

Violent Deaths and its Predictors in Gauteng and KwaZulu-Natal

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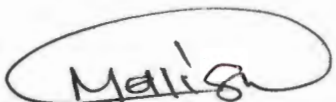
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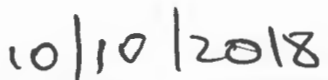
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Declaration

I, Lutendo Malisha, hereby declare that this submission is my own original work. To the best of my knowledge, this work contains no material previously published, or written by another person. It has not been submitted before – in part or in full – for any degree or examination at this, or any other University. I also declare that the intellectual content used from other people's work in design, graphics and linguistic expression has been acknowledged.


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Abstract

Introduction

Violence is increasingly being recognized, as not only a public health problem, but also a development problem. This is because it has become a major cause of death and disability; and directly or indirectly, it impedes the attainment of some of the key global development goals. It is also costing countries billions of dollars each year in health care and law enforcement; and it slows economic growth by eroding personal and collective security. Despite the lack of ideologically driven spates of violence, South Africa has one of the highest prevalence of violence deaths in the world; where it has been described as an epidemic. For example, in 2008 alone, 38% of all deaths in South Africa were attributed to violence; and this declined to 36.7% in 2011 and to 31.1% in 2013.

Gauteng province, with 24.0 deaths, and KwaZulu-Natal province with 35.1 deaths per 100,000 of the population are among the provinces with the highest prevalence of violent deaths in South Africa.

Main aim and objective

The main aims of this study were twofold: Firstly, to examine the dynamics of violent deaths by the use of the Social Ecological Model (SEM); and secondly, to examine community-level attitudes and perceptions regarding violent beliefs and behaviours by the use of the Experiential Learning Theory (ELT) in Gauteng and KwaZulu-Natal provinces.

Methodology

The study used the data on decedents from the 2001-2015 Civil Registration Systems; cross-sectional data on 282 decedents; and the data on survivors from 1319 households in Gauteng and KwaZulu-Natal provinces. The sample for the survey was derived by the use of Cochran's sampling method. The data on decedents in the cross-sectional survey were collected from adult surviving heads of household or their representatives. The data were analysed by the use of the Pearson's Chi-square statistic, Kaplan-Meier survival methods, the Binary Logistic-regression model and the multinomial logistic regression model.

Results

The study found that more than one quarter of decedents were victims of violent deaths. The key individual-level factors influencing VDV were: being a male decedent; belonging to the young adult age group; being a black decedent and consuming alcohol and drugs. Never having been married, currently married or cohabiting; and belonging to a gang sub-culture. These were significant relationship predictors of increased VDV. Additionally, community-level factors predicting VDV were: having resided in urban areas, having lived in Gauteng province, having lived in communities; where the violence expectancy is high; and having favourable attitudes to the possession of weapons and revenge violence.

Furthermore, just over one quarter of the surviving-study respondents reported a favourable attitude to the possession of weapons and revenge violence. Having experienced VDV as a secondary victim, was a significant predictor of increased favourable attitudes to the possession of weapons and revenge violence. Other control factors predicting increased favourable attitudes to the possession of weapons and revenge violence were: being male, a young adult and a black.

Conclusion

The study concludes that VDV is prevalent in South Africa in general, and in Gauteng and KwaZulu-Natal provinces in particular. The finding suggests that the high level of VDV could be influenced by the high prevalence of violent crime in South Africa. Additionally, favourable attitudes to the possession of weapons suggest that perception of vulnerability to violent victimization and violent-crime expectation is high. The favourable attitude to revenge violence also suggests that the population believe that the formal and legal justice system does not deliver commensurate justice to victims of violence, thereby enabling aggrieved parties to have favourable attitudes to revenge violence.

Acronyms

ASMR	Age Standardized Mortality Rate
AIDS	Acquired Immune-Deficiency Syndrome
CDC	Centre for Disease Control and Prevention
CDR	Crude Death Rate
CI	Confidence Interval
CS	Community Survey
CSMR	Cause-Specific Mortality Rate
CSDR	Cause-Specific Death Rate
CSVR	Centre for the Study of Violence and Reconciliation
DRC	Democratic Republic of Congo
EA	Enumeration Area
EC	Eastern Cape
ELT	Experiential Learning Theory
FBI	Federal Bureau of Investigation
FS	Free State
GP	Gauteng Province
HDI	Human-Development Index
HIV	Human Immunodeficiency
HSRC	Human Science Research Council
ICD	International Classification of Diseases
IDP	Internally Displaced People
KZN	KwaZulu-Natal
LP	Limpopo

MDGs	Millennium Development Goals
MP	Mpumalanga
MRC	Medical Research Council
NC	Northern Cape
NDP	National Development Plan
NHMP	National Homicide-Monitoring Program
NIMSS	National Injury Mortality-Surveillance System
NW	North West
OR	Odds Ratio
SADC	South African Development Community
SAMR	Standardized Specific Mortality Rate
SAPS	South African Police Services
SDGs	Sustainable Development Goals
SEM	Social-Ecological Model
SES	Socio-economic status
SPSS	Statistical Package for the Social Sciences
STATSSA	Statistics South Africa
TFR	Total Fertility Rate
UCR	Uniform Crime Reports
UN	United Nations
UNICEF	United Nations Children's Fund
UNODC	United Nations Office of Drugs and Crime
US	United States
USA	United States of America
WC	Western Cape

WHO	World Health Organization
VOCS	Victims of Crime Survey
VDV	Violent-Death Victimization
VLRC	Victorian Law-Reform Commission

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Definition and typology of key concepts

In this chapter, the key concepts that were defined include: violence and violent deaths categorized as murder, homicide and suicide.

2.2.1 Violence

The World Health Organization (2008) defined interpersonal 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, maldevelopment, or deprivation (WHO, 2008).”

Interpersonal violence is manifested in four main forms including: physical, sexual, and psychological attack, and deprivation. Violence can be divided into three main types:

- i. Self-directed violence, which is violence against oneself. This type of violence is perpetrated by the victim. It is also referred to as self-abuse or suicide.
- ii. Interpersonal violence, which is violence between individuals. This type of violence can occur within the family, such as domestic, or intimate-partner violence or community violence. Family violence includes child abuse and maltreatment; intimate-partner violence; and elder abuse. On the other hand, community violence can be subdivided into violence within a network of close friends or acquaintances and violence involving strangers. Examples of common community violence are youth violence, assault by strangers, violence related to property crimes, and violence in workplaces and within institutions.
- iii. The third type of violence is collective violence. This type of violence involves a large group of people. It occurs randomly, such as: mob violence, or

institutionalized and structured violence, such as ideological and socially motivated violence.

2.2.2 Violent-Death Victimization

Violent-death victimization (VDV) can take various forms; and it can have different social and legal definitions. The most common types of violent deaths are three. These are: murder, homicide and suicide.

i. Murder

The definition of murder varies, according to the type of legal jurisdiction. Under the common law, murder is defined as the unlawful, intentional and malicious killing of a human being by another human being (Lehman & Phelps, 2004). It is often, but not necessarily, planned and orchestrated; but it can also be the outcome of gross negligent action by an individual with a reason to believe that his or her action against another person could result in the death of that person.

In this regard, causing the death during the execution of other criminal acts, such as robbery, burglary, assault, rape, kidnapping for, or not, for ransom, arson and intentional deprivation of food or medication, which can be treated as murder. In all societies, this form of death is considered to be the most serious form of criminal offence.

ii. Homicide

On the other hand, under common law, homicide is an act committed by another person that results in the death of another unintentionally, justifiably or excusably (Lehman & Phelps, 2004). In this regard, homicide may not be considered a



criminal offence; or it may attract a lower charge of manslaughter, if convicted. Common circumstances that may lead to homicide are self-defence, which is killing a person who threatens to kill or cause grievous harm to another; killing a person due to insanity; accidentally or while under intoxication. The difference between homicide and murder can be very thin indeed, again depending on the jurisdiction in which they are applied.

iii. Suicide

Suicide is the intentional killing of oneself by any means, such as shooting with a firearm, hanging from a tree, or within a house, or by the deliberate use of poisonous substances or an overdose of medication or drugs. The factors leading to suicide are many; and they can be psychological or social. Psychological factors, such as mental disorders, including depression, schizophrenia, alcoholism, and drug and medicine abuse have commonly been featured in suicide cases (Ajdacic-Gross, et al., 2008).

Social problems, such as marital dissolution, family disputes and poverty, can act as an underlying cause of psychological disorders – leading to suicide.

In this study, therefore, VDV has been defined as “any intentional or unintentional act occasioned by another individual or self that result in the death of another person or of oneself, regardless of legal outcomes. A person who died, as a result of such acts, is regarded as having been a victim of violent death – VDV.” In this regard, in this study, VDV has been used synonymously for murder, homicide and suicide.

Chapter One

Overview of the study

1.1 Introduction

Violence is increasingly being recognized as not only a public health problem, but also a development problem. This is because it is not only a major cause of death and disability; but it also directly and indirectly impedes the attainment of some of the global development goals (WHO, 2009). The Sustainable Development Goals (SDG) identified violence as an increasing global epidemic responsible for millions of deaths and injuries annually (Nunes, 2012; Lang, 2009; Butchart, 2017). Violence, especially in developing countries, has serious implications for national and local economies, costing countries billions of dollars each year in health care, law enforcement, and lost productivity. Violence can slow economic growth; as it erodes personal and collective security in those countries in which it is prevalent.

The world report on violence indicated that more than 1.6 million people die of violence annually. Most of these deaths occur in low- and middle income-countries. Sub-Saharan Africa is by far the region most affected by violence and violence-related mortality and disability (Krug, et al., 2002). In this region, violence is directly linked to individual, relationship and community, and societal factors; and it is manifested in various forms, including child maltreatment, domestic violence, intimate-partner violence, youth-gang violence, crime and institutionalized ideologically founded violence. All these different forms of violence cause a large number of premature deaths.

All the different forms of violence are preventable. Global evidence-based research and scientific studies show that there are several ways to prevent violence and reduce its impact. Some of these are developing safe, stable and nurturing relationships; developing life skills, such as social, emotional and behavioural competencies; reducing access to and the use of harmful substances; reducing access to and the use of weapons; promoting an egalitarian society; and changing cultural and social norms that support and promote violence as a method for resolving conflicts (WHO, 2009).

By conducting this violence death-victimization study in Gauteng and KwaZulu-Natal; which are some of the provinces in South Africa, where the prevalence of violence and violent deaths are high; we have been able to show the dynamics of violence; and we have suggested practicable approaches to reduce violence and violent deaths.

In this regard, this chapter presents an overview of the situation of violence and violent-death victimization from the global, Sub-Saharan and South African context, as well as the statement of the problem. The chapter also outlines the main aim and objectives of this study, in addition to the main research questions, as well as the hypotheses forthcoming from the study. Furthermore, the chapter presents the significance of the study; and it outlines the structure of the study report.

1.2 Background

The World Health Organization has defined 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, maldevelopment, or deprivation” (WHO, 2008). There are two main

forms of violence; and these are structured violence, as well as behavioural-interpersonal violence. Both these forms of violence can lead to violent-death victimization (VDV).

In this study, therefore, VDV has been defined as “any intentional or unintentional act by another individual or self that result in the death of another person or self, regardless of whether the violence is structured or behavioural-interpersonal. In the case of homicide or murder, whether or not the perpetrator has been arraigned before a legally constituted justice system, or not, does not matter. A person who has died, as a result of such acts, is regarded as having been a victim of violent death-VDV.” This definition deviates from that of World Health Organisation because the focus of this study is death as a result of violent act committed intentional or unintentional. In this case it takes into consideration murder and homicide since both of these terms include intentional cause of harm and unintentional cause of harm.

In this regard, VDV has been used synonymously with murder, homicide or suicide.

The causes of VDV vary between countries. In some countries, wars and conflicts, which are ideologically driven structural, and institutionalized forms of violence are the main contributors to violent deaths (Reza, et al., 2001). Structural violence involves institutional structures, such as the police, military and other state agencies and opposition forces or organizations competing for ideological space. However, in most developing countries in Sub-Saharan Africa, the powers of these State agencies and their opponents frequently transcend institutional functions; and they end in behavioural-interpersonal violence.

According to Farmer (Farmer, et al., 2006; Farmer, 2004), structural violence emanates from social structures that put individuals or communities at risk of being harmed either due to the nature of political and economic organizations of society, which are not attributed to individuals, but rather to historical processes and forces that conspire to constrain individual agency.

In this regard, structural violence is visited upon all those whose social status denies them access to the fruits of scientific and social progress. Structural violence manifests in killings during war, deaths caused by the deliberate deprivation of populations, or individuals denied of medical care or food during conflict situations.

In non-war and non-conflict countries, such as the present state of South Africa and other similar countries, violent deaths are behavioural or interpersonal in nature. They are caused by social behaviours, such as substance abuse; crimes of an economic nature, such as robberies, car hijackings, etc; relationship-related violence, such as domestic violence, intimate-partner violence, child abuse and elder abuse (Jewkes, et al., 2009; Dunkle, et al., 2004); and community violence motivated by rivalry between social groups, such as gangs or conflicts between migrant and host communities (Cooley-Strickland, et al., 2009).

In most jurisdictions, behavioural-interpersonal violence is characterized by murder and homicide.

Globally, violence and violent-death victimization (VDV) are two of the world's worst cases of public health epidemics. The United Nations Office of Drugs (Nunes, 2012; Lang, 2009)

estimated the global death rate from violence at 7.6 per 100,000 populations; and it is more prevalent in the developing countries of Sub-Saharan Africa, followed by Central and South America. In both these world regions, the death rate from violence ranges from 20-30 deaths per 100,000 of the population. Males and youth are the main victims and perpetrators of violence; and these two groups account for the largest number of violent deaths (others, 2008; Obermeyer, et al., 2008).

The prevalence of VDV is higher among males and youths – mainly because of their greater propensity for erratic and violent behaviours (Owusu, 2016b; Filmer & Fox, 2014; Min-Harris, 2010).

On the African continent in general, and Sub-Saharan Africa in particular, the VDV incidence has largely been attributed to institutionalized and structured violence (Collier, et al., 2009; Lujala, et al., 2005). Much of the violence has been the consequence of social and economic disruption of order that has contributed to the behavioural-interpersonal violence and the high rate of VDV on the African continent (Collier & Hoeffler, 2004a). Some of the violence is manifested in the pervasive murders, rapes and injuries in both private and public spheres.

