

Violence in St. Kitts and Nevis: A Retrospective Analysis of Homicides 2000-2018

Trina K. Kumodzi

Baltimore, MD

B.A., Barnard College of Columbia University, 2001

A.D.N., Community College of Baltimore County, 2012

B.S.N., Barnes-Jewish College Goldfarb School of Nursing, 2014

A Dissertation to the Graduate Faculty of the University of Virginia  
in Candidacy for the Degree of Doctor of Philosophy

School of Nursing

University of Virginia

December 2019

### **Acknowledgements**

I humbly acknowledge the support, protection, and goodwill of my friends and classmates, the School of Nursing, the Center for Global Health, the Bjoring Center for Historical Inquiry, my dissertation chair, Dr. Ishan Williams, my committee members, Dr. Jeanita Richardson, Dr. Susan Kools, and Dr. Aaron Pannone; Dean Dorrie Fontaine, and Dr. Kathryn Laughon. Thank you to Victoria Tucker, Jennifer McDaniels, Amanda St. Ivany, Eboni-Starr Floyd, Danielle Houston, Latrice Hairston, Maya Wright, Kelsie Kelly and Gabriela Paniagua-Stolz. Thank you to my Mom, my Aunt KK, and my brother, Jay.

## **Dedication**

I dedicate this to my daughters, Ruby-Rose, Ruth-Amelie, and Theo-Camille; and without question, my husband, William Kumodzi.

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## CHAPTER 1: PROJECT SUMMARY/ABSTRACT

The Federation of St. Kitts and Nevis (SKN), the smallest independent nation in the Americas, is classified as a high-income country with the highest annual per capita income in the Caribbean<sup>1</sup> and the third highest homicide rate in the region.<sup>2</sup> The fiscal, clinical, and social burdens of homicidal violence are formidable given the nation's small population and as a result in need of assessment. Furthermore, the per capita homicide rates for Caribbean nations of similar population size are lower.<sup>3</sup> Population-level incidence rates stratified by sex, parish, motive, age, and homicide location are not available, revealing a significant knowledge gap on a dangerous escalating trend. The broad goal of this program of research was to increase understanding of the direct and indirect effects of violence on human health and well-being through research, advocacy, and policy. The current research project aligned with the broad goal because it created a public health surveillance dataset useful to the Federation in developing policy initiatives. There was no dataset documenting homicidal incidence/prevalence rates, which is essential to understanding and minimizing the burden of homicidal violence in a two-island nation of approximately 55,000 people.<sup>4</sup>

To address the knowledge gap, this study's major objective was to utilize the retrospective data from two data sources (the police narratives of the violent incidents housed at each island's police headquarters) to determine the prevalence and distribution of homicidal violence, characterize the epidemiology of homicidal violence by sex and parish location, and examine what increases or decreases risk of homicidal death. For Aim 1, the Federation's incidence and prevalence rates of homicidal violence by sex, age group, island, and parish location of incident were calculated. For Aim 2, an analysis of both homicidal violence perpetration and victimization in Nevis was conducted in comparison to non-fatal violence

victimization and perpetration by examining nine factors: month and year of violent incident, victim demographics (age and sex), perpetrator demographics (age and sex), weapon used, parish location of incident, motive, type of location where the violence was committed (i.e. home, community, car, or work), and if the victim received any medical treatment, died at the hospital, or was found dead at the scene to determine what increases or decreases an individual's risk of homicidal death. With the conclusion of the study, similar methods may be scaled for implementation in other countries with similar challenges regarding violence.

## **PROJECT NARRATIVE**

This study quantified the burden of homicidal violence in the Federation of St. Kitts and Nevis (SKN) and identified risk factors using information from police reports. By combining the existing data from two separate sources, this study provided valuable information for assessing the prevalence and distribution of homicidal violence in SKN, among whom the factors responsible and the magnitude of the burden of this public health crisis are mostly unknown.

## SPECIFIC AIMS

Homicidal violence has increased in the Federation of St. Kitts and Nevis since 2001.<sup>5</sup> Five out of six of the adolescent deaths in 2011 were homicides.<sup>5</sup> That same year, the capital city of Basseterre had a per capita homicide rate of 131.6 per 100,000 people, earning it the unfortunate distinction as the city with the highest homicide rate in the world.<sup>3,6</sup> There were 103 homicides between 2006-2010, compared to 42 homicides between 2001-2005, an increase of 160% in the second half of the decade.<sup>5</sup> Saint Kitts and Nevis' 2012 homicide rate was 33.6 per 100,000 citizens, ranking the nation as the world's 8th highest homicide rate for that year.<sup>3</sup> Upward trends in homicides persisted into 2016 when there were 31 homicides in the Federation, all of which were firearm-related,<sup>7,8</sup> thus increasing the nation's homicide rate to 56.5 per 100,000 for the year. Nevis' homicides doubled from 4 people in 2016 to 8 people in 2017.<sup>2</sup>

The Ministries of Health for both islands in the Federation allocate most of their healthcare dollars towards prevention with a focus on reducing the incidence and financial burden of non-communicable diseases (NCDs). However, healthcare costs associated with violent encounters may strain the health system budget. Prehospital emergency medical response services, advanced life support technologies, and physical rehabilitation services to support people who survive violent encounters with debilitating injuries displace resources towards tertiary health care treatment. Funds that were allocated for NCD prevention must then be diverted towards emergency medical services. The problem is exacerbated by the fact that homicidal violence most often affects young people.<sup>3,5</sup> Consequently, national productivity is reduced while tertiary health and social welfare services are needed for an extended period to account for the young victim's potentially long lifespan after injury. **Without insight into the factors associated with SKN homicidal violence, developing targeted effective intervention**



**strategies to reduce homicidal violence is compromised.** This study focused on social determinants (i.e. the socioeconomic conditions/circumstances that support the uneven distribution of health and illness) in the affected population and provided some understanding into the risk factors of homicidal violence within the national population in general. Also valuable is this study's assessment of the characteristics of homicides to aid the Ministries of the Federation to target resources most effectively and efficiently.

The objective of this study was to utilize the retrospective data from two data sources (the police narratives of the homicides housed at each island's police headquarters) to determine the prevalence and distribution of homicidal violence, characterize the epidemiology of homicidal violence by sex and parish location, and examine what increases or decreases risk of homicidal death. The quantitative research design was necessary to create a profile of Kittitian and Nevisian homicide victims and perpetrators and to describe the circumstances, motives, and weapons used in the individual acts of homicide over the 19-year timeframe. The specific aims of this secondary data analysis study were:

**Aim 1. To determine the prevalence and distribution of homicidal violence in St. Kitts and Nevis.** A retrospective descriptive observational study design was conducted, and data gathered was used to calculate the overall incidence and prevalence rates of homicidal violence by sex, age group, island, and parish location for each incident.

**Aim 2. To examine factors and their relationship to risk of homicidal death.** Using a retrospective cohort design, an analysis comparing both homicidal and non-fatal violence perpetration and victimization in Nevis was conducted by examining nine factors: month and year of incident, victim demographics (age and sex), perpetrator demographics (age and sex), weapon used, island, parish location of incident, motive, type of location where the incident was

committed (home, community, car, or work), and if the victim received any medical treatment, died at the hospital, or was found dead at the scene to determine what factors increase or decrease risk of homicidal death.

This study used the police narratives for all violent incidents located in the Basseterre (St. Kitts) and Charlestown (Nevis) police headquarters. All data sources were selected for their high quality, as the police data also functions as informational repositories for the World Health Organization (WHO) and the Caribbean Public Health Agency (CARPHA). All available data was collected, and missing data was noted in limitations. Every attempt was made to leverage the data that was available for the study aims to be accomplished. The primary purpose of a surveillance system is to gather up-to-date data on changes that inform violence prevention initiatives.<sup>9</sup> Objective and comprehensive data collection is the first step to prevention. This study supports the WHO's ethos- "to develop effective prevention strategies, countries need to improve their information. In particular, countries need to know about the numbers and types of injuries that occur and about the circumstances in which those injuries occur."<sup>10</sup> This study has the unprecedented capacity of supplying the necessary information on homicidal violence in SKN because no such data source existed prior to this study. Additionally, the Federation values evidence-based decision-making and findings could potentially serve as a vital source of evidence to inform screening, policy, public health priorities, and future research both in this population and within the Caribbean.<sup>1,11</sup>

## **RESEARCH STRATEGY**

### **A. Background & Significance**

St. Kitts and Nevis (SKN), the smallest independent nation in the Americas, is a two-island federation with a population of approximately 55,000 people; over 75% of the population

resides in St. Kitts and less than 25% reside in Nevis.<sup>4,5</sup> It is classified as a high-income country with the highest annual per capita income in the Caribbean<sup>1</sup> and the third highest homicide rate in the region.<sup>2</sup> The two islands are geographically divided into 14 parishes, nine on St. Kitts and five on Nevis. A federal system is articulated in the Constitution with parallel Ministries on both islands. Nevis is autonomous in its domestic affairs. This is exemplified in the structure of the Federation's health care system. Each island has its own Ministry of Health but one Federation Chief Medical Officer.<sup>5</sup>

The national government is both the largest funder and provider of health care with all services offered free or at low out-of-pocket cost to the consumer.<sup>11</sup> SKN's 2010 per capita healthcare spending was \$370 USD while the United States spent approximately \$8,000 USD during the same year.<sup>12</sup> Thus, the SKN government concentrates on judicious disbursement of its resources to maximize favorable health outcomes.<sup>12</sup> The Ministries of Health for both islands in the Federation allocate most of their healthcare dollars towards prevention with a focus on reducing the incidence and financial burden of non-communicable diseases (NCDs).<sup>1,11</sup> However, healthcare costs associated with violent encounters put a tremendous strain on the health system budget. Currently, SKN does not collect tertiary care expenditure data. The emergency department at St. Kitts' largest hospital, Joseph N. France General Hospital, started collecting data on trauma care in 2011. Gunshot wounds were the 4<sup>th</sup> leading cause of trauma visits to the emergency department between 2011-2014.<sup>1</sup> Prehospital emergency medical response services, advanced life support technologies, and physical rehabilitation services to support people who survive violent encounters with debilitating injuries displace resources towards tertiary health care.

Registered nurses (RN) in SKN are the principal service providers in the prevention-based SKN healthcare system.<sup>5,13</sup> While RNs, physicians, and unlicensed personnel collaborate in the delivery of emergency, acute, and intensive care services at Joseph N. France Hospital and Mary Charles Hospital (St. Kitts) and the Alexandra Hospital (Nevis), RNs provide the majority of patient care and teaching at the community health centers (CHCs).<sup>5,13</sup> Seventeen CHCs are located within walking distance of every SKN resident and is wholly funded by the national government.<sup>11</sup> Advanced high-technology treatments heavily used in the care of violence victims such as dialysis and magnetic resonance imaging are not readily available, rendering patients at their most critical time to survive without these interventions until they are stable enough to potentially get these treatments in neighboring islands, funded at their personal expense or with private insurance.<sup>13</sup>

SKN registered nurses are integral to primary prevention efforts and the Federation has made remarkable progress towards the United Nations Millennium Development Goals.<sup>1,14</sup> However, more RNs are needed to make similar strides in violence-related morbidity/mortality. SKN has 6.4 nurses per 1,000 people compared to 9.4 nurses per 1,000 people in the United States.<sup>15</sup> While comparison under normal circumstances is inappropriate given the size and relative wealth of both countries, SKN and the U.S. have comparable public health dilemmas regarding homicidal violence. SKN's population is approximately 55,000 people while nearly 330 million people reside in the U.S. and both nations have rates of homicide that place them in global top ten rankings.<sup>3,16</sup> Firearms are the weapon most used in homicides committed in both countries.<sup>7,16,17</sup> Adolescents in the U.S. and SKN share homicidal violence as one of the top 2 leading causes of death in their age group.<sup>5,16</sup> A study of this kind may contribute to empowering nurse-driven trauma care, increase initiatives for a larger nursing workforce, and/or

redistribute the nursing workforce to optimize primary and tertiary health care service delivery. Therefore, the purpose of this study was to address both significant knowledge gaps regarding the causes of the Federation's increased homicidal violence and voids in its violence-related public surveillance data.

The fiscal, clinical, and social burdens of homicidal violence are formidable given the nation's small population and as a result in need of assessment. Furthermore, the per capita homicide rates for Caribbean nations of similar population size are lower.<sup>3</sup> Population-level incidence rates stratified by sex, parish, motive, age, and homicide location are not available, revealing a significant knowledge gap on an escalating trend.

## **B. Conceptual Framework**

A conceptual framework that recognizes direct violence as the visible result of persistent systemic maltreatment was necessary to address the specific aims of this research project. The conceptual violence framework was best suited to identifying and addressing institutionalized injustice embedded in policies, beliefs, and traditions as violence. Violence is generically defined as a destructive physical force that is harmful to a person or property.<sup>18</sup> The World Health Organization's seminal *World Report on Violence and Health* defines violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation".<sup>6,19</sup> Because of these definitions, the concept of violence is so nebulous that often people cannot recognize violence in its many forms, particularly when it is not a direct physical assault.

## Structural Violence within Homicidal Violence

Structural violence is violence that is difficult to recognize because it is not a visible and disruptive exchange between individuals or groups like direct violence.<sup>20</sup> Structural violence is violence built into the prevailing power structure, undetectable because of its stable and acceptable presence in all aspects of life. Direct violence differs from structural violence because there is a recognizable perpetrator-victim pattern of interaction. Both the perpetrator and the victim know that violence is being committed. The victim's death is achieved through direct force, an unacceptable criminal act punishable by the justice system. Whereas direct violence is identifiable, intentional, and personal, structural violence is invisible, independent of intention, and impersonal.<sup>20</sup>

Direct	vs.	Structural
Individuals		Social Groups
Visible		Invisible/latent
Intentional		Independent of intention
Criminality		Disparity
Face/Personal		Faceless/Impersonal
Death through direct force		Death through deprivation
Unacceptable		Normalized

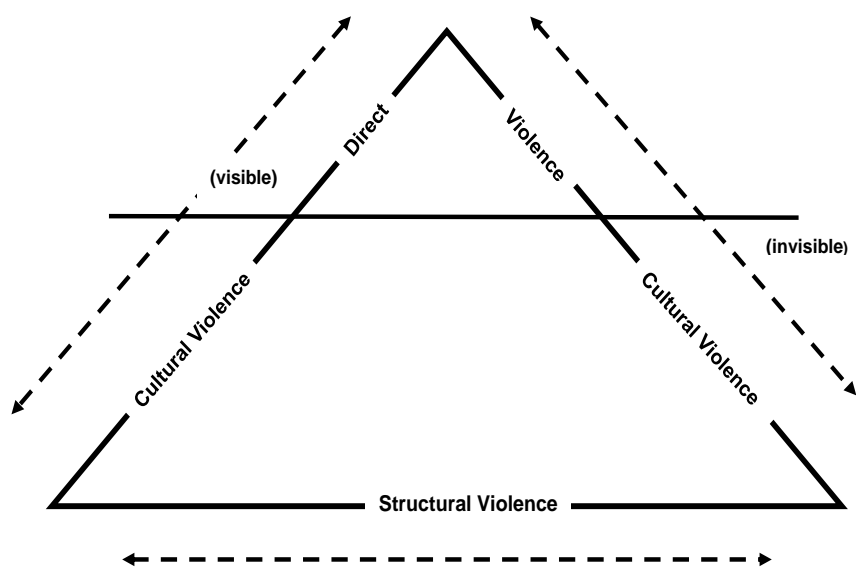
**Table 1. Defining attributes of direct and structural violence**

The victim's death occurs through deprivation, a normalized consequence of disparity. Table 1 is a comparison of direct and structural violence's defining attributes. The unequal distribution of power within the structure is embedded in the traditions and practices of all aspects of that structure so that the victims (and often, the perpetrators) cannot pinpoint a causal link and thus may be inclined not to notice it.

