistic, solicitous political agenda. Time will tell if Floyd's death will spur positive results for police reform or further fuel perceptions of racial injustice in policing.

Perhaps the silver lining in the above events, alongside some beginning reforms in police and minority community relations, is the reinstatement of religion and spirituality in Black

communities, particularly directed toward young Black males. Following the aftermath of the Michael Brown incident, religious leaders began playing a larger role in the lives of Black youth and police, in the spirit of historical church involvement in this way in Black communities, working to reduce violence between them (Moore et al., 2016). Additional efforts at reform in poor, Black communities in the areas of income equality, education, employment, and crime may serve to quell some of the underlying causes of violence between police and minorities (Abdul-Alim, 2016). Otherwise, the outlook may be bleak, with media-driven tensions further perpetuating reluctance by police officers to proactively protect and serve in fear of being judged as racist or targeted for retaliatory violence and consequential increased risk for law abiding citizens of being exposed to violence and crime in their communities.

Despite differences in the perceptions of the police held by members of society, law enforcement practices in America have evolved from past eras to be judicious, fair, and effective. They are governed by various contemporary theories born from reflections on past errors, necessity to prevent crime and protect communities, and responses to social influence. Police officers operate within theoretical frameworks to ensure the safety of citizens, to ensure their own safety, and to maintain order in free societies. The next section discusses the most relevant contemporary policing theories, their component parts, and their advantages and disadvantages.

Current Perspectives on Crime Rates and Lethal Force in Modern Policing

Policing in American has undergone many reformations since the period of slavery, despite the characterization of police by some authors as still being racially biased (e.g., Buehler, 2017; Moore et al., 2016; and Robinson, 2017), violent toward racial minorities (Alang et al., 2017; Dukes & Kahn, 2017; Duran & Loza, 2017), and driven to control minority populations to secure the prosperity of Whites (e.g., Hirschfield, 2015; Howell, 2014; and Kahn & Martin,

2016). In fact, the identity of modern policing, although fluid and continually evolving, was formed in large part on the basis of lessons learned from past eras.

The most notable changes in policing and police operations, beginning in the mid-1960s, include a required higher level of intelligence in officers, more interest by police administrators and leadership to establish and maintain the reputation of their agency, a scientific approach to enforcing the law, the demand for higher standards in police conduct, more racial and gender diversity in police forces, police specialization, and the acceptance by police of civilian oversight (Bayley, 1998). At the time of his writing, Bayley (1998) believed that although these changes were evident in many police agencies, their adoption was not widespread. It seems important nonetheless to recognize that only two decades after sweeping reform of police work was formally demanded by the Commission on Law Enforcement (Bayley, 1998), the demand was being met with apparently minimal resistance.

Aside from reforming practices on the heels of lessons from past eras, police agencies were dealing with spikes in violent crime during the 1960s in addition to frequent rioting that necessitated use of force. That approach to quelling serious and dangerous criminal activity consequently resulted in a decline in their public image, particularly with African Americans, who were viewed as having been treated unjustly, representing inequality of that time period (Uchida, 1989). That public image represented the culmination of policing ills from the previous eras and demonstrated the need for the changes discussed above.

The events of the past have undoubtedly influenced changes in police practices, as a result of both related mandates and public pressure. This pattern is likely to continue to shape law enforcement reform based on paradigms about policing, police and race relations, and public perceptions of the police.

The influence of historical events on contemporary American policing are evident. Indeed, law enforcement has evolved to be fair, racially unbiased, and data driven since the slavery era to the greatest extent possible in the context of varying political and legislative climates. Police agencies are highly bureaucratic, yet politically influenced, and police conceivably live among and share values with the citizens they serve. The authority they have granted by the administrative state is legitimate, and their use of force to maintain safety and order is universally formally sanctioned and presumably applied judiciously and justifiably. Their actions are routinely publicly scrutinized, and they are charged with protecting the interests of elitist state institutions, corporations, and the property of the ruling class, not, however, in lieu of protecting the safety of the poor, racial minorities, and citizens who do not participate in the labor force. Further, activists for the poor and oppressed reject the legitimate power of police and demand wholesale change in law enforcement aimed at decreasing police use of lethal force. Their push for change has been heeded by the Federal government for decades, and from it reforms in law enforcement have occurred, representing top-down Federal involvement that characterizes modern police practices around the country. Although promising for these activists, Federal influence on state and local law enforcement has yielded fluctuating results in favor of the marginalized groups they represent. This is largely because Federal influence comes primarily in the form of monetary aid to police agencies with accompanying requirements for them to carry out the Federal agendas. When the war on drugs was the agenda, for example, it disproportionately negatively affected poor African Americans by increasing their arrests and incarceration rates for minor drug infractions (Kahn & Martin, 2016). Other examples include post-911 efforts to enlist aid from local police agencies to fight terrorism, which ostensibly shifted police attention away from the interests of their own communities and toward the national

war on terror, and Federal support for the militarization of police agencies to equip them to carry out those agendas (Boettke et al., 2017).

Contemporary police practices born from past events and Federal influence seemingly can be characterized as being democratic, which by default also renders them bureaucratic, and evidence based. Democratic policing occurs when the police serve their community based on law enforcement policies developed through the democratic process (Harkin, 2015) and the police and citizens share the same values and have an equal interest in protecting the safety of their community (Skolnick, 1999). Democratic policing is bureaucratic because the police are held accountable by their citizens and the authority that grants their power (Skolnick, 1999). Lastly, democratic policing is evidence based because it uses research to influence its policies and practices and educate its officials, part of which is the routine measurement by police agencies of their own outcomes (Sherman, 1998).

Regardless of the outcome, decisions made by police officers are influenced by pressure from their agency, their community, the media, and society, not to mention their own safety and self-preservation and the safety of the suspects they engage. In this regard, decision making becomes an important balancing act and the outcomes, when bad, are often unfairly directly tied to the officer. Police officers are individual actors in high-pressure situations making routine, daily decisions that demand efforts at self-preservation and thus necessarily the pursuit of their own interests (Monroe & Maher, 1995), regardless of the related scrutiny they may face. Their individual decisions in the context of bureaucratic and societal pressure are reflected in professional policing, which is discussed in the next section.

Professional Policing

With advances in technology and the advent of the 911 emergency system, police practices evolved, placing officers in a more professional role. Rather than being familiar "beat cops," they became polished technocrats whose purpose was to quickly respond to calls in cars rather than on foot, and to rapidly organize to fight crime in an aloof, distant manner (Smith & Greenblatt, 2014, pp. 452-453).

This approach was effective at fighting drug trafficking, gang activity, and violent crime, and is synonymous with the now common high speed chases involving lines of police cars and helicopters, the use of specialized tactical teams, and well-organized standoffs with hostage takers, among other strategic activities. It is bureaucratic because it emphasizes a top-down organizational structure in police agencies, characterized by a hierarchy, task forces, and data driven police activity. It is often tied to Federal funding, which in part requires police departments to carry out Federal agendas (Boettke et al., 2017). Because professional policing is technical in nature, the role of police officers is more defined in ways that distance them from their citizens. This may result in policing tactics that are more aggressive (Smith & Greenblatt, 2014), particularly in high crime areas most often populated by minorities (Thompson, 2015). When police officers have professional, distant relationships with citizens, it may be easier to view them more objectively, and in some cases as dangerous criminals, potentially necessitating more aggressive use of force (Carter & Corra, 2016; Fridell, 2016). The critics of use of force by officers acting and reacting professionally in these situations often do not consider the limited contextual information available to them at the time of the decision (Fryer, 2018). Their criticism about the motivation of police officers engaging in use of force is therefore routinely misleading. Consequently, it serves little purpose in the way of police reform. This is playing out today in the

defund police era in which proactive policing has disappeared and reactive policing has all but disappeared in an apparent effort to satisfy the anti-police activists. In this new world order police officers are making decisions based on their physical safety, as they are routinely assaulted when attempting to carry out their duties, rather than the safety of citizens, the standards of their agencies, or laws on the books, the latter of which have arguably been informally delegitimized. In other words, police officers in the current environment are forced into cautious policing, making decisions to preserve their own safety as political leaders want them to pull back on enforcing the law. Meanwhile, citizens in poor, minority inner cities who want more police presence in response to an increase in crime are suffering in fear for their safety. When faced with having to decide to protect their own safety or the safety of the citizens they serve, it is fair to assume that police officers experience substantial internal conflict in their newly defined role. Parenthetically, police are now dealing with the actions of criminals whose decisions hinge on the reality of diminished police presence in an apparently growing lawless society. This arguably guarantees the perception that crime pays. Given the lack of police presence, limited threat of consequences for engaging in crime, and apparent social support and notoriety for criminal disobedience in the defund police era, the decision for some citizens to engage in crime appears inevitable. The circumstances in this era are right for criminals to act out and police to retreat, each of which leaves law abiding citizens at risk for becoming victims of crime. When criminal acting out and police retreat are combined, that risk arguably increases. Perhaps an abrupt return to professional policing, whose principles are grounded in law and order, public safety, high police presence, and deterrence, could restore public safety. Police could better factor into their decisions the costs and benefits of using force. Criminals could more wisely consider the consequences of criminal activity that would be forthcoming rather

than feel emboldened to engage in crime amidst recent talk of substantially diminishing police presence in their communities.

Similar to those of broken windows policing, the professional policing approaches to dealing with crime involve routine and impromptu stops and interrogations of suspects and witnesses, vigilant evaluation of potential threats, and justified use of force. This was arguably first evidenced by the Rodney King incident, perhaps the most well-known and documented incident of police use of force, during which time professional policing was in full bore in Los Angeles. That incident ultimately erupted into riots similar to those of those of the Civil Rights era and prompted the return to community policing (Smith & Greenblatt, 2014).

Regardless of the criticism of professional policing tactics, especially those similar to tactics of broken windows policing, it is prudent to recognize the importance of professional policing and the police officer presence in communities. It is true that police officers strive to make decisions that serve their self-interests, namely personal safety. They also, however, act to protect the welfare of others and their communities, even when their decisions hurt their own self-interests (Monroe & Maher, 1995), which is evident in their routine willingness to run in the direction of danger rather than running from it (Reiman, 2019). Their decisions can and do represent the interests and values of the citizens and communities they serve, the bureaucracy, and the state that grants their authority.

Considering the interests of the various stakeholders in the bureaucratic system, decision making is often not as challenging as making decisions based on the values of the citizens who comprise the democracy that the bureaucracy administrates. Democratic decision-making, to be fair, should include input from members of societies, and theoretically does in a republic. However, elected experts in a representative democracy may not possess the expertise by

experience that their constituents possess. Therefore, it has been argued that democratic-decision making is not always truly democratic or representative (Jankovic, 2019), and this is true in policing, particularly with respect to racial proportions of routine police engagement. This will be more thoroughly discussed in the following paragraphs.

Broken Windows Policing

Perhaps the most well-known theory of modern policing is broken windows theory. According to this theory, a disorderly environment steeped in low level crimes invites behavior that leads to larger crimes (Kotabe et al., 2016). By ambitiously pursuing and thwarting low level crimes, police are more likely to prevent more serious criminal activity (Smith & Greenblatt, 2014). It is criticized for creating an environment of discrimination toward minorities, especially African American males (Howell, 2014), as much as it is revered for its undeniable impact on high level crimes (Eli, 2002). The latter is evident when reviewing New York City's crime data beginning at that time, following only several years of broken windows policing. Since the early 1990s, murders and felonies had dropped by two thirds, primarily in low-income, minority neighborhoods. The same is true for crime rates in Los Angeles and other big cities after implementing broken windows policing, with only few exceptions (Anderson, 2016). Conversely, since such proactive policing has declined, beginning approximately five years ago due to widespread criticism of its alleged targeting of minorities, big cities have experienced an increase in violent crime, particularly murders, and the majority of those being murdered at higher rates are African American males (Anderson, 2016). Despite this finding, opposition to broken windows policing remains strong on the basis of the argument that it is racist. The central point of contention raised by those who oppose this type of policing is with "stop and frisk," the broken windows tactic they believe unfairly and disproportionately targets young African

American males (Thompson, 2015), most of whom are innocent or engaged in the same criminal activities as Whites who are not targeted (Howell, 2014). Stop and frisk gives police officers authority to make stops of citizens, preventatively and at their own discretion. This activity more routinely takes place in low-income, minority neighborhoods than other areas, subjecting young African American males to frequent encounters with the police, many of which can be violent or fatal. Stereotypes of them being dangerous and visual metaphors of their neighborhoods being uncontrollable environments encouraging rule breaking (Kotabe et al., 2016) are the primary factors in this approach to policing that influence police use of lethal force. Conversely, broken windows policing is democratic because police officers practicing it are carrying out their duties in the spirit of shared community values (Klingler, 2005). The law-abiding residents of their respective communities want police presence to deter and prevent crime (MacDonald, 2017) and in fact benefit from proactive policing, especially with respect to avoiding victimization from violent crime (Clark, 2017). They trust the police to protect their safety, preserve their communities, and fairly and justly administer the law. Despite the criticisms waged at broken windows policing, it is democratic when appropriately practiced, offering transparency through accountability with programs such as Compstat, a statistical tracking system of police activity (Anderson, 2016), citizen input through community forums (Harkin, 2015), and policing based on shared community values (Lehrer, 2002). There is widespread support for broken windows policing on the basis of these principles, especially in poor, minority, crime riddled communities (MacDonald, 2017).

Nonetheless, broken windows policing remains the target of recent police reform efforts by those who argue that it is racially biased. Thompson (2015) and others, to that end, (e.g., Abdul-Alim, 2016; Moore et al., 2016; Wilson & Wilson, 2015; and Zwach, 2015) believe that

broken windows policing and stop and frisk are at the root of the deaths of Michael Brown and others like him, and the related subsequent racial unrest between the police and minorities. They support the broader implementation of community policing since it has proven in some larger cities to decrease homicides and complaints against the police, compared to other cities operating under broken windows policing (Thompson, 2015).

Community Policing

The level of police legitimacy is often measurable by their connection to and involvement with the members of their community. Procedural justice and crime prevention do not have to follow the zero-tolerance model of broken windows policing, and it has been suggested that the proactive approach actually does more to fracture police and community relations than it does to decrease crime and instill the sense of safety in citizens (Fridell, 2016).

Community policing embraces the ideal of egalitarianism in police forces and between police and citizens in the mutual effort to keep their communities safe (Jenkins, 2016). The police and community members work together to solve problems and related crime. Police officers are present in their communities, are familiar with the criminal element, have relationships with the residents, and are together vigilant about the criminal goings on in their neighborhoods (Smith & Greenblatt, 2014). Community policing is democratic in that police officers are seen as legitimate by the citizens of the communities they serve, they are accountable to the public, their activities are transparent and open to scrutiny, and they practice with fairness to all community members, including minorities (Hickman, 2010).

Reminiscent of community policing during the era of the first Metropolitan police department in London, England, contemporary community policing enlists the involvement of citizens in crime prevention based on the notion that it is not only their right but also their

responsibility to take part in protecting their community. Further, citizens should expect a reasonable level of service from police but also have to take ownership of their environment when determining what they will tolerate from one another in order to harmoniously coexist. Trust in the police must be strong if compliance by citizens with this mutual effort at crime prevention is to be sustained, and citizens have to dislike crime more than they dislike the police for success with informal social control aimed at deterring crime (Pearl, 2015).

The major challenge with community policing is the lack of awareness by citizens of what measures in crime control they are supposed to take on, and the feeling of limited support by police in high crime neighborhoods, where police are often biased in favor of their take on the informal social-control methods initially enacted (Stein & Griffith, 2017). In these instances, although largely decentralized and community focused in the spirit of democratic decision-making, police activity can mirror that of the less community-friendly proactive policing, making residents less likely to participate in crime prevention activities. In fact, they may not only be reluctant to engage in crime deterrence or prevention activities but may actually expect the police to take over fully (Stein & Griffith, 2017). The reluctance by citizens to engage renders community policing less democratic, especially because community members then have to rely solely on the experts they elect to make decisions about law enforcement. Because elected officials do not always share the values of or experiences with their constituents in a republic, applying democratic principles of policing can be challenging (Jankovic, 2019). Nonetheless, however challenging upholding the principles of democratic decision-making may be in community policing, it is grounded in the democratic values of mutual respect for the law, citizen involvement in policing and input on law enforcement policies, and fair representation and protection by police of citizens in the communities where they reside and serve. When

politics do not interfere with police and citizen relations, community policing can be fruitfully democratic, representing and protecting the core values shared by community members. Finally, because community policing requires a commitment between police and citizens to mutually prevent crime (Pearl, 2015), its efficacy depends on perceptions about crime held by both police and citizens. However, police have to lead crime prevention efforts since citizens often default to relying on police expertise and training, particularly in high crime areas. In order for the process to be democratic, equality in policing has to be continually monitored to ensure fairness (Hickman, 2010), community forums have to be implemented (Harkin, 2015, p. 734), and transparency has to be maintained (Armacost, 2016). The way to further cement positive police and community relations is to train officers on cultural differences and ensure police agencies are comprised of multicultural personnel (Stein & Griffith, 2017). The latter of these elements are present, incidentally, in professional policing, which suggests there are meaningful similarities among the varying police work theories.

The majority of contemporary police practices involve some combination of community and professional policing approaches, while broken windows policing tactics have been greatly diminished, if not formally banished due to the heavy scrutiny they have received in recent time. It can be argued that each of these forms of policing results in the unfair and disproportionate targeting of minorities, particularly African American males, for use of lethal force. Conversely, it can be argued that these models of policing have greatly reduced crime, and although not perfect, are viable in their own right. There are likely to be ongoing arguments for and against any and all of these models. The arguments will be substantial in depth and breadth and will represent perspectives of all sorts. To date, the predominating opposing perspectives for and against current police practices surround issues embodied in themes of institutional racism and

the position that police work follows crime. These perspectives are fervently held by their respective subscribers and are likely to be until mutually satisfying resolutions are made.

The competing theories on this topic will likely be under much debate long into the future. As fixed as they are, they would be difficult to change but for deep exploration into their components. Those components are largely comprised of the numerous factors outside of race that are potentially associated with police use of lethal force, many of which are discussed in the current literature but are not thoroughly examined as contextual factors. They are the variables begging for exploration to give empirical meaning to the overarching themes of police use of lethal force with minorities that are reflected in the opposing viewpoints of the different theoretical perspectives on police use of lethal force. Those covariates, namely age and gender of suspects engaged by police with lethal force, geographical location of the lethal force incident, presence of mental illness in suspects, whether or not suspects were armed, and type of threat of suspects will be discussed in the following chapter on methodology.

Conclusion

There has been much interest in the past several years in police use of lethal force with minorities. This interest stems largely from continual media coverage of recent high-profile cases involving the shooting deaths of what are said to be unarmed, young African American males presenting no threat to police officers who engaged them at the time of their death. Attention to these incidents has been focused on the alleged historical roots of police mistreatment of Black and minority suspects dating back to slavery and Jim Crow, and its current reflection on problems related to institutional racism. The notion is that aggressive, proactive policing built around White supremacy and protecting the power structure of the dominant race is aimed at controlling African Americans, who are the lesser class in White society. Young, Black males are targeted in this approach to policing based on long standing views of their dangerousness,

violence, and proneness to criminal activity. The proponents of this school of thought identify two theories under the wider umbrella of institutional racism that account for what they believe are disproportionate killings of young African American males when compared to their non-minority counterparts. They suggest that implicit bias and errors in threat perception motivate police to aggressively engage young African American suspects and this results in violent encounters often ending in the untimely and unjust deaths of these individuals. The opponents of these theories believe that deaths of young African American males reflect the higher proportion of their involvement in violent crime. They further indicate that the Michael Brown case at the center of the media portrayals of police violence has fueled the tensions between police and minorities based on a false narrative. The result has been a decrease in proactive policing and routine policing, in turn placing law abiding citizens at greater risk for community violence and being victims of crime. Their position is that the only way to accurately evaluate the nature of police killings of minorities is to evaluate the potential influence of multiple, various factors. That includes factors such as those which may be environmental, situational, personal, and organizational, to name a few. While it is recognized that measuring the influence of these broad categories is a difficult endeavor, measuring the discrete factors that in part comprise them is realistic. In fact, this is currently taking place with the use of expanding, open-source databases housing information on various factors believed to be associated with police use of lethal force. Some of the information on police killings accumulated by these databases include the age and gender of subjects, location of lethal encounters, whether subjects are armed, and the type of threat presented by subjects. The examination of these factors, among others, using sound empirical research is likely to be helpful in exposing the truth about the nature of lethal police encounters with minority subjects.

To examine the validity of the opposing viewpoints presented herein—Viewpoint 1: Police use of lethal force as a result of Institutional Racism and Viewpoint 2: Police use of lethal force as a result of threat and disproportionate crime—an inferential statistical analysis was conducted on police lethal encounters using crowdsourced data, while at the same time considering the limited availability of relevant contextual information on each case. Although context is important in every lethal police encounter, so is an empirical examination of the relevant available data often being used to draw sweeping conclusions about lethal force used by police. To date many of these conclusions are drawn from face-value interpretations of raw data, opinions about connections between current police practices and historical concepts that are difficult to empirically validate, and ostensibly biased judgments about police and police work. Further, there is little discussion of models of policing in the contemporary literature. Conceptualizing police use of lethal force in the context of theories of modern policing here has provided broader context to the nature of police work. It seems as important to the understanding of use of lethal force as the contextual factors in individual cases. To that end, the following chapters discuss this topic based on a scientifically rigorous exploration of the data in an attempt to accurately theoretically frame incidents of lethal force.

Chapter III

METHODOLOGY

Introduction

This chapter discusses the research design for this study examining the perceived disproportionate police killings of African American males. The topic was examined from a broader theoretical perspective comprised of opposing viewpoints about policing minorities. One viewpoint points to institutional racism as the cause of disproportionate killings of African American males. The other viewpoint supports the notion that high commission rates of violent crimes by African American males exposes them to aggressive encounters with police, and the subsequent use of lethal force by police during arrests. Beginning with a restatement of the problem, the research design is discussed, followed by the presentation of the research questions and hypotheses. Next, the data source is discussed and procedures for data collection are reviewed, and the decided approach to data analysis is described. The concluding remarks focus on ethical considerations, limitations, and assumptions of the research methods.

Research Design

This study used multinomial logistic regression analysis (MLR) to examine the relationships among race and police use of lethal force, while holding constant other predictor variables, including age, gender, alleged weapon type, alleged threat level (type), geographical location of the lethal incident, and symptoms of mental illness in suspects. More specifically, the variance in race of deaths caused by police was examined while controlling for the influence of the other predictor variables in the model. In addition, the odds ratio of falling into race groups for each independent variable in the model was examined. Race is the dependent variable for the odds ratio. The independent predictor variables are age, gender, alleged weapon type, alleged threat level (type), geographical location, and symptoms of mental illness. General linear model

univariate analysis of variance (GLM ANOVA) was used to test the predictive strength of categorical independent variables on the age of subjects killed by police. The model includes age as the dependent variable and gender, race, alleged weapon type, and alleged threat level (type) as the independent variables.

General linear model univariate analysis of variance (GLM ANOVA) with interaction effects was used to examine interactions among race, alleged weapon type, alleged threat level (type) and age of subjects killed by police.

Individual univariate analyses of variance (GLM ANOVA) were used to examine differences in age among group categories for race, gender, cause of death, armed status, alleged weapon, alleged threat level (type), geographical location, and symptoms of mental illness.

Individual Welch F tests were used to examine differences in age among the same GLM ANOVA group categories.

Chi-square was used to examine relationships between gender and cause of death, armed status, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race.

Eta correlation was used to examine relationships between age and cause of death, symptoms of mental illness, alleged weapon type, and geographical location.

Confidence intervals were set at the .05 level. The predictor variables that were held constant are discussed in the next section.

For reference, a review of variable descriptions is as follows:

Race Categories: White, Black, Hispanic, Unknown, Pacific Islander, Native American, and Asian.

Age: annual age of the subject

Gender: gender of the subject—male or female; transgender was included in the MLR only because it represented only 8 subjects in total

Alleged weapon type: gun, knife, vehicle, no object, undetermined, multiple, and miscellaneous

Alleged threat level (type): attack, other, or undetermined

Geographical location: type of location of the lethal incident—rural, suburban, or urban

Symptoms of mental illness in the subject: whether the subject presented with symptoms of a mental illness—yes, no, unknown, or Drug/Alcohol use

Cause of death: gun, gunshot and taser, vehicle, no object, undetermined, or multiple

Armed status: allegedly armed, unclear, vehicle, or unarmed

The Covariates

Considering the many factors that potentially influence lethal police engagements is prudent in any discussion of reform in this area. There are certainly individual, societal, organizational, and systemic factors that influence how police engage with suspects of crime, minorities, and the communities they serve (Armacost, 2016). They are present in every police officer, suspect, and community, and may be fluid, continually evolving in response to things such as mood, state of mind, social pressure, organizational pressure, interpersonal dynamics, and stress reactions (Schouten & Brennan, 2016). Conversely, some may be more fixed, such as personality, impulse control, social values, perception, and belief system. Regardless of their level of influence or whether or not they are fluid or fixed, many of these factors are difficult to measure, some may not be accessible to conscious awareness, and others can intentionally be hidden. With that in mind, the availability of data on such uniquely complex variables, some of which are abstract and therefore hard to operationalize, is limited. This is particularly the case with respect to how they could be measured in a robust quantitative analysis. For those reasons, while mentioning them for the purpose of recognizing their importance, they will not be

examined in this study. However, certain factors have received enough attention in the literature, with corresponding data, to be measured. To that end and in respective order, in reference to minority subjects engaged in lethal encounters with police, the coexisting variables to be explored in this study are age, gender, location, presence of mental illness, whether they are armed, and level of violence threat.

Age

There is wide consensus among researchers that age of subjects involved in lethal encounters with police is a relatively constant variable across all settings. The overwhelming majority of African American males killed at the hands of police are young, between the ages of approximately 18 and 24 years old, but more generally are between ages 13 and 40 years old (Moore et al., 2016). Incidentally, this aligns with the age range of the majority of African American males engaged in violent crime (MacDonald, 2017). It has been suggested that police tend to react more quickly with deadly force with this population (Donner et al., 2017) due to bias from longstanding racial stereotypes about their proneness to criminality and violence (Dukes & Kahn, 2017). In addition, they are more likely to be targeted for stops by police and disagree with the reason for the stop, which often escalates the situation into one that becomes lethal (Kramer, 2018). This is consistent in large and small cities alike, but occurs more frequently in impoverished, high crime areas (Howell, 2014). The reasons for higher rates of stops, arrests, and use of force with young Black males appear to be grounded in racial stereotypes, proportionately higher rates of crime in the areas they populate, and episodes of resisting arrest. To the extent that age appears to be associated with police killings, it appears equally important to explore the association between gender and police use of lethal force, considering that males seem to be at high risk for fatal outcomes during police encounters.

Gender

As much as age appears to be a constant factor associated with police use of lethal force with minorities, gender is equally constant. Males are killed at rates far higher than females. According to Buehler (2017), in an examination of deaths caused by police, 96% of those killed were male (p. 295). Various other studies confirm similar results. For instance, Nix et al. (2017) found that of all civilians shot and killed by police, 95.8% were male. Robinson (2017) suggested that Black males are five times more likely than White males to be shot and killed by police. Finally, Zwach (2015) goes as far as to say that shooting deaths of Black males in this country have reached epidemic proportions, particularly because they are still perceived as dangerous and aggressive, and therefore more likely to break the law. Her sentiment is supported by others who study police use of lethal force with racial minorities. For example, police officers are more likely to perceive Black males as resistant, verbally abusive, and likely to engage in crime (Kramer, 2018). Black males are seen by police as more dangerous and aggressive and respond in kind to that perceived threat (Moore et al., 2017). In addition, Black males are often perceived as threats due to their typically larger physical size, causing them to be seen by police as being stronger and requiring them to respond with more force (Rule, 2017). The perception of Black males as being dangerous threats to society has long historical roots, dating back as far as the times of slavery (Smiley & Fakunle, 2016). Incidentally, poor, uneducated, disenfranchised young, Black males generally reside in major urban metropolitan areas. Therefore, it makes sense to examine the geographical characteristics of police use of lethal force with racial minorities.

Geographical Location of Lethal Force

Most deaths of minorities at the hands of police occur in large metropolitan areas, where Blacks among all groups are at highest risk (Edwards et al., 2018). Further, the majority of shooting deaths of African Americans, particularly young males, occur in higher populated areas where poverty levels are also high (Feldman et al., 2019). In order of highest to lowest proportions, during a six year period from 2012 to 2018, adult males were engaged in lethal encounters with police each year in the Pacific region at 1,361 per 100,000, the South Atlantic at 1,217 per 100,000, West South Central states at 1,008 per 100,000, the Mountain states at 739 per 100,000, East North Central states at 615 per 100,000, East South Central states at 437 per 100,000, the Mid Atlantic at 391 per 100,000, West North Central states at 382 per 100,000, and New England at 145 per 100,000. Black men were killed at a rate higher than Latinos and Whites, at 2.1 per 100,000, 1.0 per 100,000, and 0.6 per 100,000, respectively. The highest rates of police killings of all men were in large metropolitan areas, and the lowest rates were in suburban areas. The total rate for all areas combined was 0.87 per 100,000, or 6,295 deaths per 100,000 adult men (Edwards et al., 2018). Although lethal force has for decades been used more often in large metropolitan centers than in rural and suburban areas, and where real threats exist, such as the suspect being armed during the commission of crimes (White, 2002), Black males in all areas are perceived as a greater threat, regardless of their criminal activity (Dukes & Kahn, 2017). This is especially evident when compared to White subjects engaged in similar crimes and is not as prevalent when compared to Latinos and other racial minorities. There appears to be more of an effort by police to use non-lethal force with White subjects than there is with minorities, particularly in urban settings (Durán & Loza, 2017). Regardless of the contributing factors associated with geographical location, Blacks and Latinos have a greater chance of being

killed by police during the commission of a crime, particularly in large metropolitan areas (Ross, 2015).

Based on the reality that various broad factors may not fully explain the nature of lethal encounters between police and racial minorities, it makes sense to examine the potential discrete factors attributable to these incidents. Some of the most studied discrete factors include whether the suspect is mentally ill or armed, and the perceived level of violence threat to the police and community presented by the suspect during the commission of a crime.

Presence of Mental Illness in Suspects

Since the deinstitutionalization of the mentally ill about fifty years ago, police have had frequent, routine encounters with mentally ill suspects. They have therefore by default become involved with their care in ways such as serving as a referral source or means of transportation to hospitals or treatment facilities. Police involvement with this population has in fact become quite prevalent to the extent that it is estimated that up to nearly 20% of everyday police encounters are with mentally ill suspects (Hansson & Markström, 2014). In essence, police officers have become gatekeepers with this population due to their frequent contact and familiarity with mentally ill suspects, which is largely the result of inadequate or non-existent mental health care in the communities they serve (Reuland et al., 2009). Although some of their time with mentally ill suspects is spent deescalating high level suicidal or homicidal gestures in those with severe conditions, their more routine experiences are with suspects with long histories of depression and substance use problems (Dewey et al., 2013) who might be at risk for harming themselves or provoking suicide by cop, and whose crimes are lower level, often simple nuisance behavior that may not result in arrest (Reuland et al., 2009). However, even relatively minor situations with these suspects can quickly spiral out of control if appropriate caution is not taken early in an

encounter, especially if police officers are not aware that a mental health diagnosis or other related risk factors exist (Dewey et al., 2013). The media stigmatization of the dangerousness of mentally ill suspects further complicates their relationships with the police. They are often characterized as crazed lunatics (Frankham, 2019) who are violent or dangerous, when in fact only a small fraction of individuals with mental health problems poses measurable violence risk to the police or society. In reality, many mentally ill suspects are homeless or unemployed (Hansson & Markström, 2014), struggling with depression or substance use problems, dealing with high levels of personal or relationship stress, are suicidal or have had previous suicide attempts, or have been previously hospitalized (Dewey et al., 2013). When police officers fail to recognize these characteristics or stressors in suspects, the potential for violence during an engagement gone wrong does exist. It is not, however, due to the mental health issue or stressors alone, but reflects interpersonal errors that are far better managed when police have training to improve their knowledge about mentally ill suspects (Hansson & Markström, 2014).

In addition, police are more likely to use force with mentally ill suspects, regardless of their race, who pose threats to officers by carrying a weapon (Kahn et al., 2017a). Although this is to be expected to some extent, some mentally ill suspects might not fully appreciate the seriousness of brandishing a weapon in front of the police. There is recently some debate about how to accurately characterize unarmed versus armed suspects in lethal encounters. This debate does not always consider the variable of mental illness, particularly why suspects may be armed during encounters, be that as a suicidal gesture, the product of a delusion, or lack of cognitive sophistication about the situation they are in with the police. It is, nonetheless, an important discussion to have.

Whether Suspects are Armed During Lethal Encounters with Police

In similar form to age and gender, whether suspects killed by police are armed receives much attention in the literature. In fact, the preponderance of research on police use of lethal force suggests that the majority of young, African American male suspects killed by police are unarmed or not in possession of a weapon. To illustrate this point, many authors of research on the topic cite information about lethal police force found on public access databases. For example, Lim (2017) indicated that although more police shootings occur with White, armed men who are attacking the police, the majority of Black men killed by police are unarmed. Nix et al. (2017) found that more unarmed Black civilians were killed in 2015 than White civilians, although the majority of civilians killed by police were White males. Robinson (2017) reported that unarmed Black men are five times more likely than unarmed White men to be killed by police and, incidentally, this occurs in states that initially enacted slave codes. Weitzer (2015) noted that unarmed Black suspects, compared to White suspects, endure more lethal encounters with police despite the fact that they are less likely to be armed than White suspects. Finally, Zwach (2015) asserted that shooting deaths of unarmed Black men is an American epidemic and discredits the FBI UCR definition of justifiable homicide by police because it provides for much leeway in decisions about when to apply lethal force with potential suspects.

The main critics of the above statements found flaws in the presentation of the data used to draw such definitive conclusions. In particular, Klingler & Slocum (2017) suggest that the authors considered being unarmed as not being in possession of a firearm rather than considering that suspects in many of the cases they analyzed were attacking police officers with other types of deadly weapons. Fryer (2018) also identified flaws in those studies because they are based on face value analyses rather than recognizing or controlling for many potential extraneous

variables that could seriously challenge the validity of their findings. Fryer plans on writing an empirical rebuttal, using the same open-source databases, to this handful of studies. He hopes to expose what he believes are the major inaccuracies in their outcomes while offering evidence that many factors influence the use of lethal force with minorities. For an accurate analysis of the influence of different factors on police use of lethal force to occur, they have to be weighed against the real threat of violence posed by suspects.

Type of Violence Threat toward Police During Lethal Encounters

There is little question that the incidence of deaths caused by police should be associated with the highest levels of threat to their lives or the safety of the communities they serve. The police are likely to argue that all use of force is determined by the type of threat they face. Conversely, the opposition to this assertion is that police kill young Black males, regardless of the type of threat they face and, in fact, generally incorrectly evaluate the level of threat presented by Black suspects during lethal encounters (Moore et al., 2017). The research on this is ambiguous, largely because, like other situational variables, perception of threat is fairly subjective and difficult to measure (Shjarbak & Nix, 2020). To that end, despite claims by activists and media outlets that police target young Black males with lethal force due to errors in threat perception (e.g., Dukes & Gaither, 2017; Rule, 2017; and Smiley & Fakunle, 2016), evidence suggests that, in general, police respond with force to real threats (White, 2002).

Although differences in perception of threat exist, authors such as Kramer (2018) and Williamson (2015) assert that killings of young African American males during encounters are less the result of errors but accurately reflect the level of danger the police experience. In contrast, Moore et al. (2017) suggest that police officers routinely unnecessarily fear for their lives during encounters with Black suspects, believe that Black suspects are armed when they are

not, or accidentally shoot Black suspects because of their often unnecessary, defensive stance, weapons drawn, when they are engaged with these individuals. These differences in opinion about how police respond to threat posed by suspects have been exploited by the media (Donner et al., 2017; Embrick, 2015; Weitzer, 2015) and activists (Robinson, 2017; Tolliver et al., 2016; Weitzer, 2015) in support of the narrative that the police and young Black males are at war. However, Williamson (2015) concludes that there is no war between police and young Black males and suggests that institutional failures account for the problem with use of force with minorities. Nonetheless, the media continue to push the war narrative in ways that perpetuate the anti-police sentiment. Perhaps the silver lining in all the media buzz and activism around perceived police violence with young African American males that has sparked violence against the police is that targeted attacks on them are down. Conveying the message to the Black community that the police are targeting them with violence only begets more violence and fuels the perpetual interaction among the many variables that cause it to happen in the first place (Williamson, 2015). In the same respect, accusing police officers of being racist only de-legitimizes their power and authority, leaving them more likely to engage in lethal force in an attempt to salvage them (Trinkner et al., 2019).

Multinomial Logistic Regression Analysis

Multinomial logistic regression analysis (MLR) was selected for this study because it is a sound method to examine associations among multiple categorical and continuous predictor variables and variance in categorical outcomes accounted for by the individual variables in the model. In addition, much of the existing research on police killings of minorities has been based on content analyses and cursory reviews of descriptive statistics. This study has focused on race and use of lethal force from an empirical perspective. Finally, it is the opinion of the author that the predictive validity of regression models is superior to the methodology used in existing

studies. Although this method will not allow readers to draw conclusions about the motivations of police shooting deaths or killings by other means of African American males, (i.e., institutional racism versus disproportionate crimes by African American males), it should shine light on whether or not young African American males are shot and killed at a statistically significantly higher proportion than young males from other races. From this information, deductions about cause may be presented and studied. The intent of this study is not to measure as a construct the attitudes of police officers who use lethal force with minorities but rather to study in the current, dominant theoretical context their deadly encounters with young African American males. Embedding this research in the dominant political theory about police killings of African American males provides the framework from which to examine the results since no other plausible theories on the topic have been presented. In other words, this research did not measure attitudinal or esoteric constructs that comprise the theories used to explain police killings of African American males since that would be a comprehensive study on its own. Instead, the current theories on the topic were considered the appropriate context from which to examine this phenomenon, by default, since they are the main theories being presented by the media, academics, and politicians and used as the context in related studies. The following sections provide a more in-depth discussion of multinomial logistic regression analysis. In addition, the strengths and weaknesses of the method will be reviewed.

MLR is an inferential statistical procedure that is used to examine the variance in categorical dependent variables associated with independent variables in the model. It also provides information about the predictive validity of odds ratios of the independent variables being examined. Predictive validity is highly relevant to this study because race is alleged by the anti-police activists, academics, and media figures to be the sole factor in police use of lethal

force. Examining the predictive validity of multiple variables among race of subjects engaged in lethal force incidents may help clarify the reality of that claim.