The high prevalence of VDV in Sub-Saharan Africa is also directly linked to criminality induced by the social and economic exclusion (Owusu, 2016b; Filmer & Fox, 2014; Min-Harris, 2010). These poor conditions are manifested by the low Human Development Index (HDI), low economic performance, high levels of income inequality, rapid rates of urbanization caused by poverty-driven rural-urban migration, poorly resourced criminal-justice systems, and a proliferation of firearms (Nunes, 2012).

The pattern of VDV in Sub-Saharan Africa is quite similar to that in other world regions facing similar social and economic conditions.

1.3 Violence in South Africa

Violence in South Africa is characterized by both structural and behavioural forms of violence. The above forms of violence continue to be manifested, among others, in murders, homicides, violent robberies, non-sexual and sexual assaults, thefts and burglaries of businesses, as well as private houses. A previous study suggested that violence in South Africa is normative; and it has been regarded as an appropriate means of resolving all forms of conflicts (Simpson, 1993). Estimates suggest that overall violence and the crime rate have been on the rise since 1994.

Most of the violence is committed by young people. The mortality effects of these forms of violence have been staggering (Norman, et al., 2007).

The wave of violence and crime in South Africa can be divided into two major and related phases. The first of these was the apartheid period, which was characterized by widespread rural-urban migration due to widespread poverty in rural areas. The destinations of the migrants were the poorly planned and inadequately resourced urban townships, which were also labour reserves to service the pockets of white-owned businesses, mining and agricultural enterprises. Because township residents live in gross poverty and deprivation, widespread unemployment and scarcity of basic services, they have become centres of structural violence, political agitation, and struggle against the apartheid regime, as well as violent crimes (Seedat, et al., 2009; Comaroff & Comaroff, 1999).

These have set the stage for the criminal activity and violence that has become legitimate and socially acceptable *modus operandi*. The township structures under apartheid replaced the traditional structures of authority, such as the family or schools; and they have become more or less centres of violence for the educationally, economically and politically disempowered black youth (Goredema, 2011; Hübschle, 2014).

The level of violence in these townships has led to unprecedented levels of violent deaths, making violence the second-leading cause of deaths in South Africa (Seedat, et al., 2009; Comaroff & Comaroff, 1999).

After the demise of apartheid in 1994, the violence which led to its end did not stop. It was transformed under the inherited security and judicial structures. The failure of the criminal justice system to transform and create a new legitimate and mutually recognized source of social authority resulted in a culture of impunity (Harris, 2003; Hamber, 2000).

This culture continues to assist criminals to operate freely and to create the private system of justice as an alternative system; and this in turn, has led to the dangers of cycles of violence that prevails to this day. This has been exacerbated by the failure to realize the expectations of better living conditions for blacks promised in the post apartheid South African society (Demombynes & Özler, 2005).

Additionally, the continued failure of the school system, the family, the work place and political organizations, in acting as social-capital agencies (Sampson, et al., 2005) in creating social cohesion has enabled criminal youth gangs and other organized crime syndicates to fill the void created and perpetuated by violence in South Africa (Blumstein,

2002). These criminal gangs have provided a complete sub-culture with their own alternative forms of wealth creation through crime. The criminal activities are not only perpetuated through robbery, contract murder and protection; but they also include domestic violence and child abuse, which has increased the magnitude of VDV.

The unprecedented level of violence is believed to have greatly affected the capacity of the South African State to address violence and crime; and it contributes to perpetuating the economic impoverishment of Black South Africans.

The social and psychological insecurity generated both by the real or perceived levels of violence and crime – and public hysteria about crime – have contributed to the feelings of fear and helplessness. These have, in turn, created favourable attitudes for violent beliefs and behaviours, including the possession of weapons for self-defence and revenge violence, thereby resulting in spiralling violence and VDV.

1.4 Factors predicting VDV and violent attitudes and behaviours

Previous studies have grouped the predictors of violence and VDV into two main groups of factors; and these are: individual and contextual factors. One of the individual-level factors is age. Previous studies suggest that the majority of VDV involves young adults. These studies have justified the high rate of VDV among young adults to their propensity to violence and engaging in behaviours that promote violence, such as the use of drugs and alcohol. Another individual factor associated with violence and VDV is sex (O'Flaherty & Sethi, 2010; United Nations Office of Drugs and Crime, 2013; Paulozzi, et al., 2001). These studies suggest that most of the perpetrators of violence are males; and their victims are mostly females and intimate partners. Race is another important predictor

of the risk of VDV. Research conducted in the USA, where racial diversity is high, has observed that violence and VDV are higher among Blacks than Whites (García-Moreno, et al., 2013).

Apart from the above-mentioned factors, the contributions of other factors of a behavioural and social nature on violence and violent deaths have not been appropriately examined. This group of factors of VDV are contextual factors. One of the most important of these is the community's perception of violent crime in neighbourhoods. In communities where the level of violence is high or perceived to be high, the propensity for violence is expected also to be high. The attitude to violent beliefs and behaviours is influenced by personal experience, which often leads to the change in routine activities and habits (Kimbrow & Schachter, 2011; Wyant, 2008).

This situation leads to increasing public demand and to the increase in unfavourable attitudes towards personal protection (O'Brien, et al., 2013); as well as to blaming minority groups as perpetrators of violence and crime (Dassah, 2015; Poppe, 2001). Another important factor influencing the fear of violent crime –that has not been investigated –has been identified as the direct or indirect victimization experience (Liska & Baccaglini, 1990). This increases the perceptions of risk of expectation and vulnerability. Poor public perceptions of violence and crime-prevention agencies can also exacerbate violence attitudes and beliefs, thereby leading to VDV (Harris & Radaelli, 2007).

Community attitudes to violent beliefs and behaviours have been identified as predictors of violence and VDV. Previous research suggests that individuals in societies where violence is prevalent have favourable attitudes towards the possession of weapons

(Ncontsa & Shumba, 2013). Such attitudes are based on the perception that the possession of weapons makes people feel safe. For example, despite having a lower rate of firearm-related mortality, more Whites than Blacks in the United States have very strong favourable attitudes towards the possession of weapons – on the basis of perceived vulnerability (O'Brien, et al., 2013).

The attitude to revenge violence is another predictor of VDV (Unjacke, 2000). Revenge violence is believed to be common in settings, in which perpetrators believe that the formal system of justice does not deliver commensurate justice to the harm caused to victims. This system of justice has been described in the Hammurabi code in statements like “a life for a life”, “an eye for an eye” and “a tooth for a tooth” (Miller, 2006).

Neighbourhoods are another important predictor of violence and VDV. The United States provides one of the best settings for examining the effect of residential differences on violence and VDV. In that country, Blacks, Latinos, and other minority groups live in separate social spheres from Whites. These spheres are characterized by extreme levels of spatial and social inequalities (Krivo, et al., 2009; Blank, et al., 2001).

A study by Wickes et al., in Australia also found that violence is not randomly distributed; but it is influenced by differences in the types of neighbourhoods (Wickes, et al., 2016; Sampson, et al., 2005). Neighbourhoods with weak social cohesion and pervasive violence and VDV are mostly urban communities (Andrews, et al., 2014). In this study, similar patterns of attitudes and behaviours are expected in South Africa.

In South Africa, the high rate of VDV is taking place against the backdrop of several policies and strategies that aim to reduce violence. One of these is the National Development Plan, which among other issues, aims at strengthening the criminal-justice system, creating a professional police service and building community participation in community safety. Others are the White Paper on safety and security; the White Paper on policing; the integrated social crime-prevention strategy, community-safety forums; and the integrated urban-development framework.

Studies elsewhere have found that violent death victimization (VDV) is influenced by both individual levels and contextual-community level factors. Although the level of violent deaths in South Africa is known; much of the knowledge is based on institutional reporting systems, such as police records and hospital mortuary statistics. As a result, nothing is known about the individual level and contextual factors that influence violent-death victimization in South Africa. The only method that can provide information on the individual characterization of VDV is by conducting community-level research, which to the best of our knowledge has not yet been done in South Africa.

Additionally, knowledge on contextual community-level factors, such as attitudes and perceptions that may influence violence and VDV in South Africa are not well-understood or documented. As a result, it has been rather difficult to identify strategies that can be used to combat violence and its varied manifestations effectively.

In this regard, the aim of this study is, therefore, to investigate the prevalence and predictors of VDV, attitudes and perceptions regarding violence beliefs and behaviours

and the factors predicting these attitudes and perceptions in the Gauteng and KwaZulu-Natal provinces of South Africa.

1.5 Problem Statement

Violent deaths, as a component of total deaths, have serious consequences on the production, reproduction and socialization functions of societies. The increase of violent deaths has been a global concern, because of its effects on the attainment of the Millennium Development Goals (MDGs) (Nunes, 2012) in the past; and now the Sustainable Development Goals (SDGs). The proposed goals on violent deaths are to: (1) reduce the number of people physically harmed by violence; (2) reduce the number of people and groups affected by violence; and (3) strengthen institutional responses to prevent and reduce violence.

The prevalence of violence and violent deaths, both from structural and behavioural perspectives, is higher in low- and medium-income countries. Of these countries, Sub-Saharan Africa has the highest number of such deaths – estimated at more than 30 per 100,000 population (Abrahams, et al., 2012; Reza, et al., 2001).

The state of violence in South Africa has been described as an epidemic; mainly because South Africa has been reported to have one of the highest prevalence of violence and violence-related deaths and injuries in the world (Norman, et al., 2007)– despite the lack of ideologically driven spates of violence. In 2008, the National Injury Mortality Surveillance System reported that 38% of all deaths in South Africa for that year alone were due to violence; and this has modestly declined to 36.7% in 2011 and 31.1% in 2013.

The Gauteng provinces, with 24.0 per 100, 000 and KwaZulu-Natal province, with 35.1 per 100,000 of the population are among the provinces with a high prevalence of violent deaths. The other two provinces are the Eastern and the Western Cape (STATSSA, 2016).

The high prevalence of violent deaths in these provinces are taking place in the context of the available policies, laws and regulations to address the problem of violence and violent deaths in South Africa. Some of the instruments available are: the Bill of Rights Act No. 108 of 1996, which entrenches the rights of every person to equality and freedom and security; the Domestic Violence Act No. 116 of 1998, which protects children and women from any form of abuse; and the Dangerous Weapons and Firearms Act, which is aimed to control the possession of and the usage of weapons.

Despite these instruments, the “epidemic of violent deaths”, mostly murder and homicide, continues to be high in South Africa (WHO, 2008).

Most studies and data on violence and violent deaths in South Africa are based heavily on administrative sources, such as the police, death registrations and mortuary registrations, which are unable to comprehensively examine the dynamics and factors influencing these deaths. The only available information provided by these statistics are: the age, sex and race of the victims. Social and behavioural factors, which can be attributed to the victims and the community settings and environments, in which such violent deaths occurred, are not available in these statistics; and they are, therefore, not well understood.

Consequently, there is a significant paucity of knowledge on the predictors of violent deaths, including on population attitudes and perceptions regarding violent beliefs and behaviours in South Africa. The lack of knowledge has, in part, contributed to the failure of the available instruments to curb the “epidemic of violence and violent deaths” in South Africa. The present study, therefore, has assessed the prevalence, individual and contextual predictors of violent-death victimization, and population attitudes to violent beliefs and behaviours that may have exacerbated the situation of violence in Gauteng and KwaZulu-Natal provinces of South Africa.

1.6 Aims of the study

The aims of this study were twofold. The first was to examine the dynamics of violence, its prevalence; and to identify the main individual and contextual factors influencing violent-death victimization of the decedents. The second aim was to examine community-level attitudes and perceptions regarding violent beliefs and behaviours; and to identify their predictors, including whether or not the experience of violent deaths sustain favourable attitudes to violent beliefs and behaviours in Gauteng and KwaZulu-Natal provinces, where the prevalence of violence and violent-death victimization are high.

The specific objectives of the study are:

- i. To assess the prevalence, patterns and trends of violent-death victimization in South Africa, focusing on Gauteng and KwaZulu-Natal, by using administrative records from the Civil Registration System;
- ii. To assess the prevalence of violent-death victimization in Gauteng and KwaZulu-Natal by using community-level household data on the decedents;

- iii. To use the Social Ecological Model (SEM) as a theoretical model to examine and identify the factors that may influence violent-death victimization in Gauteng and KwaZulu-Natal provinces; and
- iv. To use the Experiential Learning Theory (ELT) as a theoretical model to examine community attitudes to violent beliefs and behaviours; and to identify their predictors in Gauteng and KwaZulu-Natal provinces.

1.7 Research Hypotheses

In this study, the following hypotheses were tested:

- i. Young adults, regardless of sex, behavioural and contextual factors are significantly more likely than older people to suffer violent-death victimization;
- ii. Violent-death victimization is significantly more likely among Blacks than other population groups, regardless of socio-demographic and contextual factors;
- iii. Substance abusers, such as alcohol and drugs are significantly more likely than those who do not use these substances to experience violent-death victimization, regardless of socio-demographic and contextual factors;
- iv. Violent-death victimization is significantly more likely among people residing in informal neighbourhoods than among people residing in formal neighbourhoods – even after controlling for socio-demographic factors;
- v. Individuals, who know a victim of, or have experience of – *witnessed*—a violent death of a family member or close associate, are more likely than individuals, who do not have experience of violent deaths to have favourable attitudes towards the possession of weapons as a form of violent belief and behaviour; and

- vi. individuals who know a victim of or have experience of – *witnessed*– a violent death of a family member or close associate, are more likely than those individuals, who do not have any experience of violent deaths to have favourable attitudes towards revenge violence, as a form of violent belief and behaviour.

1.8 Significance of the study

Despite having several measures of a legal and programme nature in place in South Africa, high rates of unnatural deaths continue to be reported in the annual police statistics and in the media in South Africa. Most of these deaths are a result of violence, crime and psycho-social problems. Although the trends in violent deaths show that the prevalence has modestly declined, South Africa remains one of the countries with high violent-death rates, not associated with ideological conflicts in the world and certainly the highest in Africa.