Direct violence is the visible manifestation of structural violence. Examining the patterns, populations, and trends of injury and death with a structural violence lens is needed to make these structures visible. There is no prominent perpetrator in structural violence and no concrete physical action. Consequently, it is easy to dismiss the reality of victims because the same causal relationship that is so apparent in direct violence is markedly absent. However, it cannot be presumed that structural violence does not cause as much pain as direct violence.<sup>20</sup>

Galtung (1969) described structural violence as a latent violence built within the social structures that maintains unequal distributions of resources and opportunities resulting in death and injury.

Paul Farmer, M.D. applied the concept to his macro-assessment of his clinical practice in developing nations, thus establishing structural violence's relevance to health care.<sup>21</sup> Farmer hypothesized that structural violence is supported by cultural violence through indirect endorsement of imbalanced social order and willing erasure of historical precedent.<sup>21</sup> Figure 1 is a concept map of structural violence. The concept map is a visual image of the visible and



**Figure 1. Structural violence concept map**

invisible representations of the same violence. Structural violence is the largest violence segment in the schema. It is the foundation. Like a foundation, it is constructed to support and stabilize yet it is invisible. Cultural violence, the actions and practices of people within society that passively or

actively endorse and re-enact prevailing inequities, is also invisible. Cultural violence reinforces structural violence. It is the framing that buttresses the foundation's strength. Direct violence is the smallest but the only visible part of the pyramid. Figure 2 is a structural violence concept map with both examples of structural, cultural, and direct violence (**in red**) along with the factors and outcome that were examined in the study (**in green**).

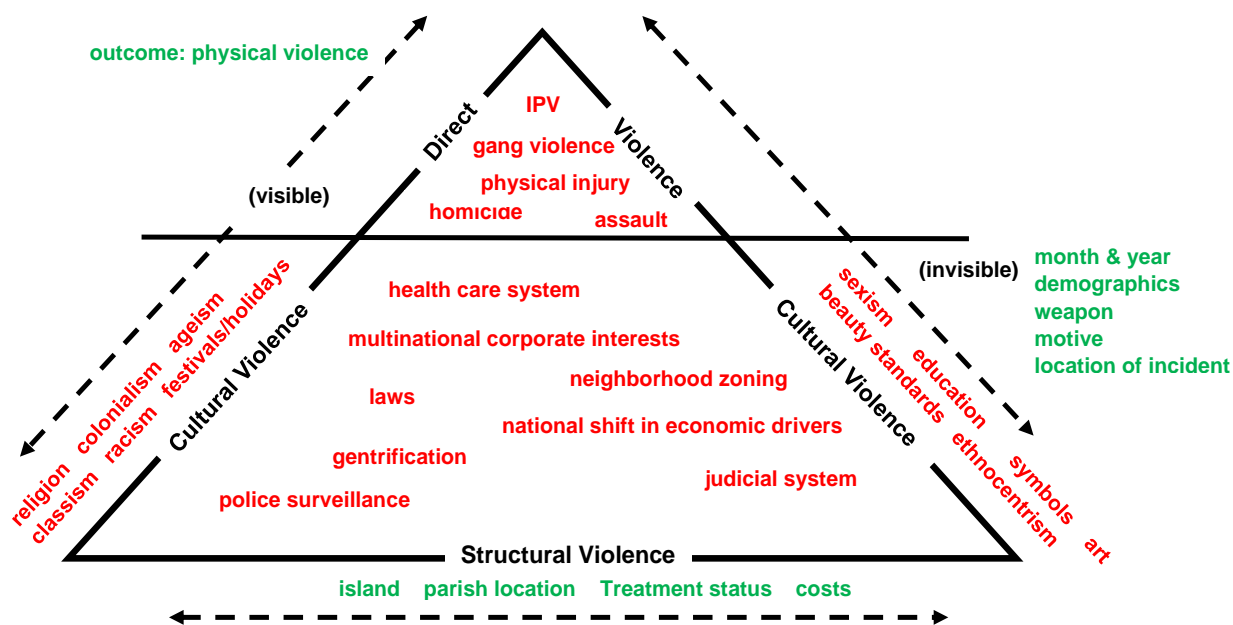


Figure 2. Structural violence concept map with examples and study factors

### Structural Violence as a Framework for the Study

Structural violence was a relevant framework for the study of homicidal violence in St. Kitts and Nevis because it provided socioeconomic, political, and historical context to the increase in homicidal violence over the past 19 years. Direct violence, the top of this pyramid, is a major public health problem. Firearm-related homicidal violence was the second leading cause of death in SKN men between 2006-2010.<sup>5</sup> This study was requested by the Federation's Former Chief Medical Officer and supported by their Ministries of Health and Police Force. The nation's healthcare and criminal justice systems (i.e. structures) are cognizant of their part in the current dismal situation and are eager to improve the sociopolitical structure by minimizing inequities.

Structural violence is a hybrid concept. It is both theoretical and empirical. It is relevant for its explanatory capacity and gives historical context to present-day health inequities.<sup>22</sup> While it is similar to the more frequently used term "social determinants of health," it is more



straightforward in identifying socioeconomic and political systems as the agents of poor health.<sup>22</sup> “Determinant” is vague and passive; there is no action. “Structural violence” asserts structural acts/inaction directly hurt people, further elucidating injustice while calling for change.<sup>22–24</sup> The empirical referents for structural violence are not assessed by clinical tools of measurement. Rather, the empirical referents are the statistical data that **quantifies disparity over time**. One cannot measure a concept that has generational lengths of time with a gradient scale: it is either present or it is not. While correlation is not proof of causation, conceptualization is the intellectual mechanism of defining human ways of knowing. Conceptualizing structural violence connects the human awareness of this concept to a clearer definition and a lens that makes the invisible visible.

### **C. Innovation of the Study**

This study was innovative in three ways. First, the availability of the data from various health care institutions and governmental agencies encouraged the development and use of a database that cross-links information from different data sources.<sup>25</sup> The Ministries of Health have collaborated extensively with other governmental sectors such as the Ministries of Education in public health prevention interventions. Second, the strength for using the proposed datasets for this analysis was that two separate government sectors provided support for the larger public health dataset. This dataset is the first collaboration between the Ministries of Health and the Police Force to address a threat to public health.

Current published literature regarding violence is predominantly focused at the individual intervention level with the intent of changing the individual’s behaviors and attitudes towards violence. Third, the findings from this study have deepened our understanding of the complex social determinants that influence homicidal violence. The future trajectory for this research is

aligned with the NIH's two-fold actionable objectives of data-sharing for all funded research with annual costs over \$500,000 and calls for projects that are secondary analysis of existing data.<sup>25,26</sup>

### **Implications for Nursing Practice**

The concept of structural violence is important to nursing because of the detrimental (and often, deadly) impact it has on the health of the population. While research on physical, sexual, and psychological violence is limited, research situating personally experienced violence within larger sociopolitical structures is even more scarce.<sup>27</sup> Individual acts of violence are often reduced to the implications for the individual and the perpetrator(s), ignoring how prevailing sociopolitical structures inform separate acts of violence.<sup>27</sup> Nurses will care for patients along the continuum of violence-related injuries. A violent act may register as unique to the victim, but a practicing nurse may perceive it in relation to the types and numbers of patients affected during a particular portion of or their entire career.<sup>28</sup> Thus, nurses are ideal members of the health care system to address violence and its sequelae. While this care is important at the individual level, nurses can do more to extend their care beyond the bedside. Nurses are at the forefront of caring for these victims and understand the burdens of interpersonal violence on healthcare yet are not as optimally involved in policy-making where prevention is possible.<sup>28</sup> A shift from treating interpersonal violence strictly as a criminal issue is greatly needed to reduce the incidence and prevalence. Conceptualizing the large-scale impact and magnitude of interpersonal violence is to see it as structural violence. Nurses are well positioned to impact a policy shift to include a public health primary prevention model.

## **Strategy and Methods**

The broad objective of this study was to analyze the prevalence and distribution of homicidal violence and perpetration. A retrospective descriptive observational research study design was used to examine Aim 1 and a retrospective descriptive cohort study design was used to examine Aim 2 in accordance with Jacobsen's *Introduction to Health Methods*.<sup>29</sup> Aim 2 utilized a cohort study design to determine the factors that increase or decrease the exposure status of homicidal death. The comparison groups had both been exposed to interpersonal violence that was reported to the police with different outcomes (i.e. exposure status). The exposure group were people in Nevis who had committed or been victims of interpersonal violence that resulted in homicidal death. The counterfactual were the people in Nevis who had committed or been victims of interpersonal violence that survived. The approach outlined the basic construct variables for each aim. See Table 2 for an outline of the methods and measures by aim.

### **Approach for Aim 1**

The goal of aim 1 was to determine the prevalence and distribution of homicidal violence in St. Kitts and Nevis. The hypotheses that fueled this aim were:

**H1a.** Both homicidal victimization and perpetration will be higher in SKN men than in women.

**H1b.** Homicidal violence will be higher in parishes with the highest levels of poverty.

### **Approach for Aim 2**

The goal for aim 2 was to examine sociodemographic factors and their relationship to risk of homicidal death. The hypothesis associated with this aim was that multiple factors influenced the increase or decrease in the risk of homicidal death.

## **Sampling Plan**

The 2000-2018 physical violence-related police narratives for the St. Kitts and Nevis Police Force were analyzed with the following inclusion criteria:

1. All Kittitian & Nevisian citizens, residents, or visitors to SKN who had either perpetrated and/or been a victim of physical violence while in the Federation between 1 January 2000 to 31 December 2018.

Specifying the inclusion and exclusion criteria was essential to reducing controlling bias and generalizability.<sup>30</sup> Attrition and refusal rates were not applicable to this study as the data included in the two datasets did not require participation on the victim or perpetrator's part.

## **Procedures**

This study was submitted for review and ultimately approved by the Institutional Review Boards (IRB) at the University of Virginia and the Federation's Interim Ethics Review Committee (IERC). The Principal Investigator (PI) secured the Verification of Ministry of Health (MOH) and Police Commissioner Support prior to pursuing institutional review board approvals. Detailed procedures for the study included:

1. Identify the eligible data within the respective databases.
2. Apply the inclusion criteria.
3. Analyze the data in consultation with the Statistician.

The PI reviewed the individual police reports for information pertaining to the incident. Information relevant to individual legal proceedings was not disclosed in these documents, nor was there any interest in following up on any results of the legal case. Police reports contain general demographic information and general motive as defined by the following labels: altercation, larceny, retaliation, rape, intimate partner violence (IPV), or unknown. Information

regarding personal motives beyond what was captured by the labels was irrelevant and was not reviewed or recorded. Demographic information was limited to the month and year the incident was committed, age, sex, and weapon type for both the victim and the perpetrator, and the geographic location of the incident at the parish level (see Police Narrative Data Collection Form). No names of victims or potential perpetrators or addresses of specific crime scenes were collected.

The PI intended to review medical billing records at each island's respective hospital for information pertaining to the costs associated with caring for homicidal violence victims. Collecting data from these records were contingent upon access. While access was granted to the records, the records did not have the necessary information to calculate the related tertiary healthcare service costs as this data is not systematically collected/tabulated by the Federation or the hospitals. As a result, the study proceeded using data exclusively from the police reports. Two variables in Aim 2 pertained to medical treatment status: died at home or in the hospital for homicide victims and victim received medical treatment-yes or no for non-fatal violence victims. The two variables pertaining to treatment status in Aim 2 provided healthcare-related information that proved substantial on its own. The data collected with these two variables may provide the MOH with information regarding the effectiveness of their emergency medical services (how many homicide victims lived long enough to receive any medical treatment) and the burden of violence-related injuries on the health care system (how many violence victims received medical treatment). Thus, meaningful treatment-related information was gleaned solely from the police narratives that may inform future nurse and medical care decisions in SKN.

## **Analyses**

The analyses were conducted in accordance with the study aims. Table 4 details the study aims, their corresponding variables, and the method of analysis. All analyses were done using IBM SPSS for Statistics 26 software. Data extracted from the police reports provided descriptive statistical analyses for Aim 1 at the population-level for the variables sex, age group, island, and parish location of incident. Aim 2 exclusively mined the police narratives only. Multinomial logistic regression was used to determine the effects of time (month and year), victim demographics, perpetrator demographics, weapon type, island, parish, motive, and incident location type on risk of homicidal death. Pearson's chi-square tests, descriptive statistics, odds ratios, relative risk ratios, and an autoregressive integrated moving average (ARIMA) time series analyses were calculated.

A two-tailed test was selected for both aims because it aligned with the goal of examining how an individual's demographic categories increase or decrease their risk of homicidal victimization or perpetration. As a result, the analysis was conducted recognizing the possibility of both a positive and negative effect. A one-tailed test would only present one direction. While a one-tailed test may support or refute the hypotheses, it is not the least biased approach to statistical analysis to take in a field of study that has high potential for personal bias. Thus, a two-tailed test was the most appropriate for the study.

**Potential Limitations and Strategies to Overcome.** There were three to consider:

- 1. Not involved in the original collection of data.** While the data in 2 databases were not collected with the intention of studying homicidal violence and its risk factors, the study aims and the databases were chosen specifically for their potential to answer the research questions and the research question was created to be answered through available data.

Thus, this limitation was overcome with proper alignment of the study aims and the available data.

- 2. Studying homicidal violence through victimization and perpetration.** Studying victimization and perpetration to learn about homicidal violence, particularly regarding weaponry, may initially seem disadvantageous. Firearm ownership is a protected right and a seriously contested issue. Consequently, there are no databases pertaining to firearms, firearm ownership, or firearm sales. As such, current studies must extract firearm information from legally collected sources pertaining to firearm victimization. This is the current state of the science due to data collection limitations. This was not overcome solely with this study. Rather, this study is one of the many required to advocate for firearm data collection and provide transparency to the public about the dearth of information.
- 3. Level of evidence.** This study was a secondary analysis of existing data in two separate databases. It is ethically impossible to conduct prospective randomized control trials regarding violent injury due to the potential for severe injury or mortality from the resulting wounds. Prospective cohort studies in violence have been conducted. While prospective studies in well-researched and funded clinical areas are typically ranked as a higher level of evidence than retrospective studies, prospective cohort studies in violence research are not as effective as analyzing existing data. Prospective cohort studies will only offer findings specific to the sample with the potential for application to a larger sample.<sup>31</sup> Conversely, the secondary analysis of existing high-quality nation-level data has the potential for population-level findings and subsequent interventions.<sup>25,32</sup>

Research teams and reviewers strictly following a traditional hierarchy of evidence will

justifiably appraise primary research studies as higher. However, a nuanced appraisal of analyses of existing data entails evaluating various evidence for its relative merit and strength.<sup>31</sup>

## **Timeline**

The research study timetable was presented schematically over a 10-month period, with the approximate start/stop dates for each phase (see Table 5). IRB submissions to the University of Virginia IRB-SBS, the St. Kitts and Nevis Interim Ethics Review Committee (IERC), and approvals from the Permanent Secretaries of Health and the Police Commissioner occurred during the first three months. Travel/living arrangements were finalized, and data was collected during months 4 and 5. Months 5 and 6 entailed data analysis in consultation with statistician. The completed three manuscripts will be submitted to targeted journals (see Table 6), the dissertation study defended, and preliminary findings disseminated during months 8-10. There were no enrollment or accrual issues to report as there were no human subjects involved in the study. Project tasks, other than IRB submission and approval, overlapped to keep within the timeline.