The main benefit of logistic regression analysis is that it allows multiple variables to be examined simultaneously while easily accommodating changes in models when variables do not fit, saving time in applied research. It therefore has substantial utility in many different types of research environments. Its strengths are that it measures predictive strength, determines the relevant strength of odds ratios of each independent variable while controlling for the influence of other independent variables in the model, and like linear regression (Johnson, 2010), is relatively easy to interpret and understand by lay consumers of research. In addition, it accommodates data that are categorical, polychotomous, dichotomous, and continuous. Lastly, it allows for large datasets to be examined, also like linear regression (Urban, 2010), providing robust information. These strengths make possible research that is empirically sound and validly predictive in the absence of controlled studies. However, the method is not without its weaknesses. The major weakness of this method is the potential for distorted results when pretests are not correctly performed. When samples are small, independent variables are highly correlated (multicollinearity), or outliers of cases fall into multiple categories, logistic regression analysis results will be flawed. In addition, there is limited consensus in the professional research communities on when to use which Pseudo R value or whether it represents differences in variance in outcomes in the same manner that R does in linear regression because logistic regression models are not linear. They are probability models that yield odds ratios rather than linear, predicted directional changes in dependent variables. Another weakness also plays to its strengths. Because it can yield largely robust amounts of information, when presented to lay persons who may use it to make important decisions—for example, policy makers, it can be

technically difficult to interpret or understand or easily and intentionally misrepresented, suggesting that a single factor or a combination of factors in the model are causing a problem, much like can be easily accomplished with other forms of statistical analyses (Johnson, 2010).

These weaknesses are worthy of consideration in their own right but should not limit the use of logistic regression analysis in research seeking to explore associations among variables or examine independent variables to explain changes in dependent variables in research. This study evaluated data with that intent, making logistic regression analysis the appropriate choice.

General Linear Model Analysis of Variance (GLM ANOVA)

The purpose of the use of GLM ANOVAs was to evaluate the variance in and interactions among contextual factors and age, and individual univariate GLM ANOVA was used to evaluate differences in age by race, gender, cause of death, armed status, alleged weapon type, alleged threat level (type), geographical location, and symptoms of mental illness for subjects killed by police.

GLM ANOVA was appropriate for examining variability in age with categorical predictive factors. The importance of understanding age as an outcome in this context is tied to recent contemporary wisdom about the age of subjects killed by police, which is that they are young. Having access to a volume of data on police killings, much of which are categorical or dichotomous, presented ample opportunity to evaluate with use of this model their strength in predicting the age of subjects engaged by police with lethal force. The benefit of GLM ANOVA is that, like regression, it allows for evaluation of predictive factors while holding constant other factors that may contribute to the outcome. That was advantageous in this case because it allowed for a more granular evaluation of various contextual factors associated with age in police killings that are not routinely acknowledged in public discussions. Limitations of GLM ANOVA include the susceptibility to failed outcomes with small samples, collinearity of predictors,

absence of a true continuous outcome variable, and compromised standard hypothesis testing when categorical predictors have many levels. None was the case here since the sample was large, collinearity was accounted for prior to the MLR analysis, and the number of levels in the categorical predictor variables were reasonable.

General Linear Model Analysis of Variance (GLM ANOVA) with Interaction Effects

The GLM ANOVA with interaction effects was appropriate to evaluate the predictability of the age of subjects in the context of various relevant factors. Like the importance of understanding factors associated with the age of subjects killed by police, it is important to be able to conceptualize the chances that subjects will be involved in lethal encounters with police based various scenarios, in this case anchored by age. Limitations of this methodology are similar to those of other GLM models. Small samples, collinearity, and inadequate predictor and outcome variables weaken or mitigate the validity of outcomes. None was problematic in this application since the sample was large, collinearity was addressed, and the variables were appropriately sound.

Individual General Linear Model Analysis of Variance (GLM ANOVA)

Individual univariate GLM ANOVA suited this study well because it allowed for the straightforward comparison of mean age differences in subjects killed by police based on important contextual factors. This approach to understanding age in police killings allowed for comparisons of differences in age rather than predictability or interactions with other contextual variables, which supplemented the comprehensive review of the significance of age of subjects in lethal police encounters. The most significant limitation of running univariate ANOVA with the GLM model is that it is susceptible to incomplete data, particularly with multiple pairwise comparisons corrected with post hoc tests. Since the data in this study were voluminous, data in

cases selected were complete, thereby mitigating problems associated with missing or incomplete data in comparison groups.

Welch F Tests

The purpose of the Welch F tests was to address concerns with violations of the assumptions of normality and homogeneity in the sample. The Welch F test and Games-Howell post hoc tests were conducted with the same variables used in the individual GLM ANOVAs to buffer potential concerns with making Type I errors when reconciling hypotheses $H_0$4 to $H_0$11. The Welch F test is appropriate for such applications and protects against rejecting the null hypothesis when it is true but slightly compromises power.

Chi-Square

Chi-square was useful in determining whether there are differences in various contextual factors in the gender of subjects killed by police. Since much of the literature and media reports suggest that males are more often killed by police than females, examining the statistically significant differences in gender in the context of other variables in lethal encounters seemed appropriate. This approach allows for analysis of relationships and differences among categorical variables, which suited the types of data available for this study. The greatest limitation of the chi-square test as it applies to this research is that it becomes less powerful with very large samples exceeding 500 subjects. That was the case here, and the limitation was considered in the interpretation of the results.

Eta Correlation

Finally, eta correlation was appropriate to further examine age in police killings because it highlighted individually correlated factors. Recognizing such correlates seems important in an effort to extrapolate from hosts of contextual factors the significance of age in lethal encounters with police since being young in those instances appears to be common. The greatest limitation

of eta correlation is the same as it is in other forms of correlation. That is, it does not suggest causation or prediction. Running it in this study seemed safe in that regard because it was done in the context of inferential methods and is considered to be supplementary.

Research Questions and Hypotheses

Due to the nature of this study, particularly that it addresses three separate dependent variables and numerous independent variables with seven different and independent analyses, testing a large number of hypotheses was necessary. The 22 hypotheses correspond separately to six research questions listed below.

Generated with influence from the current literature on police and minority relations, police shooting deaths and deaths by other means of lethal force of African American males, and the theoretical constructs that underpin these concepts, the following research questions and hypotheses guided this research:

RQ 1: Is there a statistically significant predictive relationship among age, gender, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race in police killings between 2013-2020?

$H_0$1: There is no statistically significant predictive relationship among age, gender, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race in police killings between 2013-2020.

H_a1: There is a statistically significant predictive relationship among age, gender, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race in police killings between 2013-2020.

RQ 2: Is there a relationship among the age of subjects killed by police and gender, race, alleged weapon type, and alleged threat level (type) between 2013-2020?

$H_0$2: There is no relationship among the age of subjects killed by police and gender, race, alleged weapon type, and alleged threat level (type) between 2013-2020.

H_a2: There is a relationship among the age of subjects killed by police and gender, race, alleged weapon type, and alleged threat level (type) between 2013-2020.

RQ 3: Is there a difference in the mean age of subjects killed by police between 2013-2020 based on interaction effects among race, alleged weapon type, and alleged threat level (type)?

$H_0$3: There is no difference in the mean age of subjects killed by police between 2013-2020 based on interaction effects among race, alleged weapon type, and alleged threat level (type).

H_a3: The configuration of interactions among race, alleged weapon type, and alleged threat level (type) will predict a mean difference in age of subjects killed by police between 2013-2020.

RQ 4: Is there a mean age difference in of subjects killed by police between 2013-2020 based on race, age, cause of death, armed status, alleged weapon type, threat level (type), geographical location, and symptoms of mental illness?

$H_0$4: There is no statistically significant difference in the mean age among White, Black, and Other minorities killed by police between 2013-2020.

H_a4: The mean age of White, Black, and Other minority subjects killed by police between 2013-2020 is statistically significantly different.

$H_0$5: There is no statistically significant difference in the mean age of females and males killed by police between 2013-2020.

H_a5: There is a statistically significant difference in the mean age of females and males killed by police between 2013-2020.

$H_0$6: There is no statistically significant difference in the mean age among the different groupings of cause of death (Gunshot, Gunshot and Taser, Vehicle, Taser Only, Beaten, and Physical Restraint) of subjects killed by police between 2013-2020.

H_a6: There is a statistically significant mean difference in the age among different causes of death of subjects killed by police between 2013-2020.

$H_0$7: There is no statistically significant mean difference in age of subjects killed by police between 2013-2020 based on their armed status (Allegedly Armed, Unclear, Vehicle, and Unarmed).

H_a7: The mean age of subjects killed by police between 2013-2020 is different based on their armed status.

$H_0$8: There is no statistically significant difference in the mean age of subjects killed by police between 2013-2020 based on their alleged weapon type (Gun, Knife, Vehicle, No Object, Undetermined, Multiple, and Miscellaneous).

H_a8: There is a difference in the mean age of subjects killed by police between 2013-2020 based on their alleged weapon type.

$H_0$9: There is no statistically significant difference in the mean age of subjects killed by police between 2013-2020 based on their threat level (type) (Attack, Other, and Undetermined).

H_a9: The mean age of subjects killed by police between 2013-2020 is different based on their threat level (type).

$H_0$10: The mean age of subjects killed by police between 2013-2020 is not statistically significantly different based on geographical location (Urban, Suburban, and Rural).

H_a10: There is a mean difference in age of subjects killed by police between 2013-2020 based on geographical location.

$H_0$11: There is no statistically significant mean difference in age of subjects killed by police between 2013-2020 considering the presence of symptoms of a mental illness (Yes, No, Unknown, and Drug/Alcohol Use).

H_a11: The mean age of subjects killed by police between 2013-2020 is different considering the presence of symptoms of a mental illness.

RQ 5: Is there a relationship among gender and cause of death, armed status, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race?

$H_0$12: There is no relationship between gender and cause of death in police use of lethal force between 2013-2020.

H_a12: There is a relationship between gender and cause of death in police use of lethal force between 2013-2020.

$H_0$13: There is no relationship between gender and armed status in police use of lethal force between 2013-2020.

H_a13: There is a relationship between gender and armed status in police use of lethal force between 2013-2020.

$H_0$14: There is no relationship between gender and alleged weapon type in police use of lethal force between 2013-2020.

H_a14: There is a relationship between gender and alleged weapon type in police use of lethal force between 2013-2020.

$H_0$15: There is no relationship between gender and alleged threat level (type) in police use of lethal force between 2013-2020.

H_a15: There is a relationship between gender and alleged threat level (type) in police use of lethal force between 2013-2020.

$H_0$16: There is no relationship between gender and geographical location in police use of force between 2013-2020.

H_a16: There is a relationship between gender and geographical location in police use of force between 2013-2020.

$H_0$17: There is no relationship between gender and symptoms of mental illness in police use of lethal force between 2013-2020.

H_a17: There is a relationship between gender and symptoms of mental illness in police use of lethal force between 2013-2020.

$H_0$18: There is no relationship between gender and race in police use of lethal force between 2013-2020.

H_a18: There is a relationship between gender and race in police use of lethal force between 2013-2020.

RQ 6: Is there a relationship between age and cause of death, symptoms of mental illness, alleged weapon type, and geographical location?

H019: There is no relationship between age and cause of death in police use of lethal force between 2013-2020.

H_a19: There is a relationship between age and cause of death in police use of lethal force between 2013-2020.

$H_0$20: There is no relationship between age and symptoms of mental illness in police use of lethal force between 2013-2020.

H_a20: There is a relationship between age and symptoms of mental illness in police use of lethal force between 2013-2020.

$H_0$21: There is no relationship between age and alleged weapon type in police use of lethal force between 2013-2020.

H_a21: There is a relationship between age and alleged weapon type in police use of lethal force between 2013-2020.

$H_0$22: There is no relationship between age and geographical location in police use of lethal force between 2013-2020.

H_a22: There is a relationship between age and geographical location in police use of lethal force between 2013-2020.

Data Source

Since 2013, *Mapping Police Violence* has been gathering data on police killings from sources such as *FatalEncounters.org*, *U.S. Police Shootings* Database, and *KilledbyPoice.net*. The author of the site also claims to have done extensive, original research on the topic by screening social media and searching criminal records data bases, obituaries, and police reports. These efforts were launched in response to the recent high-profile cases involving police shootings and use of lethal force and are supported by the Death in Custody Reporting Act, which mandates such data to be reported to the public (Sinyangwe, 2013). The source has been vetted to the extent possible for this study by comparing the data to their original sources, where available or when reasonably easy to locate. In what was more than a cursory evaluation of the accuracy of the data compiled by this source, it has been found to be a trustworthy open-source data house whose intention appears to be to reliably inform the public. However, it does not consider the multitude of contextual factors typically involved in police use of lethal force. This weakness is being made apparent throughout this study and has been the major point of contention raised by those who criticize the use of open-source databases in research on this complex topic. Further, the same is true for the original sources of these data since they do not

report on the abundance of contextual differences. Therefore, it must be noted that although this study will be approached in the manner that considers this source of secondary data to be valid and reliable, it is important to formally recognize the appreciable limitation it has with painting an entire picture of incidents that would be worthy ingredients in valid research. In addition, because the construct of institutional racism versus threat and crime proportion in police use of lethal force is not able to be operationalized in ways that would allow it to be defined in measurable units, it will serve as the theoretical overlay of the study. Indeed, race and type of threat are independent variables in the study that represent either side of the theoretical construct and examining them in context may provide some clarity. However, only suppositions about the construct may be made, regardless of the results, because directly tying quantitative outcomes to broad, abstract themes like institutional racism would be difficult and is beyond the scope of this study. Rather, finite variables with ample data to represent them were evaluated.

To address potential issues with validity and reliability of the data, an appropriate sample size was used, and appropriate pretests were performed to ensure that the data were equally distributed and independent variables were free from multicollinearity. In addition, the robust output was interpreted in technical and practical terms to facilitate clear understanding of the information being presented.

The data are organized and presented in downloadable Excel spreadsheets. In addition, summary discussions with descriptive statistics and histograms illustrating some of the data are published on the Mapping Police Violence website (Sinyangwe, 2013). The format of the Excel reports accommodates the gathering and transferring of data into statistical software programs. The columns include the victim’s name, victim’s age, victim’s gender, victims race, URL link to image of victim, date of incident, street address of incident, city, state, zip code, county, agency

responsible for death, cause of death, a brief description of circumstances surrounding the death, official disposition of death, criminal charges, URL link to the news article or image of the official document, where available; symptoms of mental illness, armed or unarmed status, alleged weapon, alleged threat level, fleeing, body camera, ID number, off duty killing, and geography. The date range of the data is between the years of 2013 and 2020, the offering was their most up-to-date, complete, and comprehensive dataset at the time of this study and it represents 6,087 of 8,838 cases. At the time of this writing, data from subsequent years are being compiled for publication. There is no estimated timeframe for when the compilation of data from later years will be completed.

Population and Sample

The population represented in this study is subjects killed by the police by shooting or other means of lethal force during the commission of a violent or non-violent crime. As defined by the data source, a violent crime is any crime that puts the public or police at risk for physical harm, death, or dismemberment. These include high-speed vehicle pursuits, incidents of domestic violence, direct threats of physical violence toward the public or police, brandishing a gun or weapon in a threatening manner, armed robbery, assault, hostage taking, car-jacking, or homicide. Non-violent crimes, as defined by the data source, include traffic stops, auto theft, fleeing police, drug dealing, non-violent domestic incidents, public intoxication, burglary, strange behavior attributed to mental health issue, parole or probation violation, disorderly conduct, disturbing the peace, refusal to follow police orders, and accidental shooting.

The sample frame is comprised of 8,838 recorded incidents of deaths of subjects at the hands of police between 2013 and 2020. The data were compiled by *Mapping Police Violence* from several previously identified sources and crowdsourced databases that record and report on

such incidents. The sample frame is robust, allowing for the required sample size to be met and the careful selection of cases.

The sample was pulled from the sample frame with procedures discussed in the following section and includes far more than the minimum number of required cases due to the robustness of data available. Because the sample frame is comprised of cases from all throughout the United States, reflecting incidents that have occurred in large and small and urban and rural police agencies, confidence that it fairly represents the nature of policing in this country is assured.

Data collection

The data for this study were collected through the selection of complete cases, meaning all data points were available, from a large secondary source dataset developed specifically for the purpose of promoting research on this topic and making it available to the public. Selection was executed by eliminating cases with missing information on any of the data points examined, including age, race, gender, alleged weapon type, alleged threat level (coded as type), armed status, geographical location, and symptoms of mental illness. The data were organized and coded on a separate Excel spreadsheet to accommodate their easy insertion into (SPSS) for computation of each of the analyses in the study. At that point they were ready for analysis.

Data Analysis

Institutional Review Board (IRB) approval was not necessary because the study used open-source, secondary data. However, the IRB application was submitted for approval to ensure no rules were overlooked before the research began. Approval was granted (Appendix C).

As previously indicated, all data analyses were conducted with SPSS, therefore reference to data entry processes, statistical procedures, outputs, and interpretations should be considered with that in mind.

Multinominal Logistic Regression

The initial step for running the multinomial logistic regression (MLR) analysis was to organize the coded dataset. Next, while entering variables into the program, the dummy variables, as coded, for race, gender, alleged weapon type, alleged threat level (type), geographical location, and symptoms of mental illness were created because they are categorical variables. They were subsequently available for use in the other analyses, where appropriate. The test for multicollinearity was run to ensure it did not affect the results. The potential for outliers was evaluated and nullified before being reported. Finally, the goodness of fit of the model was evaluated as part of the general analysis.

The results were then calculated, which yielded a Pseudo R-square to determine the amount of variance in race of police killings that can be explained by the model. Pseudo R-square in logistic regression is presented in three different values including McFadden, Cox and Snell, and Nagelkerke. The Likelihood Ratios test was run to determine which independent variables in the model are statistically significant predictors of the dependent variable. Parameter estimates were calculated for each of the predictor variables while holding constant the other variables in the model to determine the strength of their association with the outcome. The odds ratios for falling into each race group or the reference race group based on the influence of the predictors determined if the null hypotheses were rejected or retained.

Analysis of Variance (ANOVA)

The historical utility of ANOVA has been well established among researchers in all fields. Its usefulness, however, is tied to strict standards of data normality that are often not easy to meet in real world research settings. Incidentally, transforming data to fit normality and homogeneity standards may render outcomes less inferential to their intended application (Schmider et al., 2010), especially if it is to be applied outside the laboratory in social science

settings where samples of normally distributed data may not be available. Recognition of such limitations dates back many decades. For example, Borneau (1960), after reviewing many studies and doing his own simulation studies on the effects of violating assumptions, suggested that researchers should use ANOVA with non-normally distributed data because it can handle such violations. Posten (1984) found that ANOVA is robust enough to handle extremely small sample sizes, even as low as n = 5, but recommends a sample of at least 15 because robustness increases with sample size increases. In further support of these findings, Tomarken and Serlin (1986) found minimal differences in ANOVA's ability to protect from Type I errors between samples that are not normally distributed and normally distributed samples and samples that have homogeneity in variance and samples with differences in variance. They added, however, that ANOVA does not protect as well when there are highly unequal sample sizes and substantial differences in variance, and in those instances the Welch or Brown-Forsyth tests should be used, the Welch being better able to protect with a small trade off in power. Finally, Schmider et al. (2010) made interesting findings about ANOVA's ability to handle non-normally distributed data and data without homogeneity in variance. In their simulated study, the alphas among samples with normal distributions and those that were slightly skewed and extremely skewed were highly consistent, ranging from 4.72% to 5.26%, all within acceptable standards for social science research. Interestingly, the extremely skewed distribution had the lowest alpha at 4.72%, followed by the normal distribution at 5.14% and the slightly skewed distribution at 5.26%, which suggests that ANOVA is robust enough to handle issues with normality and homogeneity of variance in samples.

In summary, ANOVA can be used with confidence when samples are not normally distributed and do not have homogeneity of variance. However, when samples are highly

unequal or have substantial differences in variance, an alternative F test should be used, namely Welch and Brown-Forsyth, the former of which protects best against Type I errors. That is the reason the decision to conduct GLM ANOVAs to evaluate model variance and mean differences along with Welch F tests to evaluate mean differences was made. The availability of data warranted an in-depth examination of this type because of the importance of the topic under study despite the assumptions violations. However, in recognition of those violations it was prudent to also conduct Welch F tests.

General Linear Model Analysis of Variance (GLM ANOVA) for Model Variance

For the GLM ANOVA, several of the predictor variables were selected to regress on age. They are gender, race, alleged weapon type, and alleged threat level (type). The Adjusted R-square value was calculated in SPSS to determine the amount of variance in age that can be accounted for by the predictor variables while holding constant other variables in the model. Beta scores and for each of the individual predictor variables were then calculated to determine their predictive strength for age. The null hypothesis was reconciled based on the statistical significance of the outcome.

General Linear Model Analysis of Variance (GLM ANOVA) with Interaction Effects

GLM ANOVA with interaction effects involved calculating an F score to determine statistical significance of interactions among age, race, alleged weapon type, and alleged threat level (type). Interaction effects were examined by calculating parameter estimates, or beta values, for various interactions among the predictor variables and the dependent variable with corresponding effect sizes. The results directed the reconciliation of null hypotheses.

Individual General Linear Model Analysis of Variance (GLM ANOVA)

Individual (GLM) ANOVAs were run with the GLM function to evaluate differences in the mean age of subjects by race, gender, cause of death, armed status, alleged weapon type,

alleged threat level (type), geographical location, and symptoms of mental illness. An F score was calculated for each group to determine if statistically significant differences exist among age groups. Bonferroni post hoc tests were run due to the large number of pairwise comparisons to determine where statistically significant differences exist. Null hypotheses were reconciled based on the individual findings.

Welch F Test

Individual Welch F tests were conducted to evaluate mean difference in age by race, gender, cause of death, armed status, alleged weapon type, alleged threat level (type), geographical location, and symptoms of mental illness with the purpose addressing assumptions violations of normality and homogeneity of variance in the sample. An F score was calculated for each group to determine if statistically significant differences exist. Games-Howell post hoc tests were run to determine where differences exist among the groups. Null hypotheses were reconciled based on the findings.

Chi-Square

Chi-square test was conducted to determine if statistically significant relationships exist among gender and cause of death, armed status, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race. Gender was placed in columns and the other variables were placed in rows for the analysis. The statistical significance was observed through P values and expected counts were examined with effect size calculated with Cramer's V. No assumptions related to cell size were violated. However, the large sample size is noted because large samples can present challenges to this analysis. Dispositions about hypotheses were established based on the results.

Eta Correlation

To conclude the study with pointed information about the age of subjects killed by police, eta correlations on age and cause of death, symptoms of mental illness, alleged weapon type, and geographical location were conducted to evaluate the strength of relationships between age and these relevant contextual factors. Eta Correlation is used to test the strength of nonlinear associations between categorical variables and a continuous variable. The effect size of the correlations was calculated with eta squared. Their direction was indicated in the output on directional measures. Frequency counts for variables were noted on crosstabs. Null hypotheses were reconciled based on the findings. Results of the analyses are reported in chapter four and displayed in appropriate tables.

Conclusion

This study examined relationships and differences among race, age, gender, alleged weapon type, alleged threat level (type), geographical location of incidents, symptoms of mental illness and lethal use of force by police. The intent of the research is to shed an empirical light on the nature of police-minority relations with respect to police use of lethal force in the context of two predominating theories. One theory suggests that institutional or systemic racism in policing prompts disproportionate deaths of African American males. The other theory used to explain these perceived disproportionate killings is that African American males engage in violent crime at higher rates than males from other races, increasing their chances for lethal encounters with police. To date, few studies supporting either theory exist, leaving room for related theoretically based political ideology to shape law enforcement policy. The specific intent of this study was to empirically examine whether race is associated with police use of lethal force, particularly with respect to shooting deaths of African American males. From the results, hypothetical conclusions can be drawn about the theoretical underpinnings of these shooting deaths and broader police-

minority relations. In essence, the empirical data generated by this research can be used as a starting point for further investigation into the theoretical motivations for police killings of African American males. In addition, they could be appropriate for shaping real policy decisions affecting law enforcement.

Lastly, given that the study does not solicit information directly from human subjects, risk of harm to participants did not exist and there were no real ethical considerations to evaluate with respect to human participation in this research. The assumptions about this research rest more with the comprehensiveness of the data source, which has been elaborated in a previous section, than ethical considerations. Specifically, it is assumed that the data are sound in that they are impartial, accurate, and do not conflict with the objectives of this research. The major limitations of this study are that the data do not account for many contextual factors that often influence police use of lethal force (Shane & Swenson, 2019). In addition, the research methods used did not directly measure the theoretical constructs underpinning its results, therefore allowing only for hypothetical elaboration about how they apply to the problem. Finally, it can be argued that due to the lacking details about context for each deadly incident in this type of research, the results may not accurately represent the nature of incidents of police use of lethal force with minorities.

Chapter IV

RESULTS

Introduction

This study used seven statistical approaches to examine the relationships among variables commonly associated with police use of lethal force. The robust analysis included the following methodologies: multinomial logistic regression (MLR), general linear model (GLM) univariate analysis of variance (ANOVA), GLM ANOVA with interaction effects, individual GLM ANOVAs, Welch F tests, chi-square, and eta correlation. The rationale for the use of this approach to data analysis is threefold: 1) The large sample size (N = 6,087) lends well to inferential inquiries of this depth and breadth, 2) individual results of the larger, more wholesale analyses (e.g., the regression model analyses) provide additional opportunities for more granular examination, and 3) considering the preponderance of face valid content papers in the literature based on studies using the same datasets, it seems unwise not to offer contrast in the form of empirical analyses. Further, the study sought to examine race, age, and gender as dependent variables because they are commonly referred to in the literature as being central to police killings. In order to do so, multiple accommodating analyses were necessary. For example, since race is categorical, logistic regression was appropriate. GLM ANOVA models, Welch F tests, and eta correlation were used to examine age because age is continuous and the independent variables used therein are nominal. Finally, chi-square was appropriate to examine gender as an independent variable because it is categorical.

The following presentation of results begins with the restatement of the hypotheses, a review of descriptive statistics, followed by reports of logistic regression, GLM ANOVAs, Welch F tests, chi-square, and eta correlation. It concludes with a concise reconciliation of hypotheses (Table 1) and a general summary of findings.

Restatement of the Hypotheses

$H_0$1: There is no statistically significant predictive relationship among age, gender, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race in police killings between 2013-2020.

H_a1: There is a statistically significant predictive relationship among age, gender, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race in police killings between 2013-2020.

$H_0$2: There is no relationship among the age of subjects killed by police and gender, race, alleged weapon type, and alleged threat level (type) between 2013-2020.

H_a2: There is a relationship among the age of subjects killed by police and gender, race, alleged weapon type, and alleged threat level (type) between 2013-2020.

$H_0$3: There is no difference in the mean age of subjects killed by police between 2013-2020 based on interaction effects among race, alleged weapon type, and alleged threat level (type).

H_a3: The configuration of interactions among race, alleged weapon type, and alleged threat level (type) will predict a mean difference in age of subjects killed by police between 2013-2020.

$H_0$4: There is no statistically significant difference in the mean age among White, Black, and Other minorities killed by police between 2012-2020.

H_a4: The mean age of White, Black, and Other minority subjects killed by police between 2013-2020 is statistically significantly different.

$H_0$5: There is no statistically significant difference in the mean age of females and males killed by police between 2013-2020.

H_a5: There is a statistically significant difference in the mean age of females and males killed by police between 2013-2020.

$H_0$6: There is no statistically significant difference in the mean age among the different groupings of cause of death (Gunshot, Gunshot and Taser, Vehicle, Taser Only, Beaten, and Physical Restraint) of subjects killed by police between 2013-2020.

H_a6: There is a statistically significant mean difference in the age among different causes of death of subjects killed by police between 2013-2020.

$H_0$7: There is no statistically significant mean difference in age of subjects killed by police between 2013-2020 based on their armed status (Allegedly Armed, Unclear, Vehicle, and Unarmed).

H_a7: The mean age of subjects killed by police between 2013-2020 is different based on their armed status.

$H_0$8: There is no statistically significant difference in the mean age of subjects killed by police between 2013-2020 based on their alleged weapon type (Gun, Knife, Vehicle, No Object, Undetermined, Multiple, and Miscellaneous).

H_a8: There is a difference in the mean age of subjects killed by police between 2013-2020 based on their alleged weapon type.

$H_0$9: There is no statistically significant difference in the mean age of subjects killed by police between 2013-2020 based on their threat level (type) (Attack, Other, and Undetermined).

H_a9: The mean age of subjects killed by police between 2013-2020 is different based on their threat level (type).

$H_0$10: The mean age of subjects killed by police between 2013-2020 is not statistically significantly different based on geographical location (Urban, Suburban, and Rural).

H_a10: There is a mean difference in age of subjects killed by police between 2013-2020 based on geographical location.

$H_0$11: There is no statistically significant mean difference in age of subjects killed by police between 2013-2020 considering the presence of symptoms of a mental illness (Yes, No, Unknown, and Drug/Alcohol Use).

H_a11: The mean age of subjects killed by police between 2013-2020 will be different considering the presence of symptoms of a mental illness.

$H_0$12: There is no relationship between gender and cause of death in police use of lethal force between 2013-2020.

H_a12: There is a relationship between gender and cause of death in police use of lethal force between 2013-2020.

$H_0$13: There is no relationship between gender and armed status in police use of lethal force between 2013-2020.

H_a13: There is a relationship between gender and armed status in police use of lethal force between 2013-2020.

$H_0$14: There is no relationship between gender and alleged weapon type in police use of lethal force between 2013-2020.

H_a14: There is a relationship between gender and alleged weapon type in police use of lethal force between 2013-2020.

$H_0$15: There is no relationship between gender and threat level (type) in police use of lethal force between 2013-2020.

H_a15: There is a relationship between gender and threat level (type) in police use of lethal force between 2013-2020.

$H_0$16: There is no relationship between gender and geographical location in police use of force between 2013-2020.

H_a16: There is a relationship between gender and geographical location in police use of force between 2013-2020.

$H_0$17: There is no relationship between gender and symptoms of mental illness in police use of lethal force between 2013-2020.

H_a17: There is a relationship between gender and symptoms of mental illness in police use of lethal force between 2013-2020.

$H_0$18: There is no relationship between gender and race in police use of lethal force between 2013-2020.

H_a18: There is a relationship between gender and race in police use of lethal force between 2013-2020.

$H_0$19: There is no relationship between age and cause of death in police use of lethal force between 2013-2020.

H_a19: There is a relationship between age and cause of death in police use of lethal force between 2013-2020.

$H_0$20: There is no relationship between age and symptoms of mental illness in police use of lethal force between 2013-2020.

H_a20: There is a relationship between age and symptoms of mental illness in police use of lethal force between 2013-2020.

$H_0$21: There is no relationship between age and alleged weapon type in police use of lethal force between 2013-2020.

H_a21: There is a relationship between age and alleged weapon type in police use of lethal force between 2013-2020.

$H_0$22: There is no relationship between age and geographical location in police use of lethal force between 2013-2020.

H_a22: There is a relationship between age and geographical location in police use of lethal force between 2013-2020.

Findings

The tables not included in the text and regularly referenced throughout are located in Appendix B, the list of Tables.

Descriptive Statistics

The descriptive statistics will be referenced as applicable in the hypothesis testing and in the discussion of results.

Table 1 displays the overall Number of cases (N), mean for each category of independent variable, range of categories for each independent variable (N-1), and percentile for each independent variable. N = 6,087.

Table 2 displays the frequencies of female, male, and transgender subjects. It is clear that the overwhelming majority of cases are male (Female = 280, 4.6%; Male = 5,799, 95.3%; Transgender = 8, .1%).

Table 3 displays the frequencies of cause of death by police use of lethal force. Death by gunshot is most highly represented (93%), followed by gunshot and taser (4.1%). The other causes—vehicle, no object, undetermined, and multiple are nominal (2.1% total) in comparison to deaths caused by gunshot, or gunshot and taser.

Table 4 shows that the frequency of subjects being allegedly armed (4,524, 74.3%) is far greater than armed status being unclear (443, 7.3%), being armed with a vehicle (412, 6.8%), or being unarmed (708, 11.6%). This indicates that the overwhelming majority of subjects killed by the police were allegedly armed.

Table 5 indicates that 3,343 subjects were armed with a gun (54.9%), 843 were armed with a knife (13.8%), 415 were armed with a vehicle (6.8%), 504 had no object (9.3%), the weapon was undetermined for 366 subjects (6.0%), 68 had multiple weapons (1.1%), and 548 had a miscellaneous weapon (9.0%) when killed by police.

Table 6 shows that 3,955 subjects killed by the police were attacking (65%), 1,819 were a threat described as other (29.9%), and the threat level was undetermined for 313 subjects (5.1%). This confirms that most of the subjects were attacking when killed by police.

Table 7 reveals that 3,078 police killings occurred in the suburbs (50.6%), while 1,581 occurred in urban settings (26%), and 1,428 happened in rural areas (23.5%). This indicates that the majority of police killings occurred in the suburbs.

Table 8 indicates that the majority of subjects killed by police (3,996) presented with no mental illness (65.6%), 1,253 subjects presented with symptoms of mental illness (20.6%), and the presence of symptoms was unknown (11%) for 669 subjects killed by police.

Table 9 indicates that 2,762 subjects killed by police were White (45.4%), 1,539 were Black (25.3%), 1,076 were Hispanic (17.7%), the race of 482 subjects was unknown (7.9%), 42 were Pacific Islanders (.7%), 95 were Native American (1.6%), and 91 were Asian (1.5%). This confirms that the majority of subjects killed by police were White. Blacks and Hispanics were the next race of subjects killed most often by police.

Table 10 shows the voluminous range of ages of subjects killed by police. The most relevant finding here is that percentages of subjects killed appear to increase with age for White subjects beginning at 26 while percentages increase as age decreases for Black subjects. In addition, the majority of Black subjects are killed between the ages of 15 and 26. Most White subjects are killed after age 25, with that percentage growing with age. The trend for Hispanics

is similar to that of Black subjects, namely being younger, up to age 18, after which the trend of the age distribution becomes less consistent. The following discussions of inferential statistics yielded from the six analyses will provide insight into police killings by race as they are influenced by or relate to the independent variables: age, gender, cause of death, armed status, alleged weapon, alleged threat, geographical location, and symptoms of mental illness.

Multinomial Logistic Regression

Multinomial logistic regression (MLR) was run for Hypothesis $H_0 1$ to determine whether a statistically significant predictive relationship exists among age, gender, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race in police killings between 2013-2020.

No assumptions were violated. The sample size was more than adequate given the large N (N = 6,087) to accommodate the large number of predictors consistent with an apriori power analysis with a medium effect size calculator as well as parametric data distribution assumptions according to the Central Limit Theorem (Spatz, 2011). Multicollinearity was addressed. The original model included the variables *cause of death* and *armed status*, which were highly collinear. Cause of death included two categories that overlapped—*gun* and *gun and taser*, resulting in an unacceptable association between them. *Armed status* overlapped with *alleged weapon*, largely due to the category titled *vehicle*, which is in each variable and did not allow for independence of observations, meaning subjects in cases might have been recorded in that category for both predictors. *Alleged threat* category *attack* was left in the model, despite its correlation with *other* in that category, because tolerance was not below .1 and VIF was well below 10, and these are much more powerful measures of collinearity in logistic regression (Senaviratna & Cooray, 2019). Moreover, according to Allison (2012), the null is unaffected by collinearity, judged particularly by high VIF scores, especially when at least one of the predictors

is statistically significant. Finally, high correlation among predictor variables in logistic regression does not generally affect fit or interfere with inferential results (Kutner et al., 2004). Normality and linearity are not assumed in multinomial logistic regression because the model is not technically linear. Beta scores represent odds ratios rather than linear changes in the outcome. The potential for outliers was nullified because the possibility of cases belonging to more than one racial category was not indicated by the residuals. In addition, there were no problems with the goodness of fit of the model.

The chi-square of 1476.639 with a p value of < .001 reflected in the Model Fitting Information (Table 11) indicates that there is a statistically significant relationship between at least one of the independent variables in the model and the dependent variable.

Review of Table 12, the Goodness of Fit Table, indicates that the model is fit since the p values are greater than .05

The Pseudo R-square, measured by Nagelkerke, at .230, indicates a small to moderate effect size at 23%. When considering the range of scores (McFadden = .088, Cox and Snell = .215, and Nagelkerke = .230), the effect size is small. It may also be considered with caution that 9% to 23% of the variance in the race of suspects killed by police can be explained by the model. See Table 13

The Likelihood Ratio Tests (Table 14) indicate that age, gender, alleged weapon, alleged threat, geographical location, and symptoms of mental illness, with p values less than .05, significantly contribute to the final model.

The parameter estimates in Table 15 indicate the strength of the relationship between each independent variable in the model and the dependent variable while holding the other

independent variables constant. The dependent variable is the Race of subjects killed by police. The reference group is the White group.

Among the members of the Black group of subjects killed by police, age (b = -.044, Wald = 215.742, p < .001), alleged weapon 4 (b = .528, Wald = 9.997, p = .002), geographical location 1, (b = .2.058, Wald = 364.740, p < .001), geographical location 2 (b = .992, Wald = 102.637, p < .001), symptoms of mental illness 2 (b = .908, Wald = 14.873, p < .001), and symptoms of mental illness 3 (b = .571, Wald = 5.082, p = .024) had a statistically significant predictive impact.

For the Hispanic group of subjects killed by police, age (b = -.037, Wald = 130.232, p = .000), gender 0 (b = 12.152, Wald = 3447.941, p = .000), alleged weapon 1 (b = -395, Wald = 9.065, p = .003), alleged weapon 3 (b = -..380, Wald = 4.129, p = .042), geographical location 1 (b = 1.814, Wald = 222.837, p < .001), and geographical location 2 (b = 1.081, Wald = 97.506, p < .001) had a statistically significant predictive impact.

When the race was unknown among subjects killed by police, the variables that had statistically significant predictive impact are age (b = .016, Wald = 18.751, p < .001), gender 0 (b = 11.545, Wald = 1639.539, p = .000), alleged weapon 6 (b = .998, Wald = 5.605, p = .018), geographic location 1 (b = .452, Wald = 9.029, p = .003), geographic location 2 (b = .265, Wald = 5.254, p = .022), and symptoms of mental illness 2 (b = .868, Wald = 5.346, p = .021).

For the Pacific Islander group of subjects killed by police, age (b = -.030, Wald = 4.678, p = .031) and gender 0 (b = 12.729, Wald = 299.053, p < .001) were the only variables that had a statistically significant predictive impact.

The variables that had a statistically significant predictive impact on the Native American group of subjects killed by police, are age (b = -.054, Wald = 29.644, p < .001) gender 0 (b = 12.641, Wald = 708.400, p < .001), and alleged weapon 3 (b = -1.180, Wald = 3.998, p = .046).