The high violent-death rate has, therefore, become a public health epidemic which calls for urgent and concerted effort to contain this form of mortality. Three most common forms of violent deaths have been identified in South Africa. These include: murder, homicide, and suicide. These deaths are mostly caused by firearms, sharp objects, beatings and poisoning.

Although violent deaths in South Africa occur at all ages, sex and race, most of these deaths occur among young adults, males and the Black population groups; they are linked to criminal behaviour; and behaviours that are not necessarily criminal, but increase the risk of violent-death victimization, such as alcohol abuse, drug vending and drug

consumption. Another problem associated with violent deaths in South Africa is the spheres and contexts in which they occur, which are both public and private spheres.

In both cases, violent deaths are mostly interpersonal; and they occur among acquaintances, in relationships, such as intimate-partner relationships, and parent-child relationships in the domestic environment. This suggests that violent deaths in South Africa are not random; but that most victims and perpetrators are well-known to each other.

At the community level, crime has been presented as one of the most prominent features of violent deaths in South Africa. The high level of crime in South Africa has its roots in the social injustices imposed during the apartheid regime, which excluded the Black majority, among whom crime is widespread, from the benefits of development. As a result, violence and crime have been institutionalized in the psyche of South Africans as a legitimate and acceptable *modus operandi* of resolving conflict, as well as obtaining livelihoods.

This situation has the potential of creating favourable attitudes to violent beliefs and behaviour, such as the possession of weapons and revenge violence, and thereby further fuelling violence and increasing violent-death victimization.

In response to the known factors influencing violent-death victimization, mostly obtained from mortality and crime statistics held by law-enforcement agencies and health institutions, several laws and policies have been formulated to address the problems of violence and crime. Some of these are the Firearms control Act of 2000 and the

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dangerous weapons Act of 2013, which focus on addressing the main instrument used in violent-death commission; the Domestic violence Act of 1998, which aimed at stemming the most common arena in which violence and violent deaths take place; and the prevention of public violence and intimidation Act of 1991 and the regulation of gathering Act of 1993, which aim at preventing community violence during protests.

Other instruments that were designed to reduce violence and deaths; are the Bill of rights and the Constitution of the Republic of South Africa, which guarantees the security of all persons in South Africa and the National Development Plan of 2030, which aims at addressing the root causes of violence and crime, such as inequality and deprivation.

Despite the above measures, violence and violent death in South Africa have continued to be prevalent. A number of factors have been suggested, as influencing the effectiveness of the above frameworks. These include the problems of implementing these frameworks; policing practices and the lack of transformation in policing; governments' failure to address socio-economic problems that drive violence; and the challenges of unemployment, poor education and infrastructure. However, the failure of these frameworks could in part be explained by the poor understanding of the dynamics and the characterization of violence and violent-deaths victimization – due to inadequate knowledge on the individual and contextual factors influencing violence and violent-death victimization.

Our view is that a better understanding of these factors, derived from the theatre of violent actions, which is the community level, could provide a better understanding and knowledge of violent-death victimization, and set the stage for the effective

implementation of frameworks to reduce violence in South Africa. However, research using the community perspectives on violence and deaths therefrom have been neglected in South Africa.

This research will therefore contribute to the existing literature on violent-death victimization by examining the individual, community and societal contexts, in which violence and violent-death victimization occur.

1.9 Structure of the thesis

This thesis was divided into seven chapters. Chapter One presents the introduction, problem statement, study objectives, hypotheses, and rationale of the study. Chapter Two presents and discusses the literature review and the social-ecological model, as a theoretical perspective to explain the prevalence of violent deaths. It further uses the experiential learning theory to explain factors influencing the attitudes towards VD. In Chapter Three, a detailed description of the research methodology was presented; and in Chapter Four, the patterns and trends in violent deaths in South Africa were presented. Chapter Five presents the dynamics, prevalence and predictors of violent-death victimization in Gauteng and KwaZulu-Natal provinces; while Chapter Six examines the attitude towards violent belief and behaviours in Gauteng and KwaZulu-Natal. Finally, in Chapter Seven, there is a summary of the major research findings, a discussion of the results presented, the conclusion to the study, and key-policy recommendations.

Chapter Two

Literature Review

2.1 Introduction

This chapter presents the main concepts used in the violent-death victimization (VDV) study. The main concepts are violence and violent-death victimization. Other concepts defined in this chapter that are related to VDV were murder and homicide. The chapter also presents the literature on VDV from the global, African and South African perspectives; it discusses the factors associated with VDV; and the attitudes to violent beliefs and behaviours that might influence VDV patterns. Furthermore, the chapter presents the theoretical framework that was used as a basis for the study and the conceptual framework that guided the VDV study. The synthesis of the theoretical frameworks and the literature review were also presented in this chapter; as they are important in identifying the gaps for this VDV study, and in justifying the study methodology.

2.2 Perspective on violent-death victimization

The perspectives on prevalence and the patterns of violent death victimization are presented below in three different perspectives. These perspectives are: at global, Sub-Saharan, and South African perspectives.

2.2.1 The global perspective

The global state of violence and its consequences are a serious concern; as violence does not only kill people, but it also kills the resources people have; and it relegates society to a state of despair and hopelessness. Global research on violence and its magnitude has identified three forms of violence (Gottschalk & Ellis, 2010; Crowe, 1974;

Daly & Wilson, 1985; Cook, et al., 2006; Roberts, 2012; Fearon & Laitin, 2003). The first, and perhaps that with the highest burden of death, is interpersonal violence, which is characterized by murder or homicide and disability, due to violence.

The majority of these deaths are a result of firearm-related violence, the use of sharp instruments and beatings by the use of blunt objects; the second is institutionalized and structured violence perpetrated by ideological, racial, religious or socio-economic interest, or all of the above; and the third is cultural violence, which is rooted in historical exigencies; and it is passed from generation to the next, through which intra-group violence is institutionalized and operationalized. It is also random violence, usually involving a large number of participants. However, this study on violent-death victimization focused on; and it was restricted to interpersonal violence.

Globally, interpersonal violence occurs within and between sexes, between people of the same, as well as different socio-economic groups, within and between races and tribal groups and within and between neighbourhood systems. The United Nations Office of Drugs estimated the global death rate from interpersonal violence at 7.6 per 100,000 populations (Nunes, 2012). It further established that interpersonal violence is more prevalent in Sub-Saharan Africa; and as a result, this world region has the highest interpersonal death rate followed by Central and South America. The death rate due to interpersonal violence in these two world regions ranges from 20-30 deaths per 100,000 population. In contrast, East and South-East Asia and West and Central Europe have lower rates of interpersonal violence-death rates estimated at less than 10 per 100,000 of the population.

Global evidence also suggests that regardless of the groups involved, males and youths are the main victims and perpetrators of interpersonal violence; and these two groups account for the largest number of violent deaths (Alkhuzai, et al., 2008; Obermeyer, et al., 2008; Coghlan, et al., 2008).

Worldwide, young men are reported to be at a higher risk of interpersonal VDV than any other age group – mainly because of their greater propensity for erratic behaviours (CDC, 2012; WHO, 2002; WHO, 2011). It is estimated that the global interpersonal male death rate is four or five times higher than that of females, whose death rate ranges between 0.4 and 11.5 per 100,000 of the populations (United Nations Office on Drugs and Crime, 2011). Although men are more likely to be victims of interpersonal violence, the number of female and children deaths due to interpersonal violence has risen sharply in recent decades (Reza, et al., 2001; Carpenter, 2006).

Among countries, El Salvador, Jamaica and South Africa have particularly high female interpersonal death rates, more than any other country in the world (WHO, 2009).

The global pattern of interpersonal violence also reveals that the VDV rate varies according to the racial group. Perhaps the best country that can illustrate racial differences in violent deaths is the United States of America, mainly because of its large racial diversity. Evidence from the US indicates that Black people have a higher violent death rate than other racial groups (Phillips, 2002). The evidence also suggests that Blacks are more likely to kill other Blacks than other population groups (Cooper & Smith, 2011). Two main factors have been used to explain the disproportionately higher rates of violent deaths among blacks. The first is the higher rate of black involvement in criminality

and other behaviours that increase their risks of exposure to violence as victims and perpetrators. The second is the greater socio-economic vulnerability of blacks due to historical and contemporary institutionalized injustices (Edmark, 2005; Ousey & Kubrin, 2009; Webster & Kingston, 2014). These two patterns of crime and injustices also appear to explain the link between socio-economic exclusion, crime and the higher prevalence of violent deaths in other regions of the world, including in Sub-Saharan Africa.

2.2.2 Sub-Saharan African perspectives

On the African continent in general, and in Sub-Saharan Africa in particular, VDV incidence has largely been attributed to institutionalized or ideological conflicts (Collier, 2007; Depoortere, et al., 2004; Wendo, 2002). Many of these conflicts have been a consequence of colonialism and proxy wars during neo-colonial and the Cold War era. However, these conflicts have also created a social and economic order that has contributed to the thriving interpersonal violence, leading to the high prevalence of interpersonal VDV on the African continent (Collier & Hoeffler, 2002; Collier & Hoeffler, 2004a).

Some of the violence is manifested in the pervasive murders, rapes and injuries in both private and public spheres.

The high prevalence of VDV in Sub-Saharan Africa is directly linked to criminality induced by the social and economic exclusion (Owusu, 2016b; Filmer & Fox, 2014; Min-Harris, 2010). These poor conditions are manifested by the low Human Development Index (HDI), low economic performance, high levels of income inequality, rapid rates of urbanization, due to poverty driven rural-urban migration, poorly resourced criminal-

justice systems, and a proliferation of firearms. The pattern of VDV in Sub-Saharan Africa is quite similar to that in other world regions facing similar social and economic conditions.

The incidence of VDV is higher among males than females, higher among youths than older age groups, and higher among blacks than among other races (Krug, et al., 2002). Differentials by socio-economic groups also indicate that VDV in Sub-Saharan Africa is higher among the poorer groups –and mostly in the sprawling urban areas (Muggah & Frate, 2007). The main explanation for the age and sex differential has been attributed to the low level of involvement of women outside the home; where most violent crimes occur (Altbeker, 2008).

These differentials have been observed in Nigeria, South Africa (Altbeker, 2008), Kenya and other countries.

Another form of violence common in Sub-Saharan Africa, which has a high fatality rate is domestic and gender-based violence. In this form of violence, death rates have been reportedly higher among females and children than among males and other age groups. Gender-based violence, mostly among intimate partners is widespread in Sub-Saharan Africa; and it accounts for the highest proportion of female deaths due to violence. A study by García-Moreno et al. found that nearly 46% of men and 12% of women in Africa experience intimate partner violence and sexual assault in the hands of their lifetime partners (García-Moreno, et al., 2013).

A large number of these violence and assault cases end up in VDV (Abrahams, et al., 2013). Gender-Based Violence is in part exacerbated by the belief systems in patriarchal

societies (Jewkes & Morrell, 2010), the low social status of women, and discrimination against women in social and economic functions (Yodanis, 2004).

In recent years, the increasing prevalence of homicide of children has started to gain greater attention in Sub-Saharan Africa. Homicide of children was previously neglected in both public and health policy. Most young children victims of violence are killed as a result of child abuse and maltreatment, and during episodes of interpersonal violence (Pinheiro, 2006c). Child violent deaths have also been reported in practices associated with ritual killing and human sacrifices (Scholtz, et al., 1997). Another cause of child-violent deaths that is increasingly becoming common in some African countries is child-sexual assault and rape, which are often perpetrated by close relatives and end in death (Foster & Williamson, 2000).

From the above review, it is evident that violent-death victimization is widespread in Sub-Saharan Africa; and it affects all population groups. Its causes also range from offshoots related or at least resulting from institutionalized conflict, as well as interpersonal conflict within the family and in communities.

2.2.3 The profile of VDV in South Africa

South Africa continues to be one of the most violent countries on the African continent. The high level of violence is demonstrated by the pervasiveness of interpersonal violence, which has been ranked as a major cause of morbidity, mortality and disability. Interpersonal violence continues to be a national phenomenon that impacts on many groups across diverse settings. It has been described as synonymous to a “cultural” trait and a significant problem in both urban and rural neighbourhoods. This “culture of

violence” has its roots in the apartheid social, economic and political systems, which institutionalized and embedded violence in the psyche of the population, as not only normative, but also a legitimate means of resolving interpersonal social, economic and political conflicts (Simpson, 1993).

Violent-death victimization (VDV) is prevalent in the post-apartheid South Africa; and it continues to be a major public health concern. The situation of VDV in South Africa can best be illustrated by the prevalence of interpersonal violence. This is because, unlike most African countries – where VDV has been associated more with institutionalized and structured violence resulting from organized conflicts of an ideological nature – in South Africa, VDV in the post-apartheid period has been exacerbated by interpersonal violence associated with interpersonal relationships and criminality within communities (CSVR, 2016).

Although a decline in VDV has been reported from the 49 per 100,000 population in 2002 to about 30.6 per 100,000 population in 2015, South Africa continues to be rated among the top 3 most-violent and unsafe countries in the world, and having the highest rate of interpersonal VDV on the African continent. South Africa compares poorly with Russia (21 per 100,000), Brazil (19), the USA (5.6 per 100,000), and most of Europe (4 per 100,000) in VDV rates (Nunes, 2012). As observed with global patterns, South Africa has similar patterns of VDV.



In the situational context, VDV in South Africa is exacerbated by criminal behaviour, such as robberies in both public and private spheres. Other criminal situations that lead to VDV in South Africa include: cross-border crimes related to car hijacking; taxi and stock theft-

related killings; xenophobic and business-related deaths and drugs, as well as drug-related deaths (Hübschle, 2014). In South Africa, most people involved in criminal activities live on the fringe of society and create their own set of rules on how to behave. These 'subcultures' include youth and street gangs that see violence as normal; and they are more willing to use violence in situations, where other people would not (Abrahams, et al., 2013). They are also more likely to carry a weapon; and they more willing to fight to protect their 'honour' or 'status'.

These people are mostly young adult men who engage in behaviours that increase their risk of being both the victims and the perpetrators of violence (Abrahams, et al., 2006; Shamua, et al., 2015; Blumstein, 2002).