## **HUMAN SUBJECTS RESEARCH**

### **1. Risk to Human Subjects**

The study used quantitative methods to analyze data from two independent sources: the police reports of the violent incidents located at the St. Kitts' and the Nevis' respective island police headquarters to determine the prevalence and distribution of homicidal violence and characterize the epidemiology of homicidal violence by sex and parish location. The population was comprised of all visitors, residents, and citizens of SKN that have reported violence to the police during the 19-year timeframe. The number of violence victims totaled 878 ( $n = 353$



homicidal incidents,  $n = 525$  non-homicidal incidents). Likewise, the number of victims who received any form of medical treatment was 377 ( $n = 80$  homicidal incidents,  $n = 297$  non-homicidal incidents). There were no human subjects in this study. Human subject involvement was limited to the use of their data documented in the police reports. Victim names, potential perpetrator names, nor crime scene addresses were not collected.

Potential risks to the subjects: There was minimal risk to the subject(s) involved in the individual acts of violence as it involved only analysis of existing data. No participants were recruited, and no interventions were implemented. The potential for loss of confidentiality was low and the PI has extensive experience in maintaining confidentiality of such data in accordance with both UVa and IERC standards from previous research studies. A more detailed explanation of the various steps to ensure confidentiality throughout the entire research process is discussed in the next section.

## 2. Adequacy of Protection Against Risks

Informed consent: This study did not require contact with the participants whose information was analyzed. IRB approval, including waivers of informed consent and HIPAA authorization for this specific proposal was obtained prior to initiating the study.

Protection against risk: The focus of these police narratives was to provide detailed information about the scene of the crime upon police arrival. These reports are not collected for the purpose of determining identity of the perpetrator or innocence or guilt of a particular individual. It may be possible that information contained in the reports included details that may allow identities to be deduced. This was unavoidable because the population of St. Kitts and Nevis is small. The data that was collected was very limited (see attached data collection sheet) and is presented as aggregate data based on particular categories of interest. The data collected

was stripped of any identifiers and presented as aggregated totals. Therefore, the collected data and the resulting report do not contain any sensitive data.

Discussion of why risks are reasonable in relation to anticipated benefits to subjects:

There are no direct benefits to individuals. The benefits of this study will accrue to the MOH, Police Force, and the citizens of SKN because aggregate results of crime and violence may help public officials as well as involved citizens to better understand the nature of this problem. They may then use this information to frame future interventions to improve the health of the citizenry.

Importance of the knowledge to be gained: The study assessed factors related to homicidal violence in the Federation of St. Kitts and Nevis 2000-2018, and put this information into a dataset. There is currently no published dataset of its kind in the Caribbean. Synthesizing police record information with medical-related information, thereby driving structural-level interventions that are grounded in scientific evidence and not sociopolitical pressure.

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## Appendix A

**Table 2. Methods and Measures by Study Aims**

<b>Specific Aims</b>	<b>Methods</b>	<b>Software</b>
To determine the prevalence and distribution of homicidal violence in St. Kitts and Nevis.	<p>Design: Retrospective descriptive observational design</p> <p>Setting: Secondary data analysis</p> <p>Population: All homicide-related decedents and perpetrators in SKN 2000-2018</p>	IBM SPSS for Statistics 26 software
To examine factors and their relationship to risk of homicidal violence perpetration or victimization.	<p>Design: Retrospective cohort study</p> <p>Setting: Secondary data analysis</p> <p>Population: All visitors, residents, and citizens of SKN who experienced violence that was documented by the police from 2000-2018</p>	IBM SPSS for Statistics 26 software

**Table 3. Operationalization of Study Constructs**

<b>Construct</b>	<b>Variables/Coding</b>	<b>Level of Measurement</b>	<b>Instrument &amp; Source</b>
Homicide Factors	1) Year of Incident	1) Interval	Police Reports
	2) Month of Incident	2) Nominal	
	3) Victim Sex 0=Male 1=Female	3) Nominal <sup>a</sup>	
	4) Victim Age (# years)	4) Ratio	
	5) Perpetrator Sex 0=Male 1=Female	5) Nominal <sup>a</sup>	
	6) Perpetrator Age (# years)	6) Ratio	
	7) Weapon Used Knife, Blunt force trauma (BFT), Gun, Body part	7) Nominal	
	8) Island 2= St. Kitts 3=Nevis	8) Nominal <sup>a</sup>	
	9) Parish location of incident	9) Nominal	
	10) Motive Altercation, rape, IPV, larceny, retaliation	10) Nominal	
	11) Location type home, work, car, community, unknown	11) Nominal	
	12) Death location 4=DAH 5=DOA	12) Nominal <sup>a</sup>	

<sup>a</sup> Nominal treated as interval by dummy coding.

<b>Construct</b>	<b>Variables/Coding</b>	<b>Level of Measurement</b>	<b>Instrument &amp; Source</b>
Violence Factors	1) Year of Incident	1) Interval	Police Reports
	2) Month of Incident	2) Nominal	
	3) Victim Sex 0=Male 1=Female	3) Nominal <sup>a</sup>	
	4) Victim Age (# years)	4) Ratio	
	5) Perpetrator Sex 0=Male 1=Female	5) Nominal <sup>a</sup>	
	6) Perpetrator Age (# years)	6) Ratio	
	7) Weapon Used Knife, Blunt force trauma (BFT), Gun, Body part	7) Nominal	
	8) Island 2= St. Kitts 3=Nevis	8) Nominal <sup>a</sup>	
	9) Parish location of incident	9) Nominal	
	10) Motive Altercation, rape, IPV, larceny, retaliation	10) Nominal	
	11) Location type Home, work, car, community, unknown	11) Nominal	
	12) Received medical treatment? 4=Yes 5=No	12) Nominal <sup>a</sup>	

<sup>a</sup> Nominal treated as interval by dummy coding.



**Table 4. Analytic Methods by Study Aims**

Specific Aims	Variables	Analysis Methods
<b>Aim #1:</b> To determine the prevalence and distribution of homicidal violence in St. Kitts and Nevis.	Variables: 1. Sex 2. Age group 3. Island 4. Parish location of incident	Descriptive statistical analysis
<b>Aim #2:</b> To examine factors and their relationship to risk of homicidal violence perpetration or victimization.	<p>Independent variables:</p> <ol style="list-style-type: none"> <li>1. Month and year of violent incident</li> <li>2. Victim demographics [age and sex]</li> <li>3. Perpetrator demographics [age and sex]</li> <li>4. Weapon used</li> <li>5. Island</li> <li>6. Parish location of incident</li> <li>7. Motive</li> <li>8. Incident location type</li> <li>9. Victim DAH or DOA</li> <li>10. Victim received medical treatment? Y or N</li> </ol> <p>Dependent variable: Homicidal death</p>	<p>Descriptive statistical analyses</p> <p>Chi-square tests</p> <p>Multinomial logistic regression tests</p> <p>Odds ratios</p> <p>Relative risk ratios</p> <p>Autoregressive integrated moving average (ARIMA) time series analyses</p>

**Table 5. Timeline for Major Tasks of the Study by Months**

Months 1-3	Months 4-5	Months 5-6	Months 7-10
IRB submission/approval for: <ol style="list-style-type: none"> <li>1. University of Virginia IRB-SBS Archival</li> <li>2. St. Kitts and Nevis Interim Ethics Review Committee (IERC)</li> <li>3. St. Kitts Permanent Secretary of Health</li> <li>4. Nevis Permanent Secretary of Health</li> <li>5. Police Commissioner of National Police Force</li> </ol>	<ol style="list-style-type: none"> <li>1. Secured travel plans/living arrangements in SKN</li> <li>2. Data collection</li> </ol>	Analysis of data in consultation with statistician	<ol style="list-style-type: none"> <li>1. Manuscript submission</li> <li>2. Dissertation defense</li> <li>3. Disseminated findings</li> </ol>

**Table 6. Manuscripts with Intended Journals**

<b>Manuscript</b>	<b>Journal</b>
1. Violence in Nevis: An Analysis of Homicides of 2000-2017	<i>Injury Prevention</i>
2. Structural Violence: A Concept Analysis of Its Relevance to Nursing	<i>Advances in Nursing Science</i>
3. Violence in St. Kitts and Nevis: An Analysis of Homicides 2000-2018	<i>Journal of Nursing Scholarship</i>

**Police Narrative Data Collection Form for Homicidal Incidents**

DATE	VICTIM DATA				PERPETRATOR DATA			MOTIVE	PARISH HOMICIDE LOCATION	# PERPS
	Age	Sex	DOA/DAH	Loc. type	Age	Sex	Weapon type			

Weapon type: BFT, knife, gun, body part

DOA/DAH: Dead on arrival or died at hospital

Location type: Home, work, car, community

Motive labels: altercation, larceny, retaliation, rape, IPV, or unknown

St. Kitts parish location: St. George Basseterre, St. Peter Basseterre, St. Mary Cayon, Christ Church Nichola Town, St. John Capisterre, St. Paul Capisterre, St. Anne Sandy Point, St. Thomas Middle Island, Trinity Palmetto Point

Nevis parish location: St. Paul Charlestown, St. George Gingerland, St. John Figtree, St. Thomas Lowland, St. James Windward

**Police Narrative Data Collection Form for Violent Incidents**

DATE	VICTIM DATA					PERPETRATOR DATA			LABEL	MOTIVE	PARISH LOCATION	# PERPS
	Age	Sex	Tx? (Y/N)	Inj. Body Part	Loc. Type	Age	Sex	Weapon type				

**Weapon type:** BFT (bottle), knife (bottle), puncture, gun, body part

**Treatment:** Yes or No

**Location type:** Home, work, car, community

**Police Labels:** indecent assault, attempted murder, attempted rape, rape, assault with intent, grievous bodily harm, buggery, wounding w/ intent, shooting with intent, wounding, simple wounding, unlawful carnal knowledge, aggravated assault, incest

**Motive labels:** altercation, larceny, retaliation, rape, IPV, or unknown

**St. Kitts parish location:** St. George Basseterre, St. Peter Basseterre, St. Mary Cayon, Christ Church Nichola Town, St. John Capisterre, St. Paul Capisterre, St. Anne Sandy Point, St. Thomas Middle Island, Trinity Palmetto Point

**Nevis Parish location:** St. George Gingerland, St. Paul Charlestown, St. John Figtree, St. Thomas Lowland, St. James Windward

**CHAPTER 2**

MANUSCRIPT 1: Violence in Nevis: A Retrospective Analysis of Homicides 2000-2017

(Potential journal: *Injury Prevention*)

TITLE Violence in Nevis: A Retrospective Analysis of Homicides 2000-2017

Correspondence to Trina K Kumodzi, BSN, RN, CCRN, School of Nursing, University of Virginia, Charlottesville, VA 22908

AUTHORS Trina K Kumodzi (0000-0003-4911-1679)<sup>1</sup>, Jeanita W Richardson (0000-0001-9080-4026)<sup>2</sup>, Aaron Pannone (0000-0001-6035-2700)<sup>2</sup>, Susan Kools (0000-0001-5515-0995)<sup>1</sup>, Ishan C Williams (0000-0002-8329-9225)<sup>1</sup>

1. School of Nursing, University of Virginia, Charlottesville, VA, USA 22908

2. Department of Public Health Sciences, School of Medicine, University of Virginia, Charlottesville, VA, USA 22908

Word Count: 1500

### **Abstract**

The study objective was to determine the prevalence and distribution of homicidal violence in Nevis. A retrospective descriptive observational research study design was conducted to analyze police narratives of the homicides committed between 2000-2017. Eight variables were examined: Month/year of incident, motive, victim and perpetrator demographics, weapon, parish location of incident, type of location where the homicide was committed, and if the victim was found dead at the scene or died at the hospital. There were 67 homicides during this time, with an average victim age was 31.7 years. Firearms most used in male homicides, while knives and strangulation were most used in femicides. A significant correlation exists between female sex, motive, and parish. Women are more likely to be murdered in their intimate spaces than men. Findings provide insight for evaluating homicidal violence in Nevis. Data-informed policy and healthcare interventions may increase the efficacy of homicidal violence prevention efforts.

The Centers for Disease Control and Prevention recognize violence prevention as one of ten essential public health priorities to implement laws and policies that safeguards health and safety.<sup>1</sup> The global focus on prevention is echoed in the World Health Organization's (WHO) seminal World Report on Violence and Health's inclusive definition of violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation."<sup>2</sup> Both prominent organizations recognize violence as a threat to population health.

Homicidal violence has increased in the Federation of St. Kitts and Nevis (SKN) since 2001.<sup>3</sup> This manuscript considers homicidal violence specifically in Nevis, part of the two-island Federation of SKN in the Eastern Caribbean. With a population of approximately 12,000 people,<sup>3,4</sup> single digit increases in violence are noticeable and greatly impact national health. SKN's 2012 homicide rate was 33.6 per 100,000 citizens, ranking the nation as the world's 8th highest homicide rate for that year.<sup>5</sup> There were 31 SKN homicides in 2016,<sup>6,7</sup> increasing the nation's homicide rate to 56.5 per 100,000. Nevis' homicides doubled from 4 people in 2016 to 8 people in 2017.<sup>6</sup>

The Ministries of Health for both islands allocate most of their healthcare dollars towards prevention with a focus on reducing the incidence and financial burden of non-communicable diseases (NCDs).<sup>8,9</sup> However, healthcare costs associated with violent encounters strain the health system budget. Prehospital emergency medical response services, advanced life support technologies, and physical rehabilitation services to support people who survive violent encounters with debilitating injuries displace resources towards tertiary health care treatment. Funds allocated for NCD prevention must then be diverted towards emergency medical services.



This is counter to the Federation's preventive health care strategy and portends significant drains of the fiscal resources of a small nation. The problem is exacerbated by the fact that homicidal violence most often affects young people.<sup>3,5</sup> Consequently, national productivity is reduced while tertiary health and social welfare services are needed for an extended period to account for the young victim's potentially long lifespan post-injury.

The purpose of this study was to determine the prevalence and distribution of homicidal violence in Nevis through police report review and to create a public health surveillance dataset that will prove useful to the Ministry of Health and the Police Force. Both governmental agencies recognize homicidal violence has increased but they have no systematic data analysis to substantiate their concerns. The goal was to create a profile of Nevisian homicide victims and perpetrators and to describe the circumstances, motives, and weapons used in the individual acts of homicide. The surveillance data was designed to be easily integrated and disseminated to the entities who most need the information and are directly connected to violence prevention and control.<sup>10,11</sup> The primary objective of the surveillance system was to gather up-to-date data on changes that inform violence prevention initiatives.<sup>12</sup> The WHO states, "to develop effective prevention strategies, countries need to improve their information. In particular, countries need to know about the numbers and types of injuries that occur and about the circumstances in which those injuries occur."<sup>11</sup> Objective and comprehensive data collection is the first step to prevention, which aligns with the fundamental pillar of SKN's health system.