Finally, for Asians killed by police gender 0 (b = 12.912, Wald = 746.978, p < .001), alleged weapon 2 (b = .897, Wald = 4.155, p = .042), geographic location 1 (b = 1.690, Wald = 18.051, p < .001) and geographic location 2 (b = 1.393, Wald = 14.170, p < .001) had a statistically significant predictive impact.

The Exponentiated Betas Exp(B) in Table 15 are the odds ratios for the independent variables, representing the likelihood of falling into the comparison or the referent group as the independent variable changes. This odds ratio represents the change in odds of being in one category of race, compared to the reference race group, when the predictor changes by 1 unit. Alternatively, since the unit of measurement for the continuous variable age is one year, a one year increase or decrease in age predicts the odds of membership in each race group compared to the reference group. The reference group in this analysis is White.

Referring to the Parameter Estimates (Table 15) reveals that for every 1 year increase in age, subjects killed by police are .957 times or 4.3% less likely to be Black than White. Subjects in the Black group are 1.695 times or 69.5% more likely than Whites to be armed with no object. For every 1 unit change in geographic location, Black subjects are 7.829 times (683%) more likely than Whites to be killed in urban areas and 2.698 times (170%) more likely to be killed in the suburbs. They are 2.480 times or 148% more likely than Whites to have no symptoms of mental illness. Having symptoms of mental illness is 1.771 times more likely to be unknown for subjects in the Black group than subjects in the White group.

Subjects killed by police are .963 times or 3.7% less likely to fall into the Hispanic group than the White group as age increases. They are 189464.147 times more likely to be female and 460176.451 times more likely to be male. The large ratio for gender is due to the low raw percentage of female representation in this and all groups. The subjects armed with a gun are .674 times (33%) less likely to fall in the Hispanic group than the White group. When armed with a vehicle, they are .684 times or 32% less likely to be Hispanic than White. They are 6.138 times or 514% more likely to be Hispanic than White if they are killed in an urban area and 2.949 times or 195% more likely to be Hispanic if they are killed in the suburbs.

Those killed by police belonging to the Unknown race group are 1.016 times or 1.6% more likely to be older than subjects in the White group. They are also 103269.562 times more likely to be female and 213553.593 times more likely to be male. The large ratio for gender is due to the low raw percentage of female representation in all groups. The subjects in the Unknown race group are 2.714 times or 171% more likely to be armed with multiple weapons than subjects in the White group. If they are killed in an urban area, subjects are 1.571 times 57% more likely to be in the Unknown group. They are 1.303 times 30% more likely than Whites to be killed in the suburbs. The subjects in the Unknown group are more 2.382 times or 138% more likely than subjects in the White group to have no mental health symptoms.

Subjects killed by police are .971 times or 3% less likely to be in the Pacific Islander group than the White group as age increases. If female and killed by police, subjects are 337347.579 times more likely to be Pacific Islander than White. Males killed by police are 532711.135 times more likely to be in this group than the White group. The large ratio for gender is due to the low raw percentage of female representation in this and all groups.

Subjects killed by police are .947 times or 5.3% less likely to be in the Native American group than the White group with 1-year increases in age. They are also 308952.554 times more likely to be female and 368153.938 times more likely to be male. The large ratio for gender is due to the low raw percentage of female representation in this and all groups. If alleged weapon is vehicle, subjects are .307 times or 69% less likely to be in the Native American group than the White group.

For Asians killed by police, there is a 405053.627 times greater chance of being female than there is for those subjects who are White. There is a 476365.202 times greater chance than there is in the White group of being male. The large ratio for gender is due to the low raw percentage of female representation in this and all groups. If armed with a knife, there is a 2.452 time or 145% greater chance of being in the Asian group than the White group. If killed in an urban area, subjects are 5.420 times or 442% more likely to be in the Asian group than in the White group. Those subjects who are killed in the suburbs are 4.026 times or 302% more likely to belong to the Asian group than the White group.

The classification Table 16 indicates that 51.9% of the cases were correctly classified, confirming that the model predicted membership in the race groups based on changes in the independent variables in slightly more than half of the incidents of police use of lethal force. In other words, when considering the Pseudo R-square of Nagelkerke, the model explained 23% of the variance in race of subjects killed by police, and correctly classified 51.9% of the cases. When considering all of the Pseudo R-square results, (Cox and Snell = 21.5%, Nagelkerke = 23%, and McFadden = 8.8%), the model explained between 8.8% to 23% of the variance in race of subjects killed by police and correctly classified slightly more than half of the cases.

The model statistically significantly predicts the race of subjects killed by police between 2013 and 2020. Therefore, the Null Hypothesis $H_0 1$ is rejected. These results empirically validate claims made by various authors that young, Black males who may or may not be armed are killed at proportionately higher rates in urban areas than their counterpart White males (e.g., Buehler, 2017; Rule, 2017; and Smiley & Fakunle, 2016). However, they do so with an exceedingly small effect size, rendering the findings effectively inconsequential in practical applications. In other words, making policy changes to police operations based on findings that only represent 8% to 23% of a trend would be ill advised. This is particularly true when considering that many other contextual factors, namely crime proportion by race (MacDonald, 2017), that were not evaluated here could contribute to the racial disproportion. Nonetheless, the findings should be regarded as important if for no other reason than to provoke a deeper look into the contribution of variables not examined—namely crime proportion by race, personality traits of police officers, and potential bias and the reasons behind it, regardless of the small effect size. Indeed, this is a starting point for relevant discourse on police killings by race, of course, only if the dialogue remains impartial.

The next analyses were conducted with variables distilled from the logistic regression and some that were not evaluated in that model due to issues with collinearity or predictive strength. The purpose of the following analyses was to examine the relationship among age, race, gender, alleged weapon, and alleged threat level, and differences in age among groups based on those same variables in addition to cause of death, armed status, geographic location, and symptoms of mental illness, since age is identified in the literature (e.g., Chaney, 2015; Moore et al., 2016; and Thompson, 2015) as the most discerning variable next to race that motivates police killings of unarmed, Black males in urban areas.

The following section discusses the results of general linear model ANOVAs (GLM ANOVA) conducted to explore variance, relationships, and differences among variables. Assumptions of normality and homogeneity of variance were violated, in some instances to a greater extent than others, and were addressed with Welch F tests in the last analysis. The rationale for the decision to use ANOVA in the presence of these assumptions violations is discussed in the previous chapter.

General Linear Model Univariate Analysis of Variance

Regression with GLM ANOVA was used to test Hypothesis $H_0 2$ because all of the predictor variables in the model are categorical.

The tests of Between-Subjects Effects Table (Table 17) shows that the statistically significant variables in the model explain 6.8% of the variance in age of subjects killed by police.

Review of the Parameter Estimates (Table 18) reveals that race and alleged weapon are significant predictors at $p < .05$, while holding constant gender and alleged threat level. Race 1 (White) ($b = 3.387$, $p < .001$) indicates that White subjects killed by police are nearly 4 years older than the mean age of 36 and Black subjects—Race 2 (Black) ($b = -3.601$, $p < .001$) are nearly 4 years younger than the mean age.

When armed with a vehicle—Alleged Weapon 3 ($b = -3.578$, $p < .001$), subjects killed by police are 3.5 years younger than the mean age of 36. Subjects killed by police armed with no object—Alleged Weapon 4 ($b = -2.638$, $p < .001$) are nearly 3 years younger than the mean age.

The model is statistically significant when predicting age, therefore the Null hypothesis $H_0 2$ is rejected. With statistically significant results, this GLM ANOVA substantiates the claim that Black males killed by police are younger than White males (e.g., Donner et al., 2017 and Moore et al., 2016), but only by approximately 4 years. It also confirms that subjects killed by police who are armed with no object are younger. Although notably appealing, there should be

caution observed with relying on these results in real world applications because they only explain 6.8% of the variance in age of subjects killed by police, which is far below the accepted standards of empirical research.

The next logical step in further determining how these variables may be related was to examine their interactions. This was done by conducting a GLM ANOVA with interaction effects to determine what conditions, if any among the variable groups, combine to influence the age of subjects killed by police.

General Linear Model Univariate Analysis with Interaction Effect

GLM ANOVA was used to test Hypothesis $H_0$3. An interaction term for race, alleged weapon, and alleged threat level was explored. The Tests of Between-Subjects Table 19 reveals a significant interaction, F (48, 6019) = 2.231, p < .001.

Further examination of the interactions contained in the parameter estimates (Table 20) reveals that Race 1*Alleged Weapon 5*Alleged Threat Level 2 is significant (b = 28.681, t = 2.188, p = .029), indicating that White males whose weapon is undetermined and threat level is determined to be other are 29 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 2*Alleged Threat Level 1 is significant (b = 28.755, t = 2.040, p = .041), meaning that Black Males armed with a knife who are attacking are 29 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 3*Alleged Threat Level 1 (b = 18.662, t = 2.216, p = .027) indicates that Black males who are armed with a vehicle and attacking are 19 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 3*Alleged Threat Level 2 (b = 17.454, t = 2.105, p = .035) is significant. Black males armed with a vehicle and whose threat level is other are 17 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 4*Alleged Threat Level 1 (b = 25.632, t = 1.976, p = .048) is significant, indicating that Black males armed with no object and are attacking are 26 years older than that mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 4*Alleged Threat Level 2 is significant (b = 28.830, t = 2.227, p = .026), indicating that Black males armed with no object whose threat level is other are 29 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 5*Alleged Threat Level 1 is significant (b = 27.559, t = 2.120, p = .034), indicating that Black males armed with an undetermined weapon who are attacking are 28 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 5*Alleged Threat Level 2 (b = 29.440, t = 2.259, p = .024) is significant, indicating that Black males armed with an undetermined weapon whose threat level is other are 29 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 2*Alleged Weapon 7*Alleged Threat Level 1 is significant (b = 18.391, t = 2.260, p = .024), indicating that Black males armed with a miscellaneous weapon who are attacking are

18 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

Race 3*Alleged Weapon 5*Alleged Threat Level 2 is significant (b = 13.936, t = 2.218, p = .027), indicating that Other races armed with an undetermined weapon whose threat level is other are 14 years older than the mean age of 48. This combination of predictive factors would be highly unusual given the age distribution of the sample.

The effect sizes for all the interactions range from .000 to .017. This is a small effect. It is not practically significant to rely on this outcome. This is supported by the fact that the mean age difference in all the interactions is substantially high. The results suggest that although statistically significant, these interaction effects are unlikely to occur. They do not align with findings in the current literature that young Black males who are not presenting a threat are disproportionately killed by police (e.g., Dukes & Kahn, 2017; Moore et al., 2017; and Smiley & Fakunle, 2016). This is particularly true because in each of the conditions found to be statistically significant the Black subjects were between 17 and 29 years older than the mean age of subjects killed by police. However, a closer examination of the results does support the notion that young Black males who present no threat to police are killed at higher rates since in each condition the Black males who were attacking were notably older than the mean. This would suggest that older Black males are more likely to attack police. The same is true whether or not they are armed during encounters.

However, because the results are significant, the Null hypothesis $H_0 3$ is rejected.

Building on but separating from the findings of the interaction effects, individual GLM ANOVAs were conducted to extrapolate from the larger analyses the differences in age for

conditioned groups, including race, gender, cause of death, armed status, alleged weapon type, threat level (type), geographical location, and symptoms of mental illness.

Individual General Linear Model Univariate Analysis of Variance

GLM ANOVAs were used to test Hypotheses $H_0$4 to $H_0$11.

The Tests of Between-Subjects Effect Table (see Table 21) shows that there is a statistically significant difference in race groups F (2, 6076) = 183.411, p < .001. A Bonferroni post hoc test was performed to determine where the differences among race groups lie. The effect size is small.

The mean age for all races was 37 years old (see Table 22).

The mean ages by group (Table 23) are White (M = 40.089), Black (M = 32.515), and Other (M = 36.127) years old.

There were 3 pairwise comparisons performed in the post hoc test. Bonferroni correction is made for the fact that there were 6 chances to find a significant result.

There is a statistically significant difference between the mean age of White and Black subjects (M = 7.57, SE = .402, p < .001), White and Other subjects (M = 3.96, SE = .384, p < .001), and Black and Other minority subjects (M = -3.61, SE = .440, p < .001). White subjects are 8 years older than Black subjects and 4 years older than Other race subjects. Black subjects are 8 years younger than White subjects and 4 years younger Other race subjects. Other minority subjects are 4 years younger than White subjects and 4 years older than Black subjects (Table 24).

The Null hypothesis $H_0$4 is rejected. This finding aligns with the literature indicating that Black males killed by police are younger than white males (e.g., Howell, 2014; Thompson, 2015; and Wilson & Wilson, 2015). However, it does not examine the potential contributing factors to

the age difference and therefore should be applied to real world conditions with caution. Face valid results, even when statistically significant, can be misleading.

The Tests of Between-Subjects Effect Table (Table 25) shows that there is no statistically significant difference in gender F (1, 6077) = 1.323, p = .252.

The mean age of both genders is 37 years old (see Table 26).

The mean age by gender (see Table 27) is Female (M = 37.882) and Male (M = 36.970) years old.

No post hoc test was performed because the result is not significant and there are fewer than 3 groups.

The Null hypothesis $H_0$5 was retained. This finding generally supports the findings in the literature regarding the age of subjects killed by police (e.g., Donner et al., 2017; and Moore et al., 2016) since most subjects are younger.

The Tests of Between-Subjects Effect Table (Table 28) shows that there is no statistically significant difference among cause of death groups F (5, 6073) = 2.035, p = .071. A Bonferroni post hoc test was performed to determine where the differences among cause of death groups lie. The effect size is small. However, at p = .71, there is still a 93% chance that cause of death is a predictive factor in the age of subjects killed by the police. This is noted because of the practical significance of this outcome, even though it cannot be considered statistically significant at the selected confidence interval.

The mean of all age groups is 37 years old (see Table 29).

The mean ages by group are Gunshot (M = 37.009), Gunshot and Taser (M = 36.692), Vehicle (M = 31.077), Taser Only (M = 38.912), Beaten (M = 42.100), and Physical Restraint (M = 35.105) years old (Table 30).

The mean differences in age are not significant (see Table 31).

The Null hypothesis $H_0$6 is retained. Although the finding is not statistically significant, it indicates that a notably large proportion of subjects killed by police were killed by gunshot, which supports the contemporary narrative that police shoot and kill young subjects (Donner et al., 2017; Dukes & Kahn, 2017; Moore et al., 2017). The obvious weakness of the finding is that it is not statistically significant, and the notion that young Black subjects are more often shot and killed by police cannot be substantiated since all races were represented.

The Tests of Between-Subjects Effect Table (Table 32) shows that there is a statistically significant difference among armed status groups $F(3, 6075) = 29.532$, $p < .001$. A Bonferroni post hoc test was performed to determine where the differences among armed status groups lie. The effect size is small at .014.

The mean age for all groups is 35 years old (see Table 33).

The mean ages by group are Allegedly Armed (M = 37.884), Unclear (M = 35.828), Vehicle (M = 33.253), and Unarmed (34.376) years old (see Table 34).

There were 4 pairwise comparisons performed in the post hoc test. Bonferroni correction is made for the fact that there were 12 chances to find a significant result.

There is a statistically significant difference (Table 35) between the mean age of Allegedly Armed and Unclear (M = 2.06, SE = .643, p = .008), Allegedly Armed and Vehicle (M = 4.63, SE .665, p < .001), and Allegedly Armed and Unarmed (M = 3.51, SE = .522, p < .001). This indicates that subjects who are allegedly armed are 2 years older than subjects whose armed status is unclear, 5 years older than subjects armed with a vehicle, and 4 years older than subjects who are unarmed. In summary, older subjects are typically armed. The mean age is not statistically significantly different between Unclear and Unarmed (M = 1.45, SE = .782, p =

.381) and Vehicle and Unarmed (M = -1.12, SE = .801, p = .967), but the overall results are significant.

The Null hypothesis $H_0$7 is rejected. Although the effect size is small, the finding supports the notion that unarmed subjects killed by police are generally younger (Moore et al., 2016), since armed subjects here were older, even if by only a few years. The finding becomes capricious when even contemplating the voluminous potential confounding factors that contribute to the reasons subjects killed by police are typically younger, namely that most crimes are committed by younger subjects (MacDonald, 2017).

The Tests of Between-Subjects Effect Table (Table 36) shows that there is a statistically significant difference among alleged weapon groups F (6, 6072) = 15.957, p < .001. A Bonferroni post hoc test was performed to determine where the differences among alleged weapon groups lie. The effect size (.015) is small.

The mean age for all groups is 36 years old (Table 37).

The mean ages by group are Gun (M = 38.048), Knife (M = 37.263), Vehicle (M = 33.258), No Object (M = 33.796), Undetermined (M = 35.661), Multiple (M = 35.191), and Miscellaneous (M = 37.235) (Table 38).

There were 7 pairwise comparisons performed in the post hoc test. Bonferroni correction is made for the fact that there were 42 chances to find a significant result.

There is a statistically significant difference between the mean age of Gun and Vehicle (M = 4.79, SE = .673, p < .001), Gun and No Object (M = 4.25, SE = .617, p < .001), and Gun and Undetermined (M = 2.39, SE = .711, p = .017). There are significant differences between Knife and Vehicle (M = 4.00, SE = .776, p < .001) and Knife and No Object (M = 3.47, SE = .728, p < .001). There is a significant difference between Vehicle and Miscellaneous (M = -3.98,

SE = .841, p < .001). There is a significant difference between Miscellaneous and Vehicle (M = 3.98, SE = .841, p < .001) and Miscellaneous and No Object (M = 3.44, SE = .797, p < .001). This indicates that subjects armed with a gun or knife are older than subjects armed with a vehicle, subjects armed with a gun are older than subjects armed with an undetermined weapon, subjects armed with a gun or knife are older than subjects armed with no object, and subjects armed with a miscellaneous weapon are older than subjects armed with a vehicle or no object. See Table 39.

The Null hypothesis $H_0$8 is rejected. When considering the position of many authors (see Fridell, 2016; Klingler & Slocum, 2017; and Nix et al., 2017) of the contemporary literature that young (Black) male subjects killed by police are typically unarmed, this finding, although small in effect size, is confirming. The challenge those authors would have with using this information to substantiate their position, aside from the small effect size, is the finding represents all races and genders, meaning it does not confirm that only young Black subjects killed by police are typically not armed.

The Tests of Between-Subjects Effect Table (Table 40) shows that there is a statistically significant difference in alleged threat level groups F (2, 6076) = 6.805, p = .001. A Bonferroni post hoc test was performed to determine where the differences among threat level groups lie. The effect size is small at .002.

The mean age for all groups is 36 years old (see Table 41).

The mean ages by group are Attack (M = 37.441), Other (M = 36.349), and Undetermined (M = 35.441) years old. (Table 42).

There were 3 pairwise comparisons performed in the post hoc test. Bonferroni correction is made for the fact that there were 6 chances to find a significant result.

There is a statistically significant difference between Attack and Other (M = 1.09, SE = .369, p = .009) and Attack and Undetermined (M = 2.00, SE = .763, p = .026) (Table 43). This means that subjects who are attacking are older than subjects whose alleged threat level is undetermined or other.

The Null hypothesis $H_0$9 is rejected. Although the difference in age among the groups is statistically significant, it is relatively nominal at 1 to 2 years. In addition, the effect size is exceedingly small, rendering it essentially useless in practical applications. It therefore supports the notion that young subjects killed by police typically present no threat, but this can be quite misleading considering that in real world applications a 1- to 2-year difference in age between younger or older adults is not compelling. Further, the finding cannot support the errors in threat perception notion that young Black males killed by police are presenting no threat (Kahn et al., 2017a; Moore et al., 2017; Rule, 2017) during lethal encounters because White subjects are also represented in the results.

The Tests of Between-Subjects Effect Table (Table 44) shows that there is a statistically significant difference in geographical location groups F (2, 6076) = 66.829, p < .001. A Bonferroni post hoc test was performed to determine where the differences among geographical location groups lie. The effect size is small at .022.

The mean age for all groups is 37 years old. See Table 45.

The mean ages by group are Urban (M = 34.740, SE = .324), Suburban (M = 36.738), and Rural (M = 40.116) years old. See Table 46.

There were 3 pairwise comparisons performed in the post hoc test. Bonferroni correction is made for the fact that there were 6 chances to find a significant result.

There is a significant difference between Urban and Suburban (M = -2.00, SE = .398, p < .001) and Urban and Rural (M = -5.38, SE = .470, p < .001) (Table 47). This indicates that subjects who are killed in urban areas are younger than subjects who are killed in suburban and rural areas.

The Null hypothesis $H_0$10 is rejected. This supports the notion that young Black, male subjects are killed in urban areas and possibly bolsters the related argument made by those who oppose proactive policing (e.g., Bornstein, 2015; Edwards et al., 2018; and Howell, 2014) since it occurs mostly in urban areas. However, that argument falls flat when accounting for the entirety of the results because they are not extrapolated by race or gender and the effect size is extremely small, rendering them not practically significant.

The Tests of Between-Subjects Effect Table (Table 48) shows that there is a statistically significant difference in symptoms of mental illness groups F (3, 6075) = 29.777, p < .001. A Bonferroni post hoc test was performed to determine where the differences among symptoms of mental health groups lie. The effect size (.014) is small.

The mean age for all groups (Table 49) is 38 years old.

The mean ages by group (Table 50) are Yes (M = 39.850), No (Me = 35.969), Unknown (37.717), and Drug/Alcohol Use (M = 37.817) years old.

There were 4 pairwise comparisons performed in the post hoc test. Bonferroni correction is made for the fact that there were 12 chances to find a significant result.

There is a significant difference between Yes and No (M = 3.89, SE = .419, p , < .001), Yes and Unknown (M = 2.14, SE = .619, p = .003), and No and Unknown (M = -1.75, SE = .540, p = .007) (Table 51). This indicates that subjects who present with symptoms of a mental illness are older than subjects who present unknown symptoms or no symptoms of mental illness

and subjects with no symptoms of mental illness are younger than subjects with unknown symptoms.

The Null hypothesis $H_0$11 is rejected. The literature does make the argument that police are ill equipped to deal with mentally ill subjects (Hansson & Markström, 2014), but there is no particular racial emphasis to that argument (Kahn et al., 2017a). Considering that presence of mental illness is not among the most substantial contributing factors in police killings, according to the logistic regression results, the argument is weak at best. What is important to note from this finding is that symptoms of mental illness appear to be more present in older subjects and, based on results found in this study, they are typically White. It could be argued that this validates the notion that race, more than mental illness, motivates police killings since Black subjects killed by police rarely present with mental illness. That would, however, be misleading because this finding does not control for many other potential variables contributing to police killings. In addition, the larger analyses in this study found that many factors outside race are related to police killings, regardless of mental health status. Finally, this finding may also suggest that police accurately assess threat presented by mentally ill subjects because they are killed far less often than subjects with no symptoms of mental illness.

Welch F tests

Welch F tests were run to address issues with normality yielded from Shapiro-Wilke scores of less than p. 05 for race, ranging from $p < .001$ to $p = .051$ (Table 52), gender at $p < .001$ (Table 53), cause of death with gunshot and taser at $p < .001$ (vehicle, no object, undetermined, and multiple were not statistically significant and were normally distributed) (Table 54), armed status at $p < .001$ (Table 55), alleged weapon type at $p < .001$ (with the exception of multiple at $p = .172$) (Table 56), alleged threat level (type) at $p < .001$ (Table 57), geographical location at $p < .001$ (Table 58), and symptoms of mental illness at $p < .001$ (Table 59), and homogeneity of

variance yielded from Levene scores of $p < .05$ for race ($p < .001$), cause of death ($p = .018$), armed status ($p < .001$), alleged weapon type ($p < .001$), alleged threat level (type) ($p = .04$), geographical location ($p < .001$), and symptoms of mental illness ($p < .001$). Gender did not violate heterogeneity of variance with a Levene score of $p = .845$. See Tables 60, 61, 62, 62, 64 65, 66, and 67, respectively. Welch F is appropriate to run for both data that do and do not violate normality and homogeneity assumptions, therefore the levels in the cause of death, alleged weapon type, and gender groups that were normally distributed and had homogeneity in variance did not negatively affect the results.

Welch F test produced a similar, statistically significant result for race (total mean age approximately 37 years old for all groups) (Table 68) with $F (6, 335.510) = 94.858$, $p < .001$ (Table 69). Games-Howell post hoc test indicates that differences lie between White and Black ($M = 7.574$, $SE = .386$, $p < .001$), White and Hispanic ($M = 6.545$, $SE = .417$, $p < .001$), White and Unknown ($M = -2.538$, $SE = .710$, $p = .007$), and White and Native American ($M = 7.847$, $SE = .933$, $p < .001$), Black and Unknown ($M = -10.111$, $SE = .724$, $p < .001$), Black and Asian ($M = -4.74$, $SE = 1.259$, $p = .010$), Hispanic and Unknown ($M = -9.083$, $SE = .741$, $p < .001$), Unknown and Pacific Islander ($M = 8.008$, $SE = 1.966$, $p = .003$), Unknown and Native American ($M = 10.384$, $SE = 1.116$, $p < .001$), Unknown and Asian ($M = 5.638$, $SE = 1.393$, $p = .002$), and Native American and Asian ($M = -4.747$, $SE = 1.519$, $p = .034$). Table 70 displays the pairwise comparison results. This supports the assertion that minority subjects killed by police, particularly Black subjects, are younger than their White counterparts. These findings support rejecting the null hypothesis $H_0 4$.

Like the GLM ANOVA indicates, Welch F found no statistically significant difference in age between males and females $F (1, 305.877) = 1.284$, $p = .258$ (Table 72). No post hoc test was

performed because there were only two groups This finding supports retaining the null hypothesis $H_0$5.

Unlike the GLM ANOVA finding, Welch F found a statistically significant difference in cause of death F (5, 53.906) = 2.498, p = .042 (Table 74). The difference, according to Games-Howell, is between Vehicle and No Object (M = -7.835, SE = 2.466, p = .034) (Table 75). Subjects killed by police with a vehicle are nearly 8 years younger than those killed with no object. In contrast to the GLM ANOVA findings, the Welch F finding supports rejecting the null hypothesis $H_0$6. This does not align with the literature indicating that police more often shoot young subjects in lethal encounters than kill them by other means (e.g., Donner et. al., 2017; Dukes & Kahn, 2017; and Moore et al., 2017) in that there is no statistically significant difference in the age of subjects killed by police by gunshot. However, when compared to the GLM ANOVA, the difference in confidence is small (p = .71 – p = .42), and the former is just outside the .04 to .06 confidence interval acceptable in social science research conducted with ANOVA (Schmider et al., 2010). Therefore, as indicated in the discussion of GLM ANOVA, cause of death, particularly gunshot, may be a good, but practically significant, predictor of the age of subjects killed by police. This is especially noteworthy since the majority of subjects killed by gunshot (5652) were age 37 years old (Table 73), the total mean age of all subjects killed.

Welch F yielded a statistically significant difference in mean age for armed status F (3, 1012.942) = 35.404, p < .001 (Table 77). The differences, according to Games-Howell, are between allegedly armed and unclear (M = 2.055, SE = .564, p = .002), allegedly armed and vehicle (M = 4.631, SE = .562, p < .001), allegedly armed and unarmed (M = 3.508, SE = .502, p < .001), and unclear and vehicle (M = 2.575, SE = .774, p = .003) (Table 78). These findings

align with the GLM ANOVA findings that indicate that subjects who are armed are slightly older than subjects who are armed with vehicle, whose armed status is unclear, and who are unarmed. Therefore, the null hypothesis $H_0$7 is also rejected based on these results. Although by a small margin, according to these findings, unarmed subjects killed by police are younger than armed subjects (Table 76). It is equally important to note that the majority of subjects killed by police (Table 76) were armed (4517) compared to unarmed (708), not including subjects armed with a vehicle (411) or whose armed status was unclear (443). This finding does not support literature claims that unarmed subjects are more often killed by police (e.g., Moore et al., 2016) than armed subjects.

Statistical significance was found with Welch F in age for alleged weapon F (6, 699.556) = 18.809, $p < .001$ (Table 80). Games-Howell post hoc test (Table 81) indicates that differences exist between Gun and Vehicle (M = 4.790, SE = .578, $p < .001$), Gun and No Object (M = 4.253, SE = .568, $p < .001$), Gun and Undetermined (M = 2.387, SE = .646, p = .005), Knife and Vehicle (M = 4.004, SE = .668, $p < .001$), Knife and No Object (M = 3.467, SE = .659, $p < .001$), Vehicle and Undetermined (M = -.2403, SE = .798, p = .043), Vehicle and Miscellaneous (M = -3.977, SE = .752, $p < .001$), and No Object and Miscellaneous (M = -3.440, SE = .744, $p < .001$) (Table 79). This supports the GLM ANOVA results that indicate that subjects armed with a gun and knife are older than subjects armed with a vehicle, and subjects armed with no object are younger than subjects armed with miscellaneous weapons. The rejection of null hypothesis $H_0$8 by GLM ANOVA is supported by these findings. It is also notable that younger subjects were more often armed with no object than a gun, a knife, or miscellaneous weapons, but that is not differentiated by race. Nonetheless, the allegation made in the literature (e.g., Fridell, 2016; Klingler & Slocum, 2017; and Nix et al., 2017) and by media figures that young Black subjects

killed by police are unarmed warrants attention but should not be separated from the fact that these findings represent all races.

Mean differences in age were statistically significant for alleged threat level (type), according to Welch F (2, 845.659) = 7.044, p < .001 (Table 83). Games-Howell post hoc test (Table 84) indicates that there are differences between Attack and Other (M = 1.092, SE = .362, p = .007) and Attack and Undetermined (M = 2.000, SE = .741, p = .020). This confirms the GLM ANOVA findings that subjects killed by police who are attacking are slightly older than subjects whose threat level is undetermined or deemed other. The rejection of null hypothesis $H_0$9 is therefore supported. However, it is important to note that regardless of the nominal difference in age between those who were attacking and those whose threat level was undetermined or other, all subjects were young (between 35 and 37 years old) (Table 82), and the findings represent subjects from all races. Consequently, drawing the conclusion based on these findings that young Black males are more often killed by police when presenting no threat (errors in threat perception), a common theme in the literature (e.g., Kahn et al., 2017a; Moore et al., 2017; Rule, 2017), would likely be difficult.

Welch F indicates there is a statistically significant difference in the age of subjects killed by police based on geographical location F (2, 3223.038) = 67.493, p < .001 (Table 86). Games-Howell post hoc comparisons show differences between Urban and Suburban (M = -1.997, SE = .381, p < .001), Urban and Rural (M = -5.375, SE = .464, p < .001), and Suburban and Rural (M = -3.378, SE = .426, p < .001) (Table 87). These findings support rejection of the null hypothesis $H_0$10, consistent with the corresponding GLM ANOVA finding. Although there are statistically significant differences in the age of subjects killed by police among urban, suburban, and rural areas, they do not represent differences among race or gender, and more subjects were killed in

the suburbs (3072) than in urban areas (1579) and rural areas (1428) (Table 85). In addition, there is a nominal difference in age of subjects killed by police between urban and rural areas. None of these findings aligns with literature claims (e.g., Duran & Loza, 2017; Edwards et al., 2018; and Feldman et al., 2019) that most police killings, particularly killings of young Black males, occur in poor, inner city minority communities. However, the MLR finding to some extent supports that claim, indicating that Black subjects are more likely to be killed in urban areas than White subjects, even though it also suggests that Black subjects are more likely to be killed in the suburbs than White subjects. In contrast, Table 88 shows that more Black subjects were killed in suburban areas (716) than in urban areas (647), although it also confirms that more Black subjects (647) than White subjects (420), were killed in urban areas, the overwhelming majority of whom were males (2915 males to 157 females in the suburbs and 1516 males to 63 females in urban areas) (Table 89), not accounting for the potential influence of other contextual variables, including those evaluated in this study.

Finally, the Welch F test for symptoms of mental illness found statistically significant mean differences in age $F(3, 679.255) = 27.077$, $p < .001$ (Table 91). Games-Howell post hoc test (Table 92) reveals differences between Yes and No ($M = 3.888$, $SE = .442$, $p = .000$), Yes and Unknown ($M = 2.141$, $SE = .658$, $p = .006$), and No and Unknown ($M = -1.748$, $SE = .562$, $p = .010$). This finding supports rejecting the null hypothesis $H_0 11$ in kind to the GLM ANOVA hypothesis reconciliation. The most meaningful point conveyed in this finding is that older subjects more often present with symptoms of mental illness, and although not statistically significant, that includes subjects with unknown symptom presentation and those presenting with symptoms of alcohol or drug use (Table 90). It appears, based on these findings, that police are less likely to kill young subjects with mental illness, despite literature assertions that they are not

well equipped to deal with mentally ill subjects (e.g., Hansson & Markström, 2014). The literature also supports the notion that police are helpful to the mentally ill (Reuland et al., 2009) even when they encounter them in dangerous situations (e.g., Kahn et al., 2017b), the only exception being if weapons are involved.

The Welch F test results were highly similar to the GLM ANOVA results, which suggests that the latter are arguably robust enough to withstand violations of normality and homogeneity, which is consistent with findings dating back many decades (Borneau, 1960) and supported by current research (Schmider et al., 2010), and is a noteworthy, implicit secondary outcome of this study. Nonetheless, in accordance with contemporary research standards, particularly with ANOVA, the assumptions were addressed.

The following table provides a concise summary of the Welch F test results.

Table 93

Welch F test Summary of Results

Statistically Significant Mean Differences
Age and Race Groups*
White subjects 8 years older than Black subjects*
White subjects 6 years older than Hispanic subjects*
White subjects 2.5 years older than Unknown subjects*
White subjects 8 years older than Native American subjects*
Black subjects 10 years younger than Unknown subjects*
Black subjects 5 years younger than Asian subjects*
Hispanic subjects 9 years younger than Unknown subjects*
Unknown subjects 8 years older than Pacific Islander subjects*
Unknown subjects 10 years older than Native American subjects*
Unknown subjects 6 years older than Asian subjects*
Native American subjects 4 years younger than Asian subjects*
Age and Cause of Death Groups*
Subjects killed with a vehicle are 8 years younger than subjects killed with no object*
Age and Armed Status Groups*
Allegedly armed subjects 2 years older than subjects whose armed status was unclear*
Allegedly armed subjects 4 years older than subjects armed with a vehicle*
Allegedly armed subjects 3.5 years older than subjects who were unarmed*

Subjects whose armed status was unclear 2.5 years older than subjects armed with a vehicle*

Age and Alleged Weapon Groups*
Subjects armed with a gun 5 years older than subjects armed with a vehicle*
Subjects armed with a gun 4 years older than subjects armed with no object*
Subjects armed with a gun 2 years older than subjects armed with an undetermined weapon*
Subjects armed with a knife 4 years older than subjects armed with a vehicle*
Subjects armed with a vehicle 2 years younger than subjects armed with an undetermined weapon*
Subjects armed with a vehicle 4 years younger than subjects armed with miscellaneous weapons*
Subjects armed with no object 3.5 years younger than subjects armed with miscellaneous weapons*

Age and Alleged Threat Level Groups*
Subjects attacking 1 year older than subjects whose threat level was other*
Subjects attacking 2 years older than subjects whose threat level was undetermined*

Age and Geographical Location Groups*
Subjects killed in urban areas 5 years older than subjects killed in the suburbs*
Subjects killed in urban areas 5 years older than subjects killed in rural areas*
Subjects killed in suburban areas 3 years younger than subjects killed in rural areas*

Age and Symptoms of Mental Illness Groups*
Subjects presenting with symptoms of mental illness 4 years older than subjects with no symptoms of mental illness*
Subjects presenting with symptoms of mental illness 2 years older than subjects with unknown symptoms of mental illness*
Subjects presenting with no symptoms of mental illness 2 years younger than subjects with unknown symptoms of mental illness*

No Statistically Significant Mean Differences

Age and Gender Groups
No difference in age between males and females

*$p < .05$

Note. This table is included for ease of reviewing the voluminous results of the Welch F tests. Findings are significant at the .05 level.

Like age, gender is considered to be a stable contributing factor in police killings. In particular, much of the literature suggests that males are the primary target of police killings (Buhler, 2017; Nix et al., 2017), but more specifically, young Black males (Robinson, 2017;

Zwach, 2015). The significance of gender in police killings was evaluated with chi-square tests to better clarify this assumption.

Chi-Square

Hypotheses $H_0$12 through $H_0$18 were resolved with chi-square tests. The number in all expected cells is greater than 5, meaning there has been no violation of assumptions.

There is no statistically significant relationship between gender and cause of death (chi-square = 9.942, df = 5, p = .077) (see Table 95). There is no statistically significant difference in the expected versus observed counts in any of the categories (Table 94). This means that there is no difference between how males and females are killed by police.

The Null hypothesis $H_0$12 cannot be rejected. The fact that most subjects killed by police are killed by gunshot does not differ by gender. This does not necessarily align with the literature which suggests that young Black males are disproportionately shot and killed by police (Fridell, 2016; Klingler & Slocum, 2017; Ross, 2020). It appears that police who use lethal force during encounters choose their firearm more often than other means, regardless of gender. This could be a function of procedure or related to any host of other factors.

There is a statistically significant relationship between gender and armed status (chi-square = 52.741, df = 3, p < .001) (Table 98), although the effect size is very small (Table 99), with a Cramer's V value of < .001. The difference is statistically significant in the expected versus observed counts in the categories (Table 97). This means that although females were armed 61.1% of the time and males were armed 74.9% of the time, and the difference is statistically significant, the impact of the difference is essentially meaningless. The same is true for differences in the armed status for males and females if armed status was unclear (Females = 4.3%, Males = 7.4%), they were armed with a vehicle (Females = 13.2%, Males = 6.4%), or they were unarmed (Females = 21.4%, Males = 11.2%).

The Null hypothesis $H_0$13 is rejected. The fact that both females and males were armed the overwhelming majority of the time during police encounters is more meaningful than the statistically significant difference between the incidence of them being armed. This is true both due to the noted percentage of times that they were armed and the small effect size, respectively. The notion that subjects killed by police are unarmed, put forth by opponents of police use of lethal force (Lim, 2017; Robinson, 2017; Weitzer, 2015), is easily refuted based on this finding. It also suggests that females killed by police are routinely armed. That is something worthy of discussion in debates about police use of lethal force if honesty about the alleged targeting of males, rather than considering proportion of crime rates, is an objective. The debate, of course, is best had in the context of the overall results of the study.

There is a statistically significant relationship between gender and alleged weapon type (chi-square = 56.768, df = 6, $p < .001$) (Table 101). The difference in expected versus observed counts in the categories of alleged weapon type is statistically significant for males and females (Table 100). The effect size is small, with a Cramer's V of < .001 (Table 102). This means that the difference between the alleged weapon type between males and females is significant but extremely small. Females had a gun 41.8% of the time compared to males who were armed with a gun 55.6% of the time when killed by police. Similar differences were seen with knife (Females = 14.3%, Males = 13.7), vehicle (Females = 13.2%, Males = 6.5%), no object (Females = 16.4%, Males = 7.9%), undetermined (Females = 3.2%, Males = 6.2%), multiple (Females = 1.5%, Males = 1.2%), and miscellaneous (Females = 5.5%, Males = 8.9%). In other words, neither females nor males who were killed by the police were overrepresented in any of the alleged weapon categories.