Another factor associated with the high risk of interpersonal violence that can increase the risk of VDV is alcohol and substance abuse. Alcohol consumption is one of the most prevalent forms of entertainment in South Africa – for young and old alike. Research confirms that excessive alcohol use increases the likelihood of violence; and evidence in South Africa suggests that many victims and offenders of violence are involved in alcohol consumption (Freeman & Parry, 2006; Carpenter & Dobkin, 2011; Cook, et al., 2005; Popovici & French, 2013). The Blacks and the Coloured population are the primary culprits of alcohol abuse in South Africa. It is, therefore, no surprise that alcohol-related violence and mortality therefrom is more prevalent in these two population groups (Popovici & French, 2013; Larkin, 2015; Peltzer, et al., 2011).

A third situational context in which VDV occurs in South Africa is domestic and gender-based violence. In this situation, the main victims of violent deaths are women and

children. Evidence from SAPS (2017) indicates that violent deaths, in which the victim is a woman or a child, mostly occur within domestic settings; and the perpetrator is usually a person well-known to the victim.

In 2012, about 20% of VDV victims in South Africa were murdered by relatives; and over 40% were murdered by friends or acquaintances (Chan & Frei, 2013; Abrahams, et al., 2013; Uskul, et al., 2012).

Another study by the South African Medical Research Council (MRC) found that more than half the women (58%) murdered in South Africa were the victims of intimate partners (Abrahams, et al., 2013). This finding agrees with those of previous studies (Manganyi & Du Toit, 1990; Ndabandaba, 1987; Abrahams, et al., 2006). Another study in Soweto – also in South Africa – found that more than 44% of murder victims knew the perpetrator; and he/she was usually either a relative or a close friend (Snyman, 1994). Intimate-partner violence was reported to be the leading cause of death for women homicide victims, with 56% of female homicides being committed by an intimate partner (Abrahams, et al., 2012). Despite the decline, South Africa's intimate femicide rate in 2009 was more than double the rate in the United States; where it was estimated at only 2.0 per 100,000 of the population (Abrahams, et al., 2013).

Child VDV is also prevalent; and in South Africa, it has been estimated at 5.5 per 100,000. The contexts in which child VDV occurs are domestic abuse and sexual violence (Abrahams, et al., 2009). A large number of child V DVs, especially among older children aged 15 years or older, is the result of age-related behaviours (Norman, et al., 2007). This will be further discussed later in the review. The child homicide pattern show a bimodal

age distribution, with homicide rates among children aged 0-4 being higher for females at 8.3 per 100,000 than for males at nearly 5 per 100,000 populations.

However, as age increases to 15-17 years, homicide rates increase among males to 21.7 per 100,000. As is the case for women, child homicide is usually perpetrated by close family members. Mothers are the most likely perpetrators of child homicide – due to abandonment and child abuse; and such incidents are higher among girls than boys under 5 years of age (Harris, 2003; Mathews, et al., 2013). Available evidence, therefore, suggests that cases of child VDV involving strangers are relatively few in South Africa (Harris & Radaelli, 2007).

An important objective of this study is to identify the factors associated with the high rate of VDV in Gauteng and KwaZulu-Natal provinces in South Africa. The next subsection will focus on the factors associated with VDV in South Africa.

2.2.4 Factors influencing the prevalence of VDV in South Africa

A number of factors have been suggested to influence the high rate of VDV in South Africa. Broadly, these factors can be grouped into individual and contextual factors. Among the individual factors, age and sex have been identified as two of the most important factors associated with VDV in South Africa by previous reports (O'Flaherty and Sethi, 2010; United Nations Office of Drugs and Crime, 2013; CSV, 2008; Altbeker, 2008). However, these factors have not been systematically analysed from population-based survey data.

The data from law-enforcement agencies, especially the police and institutional records, shows that age is an important risk factor of VDV in South Africa. Previous studies and

available records suggest that the majority of VDV involve young adults, as victims and perpetrators. Police records in South African also show that the majority of VDV cases are in the 15-29 year age bracket (CSVR, 2009; CSVR, 2008; CSVR, 2010). These findings appear to be consistent with those of previous studies, based on institutional records (Altbeker, 2010; Altbeker, 2007; CSVR, 2007).

Previous studies attributed the high rate of VDV among young adults to altercations during crimes, such as robbery, non-sexual assault and sexual assault (Pelser, 2008; Avalos, et al., 2010; Leoschut, 2013) and during the consumption of alcohol or drugs and drug vending (Leggett, et al., 2002b).

Another individual factor associated with VDV in South Africa is sex, which suggests that the sex pattern of VDV in South Africa is consistent with that observed elsewhere (OíFlaherty & Sethi, 2010; United Nations Office of Drugs and Crime, 2013; Paulozzi, et al., 2001). In South Africa, a study involving 11,200 homicides in 32 mortuaries found that 87% of the victims were males; and only 13% were females (Matzopolous, 2002).

The findings of the above study were consistent with the police records for the period 2001 to 2014, which showed that the male homicide rate was more than 80 per 100,000 population (Altbeker, 2005; SAPS, 2004; SAPS, 2005). Studies in other countries attribute the higher rate of male homicide to the higher propensity of males to aggression and retribution, when provoked. Men are also higher risk-takers than women; and they are likely to stand their ground in the face of adversaries – leading to becoming a victim of violence, or a perpetrator of VDV.

Violent-death victimization in South Africa varies, according to racial groups. Evidence from four studies are in agreement with the view that race is an important predictor of the risk of VDV in South Africa. The studies observed that the risk of VDV was highest among blacks followed by coloureds, Whites and Asians (Leggett, 2004; Thomson, 2004; Mathews, et al., 2005).

Another study also in South Africa found that over 90% of victims of VDV were blacks (CSVR, 2007). This was followed by Coloureds and Asians, who had the lowest proportion of VDV. A study done by Mathews and colleagues (2013) also found that blacks in South Africa were disproportionately over-represented in VDV statistics, as both victims and offenders. For example, the victimization rate for blacks (27.8 per 100,000) was 6 times higher than the rate for whites (4.5 per 100,000) (Mathews, et al., 2013). A long period of economic and social subjugation, which resulted in the racial divide in poverty levels with blacks bearing the greater share of poverty, could explain the high risk of VDV among the black population in South Africa.

Law enforcement data suggests that whites or Asians are far less likely to be victims or perpetrators of VDV than Africans or Coloureds: mainly because of their socio-economic circumstances (STATSSA, 2015). African people as a group, tend to live in the worst economic circumstances; and therefore, they are more at risk of falling victim to violent crime.

2.3 Contextual factors influencing VDV and violent attitudes and behaviours

The contextual factors that could increase the risk of VDV in South Africa include the perception of the level of violent crime in neighbourhoods; violent attitudes and

behaviours, such as attitudes towards the possession of weapons and revenge violence; and the various types of residential neighbourhood.

2.3.1 Community-level perception of crime

Community-level violence, as a contextual variable, increases the propensity for violence, VDV and favourable attitude to violent beliefs and behaviours. The perception of violent crime is often based on two reasons. The first is fear, because of the personal experience as a victim of violent crime; the indirect victim as a witness of a violent crime, as it unfolds; or knowing people who have been victims of violent crime in one's neighbourhood.

These experiences increase the individual's violent-crime expectation, or risk of victimization, leading to significant dysfunctional or functional effects on individuals. Some of the dysfunctional effects are on physical and psychological health, alterations in routine activities and habits, as well as withdrawal from community, thereby weakening community cohesion and stability (Stafford, et al., 2007; Wyant, 2008; Jackson & Stafford, 2009).

One of the factors influencing the fear of violent crime is the psychology of risk-perception and the stereotyping of certain groups as being responsible for incidents of violent crime. These perceptions often lead to increasing public demand on the justice systems to respond, and/or the adoption of personal measures, including self-protection against actual or perceived vulnerability. This explains the increasing support for the possession of weapons in societies, where the level of violent crime is perceived to be on the rise (Kleck, et al., 2011; O'Brien, et al., 2013).

Accepting attitudes and behaviours for self protection in the face of violent crime is more likely in societies in which the justice system is weak; or law-enforcement agencies are unable to cope with crime. On a number of occasions, certain minorities are often scapegoats for what is perceived as pervasive violent crime (Dassah, 2015; Poppe, 2001).

A number of studies have attributed perceptions on the level of violent crime and perceived or actual vulnerability on the demographic and social characteristics of individuals. Some of these studies reported that age, sex and social class are important factors, influencing the fear of and perception of violent-crime vulnerability (Killias, 1990). These perceptions were attributed to the feeling of physical vulnerability by individuals of a particular age, sex or even race (Liska & Baccaglini, 1990). Another important factor influencing the fear of violent crime has been identified as the direct or indirect victimization experience (Liska & Baccaglini, 1990). This perspective argues that individuals who have experienced a violent crime, know a victim thereof; or they have experience of – or have witnessed – a violent crime; and consequently, they are more likely to perceive themselves as being at risk; and they perceive that violent crime is widespread – even though this may not necessarily be the case.

The perception that violent crime is widespread can also be influenced by the communities' actual or perceived crime levels, as well as the structural features of neighbourhoods, such as the socio-economic environment (Wyant, 2008).

South Africa has one of the highest levels of violent crime in the world (Burton, et al., 2009). Although reports by Statistics South Africa suggest that crime levels appear to

have stabilized; the public's perception of violent crime in their neighbourhoods indicates that violent crime is increasing in South Africa. The reports also revealed that most of the respondents reported feeling unsafe at night and more than half have reported taking physical measures as a response to the actual or perceived vulnerability to violent crime (STATSSA, 2017).

Another study also on violent crime control and prevention suggested that public perception of prevention agencies in South Africa is poor, with the majority reporting that they believed government institutions have failed in their obligation to fight violent crime (Harris & Radaelli, 2007). This line of argument has been vividly expressed in recent xenophobic violence in South Africa, in which foreign nationals have not only been blamed for exacerbating crime in certain neighbourhoods; but they have also been physically beaten, displaced, dispossessed, dehumanized and even killed (Dassah, 2015).

However, the effect of the community's perception of violent crime on VDV in South Africa is not known. In this study, we investigated the perception of the respondents on violent crime in their neighbourhoods. The investigation aimed at proving whether or not the perception of violent crime leads to VDV, having a favourable attitude to violent beliefs and behaviours, such as the possession of weapons and revenge violence.

2.3.2 Community attitudes towards violent beliefs and behaviours

Community attitudes, beliefs and behaviours towards violence comprise some of the important contextual factors influencing violence and VDV. In this section, community attitudes to the possession of weapons, revenge violence, and the perception regarding

violent crimes are reviewed. Chan and Frei (2013) suggest that the experience of violence, as a primary or secondary victim, or the witnessing of violent acts, could significantly contribute to having violent attitudes and behaviours (Chan & Frei, 2013). Another study, elsewhere by (Langhinrichsen-Rohling & Neidig, 1995) found that exposure to violence increases favourable attitudes to violent beliefs and behaviours. According to Ajzen (2005), attitude is the disposition “to respond favourably or unfavourably to an object, person, institution or [an] event (Ajzen, 2005).”

2.3.2.1 Attitude to the possession of weapons

One of the attitudes that predisposes people to violence and increases their risk of VDV or the perpetration of VDV is one's attitude to the possession of a weapon. In societies, where attitude to possession of a weapon is favourable, the level of violence is predictably high. Previous research elsewhere suggests that individuals in societies where violence is prevalent, or who have had an experience of violence, have significantly favourable attitudes towards the possession of weapons (Ncontsa & Shumba, 2013; Gwartney-Gibbs & Stockard, 1989).

These attitudes are based on the perception that the possession of a weapon makes people feel safe (Ncontsa & Shumba, 2013; Miller, et al., 2002). A previous study found that people adopt favourable attitudes to the possession of weapons, when faced with their vulnerability to violent victimization (Kleck, et al., 2011). Previous studies elsewhere identified some individual and community-level factors that encourage the possession of weapons.

The demography of violence suggests that a favourable attitude to the possession of a weapon is prevalent and pervasive among young people (Jones, et al., 2013; Cock, 1997); and age is one of the factors significantly correlated with the possession of weapons with young adults more likely to have favourable attitudes to possession of a weapon (Lizotte, et al., 2000). Another factor significantly influencing the possession of a weapon is being male.

A study by Kodjo and colleagues found that being a male is a significant risk factor for the possession of a weapon (Kodjo, et al., 2003). Another factor that engenders a favourable attitude to the possession of a weapon is race. For example, despite having a lower rate of firearm-related mortality; more whites than blacks in the United States have very strong favourable attitudes towards the possession of weapons (O'Brien, et al., 2013). The same study by Kodjo and colleagues, also found that living in poor neighbourhoods and having low education significantly increased the likelihood of possessing weapons (Kodjo, et al., 2003).

Other studies also found that high-risk behaviours, including the use of illicit drugs and the consumption of alcohol are associated with the possession of weapons (Ruggles & Rajan, 2014; Carter & Walton, 2013).

In South Africa, the ownership of firearms both legally and illegally, is widespread (Bopape, 2014). The ownership of weapons, especially firearms in South Africa, has been viewed both negatively, as a tool for perpetuating criminality and violence (van Kesteren, 2013), and also positively as a tool for self-protection – and thereby reducing violent crime in a violent society. However, what is not known is the characterization of a favourable

attitude to the possession of weapons in South Africa, which could tacitly encourage the actual possession of weapons.

This study, therefore, assessed the prevalence; and it identified the predictors of favourable attitudes to the possession of weapons in Gauteng and KwaZulu-Natal provinces, where violent victimization by the use of weapons is prevalent.

2.3.2.2 Attitudes to revenge violence

Another important attitude that fuels violence is revenge, which is a personal emotional retaliatory action, in which a victim derives pleasure or satisfaction by causing harm to people – or towards a person who has caused them harm. According to Uniacke (2000), revenge violence is a form of retaliation, which seeks the satisfaction of returning a perceived or actual humiliation, insult or injury (Uniacke, 2000). Barton described revenge violence as an act of damage, injury or punishment inflicted by a victim, or a close family member, on an adversary (Barton, 1999).

On the other hand (Crombag, et al., 2003) referred to revenge violence, as harm against an aggressor. Regardless of how revenge violence is defined, there is agreement by most scholars on the issue that revenge killing is a common feature in inter-personal and inter-communal, or group feuds (Boyle, 2010).