## **METHODS**

Secondary data analysis using a retrospective descriptive observational design was used to analyze all police reports of homicides in Nevis committed between 1 January 2000 through 31 December 2017. The reports were then coded using a predetermined set of variables. These

included eight variables: Month/year of homicidal incident, victim demographics (age and sex), perpetrator demographics (age and sex), weapon used, parish location of incident, motive, type of location where the homicide was committed (home, community, car, or work), and if victim died at the hospital or was found dead at the scene. Home and car, defined as belonging to the decedent(s), are both analyzed as separate locations and collapsed together under the term ‘intimate space,’ connoting personally delineated zones for confidential and informal communications. Community is defined as all locations outside of home, car, and work. Inclusion criteria were all Nevisian citizens, residents, or visitors to Nevis who have either perpetrated and/or been a victim of homicide while on the island between 1 January 2000 to 31 December 2017.

The individual police reports were reviewed for information pertaining to the incident. Reports contained general motive information as defined by the following labels: altercation, larceny, retaliation, rape, intimate partner violence (IPV), or unknown. Demographic information was limited to the year the incident was committed, age, sex, and weapon type for both the victim and the perpetrator, and the geographic location of the incident at the parish level. Information regarding personal motives beyond what is captured by the labels was irrelevant to the study goals and was not reviewed. No names of victims or potential perpetrators or addresses of specific crime scenes were collected. Descriptive statistics were calculated, and analytic strategies included correlations and autoregressive moving average time series analysis to predict potential future trends based upon past activity.

## **RESULTS**

The number of homicides totaled 67 over the period 2000-2017 (Figure 1). Victims between the ages 21-30 (44.8%) were the decade demographic with the highest number of

homicides. Victim age mean was 31.7 years. Most victims were between ages 11-40 (78%), thus verifying that homicide is a public health problem that acutely affects Nevisian young people. This is more pronounced in the female population, where 100% of femicide victims were between ages 11-40. Male victims were 90% of the sample, while females were 10% (Table 1). Only 35% of male victims and 43% of female victims lived long enough to receive any medical treatment at the hospital. More than half (57%) of the females were deceased when the police arrived at the crime scene.

<b>Age range</b>	<b>Count, total</b>	<b>Count, male</b>	<b>Count, female</b>	<b>Male (%)</b>	<b>Female (%)</b>
0-10	0	0	0	0	0
11-20	12	9	3	75	25
21-30	30	28	2	93	7
31-40	10	8	2	80	20
41-50	5	5	0	100	0
51-60	6	6	0	100	0
61+	4	4	0	100	0
All ages	67	60	7	90	10
Died at hospital	24	21	3	35	43
Dead on arrival	43	39	4	65	57

Of note, the two most impoverished Nevisian parishes are St. John (39.3%) and St. George (19.7%).<sup>3</sup> Approximately 20% of all homicides were in St. George, ranking it the parish with the second highest number of homicides. Conversely, St. John was the lowest ranking parish for overall homicides but was the highest in femicides. This is consistent with the

findings that most homicides are committed in the community rather than at home; for example, St. Paul parish, where the island's largest commercial city is located, has the highest rate at over 43% of total homicides. Nevisian homicides mostly occurred in the community with over 56% of total deaths committed in public spaces. Men were mostly victimized in community settings (60%).

While the home was the location for approximately 24% of all homicides (Table 2), it was the location for most femicides (43%). Results show another intimate setting, the car, is where nearly 10% of victims were attacked. When both home and car were collapsed together as intimate spaces, women were 2.5 times more likely to be murdered in their intimate spaces than men (71.4% vs. 28.4%).

<b>Table 2. Victim location by sex</b>						
	<b>Home</b>	<b>Work</b>	<b>Car</b>	<b>Community</b>	<b>Unknown</b>	<b>TOTAL</b>
<b>M</b>	13 (21.7%)	5 (8.3%)	4 (6.7%)	36 (60%)	2 (3.3%)	60
<b>F</b>	3 (42.8%)	0	2 (28.6%)	2 (28.6%)	0	7
<b>TOTAL</b>	16 (23.9%)	5 (7.5%)	6 (9%)	38 (56.6%)	2 (3%)	67 (100%)

The weapons most used in male homicides were firearms (Table 3). Knives (42.8%) and strangulation via body part (28.6%) were the lethal mechanisms most used in femicide. Firearms were used in nearly 30% of all femicides and only 20% of intimate partner-related femicides. Male intimate partners committed over 71% of femicides. Unfortunately, all parishes have a disproportionate number of homicides with unknown motive(s). Recommendations include updating the collected police reports with new information as the investigation continues. There is a strong correlation between female sex, motive, and parish ( $p < 0.05$ ). St. John is disproportionately high in IPV-motivated homicides.

**Table 3. Victim sex by weapon type**

	<b>Knife</b>	<b>Blunt force</b>	<b>Gun</b>	<b>Body part</b>	<b>TOTAL</b>
<b>M</b>	5 (8.4%)	2 (3.3%)	53 (88.3%)	0	60
<b>F</b>	3 (42.8%)	0	2 (28.6%)	2 (28.6%)	7
<b>TOTAL</b>	8 (11.9%)	2 (3.0%)	55 (82.1%)	2 (3.0%)	67 (100%)

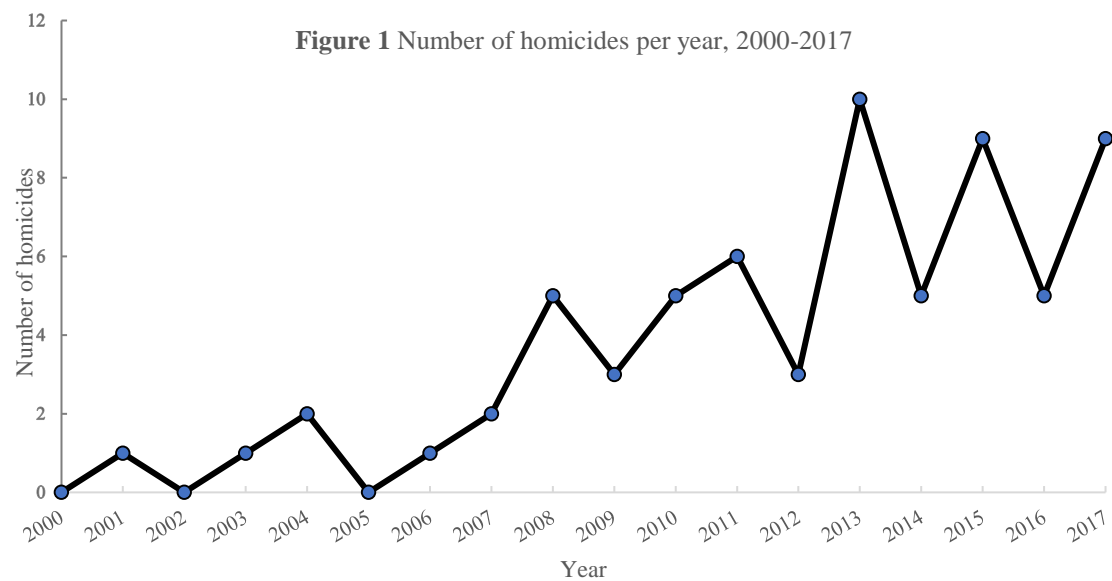
## **DISCUSSION**

Homicidal violence in Nevis has increased markedly in the last 8 years. There were 7.5 times more homicides between 2010-2017 (n=52) than between 2000-2007 (n=7). Nevis' 2011 per capita homicide rate was 48.9 per 100,000. As a distinct island as opposed to part of the Federation, it would rank as the Caribbean's second highest per capita homicide rate for that year, outpacing Jamaica's 2011 per capita rate of 41.7 per 100,000. St. John has the lowest number of homicides but the highest number of IPV-motivated deaths. Increased IPV screening and community-targeted initiatives may reduce island-level homicides in general and femicide in particular.

January and April were the months with the most homicides (9 per month) while July had only 1 homicide over the 18-year span. Cultural activities such as New Year's celebrations and the conclusion of Sugar Mas, SKN's annual carnival celebration, both increase the island's population and may influence homicidal activity. Several January homicides happened within the first 2 days of the year. January through April is peak tourism season. Increased patrolling, more street lighting in locations with heavy social activity, and more emergency medical services at the ready during this period may decrease violent altercations at best or decrease deaths from altercations at the least.

The preliminary analysis supports the need for constructive policies and initiatives to reduce the prevalence and distribution of homicidal violence in Nevis and illuminates significant issues that may be addressed with targeted interventions.

## Figures



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### CHAPTER 3

MANUSCRIPT 2: Structural Violence: A Concept Analysis of Its Relevance to Nursing

(Potential journal: *Advances in Nursing Science*)

TITLE: Structural Violence: A Concept Analysis of Its Relevance to Nursing

SHORT TITLE: Structural Violence and Nursing

ABSTRACT: The aims of this concept analysis are to (a) analyze structural violence as a concept relevant to nursing, (b) provide an operational definition which will make incidences of structural violence more recognizable and thus, preventable and/or treatable, and (c) assert direct violence as the visible manifestation of structural violence. The Chinn and Kramer method was used to conceptualize structural violence. The defining attributes of structural violence are provided, followed by a model and a contrary case to reveal the contextual influences and underlying values of structural violence. Researchers can apply this definition when exploring interventions and as a resource for future research in nursing.

AUTHORS: Trina Kumodzi, BSN, RN, CCRN; Susan Kools, PhD, RN, FAAN; Jeanita W. Richardson, PhD, M.Ed.; Aaron Pannone, PhD; and Ishan C. Williams, PhD, FGSA

KEYWORDS: structural violence; violence; nursing; concept analysis; social justice

## Structural Violence: A Concept Analysis of Its Relevance to Nursing

Nearly 2,000 people annually are killed by their intimate partners in the United States,<sup>1</sup> and American youth between 20-24 have the highest risk of both fatal and non-fatal firearm-related interpersonal injury.<sup>2</sup> People may think about violence constantly because they are accosted with the latest instances of violence that are often broadcasted on television or the internet. As a result, it may be assumed that violence, in some way, has affected them, or violence that has affected their loved ones. Because of the bombardment of violent images and reports, there is often a considerable amount of time spent pondering acts of violence. But time spent thinking about actual violence that has occurred is not the only way people think about it. People also spend considerable time thinking about how to avoid violence.<sup>3</sup> This is a logical response, because violence affects one's well-being, so preventing it and addressing its impact are essential to good health.<sup>4</sup>

There does not appear to be a consistent definition of violence both in the general population and in the scientific literature. The most commonly used definition represents violence as a destructive physical force that is harmful to a person or property.<sup>5</sup> The World Health Organization's seminal *World Report on Violence and Health* defines violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation."<sup>3</sup> Because of these incongruent definitions, the concept of violence can be nebulous such that often people cannot recognize violence in its many forms, particularly when it is not a direct physical assault.

The aim of this concept analysis is to better understand *structural violence* as a concept with the intention of making incidences of structural violence more recognizable and thus, preventable and/or treatable. This paper will describe what is meant by direct violence, cultural violence, and the two types used together to define the concept of structural violence. Empirically, understanding the different types of violence and their sequelae informs future research into the prevailing structural causes of violence and effective interventions to overcome them.

## **Background**

Research examining structural violence as a phenomenon began with sociologist Dr. Johan Galtung. Galtung developed the discipline of peace studies and formalized the concept of structural violence in his seminal work, “Violence, Peace, and Peace Research”.<sup>6</sup> Galtung described structural violence as latent violence built within the social structures that maintains unequal distributions of resources and opportunities resulting in death and injury.<sup>6</sup> He posits that the latent nature of structural violence in Judeo-Christian terms of “sin” and “virtue”, whereby the actions and circumstances of individuals or groups can be appraised as “worthy” or “earned.” Through situating structural violence within Judeo-Christian mores, the actions have no identifiable agents where one can place blame, or the “sin,” while the circumstances of the hurt individual(s) are justifiable, or “earned.” Structural violence as a theory is a means of recognizing and critiquing the macro-level machinery of injustice.<sup>6,7</sup>

Paul Farmer, M.D., during his clinical practice in rural Haiti, contemplated his patient’s vast and persistent suffering as the consequence of social/global inequities.<sup>8</sup> These inequities manifested as disproportionately high rates of AIDS and tuberculosis-related morbidity and

mortality. He embedded the modern epidemic level suffering he witnessed within the history and political economy of postcolonial Haiti.<sup>8</sup> He applied the concept to the macro-assessment of his clinical practice in developing nations, thus establishing structural violence's relevance to health care.<sup>8</sup> Farmer hypothesized that structural violence is supported by cultural violence through indirect endorsement of imbalanced social order and willing erasure of historical precedent.<sup>8</sup>

Structural violence was then applied to nursing theory in the textbook *Philosophies and Practices of Emancipatory Nursing: Social Justice as Praxis*.<sup>9</sup> The textbook discussed the application of both structural violence and social justice to nursing theory, clinical practice, and community advocacy.<sup>9</sup> Jacqueline Choiniere and colleagues conceptualized structural violence and how nurses in the mental health specialty experience it in their daily practice.<sup>10</sup> In this qualitative study, the nurses expose the machination of structural violence in their stories of their daily work lives, most notably in facility-level normalization of the intense physical violence they endure and escalating demands for higher standards of care despite fewer staff and scant resources.<sup>10</sup> The Choiniere study was one of the first nursing research studies to use structural violence as a lens to see the manifestation of system-level inequities in the direct violence meted out to mental health nurses.

Physicians Nathan Bahr and John Song applied the structural violence concept to the systematic treatment of Sickle Cell Disease patients within health care and research institutions.<sup>11</sup> Sickle Cell Disease (SCD) and Cystic Fibrosis (CF) have similar prevalence rates in the U.S.<sup>11</sup> While prevalence is relatively the same, the racial and socioeconomic demographics of the two diseases are different. SCD is a genetic disease that primarily affects

Blacks, while CF is a genetic disease most prevalent in Whites.<sup>11</sup> SCD treatment has experienced little change over the years and research funding from non-profit philanthropic organizations were less than \$1 million. Conversely, CF treatment has experienced significant improvements in patient outcomes, with non-profit philanthropic research funding totaling over \$135 million.<sup>11</sup> Bahr and Song asserted that when the sickle cell population's health disparities are conceptualized as structural violence, then it is apparent how structural violence can harm certain patient populations in a system that is theoretically focused on the health of the entire nation.<sup>11</sup> Their use of the concept gave context and validity to patients with sickle cell experience as a population within a larger structure. It is an example of structural violence's clinical applicability.