The Null hypothesis for $H_0$14 is rejected. This finding is important in that it illustrates the fact that subjects killed by police are often armed, which is much different from the narrative offered by authors of the academic literature (e.g., Lim, 2017; Nix et al., 2017; Robinson, 2017; Weitzer, 2015; and Zwach, 2015). The difference between females and males is statistically significant but not practically significant because the difference is minimal, according to the effect size, but the gleaning reality that subjects from both genders were armed during lethal encounters with police cannot be ignored.

There is a statistically significant relationship between gender and alleged threat level (chi-square = 12.525, df = 2, p = .002) (Table 104), with a Cramer's V of .002 (Table 105), indicating a small effect size. The difference in threat between females and males is statistically significant but small. There is a statistically significant difference in expected versus observed counts for females and males in each of the alleged threat level categories (Table 103). Females attack 56.4% of the time compared to males who attack 65.4% of the time. For threat level (type) other, the difference is clear (Females = 39.3%, Males = 29.4%) as it is for undetermined (Females = 4.3%, Males = 5.2%), but both have a small effect.

The Null hypothesis $H_0$15 is rejected. This is of notable importance because it appears to support the notion that subjects killed by police are typically attacking, regardless of gender. The predominant theme in the literature is that police kill suspects who are not attacking or make errors in judgment about suspects who are not posing a threat at during the encounter (e.g., Dukes & Gathier, 2017; Moore et al., 2017; Rule, 2017; and Smiley & Fakunle, 2016). This means that, based on the finding, it can be safely argued that errors in threat perception by police during incidents of lethal force cannot be substantiated.

There is no statistically significant relationship between gender and geographical location (chi-square = 3.676, df = 2, p = .159) (Table 107). The difference is not statistically significant between females and males in the categories for geographical location. This means that there is no statistically significant difference in the geographical location of where females and males are killed by police. See Table 107. Cramer's V is .159, indicating a small effect (Table 108).

The Null hypothesis $H_0$16 is retained. This finding is relevant because it calls into question the notion that (Black) males are the population most often killed in urban areas (Edwards et al., 2018; White, 2002). While this might be true overall, proportionally for gender it is not true.

There is a statistically significant relationship between gender and symptoms of mental illness (chi-square = 17.671, df = 3, p < .001). The effect size is small, with a Cramer's V of < .001 (see Table 110 and Table 111, respectively). There is a statistically significant difference in expected versus observed counts between males and females in the categories of symptoms of mental illness (Table 109). The difference in the presence of mental health symptoms between females (29.3%) and males (20.1%) killed by police is statistically significant but small. The same is true for subjects with no mental health symptoms (Females = 58.6%, Males = 66%), unknown presence of symptoms (Females = 11.4%, Males = 11%), and symptoms of Drug/Alcohol use (Females = 1.2%, Males = 2.9%).

The Null hypothesis $H_0$17 is rejected. Mental illness is not necessarily differentiated by gender in the literature, but this finding is nonetheless noteworthy. It essentially indicates that females present more often with mental health symptoms than males and males more often present with symptoms of substance abuse, even though the difference is small. This information would likely be useful in efforts to educate police officers about the risks they may face with

mentally ill or substance abusing subjects by gender to better equip them with commensurate skills to manage potentially lethal encounters.

The relationship between gender and race is statistically significant (chi-square = 34.760, df = 2, p < .001) (Table 113) but small, with a Cramer's V of < .001 (Table 114). There is a statistically significant difference in the expected versus observed counts between females and males in the categories of race (Table 112). The difference between White females killed by police at 62.5% and White males at 44.5% is statistically significant but small. The same is true for Black females (17.1%) compared to Black males (25.6%). The statistically significant difference between females at 20.4% and males at 29.8% in other races is also small.

The Null hypothesis $H_0$18 is rejected. This arguably confirms the literature assertions that males, particularly young Black males, are killed proportionally more often by police than any other group (Dukes & Kahn, 2017; Klingler & Slocum, 2017; Moore et al., 2017). What the finding clearly supports, however, is that young Black males are killed more often than young Black females. The same is not true for White females versus White males since White females are killed proportionally more often by police than White males. It must be noted, though, that the effect size is small, meaning that real world applications are limited.

In another effort to evaluate the significance of age as a factor in police killings, eta correlations were conducted. The reason for this additional approach to examining age was to effectively illustrate trends in age across the variables cause of death, symptoms of mental illness, alleged weapon, and geographical location because they held strong and consistent as factors in the other analyses. It was determined that a more granular view of the significance of age in that regard was warranted to draw out possibilities for more distinct conclusions.

Eta Correlation

Eta correlation was used to test hypotheses $H_0$19 through $H_0$22. The effect size of each of the correlations was evaluated by calculating eta squared.

Cause of death has a small, positive relationship with age (Table 115) with an eta square value of. 041 = (.001681) .1681% (√.041). Less than 2% of the variance in age is explained. The number of gunshot deaths (Table 119) increased between ages 15 and 50 years old, then decreased to the age of age 91. The overwhelming majority of police killings were by gunshot (5,652). Next was gunshot and taser (247), followed by taser only (125), vehicle (26), physical restraint (19), then beaten (10). Gunshot accounts for the greater amount of correlation.

The Null hypothesis $H_0$19 is rejected. This confirms that most police killings occur by gunshot, which supports the literature, even though those findings emphasize more specifically killings of young, Black male subjects (Fridell, 2016; Klingler & Slocum, 2017; Nix et al., 2017). It also confirms that gunshot deaths by police occur more regularly in younger subjects.

Symptoms of mental illness has a small, positive relationship with age (Table 116). Eta square is .120 = (.0144) 1.4% (√.120). Less than 2% of the variance in age is explained. The number of incidents shown in Table 120 in the no symptoms category (3,992) increased with age. Yes, the presence of symptoms, increased between 20 and 37 years old and then steadily decreased with age. Having unknown symptoms was more sporadic with age and drug/alcohol was also sporadic and less consistent across age of subjects killed by police.

The Null hypothesis $H_0$20 is rejected. Not surprisingly, considering findings of other analyses in this study, most subjects killed by police had no symptoms of mental illness. That number increased with age, but some mental illness was present in young adult subjects. This does not necessarily support or refute findings presented in the literature about police killings of mentally ill subjects (e.g., Dewey, et al., 2013; Hansson & Markström, 2014; and Kahn et al.,

2017a). It is nonetheless noteworthy because it offers contextual information that could be helpful in educating the police.

Alleged weapon and age are positively correlated (Table 117). The effect size is small at eta square .123 = (.015129) 1.5% (√.123). Less than 2% of the variance in age is explained. Armed with a gun (3,342) increased between 15 and 40, then generally decreased with age. Table 121 indicates the number of subjects armed with a knife (837) increased from age 20 to 58, then decreased with age. The number of subjects armed with a vehicle (414) increased between 19 and 40 years old, then decreased. Being armed with no object (504) increased from age 21 to 33, with some variability between ages 34 and 42, then decreased steadily, with the exception of age 47 when the incidents nearly doubled from the previous year. The incidents then steadily decreased to age 91 years old. The number of incidents by those whose armed status was undetermined (366) increased between ages 24 and 36 years old with some mild variability at age 28 and 33 (fewer incidents) and 41 and 43 (more incidents), then incidents steadily decreased. The number of incidents with subjects who had multiple weapons (68) increased from age 21 to 42 years old, then was variable with fewer cases at 43 and 44 and more cases from 45 to 49 years old, then the cases steadily decreased to 91 years old. There was an increase in cases for subjects armed with a miscellaneous weapon (548) between ages 18 and 49 years old, with sporadic variability at ages 19, 20, 23, 43, and 44 years old. Then the incidents steadily decreased.

The Null hypothesis $H_0$21 is rejected. This finding is interesting in that is does not support the notion presented in the literature that young subjects are unarmed when killed by police (Lim, 2017; Nix et al., 2017; Robinson, 2017). It shows that being armed increased with age, but young subjects were indeed armed during the majority of lethal police encounters.

Geographical location and age have a small, positive relationship (Table 118). Eta square is .147 = (.021609) 2.2% (√.147). Approximately 2% of the variance in age is explained. The incidents of subjects killed (Table 122) in Urban areas (1,579) increased between 16 and 37 years old, with minimal variation, then steadily decreased. Suburban deaths (3,072), which occurred most often, increased between ages 15 and 53 years old, then gradually decreased to age 63, then rapidly decreased. The number of subjects killed in Rural areas (1,428) increased at age 18 years old with some variability to age 23, then continued to increase from age 24 to 59 years old with minimal variability, then steadily decreased.

The Null hypothesis $H_0$22 is rejected. The relationship between age and geographical location is notable since it does not comport with literature assertions that there is an epidemic of young Black males being killed in urban areas (Edwards et al., 2018; Moore et al., 2017; Zwach, 2015). In fact, most police killings of young subjects occurred in the suburbs. Conversely, however, the logistic regression results indicate that Black subjects were appreciably more likely to be killed in urban areas than suburban areas, although numbers in the latter were still high, when compared to White subjects. The point, notwithstanding those findings, is that many Black subjects were killed in the suburbs and their lethal encounters with police were not at comparatively epidemic proportions in urban areas. In addition, the numbers of incidents of urban and rural police killings of similarly aged subjects were nearly identical, although not specifically accounting for race.

The eta square results align with results of the GLM ANOVA, indicating that a nominal amount of the variability in age can be explained by the categorical predictor variables included in the model. While eta square value in this particular analysis does not reflect variance in the outcome while holding constant other variables, it does indicate effect size in the relationship

between the variables being evaluated. Considering the small effect of the relationship between age and each of the variables evaluated, it is plausible to suggest that there is not much variability in age in police killings associated with cause of death, symptoms of mental illness, alleged weapon, and geographical location.

The following table provides a concise summary of the reconciliation of hypotheses.

Table 123

Hypotheses Resolutions

	Hypothesis	Disposition
$H_0$1	There is no statistically significant predictive relationship among age, gender, alleged weapon type, alleged threat level (type), geographical location, symptoms of mental illness, and race in police killings between 2013-2020.	Rejected
$H_0$2	There is no relationship among the age of subjects killed by police and gender, race, alleged weapon type, and alleged threat level (type) between 2013-2020.	Rejected
$H_0$3	There is no difference in the mean age of subjects killed by police between 2013-2020 based on interaction effects among race, alleged weapon type, and alleged threat level (type).	Rejected

$H_0$4	There is no statistically significant difference in the mean age among White, Black, and Other minorities killed by police between 2012-2020.	Rejected
$H_0$5	There is no statistically significant difference in the mean age of females and males killed by police between 2013-2020.	Retained
$H_0$6	There is no statistically significant difference in the mean age among the different groupings of cause of death (Gunshot, Gunshot and Taser, Vehicle, Taser Only, Beaten, and Physical Restraint) of subjects killed by police between 2013-2020.	Retained (ANOVA) Rejected (Welch F)
$H_0$7	There is no statistically significant mean difference in age of subjects killed by police between 2013-2020 based on their armed status (Allegedly Armed, Unclear Vehicle, and Unarmed).	Rejected
$H_0$8	There is no statistically significant difference in the mean age of subjects killed by police between 2013-2020 based on their alleged weapon type (Gun, Knife, Vehicle, No Object, Undetermined, Multiple, and Miscellaneous).	Rejected
$H_0$9	There is no statistically significant difference in the mean age of subjects killed by police between 2013-	Rejected

	2020 based on their threat level (type) (Attack, Other, and Undetermined).	
$H_0$10	The mean age of subjects killed by police between 2013-2020 is not statistically significantly different based on geographical location (Urban, Suburban, and Rural).	Rejected
$H_0$11	There is no statistically significant mean difference in age of subjects killed by police between 2013-2020 considering the presence of symptoms of a mental illness (Yes, No, Unknown, and Drug/Alcohol Use).	Rejected
$H_0$12	There is no relationship between gender and cause of death in police use of lethal force between 2013-2020.	Retained
$H_0$13	There is no relationship between gender and armed status in police use of lethal force between 2013-2020.	Rejected
$H_0$14	There is no relationship between gender and alleged weapon type in police use of lethal force between 2013-2020.	Rejected
$H_0$15	There is no relationship between gender and alleged threat level (type) in police use of lethal force between 2013-2020.	Rejected
$H_0$16	There is no relationship between gender and geographical location in police use of force between 2013-2020.	Retained

$H_0$17	There is no relationship between gender and symptoms of mental illness in police use of lethal force between 2013-2020.	Rejected
$H_0$18	There is no relationship between gender and race in police use of lethal force between 2013-2020.	Rejected
$H_0$19	There is no relationship between age and cause of death in police use of lethal force between 2013-2020.	Rejected
$H_0$20	There is no relationship between age and symptoms of mental illness in police use of lethal force between 2013-2020.	Rejected
$H_0$21	There is no relationship between age and alleged weapon type in police use of lethal force between 2013-2020.	Rejected
$H_0$22	There is no relationship between age and geographical location in police use of lethal force between 2013-2020.	Rejected

Summary of Findings

The majority of subjects killed by police were male. Most were killed by gunshot. Subjects were far more often armed, and the overwhelming majority were armed with a gun. In addition, most subjects killed by police were attacking, most killings occurred in the suburbs, and most subjects had no symptoms of mental illness. Most subjects were White, followed by Black, although at a much lower rate, and then Hispanic subjects at a slightly lower rate than

Black subjects. White subjects killed by police were older. Black and Hispanic subjects were younger.

Further evaluation of the data revealed that the regression model was a good fit. It explained, however, a very small amount of the variance in the race of subjects killed by police and therefore the results are not practically significant.

Black subjects were younger, more likely to be armed with no object, more likely to be killed in urban areas, and more likely to have no symptoms of mental illness when compared to White subjects. Hispanic subjects were younger, less likely to be armed with a gun, and were more likely to be killed in urban areas when compared to Whites. Subjects of unknown race were older, more likely to be armed with multiple weapons, more likely to be killed in urban areas, and more likely had no mental health symptoms when compared to the White group. Pacific Islanders are less likely to be older than White subjects. The same is true for Native Americans, who also were less likely to be armed with a vehicle. Asians were more likely to be armed with a knife and killed in an urban area than White subjects. The model correctly predicted race group membership slightly more than half of the time, which means that it did not do a particularly good job with correctly classifying police killings by race. More specifically, the model explains only 8.8% to 23% of the variance in membership in the different race groups. This means that the model had a small effect size.

Additional analysis of variance indicates that 6.8% of the variability in age of subjects killed by police can be accounted for by race and alleged weapon, while holding constant gender and alleged threat level. Particularly, White subjects were 4 years older than the mean age of 36 years old and Black subjects were 4 years younger than the mean age. Subjects armed with a vehicle or no object, regardless of race, were younger.

Interactions among those same variables, with age as the dependent variable, were noteworthy. White males armed with an undetermined weapon, whose threat level was other are much older than the mean age of 48 years old. The same is true for Black males in the following scenarios: armed with a knife and attacking, armed with a vehicle and attacking, armed with a vehicle and threat level is other, armed with no object and attacking or threat level is other, armed with an undetermined weapon and attacking or threat level is other, and armed with a miscellaneous weapon and attacking. Other minorities armed with an undetermined weapon and attacking are also much older than the mean age of 48 years old.

All of the interaction effects on age had a very small effect size, meaning that they are not practically significant.

Individual analyses of variance found that White subjects killed by police were 8 years older than Black subjects and 4 years older than other minority subjects. The difference in age between genders of subjects killed by police is not statistically significant. There is no statistically significant difference in age for cause of death by police. Subjects who were armed were older than those whose armed status was unclear, those who were armed with a vehicle, and those who were unarmed. Subjects armed with a gun or knife were older than subjects armed with a vehicle or any other weapon. All subjects armed with a vehicle were younger. The subjects who were attacking were older than those whose threat level was undetermined or other. Subjects killed in urban areas were younger than those killed in suburban or rural areas. Finally, subjects who presented with mental health symptoms were older than those with no mental health symptoms.

Chi-square results found that there is no relationship between gender and cause of death. There is no difference between females and males in how they are killed by police. However,

females were less frequently armed than males, while the armed status of males was unclear when compared to females. In addition, females were armed with a vehicle and were unarmed more often than males.

Females were armed with a gun less often than males and were armed with a knife more often than males. They were more often armed with a vehicle or no object when compared to males. The armed status of males was undetermined more often than it was for females. The female subjects were more often armed with multiple weapons. Males were more often armed with a miscellaneous weapon when killed by police.

Females attack less often than males. Their threat level is other more often. The threat level of males is more often undetermined than it is of females.

There is no relationship between gender and geographical location. Males and females are killed equally in urban areas, the suburbs, and in rural areas.

Females more often than males have symptoms of a mental illness. Males more often have no symptoms of mental illness. The difference between females and males who present with unknown symptoms is slightly higher for females than males. Males have more drug and alcohol symptoms.

White females are killed more often proportionally than White males, although overall, more White males are killed. Black females are killed less often than Black males. Males of other races are killed more often than females of other races.

The effect size for each of the analyses including gender was small. This means that they have very limited practical significance.

Finally, correlation analyses conducted with age found that cause of death has a small, positive correlation with age. The incidents of police killings increase, particularly by gunshot, between 15 and 49, then decrease from 50 to 90 years old.

Symptoms of mental illness has a small, positive correlation with age. Having no symptoms is common in all ages between 15 and 39 years old, when most subjects are killed.

Alleged weapon and age are positively correlated, although the correlation is small. Being armed with a weapon increases between the ages of 16 and 31, then decreases between 35 and 59 years old. The possession of a weapon drops substantially from 60 to 91 years old.

Geographical location is positively correlated with age. Substantially more subjects of all ages are killed in the suburbs.

General conclusions about the nature of police killings based on race, age, and gender can be drawn from these findings and compared to literature and media assertions with some confidence. How they are drawn, however, might depend on how readers interpret the meaning of statistical significance and effect size or the beliefs they hold about police use of lethal force. It is important in either case, or when considering any other factors persuading conclusions about the findings, to contemplate them in the context of the theoretical bases of the study. To that end, the results cannot support or refute either the institutional racism or crime proportion theory, but they can support an empirically informed discussion on how to approach efforts at reform.

Chapter V: CONCLUSIONS

The results of this study are robust with information from seven levels of data analysis. Given the importance of the topic of police killings and race, the availability of a large sample (N = 6,087), and an arguably dire need in policy making to separate empirical truth from biased discourse about how police operate with respect to justice equity, a study of this scale and scope was inherently necessary.

The following discussion will present in detail the findings of each analysis in the context of the comparative professional literature, media coverage, real world applications to and implications for public safety policy, and recommendations for future research. In a linear, but integrative process, research questions and findings will be presented in the order in which they were evaluated. For reference, age is stratified into four categories: young = 14 to 44, middle = 45 to 65, and older = 65 and higher. Also, effect sizes are classified as follows: small effect = 0.01 to .06, medium effect = 0.6 to .13, and large effect = 0.14 for ANOVAs, .02 = small effect, .13 = medium effect, and .26 = large effect for eta square, and 0.1 = weak, 0.5 = medium, and > 0.5 = strong association for chi-square.

Research Question 1

Research question 1 was examined by testing with multinomial logistic regression (MLR) the predictive factors associated with race in police killings. The predictive variables were selected based on predominating themes in the literature on police killings, media emphasis (on race), and contemporary political discourse on policing in America, particularly during the last decade.

The logistic regression results found that the model statistically significantly predicts the race of subjects killed by police between 2013-2020. However, it only explains 8.8% to 23% of the variance in race of subjects killed by police when controlling for age, gender, alleged weapon

type, alleged threat level (type), geographical location, and symptoms of mental illness. Therefore, although statistically significant, the model did not do a particularly good job at predicting the variability in race of subjects killed by police.

This finding can be interpreted to support either viewpoint on police killings, depending on partiality of perception: 1) there are racial differences in police use of lethal force (Armacost, 2016; Carter & Corra, 2016; Chaney, 2015; Dukes & Kahn, 2017) because the results are significant or 2) race is not a motivating factor in police killings (Anderson, 2016; Clark, 2017; MacDonald, 2017; McCarthy, 2016) because the model only accounted for an average of approximately 15% of the variability in race. These provisos are important to consider for educating policy makers, police, and the public.

For example, according to the findings, young Black subjects are killed by police at higher rates than young White subjects, but the difference is negligible at about 4%. Black subjects are 69% more likely to be armed with no object when compared to White subjects, but that represents only 504 subjects of 6,087 in the study. In addition, those subjects still may present threat to police during an encounter, since dangerous assaults on police by unarmed subjects are common (Shane & Swensen, 2019), as will be discussed in the following sections. Therefore, it is true that some Black subjects are unarmed during lethal encounters with police, which fits the literature and media narratives (e.g., Nix et al., 2017; Robinson, 2017; and Weitzer, 2015), as are subjects from all races. In addition, considerations such as threat presented, type of crime during the incident—particularly if it is violent, the violence history of the subject, and other related contextual factors are necessary when making cause and effect conclusions about police use of lethal force. In addition, the number of subjects armed with no object in this study comprise a small fraction of the total sample. The same is true for the

geographical location of incidents, considering that Black subjects and many minorities are killed at proportionally higher rates in urban and suburban areas than rural areas. This finding contradicts the literature (Bornstein, 2015; Dukes & Gaither, 2017; Kahn et al., 2017a) and media narratives suggesting that police killings, fueled by errors in threat perception due to proactive policing, are exclusive to urban areas. While the results of this study support the fact that many Black subjects are killed by police in urban areas, a significant number of police killings of Black subjects happen in the suburbs. This leaves open for presumption that police interaction may be due to crime, not the targeting of racial minorities due to proactive policing. If lethal force incidents are similar in numbers in urban and suburban areas and there is no proactive policing in suburban areas, it would be fair to suggest that police interaction with subjects occurs where those subjects are involved in crime being committed.

Another important finding is that Black subjects are much less likely to present with symptoms of mental illness than White subjects. This feasibly supports the anti-police narrative that race motivates police killings, but it also questions the notion of errors in threat perception since police often encounter threatening mentally ill subjects from all races whom they do not kill (Hansson & Markström, 2014). From a policy making perspective, findings such as this deserve more pointed inquiry.

Hispanic subjects were also younger than White subjects, less likely to be armed with a gun, less likely to be armed with a vehicle, and more likely to be killed in both urban and suburban areas. When considered alone, with no additional contextual elements, this supports the narrative that unarmed minorities are more likely to be killed by police than unarmed White subjects (Fridell, 2016; Klingler & Slocum, 2017; Nix et al., 2017). However, as will be seen in following discussions, many of these subjects presented some form of threat to police officers by

other means during encounters. In addition, this outcome does not include an analysis of the types of crimes (i.e., violent vs. non-violent) being committed during the lethal incidents. Therefore, at face value this result appears to support the allegation that minorities, including Hispanics, are targeted with police use of lethal force regardless of armed status. However, considering that an average of only 15% of the variability in police killings by race can be explained by the variables (age, gender, alleged weapon type, alleged threat level (type), geographical location, and symptoms of mental illness) in the model, the allegation of targeting by race can be scrutinized.

The characteristics of the subjects in the unknown race group do not align convincingly with either the institutional racism or crime proportion theory. Subjects in this group were 1.65% more likely to be older than White subjects, 171% more likely to be armed with multiple weapons, 57% more likely to be killed in urban areas and 30% more likely to be killed in suburban areas. They also were 138% more likely to have no mental health symptoms. These subjects could be of various minority races or non-minority. Further understanding, therefore, of how this composite group of "unknown races" fits the predominate narratives of police use of lethal force by race—institutional racism or crime proportion—at face value or empirically, is not overtly possible.

The significant finding for the Pacific Islander group is that subjects are 3% more likely to be younger than White subjects. They are also many times more likely to be female and male than White subjects killed by police. These results do not align with the notion that minority subjects are killed more often than White subjects. They do suggest that minority subjects of Pacific Island descent killed by police are younger than White subjects.

Native Americans were more likely to be younger than White subjects, more likely to be female and male, and less likely to be armed with a vehicle than White subjects. Based on this finding, the suggestion that minorities killed by police are younger than White subjects can be supported. Also, due to proportions of male and female subjects in the study, it appears that female and male subjects in this group are more likely to be killed by police than subjects in the White group, which has numeric meaning by proportion since far more White subjects than subjects from any other race groups are killed by police.

Finally, the significance of gender in the Asian group is the same as it is for the previous group. The most important finding for the Asian group is with alleged weapon. The Asian subjects were 145% more likely to be armed with a knife than subjects in the White group. They were also far more likely to be killed in urban areas or the suburbs, indicating that geographical location is also significant for this race group. Regarding the racial narrative, the results from this study do not support the notion that minorities killed by police are unarmed and younger than White subjects. It does suggest that, proportionally, Asian subjects are killed more often in urban and suburban areas.

The MLR analysis revealed some relevant and interesting findings that contribute to the understanding of police use of lethal force. The findings indicate that there are some statistically significant associations between race and police killings. However, they explain a small portion of the variance. Because the regression model explains racial variability in police killings by only 8% to 23% (average of 15%) and correctly classified membership in race groups only slightly more than 50% of the time, the findings may not be convincing enough to rely upon for shaping policy in law enforcement.

Research Question 2

The second research question was tested with GLM ANOVA for the purpose of determining the predictive value of gender, race, alleged weapon type, and alleged threat level (type) on the age of subjects killed by the police. Age was selected as the dependent variable in this analysis because it represents the second most common variable in the context of race in police shootings emphasized by the media (Goldberg, 2020; Mullainathan; 2015; Park, 2018) and many contemporary authors (Donner et al, 2017; Kramer, 2018; Moore et al., 2017) of the professional literature.

The GLM ANOVA revealed that gender, race, alleged weapon type, and alleged threat level (type) explain 6.8% of the variance in the age of subjects killed by police between 2013-2020. More specifically, race and alleged weapon type were the best predictors of age in incidents of police use of lethal force. White subjects are 4 years older than the mean age of 36 years old and Black subjects were 4 years younger than the mean age. This finding generally comports with media claims (Goldberg, 2020; Mullainathan; 2015; Park, 2018) and assertions made in the literature (Donner et al., 2017; Kramer, 2018; Moore et al., 2017) that Black subjects killed by police are younger than White subjects.

Further, subjects armed with a vehicle were 3.5 years younger than the mean age of 36 and those armed with no object were nearly 3 years younger than the mean. Interestingly, the media and authors of professional literature rarely, if ever, focus on the fact that young subjects killed by police often use a vehicle as a deadly weapon. In this scenario, subjects are indeed armed but not with a gun. They are, therefore, dangerous threats to police. Failing to reveal this fact makes it easy to categorize these dangerous subjects as unarmed, which is misleading. Notwithstanding the omission of the fact that young subjects often use vehicles as weapons in

encounters with police, the findings of this analysis support the notion that unarmed subjects killed by police are typically younger (Nix et al., 2017; Robinson, 2017; Weitzer, 2015). It is wise to proceed with caution, however, when citing these findings to support public policy around the notion that young, unarmed, Black men are killed by police more often than their White counterparts because that was confirmed in less than 7% of the cases.

Research Question 3

For a more in-depth analysis of age as the dependent variable, GLM ANOVA with interaction effects was conducted to examine the interactions among age, alleged weapon, and alleged threat level. The model was selected because it yielded statistically significant results.

The results of the analysis revealed that statistically significant interactions exist among some of the configurations of variables. The effect size range for all the interactions is exceedingly small (from .000 to .001), meaning that the interactions are unlikely to occur in real world scenarios. This makes sense when considering the relatively high mean age of subjects in the findings and the substantially large mean age differences. For example, in each of the findings, the subjects would be in the "older" age range—65 years old or higher, which is much older than the typical age range of subjects killed by police (see Table 10), regardless of race.

Although the predictive scenarios would be highly unusual, they are nonetheless interesting because they illustrate what not to expect in police killings with respect to age. For example, most Black and White subjects, armed, armed with no object, attacking, not attacking, or any combination therein would be between 62 and 77 years old.

These findings technically support the notion that young, unarmed subjects are killed by police more often than their older counterparts (Nix et al., 2017; Robinson, 2017; Weitzer, 2015). It also aligns with the assumption that young subjects have more encounters with police

because they engage in crime more often (FBI Uniform Crime Report, 2013-2020; McDonald, 2017) than older males, regardless of race, considering that the scenarios here would be highly unlikely to occur in real world encounters.

Research Question 4

Continuing with age as the dependent variable, individual GLM ANOVAs and Welch F tests were run to determine if there are differences in the age of subjects killed by police based on race, gender, cause of death, armed status, alleged weapon, alleged threat level (type), geographical location, and symptoms of mental illness. Because these variables were consistently presented as significant in the other analyses, it was determined that exploring them in isolation with age, the secondary dependent variable, outside the regression models would help define their value in more fully understanding the nature of police killings.

The GLM ANOVAs indicated that there are statistically significant differences in age for race, armed status, alleged weapon, alleged threat level, geographical location, and symptoms of mental illness. There are no statistically significant differences in age for gender and cause of death. The Welch F tests produced similar results except that a statistically significant difference was found for the cause of death group. The differences that are statistically significant have effect sizes ranging from .000 to .022, which are very small to small. However, like the other findings in this study with small effect sizes, these do glean some potentially relevant information about the nature of police killings. Particularly, they statistically support the notions that Black males killed by police are typically younger than White males (Howell, 2014; Thompson, 2015; Wilson & Wilson, 2015), unarmed subjects killed by police are generally younger (Moore et al., 2016), subjects killed by police may be unarmed (Fridell, 2016; Klingler & Slocum, 2017; Nix et al., 2017), subjects killed by police may present undetermined threat

(Kahn et al., 2017a; Moore et al., 2017; Rule, 2017), and young subjects killed by police are killed in urban areas (Bornstein, 2015; Edwards et al., 2018; Howell, 2014). However, even though statistically valid, the results are not practically significant due to small effect sizes and do not represent the potential influence of a wide ranging host of contextual variables that could account for the differences in age of subjects killed by police.

With the exploration of age as the dependent variable nearly exhausted, attention is now turned to the dependent variable gender. It is an important dependent variable to which to designate a separate analysis because of the public claim that males are more often the target of police killings (Buehler, 2017; Nix et al., 2017; Robinson, 2017) than females.

Research Question 5

To examine potential relationships among cause of death, armed status, alleged weapon type, alleged threat level (type), geographic location, symptoms of mental illness, race, and gender in police killings, chi-square tests were conducted. It seems clear that males are killed by police at far greater proportions than females (see Table 2), but there was no way of determining if that proportion is statistically significant without an empirical inquiry. That inquiry was therefore carried out here.

The chi-square tests found that the relationship between gender and cause of death and gender and geographic location are not statistically significant. All of the other relationships, including gender and armed status, gender and alleged weapon, gender and alleged threat level (type), gender and symptoms of mental illness, and gender and race are statistically significant, although with very low Cramer's V values (effect size) at .000, .000, .002, .001, and .000, respectively. Those values are very small but may be attributable to the large sample size, to which chi-square can be particularly sensitive. Nonetheless, following the trend of this study,

results with small effect sizes will be further elaborated because they add some value to discourse about disparities in police killings. To that end, it is interesting to learn that police use the same means of lethal force with females and males, there is only a small difference in the frequency that females and males were armed when killed by police, and females and males were often armed with the same type of weapon (particularly gun, knife or multiple weapons) during lethal incidents with police, although proportionally, females were generally armed less frequently. In addition, subjects from both genders were attacking when killed by police, and they were killed in both urban and suburban areas with no discernable or statistically significant difference. Another important finding is that females presented with mental illness more than males and males presented more with substance use problems during lethal police encounters. Finally, and also important is the finding that Black males are killed proportionally more often than Black females, but White females are killed proportionally more often than White males.

These findings provide new perspectives on both literature assertions and media narratives about disparities in police killings, particularly that young, unarmed males are targets of police violence (Zwach, 2015). Although Black males were killed more than Black females when compared to their White counterparts, there was no proportional difference in police killings between males and females. In other words, the chi-square outcomes, although with small effect, could provide an alternative perspective on gender narratives (i.e., males are killed proportionally more often than females and subjects, regardless of gender, are unarmed or non-threatening during lethal incidents) about police killings. In fact, the findings suggest that police kill (by gunshot) males and females at proportionally similar rates and subjects of both genders are more often armed than unarmed and are attacking during lethal force incidents with police.

Research Question 6

Turning back to age as the dependent variable, eta correlations were conducted to further examine the relationship between age and cause of death, symptoms of mental illness, alleged weapon, and geographical location. This analysis was conducted last and separate from the other analyses using age as the dependent variable because it is the simplest of them all, following the format of most sophisticated to most rudimentary, but yielded voluminous explanatory results that were better situated as concluding remarks.

The eta square values ranged from .041 to .147, the highest of which indicating a small effect. Most important in this analysis are the numeric trends of the associations. To reiterate, to better facilitate this discussion, age is stratified as follows: young = 14 to 44, middle = 45 to 65, and older = 65 and higher.

For cause of death, it is noteworthy that killings by gunshot were exponentially higher than all other causes of death by police, and most of them occurred with subjects between ages 15 and 50 years old. This trend supports the notion that subjects killed by police are younger (Donner et al., 2017; Dukes & Kahn, 2017; Moore et al., 2017), although some were above the 44 year old threshold. Data related conclusions also support the notion that young people, especially males, more often engage in crime (Clark, 2017; Howell, 2014; MacDonald, 2017), since all of the subjects in this study were described by the author of the dataset as having been engaging in crime during the lethal incident.

There was similar numeric disparity in younger subjects with no symptoms of mental illness (3,992) specifically, between 20 and 37 years of age. Police officers are less often scrutinized for their encounters with subjects with mental illness than they are with young or minority subjects. This is due to their generally well-known efforts to deal carefully with the

mentally ill and the fact that they have been recognized by academics as gatekeepers of the mentally ill (Reuland et al., 2009), adding to their already challenging roles. In other words, it has been generally recognized that police do their best to deal effectively with mental illness during encounters and provide more help than harm to the mentally ill by way of de-escalation and support, serving as a referral source, providing transportation to emergency rooms and mental health care facilities (Hansson & Markström, 2014), and recognizing that violent tendencies in this population are often suicidal gestures or reflections of the mental illness (Dewey et al., 2013).

The next finding is quite in line with the aforementioned findings in that armed status is numerically lopsided. There were 3,342 subjects armed with a gun. They were mostly young, between the ages of 15 and 40 years old. Most subjects armed with a knife (of the total 837) were between 20 and 58 years of age. Those armed with a vehicle were also younger (19 to 40 years of age), and those armed with no object were typically young, between 21 and 33 years old, but that accounted for only 504 in total. The subjects whose armed status was undetermined comprised only 366 cases and they were generally younger. There were 68 subjects armed with multiple weapons. They were also generally younger. Finally, of the 548 subjects armed with miscellaneous weapons, most were younger, between 18 and 49 years of age. These findings suggest that young subjects of all races killed by the police are more often armed than unarmed, and they are armed most often with a gun, then a knife. There were only 504 killings of subjects from all races armed with no object. When compared to media coverage and some of the professional literature (e.g., Nix et al., 2017; Robison, 2017; Weitzer, 2015; and Zwach, 2015) emphasizing the unarmed status of subjects killed by police, this information stands out in notable contrast. Most subjects were young and armed with a gun, regardless of race. Although

young Black men armed with no object were killed proportionally more often than young White males, this finding is important in that it provides context about the ratios of police killings of subjects armed with a gun versus subjects armed with no object, particularly because being unarmed during a lethal police encounter is generally described by the media and authors of professional literature as not possessing a gun.

The findings for geographical location are particularly noteworthy because they appear to directly contradict the academic sentiment that police killings of young subjects occur in urban areas (Durán & Loza, 2017; Edwards et al., 2018; Feldman et al., 2019) where and when proactive policing was practiced (Howell, 2014; Kotabe et al., 2016; Thompson, 2015). In fact, according to the findings, approximately 50% fewer police killings (1,579) of subjects took place in urban areas than in the suburbs (3,072). The age range of the subjects was similar, from 16 to 37 and 15 to 53 years of age, respectively. This finding is bolstered by the MLR findings indicating that Black subjects are nearly equally likely to be killed in urban areas as they are to be killed in suburban areas.

All seven analyses provided noteworthy results that can add to the literature about disparities in police killings. Though much of the literature and media confidently suggest that race motivates police killings, the findings in this study do not support that claim. Nor do the results necessarily refute that claim in its entirety. This is in part due to small variances and effect sizes in addition to the fact that many potential contextual factors in police killings were not able to be identified and controlled. Further, systemic (or institutional) racism was not and has not been operationalized and there are few known studies that compare crime proportions by race to police killings. Conscientious consumers of this research should heed those facts to avoid making erroneous conclusions about how the results can be applied to real policy decisions.

Notwithstanding the limitations stated above and related warnings about interpreting their meaning, the results do provide voluminous pertinent information worthy of review that can be compared to media characterizations and literature assertions about police killings. The following table summarizes the most meaningful findings compared to the existing literature. This snapshot view allows for easy reference to the information.

Table 124

Summary of Findings

Significant Findings	Previous Research Support/Refutation	Limitations
The MLR model explains 9-23% of variability in race in police killings	Nix et al., 2017; Fridell, 2016; Klingler and Slocum, 2017; CNN, NBC, USA Today, among others, claim that race is the primary motivating factor in police killings Capezzuto refutes	Previous literature relied heavily on descriptive statistics, content analyses. This finding explains a small portion of variability in police killings.
The GLM ANOVA model explains 7% of variability in age in police killings	Moore et al., 2017 and Zwach, 2015 claim that young Black males are targeted by police Capezzuto refutes	Previous literature ignores the fact that most crime is committed by young males of all races. This result yielded a small effect size limiting the applicability of findings to real world incidents.
The GLM ANOVA model with interaction effects found that multiple scenarios involving age, weapon, and threat level would be highly unlikely	Most of the literature asserts that young, unarmed, Black males are targets of police violence Capezzuto cannot refute or support	Results revealed highly unlikely scenarios, particularly the substantially older predicted age of subjects
Individual GLM ANOVAs and Welch F tests found differences in mean age by race, armed status, alleged weapon, alleged threat level,	Most of the literature asserts that young, unarmed, Black males presenting no threat are killed by police Capezzuto refutes	The effect sizes for the mean age differences in the groups were very small

geographical location, and symptoms of mental illness		
Chi-square found that police use firearm more than other means in killings, regardless of gender. Females and males more often than not are armed, primarily with a gun, are typically attacking, equally killed in urban areas and the suburbs, and minimal difference in proportions of female to male killings	Much of the contemporary dialogue about police killings suggests that subjects are unarmed, not attacking, and killed in urban areas Capezzuto cannot refute or support	The effect sizes for significant results were extremely small, but analyses yielded interesting findings
Eta correlations found that most police killings occur by gunshot, subjects were not mentally ill, subjects were armed, and subjects were killed in near equal ratios in both urban and suburban areas, regardless of age	Much of the literature suggests that young, unarmed, Black males in urban areas are the primary targets in police killings Capezzuto refutes	The small effect sizes of these results leave room for scrutiny of interpretation

The table summary is based on the findings of each analysis. However, because variance explanations and effect sizes were small, the cogency of findings in terms of how they should influence law enforcement policy decisions may be questioned. In other words, the findings may describe real world trends for a very small portion of police killings. It also must be noted that the findings do not account for the numerous other potential contextual variables involved in every lethal police encounter. Nonetheless, they can serve as the springboard to potentially meaningful discourse on police killings, regardless of how they are interpreted by supporters of either school of thought—institutional racism or crime proportion. Fittingly, the implications and applications of the findings are discussed in the following section.