Revenge violence can be a spontaneous, irrational or a well thought-out and planned action of an individual, or the collective action of a group – mob justice – against a victim or victims, on the basis of a perceived, or an actual wrong done to a group, society or to one of its members. It is a form of reciprocal violence to the wrong; and it seeks to achieve some form of satisfaction (Boyle, 2010). Revenge violence has been metaphorically

referred to as “wild justice” or “jungle law”, denoting a negative sentiment. It is also perceived to be committed more commonly in settings and conditions, in which the perpetrators believe that the formal system of justice will not deliver justice to the aggrieved party(s); and this failure in the justice system could explain the incidence and prevalence of a retaliatory cycle of violence in such settings.

The universal and naturalist nature of revenge violence is in human nature; and it is historically described in the Hammurabi code, in statements, like “a life for a life, an eye for an eye, and a tooth for a tooth” (Miller, 2006). Although anecdotal evidence suggests that revenge violence is pervasive in South Africa, the attitude to revenge violence in South Africa, where violent victimization is common, is largely unknown. In this study, we have examined the prevalence and predictors of favourable attitudes to revenge violence, as a form of violent behaviour and its effect on VDV.

The above review of literature has demonstrated that VDV is indeed a public health concern, which needs further investigation for policy-making. It further shows that most VDV is influenced by age, sex and race. However, the role of contextual factors in explaining VDV in South Africa, has not been systematically examined. In this study, we hypothesise that contextual factors such as behaviour, neighbourhood and experience with VDV plays a far greater role in exacerbating VDV in South Africa than do individual factors.

Dealing with the high prevalence of VDV requires a clear understanding of the forces that increase the risk of VDV; and these forces are largely contextual. Additionally, all the available evidence on VDV was derived from administrative data. The analysis of VDV by

using a population-based approach offers a unique opportunity for examining, in detail, the contextual factors underpinning the high prevalence of VDV in South Africa.

2.4 Theoretical Framework

The study on VDV was based on two important theoretical models; and these are the social-ecological model that was used to explain the occurrence of violent death and the attitudes to violent revenge, and the experiential model, which was used to explain attitudes to violent beliefs and behaviours.

2.4.1 The social-ecological model

Using the social-ecological model, we propose that VDV is the manifestation of the interaction between several layers of factors that can be grouped into individual, relationship and family, and community and societal factors. In the case of South Africa, none of the above factors can individually explain the high prevalence of VDV. Violent-death victimization can, therefore, be holistically better understood by examining the contribution of each group of factors; and how they relate to each other (Durkheim, 1897).

The social-ecological model originated in the biological sciences; and it refers to the inter-relationships between organisms and their environments. Social-ecological models of human behaviour have evolved over a number of decades in the fields of sociology, psychology, as well as education and health; and they focus on the nature of people's interactions with their environments. Healthy behaviours, including living in safe environments, are thought to be improved when environments and policies support healthy choices; and individuals are motivated and educated to make choices that influence their behaviour (WHO, 1986).

The social-ecological model acknowledges that it takes a combination of both individual-level and societal-level interventions to achieve substantial changes in behaviours.

The social-ecological model developed out of the work of a number of prominent scholars, including Bronfenbrenner (Bronfenbrenner, 1979), who developed the “Ecological-Systems Theory”, which focuses on the relationship between the individual and the environment (McLeroy, et al., 1988). The Ecological Model of Health Behaviours, which classifies five different levels of influence on health behaviour; and that of Stokols’ (Stokols, 1992; Stokols, 2003), Social-Ecological Model of Health Promotion, which identified the core assumptions that underpin the social-ecological model. The work of these and other scholars has been used and modified; and it has evolved over time into what is referred to as the social-ecological model.

There are a number of variants of the social-ecological model, which are slightly different in the classification of environmental influences. In this violent-death victimization study, the social-ecological model comprises individual, relationship and family and community environment-level factors, which is the most appropriate in this context. In the following sub-sections, we described the different groups of factors and how they might explain the occurrence of VDV.

2.4.1.1 Individual-level factors

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Much of the literature on VDV has focused on the individuals involved; because of the need to understand the reasons why some individuals are more likely than others to either engage in violence or to become the victims of violence. This is because the individual is at the centre of the social-ecological model. This level includes personal factors that

increase or decrease the likelihood of an individual being a victim or a perpetrator of violence.

Previous studies have found that individuals involved in violence are more likely to be depressed, which could result in self-harm and injury to other people (Austin & Joseph, 1996; Craig, 1998; Kaltiala-Heino, et al., 2000). Although depression was not examined in this study; because the subjects for investigation were already dead; depression is very closely associated with a number of individual-level factors. These are: age, sex, level of education, and employment/work status. Other individual factors are of a behavioural nature, such as the consumption of alcohol, smoking cigarettes and the use of drugs. These factors are important in acquiring knowledge, attitudes, beliefs and behaviours and capabilities that either increase their exposure to violence as victims, or as perpetrators or both.

At the individual level, the characteristics of the victim could influence the experience of violent deaths (Neville, et al., 2004; Neville & Heppner, 1999). In this study, the influence of individual-level factors includes age, sex, religion, education and employment/work status on VDV; and violent beliefs and behaviours, including the attitude to the possession of weapons and the attitude to revenge violence.

2.4.1.2 Relationships and family-level factors

There are a number of relationship factors that can increase the risk of being a victim, or a perpetrator of violence. These factors include being a member of a group, in a relationship, like marriage, or girl/boyfriend relationships. Such relationships are in many ways influenced by the individual's characteristics, such as age, sex or education. The

group membership is a powerful and salient context that places individuals in the way, thereby making them victims of violence in contexts, such as gang membership, school mates, or wife or husband contexts, or even race contexts, in which dominance (Pellegrini & Long, 2002; Pellegrini, et al., 2007) or attraction (Bukowski, et al., 2000) or homophobic attitudes (Cairns & Cairns, 1994; Espelage & Wasserman, 2007) can be a major underlying force for violent behaviours.

Research has also focused on the various participant roles that peer-group members adopt; and how the instrumentality of these participant roles contributes to the perpetrator-victim phenomenon (Craig, et al., 2001; Salmivalli & Poskiparta, 2012; Salmivalli, 2010).

Several studies have found a consistent relationship between the involvement in a delinquent peer group and delinquent behaviour. These include a study by Lipsey and Derzon, who noted that for youths aged 12-14, a key predictor of delinquency is the presence of antisocial peers; and peer-delinquent behaviour, peer approval of delinquent behaviour, attachment or allegiance to peers, time spent with peers, and peer pressure for deviance, have all been associated with violence (Lipsey & Derzon, 1998).

Conversely, spending time with peers who disapprove of delinquent behaviour may curb later violence (Elliot, et al., 1985; Borum, 2000). Peers' acceptance of violent behaviour is more prevalent in settings in which youths have little interaction with their parents (Steinberg, 1987). In this study, the influence of relationship factors, such as belonging to a social group (gangs or bullies), racial groups and marital status will be examined, in

order to assess their association with VDV and violent beliefs and behaviours, including the attitude to the possession of weapon and the attitude to revenge violence.

Additionally, the family provides structures that protect members from violence. Neville and Heppner conceptualized them as social support; and Bronfenbrenner defined them as a micro-system; and these include the face-to-face interactions and inter-relations between individuals and others in their immediate setting (Bronfenbrenner, 1999; Neville & Heppner, 1999). Family characteristics, such as poor parenting skills, family size, home discord, child maltreatment, and antisocial parents are risk factors linked to juvenile delinquency (Wasserman & Seracini, 2001; Derzon, 2010). Furthermore, studies have shown that children in large families have an increased chance of offending (Austin, 1978; Wasserman & Seracini, 2001; Crockett, et al., 1993).

In this study, family size will be examined to assess its role in VDV, attitudes to violent beliefs and behaviour.

2.4.1.3 Community and societal-level factors

Surrounding the individual, relationships and family in the social-ecological model is the social environment. The social environment has a significant influence on violence. It encompasses a number of factors, such as geography, weather and the services available to communities. It can also be measured by neighbourhood types, beliefs and behaviours about violence and the perception of crime in the community, or larger society. In this VDV study, the social environment comprises the community perceptions of violent crime, attitudes to the possession of weapons, attitudes to revenge violence and the types of residential neighbourhood.

2.4.2 The experiential learning theory

To examine the factors influencing the attitudes to the possession of weapons, the experiential learning theory, proposed by (Kolb, et al., 2001), was used. The theory proposed that learning is a holistic process of human adaptation, which can be applied to nearly all aspects of human behaviour, including attitudes to beliefs and behaviours towards violence. This is because experience is a major factor of learning dynamics; and it shapes the learning processes as well as their outcomes. Experiential learning theory (ELT) argues that knowledge comes from understanding experiences through actual or abstract conceptualization; and this is influenced by the individual's demographic and social characteristics, their life experiences, and the nature of their current environment.

We therefore hypothesized that individuals, who have experience of violent death are more likely than individuals who have not experienced violent death – to have favourable attitudes to the possession of weapons and revenge violence. However, the favourable attitude is mediated by the social identity of individuals, which is based on their individual, relationships and social environment.

2.5 Conceptual framework

This VDV study is premised on the understanding that VDV and attitudes to violent beliefs and behaviours are associated with, and are products of, individual, relationship and community/societal-level factors. Although these factors act at different layers, they are interdependent in influencing VDV and violent attitudes and behaviours. It is, therefore, clear that none of the main group of factors can individually explain the incidence of VDV or violent attitudes and behaviours that might influence the dynamics of VDV in a population.

Figure 2.1 presents the conceptual framework used in the study. The figure shows the three groups of factors that influence VDV as individual, relationship and community-level factors. The individual-level factors comprise demographic, socio-economic and behavioural characteristics of victims of violent deaths, as well as that of the surviving respondents.

The demographic characteristics are age and sex. These demographic factors influence, and are influenced by, socio-economic factors to affect the risk of VDV and violent attitudes and behaviours. The socio-economic factors influenced by age and sex and *vice versa* are religion, level of education, marital status and employment status. The socio-economic factors also increase the risk of VDV through intra-racial, intimate-partner, domestic and culture-group violence. The socio-economic factors outlined above also influence the behavioural characteristics of individuals, especially the consumption of alcohol and drugs, which have been identified as some of the most common direct-risk factors of VDV.

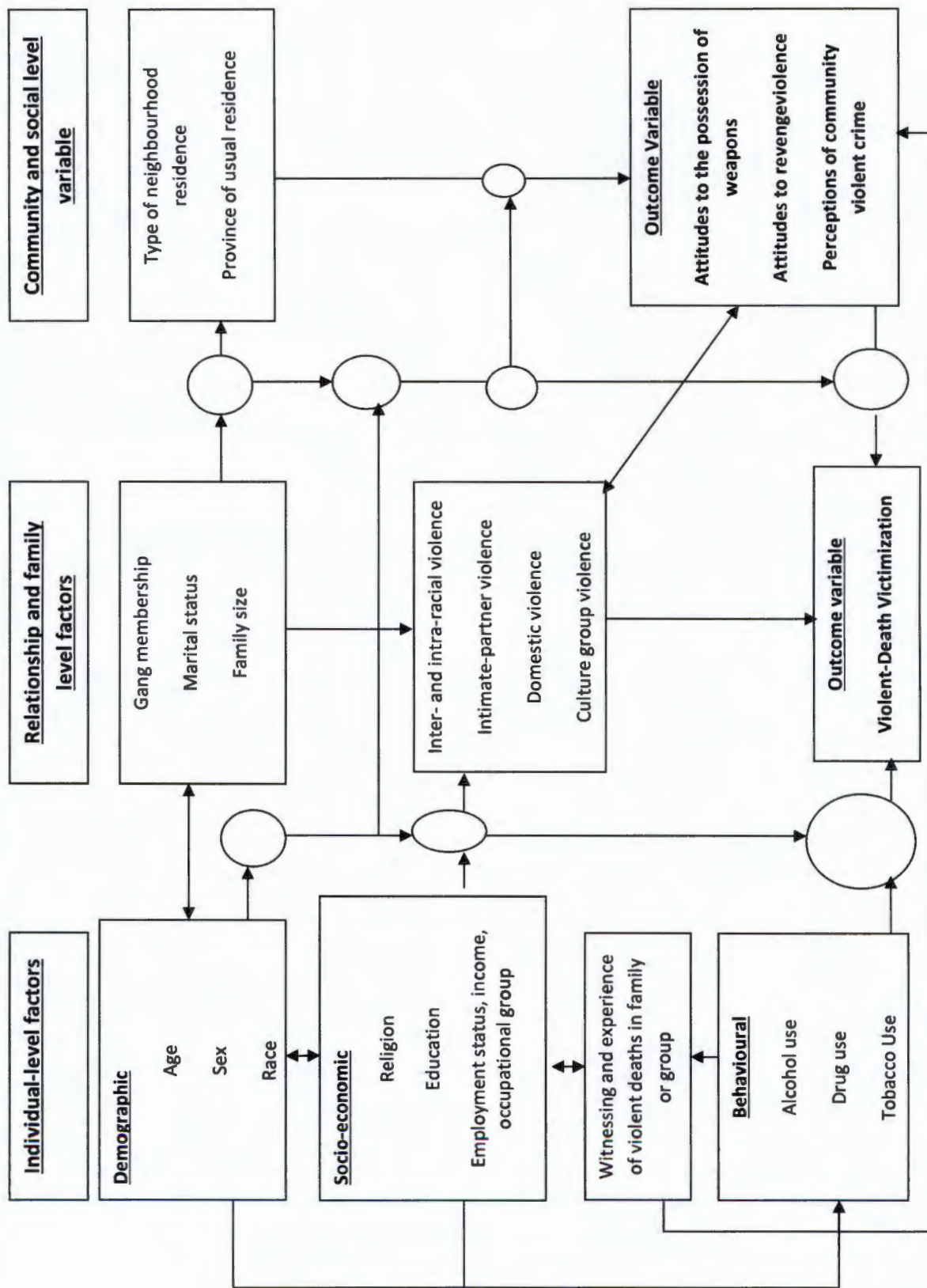
Figure 2.1 presents the relationship and the family variables that can be affected by demographic and socio-economic factors to influence the risk of VDV. These factors are: the racial group, sub-cultures, namely gang membership and family size. These factors can directly affect the risk of VDV, as well as violent attitudes and behaviours. They can also influence the risk of VDV indirectly through racial and relationship conflicts and violence. The main types of relationship violence in this regard are intimate-partner violence and domestic violence between family members, and inter- and intra-culture

group violence. The above variables can also influence violent attitudes and behaviours, namely: attitudes to carrying weapons and attitudes to revenge violence.