## **Methods**

Concepts are foundational to theory development. A theory cannot withstand critique without well-defined concepts because the core elements lack a robust explanation that is empirically grounded.<sup>12</sup> A concept analysis is relevant to exploring all ways of knowing and experiencing the concept. The concept analysis method outlined by Chinn and Kramer<sup>13</sup> will be used to conceptualize the phenomenon. Chinn and Kramer's method is best suited to the conceptual analysis of structural violence because their method asserts contextual meaning is not grounded in objects but is situated in the empiric experience of the individual.<sup>14</sup> Structural violence by its nature is latent or invisible and can only be seen through the physical experience of the individual. Thus, Chinn and Kramer's method is most useful for clarifying and defining a concept embodying these attributes.

Conceptualization will be accomplished through model and contrary cases to reveal both contextual influence and underlying values. The social context will be examined. Chinn and Kramer's analysis method is heavily influenced by Walker and Avant's 8-step method.<sup>14</sup> Chinn and Kramer then modified Walker and Avant's steps to 5 with a greater focus on their method as a means of creating conceptual meaning. Chinn and Kramer differ from Walker and Avant's defined structure and function approach with support for the intellectual exploration of values and contexts within a concept. Their approach to concept analysis provides an intellectual space for the tentative nature of contextual phenomena. The five steps are as follows: (1) select a concept; (2) clarify purpose; (3) identify data sources; (4) explore context and values; and (5) formulate criteria.<sup>14</sup> All steps were addressed in the analysis of structural violence.

Additionally, the defining attributes, a model case, and a contrary case were included to assist nurses with easier comprehension and identification of structural violence in the clinical environment and social justice advocacy in society-at-large.

### **Data Source**

The PRISMA protocol statement guided the search of the literature. Inclusion and exclusion criteria were used in accordance with the aim of the study. Figure 1 illustrates the literature search process. This literature search used three strategies: electronic searching, ancestral searching, and hand-searching of journals known to publish articles pertaining to concept analyses. An electronic keyword search was conducted using the PubMed, OVID Medline, CINAHL, Web of Science, and Google Scholar databases. The search employed keywords and MeSH terms in one main search topic area: structural violence. MeSH terms or keywords for structural violence included structural violence, structural violence theory, and

structural violence concept analysis. Consistent with the Chinn and Kramer method, the search was inclusive of literature, books, philosophical, and original research that included qualitative, quantitative, or mixed methods methodology written in English that examined some aspect of structural violence. The initial search was conducted in November 2016, followed by a second search in December 2018.

The inclusion criteria were comprised of four components related to structural violence: (1) discussed structural violence as a concept; (2) had philosophical relevance to the concept; (3) if a clinical study, interpersonal violence was the clinical issue; and (4) peer-reviewed research published in academic journals and texts. Limitations were set to exclude non-human structural violence and sources not published in English. Citations referenced in the articles were reviewed to find additional relevant studies. All titles and abstracts were reviewed for relevance. The resulting 14 research studies included in this review were examined in their entirety.

## **Results**

### **DEFINING ATTRIBUTES**

Structural violence is violence that is difficult to recognize because it is not a visible and disruptive exchange between individuals or groups like direct violence.<sup>6,15-17</sup> Structural violence is violence built into the prevailing power structure, undetectable because of its stable and acceptable presence in all aspects of life.<sup>6,18,19</sup> Direct violence differs from structural violence because there is a recognizable perpetrator-victim pattern of interaction. Both the perpetrator and the victim know that violence is being committed. The victim's death is achieved through direct force, an unacceptable criminal act punishable by the justice system. Whereas direct violence is identifiable, intentional, and personal, structural violence is invisible, independent of

intention, and impersonal<sup>6</sup>. The victim's death occurs through deprivation, a normalized consequence of disparity. Table 1 is a comparison of direct and structural violence's defining attributes. The unequal distribution of power within the structure is embedded in the traditions and practices of all aspects of that structure so that the victims (and often, the perpetrators) cannot pinpoint a causal link and thus may be inclined not to notice it.

Direct violence is the visible manifestation of structural violence. Examining the patterns, populations, and trends of injury and death with a structural violence lens is needed to make these structures visible. There is no prominent perpetrator in structural violence and no concrete physical action. Consequently, it is easy to dismiss the reality of victims because the same causal relationship that is so apparent in direct violence is markedly absent. However, it cannot be presumed that structural violence does not cause as much pain as direct violence.<sup>6,10,17,19</sup> Figure 2 is a concept map of structural violence. The concept map is a visual image of the visible and invisible representations of the same violence. Structural violence is the largest violence segment in the schema. It is the foundation. Like a foundation, it is constructed to support and stabilize yet it is invisible. Cultural violence, the actions and practices of people within society that passively or actively endorse and re-enact prevailing inequities, is also invisible. Cultural violence reinforces structural violence. It is the framing that buttresses the foundation's strength. Direct violence is the smallest but the only visible part of the pyramid.

### ***Social groups***

The structure of a social group is comprised of established or expected routines, standards, expectations and patterns of communication that are both internally and externally constructed for a group over time.<sup>20</sup> Standards include the anticipated performance and behavior



of people within the group. Mores that come from within the group of what constitutes acceptable and unacceptable conduct defines its expectations,<sup>20</sup> while expectations from outside of a group may be experienced as stereotypes. Social groups are the voluntary and involuntary ways people are categorized. This categorization may be organized around gender, sexuality, race, geographic location, income/class, profession, and/or insurance status.<sup>6,8,10,11,16–19,21–26</sup> Voluntary social group participation gives the individual a sense of pride and unity. Individuals negatively suffer from both voluntary and involuntary group participation when they bear an unfair amount of a society's negative outcomes.

The most salient social grouping within the studies was race. Chandra Ford asserts that the increase in health disparities literature, while critical to improved and more nuanced research, is still restrained in its explanation of racially-driven inequities because of innate limitations within prevailing study designs and statistical methods.<sup>27</sup> Often, race as a significant and explanatory variable is assumed, and documented differences may be used as evidence of genetic or behavioral differences by race.<sup>27,28</sup> The proxy of race indicates that a group is vulnerable to structural violence.<sup>27</sup> Research that conflates proxy and cause minimizes the possibility for systemic change.<sup>27</sup>

### ***Invisible/latent***

Invisibility/latency as attributes of structural violence are encompassed in the literature as vulnerability resulting from larger sociopolitical, commercial, and historical intersections that disproportionately affect specific groups of people.<sup>6,8,10,11,16–19,21–26</sup> Direct interpersonal violence is experienced as negative fluctuations at a specific time to a specific person. Structural violence is embedded in the social structure and thus, remains invisible as a function of the stability

within the social structure.<sup>6</sup> The ramifications are visible, but the source of the force is hidden. The usual symptoms of violence are not obviously apparent because of the intentional obscurity, or as one article deemed it, the “everydayness” of the interactions.<sup>23</sup>

### ***Independent of intention***

Independence of intention means that the consequences of violence do not require conscious action on the part of any individual or group.<sup>6,8,10,11,16–19,21–26</sup> Judeo-Christian/Roman ethical principles place primary importance on intention because this ethical system inextricably links intention to guilt.<sup>6</sup> The guilty is held accountable for the aftermath of his or her intents within this ethical system. The limits of such an ethical system is that there is no real method to rectify the violence if the guilty cannot be readily identified. This particular attribute of structural violence does not require active belief or intention in the consequences for them to manifest. The consequences happen regardless of purpose, desires, or attitude.

### ***Disparity***

Disparity within structural violence refers to the distance between reference points and the relative value ascribed to one reference point over the others. It is the group-specific difference in potential, actualization, and access.<sup>29</sup> This difference is coupled with hierarchy, resulting in inequity/inequality. Behaviors that foster disparity include discrimination and implicit bias.<sup>29</sup> Discriminatory behaviors cause disparity because it is conscious distinction coupled with friction. Disparity from implicit bias is most often independent of intention, even invisible to the perpetrator because they may act without recognizing the power of the values, messages, and practices of their past on their present thoughts and actions.

### ***Faceless/impersonal***

The faceless nature of structural violence is an insidious attribute. Since this type of violence is an impersonal force, it is without human agency. This is exemplified in statistical data on interpersonal violence. There is no personal reference or connection to the lived experience of the “other.” Rather, impersonal statistics distance people from the gruesome realities of violence and instill confidence in a faceless system to adequately address it.<sup>6,8,10,11,16-19,21-26</sup> While perpetrators and victims in a traditional sense are unidentifiable in structural violence, perpetration and victimhood can still be identified by connecting the micro-political process (at the individual interaction level) to the macro-political results.<sup>30</sup>

### ***Death through deprivation***

Deprivation can be defined as lack or disadvantage with a time component. Death through deprivation is the component of structural violence that connects survival needs deficiency to direct violence as a reaction to oppression and apathy as its byproduct.<sup>6,8,10,11,16-19,21-26</sup> The denial of necessities is an effective means of killing using active or passive control by group action or inaction.<sup>7</sup> Depriving the physical self of its needs causes it to weaken and die. Physical deprivation begets emotional/psychological scarcity, thereby weakening and killing the psychological/emotional self as well.<sup>7</sup> Direct violence in this context may then be a means to secure survival or a symptom of hopelessness.<sup>6,7,16,17,21</sup>

### ***Normalized***

To normalize is to establish the current way things are as the standard. This attribute of structural violence refers to its hegemonic power to permeate and influence without conscious or subconscious awareness. Hegemonic influence, often referred to as the status quo, is explicitly

deemed “as natural as the air around us.”<sup>6,18</sup> By making its violent outcomes common-place, the social structure eliminates any desire to change or react by neutralizing it.<sup>6,8,10,17,18</sup> The governing powers sanction the resulting violence by legitimizing it in the media, culture, laws, and social arrangements.<sup>17</sup> Thus, societal norms automatically function to venerate designated populations while simultaneously constructing the plight of the disenfranchised as a product of their own making.<sup>15,17</sup>

### **Conceptual, Theoretical, and Empirical Implications**

Structural violence is a hybrid concept. It is both theoretical and empirical. It is relevant for its explanatory capacity and gives historical context to present-day health inequities.<sup>18</sup>

While it is similar to the more frequently used term “social determinants of health,” it is more straightforward in identifying socioeconomic and political systems as the agents of poor health.

<sup>18</sup> “Determinant” is vague and passive; there is no action. “Structural violence” asserts structural acts/inaction directly hurt people, further elucidating injustice while calling for change.<sup>18,23,31</sup> The empirical referents for structural violence are not assessed by clinical tools of measurement. Rather, the empirical referents are the statistical data that **quantifies disparity over time**. One cannot measure a concept that has generational lengths of time with a gradient scale: it is either present or it is not. Conceptualizing structural violence connects the human awareness of this concept to a clearer definition and a lens that makes the invisible visible.

Empirical referents in the articles included in the literature review are statistical or historical examples of disparity in social groups. Table 2 is a sample of both the theoretical and empirical ways structural violence has been defined and used. The table is not comprehensive. Articles

chosen that were applications of the concept are ones that address direct and/or interpersonal violence as a part of structural violence.

## MODEL AND CONTRARY CASES

### **Model and Contrary Cases**

**Model Case.** The following case has all the defining structural violence attributes of social group, latency, independence to intention, disparity, impersonal nature, death through deprivation, and normalization.

Over 400 African-Americans living in Newark, NJ are treated for firearm injury. Most of the victims come from households with incomes below the U.S. annual median income level. Their homes are in communities that have many abandoned homes.

**Model Case Evaluation.** Approximately 86% of all patients treated at the New Jersey Trauma Center for firearm-related (FAR) injury are African-American.<sup>32</sup> The statistical data, while informative, is impersonal and renders the victims faceless. The African-American population as a social group are the largest victims of FAR assault, homicide, hospitalizations, and deaths.<sup>33-42</sup> Several researchers have conducted retrospective analyses that show most FAR assaults occur in neighborhoods where residents earn below the annual median U.S. household income.<sup>37,43</sup> Likewise, neighborhoods with high housing vacancy have higher rates of FAR assault.<sup>32,42</sup> The prevalence of FAR violence in impoverished communities exemplifies how normalized both direct violence and apathetic structural response is in places where disparity and deprivation are all-encompassing.

**Contrary Case.** The following case has none of the defining attributes of structural violence.

Timothy Harris, a 28-year-old African-American man residing in Florida, was at a traffic light. John Rodgers, a 50-year-old Caucasian man also from Florida, runs the red light and nearly collides with Mr. Harris' car. Mr. Harris gets out of his vehicle and approaches Mr. Rodgers' car. The two get into a heated exchange and Mr. Harris fatally shoots Mr. Rodgers. Mr. Harris is arrested. He invokes the Stand Your Ground Law on the basis that he felt threatened by Mr. Rodgers. Mr. Harris has a hearing before the judge who grants him immunity.

***Contrary Case Evaluation.*** The above example is a contrary case because white perpetrators with black victims are more likely to have the homicide deemed justifiable (i.e. a legal defense whereby a committed offense does not carry criminal liability for the perpetrator) than black perpetrators with white victims in states without Stand Your Ground (SYG) laws. Justifiable homicide for the white perpetrator-black victim dyad is nearly double in the SYG states (9.51% vs. 16.85%).<sup>44</sup> Black perpetrators with black victims have had their homicides deemed justifiable 2.15% in non-SYG states compared to 3.16% in SYG states. SYG defenses are ruled justifiable at the lowest rate in black perpetrators with white victims at a rate of 1.13% in non-SYG states compared to 1.40% in SYG states.<sup>44</sup> Hence, perpetrators with black victims have the highest probability of a successful claim of SYG but black perpetrators with white victims have the lowest probability of a successful SYG claim. Mr. Harris' immunity is contrary to the justice's system's typical response of granting justifiable homicide in black perpetrator-white victim cases.

## Discussion

The concept of structural violence is important to nursing because of the detrimental (and often, deadly) impact it has on the health of the population. While research on physical, sexual, and psychological violence is limited, research situating personally experienced violence within larger sociopolitical structures is even more scarce.<sup>10</sup> Individual acts of violence are often reduced to the implications for the individual and the perpetrator(s), ignoring how prevailing imbalanced sociopolitical structures inform separate acts of violence.<sup>10</sup> Nurses will provide care for victims of violence-related injuries from resuscitation to rehabilitation. A violent act may register as unique to the victim, but a practicing nurse may perceive it in relation to the types and numbers of patients affected during a particular portion of or their entire career.<sup>15</sup> Thus, nurses are uniquely qualified professionals within the health care system to deal with violence and its far-reaching consequences. While this care is important at the individual level, nurses can do more to extend their care beyond the bedside. Nurses are at the forefront of caring for these victims and can understand the burdens of interpersonal violence on healthcare yet are not as ideally involved in policy creation where the potential for prevention is at its highest.<sup>15</sup>

The police and the court system (i.e. the criminal justice system) are where interpersonal violence is currently managed. It is reactionary and punishment-based with the anticipation of punishment as the motivator to avoid interpersonal violence. A public health primary prevention approach to violence could potentially reduce the daunting solitary work of the criminal justice system that does not get at the root causes of violence. Figure 3 is an illustration of the current treatment model. The community is currently mostly responsible for violence prevention, while the most energy and resources are at the tertiary level, the domain of the criminal justice and

health care professionals. They are separate efforts. Figure 4 is an illustration of a potential public health model. This model has both the community and health care system focusing on the primary and secondary stages of prevention and collaborating with the criminal justice system in the tertiary stage of violence prevention. Envisioning the immediate effect and residual consequences of interpersonal violence is fundamental to recognizing it as structural violence. Individual incidents of violence are then indicators of weightier social determinants that reinforce and permit violence. Nurses are ideally situated to initiate a paradigm shift, both within and outside of the healthcare system, towards a public health primary prevention model.