Implications/Applications

The primary goal of this research is to contribute to the body of knowledge regarding police killings in America from which to convey accurate perceptions about police operations, thus improving police-community relations. Ideally, this information will be used to help reduce future tensions between police and racial minorities, help to accurately characterize police killings that are unjustified (i.e., the subject was not an overt and imminent danger to self or others) and thus promote political and racial agendas that are not solely representative of the demographic facts. The discussion that follows is framed in the context of two competing theories that undergird much of the public debate on police use of lethal force. They are the theory of Institutional or Systemic Racism versus the theory of Crime Proportion. Three specific categories of research implications and applications from this study will involve stakeholders impacted (i.e., police, public, and politicians and policy makers). Additional points about the implications of the characterization of policing in America will also be discussed. They include defunding the police, the plight of citizens in high-crime communities where police presence has decreased due to defunding and elimination of proactive policing deemed to target young Black males, and relatedly, increasing violent crime and violent crime perpetrated against minorities.

Police Stakeholders

The findings may help shape police training and educational opportunities and efforts at reform since there are lessons to be heeded from the outcomes. This discussion, therefore, will emphasize that the actions of police officers engaged in use of lethal force are influenced by various contextual factors that are difficult to measure and control in social science research. Also, it will bring into focus conceptions about whether police officers target racial minorities for use of force. That notion has not been empirically supported by this or other research on the topic of police killings outside a volume of opinion based content papers circulating in the

literature (e.g., Chaney, 2015; Fridell, 2016; and Zwach, 2015), although proportional differences in race have been documented (e.g., Nix et al., 2017; Robinson, 2017; and Weitzer, 2015). Equally notable, however, is that the media and literature claims of racial targeting have not been wholly empirically refuted as deeper, more comprehensive inquiries on the topic have only recently begun. Regardless of either empirical truth, it seems that media acknowledgment of other contextual possibilities in lethal police incidents beyond race is to a notable extent limited. To the exclusion of a running debate about fair media coverage of police killings, it is important to recognize their failures to report on context when informing the public about this sensitive topic. Conversely, although failures in accurate reporting by the media are compelling, it also seems likely that the media may not have an equally substantial impact on perceptions about police for all citizens. Their greatest impact is more likely to be on perceptions of those who are regular consumers of mass media. For those who do not regularly consume media or place a high value on media reports, perhaps even including perpetrators of violent crime, their characterizations of police and race relations may be less persuasive. In other words, it is fair to suggest that media reporting may not be the primary force influencing perceptions about policing in American society. Nonetheless, their influence on policy, good or bad, should not be ignored. Because the media have an important, albeit indirect, role in policy making (Soroka et al., 2013), comparing results of this study to their assertions is nearly equally important as comparing them to the professional literature. Therefore, reference to media portrayals of police killings that might influence policy making will be made where appropriate. If this discussion is to be of any real value, socially, politically, or otherwise, its content should be comprised of only empirically validated information weighed against findings from the existing body of professional literature. The best way to ensure positive results from police training and education is to build them

around factual information that can be applied in the field in the manner that furthers equity in justice, including ruling in or out the presence of institutional racism as a motivating factor in police killings.

Most training aimed at policing reform pertaining to race falls into two categories: 1) implicit bias training and 2) de-escalation training. Because reformists generally suggest that problems with bias and aggressive policing contribute to racial disparities in use of lethal force (e.g., Carter and Corra, 2016; Dukes & Gaither, 2017; and Dukes & Kahn, 2017), bias and de-escalation training are often cited by them as necessary components of a comprehensive plan to reshape American policing. The success of such training with decreasing racial disparities in policing is therefore worthy of discussion in this empirical context.

Implicit Bias Training

Contrary to the notion that police officers are not well trained on racial bias in the use of force, they have undergone for many years, if not decades, such use of force training. In fact, implicit bias training efforts throughout the country have been extensive but have not yielded necessarily desired results. What has been found, according to MacDonald, as the result of bias training is that police officers, including Black officers, are less likely to engage minorities with force when justified (American Forum, 2016) in order to avoid becoming the subject of allegations of racism in policing. Coupled with years of findings dating back to 1991 that police more often than not hesitate to use force when facing dangerous threats (Shane & Swenson, 2019), this potentially puts their lives and the lives of citizens at risk because any hesitation to use force when appropriate can have dangerous consequences (Pinizzotto et al., 2012). It is apparent that this finding contradicts the literature and media assertions that police officers, due

to bias, are more likely to kill Black and minority subjects (Jackman, 2016). Perhaps race does influence how and when police use lethal force in that it creates hesitancy rather than resolve.

Of course, this is not to suggest that there are no racist police officers, just as there are racists in every industry or profession, but it would be perceptively difficult to intimate, based on the findings of this study and the results from years of implicit bias training, that racial bias is the sole contributing factor in police killings of minorities. Indeed, some officers who have engaged in lethal force may have made errors in judgement about the imminent risk they or the community faced. However, whether or not those errors were based on race cannot be known, especially if the subject had a history of violence or was engaging in violence, was wielding a benign object that was mistaken for a gun or other weapon, was unarmed and attacking, or the incident took place in a high crime or dangerous area, any of which may be factors that are present in police encounters (e.g., Klingler & Slocum, 2017; Shane & Swensen, 2019; and White, 2002). Those errors in threat perception can be equally justified and scrutinized depending on various contextual factors. The limitations of contemplating theories about police use of lethal force become clearer when done alongside data that have been empirically validated, as is the case here. In addition, since results from years of implicit bias training obviate some meaningful contradictions to the literature and media narrative, the suggestion that police are racially biased or that implicit bias training can somehow decrease police killings of minorities appears to be debatable. What have to be more strongly considered when studying racial differences in police killings are the voluminous contextual factors, some of which are identified in this discussion. Otherwise, training will likely be inevitably incomplete, ineffective, and engender fear rather than confidence in officers being trained. Despite the limitations of implicit bias training surrounding the potential reverse effect of using justifiable force with

minority subjects (e.g., Jackman, 2016), it cannot be rendered wholly obsolete in the greater context of policing.

To that end, the questionable success of implicit bias training with decreasing police killings of Black males notwithstanding, a recent study has shown that the training can be effective, if not only for, at minimum, raising awareness of policing disparities around race. For example, the International Association of Chiefs of Police (IACP) found that up to 31% of officers trained on implicit bias awareness attempted to implement in the field what they learned for up to a year. Some subsequent reduction in disparity in arrests and use of force in general occurred during that time period, but so did an apparent increase in disparity since arrests of Whites decreased. In other words, implicit bias training may be effective, at least temporarily, at decreasing disparity in arrests and use of force with subjects regardless of race, but also possibly contributes to reluctance to arresting Whites and using lethal force against Black and White subjects when justified. The authors of the IACP study, therefore, concluded that the effects of implicit bias training were difficult to isolate and that disparities in arrests are typically related to a host of situational, individual (subject and officer), organizational (agency policy), and other contextual factors (Worden, et al., 2019) ostensibly unaffected by bias awareness.

Another recent study (Briscoe, 2020) found that no discernable changes in behavior in police officers occurred following implicit bias training. The proportion of arrests, stops, and frisks based on race remained consistent.

Considering the largely incongruent outcomes of implicit bias training, particularly that it may influence the inhibition of justified use of force and does not apparently change officer behavior, it cannot be supported as an entirely effective tool for addressing disparities in police work, although it does have some advantages. Specifically, it has not been shown to decrease

errors in threat perception leading to unjustified police killings and possibly has the reverse effect. It has, however, shown to possibly contribute to at least temporary decreases in use of force and potential disparity in arrests. Perhaps this is evidence that police work and use of force are carried out in response to crime or that pervasive institutional or systemic racism in policing is a real problem. That is difficult to conclude, particularly the latter since it is more abstract and difficult to measure. Crime proportions, on the other hand, are easily discernable. Nonetheless, it remains challenging to empirically connect the dots between disparities in police use of lethal force and either theory.

Regardless of the uncertain effectiveness of implicit bias training, it does provide officers with the opportunity to increase awareness of their own tendencies when engaged in encounters that may require the use of force. That reason alone makes it a viable training for police. Still, it is important to consider that alone, this type of training may not necessarily improve the characteristics of police engagement with minorities.

De-escalation Training

Much of de-escalation training centers on police officers learning tools for managing crisis situations (Oliva et al., 2010) involving potentially dangerous and mentally ill subjects. When applied appropriately to potentially dangerous and hostile situations, it appears to be effective. However, that effectiveness has not necessarily been empirically validated since it appears to receive little interest from academics, and police agencies are sometimes reluctant to implement de-escalation training for that reason. The lack of empirical evidence of its success undergirds the hesitancy by police administrators to implement policies around such training, citing it may only put officers at greater risk for harm when entering into dangerous encounters (Engel et al., n.d.). Further, some officers are skeptical about the benefits of the training,

especially because it is not uniform or standardized across police agencies or departments (White et al., 2019). Nonetheless, there are consistent widespread calls to implement de-escalation training because of the perception that it can decrease the potential for police use of lethal force (Dayley, 2016).

As is the case with implicit bias training, the results of this study do not offer anything specific in the way of recommendations for de-escalation training for police officers, primarily due to the finding that mental illness in subjects had little to no predictive strength in outcomes in any of the analyses. Some useful information can be gleaned, however, from review of threat level (type) since that variable most closely reflects the presence of hostility or crises that ended in deadly encounters. The results were consistent in that most of the subjects killed were attacking in some capacity. It is surmisable that de-escalation techniques, if used by officers, could have prevented the killings, only if in fact they were not used. There is no way to know that for sure, which means that de-escalation training may or may not have helped during the lethal incidents evaluated. This appears to be consistent with the documented uncertainty in the literature of the benefits of this type of training.

Although implicit bias and de-escalation training have little apparent fruitful utility in addressing racial differences in lethal force in real world applications, knowledge that such trainings are being tried in efforts at police reform in some ways appears to appease the public, especially those who believe there are widespread problems with racial disparities in police use of lethal force.

Public Perception

The importance of public perception of the police as the foundation of police and community relations should not be underestimated to any extent. In a democratic society, the

police and the public should have mutual goals around policing and public safety if their safety is to be realized. Societal devolution in the form of crime and violence appears to be foreseeable when police authority is challenged and when police presence is rejected, judging by the turbulent events of the summer of 2020 when that happened and, in its wake, the increase in crime and violent crime in various major cities across the country that persist to date. Media coverage of those events was varied, some favoring protestors and some favoring police, which ostensibly shaped public perceptions of protests, riots, and police responses. Contextual factors were rarely covered amidst the chaos, thereby resulting in incomplete portrayals of what was happening and why. The public was not being told the whole story. Media coverage of the Floyd killing, among other lethal police encounters that precipitated those events, arguably had an influence on the policy enactments that followed, including defunding the police, bail reforms, and laxed prosecutions, which will be addressed in the following sections, with limited discussion of potential contextual factors. Considering the media's crucial role in policy making from framing agendas, creating tones of policy debates, and in that sense, to generating social narratives (Soroka et al., 2013), their contribution to the implementation of the policies, whether viewed as positive or negative, succeeding the social unrest of 2020 cannot be ignored. Much like this study was not able to isolate and control for a multitude of possible contextual factors in police killings, the media would not have been able to reasonably suggest in their coverage of events that race alone was fueling lethal force incidents with police that initiated the protests. This exposes the need for comprehensive media reporting on serious social issues for reform to be successful. Indeed, arguably all law abiding citizens want police protection and safe cities and streets. For those to be possible, public perception of policing and police must be sound and based on verifiable truth rather than incomplete media portrayals.

Public Stakeholders

This study yielded results, some statistically significant and some practically significant, that may benefit the public in the formulation of its opinion on police killings. In addition, the findings, when compared to media portrayals of policing, may be at least curiously enlightening. First, a review of its descriptive statistics reveals that most subjects killed by police, regardless of race, are armed with a weapon, are attacking, or are perceived as threatening. Second, the finding that unarmed Black males are more likely to be killed by the police represents 504 subjects from all races of the 6,087 subjects in the study. Also, in reference to that finding, the study was not able to substantiate that the disproportion reflects systemic racism, crime proportions by race, or any other possible contributing factor. Of those 504 subjects, 196 were White and 170 were Black. Averaged over the seven years of data, police killed 28 White subjects and 24 Black subjects who were armed with no object per year. Those numbers are disproportionate by race. Black subjects were armed with no object proportionally more than White subjects, which aligns with media claims—25.3% of 1,539 subjects versus 45.4% of 2,762 subjects (see Table 9), respectively, but there is no way to know from these results what factors account for that difference. Some media suggest that police killings of young Black males are an epidemic caused by systemic racism, which is supported by some authors (e.g., Chaney, 2015; and Zwach, 2015). The findings from this study may not support or refute that notion. For example, the results indicate that 869 subjects per year were killed by police. Approximately 8% of those subjects were armed with no object, 3.22% of whom were White and 2.79% of whom were Black. Although that less than 3% figure of Black subjects armed with no object killed by police is small, when compared proportionally to the population, the claim that it is an epidemic appears to be valid. However, because assaults by subjects of all races, armed and unarmed, are

prevalent in police encounters (Shane & Swensen, 2019), it is difficult to know if the epidemic is precipitated by systemic racism, disproportionate crime, or dangerous threats. Reporting on one possibility more than or to the exclusion of others represents and incomplete picture of police killings by race. Given the influence of the media on shaping public opinion on such social matters and their influence on politics and public policy, the depictions they offer of police killings of Black subjects should include discussion of such fine distinctions.

The media have played an important role in police reform since the civil rights era, televising atrocities and brutality about which citizens had the right to know. Much of what they accomplished in that regard improved police and public relations and led to universal police reform. In recent years, however, their focus has shifted. Rather than expose racial disparities like they did in their coverage of police brutality during the civil rights era, the media appear to report on the nuances of lethal force incidents less fully, leaving out coverage of contextual factors. Reporting on contextual factors in police use of lethal force is important for reform to be effective because policy changes should accurately reflect problem areas for the benefit of public trust and to ensure equity in justice.

Parenthetically, and to that end, the mass media coverage of lethal force incidents has been supplemented in the past decade due to advances in technology. Real-time cell phone videos and police bodycams have generated footage to both substantiate and challenge media portrayals of lethal police encounters. Those methods are not without flaws, however, since the public videographers and police can edit videos in ways that support their portrayal of incidents, whether that hurts or helps subjects or police. Nonetheless, ubiquitous modern video technology in the hands of the public and police can help facilitate better public knowledge about lethal police encounters.

As previously stated, the major reform that has followed several years of recent media coverage of police use of lethal force is to defund the police. It has been suggested that the defund the police policy disproportionately negatively impacts Black citizens who nearly immediately became victims of increased crime after it was enacted (Nickeas et al., 2021). Incidentally, a recent PEW research poll found that more White people than Black people continue to support the defund police policy (Parker & Hurst, 2021). This reflects an apparent discrepancy in perceptions about the importance of the role of police between those who support defunding the police and those who are more likely to experience the consequences of decreased police presence (Nickeas et al., 2021), the dividing line being race. Conversely, support for defunding the police was not universal among American citizens at its inception and despite negative feelings about police by some, defunding to them was never favorable (Neuman, 2020). In fact, another PEW survey found that Whites, Blacks, and Hispanics wanted increased spending on police during the time when defunding was gaining popularity in some circles (Williams, 2021). Finally, despite fervent calls to defund police, many cities did not reduce funding, and if they did, it was by a small margin, and some cities increased funding (Kummerer, 2022). Media reporting on nuanced public stakeholder positions such as these could better serve efforts at policy reform.

The results of this study do not support or refute the furthering of the racial bias narrative in policing, nor do they support police reform that eliminates or decreases the presence of police. At present, the best reform might begin with comprehensive media coverage of police killings, police work, and the purpose and intentions of law enforcement. Then the discussion could turn to the problem of crime, the reasons for disparate crime proportions, and how to decrease crime to avoid police interaction. Next, implement widespread efforts to engage the police and

communities in factually based dialogue on how to improve their relations. Finally, examine systemic racism and racial bias in policing as empirical constructs rather than theoretical or ideological overlay. Regardless of the approaches taken to implement policy on police reform, the stakeholders involved should rely on what has been empirically validated and avoid acting on emotion or ideology. For example, it seems relatively clear that the media do not tell the whole story about lethal police incidents, some trainings do not effect targeted change in police behavior, and the facts about policing may not be comfortable depending on political persuasion. It seems clear that the system (comprised of media, policy making, and politicking) is not working to improve equity in justice. Lately, efforts aimed at equity in justice, like defund the police, seem to have contributed to more crime victimization of Black citizens (e.g., Nickeas et al., 2021) than they have influenced policing in a positive direction or changes in killings of unarmed Black subjects. Media influence on policy has to be more balanced if racial bias or systemic racism in policing, should it exist, is to be removed.

The mass media have great power and responsibility to influence political activists and politicians in productive ways to truly effect police reform in the direction of equality, peace, and fairness. To that end, hopefully these recommendations will be recognized.

Politicians and Policy Makers Stakeholders

It is evident that politicians and policy makers are in positions to effect police reform. Indeed, it is their responsibility to ensure the safety of the public and stability of an effective and fair law enforcement system through both legislation and leadership. They must work to represent their constituents in legislation they pass, be conscientious of equity in justice therein, and make wise policy decisions that directly benefit the citizens who put them in power. Since the policy making process can be tumultuous, gamey, and sinister, as much in politics is,

politicians must be able to weather related storms to make sound policy decisions. This can be challenging but is particularly challenging of late with legislating law enforcement policy. Media, activists, and citizens have been weighing in on police behavior in the past decade to the extent and with fervor that cannot be ignored. Politicians are pressured to consider the positions of all such stakeholders when making policy decisions as much as they are responsible for making policy decisions based on facts. In the past two years, with apparent pressure from the media and activists, many policy makers implemented policies they believed would address police killings of young Black males and reform policing as it was then known. The policies were based on the belief that police are racist, police target minorities with violence, and immediate reform in policing was necessary to save lives. In a hurried manner and in response to pressure from media and activists, defund the police, bail reform, and laxed prosecutions were implemented in various cities. For example, New York City, Washington DC, Baltimore, Philadelphia, Los Angeles, San Francisco Atlanta, Minneapolis, Seattle, Salt Lake City, Portland, Hartford, Norman, Oklahoma (National Police Support Fund, 2021), and Chicago (American Police Officers Alliance, 2021), reduced or reallocated funding from police budgets on the heels of the George Floyd protests to divest in police programs that allegedly disproportionately negatively affected Black communities, such as specialty crime units, and invest in other things such as health insurance and emergency medical and mental health services (Levin, 2021). However, not all decreases in funding happened in direct response to activist demands. Some defunding was characteristic of typical fiscal year budgeting processes, in part influenced at that time by shortfalls due to pandemic spending and included various funding allocations. Funds in those instances, for example, were shifted to priorities such as improving 911 responses and reorganizing positions of public safety personnel (Funke, 2022). Despite the conceivably good

intentions of the policy makers who implemented this policy on the basis of racial targeting in police killings, that claim has been discredited by numerous academics and well-knowing authors who have rigorously studied police killings (e.g., Clark, 2017; Fryer, 2017; MacDonald, 2017). There is ample evidence that police target crime (Anderson, 2016; Lehrer, 2002), and it has been shown, for example, that in areas where a higher proportion of homicide suspects are White, persons shot and killed by police are nearly four times more likely to be White. The same is true for Black homicide suspects. Hispanic suspects in those scenarios are just over three times more likely to be fatally shot. Further, when controlling for crime rates, Black civilians are not more likely to be shot and killed by the police (Johnson & Cesario, 2019). Another fact—supported by the findings of this study (see Tables 4 and 5)— contrary to some public claims by the media when discussing systemic racism in policing is that the overwhelming majority of persons killed by police in the past decade, regardless of race, were armed (O'Donnell, 2021). If the police were targeting suspects based on race alone, particularly unarmed Black males, these findings would not exist.

The defunding of police has not reliably been associated positive results. In every city where defund the police was implemented between late 2020 and mid-2021, crime and violent crime have substantially increased, affecting a disproportionately large number of minorities (Nickeas et al., 2021). Of course, during that same time period crime and violence were on the rise for other likely reasons, such as the pandemic, which prompted the release of inmates with violence histories, contributed to emotional distress leading to criminal activity, and resulted in less engagement by police who were sick or following pandemic safety rules. In addition, protests about police killings were occurring all throughout the country. Such protests are at times associated with increases in violent crime (Arthur & Asher, 2016), as they were during the

2020 protests against police killings (Koppel et al., 2021; Rosenfeld et. al., 2021). The timing for defunding the police amidst such corollaries perhaps could not have been worse. All of these factors considered, increases in crime at the time seemed inevitable. Although violent crime rates, particularly murder, had been on the rise nationwide prior to the defund police movement (Funke, 2022), less police presence in some communities may have contributed to the hike (Nickeas et al., 2021). For example, Minneapolis saw a 46% increase in homicides and a 22% increase in violent crime since the police were defunded. In Portland, murders are up 271%. New York City's violent crime numbers are also rising, with murders being up by 12% and shootings up by 40%. Los Angeles endured a near 40% increase in homicides last year and in the first three months of 2021 homicides are at a 28% increase. Assaults in Los Angeles have also risen. Much like the other cities that have seen an increase in crime and violent crime on the heels of defunding the police, aggravated assaults in Austin have climbed by 26% compared to what they were one year ago (Pagones, 2021). Nickeas et al., (2021) of CNN reported that hikes in violent crime have been realized by nearly every city in the past year. In response, many cities are at least in part reversing their policies of defunding the police and at the urging of many Chiefs of police are focusing on the need to address violent crime, particularly gun violence among younger shooters, ninety-five percent of whom in New York City are Black, as are ninety-five percent of their victims. Cities including New York, Minneapolis, Baltimore, Los Angeles (Elinson et al., 2021), and Atlanta (National Police Support Fund, 2021) have all increased funding to their police departments in response to increased crime and public demand for safety (Akinnibi, 2021). Such efforts, particularly in Los Angeles, are aimed primarily at hiring more officers for patrol and instituting or reinstituting specialized units to address specific types of

crime that were eliminated with defunding the police because at the time they were considered to be systemically racist.

Bail reform is another policy enacted in some of the same cities, namely New York and Los Angeles, who defunded the police. However, bail reform efforts in those cities, among other cities and states including San Francisco, Washington DC, Philadelphia, Chicago, Seattle, New Orleans, New Jersey, New Mexico, and Kentucky, aimed at exploring criminal justice reform (Herring, 2020) long preceded the reflexive post-Floyd policy enactments. Some of those early efforts have been associated with positive results with respect to racial equity (Orsagos, 2021). Nonetheless, since the ad hoc bail reform was implemented problems with crime have followed, particularly that many subjects taken into custody and released without bail immediately recidivate, some committing violent crimes or serious felonies (Fitz-Gibbon, 2021b). In New York City, for example, recent bail reform has been accompanied by a rise in index crimes, higher rates of recidivism, and higher rates of recidivism for major crimes. Prosecution patterns consequently changed, mostly characterized by decreases in appearances for arraignment by those who were arrested and issued desk appearances and/or were released without bond or bail (NYPD, 2020). Similar laxed or selective prosecutions were happening in Los Angeles (Eustachewich, 2020) and other major American cities.

Finally, laxed prosecutions, as part of acute and sweeping, ad hoc criminal justice reform beginning in 2020, have demonstrated no real effectiveness. Prosecutions in Los Angeles, San Francisco (Siddell, 2021), Chicago (Sheets, 2022), and New York (Latzer, 2022) dramatically declined in numbers beginning in 2020, and prosecutors in those cities since then have been selectively prosecuting some crimes while failing to prosecute others, including violent crimes (e.g., Latzer, 2022; Sheets, 2022; and Siddel, 2021). Those cities have experienced a concurrent

rise in crime, as noted above (Fitz-Gibbon, 2021a), while citizens, regardless of the cause (note that murder rates were climbing prior to enactment of this practice), demand action. Incidentally, some prosecutors who supported bail reform are now pledging to prosecute all crime, including petty crimes (reminiscent of broken windows policing), in response to rising crime rates (Konig, 2022; Meyers, 2022; Sipes, 2021; Spielman, 2022). The logic behind the three-tiered criminal justice reform implemented after the 2020 riots was that arrests, bail, and prosecutions are racist. Conversely, opponents of that logic argue that not making arrests, not imposing bail, and not prosecuting criminals disproportionately affects minorities who live in high-crime areas (Nickeas et al., 2021), which seems racist by omission and commission.

While police reform may be necessary, any such efforts require thoughtful, empirically informed, and logical measures. Knee-jerk policy reactions to understandable, long-term unrest about policing, culminating with the George Floyd killing, as troubling as it was, cannot be sound or beneficial to the police or public. That has been demonstrated over the past year by increasing crime and violent crime, exponentially higher rates of recidivism and graduation by recidivists to more serious crimes (NYPD, 2020) (conceivably influenced by both pandemic related premature releases of violent criminals and defund the police and related policies), more crime victimization of minorities (Nickeas et al., 2021), notably widespread rejection by the public of defunding the police or decreased police presence in their communities (Parker & Hurst, 2021), and calls to rescind laxed or selective prosecutions (Fitz-Gibbon, 2021a; Molnar, 2021).

Politicians and policy makers may do right by society by heeding what has been learned by ad hoc policy decisions. Their efforts at effecting policy should be geared toward balanced community benefit. Passing new legislation or revising existing legislation based on the facts is

the only way to ensure sustained, true reform. In doing so, they should consider the following points: 1) the leading cause of death of Black males under the age of 44 years old is homicide by Black on Black crime, 2) innocent minorities suffer the most from decreased police presence, 3) complying with police, not resisting arrest, and not fighting with the police substantially decreases the chance of lethal encounters, 4) well-intentioned political activism does not replace sound empirical information in policy making, 5) law abiding citizens want police presence in their communities, 6) the overwhelming majority of subjects killed by police are armed with a gun, regardless of race (see Tables 5 and 6), 7) the majority of subjects killed by police are younger men possibly because they engage in crime more than any other population (see FBI UCR), 8) police officers are likely to be more alert in high-crime areas or if the subject of an arrest is known to police due to a history of violence or criminal record, 9) bias training shows that police officers are more likely to be hesitant to use force with minorities, regardless of their race, when justified, 10) police use restraint notably more often than lethal force when dealing with threatening subjects (Shane & Swensen, 2019); 11) the knee-jerk changes in law enforcement policy made in the name of institutional racism have been followed by adverse results and have not improved equity in justice, 12) all of the subjects in the cases evaluated in this research on police killings were engaged in crime during the lethal incident, regardless of their race, 13) there is no empirical evidence, including this study, that supports the claim that systemic racism causes or contributes to incidents of police use of lethal force, while there is support for the notion that use of lethal force occurs during crimes committed by armed or threatening subjects, regardless of their race (see Tables 5 and 6), 14) crime disproportion reflects high rates of recidivism by a small number of repeat offenders in every race, notably young males; estimates suggest that the same 1400 recidivists are responsible for the crime wave

in Chicago and the same 1,000 recidivists are responsible for 40% of the crime in Atlanta (Parascandola, 2022), and 15) it is difficult to substantiate the notion that all racial disparities in police killings are due to discrimination or racism.

Highlights of Implications and Applications of Findings

The findings in this study do not support or refute either the institutional racism or crime proportion theory of police killings of monitories. Indeed, they can coexist but more direct research on each or both is needed for more definitive answers about their prevalence. However, the study has yielded some relevant factors to consider when evaluating issues around policing and race. Most pointed of the factors is that relationships between the police and public have to be stable for democratic, community policing to succeed, and media and politicians have to use their influence wisely for policy to be fair. Take, for instance, the reality that activism brought to light some important issues related to police killings, but the efforts of activists to reform policing have not produced the results they wanted. More, not fewer, Black citizens have been killed, victimization of Black citizens has increased, and crime rates in general have been on the rise since defunding the police, amidst some other contributing factors. Therefore, equity in justice in that regard has since not been realized. Conversely, proactive policing that has proven to be effective at decreasing crime (Anderson, 2016), particularly higher-level crimes, disproportionately negatively affects young Black males due to profiling (Howell, 2014) inherent in that practice. For example, in 2016 when the Detroit police implemented the CAAT team—a very proactive policing unit engaged in broken windows methods—crime rates dramatically declined after many years of rampant criminal activity disproportionately affecting poor minorities. What also happened were higher rates of profiling, increased stops of young Black males, and some fervent community backlash, although balanced by visceral community support. Policy makers have the responsibility to figure out dilemmas like this to ensure equity in justice

for those who become targets of police stops and those who want police presence and protection in their communities.

Another variable to consider is media influence on policy decisions. The media have the power to sway public opinion to create narratives (Soroka et al., 2013). Their weighing in on this topic has been incomplete, although important for the cause of equity in justice. They fail to provide perspective and context too often in their coverage of police killings.

The role of the media is to keep politicians and public figures honest and be the watchdog for citizens. Telling the whole story in that role is of paramount importance. Defunding the police, bail reform (specifically catch and release), and laxed prosecutions were all heavily influenced by media portrayals. To their credit, however, the media are getting behind plans by some cities, including Buckhead, Atlanta (Duncan, 2022) and Minneapolis, Minnesota (Akinnibi, 2021) to rescind them because they may have contributed to reverse effects on justice equity. To that end, criminals, police officers, and citizens have all experienced increased violence in the past two years. Criminals are victimized by other criminals and engaged in more violent incidents with police, often resulting in their deaths. Police are facing more violence during stops and arrests, and some are being targeted with violence and killed by violent criminals. Incidentally, police deaths have risen from 149 in 2019 to 472 in 2021 (National Law Enforcement Memorial Fund, 2022), 36% of which were due to violence by firearms (VOA News, 2022). More citizens, particularly in poor Black and minority communities, are being victimized by recidivists (e.g., Nickeas et al., 2021). Policy makers have to examine these and other facts in context and free of politics, imbalanced media influence, and cajoled activism if they are to reform policing and criminal justice policy in a manner that promotes equity, fairness, and true representation of citizen demands. They must honestly address the costs and benefits of

proactive policing, rigorously address recidivism, review the effects of defund the police, bail reform, and laxed prosecutions, and work to improve police and community relations. Finally, they must demand pointed, specific, highly empirical, and infallibly sound research on police use of lethal force to inform policy decisions.

Specific Policy Considerations

Aside from the reflexive policies implemented over the past year, recently there have been reasonable efforts at reform. Post-Floyd efforts at police reform have been aimed primarily at police officer behavior, focusing on things such as banning or restricting chokeholds and other neck restraints, restricting shooting at fleeing suspects or vehicles, and implementing the use of less than lethal weapons. There are also mandates for reporting use of force incidents to local, state, and federal governments and mandates for officers to render first aid to subjects injured during use of force incidents or immediately seek medical attention for their care (Subramanian & Arzy, 2021). These efforts may very well result in positive change in policing in that they could prevent lethal force incidents such as the one in which Eric Garner was killed, and contribute to a more comprehensive, robust dataset making possible better research on police use of lethal force.

However, while putting the onus on police to change their behavior when engaging suspects may positively impact use of force decisions and fatalities, and better data would indeed likely contribute to better research on police killings, shaping reform will be far more complex, commensurate to the complexities of lethal force incidents. Starting with police behavior in policy reform is appropriate, but it is only one component of the bigger picture of law and order that has to be addressed to bring harmony to policing and race relations. For example, since a small proportion of police encounters are lethal (Kerik, 2019), a small proportion of those occur with unarmed subjects (although disproportionate by race—see Table 9), and police are more

likely to use restraint than engage threatening subjects with force (Pinizzotto et al., 2012), it is possible to precisely examine multitudes of potential contextual factors, including subject and police officer characteristics and attitudes (about race and crime), in lethal force incidents, particularly with unarmed subjects. The distillation of such factors could provide accurate targets for policy reform. In addition, because it seems more reasonable to identify racial bias in individual officers than entire police departments, focusing on that rather than deeming the police in general to be racist makes more sense from a police and race relations perspective. Finally, because crime correlates are well-known (Bartol & Bartol, 2011; Collins & DeRigne, 2017; Fryer, 2018; Streit, et al., 2017), addressing them with pointed interventions may help decrease the frequency of police engagements and lethal force incidents by potentially reducing crime altogether.

As much as policy reform will involve more than one intervention, so will it involve more than one player. The police, policy makers, and media will have to find common ground from which to build the foundation necessary to influence change that will satisfy all stakeholders, as difficult as that will likely be. In fact, it should be the initial step in policy making in this area and will be the most important policy making effort because their working together will more likely facilitate real change. Discord among them will more likely result in failure, which has been demonstrated over the past decade, prior to the aforementioned, post-Floyd reform for which there was some collaboration.

The overarching rules for their collaboration should require that rigid political and ideological persuasion be shelved. In addition, when exploring matters of race (be they crime proportion or disproportionate use of lethal force), players should have confidence to allow

insight to unfold naturally from empirically informed resources, regardless of which theoretical claim it supports. From there, authentic interventions may persist.

The following policy suggestions are made under the assumption that these rules would be recognized in more than an aspirational manner:

- Reconsider bail reform in ways to ensure fairness in justice and public safety
- Commit to arresting and keeping violent criminals in custody to address recidivism of violent crime
- Give special attention to gang activity, which likely contributes to much of the increase in crime, particularly in big cities, much like it did during the 1980s and 1990s when police became more militarized in response to high rates of violent crime
- Make efforts to educate young (men) citizens about the importance of respecting authority while encouraging police officers to engage high-risk youth in positive interactions both organically and through specific programs
- Revise new officer candidate evaluations to include assessment of specific factors around race awareness, multicultural attitudes, and aptitude for impartiality
- Implement mandatory requirements for police officers to maintain residency in the communities they serve to facilitate community policing
- Require media and policy makers to refer to empirical data when making public claims about policing, which is challenging in a competitive environment with an extensive flow of new information, but not impossible due to the high accessibility of empirical information through resources such as Google Scholar and other electronic professional search engines, and submit to scrutiny by community review boards

- Consider licensing news reporters much like professionals in other fields serving the public are licensed, to better ensure responsibility in reporting as public fiduciaries
- Require media opinion reporters and television program hosts providing commentary on police killings to identify themselves as such to avoid public confusion between editorializing and reporting
- Revise use of force training in ways that target specific phenomena empirically tied to lethal force incidents

Although likely cumbersome in application, heeding considerations such as these may benefit mutually accepted reform efforts by all stakeholders. This process would have to begin with thoughtful, impartial inquiries into crime, criminal behavior, crime trends, police officer behavior, police and race relations, police and community relations, proactive and other forms of policing and race, trends in media reporting, media influence on policy making, anti-police activism, political influence on activism, the influence of activism on political actors, contextual factors in lethal force incidents, and police culture, among innumerable other potential related topics, which is a challenging but necessary task. Explicit recommendations for research are discussed in the following paragraphs.

Recommendations for Future Research

Although a difficult and complex topic to explore, it is a necessary one, and one with a limited scope of related research to date. Its complexities lie within the sensitivity of the topic—race is seemingly the hot-button topic of the decade—in addition to the presence of a multitude of difficult-to-measure contextual factors involved in police killings. Consider, for example, contextual factors such as personalities of police officers, emotional states of police officers and subjects, political climates, violence potential of subjects, and the way in which police officers

experience dangerous, mob group activity like that witnessed during the summer 2020 riots, among many other abstract and esoteric goings on during lethal police incidents. They are always present, challenging to operationalize or aggregate, and therefore difficult to measure, despite the fact that they are important to measure. Controlling for such contextual factors in research on police killings is seemingly an impossible task, much like it is in all forms of social science research. That is the major limitation of this study and studies like it that should be addressed by other means of research. Those efforts could begin with qualitative inquiries and case studies focused on abstract constructs such as racial bias, institutional or systemic racism, personal attitudes of police officers and subjects, first-responder experiences of violence, and other thematic content that to date have no quantifiable definitions. Also, quantitative methods designed to compare crime and violent crime rates more sharply and directly to incidents of police use of lethal force with racially diverse subjects could shed light on the legitimacy of the police work follows crime theory.

For example, qualitative phenomenological research involving police, the public, and politicians around the topic of race and policing could yield informative results about the lived experiences of those who regularly interact with the criminal justice system, providing direction for quantitative researchers. Case studies on individual experiences of police, criminal subjects, and the public may enhance knowledge about the plights of those individuals and their experiences with the criminal justice system. That information could be distilled into specific policy recommendations or measurable units for further research. Ethnographic studies, because they focus on society and culture, may help in the understanding of behavioral patterns of police and criminal subjects because they could be deeply examined based on their respective beliefs,

attitudes and values. Perhaps that would be a viable way to operationalize those abstract constructs for better research outcomes on this sensitive topic.

From those types of qualitative methods, more precise quantitative approaches could be realized since constructs and concepts could be more easily defined. For example, sound survey research may be born from highly operationalized terms that validly and reliably measure things such as belief systems and attitudes which arguably have meaning central to issues around police killings and race. Also, perhaps systemic racism could be clarified, operationalized, and quantified in order to truly measure the influence of the concept on police behavior, rather than deeming it heuristically valid in research on the topic with no empirical support. Having operationalized definitions of such contextual factors in police killings may indeed enhance the designs of regression models, comparison studies, and correlational inquiries, since they are substantially lacking in existing databases being used in this type of research. Further, existing terms in those databases could be better operationalized (i.e., what it means to be armed, a threat, dangerous, or of a specific race). Access to more precise definitions would help facilitate the generation of more definitive outcomes in this type of research and squeeze out the potential for misrepresentation of the data that do exist.

Finally, valid and reliable instruments should be used to gather data for evaluating concepts or operationalizing abstract constructs for research such as perception, attitude, etc. Some examples of valid and reliable instruments are:

1. White Racial Identity Attitudes Scale (WRIAS) originally developed by Carter and Helms (1990).
2. People of Color Racial Identity Scale (POCRIAS) originally developed by Helms (1996).