Furthermore, Figure 2.1 presents community or societal-level factors that indirectly influence individual-violent attitudes and behaviours including, but not limited to, attitudes to the possession of weapons, revenge violence and the perception of community-level violent crime. These attitudes and perceptions of individuals contribute directly to the risk of VDV in communities. The above violent attitudes and behaviours are influenced by the type of residential neighbourhood, the province of residence, the community-level prevalence of violence and community-level socio-economic status.

The witnessing and/or the experience of VDV in the family or close associates is expected to influence violent attitudes and behaviours. In this regard, witnessing, experience or knowledge of a family member or close associates, who was a victim of violence, is a proximate determinant of violent attitudes and behaviours.

Figure 2.1 Conceptual framework, showing factors related to violent-death victimization and attitudes to violent behaviours



Chapter Three

Research Methodology

3.1 Introduction

The main aim of this study was to investigate the prevalence and predictors of violent-death victimization (VDV), and to assess the attitudes of the study population to violent beliefs and behaviours. The study was conducted in Gauteng and KwaZulu-Natal provinces. The study used the social-ecological model and the theory of experiential learning. The study subjects were selected by the use of multi-stage sampling design; and the data for the study were collected by the use of a cross-sectional quantitative research design. This is based on the belief that quantitative data yield more objective and accurate information; because they are collected by using standardized instruments and methods.

In order to achieve the objectives of the study, we tested the association of VD to other variables using the Pearson chi-square statistics. We examined the survivorship to age at violent death by the use of Kaplan-Meier survival method; and we identified the predictors of VDV by the use of the binary-logistic regression.

This chapter, therefore, presents the detailed description of the methodology used in the study. These include the research setting, which described the geographical, economic and demographic profiles of the study area; the study design and the sample design, which consisted of the sample-size determination and the sampling design; and the data-collection methods. Also described in this chapter were the data-collection instrument; and the measures collected including the occurrence of deaths in selected

households, the cause of deaths, the selected characteristics of the decedents; and the characteristics of respondents and their attitudes to violent beliefs and behaviours. Relevant community and societal attributes that could have influenced violence were also collected. The data-quality assurance procedures included the recruitment and training of the research assistants, the pretesting of the data-collection instrument, the administration and supervision of the data collection, the validation and reliability procedures, the ethical procedures, the data processing and the analysis procedures, together with the limitations of the study, were also described.

3.2 The study setting

In this section, the study setting was described by geographical, administrative, population and economic profiles. These profiles were described at the national and the provincial levels.

3.2.1 Geographical and administrative set-up

South Africa is located on the southern tip of the African continent. It is bordered by Namibia, Botswana, Zimbabwe and Mozambique to the north; Swaziland and the Indian Ocean to the east; and the Atlantic Ocean to the South and West. The mountain kingdom of Lesotho is completely surrounded by South Africa; and it is the only country in world that is completely surrounded by another country. With a land area of 1,219,912 sq km, South Africa is the 9th largest country on the African continent.

Administratively, South Africa is divided into 9 provinces. These comprise the Western Cape, the Eastern Cape, the Northern Cape, the Free State, KwaZulu-Natal, the North West, Gauteng, Mpumalanga and Limpopo provinces. Of the 9 provinces, the Northern

Cape is the largest; while Gauteng is the smallest in land area. Each of the nine provinces has its own legislature; and it is headed by premiers as the chief political and executive heads of governments, who together form the council of provinces, whose main role is to supervise and provide oversight of the political function over service delivery by the technical departments of government. In each province, there are also traditional leaders, whose main role is to look after the cultural and traditional affairs of their populations. Together, these leaders form the council of traditional leaders, which is largely apolitical.

Below the provincial level, South Africa is divided into 8 major metropolitan areas including Buffalo City and Nelson Mandela Metropolitan Municipality in the Eastern Cape, the City of Cape Town in the Western Cape, Ekurhuleni Metropolitan Municipality, the City of Johannesburg and the City of Tshwane in Gauteng. Mangaung Municipality and eThekweni are metropolitan areas in the Free State and in the KwaZulu-Natal province, respectively. There are also 44 additional district municipalities and 226 local municipalities.

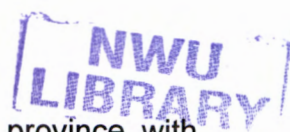
These local municipalities constitute the lowest levels of public administration, as well as being the main service providers of all the services provided by the central and provincial governments. Some of the important services provided at this level are: education, health, water and sanitation, housing services, electricity services, and public safety and security.

3.2.2 Population

With a total population of nearly 56 million people, South Africa is the 5th largest country on the African continent. The population of the country increased by 1.6% between 2001 and 2016, and the country consists of four racial groups, namely: blacks who are the

majority comprising 80.7%; followed by Coloureds with 8.8%; Whites with 8.1%; and Asians with 2.5% of the population. There is also a wide variety of cultures, languages and religious beliefs in the different races of the population (STATSSA, 2016). There are 11 official written languages in South Africa and scores of unofficial ones. The officially recorded mother-tongue languages are: Afrikaans, English, isiNdebele, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, Sign language, SiSwati, Tshivenda, Xitsonga and others, which together make South Africa a diverse country.

However, the most spoken languages are isiZulu language (24.6%), isiXhosa (17%) and English, which is the most commonly spoken language in official and commercial circles. The majority (86%) of South Africans are Christians; followed by those with no religious affiliation (10.9%); and other minority religious groups, such as Muslims, Hindus and others (10.1%). However, differentials in language and religious beliefs and ideologies have not been a cause of significant social, ideological and political conflicts among South Africans in the past; as was the case in multi-lingual countries in other Sub-Saharan African countries.



South Africa's population is quite variable across the 9 provinces. Gauteng province, with a population of about 14.7 million, has the highest population; followed by KwaZulu-Natal with about 11.4 million people. These are followed by the Western Cape with 6.6 million, the Eastern Cape with 6.5 million, Limpopo with 5.8 million, Mpumalanga with 4.5 million, North West with 4 million and the Free State with 3 million. The Northern Cape with only 1.2 million people has the lowest population and population density (STATSSA, 2018). The South African population is dominated by females, who comprise 51%; while males make up the remaining 49%. Youths between the ages of 15-34 years are the

majority in size, followed by those aged 0-14 years; and those aged 35-59 years. Although the elderly comprise only 8% of the population, this population group is rapidly increasing.

Regarding population dynamics, South Africa's Total Fertility Rate (TFR) declined from more than 6 children per woman in 1980 to 2.46 in 2016 (STATSSA, 2018). The fertility transition the country experienced has made it the most transformed country demographically on the African continent (Chimere-Dan, 1999; Moultrie & Timæus, 2003; STATSSA, 2015). Mortality trends in South Africa reveal two different patterns. The first was that of increasing trends from 317,860 in 1993 to 614,158 in 2006. The second is that of a declining trend, which started in 2007, with 606,112 deaths to 460,236 in 2015.

As expected, male mortality has been higher than that of females. In 2015, there were slightly more male deaths (52.6%) than female deaths (47.4%) in South Africa. The median age at death has been changing throughout the years; however, in 2015, the South African median age at death was 52.2; and the life expectancy was estimated at 64 years.

Another important demographic process in South Africa is international and internal migration. International migration brought more than 6 million foreign nationals to South Africa, shortly after the transition from Apartheid to the current democratic dispensation, mostly from the neighbouring countries of Zimbabwe (39.6%), Mozambique (20.2%), Lesotho (11%) and Malawi (5.4%). On the other hand, internal migration contributed to large-scale population redistribution of mainly the black population of South Africa. While seeking economic opportunity and political stability were cited as the main reasons for international migration, the desire to improve their socio-economic conditions, followed

by family reunions, were cited as the main reason for internal migration. Most of these movements relocated people from rural to urban townships, which resulted in the creation of a large urban, mostly unemployed and poor black population.

These population relocations were to have a significant effect on violence and violent crimes that have since become a hallmark of post-apartheid South Africa. A new form of violence previously not known in South Africa was also born during this period; and that is xenophobia – fuelled by high unemployment, poverty, deprivation and crime.

3.2.3 Economic profile of South Africa

South Africa is a middle-income country, the second largest and most industrialized economy on the African continent. The economy of the country is heavily dependent on natural resources, largely dominated by mineral mining. These minerals include gold, platinum, iron ore and diamonds. Apart from minerals, tourism constitutes an important part of the economy; and the most important tourism cites consist of the game parks for wildlife tourism, the Indian and Atlantic coast cities of Durban and Cape Town, respectively.

South Africa also has a vibrant stock-exchange market, which is the largest on the African continent; and it features among the top 20 in the world. In addition, the country has well-developed financial, legal, communications, energy, and transport sectors, which are comparable to those in many developed countries.

Despite the modern physical infrastructure, such as roads and the railway system, as well as a relatively efficient financial and communication industry, which supports the efficient distribution of goods and services, South Africa's economy has declined substantially in

recent years. The economic growth rate has been on the decline since 2010, having declined from more than 2% per annum before 2010 to 1.5% in 2014 and further down to 0.5 in 2016.

A number of factors have been blamed for the decline in the economy. The most important of these comprised the energy crisis of 2014-2015; widespread labour unrest; institutional instability, and political challenges, which reached a climax in early 2017. These have also been blamed for the decline in the country's economy. The 2016 drought in the Southern Africa region also greatly contributed to the decline in the agricultural sector. Other challenges facing the economy are structural in nature, which have their roots in the apartheid policies.

These include skills shortages and declining global competitiveness. There are also challenges, due to the widespread and destructive social unrest emanating from service delivery protests by low-income areas and black poor township populations; and to high populations in townships and informal settlements, due to migrations across the country.

The above and other challenges have retarded the country's efforts in creating employment for the youth; and they have led to widespread unemployment estimated at 27%. One of the consequences of the widespread unemployment is the increase in the level of violent crime, which has placed South Africa among the first three leading countries in the world in violence-related mortality.

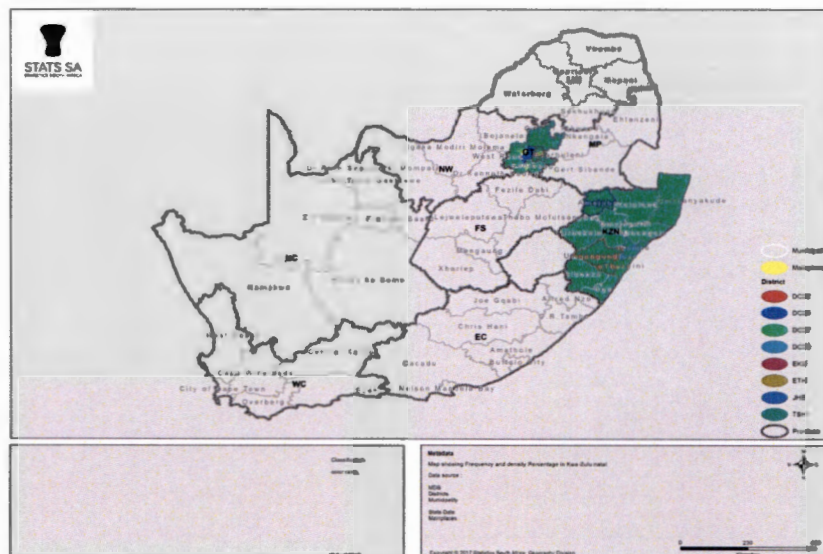
3.2.4 Gauteng and KwaZulu-Natal provinces

This study was undertaken in the Gauteng and KwaZulu-Natal provinces of the Republic of South Africa. In this section, therefore the profiles of the two provinces were described.

Figure 3.1 presents the location of Gauteng province in the Republic of South Africa. The Figure shows that the province is the smallest province in South Africa with a total land area of 16,548 square kilometres. It is surrounded by four other provinces, which include the Free State, North West, Limpopo and Mpumalanga.

The province is divided into three Metropolitan Municipalities, including the City of Ekurhuleni, the City of Johannesburg and the City of Tshwane. It has also two district municipalities (West Rand and Sedibeng), which are further subdivided into six local municipalities.

Figure 3.1 Map of South Africa showing the provinces of Gauteng and KwaZulu-Natal



Although it is the smallest of South Africa's nine provinces, Gauteng has 24% of South Africa's population; and it grew at a rate of 2% between 2011 and 2016. The district profile showed that metropolitan areas had the highest population growth rates with the city of Tshwane leading (2.6%), followed by Johannesburg at 2.5%, and the lowest growth rate was reported in West Rand at 0.5%.

As regards local municipalities, Midvaal municipality had the highest growth rate (3.5%), followed by Lesedi at 2.7%; while the lowest growth rate was observed in Merafong City (-1.0%). The distribution of the population by sex; shows that there were more males (50.4%) than females (49.6%). The population of Gauteng province comprises largely people in the 15-59 (66.5%) years of age, which is the working-age group. With 80.4%, black Africans; it constitutes the highest proportion of the population in the province; followed by Whites at 13.6%, Coloureds and Indians/Asians.

Among Africans, the largest ethnicity is IsiZulu speakers, followed by Sesotho. Gauteng province shown in Figure 3.2 is the economic hub of South Africa; and it is responsible for over 34.8% of the country's total gross domestic product (GDP) and the highest *per capita* income in South Africa. The province is the site of coal and diamond extraction operations; but it is best known for its gold deposits. The Witwatersrand ("ridge of white waters"), which runs through Gauteng – meaning "the place of gold" in Sesotho – is famous for being the source of the world's largest gold production – about 40% of all the gold ever mined from the Earth.