### **Conclusion**

The fundamental tenets garnered from this article are that invisibility does not negate causality and that violence is preventable. Direct violence, the top of this pyramid, is a major public health problem. Nearly 15,000 children were treated in emergency departments nationwide for FAR injury in 2008.<sup>43</sup> Concern for and attention to the top of the pyramid is warranted. However, merely concentrating on direct violence is reductionist.<sup>10</sup> It diverts attention from the much larger issues that manifest violence. Likewise, it narrows both the blame and the onus of creating a solution on individuals while expanding the power to judge and punish at the structural level.<sup>6,8,10</sup> The bottom of the pyramid is a larger problem. While correlation is not proof of causation, conceptualization is the intellectual mechanism of defining human ways of knowing.



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Direct	vs.	Structural
Individuals		Social Groups
Visible		Invisible/latent
Intentional		Independent of intention
Criminality		Disparity
Face/Personal		Faceless/Impersonal
Death through direct force		Death through deprivation
Unacceptable		Normalized

Table 1. Defining attributes of direct and structural violence

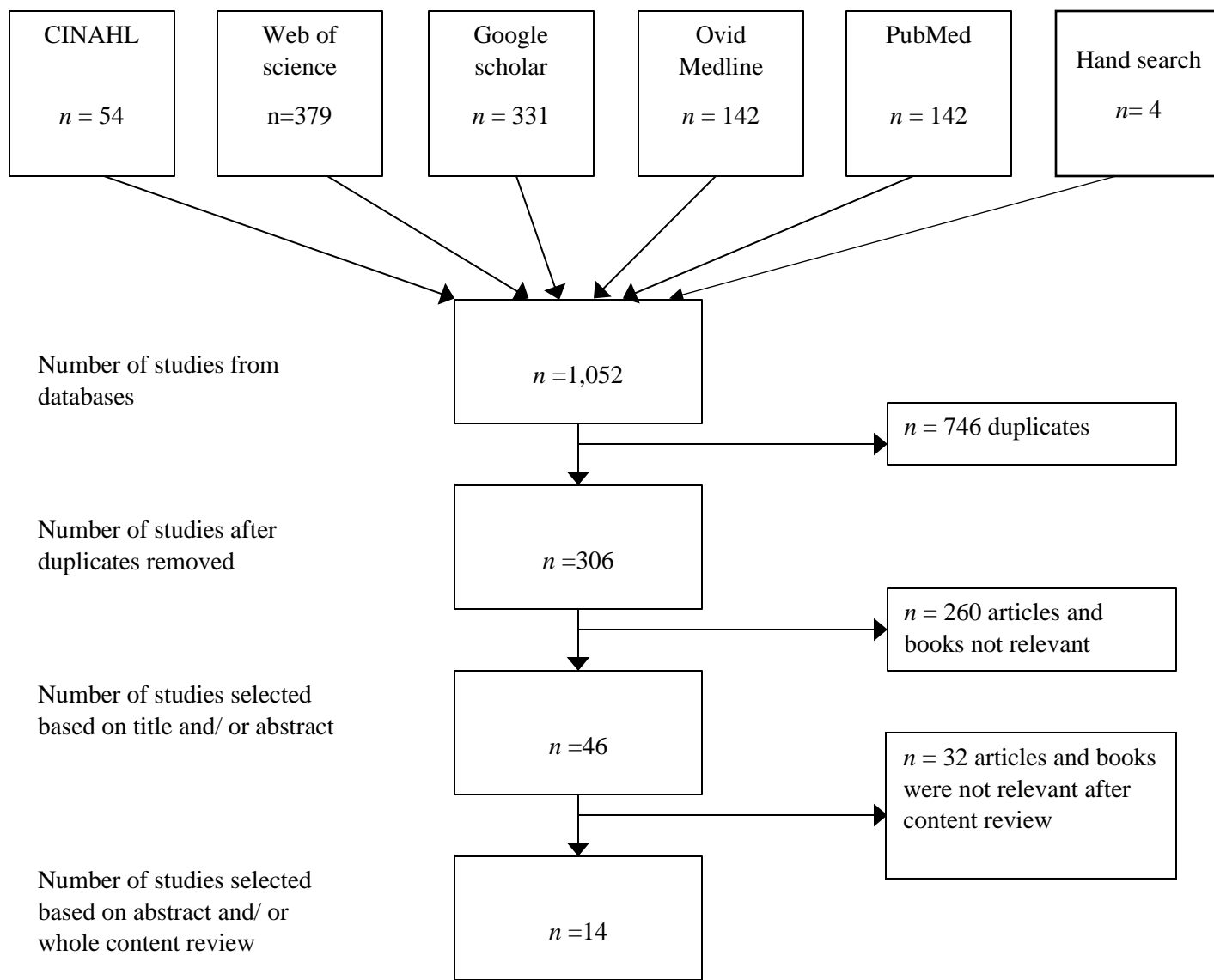


Figure 1. Summary of search outcome and study selection

Table 2 Literature Review

Author(s) and Year	Aims/Purpose	Concept Attributes	Empirical Referents
Galtung, J., 1969	To develop the concept of structural violence	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Long-standing culture of husbands beating their wives; life-expectancy higher in upper than in lower classes
Kaljee, L.M., et al., 1995	To present data from ethnographic and survey research that demonstrates the necessity of contextualizing direct violence as a part of structural violence	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Statistical data of rising unemployment and increase in FAR violence between 1970-1990 by racial and age groups in Baltimore City; qualitative examples from structured interviews
James, S.E., et al., 2003	To present a tripartite model of violence	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Qualitative examples from structured interviews
Farmer, P., 2004	To show the effects of structural violence in Haiti	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Centuries of human and economic exploitation are context for current poverty and violence
Lane, S.D., et al., 2004	To use structural violence to analyze ecological-level risk factors that cause disparate rates of HIV in women of color in Syracuse, NY	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Community rates of infection, increased vulnerability, & concurrent partnerships

Rutherford et al., 2007	To clarify definitions and concepts of violence used in public health	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Apartheid system in South Africa
Choiniere, J.A., 2013	To show how gender, race, & neoliberalism intersect and reinforce structural violence in mental health nursing	Social groups, Invisible/latent, Independent to intention, Normalized, Disparity, Faceless/Impersonal	Qualitative examples from structured interviews and focus groups
Varcoe, Browne, & Cender, 2014	To explain the concept of structural violence and give solutions to overcome it in nursing practice	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Nurse prioritized patient care of one patient over another that upholds prevailing disparities
DeVerteuil, G., 2015	To provide definitional and conceptual clarity of violence and to raise visibility of violence across health and medical geography	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Sociopolitical policies of the state that create and maintain disparity with system surpluses concentrated in advantaged echelons of society
Bahr, N.C., & Song, J., 2015	To show the mechanisms of structural violence by comparing the systemic response to sickle cell disease to that of cystic fibrosis	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Compare and contrast the affected populations, total research dollars, and available treatment options of both diseases within the context of prevailing sociopolitical factors
Montesanti, S.R., & Thurston, W.E., 2015	To elucidate how structural violence contributes to and intensifies interpersonal violence against women	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Scoping review of 174 relevant papers using Thurston & Vissandjee's ecological framework



Lee, B., 2015	To give definitional clarity and make pragmatic and theoretical contributions to violence studies	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	The World Health Organization's <i>World Report</i> includes structural violence in its definitions of violence
De Maio, F., & Ansell, D., 2018	To discuss the strengths and weaknesses of the term structural violence within contemporary health literature	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Structural violence-related health literature published within the past 30+ years
Sossenheimer, P.H. et al., 2018	To explore structural violence in trauma care using widely accepted principles in medical ethics	Social groups, Invisible/latent, Independent to intention, Death through deprivation, Normalized, Disparity, Faceless/Impersonal	Statistical data pertaining to inequality in trauma outcomes in marginalized populations

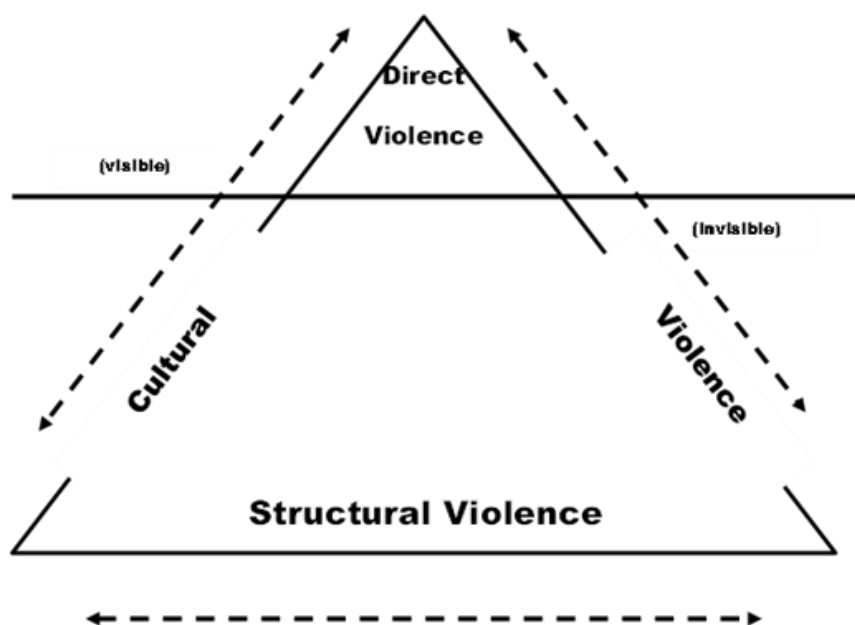


Figure 2. Structural violence concept map

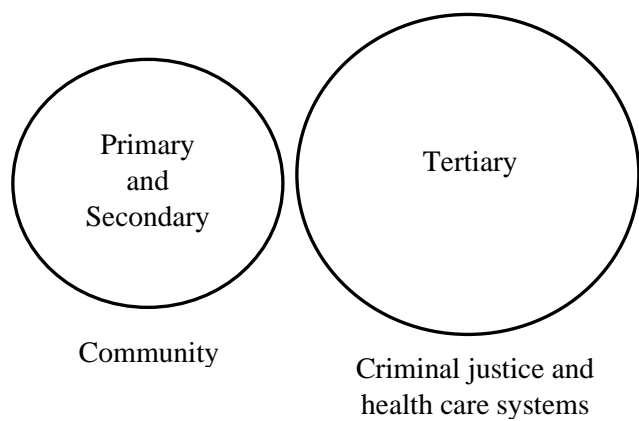


Figure 3. Current treatment model

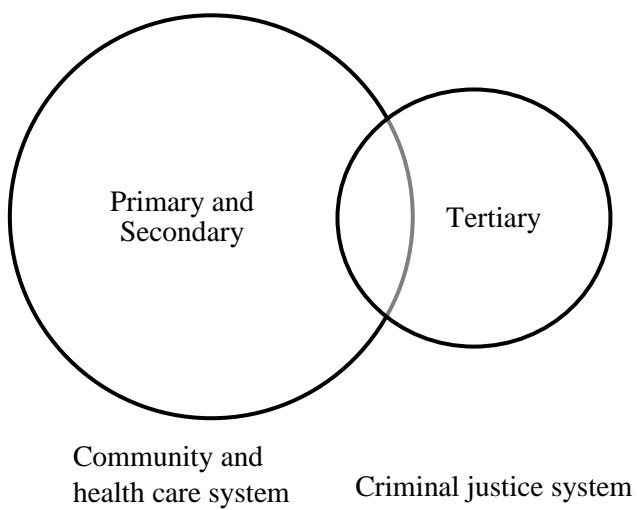


Figure 4. Public health model

## CHAPTER 4

MANUSCRIPT 3: Violence in St. Kitts and Nevis: A Retrospective Analysis of Homicides  
2000-2018

(Potential journal: *Journal of Nursing Scholarship*)

TITLE Violence in St. Kitts and Nevis: A Retrospective Analysis of Homicides 2000-2018

RUNNING HEAD Violence in St. Kitts and Nevis

ACKNOWLEDGEMENTS Funding generously provided by the Barbara Brodie Scholars  
Endowment Award and the Barbara Parker Dissertation Fellowship

AUTHORS Trina K. Kumodzi, BSN, RN, CCRN<sup>1</sup> (Beta Kappa chapter), Aaron Pannone, PhD<sup>2</sup>,  
Jeanita W. Richardson, PhD, M.Ed.<sup>2</sup>, Susan Kools, PhD, RN, FAAN<sup>1</sup> (Alpha Eta chapter), &  
Ishan C. Williams, PhD, FGSA<sup>1</sup>.

1. School of Nursing, University of Virginia, Charlottesville, VA, USA 22908

2. Department of Public Health Sciences, School of Medicine, University of Virginia,  
Charlottesville, VA, USA 22908

CONFLICTS OF INTEREST none

Trina Kumodzi (corresponding author)  
University of Virginia  
School of Nursing  
225 Jeanette Lancaster Way  
Charlottesville, VA 22903

## ABSTRACT

**Purpose:** The purpose of this study is to determine the prevalence and distribution of homicidal violence in the Federation of St. Kitts and Nevis (SKN), characterize the epidemiology of homicidal violence by variables such as sex and parish location, and to identify relevant priority areas in both nursing practice and science.

**Design:** A retrospective descriptive observational study of police reports of all homicides committed between 2000-2018 in SKN.

**Methods:** All police narratives of homicides committed in SKN between 1 January 2000 through 31 December 2018 were reviewed and coded. Coded variables included: month and year of homicidal incident, victim demographics (age and sex), perpetrator demographics (age and sex), weapon used, parish location of incident, motive, type of location where the homicide was committed (home, community, car, or work), and if victim died at the hospital or at the scene. Inclusion criteria were all citizens, residents, or visitors to St. Kitts and Nevis who had either perpetrated and/or been a victim of homicide while on either island during the timeframe.

**Findings:** There were 353 homicides in SKN between 2000-2018. Victim mean age is 31.4 years for all victims, but 31% of females were killed between 11-20 years of age. Firearms were the weapon most used in both male homicides and female homicides in St. Kitts, while knives were most used in femicides in Nevis. A strong correlation exists between female sex, motive, and parish ( $P < 0.001$ ). Males are most likely to be victimized in the community while 50% of femicides occur in the home.

**Conclusions:** Without insight into the factors associated with homicidal violence in SKN, developing effective intervention strategies to reduce it is compromised. This study may assist the Federation's Ministries of Health develop and implement violence reduction/prevention interventions and policies.

**Clinical Relevance:** Nurses care for patients along the continuum of violence-related injuries. A violent act may register as unique to the victim, but a practicing nurse may perceive it in relation to the types and numbers of patients affected during a particular portion of their entire career. Thus, nurses are ideal members of the health care system to address violence and its sequelae.