3. Multicultural Competence Inventory (MCI) originally developed by Sodowsky, et al. (1994) for evaluating self-perceptions and competency.
4. Multicultural Awareness-Knowledge-and-Skills Survey (MAKSS).
5. The Attitude Towards Implicit Bias Instrument, a novel instrument developed by Gonzalez, Grochowalski, Garba, Bonne, and Marantz (2021) to evaluate implicit bias in health care providers.
6. The Personality Assessment Screener developed by Morey (1991), a brief measure of psychopathology with high concurrent validity with the parent instrument, The Personality Assessment Inventory (PAI), a full-scale personality inventory.
7. Police Attitude Questionnaire, an instrument developed by the International Institute for Restorative Practices, used to measure attitudes and cultures of police departments (McCold and Wachtel, 2012).
8. Mental Health Attitude Survey for Police (MHASP) is an instrument developed in 2011 by Clayfield, et al., and is used to evaluate police officer attitudes toward mentally ill persons.
9. Perceptions of Police Scale (POPS) is an instrument designed to measure public perceptions of police and police bias (Nadal & Davidoff, 2015).
10. The Attitudes Toward Police Legitimacy Scale developed by Reynolds, et al. in 2018 to evaluate attitudes by the public about police legitimacy.

If contextual factors in police killings could be operationalized through the use of valid and reliable instruments and researchers were not bound by the limitations of primarily demographic data, research findings on the topic could be more robust, comprehensive, sound, and valuable to all interested stakeholders.

Final Takeaways

There is a documented history of past atrocities in the policing of African American citizens in this country dating back to the era of slave patrols. The atrocities were real, racially motivated, and reflective of the time. That slavery was real and police and civilian patrols were tasked with maintaining the bondage of African Americans then, does not support the claim that the police are racist now, policing is systemically racist, or minorities are targeted for violence by the police. Drawing such conclusions from historical events with no empirical or even common sense evidence, as has been done by academics, media personalities, and politicians, only strains police and community relations. This is especially true when considering the enormous multitude of potential contextual factors involved in lethal police encounters.

The social and political implications of pointing at race as the sole motivating factor in police killings have been far reaching, indeed, serving an apparent lopsided debate about the motivation for police use of lethal force that is helping to fuel hostilities between the police and racial minorities. While promoting the race narrative has been advantageous for politicians, the media elite, and activists, the citizens suffer the aftermath of related reflexive, questionable policy decisions like defunding the police, knee-jerk bail reform, and laxed prosecutions, all of which have been followed by increasing crime, long waits for police to respond to calls, and the decreased safety of communities. The politicians, activists, and the media appear loyally committed to the race narrative to the extent that they ignore contextual factors in their public opining about police use of lethal force, with no apparent awareness of how their constituents are suffering from resulting ad hoc, politically expedient policy decisions. It seems unproductive for politicians, media personalities, and activists to suggest that race disparities are responsible for nearly all lethal incidents in policing, citing opinion pieces, studies based on descriptive statistics, and media unanimity on the topic as evidence for their position. Some media state that

they believe all disparities in police killings are due to racism. This is happening even as serious authors and researchers present evidence that explicitly contradicts the race narrative. Conversely, other media ignore the bases for activism against police activity and condemn activist groups for demanding change. Not all activist claims are lies or unfounded. A review of the history of policing in America dating back only sixty years will confirm the bases of their grievances. Neither approach to covering the topic of policing in America is helpful and both can readily improve. There should be an effort by all media to recognize the plight of activists in addition to the challenges to equity in justice for all citizen stakeholders, including those who suffer when there is not police presence in their communities. The results of this study cannot support or refute the race or crime proportion theory. Although the MLR findings indicate that a range of factors including age, gender, alleged weapon, alleged threat level (type), presence of mental illness, and geographical location predict police killings of subjects belonging to different race groups, they do not explain why the differences exist. Further, they explain 8% to 23% (average 15%) of that variability, which is small. It would not be wise to make policy decisions about policing and race based on a 15% variance in the race of subjects killed that does not explain why the differences exist among many contextual variables in incidents of police use of lethal force. Similar trends were found in the GLM ANOVAS and Welch F tests on age, the chi-squares on gender, and the eta correlations on age, namely that they all produced small effect sizes. Also, the descriptive statistics show that the majority of subjects killed by police were White, the overwhelming majority of subjects killed by police were armed, the majority were also attacking or demonstrating some level of threat, and all were engaged in crime at the time of the lethal encounter as defined by the author of the dataset. Although this study did not compare racial differences in police killings by race to crime proportions, crime is disproportionate by

race (see FBI, 2015) and must be studied alongside disparities in police use of lethal force. One study, for example, suggests that disproportionate rates of lethal incidents with African Americans occur because they have more contact with police due to higher rates of involvement in violent crime (Johnson & Cesario, 2019). That sentiment is echoed by MacDonald (2017) and Clark (2017), both of whom have written extensively about the influence of racially disproportionate crime rates on encounters with police. However, large scale empirical support for the crime proportion theory is lacking.

Perhaps race and policing have become politicized to the extent that honest discourse about them is not possible. If politicization remains the greatest overarching barrier to sound research on the topic, change may be out of reach. On the other hand, if stakeholders were able to participate in discussions about race and policing free from political influence, true police reform may be realized.

As previously stated, this study does not empirically substantiate or refute the institutional racism or crime proportion theory of racial disparities in police use of lethal force. The same is true for the robust literature reviewed herein, whether or not the authors of that literature conclude that one theory is proved. What the findings of this study can do is provide insight into obvious and controllable factors that are both associated with or different among the race of subjects killed by police. Further, what is apparent in existing research on the topic is that measuring institutional or systemic racism in policing is difficult. It may be as difficult as making cause and effect statements about crime proportions and police use of lethal force, although crime proportions are measurable. Researchers have to make distinct empirical ties between police use of lethal force and those predominating theories before either can garner honest support from stakeholders.

Hopefully, future research on police use of lethal force will be conducted with reliance on soundly defined variables derived from exhaustive qualitative and quantitative inquiries. That includes an operationalized and clarified definition of institutional or systemic racism that is suitable for empirical inquiry. Future studies should also be impartial, unbiased, and free from political influence. Finally, efforts should be made to examine the reasons for racially disproportionate crime rates and violent crime rates in order to resolve that root problem if the goals are truly to save lives and evaluate police conduct. Those are the only ways to ensure studies produce valid and applicable results. Let this be the call for that research.

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Appendix A

Definition of Terms

Appendix A

Definition of Terms

Police use of Lethal Force or Deadly Force: The act of use of force by police against a subject that causes death.

Implicit Bias: The perception and subsequent commensurate treatment of other people based on unconscious beliefs, attitudes, and stereotypes about things such as their race, age, ethnicity, appearance, and gender (The Ohio State University Kirwin Institute for the Study of Race and Ethnicity, 2015).

Institutional Racism: Patterns in social institutions that penalize individual members of non-white racial groups (Better, 2007, p.11). (also known as systemic racism)

FBI Uniform Crime Report: The United States public housing of crime statistics, updated annually and offering various data on the commission of crimes, perpetrators of crime, and victims of crime, across cities, states, and locals around the nation (UCR.FBI.GOV).

Michael Brown Case "Hands Up" Movement: The public gesture for police lethal use of force against unarmed African American Males invented based on false accounts of the Michael Brown shooting in Ferguson, Missouri (MacDonald, 2017).

Appendix B

List of Tables

Appendix B

List of Tables

Table 1

Statistics

		Gender	Cause_of_Death	Armed_Status	Alleged_Weapon	Alleged_Threat	Geographical_Location	Symptoms_Mental_Illness	Race
N	Valid	6087	6087	6087	6087	6087	6087	6087	6087
	Missing	0	0	0	0	0	0	0	0
Mean		.96	1.13	1.56	2.36	1.40	1.97	1.96	2.04
Range		3	5	3	6	2	2	3	6
Percentiles	100	3.00	6.00	4.00	7.00	3.00	3.00	4.00	7.00

Table 2

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	280	4.6	4.6	4.6
	Male	5799	95.3	95.3	99.9
	Transgender	8	.1	.1	100.0
	Total	6087	100.0	100.0	

Table 3

Cause_of_Death

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Gun	5660	93.0	93.0	93.0
	Gunshot and Taser	247	4.1	4.1	97.0
	Vehicle	26	.4	.4	97.5
	No Object	125	2.1	2.1	99.5
	Undetermined	10	.2	.2	99.7
	Multiple	19	.3	.3	100.0
	Total	6087	100.0	100.0	

Table 4

Armed_Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Allegedly Armed	4524	74.3	74.3	74.3
	Unclear	443	7.3	7.3	81.6
	Vehicle	412	6.8	6.8	88.4
	Unarmed	708	11.6	11.6	100.0
	Total	6087	100.0	100.0	

Table 5

Alleged_Weapon

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Gun	3343	54.9	54.9	54.9
	Knife	843	13.8	13.8	68.8
	Vehicle	415	6.8	6.8	75.6
	No Object	504	8.3	8.3	83.9
	Undetermined	366	6.0	6.0	89.9
	Multiple	68	1.1	1.1	91.0
	Miscellaneous	548	9.0	9.0	100.0
	Total	6087	100.0	100.0	

Table 6

Alleged_Threat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Attack	3955	65.0	65.0	65.0
	Other	1819	29.9	29.9	94.9
	Undetermined	313	5.1	5.1	100.0
	Total	6087	100.0	100.0	

Table 7

Geographical_Location

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	1581	26.0	26.0	26.0
	Suburban	3078	50.6	50.6	76.5
	Rural	1428	23.5	23.5	100.0
	Total	6087	100.0	100.0	

Table 8

Symptoms_Mental_Illness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1253	20.6	20.6	20.6
	No	3996	65.6	65.6	86.2
	Unknown	669	11.0	11.0	97.2
	Drug/Alcohol Use	169	2.8	2.8	100.0
	Total	6087	100.0	100.0	

Table 9

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	2762	45.4	45.4	45.4
	Black	1539	25.3	25.3	70.7
	Hispanic	1076	17.7	17.7	88.3
	Unknown	482	7.9	7.9	96.3
	Pacific Islander	42	.7	.7	96.9
	Native American	95	1.6	1.6	98.5
	Asian	91	1.5	1.5	100.0
	Total	6087	100.0	100.0	

Table 10

Age * Race Crosstabulation

			Race							
			White	Black	Hispanic	Unknown	Pacific Islander	Native American	Asian	Total
Age	6	% within Age	66.7%		33.3%					100.0%
		% within Race	0.1%		0.1%					0.0%
		% of Total	0.0%		0.0%					0.0%
	10	% within Age	100.0%							100.0%
		% within Race	0.0%							0.0%
		% of Total	0.0%							0.0%
	12	% within Age	100.0%							100.0%
		% within Race	0.0%							0.0%
		% of Total	0.0%							0.0%
	13	% within Age		100.0%						100.0%
		% within Race		0.1%						0.0%
		% of Total		0.0%						0.0%
	14	% within Age			66.7%			33.3%		100.0%
		% within Race			0.2%			1.1%		0.0%
		% of Total			0.0%			0.0%		0.0%
	15	% within Age	15.8%	42.1%	31.6%	5.3%	5.3%			100.0%
		% within Race	0.1%	0.5%	0.6%	0.2%	2.4%			0.3%
		% of Total	0.0%	0.1%	0.1%	0.0%	0.0%			0.3%
	16	% within Age	26.5%	35.3%	23.5%	8.8%	5.9%			100.0%
		% within Race	0.3%	0.8%	0.7%	0.6%	4.8%			0.6%
		% of Total	0.1%	0.2%	0.1%	0.0%	0.0%			0.6%
	17	% within Age	31.0%	46.6%	19.0%	3.4%				100.0%
		% within Race	0.7%	1.8%	1.0%	0.4%				1.0%
		% of Total	0.3%	0.4%	0.2%	0.0%				1.0%
	18	% within Age	20.8%	46.2%	23.6%	4.7%		0.9%	3.8%	100.0%

	% within Race	0.8%	3.2%	2.3%	1.0%		1.1%	4.4%	1.7%
	% of Total	0.4%	0.8%	0.4%	0.1%		0.0%	0.1%	1.7%
19	% within Age	24.7%	46.4%	20.6%	4.1%	1.0%	3.1%		100.0%
	% within Race	0.9%	2.9%	1.9%	0.8%	2.4%	3.2%		1.6%
	% of Total	0.4%	0.7%	0.3%	0.1%	0.0%	0.0%		1.6%
20	% within Age	30.8%	44.9%	18.7%	1.9%		0.9%	2.8%	100.0%
	% within Race	1.2%	3.1%	1.9%	0.4%		1.1%	3.3%	1.8%
	% of Total	0.5%	0.8%	0.3%	0.0%		0.0%	0.0%	1.8%
21	% within Age	21.1%	44.4%	27.1%	3.8%	0.8%	1.5%	1.5%	100.0%
	% within Race	1.0%	3.8%	3.3%	1.0%	2.4%	2.1%	2.2%	2.2%
	% of Total	0.5%	1.0%	0.6%	0.1%	0.0%	0.0%	0.0%	2.2%
22	% within Age	28.8%	37.1%	27.3%	4.5%	0.8%	0.8%	0.8%	100.0%
	% within Race	1.4%	3.2%	3.3%	1.2%	2.4%	1.1%	1.1%	2.2%
	% of Total	0.6%	0.8%	0.6%	0.1%	0.0%	0.0%	0.0%	2.2%
23	% within Age	32.5%	38.4%	19.9%	6.0%	0.7%	2.0%	0.7%	100.0%
	% within Race	1.8%	3.8%	2.8%	1.9%	2.4%	3.2%	1.1%	2.5%
	% of Total	0.8%	1.0%	0.5%	0.1%	0.0%	0.0%	0.0%	2.5%
24	% within Age	35.6%	39.5%	19.2%	2.3%		2.3%	1.1%	100.0%
	% within Race	2.3%	4.5%	3.2%	0.8%		4.2%	2.2%	2.9%
	% of Total	1.0%	1.1%	0.6%	0.1%		0.1%	0.0%	2.9%
25	% within Age	36.2%	37.1%	17.8%	3.8%	0.9%	3.8%	0.5%	100.0%
	% within Race	2.8%	5.1%	3.5%	1.7%	4.8%	8.4%	1.1%	3.5%
	% of Total	1.3%	1.3%	0.6%	0.1%	0.0%	0.1%	0.0%	3.5%
26	% within Age	41.5%	23.9%	24.4%	5.7%	1.1%	1.7%	1.7%	100.0%
	% within Race	2.6%	2.7%	4.0%	2.1%	4.8%	3.2%	3.3%	2.9%
	% of Total	1.2%	0.7%	0.7%	0.2%	0.0%	0.0%	0.0%	2.9%
27	% within Age	33.3%	31.8%	23.7%	6.1%	0.5%	2.5%	2.0%	100.0%
	% within Race	2.4%	4.1%	4.4%	2.5%	2.4%	5.3%	4.4%	3.3%

	% of Total	1.1%	1.0%	0.8%	0.2%	0.0%	0.1%	0.1%	3.3%
28	% within Age	37.4%	30.0%	22.6%	4.2%	1.1%	1.6%	3.2%	100.0%
	% within Race	2.6%	3.7%	4.0%	1.7%	4.8%	3.2%	6.6%	3.1%
	% of Total	1.2%	0.9%	0.7%	0.1%	0.0%	0.0%	0.1%	3.1%
29	% within Age	38.8%	25.0%	23.4%	8.5%	1.1%	2.7%	0.5%	100.0%
	% within Race	2.6%	3.1%	4.1%	3.3%	4.8%	5.3%	1.1%	3.1%
	% of Total	1.2%	0.8%	0.7%	0.3%	0.0%	0.1%	0.0%	3.1%
30	% within Age	42.5%	29.5%	15.0%	8.8%	2.1%	1.6%	0.5%	100.0%
	% within Race	3.0%	3.7%	2.7%	3.5%	9.5%	3.2%	1.1%	3.2%
	% of Total	1.3%	0.9%	0.5%	0.3%	0.1%	0.0%	0.0%	3.2%
31	% within Age	43.7%	31.5%	15.5%	6.6%	0.5%	1.4%	0.9%	100.0%
	% within Race	3.4%	4.4%	3.1%	2.9%	2.4%	3.2%	2.2%	3.5%
	% of Total	1.5%	1.1%	0.5%	0.2%	0.0%	0.0%	0.0%	3.5%
32	% within Age	44.4%	26.3%	18.7%	4.5%	0.5%	3.0%	2.5%	100.0%
	% within Race	3.2%	3.4%	3.4%	1.9%	2.4%	6.3%	5.5%	3.3%
	% of Total	1.4%	0.9%	0.6%	0.1%	0.0%	0.1%	0.1%	3.3%
33	% within Age	43.8%	24.9%	18.4%	6.5%	1.5%	3.5%	1.5%	100.0%
	% within Race	3.2%	3.2%	3.4%	2.7%	7.1%	7.4%	3.3%	3.3%
	% of Total	1.4%	0.8%	0.6%	0.2%	0.0%	0.1%	0.0%	3.3%
34	% within Age	47.4%	21.6%	20.6%	5.7%	0.5%	2.6%	1.5%	100.0%
	% within Race	3.3%	2.7%	3.7%	2.3%	2.4%	5.3%	3.3%	3.2%
	% of Total	1.5%	0.7%	0.7%	0.2%	0.0%	0.1%	0.0%	3.2%
35	% within Age	43.4%	22.2%	23.3%	7.4%	0.5%	1.6%	1.6%	100.0%
	% within Race	3.0%	2.7%	4.1%	2.9%	2.4%	3.2%	3.3%	3.1%
	% of Total	1.3%	0.7%	0.7%	0.2%	0.0%	0.0%	0.0%	3.1%
36	% within Age	49.7%	18.8%	20.4%	6.1%	0.6%	2.8%	1.7%	100.0%
	% within Race	3.3%	2.2%	3.4%	2.3%	2.4%	5.3%	3.3%	3.0%
	% of Total	1.5%	0.6%	0.6%	0.2%	0.0%	0.1%	0.0%	3.0%
37	% within Age	38.8%	28.2%	23.4%	6.9%		1.1%	1.6%	100.0%

	% within Race	2.6%	3.4%	4.1%	2.7%		2.1%	3.3%	3.1%
	% of Total	1.2%	0.9%	0.7%	0.2%		0.0%	0.0%	3.1%
38	% within Age	43.8%	20.0%	22.5%	10.0%		1.3%	2.5%	100.0%
	% within Race	2.5%	2.1%	3.3%	3.3%		2.1%	4.4%	2.6%
	% of Total	1.1%	0.5%	0.6%	0.3%		0.0%	0.1%	2.6%
39	% within Age	42.2%	24.7%	16.9%	13.6%		1.3%	1.3%	100.0%
	% within Race	2.4%	2.5%	2.4%	4.4%		2.1%	2.2%	2.5%
	% of Total	1.1%	0.6%	0.4%	0.3%		0.0%	0.0%	2.5%
40	% within Age	54.3%	19.4%	15.5%	8.5%		0.8%	1.6%	100.0%
	% within Race	2.5%	1.6%	1.9%	2.3%		1.1%	2.2%	2.1%
	% of Total	1.1%	0.4%	0.3%	0.2%		0.0%	0.0%	2.1%
41	% within Age	49.6%	23.0%	16.5%	7.9%	0.7%	0.7%	1.4%	100.0%
	% within Race	2.5%	2.1%	2.1%	2.3%	2.4%	1.1%	2.2%	2.3%
	% of Total	1.1%	0.5%	0.4%	0.2%	0.0%	0.0%	0.0%	2.3%
42	% within Age	53.8%	19.3%	18.5%	5.9%	0.8%	0.8%	0.8%	100.0%
	% within Race	2.3%	1.5%	2.0%	1.5%	2.4%	1.1%	1.1%	2.0%
	% of Total	1.1%	0.4%	0.4%	0.1%	0.0%	0.0%	0.0%	2.0%
43	% within Age	46.0%	20.2%	14.5%	13.7%		3.2%	2.4%	100.0%
	% within Race	2.1%	1.6%	1.7%	3.5%		4.2%	3.3%	2.0%
	% of Total	0.9%	0.4%	0.3%	0.3%		0.1%	0.0%	2.0%
44	% within Age	53.9%	15.7%	18.6%	7.8%		2.0%	2.0%	100.0%
	% within Race	2.0%	1.0%	1.8%	1.7%		2.1%	2.2%	1.7%
	% of Total	0.9%	0.3%	0.3%	0.1%		0.0%	0.0%	1.7%
45	% within Age	59.0%	15.4%	17.1%	5.1%	0.9%		2.6%	100.0%
	% within Race	2.5%	1.2%	1.9%	1.2%	2.4%		3.3%	1.9%
	% of Total	1.1%	0.3%	0.3%	0.1%	0.0%		0.0%	1.9%
46	% within Age	50.5%	21.0%	18.1%	6.7%	1.0%	1.0%	1.9%	100.0%
	% within Race	1.9%	1.4%	1.8%	1.5%	2.4%	1.1%	2.2%	1.7%

	% of Total	0.9%	0.4%	0.3%	0.1%	0.0%	0.0%	0.0%	1.7%
47	% within Age	52.7%	21.4%	15.2%	8.9%	1.8%			100.0%
	% within Race	2.1%	1.6%	1.6%	2.1%	4.8%			1.8%
	% of Total	1.0%	0.4%	0.3%	0.2%	0.0%			1.8%
48	% within Age	54.0%	25.0%	5.0%	13.0%	1.0%		2.0%	100.0%
	% within Race	2.0%	1.6%	0.5%	2.7%	2.4%		2.2%	1.6%
	% of Total	0.9%	0.4%	0.1%	0.2%	0.0%		0.0%	1.6%
49	% within Age	62.1%	14.6%	10.7%	9.7%		1.0%	1.9%	100.0%
	% within Race	2.3%	1.0%	1.0%	2.1%		1.1%	2.2%	1.7%
	% of Total	1.1%	0.2%	0.2%	0.2%		0.0%	0.0%	1.7%
50	% within Age	56.7%	14.4%	18.6%	6.2%	1.0%	2.1%	1.0%	100.0%
	% within Race	2.0%	0.9%	1.7%	1.2%	2.4%	2.1%	1.1%	1.6%
	% of Total	0.9%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%	1.6%
51	% within Age	66.3%	12.5%	11.3%	6.3%	1.3%	1.3%	1.3%	100.0%
	% within Race	1.9%	0.6%	0.8%	1.0%	2.4%	1.1%	1.1%	1.3%
	% of Total	0.9%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	1.3%
52	% within Age	54.3%	15.7%	14.3%	11.4%	1.4%		2.9%	100.0%
	% within Race	1.4%	0.7%	0.9%	1.7%	2.4%		2.2%	1.1%
	% of Total	0.6%	0.2%	0.2%	0.1%	0.0%		0.0%	1.1%
53	% within Age	71.1%	13.2%	1.3%	9.2%	1.3%	1.3%	2.6%	100.0%
	% within Race	2.0%	0.6%	0.1%	1.5%	2.4%	1.1%	2.2%	1.2%
	% of Total	0.9%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	1.2%
54	% within Age	63.8%	14.5%	5.8%	13.0%		1.4%	1.4%	100.0%
	% within Race	1.6%	0.6%	0.4%	1.9%		1.1%	1.1%	1.1%
	% of Total	0.7%	0.2%	0.1%	0.1%		0.0%	0.0%	1.1%
55	% within Age	47.8%	13.4%	11.9%	23.9%	3.0%			100.0%
	% within Race	1.2%	0.6%	0.7%	3.3%	4.8%			1.1%
	% of Total	0.5%	0.1%	0.1%	0.3%	0.0%			1.1%
56	% within Age	64.7%	8.8%	5.9%	19.1%			1.5%	100.0%

	% within Race	1.6%	0.4%	0.4%	2.7%			1.1%	1.1%
	% of Total	0.7%	0.1%	0.1%	0.2%			0.0%	1.1%
57	% within Age	64.3%	14.3%	14.3%	7.1%				100.0%
	% within Race	1.3%	0.5%	0.7%	0.8%				0.9%
	% of Total	0.6%	0.1%	0.1%	0.1%				0.9%
58	% within Age	71.7%	6.7%	10.0%	10.0%		1.7%		100.0%
	% within Race	1.6%	0.3%	0.6%	1.2%		1.1%		1.0%
	% of Total	0.7%	0.1%	0.1%	0.1%		0.0%		1.0%
59	% within Age	71.9%	3.1%	7.8%	14.1%			3.1%	100.0%
	% within Race	1.7%	0.1%	0.5%	1.9%			2.2%	1.1%
	% of Total	0.8%	0.0%	0.1%	0.1%			0.0%	1.1%
60	% within Age	59.0%	17.9%	2.6%	10.3%	2.6%		7.7%	100.0%
	% within Race	0.8%	0.5%	0.1%	0.8%	2.4%		3.3%	0.6%
	% of Total	0.4%	0.1%	0.0%	0.1%	0.0%		0.0%	0.6%
61	% within Age	59.1%	18.2%	2.3%	18.2%			2.3%	100.0%
	% within Race	0.9%	0.5%	0.1%	1.7%			1.1%	0.7%
	% of Total	0.4%	0.1%	0.0%	0.1%			0.0%	0.7%
62	% within Age	57.5%	12.5%	7.5%	20.0%			2.5%	100.0%
	% within Race	0.8%	0.3%	0.3%	1.7%			1.1%	0.7%
	% of Total	0.4%	0.1%	0.0%	0.1%			0.0%	0.7%
63	% within Age	54.1%	18.9%	8.1%	18.9%				100.0%
	% within Race	0.7%	0.5%	0.3%	1.5%				0.6%
	% of Total	0.3%	0.1%	0.0%	0.1%				0.6%
64	% within Age	81.8%	9.1%	4.5%	4.5%				100.0%
	% within Race	0.7%	0.1%	0.1%	0.2%				0.4%
	% of Total	0.3%	0.0%	0.0%	0.0%				0.4%
65	% within Age	68.0%	8.0%	4.0%	20.0%				100.0%
	% within Race	0.6%	0.1%	0.1%	1.0%				0.4%

	% of Total	0.3%	0.0%	0.0%	0.1%				0.4%
66	% within Age	77.8%	11.1%	5.6%	5.6%				100.0%
	% within Race	0.5%	0.1%	0.1%	0.2%				0.3%
	% of Total	0.2%	0.0%	0.0%	0.0%				0.3%
67	% within Age	57.9%	21.1%		21.1%				100.0%
	% within Race	0.4%	0.3%		0.8%				0.3%
	% of Total	0.2%	0.1%		0.1%				0.3%
68	% within Age	60.0%	33.3%		6.7%				100.0%
	% within Race	0.3%	0.3%		0.2%				0.2%
	% of Total	0.1%	0.1%		0.0%				0.2%
69	% within Age	64.7%		17.6%	17.6%				100.0%
	% within Race	0.4%		0.3%	0.6%				0.3%
	% of Total	0.2%		0.0%	0.0%				0.3%
70	% within Age	46.7%		26.7%	26.7%				100.0%
	% within Race	0.3%		0.4%	0.8%				0.2%
	% of Total	0.1%		0.1%	0.1%				0.2%
71	% within Age	58.3%	8.3%	16.7%	16.7%				100.0%
	% within Race	0.3%	0.1%	0.2%	0.4%				0.2%
	% of Total	0.1%	0.0%	0.0%	0.0%				0.2%
72	% within Age	83.3%	16.7%						100.0%
	% within Race	0.2%	0.1%						0.1%
	% of Total	0.1%	0.0%						0.1%
73	% within Age	55.6%	11.1%	11.1%	22.2%				100.0%
	% within Race	0.2%	0.1%	0.1%	0.4%				0.1%
	% of Total	0.1%	0.0%	0.0%	0.0%				0.1%
74	% within Age	50.0%	33.3%		16.7%				100.0%
	% within Race	0.1%	0.1%		0.2%				0.1%
	% of Total	0.0%	0.0%		0.0%				0.1%
75	% within Age	80.0%			20.0%				100.0%

	% within Race	0.1%			0.2%				0.1%
	% of Total	0.1%			0.0%				0.1%
76	% within Age	66.7%			33.3%				100.0%
	% within Race	0.3%			0.8%				0.2%
	% of Total	0.1%			0.1%				0.2%
77	% within Age	40.0%	20.0%		40.0%				100.0%
	% within Race	0.1%	0.1%		0.4%				0.1%
	% of Total	0.0%	0.0%		0.0%				0.1%
78	% within Age	50.0%			50.0%				100.0%
	% within Race	0.0%			0.2%				0.0%
	% of Total	0.0%			0.0%				0.0%
79	% within Age	50.0%			50.0%				100.0%
	% within Race	0.0%			0.2%				0.0%
	% of Total	0.0%			0.0%				0.0%
80	% within Age	50.0%		50.0%					100.0%
	% within Race	0.0%		0.1%					0.0%
	% of Total	0.0%		0.0%					0.0%
81	% within Age	33.3%			66.7%				100.0%
	% within Race	0.0%			0.4%				0.0%
	% of Total	0.0%			0.0%				0.0%
82	% within Age	100.0%							100.0%
	% within Race	0.1%							0.0%
	% of Total	0.0%							0.0%
83	% within Age	66.7%			33.3%				100.0%
	% within Race	0.1%			0.2%				0.0%
	% of Total	0.0%			0.0%				0.0%
84	% within Age	100.0%							100.0%
	% within Race	0.1%							0.0%

		% of Total	0.0%							0.0%
	85	% within Age	100.0%							100.0%
		% within Race	0.0%							0.0%
		% of Total	0.0%							0.0%
	86	% within Age	50.0%			50.0%				100.0%
		% within Race	0.0%			0.2%				0.0%
		% of Total	0.0%			0.0%				0.0%
	88	% within Age		100.0%						100.0%
		% within Race		0.1%						0.0%
		% of Total		0.0%						0.0%
	89	% within Age				100.0%				100.0%
		% within Race				0.2%				0.0%
		% of Total				0.0%				0.0%
	91	% within Age	100.0%							100.0%
		% within Race	0.1%							0.0%
		% of Total	0.0%							0.0%
Total		% within Age	45.4%	25.3%	17.7%	7.9%	0.7%	1.6%	1.5%	100.0%
		% within Race	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	45.4%	25.3%	17.7%	7.9%	0.7%	1.6%	1.5%	100.0%

Table 11

Model Fitting Information

	Model Fitting Criteria			Likelihood Ratio Tests		
Model	AIC	BIC	-2 Log Likelihood	Chi-square	df	Sig.
Intercept Only	11738.684	11778.968	11726.684			
Final	10454.045	11138.864	10250.045	1476.639	96	<.001

Table 12

Goodness-of-Fit

	Chi-square	df	Sig.
Pearson	15920.393	16494	.999
Deviance	8115.802	16494	1.000

Table 13

Pseudo R-square

Cox and Snell	.215
Nagelkerke	.230
McFadden	.088

Table 14

Likelihood Ratio Tests

	Model Fitting Criteria			Likelihood Ratio Tests		
Effect	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-square	df	Sig.
Intercept	10454.045	11138.864	10250.045[a]	.000	0	.
Age	10827.561	11472.097	10635.561[b]	385.516	6	<.001
Gender	10472.876	11077.128	10292.876	42.831	12	<.001
Alleged_Weapon	10496.509	10939.627	10364.509[b]	114.463	36	<.001
Alleged_Threat	10456.629	11060.881	10276.629[b]	26.584	12	.009
Geographical_Location	10991.791	11596.043	10811.791[b]	561.746	12	<.001
Symptoms_Mental_Illness	10573.704	11137.673	10405.704[b]	155.659	18	<.001

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

b. Unexpected singularities in the Hessian matrix are encountered. This indicates that either some predictor variables should be excluded or some categories should be merged.

Table 15

Parameter Estimates

Race[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B) Lower Bound	Upper Bound
Black	Intercept	-.311	.818	.145	1	.704			
	Age	-.044	.003	215.742	1	<.001	.957	.951	.962
	[Gender=0]	-1.131	.762	2.203	1	.138	.323	.073	1.437
	[Gender=1]	-.344	.742	.215	1	.643	.709	.165	3.037
	[Gender=2]	0[b]	.	.	0	.	.	.	.
	[Alleged_Weapon=1]	.153	.131	1.361	1	.243	1.165	.901	1.507
	[Alleged_Weapon=2]	-.091	.157	.336	1	.562	.913	.672	1.242
	[Alleged_Weapon=3]	.138	.177	.612	1	.434	1.148	.812	1.623
	[Alleged_Weapon=4]	.528	.167	9.997	1	.002	1.695	1.222	2.351
	[Alleged_Weapon=5]	-.302	.214	1.987	1	.159	.739	.486	1.125
	[Alleged_Weapon=6]	.084	.362	.054	1	.817	1.087	.535	2.210
	[Alleged_Weapon=7]	0[b]	.	.	0	.	.	.	.
	[Alleged_Threat=1]	-.177	.186	.901	1	.343	.838	.581	1.207
	[Alleged_Threat=2]	-.199	.187	1.125	1	.289	.820	.568	1.183
	[Alleged_Threat=3]	0[b]	.	.	0	.	.	.	.
	[Geographical_Location=1]	2.058	.108	364.740	1	<.001	7.829	6.339	9.670
	[Geographical_Location=2]	.992	.098	102.637	1	<.001	2.698	2.226	3.269
	[Geographical_Location=3]	0[b]	.	.	0	.	.	.	.
	[Symptoms_Mental_Illness=1]	.080	.247	.105	1	.745	1.083	.668	1.757
	[Symptoms_Mental_Illness=2]	.908	.236	14.873	1	.000	2.480	1.563	3.935
	[Symptoms_Mental_Illness=3]	.571	.253	5.082	1	.024	1.771	1.077	2.910
	[Symptoms_Mental_Illness=4]	0[b]	.	.	0	.	.	.	.
Hispanic	Intercept	-13.344	.341	1534.015	1	.000			
	Age	-.037	.003	130.232	1	<.001	.963	.957	.970

	[Gender=0]	12.152	.207	3447.941	1	.000	189464.147	126290.462	284238.910
	[Gender=1]	13.039	.000	.	1	.	460176.451	460176.451	460176.451
	[Gender=2]	0[b]	.	.	0	.	.	.	.
	[Alleged_Weapon=1]	-.395	.131	9.065	1	.003	.674	.521	.871
	[Alleged_Weapon=2]	-.052	.150	.118	1	.732	.950	.707	1.275
	[Alleged_Weapon=3]	-.380	.187	4.129	1	.042	.684	.474	.987
	[Alleged_Weapon=4]	-.075	.175	.187	1	.666	.927	.659	1.306
	[Alleged_Weapon=5]	-.261	.207	1.578	1	.209	.771	.513	1.157
	[Alleged_Weapon=6]	-.129	.375	.119	1	.730	.879	.422	1.832
	[Alleged_Weapon=7]	0[b]	.	.	0	.	.	.	.
	[Alleged_Threat=1]	-.255	.196	1.684	1	.194	.775	.528	1.139
	[Alleged_Threat=2]	-.010	.195	.003	1	.959	.990	.676	1.451
	[Alleged_Threat=3]	0[b]	.	.	0	.	.	.	.
	[Geographical_Location=1]	1.814	.122	222.837	1	<.001	6.138	4.837	7.789
	[Geographical_Location=2]	1.081	.110	97.506	1	<.001	2.949	2.379	3.654
	[Geographical_Location=3]	0[b]	.	.	0	.	.	.	.
	[Symptoms_Mental_Illness=1]	-.410	.234	3.086	1	.079	.664	.420	1.049
	[Symptoms_Mental_Illness=2]	.369	.220	2.809	1	.094	1.446	.939	2.226
	[Symptoms_Mental_Illness=3]	.085	.242	.124	1	.724	1.089	.678	1.750
	[Symptoms_Mental_Illness=4]	0[b]	.	.	0	.	.	.	.
Unknown	Intercept	-15.669	.518	914.759	1	<.001			
	Age	.016	.004	18.751	1	<.001	1.016	1.009	1.023
	[Gender=0]	11.545	.285	1639.539	1	.000	103269.562	59057.183	180580.957
	[Gender=1]	12.272	.000	.	1	.	213553.593	213553.593	213553.593
	[Gender=2]	0[b]	.	.	0	.	.	.	.
	[Alleged_Weapon=1]	.162	.198	.668	1	.414	1.176	.797	1.735
	[Alleged_Weapon=2]	.265	.228	1.345	1	.246	1.303	.833	2.039

	[Alleged_Weapon=3]	.022	.281	.006	1	.937	1.022	.589	1.773
	[Alleged_Weapon=4]	-.488	.328	2.209	1	.137	.614	.323	1.168
	[Alleged_Weapon=5]	.368	.289	1.621	1	.203	1.445	.820	2.547
	[Alleged_Weapon=6]	.998	.422	5.605	1	.018	2.714	1.188	6.201
	[Alleged_Weapon=7]	0[b]	.	.	0	.	.	.	.
	[Alleged_Threat=1]	.069	.277	.062	1	.803	1.071	.622	1.845
	[Alleged_Threat=2]	-.059	.278	.045	1	.832	.943	.547	1.626
	[Alleged_Threat=3]	0[b]	.	.	0	.	.	.	.
	[Geographical_Location=1]	.452	.150	9.029	1	.003	1.571	1.170	2.109
	[Geographical_Location=2]	.265	.116	5.254	1	.022	1.303	1.039	1.634
	[Geographical_Location=3]	0[b]	.	.	0	.	.	.	.
	[Symptoms_Mental_Illness=1]	.338	.387	.761	1	.383	1.401	.657	2.991
	[Symptoms_Mental_Illness=2]	.868	.375	5.346	1	.021	2.382	1.141	4.970
	[Symptoms_Mental_Illness=3]	-.150	.423	.125	1	.723	.861	.375	1.973
	[Symptoms_Mental_Illness=4]	0[b]	.	.	0	.	.	.	.
Pacific Islander	Intercept	-27.178	225.539	.015	1	.904			
	Age	-.030	.014	4.678	1	.031	.971	.945	.997
	[Gender=0]	12.729	.736	299.053	1	<.001	337347.579	79714.660	1427634.391
	[Gender=1]	13.186	.000	.	1	.	532711.135	532711.135	532711.135
	[Gender=2]	0[b]	.	.	0	.	.	.	.
	[Alleged_Weapon=1]	-.572	.579	.978	1	.323	.564	.182	1.754
	[Alleged_Weapon=2]	.530	.603	.773	1	.379	1.699	.521	5.538
	[Alleged_Weapon=3]	.721	.655	1.213	1	.271	2.056	.570	7.418
	[Alleged_Weapon=4]	.328	.722	.206	1	.650	1.388	.337	5.715
	[Alleged_Weapon=5]	-11.294	232.550	.002	1	.961	1.244E-5	1.406E-203	1.101E+193
	[Alleged_Weapon=6]	1.477	.899	2.699	1	.100	4.379	.752	25.503
	[Alleged_Weapon=7]	0[b]	.	.	0	.	.	.	.
	[Alleged_Threat=1]	10.989	225.537	.002	1	.961	59193.294	6.237E-188	5.618E+196
	[Alleged_Threat=2]	10.688	225.537	.002	1	.962	43821.289	4.617E-188	4.160E+196

	[Alleged_Threat=3]	0[b]	.	.	0	.	.	.	.
	[Geographical_Location=1]	.329	.547	.362	1	.547	1.390	.476	4.060
	[Geographical_Location=2]	.678	.407	2.776	1	.096	1.970	.887	4.373
	[Geographical_Location=3]	0[b]	.	.	0	.	.	.	.
	[Symptoms_Mental_Illness=1]	-.342	.789	.188	1	.665	.710	.151	3.336
	[Symptoms_Mental_Illness=2]	-.184	.749	.060	1	.807	.832	.192	3.615
	[Symptoms_Mental_Illness=3]	-1.204	1.014	1.411	1	.235	.300	.041	2.187
	[Symptoms_Mental_Illness=4]	0[b]	.	.	0	.	.	.	.
Native American	Intercept	-13.584	.877	239.973	1	<.001			
	Age	-.054	.010	29.664	1	<.001	.947	.929	.966
	[Gender=0]	12.641	.475	708.400	1	<.001	308952.554	121792.551	783723.466
	[Gender=1]	12.816	.000	.	1	.	368153.938	368153.938	368153.938
	[Gender=2]	0[b]	.	.	0	.	.	.	.
	[Alleged_Weapon=1]	-.572	.339	2.842	1	.092	.564	.290	1.097
	[Alleged_Weapon=2]	-.140	.374	.140	1	.708	.869	.418	1.810
	[Alleged_Weapon=3]	-1.180	.590	3.998	1	.046	.307	.097	.977
	[Alleged_Weapon=4]	-.535	.469	1.300	1	.254	.586	.234	1.469
	[Alleged_Weapon=5]	-.066	.489	.018	1	.893	.937	.359	2.443
	[Alleged_Weapon=6]	-12.411	428.108	.001	1	.977	4.072E-6	.000	.[c]
	[Alleged_Weapon=7]	0[b]	.	.	0	.	.	.	.
	[Alleged_Threat=1]	.322	.599	.289	1	.591	1.379	.427	4.458
	[Alleged_Threat=2]	.917	.586	2.448	1	.118	2.502	.793	7.888
	[Alleged_Threat=3]	0[b]	.	.	0	.	.	.	.
	[Geographical_Location=1]	.137	.284	.234	1	.629	1.147	.657	2.004
	[Geographical_Location=2]	-.453	.241	3.549	1	.060	.636	.397	1.018
	[Geographical_Location=3]	0[b]	.	.	0	.	.	.	.