Figure 3.2 Map of Gauteng Province showing the sampled areas where the data were collected

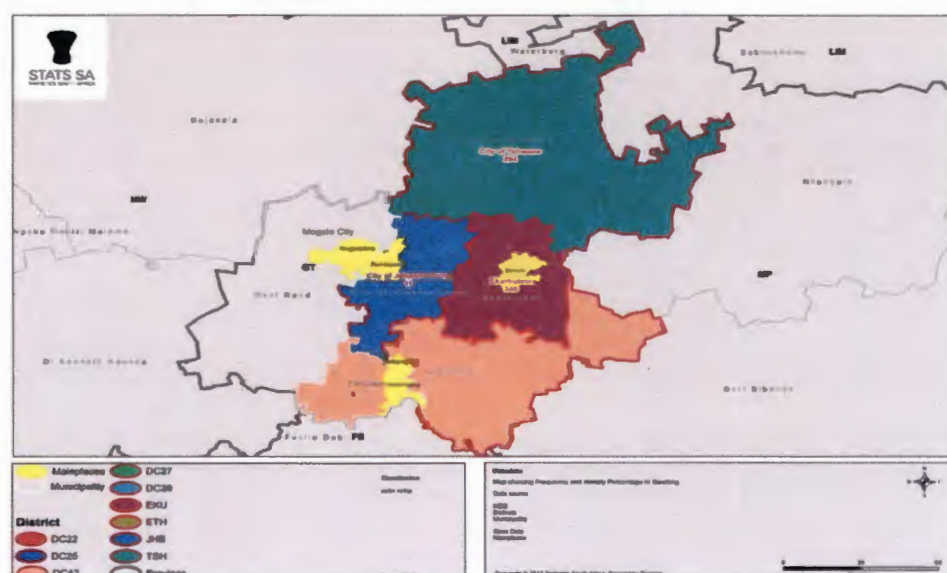
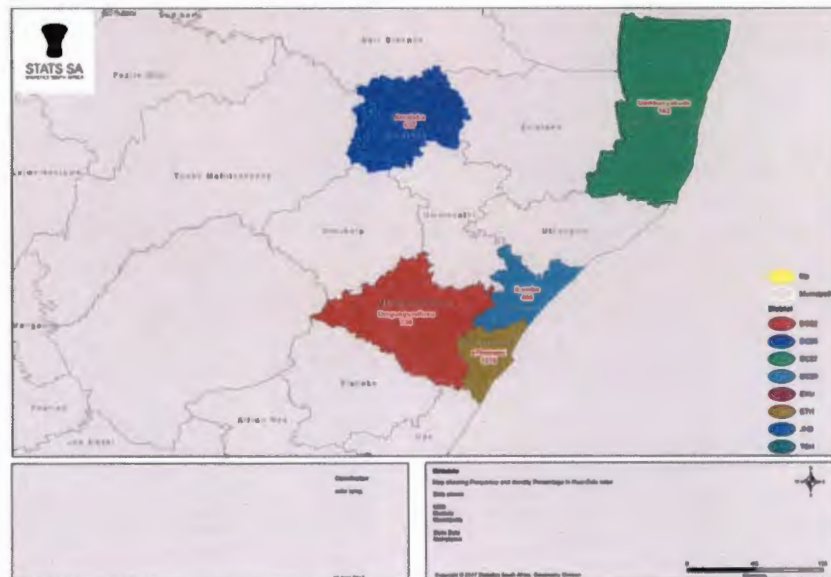


Figure 3.3 shows the location of KwaZulu-Natal province in the Republic of South Africa. The province is the third smallest province with a total area of 94,361 square kilometres, which takes up 7.7% of South Africa's land area. It has the second-largest population, with 11.1 million (20%) of the South African population. The province borders three other

South African provinces, comprising Mpumalanga to the north, the Eastern Cape in the South and the Free State in the West.

It also borders Swaziland, Mozambique and Lesotho to the South and the Indian Ocean to the East. KwaZulu-Natal is divided into eleven districts. One of these, eThekweni, is a metropolitan municipality; while the other ten are district municipalities.

Figure 3.3 Map of KwaZulu-Natal Province showing the sampled areas where the data were collected



Demographically, KwaZulu-Natal has more females (52.1%) than males (47.9%) and had a growth rate of 1.7% between 2011 and 2016. eThekweni Metropolitan Municipality contains the largest proportion of the population of KwaZulu-Natal. Within a period of 5 years, Ugu, Zululand, uMkhanyakude and Sisonke districts had populations that grew at a rate of 2%. eMadlangeni is the municipality with the smallest population compared to other municipalities. The majority of the population are in the 15-59 years age group (57.9%); followed by those in the under 15 years age group (34.8%). Black Africans

comprise the majority in the province, with 87% of the population; followed by the Indian/Asian population with 7.9%; while Whites and Coloureds comprise a small proportion of the province population. IsiZulu is the language spoken by 82.5% of the population, followed by English. Over 70% of the population in KwaZulu-Natal are Christians; whereas approximately 13% have no religious affiliation. With about 4%; Hinduism is the third-largest religious group in the province.

Overall, KwaZulu-Natal contributes 22% of the national manufacturing; 25% of the national agriculture; 19% of national construction; but only 3% of the national mining, making it the second-largest economic area in South Africa, with a contribution of 16% of the GDP in 2015/2016. Manufacturing comprises the largest real-economic sector; and it accounts for 16% of the economic activities in KwaZulu-Natal; followed by agriculture at 5%; construction at 4%; and mining at 2%.

Another important activity in KwaZulu-Natal is the marine services in Durban, which is a rapidly growing urban area; and it is, by most measures, the busiest port in Africa. Economically, Richards Bay is the centre of operations for South Africa's aluminium industry. The Richards Bay Coal Terminal is instrumental in securing the country's position as the second-largest exporter of steam coal in the world. Richards Bay Minerals is the largest sand-mining and mineral processing operation in the world.

3.2.5 Prevalence of violence and violent-death victimization

South Africa has been identified by various reports as one of most violent countries in the world. Violence in South Africa has its roots in the apartheid system and those policies, which implemented separate-development paradigms for the four major racial groups. Over 23 years after apartheid, South Africa still faces a significant burden of violence. Violence continues to be a major cause of premature deaths and disability in South Africa. Various reports have suggested that violent crime has been on the increase (STATSSA, 2017; SAPS, 2017). Assault has been the leading form of violence, followed by robbery, rape and self-inflicted violence (Donson, 2008; Schlebusch, 2005; Madu & Matla, 2003).

The main perpetrators and victims of violence are young adults. The weapons of choice in violent altercations in South Africa are: firearms, sharp objects like knives, beating with blunt objects and strangulations (Donson, 2008; Naidoo & Schlebusch, 2014). In South Africa, Gauteng, KwaZulu-Natal and the Western Cape have been identified as the provinces with the highest rates of violence and violent-death victimization.

A study by the Medical Research Council (2013) reported that violence was one of the leading causes of death in the Gauteng province, accounting for nearly one-third (30.5%) of all deaths. Another study by (Abrahams, et al., 2010) found that, although firearm deaths have been declining since 2001 in South Africa, Johannesburg remained the leading city in South Africa in firearm homicide, followed by Durban. Another study found that sharp objects, such as a knives, were the second most commonly used weapon of choice in homicides in Gauteng and KwaZulu-Natal, followed by blunt objects, since the early 1990s (Matzopoulos, et al., 2008). However, the underlying factors influencing violent behaviours and attitudes remain relatively unclear and unknown. The main aims

of this study were, therefore, to investigate and identify the main factors influencing violent-death victimization and the attitudes and beliefs regarding violent behaviour in South Africa.

3.3 Study design

In this study, the cross-sectional study design was used. The cross-sectional research design is the most commonly used design for collecting demographic and social data. This is mainly because it can collect both current and retrospective data; and it is relatively cheap compared to experimental or longitudinal designs. The main objective of cross-sectional research design is to establish whether or not there are associations between the outcome and the explanatory variables (Mann, 2003).

In this regard, the first purpose of using the cross-sectional research design in this study was to measure the prevalence of violent-death victimization and to identify their main predictors. A second purpose was to explore the population attitude to – and the perceptions of – violent attitudes and behaviours; and to examine those factors that may affect them. Accordingly, the issues examined were the attitude towards the possession of weapons, the attitude towards revenge violence; and the perceptions that violent crime is widespread in the communities investigated.

The cross-sectional design was preferred in this study; because of its probabilistic nature, which allows for the generalization of the research findings, as well as its greater external validity (Bowling & Veloso, 2003).

However, despite this popularity, cross-sectional designs have the inherent limitation of placing events as they occur; and therefore, it falls short of precise measurements of

events that change over the life course. One of these events is death. Cross-sectional research design does not only fail to give information on the time of occurrence of events, but also to the changing of the explanatory variables, which may lead to wrong conclusions. Additionally, cross-sectional designs are unable to establish causality; they are affected by recall bias; and they are rather less effective in measuring rare events.

In order to address some of these challenges, the focus of the study was narrowed to those events that had occurred in the 12 months preceding the study.

3.4 Sampling design

In designing the sample of this study, four major considerations were used to determine the sample size; and these included: (i) The degree of sampling precision required; (ii) the degree of sampling precision expected; (iii) the availability of funds; and (iv) the availability of cases. This was because the sampling precision expected could vary with different sample sizes, depending on the variability and clustering in the population of interest (Moser & Kalton, 1971). It therefore took longer than planned to reach the expected number of cases for the study.

The focus of this study is death, and more specifically violent deaths, which are rare events in human populations, especially in those populations where the mortality rates are low. Consequently, the study requires a large sample size, in order to obtain a sufficient number of cases for the analysis that is required, in order to achieve the objectives of the study. Therefore, a case-control method was utilised to select the households to participate in the study. A case-control study is designed to help determine whether an exposure is associated with an outcome (i.e., death). In theory, the

case-control study can be described simply. First, identify the cases (households with persons who died of violent death) and the controls (households with no violent death experience).

According to (STATSSA, 2014), violent deaths contributed to 36.7% of all deaths in 2011. Using this approach, 282 decedents and 4103 surviving individuals were identified from 1319 households in Gauteng and data KwaZulu-Natal. From Gauteng, there were 623 households and from KwaZulu-Natal, there were 696 households.

3.4.1 Sample size and technique

The sample for the violent-death victimization objective was purposively obtained from among households in selected enumeration areas (EAs). Gate keepers, and referrals by other households in selected communities, were used to identify those households, in which a death had occurred in the 12 months preceding the study. Overall, only a total of 282 decedents were identified. This was considerably less than the estimated 384. Of the 282, only 77 were cases of violent death (cases); while 205 were natural deaths (non-cases).

Provincial differentials show that in Gauteng, a total of only 37 cases and 53 non-cases were identified for proxy interviews; while in KwaZulu-Natal, 46 cases and 146 non-cases were identified for interviewing. Cochran's equation, as shown below, was used to estimate the total sample of decedents:

$$n_0 = \frac{Z_{\alpha}^2 \times p \times q}{e^2}$$

Where: n_0 is the sample size; $Z_{\alpha}^2 = 1.96$ is the value of a co-ordinate on the horizontal axis, which is known as the X- axis. This indicates how far the straight line is from the Y

– axis; e is the level of precision; p is the estimated proportion of violent deaths in the selected areas, based on the assumption that it is similar to the 37% estimated by STAT SA (2014) for South Africa and $q=1-p$.

Therefore, the sample size of decedents was calculated as follows:

$$\begin{aligned}n_0 &= \frac{(1.96)^2 (0.5) (1-0.5)}{0.05^2} \\&= \frac{(1.96)^2 * 0.25}{0.0025} \\&= 384\end{aligned}$$

Similarly, the sample size for the attitude to violent beliefs and behaviours was obtained by the use of the Cochrane's formula, which gave a sample size of 1500 households; however, only 1319 households were successfully interviewed.

To select the households, a three-stage sampling procedure was conducted. At the first stage, the enumeration areas at the study locations were stratified. The stratification was based on the settlement type. For Gauteng province, the stratification was done by using formal and informal settlement types; while in KwaZulu-Natal province, urban and tribal stratification were adopted. All the households that fell on the selected enumeration area were listed as the sampling frame. Thereafter, the systematic sampling method was used to select the households.

In the selected households, the respondent, who was preferably the household head, was interviewed. However, in his/her absence, the acting head of the household, who was an individual aged 18 years or older, was interviewed. Initially, the study planned to get 1000

controls in each province, leading to a total of 2000 households for the study. However, due to refusals and non-contacts in both provinces, the study had 419 households in Gauteng province and 900 households who participated in the KwaZulu-Natal province, thereby bringing the total of successful interviews to 1319.

3.5 Data-Collection instruments

The method of data collection is determined by the type of data needed to measure the research outputs. It is also an important determinant of the quality of the data, as well as the reliability of the results. This section has described the data-collection instrument; it has outlined the main variables, from which the data were collected, and the method used to collect the data.

This study used a structured pre-coded questionnaire to collect the data. The structured questionnaire is the commonly used instrument for the data collection in cross-sectional studies (Mann, 2003). This is because of its relevance and effectiveness in collecting current and retrospective data. The questionnaire was developed in English and translated into both Setswana and IsiZulu, in order to collect the data in Gauteng and KwaZulu-Natal provinces, respectively.

The questionnaire used in this study collected the data on decedents and surviving members of selected households on the individual, social and community characteristics of the decedents and the survivors. The data were collected from heads of households.

3.5.1 Data on the decedents

The outcome of interest in this section is the prevalence of VDV relative to other deaths; and to identify the risk factors of VDV. In this regard, the outcome variable had two

categories, namely: violent deaths and natural deaths. A death was defined as a violent death; if it was caused by the action of another individual or self (victim) by the use of a weapon, including a firearm, a sharp object, by beating with a blunt object, or by any other means. All other deaths – due to illness from any cause – were classified as natural deaths. The data on violent and natural deaths were obtained from proxy respondents by asking them two questions. Firstly: Has anyone died in this household in the past year? Secondly, what was the cause of death?

The exposure variables comprised selected demographic, socio-economic and behavioural characteristics of the decedents, which were identified in the literature as important in predicting violent deaths. Also, societal perceptions and attitudes to violent beliefs and behaviours were examined, in order to assess the extent to which they are a risk factor of VDV. The demographic characteristics consisted of sex, which was categorized as male or female; age, categorized as <20, 20-29, 30-39 or 40 years or older; and racial group categorized as black, or other (Coloured, Asians and Whites).