St. Kitts and Nevis (SKN), the smallest independent nation in the Americas, is a two-island federation with a population of approximately 55,000 people; over 75% of the population resides in St. Kitts and less than 25% reside in Nevis.<sup>1,2</sup> It is classified as a high-income country with the highest annual per capita income in the Caribbean<sup>3</sup> and the third highest homicide rate in the region.<sup>4</sup> The two islands are geographically divided into 14 parishes, nine on St. Kitts and five on Nevis. A federal system is articulated in the Constitution with parallel Ministries on both islands. Nevis is autonomous in its domestic affairs. This is exemplified in the structure of the Federation's health care system. Each island has its own Ministry of Health but one Federation Chief Medical Officer.<sup>2</sup>

The national government is both the largest funder and provider of health care with all services offered free or at low out-of-pocket cost to the consumer.<sup>5</sup> SKN's 2010 per capita healthcare spending was \$370 USD while the United States spent approximately \$8,000 USD during the same year.<sup>6</sup> Thus, the SKN government concentrates on judicious disbursement of its resources to maximize favorable health outcomes.<sup>6</sup> The Ministries of Health for both islands in the Federation allocate most of their healthcare dollars towards prevention with a focus on reducing the incidence and financial burden of non-communicable diseases (NCDs).<sup>3,5</sup> However, healthcare costs associated with violent encounters put a tremendous strain on the health system budget. Currently, SKN does not collect tertiary care expenditure data. The emergency department at St. Kitts' largest hospital, J.N. France General Hospital, started collecting data on trauma care in 2011. Gunshot wounds were the 4<sup>th</sup> leading cause of trauma visits to the emergency department between 2011-2014.<sup>3</sup> Prehospital emergency medical response services, advanced life support technologies, and physical rehabilitation services to

support people who survive violent encounters with debilitating injuries displace resources towards tertiary health care.

Registered nurses (RN) in SKN are the principal service providers in the prevention-based SKN healthcare system.<sup>2,7</sup> While RNs, physicians, and unlicensed personnel collaborate in the delivery of emergency, acute, and intensive care services at Joseph N. France Hospital (St. Kitts) and the Alexandra Hospital (Nevis), RNs provide the majority of patient care and teaching at the community health centers (CHCs).<sup>2,7</sup> Seventeen CHCs are located within walking distance of every SKN resident and is wholly funded by the national government.<sup>5</sup> Advanced high-technology treatments heavily used in the care of victims of violence, such as dialysis and magnetic resonance imaging, are not readily available. As a result, rendering patients at their most critical time to survive without these interventions until they are stable enough to potentially get these treatments on neighboring islands, funded at their personal expense or with private insurance.<sup>7</sup>

SKN registered nurses are integral to primary prevention efforts and the Federation has made remarkable progress towards the United Nations Millennium Development Goals.<sup>3,8</sup> However, more RNs are needed to make similar strides in violence-related morbidity/mortality cases. SKN has 6.4 nurses per 1,000 people compared to 9.4 nurses per 1,000 people in the United States.<sup>9</sup> While comparison under normal circumstances is inappropriate given the size and relative wealth of both countries, SKN and the U.S. have comparable public health dilemmas regarding homicidal violence. SKN's population is approximately 55,000 people while nearly 330 million people reside in the U.S. and both nations have rates of homicide that places them in the global top ten rankings.<sup>10,11</sup> Firearms are the weapon most used in homicides committed in both countries.<sup>10,12,13</sup> Adolescents in the U.S. and SKN share homicidal violence as one of the

top 2 leading causes of death in their age group.<sup>2,10</sup> Therefore, the purpose of this study is to identify gaps in knowledge related to the causes of the Federation's increased homicidal violence and voids in its violence-related public surveillance data. A study of this kind has the potential to empower nurse-driven trauma care, increase initiatives for a larger nursing workforce, and/or redistribute the nursing workforce to optimize primary and tertiary health care service delivery.

The fiscal, clinical, and social burdens of homicidal violence are formidable given the nation's small population and as a result in need of assessment. Furthermore, the per capita homicide rates for Caribbean nations of similar population size are lower.<sup>11</sup> Population-level incidence rates stratified by sex, parish, motive, age, and homicide location are not available, revealing a significant knowledge gap on what appears to be a dangerous escalating trend.

## **Methods**

A retrospective descriptive observational design was used to analyze the police reports of SKN homicides committed between 1 January 2000 through 31 December 2018. Inclusion criteria were all SKN citizens, residents, or visitors to SKN who were perpetrators and/or victims of homicide while in the Federation between 2000 to 2018. A total of 353 police reports were included and reviewed in its entirety.

### *Measures*

A data collection form designed to record sociodemographic and motive information from the police reports was used. Information from the reports were then coded using eight predetermined variables. The variables were as follows: Month/year of homicidal incident, victim demographics (age and sex), perpetrator demographics (age and sex), weapon used, parish location of incident, motive if provided, type of location where the homicide was committed (home, community, car, or work), and if victim died at the hospital or was found dead at the

scene. Two of the location types, home and car, were both analyzed as separate locations and collapsed together under the term ‘personal zone,’ considered demarcated areas conducive to confidential and personal exchanges. Community was defined as all locations other than home, car, and work. Identifying information such as names of victims, perpetrators, or detailed crime scene addresses were not collected.

The individual police reports were reviewed for information relevant to the nature of the incident. Reports contained general motive information as defined by the following labels: altercation, larceny, retaliation, rape, intimate partner violence, drugs, gang, or unknown. Demographic information was limited to the year the incident was committed, age, sex, and weapon type for both the victim and the perpetrator, and the geographic location of the incident at the parish level. Information regarding personal motives beyond what is captured by the labels was beyond the scope of the study and was not collected.

### *Statistical Analysis*

Statistical Package for Social Sciences (SPSS/version 26) software was used for statistical analysis. Results are expressed as means plus or minus the standard error of mean (SEM). Pearson’s chi-square tests were used for categorical variables. A p-value less than or equal to 0.05 was considered statistically significant.

### *Ethical Considerations*

This study was submitted for review and ultimately approved by the Institutional Review Boards (IRB) at the University of Virginia and the Federation’s Interim Ethics Review Committee (IERC). Governmental agency approvals were also secured through the Verification of Ministry of Health (MOH) and Police Commissioner Support prior to conducting the study.



## Results

The number of homicides in SKN totaled 353 between 1 January 2000 to 31 December 2018. The separate islands of St. Kitts and Nevis had 281 and 72 homicides respectively. The SKN mean victim age is 31.4 years. There were 9 homicide victims in St. Kitts whose ages were not recorded in the police reports, so the mean was computed with a sum different from the total number of homicides (for age:  $n = 344$  vs  $N = 353$ ). Nearly 40% of all victims with known ages were between 21-30 years old ( $n = 133$ ), highlighting this age bracket as the age demographic with the highest number of homicides (Table 1). While most homicide victims fall within this age range, approximately 80% of all victims were younger than age 40 ( $n = 271$ ), exposing homicidal violence as a public health threat that disproportionately affects the nation's youth. The majority of homicide victims were male ( $n = 327$ , 92.6%). Female homicides ( $n = 26$ , 7.4%), while in the minority, still warrant serious attention to their particular public health challenges. Figure 1 illustrates the yearly trend in homicides for the separate islands and the Federation as a whole.

Location was a notable variable in SKN homicides. The larger island of St. Kitts' homicide total is four times that of Nevis. Basseterre, St. Kitts' largest commercial city, is located in St. George Basseterre parish. Charlestown is Nevis' largest commercial city and is in the parish of St. Paul Charlestown. Homicidal violence is the most prevalent for each island within these parishes, with nearly 50% of all homicides in St. Kitts and 43% of all homicides in Nevis occurring there. Higher rates in St. George Basseterre and St. Paul Charlestown parishes are supported by findings that homicidal violence occurs most frequently in the community than the other settings combined (see Table 2). SKN male victims were nearly 3.5 times more likely to be found in the community than at home ( $n = 224$ , 63.5%). Since males are victimized more

often in public, this may support the slightly higher rate of male homicide victims receiving some level of medical treatment prior to their death than female victims (23% vs. 19%).

Femicide in SKN follows a different pattern than their male counterparts. Femicide is highest at 11-20 years of age, with nearly 31% of all female homicide victims dying within this age range (Table 1). Community settings are where most homicides occur. The second highest setting category for all homicides is the home ( $n = 65$ , 18.4%). However, femicides mostly occur in the home, with 50% of female victims on both islands found dead at home (Table 2). When home and car are categorized as the “personal zone” and work and community are categorized as the “public zone,” females are disproportionately victimized in their personal zone ( $n = 16$ , 62%) compared to male victims ( $n = 72$ , 22%). Femicide within the personal zone is highest in Nevis, with 75% of the island’s female victims found dead in their car or home. Similar to the findings in males, the setting of the female victim’s homicide may be related to the potential for medical attention. More than 80% of female victims were found dead. Females may not have received medical treatment prior to their demise precisely because their murders happened in their personal zones where fewer people are located and with lower interactional frequency are likely to occur. Over 30% of femicides are committed by intimate partners. All femicides in the St. Kitts parish of St. Mary Cayon are IPV-motivated ( $n = 3$ , 43%). St. John Figtree parish in Nevis has the highest number of IPV-motivated femicides ( $n = 3$ , 43%).

Firearms are the weapon most used in SKN homicides (Table 4). This is the case for both male and female victims due to the high number of firearm-related femicides in St. Kitts ( $n = 7$ , 38.9%). However, firearms are tied with body part (i.e. strangulation) as the second most used weapon in Nevisian femicides. Knives are used with the most frequency in femicide in

Nevis ( $n = 3$ , 37.5%) and the second most frequently used weapon in femicide in St. Kitts ( $n = 5$ , 27.8%).

## **Discussion**

Homicidal violence in SKN has had a substantial increase over the last 9 years. There were 2.2 times more homicides in the Federation between 2010-2018 ( $n = 225$ ) than between 2000-2008 ( $n = 101$ ). While the island of St. Kitts had a similar increase in homicides as the overall Federation at nearly twice the number of homicides in 2010-2018 than in 2000-2008, Nevis had the most significant jump in its number of homicides. Nearly 5 times more homicides were committed between 2010-2018 ( $n = 57$ ) than between 2000-2008 ( $n = 12$ ). SKN's 2011 national per capita homicide rate was calculated at 74.2 per 100,000 for its 35 incidents. Nevis' 2011 per capita homicide rate was calculated at 48.9 per 100,000, ranking the island as the second highest per capita homicide rate in the Caribbean, displacing Jamaica with its rate of 41.7 per 100,000 for its 1,133 incidents occurring in that year.<sup>11</sup>

The second quarter of the year (April through June) is the most active with homicidal activity in SKN. March is the busiest month in St. Kitts while Nevis has its highest homicidal activity in January. October through December had the fewest number of homicides over the 19-year span. Prior to tourism becoming the nation's major economic driver in 2005, heavy tourism traffic was relegated to the pre-hurricane season months of December through April. However, tourist activity has increased throughout the year, with many of the Federation's most popular festivals such as Music Fest falling within the hurricane season. It is possible that because tourism in SKN is at its peak during non-hurricane season months, that homicidal violence also increased. However, it is impossible to link the tourism period to increased homicidal violence with certainty. Although, it will be important to consider these trends in developing policies to

help mitigate homicidal violence in SKN because the rates continue to increase throughout the year overall. The increase does not reflect tourists as targets of homicidal violence; rather, it may reflect inequity within the society as groups of people may be disadvantaged in the new service-based economy.

Tourism replaced sugar as the nation's primary economic driver in 2005.<sup>3</sup> SKN's gross domestic product (GDP) had impressive annual increases from 2006-2008.<sup>2</sup> It is also during this time that the Federation and the individual islands had significant changes in their homicidal activity. St. Kitts doubled its homicides between 2005 to 2006 and went from 8 homicides in 2005 to 18 in 2008. Nevis went from no homicides in 2005 to 5 in 2008. The rise of the GDP, one indicator of a specific type of progress, is not an indicator that all SKN citizens are faring well in the new economy as homicides also increased along with the GDP. Nevis' citizens would then suffer financial losses between 2008-2010 when the Four Seasons Resort, the island's largest employer and tourist resort, was closed for repairs after Hurricane Omar. The 12,000 people on the island were affected by the 600 layoffs during the closure.<sup>2</sup> Nevis' homicides totaled 13 between 2008-2010, nearly doubling the number of homicides it had from 2000-2007 in just three years. These reports do not indicate a causal relationship between homicidal activity and fluctuations in the economy; rather, the trends illustrate the potential relationships between structural actions and changes at the societal and personal level. Deliberate and thoughtful assessment of the socioeconomic, political, and historical contexts that may have given rise to increased homicidal violence may uncover issues that could be addressed with targeted interventions.

## **Limitations**

There were some notable limitations to this study. Firstly, the researchers were not involved in the original collection of data. As a result, there was a significant amount of unknown and/or missing information. As the data and the resulting analyses prove useful to the Federation in its initiatives, the importance of thorough and complete data collection within the police reports will be stressed. While the data in 2 databases were not collected with the intention of studying homicidal violence and its risk factors, the study aims and the databases were chosen specifically for their potential to answer the research questions and the research question was created to be answered through available data. Thus, this limitation was overcome with proper alignment of the study aims and the available data. Secondly, studying victimization and perpetration to learn about homicidal violence, particularly regarding weaponry, may initially seem disadvantageous. Firearm ownership is a protected right and a seriously contested issue. Consequently, there are no databases pertaining to firearms, firearm ownership, or firearm sales. As such, current studies must extract firearm information from legally collected sources pertaining to firearm victimization. This is the current state of the science due to data collection limitations. This was not overcome solely with this study. Rather, this study is one of the many required to advocate for firearm data collection and provide transparency to the public about the dearth of information.