	[Symptoms_Mental_Illness=1]	-1.027	.533	3.708	1	.054	.358	.126	1.019
	[Symptoms_Mental_Illness=2]	-.446	.485	.845	1	.358	.640	.247	1.657
	[Symptoms_Mental_Illness=3]	-.503	.552	.830	1	.362	.605	.205	1.784
	[Symptoms_Mental_Illness=4]	0[b]	.	.	0	.	.	.	.
Asian	Intercept	-17.846	1.080	273.161	1	<.001			
	Age	-.016	.009	3.455	1	.063	.984	.967	1.001
	[Gender=0]	12.912	.472	746.978	1	<.001	405053.627	160466.507	1022446.638
	[Gender=1]	13.074	.000	.	1	.	476365.202	476365.202	476365.202
	[Gender=2]	0[b]	.	.	0	.	.	.	.
	[Alleged_Weapon=1]	.134	.423	.101	1	.750	1.144	.500	2.619
	[Alleged_Weapon=2]	.897	.440	4.155	1	.042	2.452	1.035	5.809
	[Alleged_Weapon=3]	-1.547	1.079	2.056	1	.152	.213	.026	1.764
	[Alleged_Weapon=4]	.437	.534	.671	1	.413	1.548	.544	4.405
	[Alleged_Weapon=5]	.815	.602	1.828	1	.176	2.258	.693	7.356
	[Alleged_Weapon=6]	1.066	.834	1.633	1	.201	2.904	.566	14.899
	[Alleged_Weapon=7]	0[b]	.	.	0	.	.	.	.
	[Alleged_Threat=1]	1.085	.790	1.885	1	.170	2.959	.629	13.928
	[Alleged_Threat=2]	1.072	.787	1.857	1	.173	2.923	.625	13.666
	[Alleged_Threat=3]	0[b]	.	.	0	.	.	.	.
	[Geographical_Location=1]	1.690	.398	18.051	1	<.001	5.420	2.485	11.819
	[Geographical_Location=2]	1.393	.363	14.710	1	<.001	4.026	1.976	8.203
	[Geographical_Location=3]	0[b]	.	.	0	.	.	.	.
	[Symptoms_Mental_Illness=1]	-.664	.513	1.677	1	.195	.515	.188	1.406
	[Symptoms_Mental_Illness=2]	-.640	.491	1.700	1	.192	.527	.202	1.380
	[Symptoms_Mental_Illness=3]	-.094	.529	.031	1	.860	.911	.323	2.569

[Symptoms_Mental_Illness=4]	0[b]	.	.	0	.	.	.	.

a. The reference category is: White.

b. This parameter is set to zero because it is redundant.

c. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing.

Table 16

Classification

	Predicted							
Observed	White	Black	Hispanic	Unknown	Pacific Islander	Native American	Asian	Percent Correct
White	2372	352	38	0	0	0	0	85.9%
Black	753	747	39	0	0	0	0	48.5%
Hispanic	642	394	40	0	0	0	0	3.7%
Unknown	393	76	13	0	0	0	0	0.0%
Pacific Islander	33	7	2	0	0	0	0	0.0%
Native American	71	19	5	0	0	0	0	0.0%
Asian	68	19	4	0	0	0	0	0.0%
Overall Percentage	71.2%	26.5%	2.3%	0.0%	0.0%	0.0%	0.0%	51.9%

Table 17

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	72113.764[a]	11	6555.797	41.595	<.001
Intercept	794991.548	1	794991.548	5044.051	.000
Gender	60.022	1	60.022	.381	.537
Race	55730.907	2	27865.453	176.800	<.001
Alleged_Weapon	11364.992	6	1894.165	12.018	<.001
Alleged_Threat_Level	102.321	2	51.161	.325	.723
Error	956218.311	6067	157.610		
Total	9356034.000	6079			
Corrected Total	1028332.075	6078			

a. R squared = .070 (Adjusted R squared = .068)

Table 18

Parameter Estimates

Dependent Variable: Age

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	35.842	1.009	35.522	<.001	33.864	37.820
[Gender=0]	.478	.775	.617	.537	-1.040	1.996
[Gender=1]	0[a]	.	.	.	.	.
[Race=1]	3.837	.383	10.020	<.001	3.086	4.588
[Race=2]	-3.601	.440	-8.194	<.001	-4.463	-2.740
[Race=3]	0[a]	.	.	.	.	.
[Alleged_Weapon=1]	.939	.586	1.603	.109	-.209	2.088
[Alleged_Weapon=2]	.041	.693	.059	.953	-1.318	1.400
[Alleged_Weapon=3]	-3.578	.819	-4.370	<.001	-5.183	-1.973
[Alleged_Weapon=4]	-2.638	.784	-3.365	<.001	-4.175	-1.101
[Alleged_Weapon=5]	-1.474	.929	-1.587	.113	-3.294	.346
[Alleged_Weapon=6]	-1.599	1.615	-.990	.322	-4.765	1.567
[Alleged_Weapon=7]	0[a]	.	.	.	.	.
[Alleged_Threat_Level=1]	.468	.861	.544	.587	-1.219	2.155
[Alleged_Threat_Level=2]	.198	.861	.229	.819	-1.491	1.886
[Alleged_Threat_Level=3]	0[a]	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

Table 19

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	88829.077[a]	59	1505.578	9.646	<.001	.086
Intercept	455244.564	1	455244.564	2916.560	.000	.326
Race	4262.668	2	2131.334	13.655	<.001	.005
Gender	58.596	1	58.596	.375	.540	.000
Alleged_Threat_Level	225.596	2	112.798	.723	.486	.000
Alleged_Weapon	4690.940	6	781.823	5.009	<.001	.005
Race * Alleged_Weapon * Alleged_Threat_Level	16715.313	48	348.236	2.231	<.001	.017

Error	939502.998	6019	156.090			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .086 (Adjusted R squared = .077)

Table 20

Parameter Estimates

Dependent Variable: Age

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound	Partial Eta Squared
Intercept	48.200	5.587	8.627	<.001	37.247	59.153	.012
[Race=1]	-10.570	8.383	-1.261	.207	-27.004	5.865	.000
[Race=2]	-18.600	7.902	-2.354	.019	-34.090	-3.110	.001
[Race=3]	0[a]	.	.	.	.	.	.
[Gender=0]	.478	.780	.613	.540	-1.052	2.008	.000
[Gender=1]	0[a]	.	.	.	.	.	.
[Alleged_Threat_Level=1]	-11.705	5.730	-2.043	.041	-22.937	-.473	.001
[Alleged_Threat_Level=2]	-11.289	5.764	-1.959	.050	-22.588	.010	.001
[Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.
[Alleged_Weapon=1]	-7.264	6.452	-1.126	.260	-19.913	5.385	.000
[Alleged_Weapon=2]	-9.450	8.381	-1.128	.260	-25.880	6.980	.000
[Alleged_Weapon=3]	-5.753	2.202	-2.613	.009	-10.069	-1.437	.001
[Alleged_Weapon=4]	-12.750	6.247	-2.041	.041	-24.996	-.504	.001
[Alleged_Weapon=5]	-14.612	5.855	-2.496	.013	-26.089	-3.134	.001
[Alleged_Weapon=6]	.089	4.398	.020	.984	-8.534	8.711	.000
[Alleged_Weapon=7]	0[a]	.	.	.	.	.	.

[Race=1] * [Alleged_Weapon=1] * [Alleged_Threat_Level=1]	23.331	13.270	1.758	.079	-2.684	49.346	.001
[Race=1] * [Alleged_Weapon=1] * [Alleged_Threat_Level=2]	22.837	13.306	1.716	.086	-3.247	48.921	.000
[Race=1] * [Alleged_Weapon=1] * [Alleged_Threat_Level=3]	15.490	9.479	1.634	.102	-3.092	34.073	.000
[Race=1] * [Alleged_Weapon=2] * [Alleged_Threat_Level=1]	22.164	14.339	1.546	.122	-5.946	50.274	.000
[Race=1] * [Alleged_Weapon=2] * [Alleged_Threat_Level=2]	21.932	14.341	1.529	.126	-6.180	50.045	.000
[Race=1] * [Alleged_Weapon=2] * [Alleged_Threat_Level=3]	11.320	11.633	.973	.331	-11.484	34.123	.000
[Race=1] * [Alleged_Weapon=3] * [Alleged_Threat_Level=1]	16.288	8.843	1.842	.066	-1.047	33.623	.001
[Race=1] * [Alleged Weapon=3] * [Alleged_Threat_Level=2]	14.330	8.690	1.649	.099	-2.705	31.365	.000
[Race=1] * [Alleged_Weapon=3] * [Alleged_Threat_Level=3]	1.923	8.669	.222	.824	-15.072	18.918	.000
[Race=1] * [Alleged_Weapon=4] * [Alleged Threat Level=1]	21.431	13.235	1.619	.105	-4.515	47.377	.000
[Race=1] * [Alleged Weapon=4] * [Alleged_Threat_Level=2]	21.693	13.242	1.638	.101	-4.265	47.652	.000
[Race=1] * [Alleged_Weapon=4] * [Alleged_Threat_Level=3]	10.245	9.372	1.093	.274	-8.128	28.617	.000
[Race=1] * [Alleged_Weapon=5] * [Alleged_Threat_Level=1]	24.667	13.223	1.865	.062	-1.254	50.588	.001

[Race=1] * [Alleged_Weapon=5] * [Alleged_Threat_Level=2]	28.681	13.107	2.188	.029	2.988	54.375	.001
[Race=1] * [Alleged_Weapon=5] * [Alleged_Threat_Level=3]	14.371	8.664	1.659	.097	-2.613	31.355	.000
[Race=1] * [Alleged_Weapon=6] * [Alleged_Threat_Level=1]	8.923	10.049	.888	.375	-10.776	28.622	.000
[Race=1] * [Alleged_Weapon=6] * [Alleged_Threat_Level=2]	14.195	10.350	1.371	.170	-6.096	34.485	.000
[Race=1] * [Alleged_Weapon=6] * [Alleged_Threat_Level=3]	-12.719	14.645	-.868	.385	-41.429	15.991	.000
[Race=1] * [Alleged_Weapon=7] * [Alleged_Threat_Level=1]	11.652	8.538	1.365	.172	-5.085	28.389	.000
[Race=1] * [Alleged_Weapon=7] * [Alleged_Threat_Level=2]	13.520	8.596	1.573	.116	-3.332	30.371	.000
[Race=1] * [Alleged_Weapon=7] * [Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.
[Race=2] * [Alleged_Weapon=1] * [Alleged_Threat_Level=1]	21.800	12.974	1.680	.093	-3.635	47.234	.000
[Race=2] * [Alleged_Weapon=1] * [Alleged_Threat_Level=2]	19.163	13.019	1.472	.141	-6.360	44.686	.000
[Race=2] * [Alleged_Weapon=1] * [Alleged_Threat_Level=3]	6.506	9.004	.723	.470	-11.145	24.156	.000
[Race=2] * [Alleged_Weapon=2] * [Alleged_Threat_Level=1]	28.755	14.095	2.040	.041	1.123	56.386	.001
[Race=2] * [Alleged_Weapon=2] * [Alleged_Threat_Level=2]	26.238	14.112	1.859	.063	-1.426	53.902	.001

[Race=2] * [Alleged_Weapon=2] * [Alleged_Threat_Level=3]	5.850	16.048	.365	.715	-25.610	37.310	.000
[Race=2] * [Alleged_Weapon=3] * [Alleged_Threat_Level=1]	18.662	8.423	2.216	.027	2.150	35.173	.001
[Race=2] * [Alleged_Weapon=3] * [Alleged_Threat_Level=2]	17.454	8.291	2.105	.035	1.200	33.709	.001
[Race=2] * [Alleged_Weapon=4] * [Alleged_Threat_Level=1]	25.632	12.973	1.976	.048	.201	51.063	.001
[Race=2] * [Alleged_Weapon=4] * [Alleged_Threat_Level=2]	28.830	12.946	2.227	.026	3.451	54.210	.001
[Race=2] * [Alleged_Weapon=4] * [Alleged_Threat_Level=3]	14.848	8.777	1.692	.091	-2.358	32.053	.000
[Race=2] * [Alleged_Weapon=5] * [Alleged_Threat_Level=1]	27.559	12.999	2.120	.034	2.076	53.041	.001
[Race=2] * [Alleged_Weapon=5] * [Alleged_Threat_Level=2]	29.440	13.032	2.259	.024	3.894	54.987	.001
[Race=2] * [Alleged_Weapon=5] * [Alleged_Threat_Level=3]	14.560	8.398	1.734	.083	-1.904	31.024	.000
[Race=2] * [Alleged_Weapon=6] * [Alleged_Threat_Level=1]	8.683	9.818	.884	.377	-10.564	27.930	.000
[Race=2] * [Alleged_Weapon=6] * [Alleged_Threat_Level=2]	16.480	10.901	1.512	.131	-4.890	37.851	.000
[Race=2] * [Alleged_Weapon=7] * [Alleged_Threat_Level=1]	18.391	8.137	2.260	.024	2.439	34.343	.001
[Race=2] * [Alleged_Weapon=7] * [Alleged_Threat_Level=2]	14.347	8.279	1.733	.083	-1.884	30.577	.000

[Race=2] * [Alleged_Weapon=7] * [Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=1] * [Alleged_Threat_Level=1]	8.053	6.592	1.222	.222	-4.870	20.976	.000
[Race=3] * [Alleged_Weapon=1] * [Alleged_Threat_Level=2]	6.122	6.687	.915	.360	-6.987	19.231	.000
[Race=3] * [Alleged_Weapon=1] * [Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=2] * [Alleged_Threat_Level=1]	8.283	8.552	.969	.333	-8.481	25.047	.000
[Race=3] * [Alleged_Weapon=2] * [Alleged_Threat_Level=2]	8.826	8.552	1.032	.302	-7.938	25.590	.000
[Race=3] * [Alleged_Weapon=2] * [Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=3] * [Alleged_Threat_Level=1]	2.109	3.009	.701	.483	-3.789	8.008	.000
[Race=3] * [Alleged_Weapon=3] * [Alleged_Threat_Level=2]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=4] * [Alleged_Threat_Level=1]	9.701	6.697	1.449	.148	-3.427	22.830	.000
[Race=3] * [Alleged_Weapon=4] * [Alleged_Threat_Level=2]	8.266	6.554	1.261	.207	-4.582	21.113	.000
[Race=3] * [Alleged_Weapon=4] * [Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=5] * [Alleged_Threat_Level=1]	12.672	6.455	1.963	.050	.018	25.326	.001

[Race=3] * [Alleged_Weapon=5] * [Alleged_Threat_Level=2]	13.936	6.282	2.218	.027	1.620	26.251	.001
[Race=3] * [Alleged_Weapon=5] * [Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=6] * [Alleged_Threat_Level=1]	1.805	5.443	.332	.740	-8.865	12.475	.000
[Race=3] * [Alleged_Weapon=6] * [Alleged_Threat_Level=2]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=7] * [Alleged_Threat_Level=1]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=7] * [Alleged_Threat_Level=2]	0[a]	.	.	.	.	.	.
[Race=3] * [Alleged_Weapon=7] * [Alleged_Threat_Level=3]	0[a]	.	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

Table 21

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	58548.046[a]	2	29274.023	183.411	<.001	.057
Intercept	7511231.363	1	7511231.363	47060.212	.000	.886
Race	58548.046	2	29274.023	183.411	<.001	.057
Error	969784.028	6076	159.609			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .057 (Adjusted R squared = .057)

Table 22

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
36.244	.167	35.916	36.571

Table 23

2. Race

Dependent Variable: Age

Race	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
White	40.089	.241	39.617	40.560
Black	32.515	.322	31.883	33.147
Other	36.127	.299	35.541	36.713

Table 24

Multiple Comparisons

Dependent Variable: Age

Bonferroni

(I) Race	(J) Race	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
White	Black	7.57*	.402	<.001	6.61	8.54
	Other	3.96*	.384	<.001	3.04	4.88
Black	White	-7.57*	.402	<.001	-8.54	-6.61
	Other	-3.61*	.440	<.001	-4.66	-2.56
Other	White	-3.96*	.384	<.001	-4.88	-3.04
	Black	3.61*	.440	<.001	2.56	4.66

Based on observed means.

The error term is Mean Square(Error) = 159.609.

*. The mean difference is significant at the .05 level.

Table 25

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	222.066[a]	1	222.066	1.313	.252	.000
Intercept	1496550.631	1	1496550.631	8845.880	.000	.593
Gender	222.066	1	222.066	1.313	.252	.000
Error	1028110.009	6077	169.181			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .000 (Adjusted R squared = .000)

Table 26

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
37.426	.398	36.646	38.206

Table 27

2. Gender

Dependent Variable: Age

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Female	37.882	.777	36.358	39.406
Male	36.970	.171	36.636	37.305

Table 28

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1720.352[a]	5	344.070	2.035	.071	.002
Intercept	239991.927	1	239991.927	1419.691	<.001	.189
Cause_of_Death	1720.352	5	344.070	2.035	.071	.002
Error	1026611.723	6073	169.045			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .002 (Adjusted R squared = .001)

Table 29

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
36.816	.977	34.900	38.731

Table 30

2. Cause_of_Death

Dependent Variable: Age

Cause_of_Death	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Gunshot	37.009	.173	36.670	37.348
Gunshot and Taser	36.692	.827	35.071	38.314
Vehicle	31.077	2.550	26.078	36.076
Taser Only	38.912	1.163	36.632	41.192
Beaten	42.100	4.112	34.040	50.160
Physical Restraint	35.105	2.983	29.258	40.953

Table 31

Multiple Comparisons

Dependent Variable: Age

Bonferroni

(I) Cause_of_Death	(J) Cause_of_Death	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Gunshot	Gunshot and Taser	.32	.845	1.000	-2.16	2.80
	Vehicle	5.93	2.556	.305	-1.57	13.44
	Taser Only	-1.90	1.176	1.000	-5.36	1.55
	Beaten	-5.09	4.115	1.000	-17.17	6.99
	Physical Restraint	1.90	2.988	1.000	-6.87	10.68
Gunshot and Taser	Gunshot	-.32	.845	1.000	-2.80	2.16
	Vehicle	5.62	2.681	.544	-2.26	13.49
	Taser Only	-2.22	1.427	1.000	-6.41	1.97
	Beaten	-5.41	4.194	1.000	-17.72	6.91
	Physical Restraint	1.59	3.095	1.000	-7.50	10.68
Vehicle	Gunshot	-5.93	2.556	.305	-13.44	1.57
	Gunshot and Taser	-5.62	2.681	.544	-13.49	2.26
	Taser Only	-7.84	2.803	.078	-16.06	.39
	Beaten	-11.02	4.838	.341	-25.23	3.18
	Physical Restraint	-4.03	3.924	1.000	-15.55	7.49
Taser Only	Gunshot	1.90	1.176	1.000	-1.55	5.36
	Gunshot and Taser	2.22	1.427	1.000	-1.97	6.41
	Vehicle	7.84	2.803	.078	-.39	16.06
	Beaten	-3.19	4.273	1.000	-15.73	9.36
	Physical Restraint	3.81	3.201	1.000	-5.59	13.21
Beaten	Gunshot	5.09	4.115	1.000	-6.99	17.17
	Gunshot and Taser	5.41	4.194	1.000	-6.91	17.72
	Vehicle	11.02	4.838	.341	-3.18	25.23
	Taser Only	3.19	4.273	1.000	-9.36	15.73
	Physical Restraint	6.99	5.080	1.000	-7.92	21.91
Physical Restraint	Gunshot	-1.90	2.988	1.000	-10.68	6.87
	Gunshot and Taser	-1.59	3.095	1.000	-10.68	7.50
	Vehicle	4.03	3.924	1.000	-7.49	15.55
	Taser Only	-3.81	3.201	1.000	-13.21	5.59
	Beaten	-6.99	5.080	1.000	-21.91	7.92

Based on observed means. The error term is Mean Square(Error) = 169.045.

Table 32

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	14781.387[a]	3	4927.129	29.532	<.001	.014
Intercept	3158840.041	1	3158840.041	18933.393	.000	.757
Armed_Status	14781.387	3	4927.129	29.532	<.001	.014
Error	1013550.688	6075	166.840			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .014 (Adjusted R squared = .014)

Table 33

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
35.335	.257	34.832	35.839

Table 34

2. Armed_Status

Dependent Variable: Age

Armed_Status	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Allegedly Armed	37.884	.192	37.507	38.261
Unclear	35.828	.614	34.625	37.031
Vehicle	33.253	.637	32.004	34.502
Unarmed	34.376	.485	33.424	35.327

Table 35

Multiple Comparisons

Dependent Variable: Age

Bonferroni

(I) Armed_Status	(J) Armed_Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Allegedly Armed	Unclear	2.06*	.643	.008	.36	3.75
	Vehicle	4.63*	.665	<.001	2.87	6.39
	Unarmed	3.51*	.522	<.001	2.13	4.89
Unclear	Allegedly Armed	-2.06*	.643	.008	-3.75	-.36
	Vehicle	2.58*	.885	.022	.24	4.91
	Unarmed	1.45	.782	.381	-.61	3.52
Vehicle	Allegedly Armed	-4.63*	.665	<.001	-6.39	-2.87
	Unclear	-2.58*	.885	.022	-4.91	-.24
	Unarmed	-1.12	.801	.967	-3.24	.99
Unarmed	Allegedly Armed	-3.51*	.522	<.001	-4.89	-2.13
	Unclear	-1.45	.782	.381	-3.52	.61
	Vehicle	1.12	.801	.967	-.99	3.24

Based on observed means.

The error term is Mean Square(Error) = 166.840.

*. The mean difference is significant at the .05 level.

Table 36

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	15608.224[a]	6	2601.371	15.597	<.001	.015
Intercept	2493457.766	1	2493457.766	14950.053	.000	.711
Alleged_Weapon	15608.224	6	2601.371	15.597	<.001	.015
Error	1012723.851	6072	166.786			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .015 (Adjusted R squared = .014)

Table 37

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
35.779	.293	35.205	36.353

Table 38

2. Alleged_Weapon

Dependent Variable: Age

Alleged_Weapon	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Gun	38.048	.223	37.610	38.486
Knife	37.263	.446	36.388	38.138
Vehicle	33.258	.635	32.014	34.503
No Object	33.796	.575	32.668	34.923
Undetermined	35.661	.675	34.338	36.985
Multiple	35.191	1.566	32.121	38.261
Miscellaneous	37.235	.552	36.154	38.317

Table 39

Multiple Comparisons

Dependent Variable: Age

Bonferroni

(I) Alleged_Weapon	(J) Alleged_Weapon	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Gun	Knife	.79	.499	1.000	-.73	2.30
	Vehicle	4.79*	.673	<.001	2.74	6.83
	No Object	4.25*	.617	<.001	2.38	6.13
	Undetermined	2.39*	.711	.017	.23	4.55
	Multiple	2.86	1.582	1.000	-1.95	7.67
	Miscellaneous	.81	.595	1.000	-1.00	2.62
Knife	Gun	-.79	.499	1.000	-2.30	.73
	Vehicle	4.00*	.776	<.001	1.65	6.36
	No Object	3.47*	.728	<.001	1.25	5.68
	Undetermined	1.60	.809	1.000	-.86	4.06
	Multiple	2.07	1.628	1.000	-2.88	7.02
	Miscellaneous	.03	.710	1.000	-2.13	2.18

Vehicle	Gun	-4.79*	.673	<.001	-6.83	-2.74
	Knife	-4.00*	.776	<.001	-6.36	-1.65
	No Object	-.54	.857	1.000	-3.14	2.07
	Undetermined	-2.40	.927	.200	-5.22	.41
	Multiple	-1.93	1.690	1.000	-7.07	3.20
	Miscellaneous	-3.98*	.841	<.001	-6.53	-1.42
No Object	Gun	-4.25*	.617	<.001	-6.13	-2.38
	Knife	-3.47*	.728	<.001	-5.68	-1.25
	Vehicle	.54	.857	1.000	-2.07	3.14
	Undetermined	-1.87	.887	.745	-4.56	.83
	Multiple	-1.40	1.668	1.000	-6.47	3.68
	Miscellaneous	-3.44*	.797	<.001	-5.86	-1.02
Undetermined	Gun	-2.39*	.711	.017	-4.55	-.23
	Knife	-1.60	.809	1.000	-4.06	.86
	Vehicle	2.40	.927	.200	-.41	5.22
	No Object	1.87	.887	.745	-.83	4.56
	Multiple	.47	1.705	1.000	-4.71	5.65
	Miscellaneous	-1.57	.872	1.000	-4.22	1.08
Multiple	Gun	-2.86	1.582	1.000	-7.67	1.95
	Knife	-2.07	1.628	1.000	-7.02	2.88
	Vehicle	1.93	1.690	1.000	-3.20	7.07
	No Object	1.40	1.668	1.000	-3.68	6.47
	Undetermined	-.47	1.705	1.000	-5.65	4.71
	Miscellaneous	-2.04	1.660	1.000	-7.09	3.00
Miscellaneous	Gun	-.81	.595	1.000	-2.62	1.00
	Knife	-.03	.710	1.000	-2.18	2.13
	Vehicle	3.98*	.841	<.001	1.42	6.53
	No Object	3.44*	.797	<.001	1.02	5.86
	Undetermined	1.57	.872	1.000	-1.08	4.22
	Multiple	2.04	1.660	1.000	-3.00	7.09

Based on observed means.

The error term is Mean Square(Error) = 166.786.

*. The mean difference is significant at the .05 level.

Table 40

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2298.425[a]	2	1149.212	6.805	.001	.002
Intercept	2983462.897	1	2983462.897	17667.569	.000	.744
Alleged_Threat_Level	2298.425	2	1149.212	6.805	.001	.002
Error	1026033.650	6076	168.867			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .002 (Adjusted R squared = .002)

Table 41

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
36.410	.274	35.873	36.947

Table 42

2. Alleged_Threat_Level

Dependent Variable: Age

Alleged_Threat_Level	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Attack	37.441	.207	37.036	37.847
Other	36.349	.305	35.751	36.947
Undetermined	35.441	.735	34.001	36.881

Table 43

Multiple Comparisons

Dependent Variable: Age

Bonferroni

(I) Alleged_Threat_Level	(J) Alleged_Threat_Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Attack	Other	1.09*	.369	.009	.21	1.97
	Undetermined	2.00*	.763	.026	.17	3.83
Other	Attack	-1.09*	.369	.009	-1.97	-.21

	Undetermined	.91	.795	.761	-1.00	2.81
Undetermined	Attack	-2.00*	.763	.026	-3.83	-.17
	Other	-.91	.795	.761	-2.81	1.00

Based on observed means.

The error term is Mean Square(Error) = 168.867.

*. The mean difference is significant at the .05 level.

Table 44

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	22134.070[a]	2	11067.035	66.829	<.001	.022
Intercept	7505885.427	1	7505885.427	45324.836	.000	.882
Geographical_Location	22134.070	2	11067.035	66.829	<.001	.022
Error	1006198.005	6076	165.602			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .022 (Adjusted R squared = .021)

Table 45

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
37.198	.175	36.855	37.540

Table 46

2. Geographical_Location

Dependent Variable: Age

Geographical_Location	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Urban	34.740	.324	34.105	35.375
Suburban	36.738	.232	36.282	37.193
Rural	40.116	.341	39.448	40.783

Table 47

Multiple Comparisons

Dependent Variable: Age

Bonferroni

(I) Geographical_Location	(J) Geographical_Location	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Urban	Suburban	-2.00*	.398	<.001	-2.95	-1.04
	Rural	-5.38*	.470	<.001	-6.50	-4.25
Suburban	Urban	2.00*	.398	<.001	1.04	2.95
	Rural	-3.38*	.412	<.001	-4.36	-2.39
Rural	Urban	5.38*	.470	<.001	4.25	6.50
	Suburban	3.38*	.412	<.001	2.39	4.36

Based on observed means.

The error term is Mean Square(Error) = 165.602.

*. The mean difference is significant at the .05 level.

Table 48

Tests of Between-Subjects Effects

Dependent Variable: Age

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	14902.311[a]	3	4967.437	29.777	<.001	.014
Intercept	2706551.118	1	2706551.118	16224.408	.000	.728
Symptoms_of_Mental_Illness	14902.311	3	4967.437	29.777	<.001	.014
Error	1013429.763	6075	166.820			
Total	9356034.000	6079				
Corrected Total	1028332.075	6078				

a. R squared = .014 (Adjusted R squared = .014)

Table 49

1. Grand Mean

Dependent Variable: Age

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
37.840	.297	37.258	38.423

Table 50

2. Symptoms_of_Mental_Illness

Dependent Variable: Age

Symptoms_of_Mental_Illness	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Yes	39.858	.365	39.141	40.574
No	35.969	.204	35.569	36.370
Unknown	37.717	.500	36.737	38.697
Drug/Alcohol Use	37.817	.994	35.869	39.764

Table 51

Multiple Comparisons

Dependent Variable: Age

Bonferroni

(I) Symptoms_of_Mental_Illness	(J) Symptoms_of_Mental_Illness	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Yes	No	3.89*	.419	<.001	2.78	4.99
	Unknown	2.14*	.619	.003	.51	3.77
	Drug/Alcohol Use	2.04	1.059	.323	-.75	4.83
No	Yes	-3.89*	.419	<.001	-4.99	-2.78
	Unknown	-1.75*	.540	.007	-3.17	-.32
	Drug/Alcohol Use	-1.85	1.014	.412	-4.52	.83
Unknown	Yes	-2.14*	.619	.003	-3.77	-.51
	No	1.75*	.540	.007	.32	3.17
	Drug/Alcohol Use	-.10	1.112	1.000	-3.03	2.84
Drug/Alcohol Use	Yes	-2.04	1.059	.323	-4.83	.75
	No	1.85	1.014	.412	-.83	4.52
	Unknown	.10	1.112	1.000	-2.84	3.03

Based on observed means.

The error term is Mean Square(Error) = 166.820.

*. The mean difference is significant at the .05 level.

Table 52

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Race	Statistic	df	Sig.	Statistic	df	Sig.
Age	White	.079	2758	.000	.975	2758	<.001
	Black	.097	1535	.000	.936	1535	<.001
	Hispanic	.075	1076	.000	.960	1076	<.001
	Unknown	.084	482	.000	.975	482	<.001
	Pacific Islander	.149	42	.020	.947	42	.051
	Native American	.094	95	.037	.965	95	.012
	Asian	.076	91	.200*	.965	91	.016

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 53

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Gender	Statistic	df	Sig.	Statistic	df	Sig.
Age	Female	.066	280	.005	.971	280	<.001
	Male	.084	5799	.000			

a. Lilliefors Significance Correction

Table 54

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Cause_of_Death	Statistic	df	Sig.	Statistic	df	Sig.
Age	Gun	.084	5652	.000			
	Gunshot and Taser	.083	247	.000	.965	247	<.001
	Vehicle	.131	26	.200*	.928	26	.069
	No Object	.085	125	.027	.986	125	.208
	Undetermined	.142	10	.200*	.960	10	.781
	Multiple	.150	19	.200*	.932	19	.188

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 55

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Armed_Status	Statistic	df	Sig.	Statistic	df	Sig.
Age	Allegedly Armed	.086	4517	.000	.961	4517	<.001
	Unclear	.080	443	.000	.972	443	<.001
	Vehicle	.098	411	.000	.954	411	<.001
	Unarmed	.070	708	.000	.963	708	<.001

a. Lilliefors Significance Correction

Table 56

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Alleged_Weapon	Statistic	df	Sig.	Statistic	df	Sig.
Age	Gun	.093	3342	.000	.957	3342	<.001
	Knife	.078	837	.000	.972	837	<.001
	Vehicle	.097	414	.000	.956	414	<.001
	No Object	.069	504	.000	.967	504	<.001
	Undetermined	.084	366	.000	.961	366	<.001
	Multiple	.075	68	.200*	.974	68	.172
	Miscellaneous	.072	548	.000	.974	548	<.001

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 57

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Alleged_Threat	Statistic	df	Sig.	Statistic	df	Sig.
Age	Attack	.089	3952	.000	.958	3952	<.001
	Other	.077	1814	.000	.967	1814	<.001
	Undetermined	.092	313	.000	.947	313	<.001

a. Lilliefors Significance Correction

Table 58

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Geographical_Location	Statistic	df	Sig.	Statistic	df	Sig.
Age	Urban	.092	1579	.000	.955	1579	<.001
	Suburban	.082	3072	.000	.957	3072	<.001
	Rural	.077	1428	.000	.974	1428	<.001

a. Lilliefors Significance Correction

Table 59

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Symptoms_Mental_Illness	Statistic	df	Sig.	Statistic	df	Sig.
Age	Yes	.092	1250	.000	.966	1250	<.001
	No	.080	3992	.000	.960	3992	<.001
	Unknown	.092	668	.000	.961	668	<.001
	Drug/Alcohol Use	.105	169	.000	.964	169	<.001

a. Lilliefors Significance Correction

Table 60

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	27.112	6	6072	<.001
	Based on Median	23.979	6	6072	<.001
	Based on Median and with adjusted df	23.979	6	5942.493	<.001
	Based on trimmed mean	27.000	6	6072	<.001

Table 61

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	.038	1	6077	.845
	Based on Median	.121	1	6077	.728
	Based on Median and with adjusted df	.121	1	6076.999	.728
	Based on trimmed mean	.064	1	6077	.800

Table 62

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	2.737	5	6073	.018
	Based on Median	2.273	5	6073	.045
	Based on Median and with adjusted df	2.273	5	6051.020	.045
	Based on trimmed mean	2.557	5	6073	.026

Table 63

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	22.132	3	6075	<.001
	Based on Median	17.849	3	6075	<.001
	Based on Median and with adjusted df	17.849	3	5944.755	<.001
	Based on trimmed mean	21.060	3	6075	<.001

Table 64

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	16.062	6	6072	<.001
	Based on Median	12.452	6	6072	<.001
	Based on Median and with adjusted df	12.452	6	5791.581	<.001
	Based on trimmed mean	15.033	6	6072	<.001

Table 65

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	5.656	2	6076	.004
	Based on Median	3.876	2	6076	.021
	Based on Median and with adjusted df	3.876	2	6046.359	.021
	Based on trimmed mean	5.119	2	6076	.006

Table 66

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	15.828	2	6076	<.001
	Based on Median	15.230	2	6076	<.001
	Based on Median and with adjusted df	15.230	2	6041.200	<.001
	Based on trimmed mean	16.065	2	6076	<.001

Table 67

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Age	Based on Mean	14.523	3	6075	<.001
	Based on Median	11.711	3	6075	<.001
	Based on Median and with adjusted df	11.711	3	6015.877	<.001
	Based on trimmed mean	13.848	3	6075	<.001

Table 68

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
White	2758	40.09	13.278	.253	39.59	40.58	6	91
Black	1535	32.52	11.421	.292	31.94	33.09	13	88
Hispanic	1076	33.54	10.875	.332	32.89	34.19	6	80
Unknown	482	42.63	14.557	.663	41.32	43.93	15	89
Pacific Islander	42	34.62	11.994	1.851	30.88	38.36	15	60
Native American	95	32.24	8.755	.898	30.46	34.03	14	58
Asian	91	36.99	11.683	1.225	34.56	39.42	18	62
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 69

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	94.858	6	335.510	<.001

a. Asymptotically F distributed.