Lastly, this study was a secondary analysis of existing data in two separate databases. It is ethically impossible to conduct prospective randomized control trials regarding violent injury due to the potential for severe injury or mortality from the resulting wounds. Prospective cohort studies in violence have been conducted. While prospective studies in well-researched and funded clinical areas are typically ranked as a higher level of evidence than retrospective studies,

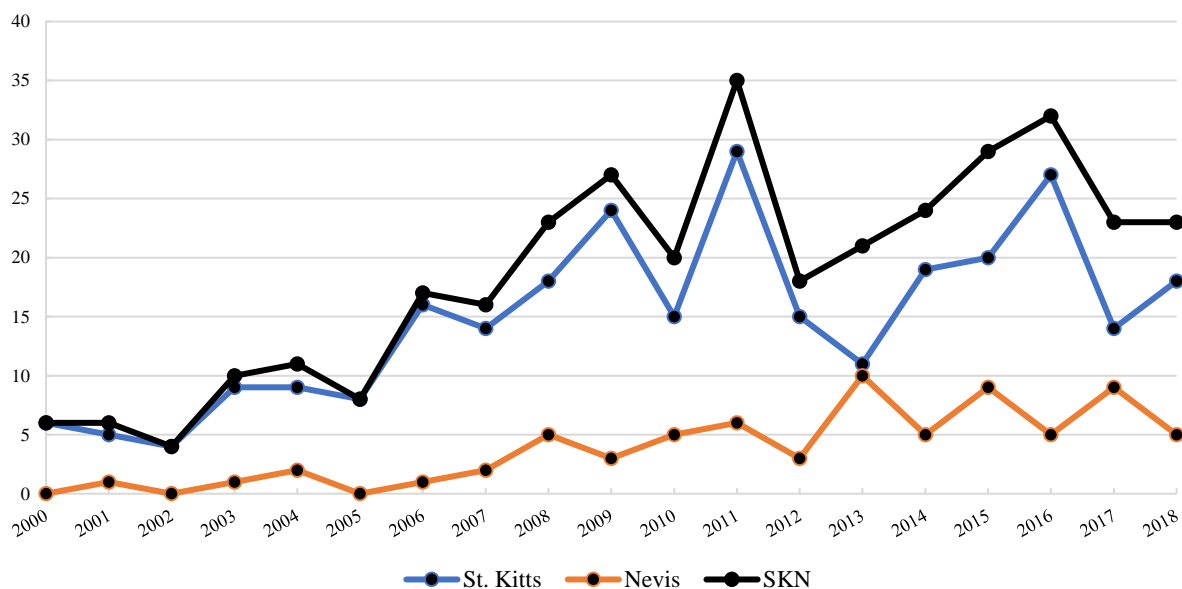
prospective cohort studies in violence research are not as effective as analyzing existing data. Prospective cohort studies will only offer findings specific to the sample with the potential for application to a larger sample.<sup>14</sup> Conversely, the secondary analysis of existing high-quality nation-level data has the potential for population-level findings and subsequent interventions.<sup>15,16</sup> Research teams and reviewers strictly following a traditional hierarchy of evidence will justifiably appraise primary research studies as higher. However, a nuanced appraisal of analyses of existing data entails evaluating various evidence for its relative merit and strength.<sup>14</sup>

### **Conclusion**

Nursing conceptualizes care as caring for the patient in the context of their family/community/society, so nurses are uniquely placed to see the individual patient within larger structures. While this care is important at the individual level, nurses can do more to extend their care beyond the bedside. Traditional clinical-model review of the data typically focuses on modifying the behavior of the individual. The biggest impact from nursing may be to evenly distribute the concern for patients solely from the bedside (which is tertiary) to the community (which is primary prevention). It may be a difficult model as a skilled practitioner to grasp, but nursing has already done this in so many other aspects of patient care. The same outpatient paradigm shift must now happen for a prevention model for violence.

### St. Kitts and Nevis Violence Manuscript's Tables and Figures

**Figure 1** Number of homicides per year, 2000-2018



**Table 1. Percent, count, & place of death of homicide by victim sex and age range, 2000-2018**

AGE RANGE	COUNT, TOTAL	COUNT, MALE	COUNT, FEMALE	MALE (%)	FEMALE (%)
0-10	2	1	1	50%	50%
11-20	70	62	8	88.6%	11.4%
21-30	133	127	6	95.5%	4.5%
31-40	66	60	6	90.9%	9.1%
41-50	36	33	3	91.7%	8.3%
51-60	23	23	0	100%	0%
61+	14	12	2	85.7%	14.3%
Unknown	9	9	0	100%	0%
All ages	353	327	26	92.6%	7.4%
Died at hospital	80	75	5	93.8%	6.2%
Dead on arrival	251	230	21	91.6%	8.4%

**Table 2. Victim Location by Sex**

<b>Table 2. Victim Location by Sex</b>							
<b>Island</b>	<b>SEX</b>	<b>Home</b>	<b>Work</b>	<b>Car</b>	<b>Community</b>	<b>Unknown</b>	<b>TOTAL</b>
<b>St. Kitts</b>	M (% male)	38 (14.4%)	8 (3.0%)	15 (5.7%)	176 (66.9%)	26 (10%)	263
	F (% female)	9 (50%)	0	1 (5.6%)	8 (44.4%)	0	18
	<b>Island total (in island)</b>	47 (16.7%)	8 (2.8%)	16 (5.7%)	184 (65.5%)	26 (9.3%)	281
<b>Nevis</b>	M (% male)	14 (21.9%)	5 (7.8%)	5 (7.8%)	38 (59.4%)	2 (3.1%)	64
	F (% female)	4 (50%)	0	2 (25%)	2 (25%)	0	8
	<b>Island total (in island)</b>	18 (25%)	5 (6.9%)	7 (9.7%)	40 (55.6%)	2 (2.8%)	72
<b>SKN</b>	M (% male)	52 (15.9%)	13 (4.0%)	20 (6.1%)	214 (65.4%)	28 (8.6%)	327
	F (% female)	13 (50%)	0	3 (11.5%)	10 (38.5%)	0	26
	<b>TOTAL (% location)</b>	65 (18.4%)	13 (3.7%)	23 (6.5%)	224 (63.5%)	28 (7.9%)	353



**Table 3. Motive by Victim Sex**

<b>Table 3. Motive by Victim Sex</b>								
<b>Island</b>	<b>SEX</b>	<b>IPV</b>	<b>Alter- cation</b>	<b>Rape</b>	<b>Lar- ceny</b>	<b>Retal- iation</b>	<b>Un- Known</b>	<b>TOTAL</b>
<b>St. Kitts</b>	M (% males)	1 (0.4%)	18 (6.8%)	0	5 (1.9%)	4 (1.5%)	235 (89.4%)	263
	F (% females)	6 (33.3%)	0	0	1 (5.6%)	0	11 (61.1%)	18
	<b>Island total (% island)</b>	7 (2.5%)	18 (6.4%)	0	6 (2.1%)	4 (1.4%)	246 (87.6%)	281
<b>Nevis</b>	M (% males)	0	8 (12.5%)	0	6 (9.4%)	1 (1.6%)	49 (76.5%)	64
	F (% females)	6 (75%)	0	1 (12.5%)	0	0	1 (12.5%)	8
	<b>Island total (% island)</b>	6 (8.3%)	8 (11.1%)	1 (1.4%)	6 (8.3%)	1 (1.4%)	50 (69.5%)	72
<b>SKN</b>	M (% males)	1 (0.3%)	26 (8.0%)	0	11 (3.4%)	5 (1.5%)	284 (86.9%)	327
	F (% females)	12 (46.4%)	0	1 (3.8%)	1 (3.8%)	0	12 (46.2%)	26
	<b>TOTAL (% location)</b>	13 (3.7%)	26 (7.4%)	1 (0.3%)	12 (3.4%)	5 (1.4%)	296 (83.9%)	353

**Table 4. Victim Sex by Weapon Type**

<b>Table 4. Victim Sex by Weapon Type</b>								
<b>SEX</b>								<b>TOTAL</b>
<b>Island</b>		<b>Knife</b>	<b>BFT</b>	<b>Gun</b>	<b>Body part</b>	<b>Other</b>	<b>Unknown</b>	
<b>St. Kitts</b>	M (% males)	41 (15.6%)	7 (2.7%)	205 (77.9%)	4 (1.5%)	4 (1.5%)	2 (0.8%)	263
	F (% females)	5 (27.8%)	2 (11.1%)	7 (38.9%)	4 (22.2%)	0	0	18
	<b>Island total (% island)</b>	46 (16.4%)	9 (3.2%)	212 (75.4%)	8 (2.8%)	4 (1.4%)	2 (0.7%)	281
<b>Nevis</b>	M (% males)	5 (7.8%)	2 (3.1%)	57 (89.1%)	0	0	0	64
	F (% females)	3 (37.5%)	1 (12.5%)	2 (25%)	2 (25%)	0	0	8
	<b>Island total (% island)</b>	8 (11.1%)	3 (4.2%)	59 (81.9%)	2 (2.8%)	0	0	72
<b>SKN</b>	M (% males)	46 (14.1%)	9 (2.8%)	262 (80.1%)	4 (1.2%)	4 (1.2%)	2 (0.6%)	327
	F (% females)	8 (30.8%)	3 (11.5%)	9 (34.6%)	6 (23.1%)	0	0	26
	<b>TOTAL (% weapon)</b>	54 (15.3%)	12 (3.4%)	271 (76.8%)	10 (2.8%)	4 (1.1%)	2 (0.6%)	353

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## CHAPTER 5: CONCLUSION

### Summary of Research

The purpose of this study was to create a profile of the Federation's homicide victims and perpetrators; to describe the circumstances, motives, and weapons used in the individual acts of homicide; and to create a public health surveillance dataset useful to the Federation in developing policy initiatives. The findings may support the Federation's Ministries of Health and the SKN Police Force in developing and implementing violence reduction/prevention policies and interventions. Chapter one was an introduction and explanation of the dissertation study. Chapters two, three, and four are manuscripts one, two, and three, respectively, detailing various facets of the study. Findings and implications for each manuscript are summarized in this final chapter along with the future trajectory of the research.

The specific aims for this study were: (1) to determine the prevalence and distribution of homicidal violence in St. Kitts and Nevis, and (2) to examine factors and their relationship to risk of homicidal death.

### Overview of Findings

#### *Aim 1 Results*

Manuscript one, "Violence in Nevis: A Retrospective Analysis of Homicides 2000-2017," was a pilot study, funded by the University of Virginia's Center for Global Health Global Scholars fellowship. Homicides in Nevis totaled 67 during the 18-year span. Victim age mean was 31.7 years. Firearms (88%) were the weapon most used in male homicide, while knives (42.8%) and body parts (28.6%) were most used in femicide. Another significant finding was the importance of place to homicidal violence. St. George parish was the location for approximately 20% of all homicides on the island, ranking it the parish with the second highest

number of homicides. St. John parish was the lowest ranking parish for overall homicides but was the highest in femicides, thus revealing a strong correlation between female sex, motive, and parish. St. Paul parish, where the island's largest commercial city of Charlestown is located, had the highest rate at over 43% of total homicides. This is consistent with the findings that most homicides are committed in the community rather than at home. This is in contrast to the United States, where the most homicides occur within a 7-mile radius of the victim's residence.

Manuscript 2, "Structural Violence: A Concept Analysis of Its Relevance to Nursing," is theory based with practical applications to nursing science and practice. Funding for this study was provided by the University of Virginia's Power, Violence, and Inequality Collective fellowship. Structural violence as a theoretical concept is significant to nursing for its ability to connect present-day health inequities to their historical context.<sup>1</sup> Structural violence pinpoints prevailing systems of power as the agents of poor health. Nursing science needs innovative methods of practicing, teaching, and expanding nursing science that are amenable to expansive definitions of violence to achieve health equity and social justice. Structural violence affirms that people's actual pain is caused by structural acts/inaction, further exposing injustice while simultaneously calling for system-level transformation.<sup>1-3</sup>

Manuscript 3, "Violence in St. Kitts and Nevis: A Retrospective Analysis of Homicides 2000-2018," is a study of homicidal violence in the Federation. Funding for this study came from the University of Virginia School of Nursing's Barbara Brodie Scholars Endowment Award and the Barbara Parker dissertation fellowship. As in the Nevis study, community settings were where most homicides occurred. The second highest setting category for all homicides was the home. However, femicides mostly occurred in the home, with 50% of female victims on both islands found dead at home. When home and car are categorized as the "personal zone" and

work and community are categorized as the “public zone,” females are disproportionately victimized in their personal zone ( $n = 16$ , 62%) compared to male victims ( $n = 72$ , 22%). Femicide within the personal zone is highest in Nevis, with 75% of the island’s female victims found dead in their car or home. Similar to the findings in males, the setting of the female victim’s homicide may be related to the potential for medical attention. Females may not have received medical treatment prior to their demise precisely because their murders happened within their personal zones where fewer people were likely to see them and take them to the hospital in time. Over 30% of femicides were committed by intimate partners. All femicides in the St. Kitts parish of St. Mary Cayon were IPV-motivated. St. John parish in Nevis had the highest number of IPV-motivated femicides.

### ***Aim 2 Results***

In the Nevis cohort study, homicidal incidents were compared to non-homicidal incidents to determine what factors protected or put people at greater risk of homicidal death. There is not much different for men in non-homicidal violence, with most of the violence concentrated at 21-30 years of age as in homicidal violence. Women victims of non-homicidal violence, however, are targeted at a younger age and with more frequency than men, comprising 53% of all non-homicidal incidents for victims under the age of 20.

Seven police crime labels were attributable to sexually motivated violence, so all pertinent incidents were collapsed into one category labeled “sexual violence” and comparable homicidal incidents were relabeled the same for analysis purposes. Motive labels “altercation” and “retaliation” were collapsed into one category labeled “confrontation” and the motives “family violence” and “IPV” were combined under the label “home violence” for adequate comparison. Of the incidents with known motives, sexual violence is highest, and it

disproportionately affected women, who made up nearly 97% of all sexual violence victims. There was only 1 sexually motivated homicide over the 19-year timeframe, which computes to sexual violence as a statistically significant protective factor. But this is a nurse-driven research study, so this is not protective. Rather, it shows the impact nursing practice and research can have on gender-based violence in the Federation.

Another significant finding was in relation to weapons. During data collection of the non-homicidal data, bottles were documented as the weapon used in many incidents. Perpetrators of non-homicidal violence used bottles as weapons in two different ways: to hit (blunt force trauma) or to break the skin (stab). No bottles were used as weapons in homicide, so this was unique to non-homicidal violence. Incidents coded as “BFT bottle” were added to the other blunt force trauma incidents and titled “bludgeon”. Incidents coded as “stab bottle” were added to the knife incidents and labeled “stab” for homicidal data comparison. Bottles were weapons in nearly 15% of all non-homicidal incidents. Body parts were used most often in female non-homicidal incidents secondary to sexual violence being the primary motivator of violence against them. Body parts were also used disproportionately in femicide, all of which were committed via strangulation. Men were still mostly attacked with guns and knives as in homicide.

### **Nursing Implications**

The implications for nursing practice and science is that while registered nurses (RNs), physicians, and unlicensed personnel work together in providing emergency, acute, and intensive care services at the hospitals in the Federation, RNs largely practice independently in the community at the government-funded health centers.<sup>4,5</sup> Independent practice in the community provides significant opportunity for nurses to lead primary and secondary violence prevention



interventions. Intimate partner violence and family violence screening during physical assessment coupled with swift interventions such as acute injury treatment, chronic symptom management, mental health/counseling services, and social services referrals are already within nurses' current scope of practice with relatively minimal changes to their current care service delivery.

Nurses have been integral to primary prevention efforts and the Federation has made great strides towards the United Nations Millennium Development Goals.<sup>6,7</sup> However, more RNs are needed to make similar strides in violence-related morbidity/mortality. A study of this kind may contribute to empowering nurse-driven trauma care, increase initiatives for a larger nursing workforce, and/or redistribute the nursing workforce to optimize primary and tertiary health care service delivery.

### **Proposed Research and Future Goals**

This projected program of research is situated in the three areas I have done considerable study: violence, policy, and global health. My dissertation study illustrated an intersection between all three of these areas. While I am invested in research that combines violence, policy, and global health, I am equally excited to pursue future studies that expand my skills and impact in violence research, like my previous experience as a Power, Violence, and Inequality Fellow; or my involvement in policy such as my co-authorship of the American Public Health Association's policy statement on Reducing Suicides by Firearms. I have three manuscripts ready for peer review at their targeted journals and six other identified manuscripts from the data for the future. Potential future studies that I may pursue in collaboration with my in-country research partners are a St. Kitts cohort study, intervention studies targeted towards gender-based violence and non-fatal violence injury within the community, and a replication of this study in

the Caribbean country of St. Vincent and the Grenadines, thereby expanding knowledge of violence in the region. Other potential future violence prevention studies I may pursue include secondary data analyses of the National Trauma Data Bank, intervention studies targeted toward trauma recovery secondary to violent injury, and a replication of this dissertation study in a small U.S. metropolitan city.

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