Table 70

Multiple Comparisons

Dependent Variable: Age

Games-Howell

		Mean Difference			95% Confidence Interval	
(I) Race	(J) Race	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
White	Black	7.574*	.386	<.001	6.44	8.71
	Hispanic	6.545*	.417	<.001	5.31	7.78
	Unknown	-2.538*	.710	.007	-4.64	-.44
	Pacific Islander	5.470	1.868	.074	-.31	11.25
	Native American	7.847*	.933	<.001	5.04	10.65
	Asian	3.100	1.251	.179	-.67	6.86
Black	White	-7.574*	.386	<.001	-8.71	-6.44
	Hispanic	-1.028	.441	.230	-2.33	.27
	Unknown	-10.111*	.724	<.001	-12.25	-7.97
	Pacific Islander	-2.104	1.874	.918	-7.90	3.69
	Native American	.273	.944	1.000	-2.56	3.11
	Asian	-4.474*	1.259	.010	-8.26	-.69
Hispanic	White	-6.545*	.417	<.001	-7.78	-5.31
	Black	1.028	.441	.230	-.27	2.33
	Unknown	-9.083*	.741	<.001	-11.27	-6.89
	Pacific Islander	-1.075	1.880	.997	-6.88	4.73
	Native American	1.302	.957	.822	-1.57	4.17
	Asian	-3.445	1.269	.105	-7.26	.37
Unknown	White	2.538*	.710	.007	.44	4.64
	Black	10.111*	.724	<.001	7.97	12.25
	Hispanic	9.083*	.741	<.001	6.89	11.27
	Pacific Islander	8.008*	1.966	.003	1.98	14.04
	Native American	10.384*	1.116	<.001	7.06	13.71

	Asian	5.638*	1.393	.002	1.47	9.80
Pacific Islander	White	-5.470	1.868	.074	-11.25	.31
	Black	2.104	1.874	.918	-3.69	7.90
	Hispanic	1.075	1.880	.997	-4.73	6.88
	Unknown	-8.008*	1.966	.003	-14.04	-1.98
	Native American	2.377	2.057	.908	-3.89	8.65
	Asian	-2.370	2.219	.936	-9.09	4.35
Native American	White	-7.847*	.933	<.001	-10.65	-5.04
	Black	-.273	.944	1.000	-3.11	2.56
	Hispanic	-1.302	.957	.822	-4.17	1.57
	Unknown	-10.384*	1.116	<.001	-13.71	-7.06
	Pacific Islander	-2.377	2.057	.908	-8.65	3.89
	Asian	-4.747*	1.519	.034	-9.28	-.21
Asian	White	-3.100	1.251	.179	-6.86	.67
	Black	4.474*	1.259	.010	.69	8.26
	Hispanic	3.445	1.269	.105	-.37	7.26
	Unknown	-5.638*	1.393	.002	-9.80	-1.47
	Pacific Islander	2.370	2.219	.936	-4.35	9.09
	Native American	4.747*	1.519	.034	.21	9.28

*. The mean difference is significant at the 0.05 level.

Table 71

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Female	280	37.88	13.160	.786	36.33	39.43	6	91
Male	5799	36.97	13.000	.171	36.64	37.30	6	91
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 72

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	1.284	1	305.877	.258

a. Asymptotically F distributed.

Table 73

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gun	5652	37.01	13.073	.174	36.67	37.35	6	91
Gunshot and Taser	247	36.69	12.690	.807	35.10	38.28	15	78
Vehicle	26	31.08	11.541	2.263	26.42	35.74	15	63
No Object	125	38.91	10.941	.979	36.98	40.85	15	71
Undetermined	10	42.10	14.012	4.431	32.08	52.12	22	63
Multiple	19	35.11	8.373	1.921	31.07	39.14	23	50
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 74

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	2.498	5	53.906	.042

a. Asymptotically F distributed.

Table 75

Multiple Comparisons

Dependent Variable: Age

Games-Howell

(I) Cause_of_Death	(J) Cause_of_Death	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Gun	Gunshot and Taser	.317	.826	.999	-2.05	2.69
	Vehicle	5.932	2.270	.131	-1.06	12.92
	No Object	-1.903	.994	.398	-4.78	.97
	Undetermined	-5.091	4.434	.850	-20.83	10.65
	Multiple	1.904	1.929	.916	-4.21	8.02
Gunshot and Taser	Gun	-.317	.826	.999	-2.69	2.05
	Vehicle	5.615	2.403	.210	-1.67	12.90
	No Object	-2.220	1.269	.500	-5.86	1.42

	Undetermined	-5.408	4.504	.827	-21.18	10.36
	Multiple	1.587	2.084	.971	-4.84	8.01
Vehicle	Gun	-5.932	2.270	.131	-12.92	1.06
	Gunshot and Taser	-5.615	2.403	.210	-12.90	1.67
	No Object	-7.835*	2.466	.034	-15.27	-.40
	Undetermined	-11.023	4.975	.290	-27.35	5.30
	Multiple	-4.028	2.969	.752	-12.88	4.82
No Object	Gun	1.903	.994	.398	-.97	4.78
	Gunshot and Taser	2.220	1.269	.500	-1.42	5.86
	Vehicle	7.835*	2.466	.034	.40	15.27
	Undetermined	-3.188	4.538	.977	-18.98	12.61
	Multiple	3.807	2.156	.502	-2.78	10.39
Undetermined	Gun	5.091	4.434	.850	-10.65	20.83
	Gunshot and Taser	5.408	4.504	.827	-10.36	21.18
	Vehicle	11.023	4.975	.290	-5.30	27.35
	No Object	3.188	4.538	.977	-12.61	18.98
	Multiple	6.995	4.829	.700	-9.12	23.11
Multiple	Gun	-1.904	1.929	.916	-8.02	4.21
	Gunshot and Taser	-1.587	2.084	.971	-8.01	4.84
	Vehicle	4.028	2.969	.752	-4.82	12.88
	No Object	-3.807	2.156	.502	-10.39	2.78
	Undetermined	-6.995	4.829	.700	-23.11	9.12

*. The mean difference is significant at the 0.05 level.

Table 76

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Allegedly Armed	4517	37.88	13.361	.199	37.49	38.27	14	91
Unclear	443	35.83	11.101	.527	34.79	36.87	15	76
Vehicle	411	33.25	10.648	.525	32.22	34.29	15	77
Unarmed	708	34.38	12.270	.461	33.47	35.28	6	84
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 77

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	35.404	3	1012.942	<.001

a. Asymptotically F distributed.

Table 78

Multiple Comparisons

Dependent Variable: Age

Games-Howell

(I) Armed_Status	(J) Armed_Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Allegedly Armed	Unclear	2.055*	.564	.002	.60	3.51
	Vehicle	4.631*	.562	<.001	3.18	6.08
	Unarmed	3.508*	.502	<.001	2.22	4.80
Unclear	Allegedly Armed	-2.055*	.564	.002	-3.51	-.60
	Vehicle	2.575*	.744	.003	.66	4.49
	Unarmed	1.453	.701	.162	-.35	3.26
Vehicle	Allegedly Armed	-4.631*	.562	<.001	-6.08	-3.18
	Unclear	-2.575*	.744	.003	-4.49	-.66
	Unarmed	-1.123	.699	.376	-2.92	.68
Unarmed	Allegedly Armed	-3.508*	.502	<.001	-4.80	-2.22
	Unclear	-1.453	.701	.162	-3.26	.35
	Vehicle	1.123	.699	.376	-.68	2.92

*. The mean difference is significant at the 0.05 level.

Table 79

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Gun	3342	38.05	13.808	.239	37.58	38.52	14	91
Knife	837	37.26	11.893	.411	36.46	38.07	14	76
Vehicle	414	33.26	10.718	.527	32.22	34.29	15	77

No Object	504	33.80	11.561	.515	32.78	34.81	6	84
Undetermined	366	35.66	11.475	.600	34.48	36.84	16	76
Multiple	68	35.19	11.106	1.347	32.50	37.88	16	67
Miscellaneous	548	37.24	12.576	.537	36.18	38.29	13	83
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 80

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	18.809	6	699.556	<.001

a. Asymptotically F distributed.

Table 81

Multiple Comparisons

Dependent Variable: Age

Games-Howell

(I) Alleged_Weapon	(J) Alleged_Weapon	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Gun	Knife	.785	.475	.648	-.62	2.19
	Vehicle	4.790*	.578	<.001	3.08	6.50
	No Object	4.253*	.568	<.001	2.57	5.93
	Undetermined	2.387*	.646	.005	.48	4.30
	Multiple	2.857	1.368	.371	-1.29	7.01
	Miscellaneous	.813	.588	.811	-.93	2.55
Knife	Gun	-.785	.475	.648	-2.19	.62
	Vehicle	4.004*	.668	<.001	2.03	5.98
	No Object	3.467*	.659	<.001	1.52	5.41
	Undetermined	1.602	.727	.295	-.55	3.75
	Multiple	2.072	1.408	.761	-2.19	6.33
	Miscellaneous	.027	.676	1.000	-1.97	2.03
Vehicle	Gun	-4.790*	.578	<.001	-6.50	-3.08
	Knife	-4.004*	.668	<.001	-5.98	-2.03
	No Object	-.537	.737	.991	-2.71	1.64
	Undetermined	-2.403*	.798	.043	-4.76	-.04

	Multiple	-1.933	1.446	.833	-6.30	2.43
	Miscellaneous	-3.977*	.752	<.001	-6.20	-1.75
No Object	Gun	-4.253*	.568	<.001	-5.93	-2.57
	Knife	-3.467*	.659	<.001	-5.41	-1.52
	Vehicle	.537	.737	.991	-1.64	2.71
	Undetermined	-1.866	.791	.217	-4.20	.47
	Multiple	-1.396	1.442	.960	-5.75	2.96
	Miscellaneous	-3.440*	.744	<.001	-5.64	-1.24
Undetermined	Gun	-2.387*	.646	.005	-4.30	-.48
	Knife	-1.602	.727	.295	-3.75	.55
	Vehicle	2.403*	.798	.043	.04	4.76
	No Object	1.866	.791	.217	-.47	4.20
	Multiple	.470	1.474	1.000	-3.97	4.91
	Miscellaneous	-1.574	.805	.444	-3.95	.81
Multiple	Gun	-2.857	1.368	.371	-7.01	1.29
	Knife	-2.072	1.408	.761	-6.33	2.19
	Vehicle	1.933	1.446	.833	-2.43	6.30
	No Object	1.396	1.442	.960	-2.96	5.75
	Undetermined	-.470	1.474	1.000	-4.91	3.97
	Miscellaneous	-2.044	1.450	.795	-6.42	2.33
Miscellaneous	Gun	-.813	.588	.811	-2.55	.93
	Knife	-.027	.676	1.000	-2.03	1.97
	Vehicle	3.977*	.752	<.001	1.75	6.20
	No Object	3.440*	.744	<.001	1.24	5.64
	Undetermined	1.574	.805	.444	-.81	3.95
	Multiple	2.044	1.450	.795	-2.33	6.42

*. The mean difference is significant at the 0.05 level.

Table 82

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Attack	3952	37.44	13.240	.211	37.03	37.85	14	91
Other	1814	36.35	12.518	.294	35.77	36.93	6	88
Undetermined	313	35.44	12.572	.711	34.04	36.84	15	89
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 83

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	7.044	2	845.659	<.001

a. Asymptotically F distributed.

Table 84

Multiple Comparisons

Dependent Variable: Age

Games-Howell

(I) Alleged_Threat	(J) Alleged_Threat	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Attack	Other	1.092*	.362	.007	.24	1.94
	Undetermined	2.000*	.741	.020	.26	3.74
Other	Attack	-1.092*	.362	.007	-1.94	-.24
	Undetermined	.908	.769	.465	-.90	2.72
Undetermined	Attack	-2.000*	.741	.020	-3.74	-.26
	Other	-.908	.769	.465	-2.72	.90

*. The mean difference is significant at the 0.05 level.

Table 85

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Urban	1579	34.74	11.881	.299	34.15	35.33	13	77
Suburban	3072	36.74	13.110	.237	36.27	37.20	6	91
Rural	1428	40.12	13.384	.354	39.42	40.81	6	89
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 86

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	67.493	2	3223.038	<.001

a. Asymptotically F distributed.

Table 87

Multiple Comparisons

Dependent Variable: Age

Games-Howell

(I) Geographical_Location	(J) Geographical_Location	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Urban	Suburban	-1.997*	.381	<.001	-2.89	-1.10
	Rural	-5.375*	.464	<.001	-6.46	-4.29
Suburban	Urban	1.997*	.381	<.001	1.10	2.89
	Rural	-3.378*	.426	<.001	-4.38	-2.38
Rural	Urban	5.375*	.464	<.001	4.29	6.46
	Suburban	3.378*	.426	<.001	2.38	4.38

*. The mean difference is significant at the 0.05 level.

Table 88

Geographical_Location * Race Crosstabulation

Count

		Race							
		White	Black	Hispanic	Unknown	Pacific Islander	Native American	Asian	Total
Geographical_Location	Urban	420	647	372	89	6	21	24	1579
	Suburban	1401	716	578	253	28	38	58	3072
	Rural	937	172	126	140	8	36	9	1428
Total		2758	1535	1076	482	42	95	91	6079

Table 89

Geographical_Location * Gender Crosstabulation

Count

		Gender		
		Female	Male	Total
Geographical_Location	Urban	63	1516	1579
	Suburban	157	2915	3072
	Rural	60	1368	1428
Total		280	5799	6079

Table 90

Descriptives

Age

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Yes	1250	39.86	13.998	.396	39.08	40.63	10	88
No	3992	35.97	12.482	.198	35.58	36.36	6	91
Unknown	668	37.72	13.590	.526	36.68	38.75	6	89
Drug/Alcohol Use	169	37.82	11.881	.914	36.01	39.62	16	77
Total	6079	37.01	13.007	.167	36.69	37.34	6	91

Table 91

Robust Tests of Equality of Means

Age

	Statistic[a]	df1	df2	Sig.
Welch	27.077	3	679.255	<.001

a. Asymptotically F distributed.

Table 92

Multiple Comparisons

Dependent Variable: Age

Games-Howell

(I) Symptoms_Mental_Illness	(J) Symptoms_Mental_Illness	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Yes	No	3.888*	.442	.000	2.75	5.03
	Unknown	2.141*	.658	.006	.45	3.83
	Drug/Alcohol Use	2.041	.996	.173	-.54	4.62
No	Yes	-3.888*	.442	.000	-5.03	-2.75
	Unknown	-1.748*	.562	.010	-3.19	-.30
	Drug/Alcohol Use	-1.847	.935	.201	-4.27	.58
Unknown	Yes	-2.141*	.658	.006	-3.83	-.45
	No	1.748*	.562	.010	.30	3.19
	Drug/Alcohol Use	-.100	1.054	1.000	-2.82	2.62
Drug/Alcohol Use	Yes	-2.041	.996	.173	-4.62	.54
	No	1.847	.935	.201	-.58	4.27
	Unknown	.100	1.054	1.000	-2.62	2.82

*. The mean difference is significant at the 0.05 level.

Table 94

Gender * Cause_of_Death Crosstabulation

			Cause_of_Death						
			Gunshot	Gunshot and Taser	Vehicle	Taser Only	Beaten	Physical Restraint	Total
Gender	Female	Count	264a	8a	4a	4a	0a	0a	280
		Expected Count	260.3	11.4	1.2	5.8	.5	.9	280.0
		% within Gender	94.3%	2.9%	1.4%	1.4%	0.0%	0.0%	100.0%
		% within Cause_of_Death	4.7%	3.2%	15.4%	3.2%	0.0%	0.0%	4.6%
		Residual	3.7	-3.4	2.8	-1.8	-.5	-.9	
		Standardized Residual	.2	-1.0	2.6	-.7	-.7	-.9	
	Male	Count	5388a	239a	22a	121a	10a	19a	5799
		Expected Count	5391.7	235.6	24.8	119.2	9.5	18.1	5799.0
		% within Gender	92.9%	4.1%	0.4%	2.1%	0.2%	0.3%	100.0%

	% within Cause_of_Death	95.3%	96.8%	84.6%	96.8%	100.0%	100.0%	95.4%
	Residual	-3.7	3.4	-2.8	1.8	.5	.9	
	Standardized Residual	.0	.2	-.6	.2	.1	.2	
Total	Count	5652	247	26	125	10	19	6079
	Expected Count	5652.0	247.0	26.0	125.0	10.0	19.0	6079.0
	% within Gender	93.0%	4.1%	0.4%	2.1%	0.2%	0.3%	100.0%
	% within Cause_of_Death	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Cause_of_Death categories whose column proportions do not differ significantly from each other at the .05 level.

Table 95

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.942[a]	5	.077
Likelihood Ratio	8.956	5	.111
Linear-by-Linear Association	.975	1	.324
N of Valid Cases	6079		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is .46.

Table 96

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.040	.077
	Cramer's V	.040	.077
	Contingency Coefficient	.040	.077
N of Valid Cases		6079	

Table 97

Gender * Armed_Status Crosstabulation

			Armed_Status				
			Allegedly Armed	Unclear	Vehicle	Unarmed	Total
Gender	Female	Count	171$_a$	12$_a$	37$_b$	60$_b$	280
		Expected Count	208.1	20.4	18.9	32.6	280.0
		% within Gender	61.1%	4.3%	13.2%	21.4%	100.0%
		% within Armed_Status	3.8%	2.7%	9.0%	8.5%	4.6%
		Residual	-37.1	-8.4	18.1	27.4	
		Standardized Residual	-2.6	-1.9	4.2	4.8	
	Male	Count	4346$_a$	431$_a$	374$_b$	648$_b$	5799
		Expected Count	4308.9	422.6	392.1	675.4	5799.0
		% within Gender	74.9%	7.4%	6.4%	11.2%	100.0%
		% within Armed_Status	96.2%	97.3%	91.0%	91.5%	95.4%
		Residual	37.1	8.4	-18.1	-27.4	
		Standardized Residual	.6	.4	-.9	-1.1	
Total		Count	4517	443	411	708	6079
		Expected Count	4517.0	443.0	411.0	708.0	6079.0
		% within Gender	74.3%	7.3%	6.8%	11.6%	100.0%
		% within Armed_Status	100.0%	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Armed_Status categories whose column proportions do not differ significantly from each other at the .05 level.

Table 98

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	52.741[a]	3	<.001
Likelihood Ratio	45.392	3	<.001
Linear-by-Linear Association	41.836	1	<.001
N of Valid Cases	6079		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.93.

Table 99

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.093	<.001
	Cramer's V	.093	<.001
	Contingency Coefficient	.093	<.001
N of Valid Cases		6079	

Table 100

Gender * Alleged_Weapon Crosstabulation

			Alleged_Weapon							Total
			Gun	Knife	Vehicle	No Object	Undetermined	Multiple	Miscellaneous	
Gender	Female	Count	117$_{a}$	40$_{a, b}$	37$_{b, c}$	46$_{c}$	9$_{a}$	1$_{a, b, c}$	30$_{a, b, c}$	280
		Expected Count	153.9	38.6	19.1	23.2	16.9	3.1	25.2	280.0
		% within Gender	41.8%	14.3%	13.2%	16.4%	3.2%	0.4%	10.7%	100.0%
		% within Alleged_Weapon	3.5%	4.8%	8.9%	9.1%	2.5%	1.5%	5.5%	4.6%
		Residual	-36.9	1.4	17.9	22.8	-7.9	-2.1	4.8	
		Standardized Residual	-3.0	.2	4.1	4.7	-1.9	-1.2	.9	
	Male	Count	3225$_{a}$	797$_{a, b}$	377$_{b, c}$	458$_{c}$	357$_{a}$	67$_{a, b, c}$	518$_{a, b, c}$	5799
		Expected Count	3188.1	798.4	394.9	480.8	349.1	64.9	522.8	5799.0
		% within Gender	55.6%	13.7%	6.5%	7.9%	6.2%	1.2%	8.9%	100.0%
		% within Alleged_Weapon	96.5%	95.2%	91.1%	90.9%	97.5%	98.5%	94.5%	95.4%
		Residual	36.9	-1.4	-17.9	-22.8	7.9	2.1	-4.8	
		Standardized Residual	.7	-.1	-.9	-1.0	.4	.3	-.2	
Total		Count	3342	837	414	504	366	68	548	6079
		Expected Count	3342.0	837.0	414.0	504.0	366.0	68.0	548.0	6079.0
		% within Gender	55.0%	13.8%	6.8%	8.3%	6.0%	1.1%	9.0%	100.0%
		% within Alleged_Weapon	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Alleged_Weapon categories whose column proportions do not differ significantly from each other at the .05 level.

Table 101

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	56.768[a]	6	<.001
Likelihood Ratio	50.144	6	<.001
Linear-by-Linear Association	8.374	1	.004
N of Valid Cases	6079		

a. 1 cells (7.1%) have expected count less than 5. The minimum expected count is 3.13.

Table 102

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.097	<.001
	Cramer's V	.097	<.001
	Contingency Coefficient	.096	<.001
N of Valid Cases		6079	

Table 103

Gender * Alleged_Threat_Level Crosstabulation

			Alleged_Threat_Level			
			Attack	Other	Undetermined	Total
Gender	Female	Count	158_{a}	110_{b}	$12_{a, b}$	280
		Expected Count	182.0	83.6	14.4	280.0
		% within Gender	56.4%	39.3%	4.3%	100.0%
		% within Alleged_Threat_Level	4.0%	6.1%	3.8%	4.6%
		Residual	-24.0	26.4	-2.4	
		Standardized Residual	-1.8	2.9	-.6	
	Male	Count	3794_{a}	1704_{b}	$301_{a, b}$	5799
		Expected Count	3770.0	1730.4	298.6	5799.0
		% within Gender	65.4%	29.4%	5.2%	100.0%

	% within Alleged_Threat_Level	96.0%	93.9%	96.2%	95.4%
	Residual	24.0	-26.4	2.4	
	Standardized Residual	.4	-.6	.1	
Total	Count	3952	1814	313	6079
	Expected Count	3952.0	1814.0	313.0	6079.0
	% within Gender	65.0%	29.8%	5.1%	100.0%
	% within Alleged_Threat_Level	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Alleged_Threat_Level categories whose column proportions do not differ significantly from each other at the .05 level.

Table 104

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.525[a]	2	.002
Likelihood Ratio	11.936	2	.003
Linear-by-Linear Association	5.094	1	.024
N of Valid Cases	6079		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.42.

Table 105

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.045	.002
	Cramer's V	.045	.002
	Contingency Coefficient	.045	.002
N of Valid Cases		6079	

Table 106

Gender * Geographical_Location Crosstabulation

			Geographical_Location			
			Urban	Suburban	Rural	Total
Gender	Female	Count	63[a]	157[a]	60[a]	280
		Expected Count	72.7	141.5	65.8	280.0
		% within Gender	22.5%	56.1%	21.4%	100.0%
		% within Geographical_Location	4.0%	5.1%	4.2%	4.6%
		Residual	-9.7	15.5	-5.8	
		Standardized Residual	-1.1	1.3	-.7	
	Male	Count	1516[a]	2915[a]	1368[a]	5799
		Expected Count	1506.3	2930.5	1362.2	5799.0
		% within Gender	26.1%	50.3%	23.6%	100.0%
		% within Geographical_Location	96.0%	94.9%	95.8%	95.4%
		Residual	9.7	-15.5	5.8	
		Standardized Residual	.3	-.3	.2	
Total		Count	1579	3072	1428	6079
		Expected Count	1579.0	3072.0	1428.0	6079.0
		% within Gender	26.0%	50.5%	23.5%	100.0%
		% within Geographical_Location	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Geographical_Location categories whose column proportions do not differ significantly from each other at the .05 level.

Table 107

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.676[a]	2	.159
Likelihood Ratio	3.695	2	.158
Linear-by-Linear Association	.119	1	.731
N of Valid Cases	6079		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 65.77.

Table 108

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.025	.159
	Cramer's V	.025	.159
	Contingency Coefficient	.025	.159
N of Valid Cases		6079	

Table 109

Gender * Symptoms_of_Mental_Illness Crosstabulation

			Symptoms of Mental Illness				
			Yes	No	Unknown	Drug/Alcohol Use	Total
Gender	Female	Count	82$_a$	164$_b$	32$_{a, b}$	2$_b$	280
		Expected Count	57.6	183.9	30.8	7.8	280.0
		% within Gender	29.3%	58.6%	11.4%	0.7%	100.0%
		% within Symptoms_of_Mental_Illness	6.6%	4.1%	4.8%	1.2%	4.6%
		Residual	24.4	-19.9	1.2	-5.8	
		Standardized Residual	3.2	-1.5	.2	-2.1	
	Male	Count	1168$_a$	3828$_b$	636$_{a, b}$	167$_b$	5799
		Expected Count	1192.4	3808.1	637.2	161.2	5799.0
		% within Gender	20.1%	66.0%	11.0%	2.9%	100.0%
		% within Symptoms_of_Mental_Illness	93.4%	95.9%	95.2%	98.8%	95.4%
		Residual	-24.4	19.9	-1.2	5.8	
		Standardized Residual	-.7	.3	.0	.5	
Total		Count	1250	3992	668	169	6079
		Expected Count	1250.0	3992.0	668.0	169.0	6079.0
		% within Gender	20.6%	65.7%	11.0%	2.8%	100.0%
		% within Symptoms_of_Mental_Illness	100.0%	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Symptoms_of_Mental_Illness categories whose column proportions do not differ significantly from each other at the .05 level.

Table 110

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.671[a]	3	<.001
Likelihood Ratio	18.371	3	<.001
Linear-by-Linear Association	10.640	1	.001
N of Valid Cases	6079		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.78.

Table 111

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.054	<.001
	Cramer's V	.054	<.001
	Contingency Coefficient	.054	<.001
N of Valid Cases		6079	

Table 112

Gender * Race Crosstabulation

			Race			
			White	Black	Other	Total
Gender	Female	Count	175[a]	48[b]	57[b]	280
		Expected Count	127.0	70.7	82.3	280.0
		% within Gender	62.5%	17.1%	20.4%	100.0%
		% within Race	6.3%	3.1%	3.2%	4.6%
		Residual	48.0	-22.7	-25.3	
		Standardized Residual	4.3	-2.7	-2.8	
	Male	Count	2583[a]	1487[b]	1729[b]	5799
		Expected Count	2631.0	1464.3	1703.7	5799.0
		% within Gender	44.5%	25.6%	29.8%	100.0%
		% within Race	93.7%	96.9%	96.8%	95.4%
		Residual	-48.0	22.7	25.3	
		Standardized Residual	-.9	.6	.6	

Total	Count	2758	1535	1786	6079
	Expected Count	2758.0	1535.0	1786.0	6079.0
	% within Gender	45.4%	25.3%	29.4%	100.0%
	% within Race	100.0%	100.0%	100.0%	100.0%

Each subscript letter denotes a subset of Race categories whose column proportions do not differ significantly from each other at the .05 level.

Table 113

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.760[a]	2	<.001
Likelihood Ratio	34.716	2	<.001
Linear-by-Linear Association	27.805	1	<.001
N of Valid Cases	6079		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 70.70.

Table 114

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.076	<.001
	Cramer's V	.076	<.001
	Contingency Coefficient	.075	<.001
N of Valid Cases		6079	

Table 115

Directional Measures

			Value
Nominal by Interval	Eta	Cause_of_Death Dependent	.100
		Age Dependent	.041

Table 116

Directional Measures

			Value
Nominal by Interval	Eta	Symptoms_of_Mental_Illness Dependent	.120
		Age Dependent	.120

Table 117

Directional Measures

			Value
Nominal by Interval	Eta	Alleged_Weapon Dependent	.127
		Age Dependent	.123

Table 118

Directional Measures

			Value
Nominal by Interval	Eta	Geographical_Location Dependent	.171
		Age Dependent	.147

Table 119

Crosstab Count		Age				
		6	10	12	13	14
Cause_of_Death	Gunshot	3	1	1	1	3
	Gunshot and Taser	0	0	0	0	0
	Vehicle	0	0	0	0	0
	Taser Only	0	0	0	0	0
	Beaten	0	0	0	0	0
	Physical Restraint	0	0	0	0	0
Total		3	1	1	1	3

15	16	17	18	19	20	21	22	23
16	30	55	101	93	98	125	122	139
1	2	3	4	4	7	4	5	8
1	1	0	0	0	1	2	3	0
1	1	0	1	0	1	1	1	2

0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0	1
19	34	58	106	97	107	132	132	150

24	25	26	27	28	29	30	31	32
170	190	166	189	177	179	177	199	181
3	15	5	5	8	5	8	11	9
0	2	1	1	0	1	2	0	2
3	4	4	0	3	2	4	3	3
0	1	0	0	0	0	0	0	1
0	1	0	2	2	1	1	0	1
176	213	176	197	190	188	192	213	197

33	34	35	36	37	38	39	40	41
188	185	169	167	174	146	137	123	128
8	5	11	7	7	7	9	1	3
1	1	0	0	0	1	1	0	0
1	3	8	7	7	5	7	1	8
1	0	0	0	0	0	0	1	0
1	0	1	0	0	0	0	3	0
200	194	189	181	188	159	154	129	139

42	43	44	45	46	47	48	49	50
108	113	96	110	95	106	91	90	89
4	7	1	4	7	5	5	7	6
1	0	1	0	0	0	0	1	0
6	2	4	3	1	1	2	5	1
0	0	0	0	1	0	1	0	0
0	2	0	0	1	0	1	0	1
119	124	102	117	105	112	100	103	97

51	52	53	54	55	56	57	58	59
76	64	71	62	62	66	53	53	64
2	4	2	5	3	1	2	3	0

1	0	0	0	0	0	0	0	0
1	2	3	1	2	1	1	3	0
0	0	0	1	0	0	0	1	0
0	0	0	0	0	0	0	0	0
80	70	76	69	67	68	56	60	64

60	61	62	63	64	65	66	67	68
37	41	39	29	21	25	17	18	15
2	2	0	6	0	0	0	1	0
0	0	0	1	0	0	0	0	0
0	1	1	0	1	0	1	0	0
0	0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0	0
39	44	40	37	22	25	18	19	15

69	70	71	72	73	74	75	76	77
17	14	11	6	9	6	5	11	5
0	1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
17	15	12	6	9	6	5	12	5

78	79	80	81	82	83	84	85	86
1	2	2	3	3	3	3	1	2
1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
2	2	2	3	3	3	3	1	2

88	89	91	Total
1	1	2	5652
0	0	0	247
0	0	0	26
0	0	0	125
0	0	0	10
0	0	0	19
1	1	2	6079

Table 120

Crosstab Counts		Age				
		6	10	12	13	14
Symptoms_of_Mental_Illness	Yes	0	1	0	0	0
	No	2	0	1	1	3
	Unknown	1	0	0	0	0
	Drug/Alcohol	0	0	0	0	0
Total		3	1	1	1	3

15	16	17	18	19	20	21	22	23
2	8	9	10	10	20	16	22	29
14	23	42	77	80	75	98	94	102
3	2	6	17	7	10	16	12	17
0	1	1	2	0	2	2	4	2
19	34	58	106	97	107	132	132	150

24	25	26	27	28	29	30	31	32
31	37	26	35	35	39	34	50	37
121	149	126	147	127	121	126	131	137
22	21	18	9	23	20	26	24	19
2	6	6	6	5	8	6	8	4
176	213	176	197	190	188	192	213	197

33	34	35	36	37	38	39	40	41
35	32	37	42	42	28	33	24	24

137	133	124	108	125	114	106	90	88
24	26	17	22	16	12	13	12	24
4	3	11	9	5	5	2	3	3
200	194	189	181	188	159	154	129	139

42	43	44	45	46	47	48	49	50
21	28	22	24	18	22	24	29	22
77	82	63	79	72	74	62	54	59
16	8	14	11	12	12	11	18	11
5	6	3	3	3	4	3	2	5
119	124	102	117	105	112	100	103	97

51	52	53	54	55	56	57	58	59
22	17	18	20	20	21	13	19	20
53	43	38	43	37	37	37	33	37
4	9	17	4	9	9	4	6	4
1	1	3	2	1	1	2	2	3
80	70	76	69	67	68	56	60	64

60	61	62	63	64	65	66	67	68	69
11	11	12	16	9	8	4	4	6	9
24	26	19	17	8	15	9	13	7	6
3	6	6	4	4	1	5	2	2	1
1	1	3	0	1	1	0	0	0	1
39	44	40	37	22	25	18	19	15	17

70	71	72	73	74	75	76	77	78
3	3	4	4	1	1	3	2	1
10	6	2	5	3	3	5	2	0
2	3	0	0	2	1	4	0	1
0	0	0	0	0	0	0	1	0
15	12	6	9	6	5	12	5	2

79	80	81	82	83	84	85	86	88
2	0	1	1	1	3	0	1	1
0	2	2	1	2	0	1	0	0

0	0	0	1	0	0	0	1	0
0	0	0	0	0	0	0	0	0
2	2	3	3	3	3	1	2	1

89	91	Total
0	0	1250
0	2	3992
1	0	668
0	0	169
1	2	6079

Table 121

Crosstab Counts		Age				
		6	10	12	13	14
Alleged_Weapon	Gun	0	0	0	0	1
	Knife	0	0	0	0	1
	Vehicle	0	0	0	0	0
	No Object	3	1	1	0	0
	Undetermined	0	0	0	0	0
	Multiple	0	0	0	0	0
	Miscellaneous	0	0	0	1	1
Total		3	1	1	1	3

15	16	17	18	19	20	21	22	23
10	16	32	67	52	54	71	65	81
2	4	7	8	6	14	11	21	20
4	2	8	4	11	13	10	9	12
1	5	6	10	13	9	14	14	18
0	3	0	6	7	7	10	4	8
0	1	0	1	2	2	2	2	0
2	3	5	10	6	8	14	17	11
19	34	58	106	97	107	132	132	150

24	25	26	27	28	29	30	31	32
91	98	93	100	109	104	91	116	112
17	33	28	33	29	24	34	24	18

18	15	17	9	18	13	19	18	25
22	24	12	19	17	14	19	15	10
12	17	13	23	5	14	9	18	11
4	3	2	0	1	3	2	2	2
12	23	11	13	11	16	18	20	19
176	213	176	197	190	188	192	213	197

33	34	35	36	37	38	39	40	41
117	111	98	82	99	78	84	75	75
23	30	26	29	27	24	20	17	17
18	10	12	20	9	16	11	2	6
13	14	21	19	25	17	10	11	15
6	13	15	14	8	9	9	9	13
3	1	3	2	3	2	4	1	1
20	15	14	15	17	13	16	14	12
200	194	189	181	188	159	154	129	139

42	43	44	45	46	47	48	49	50
54	64	54	62	57	62	48	58	61
21	22	12	19	17	16	19	16	14
4	6	7	8	10	2	10	3	5
15	9	9	5	5	12	4	4	4
9	11	9	4	4	7	6	8	3
0	3	2	2	0	1	2	0	1
16	9	9	17	12	12	11	14	9
119	124	102	117	105	112	100	103	97

51	52	53	54	55	56	57	58	59
48	40	50	37	30	41	38	37	49
13	10	9	15	16	12	9	10	5
6	1	3	3	3	2	1	0	0
1	3	3	6	6	4	3	4	2
4	6	3	4	4	3	1	1	3
2	2	2	0	0	0	0	1	0
6	8	6	4	8	6	4	7	5
80	70	76	69	67	68	56	60	64

60	61	62	63	64	65	66	67	68
24	29	24	21	16	22	13	16	15
7	7	6	6	2	0	1	2	0
2	1	2	2	2	0	0	0	0
2	3	1	1	1	0	1	0	0
0	3	1	2	1	1	2	0	0
0	0	0	0	0	0	0	1	0
4	1	6	5	0	2	1	0	0
39	44	40	37	22	25	18	19	15

69	70	71	72	73	74	75	76	77
13	13	10	4	6	4	4	10	3
0	0	1	1	0	0	1	1	0
0	0	1	0	0	0	0	0	1
0	1	0	0	2	0	0	0	0
1	0	0	0	0	1	0	1	0
0	0	0	0	0	0	0	0	0
3	1	0	1	1	1	0	0	1
17	15	12	6	9	6	5	12	5

78	79	80	81	82	83	84	85	86
2	2	2	3	3	2	2	1	2
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0	0
2	2	2	3	3	3	3	1	2

88	89	91	Total
1	1	2	3342
0	0	0	837
0	0	0	414
0	0	0	504
0	0	0	366
0	0	0	68
0	0	0	548
1	1	2	6079

Table 122

Crosstab Counts		Age				
		6	10	12	13	14
Geographical_Location	Urban	0	0	0	1	1
	Suburban	2	1	0	0	1
	Rural	1	0	1	0	1
Total		3	1	1	1	3

15	16	17	18	19	20	21	22	23
5	12	16	41	31	30	43	43	47
12	19	38	48	56	57	71	66	86
2	3	4	17	10	20	18	23	17
19	34	58	106	97	107	132	132	150

24	25	26	27	28	29	30	31	32
62	65	45	49	55	57	57	53	60
81	107	87	104	94	98	102	113	92
33	41	44	44	41	33	33	47	45
176	213	176	197	190	188	192	213	197

33	34	35	36	37	38	39	40	41
68	54	47	43	55	36	34	26	35
96	93	102	88	91	86	83	68	70
36	47	40	50	42	37	37	35	34
200	194	189	181	188	159	154	129	139

42	43	44	45	46	47	48	49	50
29	31	22	24	22	28	26	26	23
58	68	47	65	59	51	50	49	41
32	25	33	28	24	33	24	28	33
119	124	102	117	105	112	100	103	97

51	52	53	54	55	56	57	58	59
17	15	9	15	16	15	10	11	12
41	30	40	29	30	32	25	26	28
22	25	27	25	21	21	21	23	24
80	70	76	69	67	68	56	60	64

60	61	62	63	64	65	66	67	68
8	7	6	10	2	3	3	3	1
20	25	21	16	9	13	7	11	10
11	12	13	11	11	9	8	5	4
39	44	40	37	22	25	18	19	15

69	70	71	72	73	74	75	76	77
3	2	1	1	2	1	0	3	1
7	6	6	3	3	3	4	6	1
7	7	5	2	4	2	1	3	3
17	15	12	6	9	6	5	12	5

78	79	80	81	82	83	84	85	86
0	0	0	0	0	0	0	0	0
1	1	2	2	3	2	3	1	2
1	1	0	1	0	1	0	0	0
2	2	2	3	3	3	3	1	2

88	89	91	Total
0	0	0	1579

1	0	2	3072
0	1	0	1428
1	1	2	6079

Appendix C

Institutional Review Board (IRB) Protocol Exemption Report

Institutional Review Board (IRB)
For the Protection of Human Research Participants

PROTOCOL EXEMPTION REPORT

Protocol Number: 04139-2021 **Responsible Researcher(s):** Matthew Capezzuto

Supervising Faculty: Dr. Bonnie Peterson

Project Title: *Perceived Racial Disparity in Police Use of Lethal Force.*

INSTITUTIONAL REVIEW BOARD DETERMINATION:

This research protocol is Exempt from Institutional Review Board (IRB) oversight under Exemption Category 4. Your research study may begin immediately. If the nature of the research project changes such that exemption criteria may no longer apply, please consult with the IRB Administrator (irb@valdosta.edu) before continuing your research.

ADDITIONAL COMMENTS:

- *Upon completion of this research study all collected data must be securely maintained (locked file cabinet, password protected computer, etc.) and accessible only by the researcher for a minimum of 3 years.*
- *At three years, post-study, all collected data is to be permanently destroyed.*

☒ ***If this box is checked, please submit any documents you revise to the IRB Administrator at irb@valdosta.edu to ensure an updated record of your exemption.***

Elizabeth Ann Olphie *02.19.2021*
Elizabeth Ann Olphie, IRB Administrator

Thank you for submitting an IRB application.
Please direct questions to irb@valdosta.edu or 229-253-2947.

Revised: 06.02.16