The socio-economic characteristics of the decedents included in the analysis comprised: religion, categorized as Christian, or other (all minority non-Christian religious groups, such as Muslims, indigenous beliefs etc); level of education, categorized as none/primary or secondary or higher education; marital status, categorized as married (currently married, cohabiting, widowed and divorced), or never married; and employment status at the time of death, which was categorized as employed, unemployed or other (students, pensioners and decedents, whose employment status was unknown).

Also included in the analysis were the type of residential neighbourhood, categorized as rural, urban or informal, and the province of usual residence, categorized as Gauteng and KwaZulu-Natal.

The behavioural characteristics of the decedents included in the study were: alcohol-use status, smoking status, drug-use status, and whether or not they belonged to a sub-culture or group. Alcohol-use status was categorized as yes or no; cigarette-smoking status was categorized as yes or no; and the drug-use status was also categorized as yes or no. The sub-culture or group, to which the decedent belonged, was grouped as a gang member or not a gang member. The data on these characteristics of the decedents were obtained from a family member of the deceased, who had lived with him or her prior to their deaths.

Community perceptions and attitudes included in the study were attitudes that “violent crime is a way of life in the community”, categorized as agreed, disagreed or ambivalent; “carrying a weapon makes people feel safe” was categorized as agreed, disagreed or ambivalent; and the attitude that “it is okay to use violence to get what one wants” was categorized as agreed, disagreed or ambivalent. The data on the community perceptions and attitudes were obtained from the family members of the decedents.

3.5.2 Data on the surviving respondents

The dependent variables in this chapter of the study were three; and they formed the main analytical sections presented in this chapter. These are:

- i. Attitude to possession of weapons, which was measured by using a scale of three categories, including favourable, unfavourable, or ambivalent attitudes. This was

the reference category. In this study, possession of a weapon referred to the ownership and the carrying of a weapon, regardless of its legal status (licensed or not licensed). In this study, the definition of a weapon, as prescribed in the Dangerous Weapons Act, 2013 was “any object, other than a firearm, capable of causing death or inflicting serious bodily harm, if it were used for an unlawful purpose” was adopted. In this regard, weapons include firearms, knives, machetes, spears, clubs and other objects, if used as a weapon.

- ii. Attitude to revenge violence for the killing of a family member or close associate violently. A violent death was defined as death caused by the intentional or unintentional action of another individual – by the use of a weapon, including a firearm, a sharp object, by beating, using a blunt object, or any other means. Attitudes were measured by using a scale of three categories, namely: favourable, unfavourable or ambivalent attitudes. The ambivalent attitude was the reference category.

The explanatory variables comprised the main independent variable, which was experience of a violent death, which had two categories. These are: either the respondent had the experience of a violent death, or had no experience of a violent death. Experience of a violent death was defined as knowledge of an individual who was killed by the use of a weapon, or the witnessing of a violent act, perpetrated by another individual on another person –and leading to death. Experience of a violent death was coded “1” and the non-experience of a violent death was coded “0”.

The other explanatory variables analysed were the characteristics of the respondent. These were used as the control variables. These characteristics are

demographic and socio-economic in nature; and they were identified in the literature as possible predictors of violent beliefs and behaviours. The demographic characteristics comprised the sex of the respondent (male or female); the age of the respondent, which was categorized as <25 years, 25-34, 35-44 and 45 years or older age groups; and racial groups, categorized as: black, who were the majority or others (Coloured, Asian or White).

The socio-economic characteristics of the respondents comprised their religious affiliation, which was categorized as Christian or other (Muslim, Traditional, Hindu, no religion); and the marital status, categorized as currently in union (married or cohabiting), formerly in union (married or cohabiting) and never in union. The highest level of education was categorized as no education, primary, secondary and tertiary education; employment status was categorized as unemployed and employed; and having a regular source of income was categorized as yes or no. These were also analysed. Also included as socio-economic variables in the analysis was the type of residential neighbourhood, categorized as rural, urban or informal; the province of usual residence was categorized as Gauteng or KwaZulu-Natal.

An important behavioural variable included in the analysis was: alcohol-use status, which was categorized as: has used alcohol, or did not use alcohol.

3.6 The data-collection procedure

Prior to the commencement of the data collection, the sample areas were visited to publicize the data collection. The necessary publicity for the survey was conducted in three ways: firstly by informing the gatekeepers in the selected enumeration areas two weeks before the commencement of the data collection; secondly, by sending out

introduction letters to the selected households to explain the purpose of the survey and indicate that their households are selected for the survey; and thirdly, by announcing the survey using megaphones in the selected areas two days before the start date.

Gatekeepers in this survey were community leaders, such as counsellors, street representatives, traditional leaders in traditional areas, and religious leaders. The STATSSA data collectors are well acquainted with their areas of jurisdiction; and they would have already formed a relationship with the people in these areas. This made it easier for them to gain access to communities, and to be granted permission to collect the data.

Introductory letters were prepared and hand-delivered by STATSSA employees to the selected households. The letter had STATSSA logo, address and contact details of the principal researcher. It explained the purpose of the survey and how the respondents were selected to participate in the survey. In most cases, the STATSSA employees who had to hand-deliver the letters secured appointments for the face-to-face interviews with the households.

In conducting the questionnaire, a face-to-face interview method was utilized. This was important and preferred; because of the personal contact between the interviewer and the interviewee, which acts as a means of motivation. Interviewers can also help the respondent to understand questions; and to encourage the respondents to complete the questionnaires. The face-to-face interview method can also help to validate the responses provided on the spot. However, the researcher was also aware that face-to-face interviews are usually difficult, if the subject of the research is sensitive, or comprises

sensitive and personal matters, which the respondents may not want to talk about. The likelihood of respondents being biased by the interviewer could also compromise the validity of the respondent's answers.

3.7 Data-quality assurance

The quality of data is important for the validity and reliability of the results. It also allows for the generalization of the study's findings to the population of interest. In this regard, a number of quality-assurance practices were implemented, prior to and during the data collection.

i. Recruitment and training of research assistants

The study utilised STATSSA data collectors and supervisors, who are permanently employed to collect the data. Data collectors and supervisors were trained intensively for 3 days for the purpose of this study – to ensure the data quality. The supervisors were responsible for the quality assurance during the data collection.

ii. Questionnaire pre-testing

A pre-test of the data-collection instrument was done in Gauteng province in an area not sampled for the study. This was needed to ensure that the questionnaire collected the data required for the study – by identifying any errors – and to assess the logical flow of questions. Pre-testing was intended to familiarise the research assistants with the data-collection instrument and the data-collection processes.

iii. Data editing and coding

Before the data were entered into computers, fieldwork supervisors conducted checks on all the completed questionnaires. The checks ensured that all the data captured were consistent and logical. These checks included the correction of data and any other inconsistencies, which might have occurred during the data collection.

iv. Data entry

The data entry was processed by well-trained research assistants using the IBM SPSS. Double-data entry was conducted, in order to avoid data typing or editing errors. The researcher monitored the data-entry process to ensure that no errors were introduced in the survey of the data.

v. Data cleaning

Statistical edits were used as the distributors of the data, in order to detect any possible errors. Outliers were identified in reference to the feasible limits. Moreover, macro-edits were also done; these are a review of the data at an aggregate level. Inconsistencies were traced to the individual records involved. When all these inconsistencies were identified, data cleaning was done.

3.8 Data-analytical methods

The data analysis was done by the use of demographic and statistical methods.

3.8.1 Demographic methods

Three demographic methods were used to analyse the mortality rates. These included the Crude-Death Rate (CDR), the Cause-Specific Mortality Rates (CSMR) and the Age-Standardized Mortality Rates (ASMR).

3.8.1.1 The Crude Death Rate

Crude-death rates were calculated, in order to provide a clear understanding of how violent death affected different groups of people in South Africa, and in Gauteng and KwaZulu-Natal provinces. In order to provide a comparison of the two populations, standardized age-specific death rates were computed. All death rates were multiplied by 1000 populations. The survey collected the information on the number of violent deaths in households (cases) for the previous year. It is possible to compute crude-death rates and age-specific death rates, and hence, the trends in the death rates from the data.

For the year of the survey (2015), this was a straightforward computation, which is expressed algebraically as follows:

$CDR_v^{15} = v^{15}/n^{15}.....1$

Where for each province, CDR_c^{15} is the observed crude-death rate, due to violent deaths v , in the year 2015₁₅, n is the total number of persons enumerated in households during the survey. Similarly for any age group, the age-specific death rate for the year of the survey was computed as:

$CDR_x^{15} = v^{x15}/n^{x15}.....2$

Where x denotes an age group. General equations for computing the deaths rates from (1) and (2) above were:

$$CDR_v^t = v^t/n^t.....3$$

For the crude-death rate due to violent deaths for any time period t, and

$$CDR_v^{x,t} = v^{xt}/n^{xt}4$$

Beyond the survey year, n in the above equations was not available; but the sample fraction f was used to estimate n as follows:

$$f^{15} = s^{15}/P^{15}5$$

Where f¹⁵ is the sample fraction for the survey, computed as the ratio of the total number of persons enumerated in households during the survey in 2015; and P¹⁵ is the estimated or projected population of the province in 2015. This assumes that if a similar survey were carried out for each year prior to 2015, the sample fraction would be normally distributed with an average similar to that observed in 2015. On the basis of this assumption, the estimated denominator, n_e for estimating the death rates due to violent deaths for year prior to 2015 was estimated as:

$$n_e^t = f^{15}* P^t6$$

Where n_e is the estimated denominator (the estimated total number of persons who would have been enumerated in households had a similar survey been carried out in time t) for the province; P^t is the projected population of the province at time t. Equation 6 was applied by age group to estimate the denominators for the different age groups.

3.8.1.2 Cause-Specific Death Rates

The cause-specific death rate (CSDR) was used to estimate the burden of death by cause. In this regard, the causes of death were divided into death due to violence and death due to natural causes. To estimate violent death, the WHO (2008) definition of violence was used. On the other hand, natural death was defined as death resulting from congenital causes, diseases due to infections, and aging. This analysis was done, in order to understand the differentials in the cause-specific death rates by selected characteristics of the decedents, on which data on the population exposed to death were available (Preston, et al., 2001).

Violent deaths were derived from causes, such as: poison, firearms, sharp objects and other actions of perpetrators. Each cause-specific death rate was computed by death divided by mid-year population and multiplied by 100 000.

Accordingly, two different numerators and denominators were used to estimate the deaths rates for South Africa as a whole, by using the national data obtained from Statistics South Africa; and for the data collected from Gauteng and KwaZulu-Natal for the dynamics of violent death and attitudes to violent beliefs and behaviour study. Whereas the denominator for the South African rate was a projected estimate of mid-year population, for the Gauteng and KwaZulu-Natal study, this was the population at risk of violent death at the time the data were collected.

For the South African case, the mid-year population size estimate using the cohort component-projection method was utilized. This method requires a base population

distributed by age and sex. The formula for this method is expressed in (Preston, et al., 2001). The formula used in this regard was:

$$P_{(t+n)} = P_t + B_{(t, t+n)} - D_{(t, t+n)} + I_{(t, t+n)} - O_{(t, t+n)} \dots\dots\dots 7$$

Where: P_t is the base population at time t ; $B_{(t, t+n)}$ is the number of births in the population during the period $t, t+n$; $D_{(t, t+n)}$ is the number of deaths in the population during the period $t, t+n$; $I_{(t, t+n)}$ is the number of immigrants into the population during the period $t, t+n$; $O_{(t, t+n)}$ is the number of emigrants from the population during the period $t, t+n$.

This method allows the comparison of two populations. In this study, the populations were derived, based on the nature of death, in order to compute age-specific death rates. Age-sex specific death rates were used; because their estimation is a reliable and comprehensive method of expressing the death data (Preston, et al., 2001).

The causes of death and the mortality data were used to derive deaths from population aged 15 years or older. The data used ICD 10 codes to classify death. The study focused on the ICD 10 section on external causes of morbidity and mortality. In this section of the ICD 10 codes, the study utilises all deaths that are due to intentional harm. Two broad types of deaths were created by using all the codes from X60 to Y36 of the ICD 10.

The first category was violent deaths, which include all those who died after violence; and secondly, this was all the other deaths, i.e. natural deaths.

3.8.2 Statistical methods of data analysis

Data analysis was done by using four methods, including a description of the study population profiles: Pearson's Chi-square statistic, the Kaplan-Meir survival method, the

binary logistic-regression model and the Multinomial logistic-regression method. These methods are described in detail in the following sub-sections. All the analysis was done by using the SPSS version 22.

3.8.2.1 The profiles of the study population

Two main population groups were involved in this study. The first was the population of decedents, which comprised 285 members and the population of surviving respondents which was 1319. The frequency distribution was used to describe the profiles of both population groups by selected demographic, social, behavioural and attitudinal variables. This analysis is exploratory; and it intended to assess the distribution of the populations by the structures of the dependent and exploratory variables. At this stage, the variables were found to have few cases in each category of variables; consequently, they were regrouped, in order to create more robust categories for analysis.

This stage of the analysis is important for assessing the adequacy of the data; and for preparing the data for higher-level analysis, which will examine the differentials and the predictors of violent-death victimization of decedents. In addition, it is necessary to examine the attitudes and the perceptions of the surviving population to violent beliefs and behaviours.

3.8.2.2 The Pearson's chi-square statistic

The chi-square statistic was used to examine the differentials in two main aspects of the study. These are the differentials in violent-death victimization and the differentials in the attitudes and the perceptions in violent beliefs and behaviours. These are the attitudes to the possession of weapons, the attitudes to revenge violence and the perceptions on the

perverseness of violent crime in neighbourhoods. The Chi-square statistic was used as a preliminary step to assess the generalizability of the findings from the sample to the study populations (Bless & Higson-Smith, 2000).

The differentials were examined by selected individual-level demographic, social, behavioural and attitudinal variables. The Chi-square statistic was required to establish the association between violent death and the attitudes to violent beliefs and behaviours and to the explanatory demographic, social and behavioural variables. The chi-square formula used was in the form of:

$$\chi^2 = \sum_{i=1}^i \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \dots\dots\dots 8$$

Where: O_{ij} is the i th observation of the j th item; and E_{ij} is the i th expected value of the j th item. The decision rule was used to reject the null hypothesis in favour of the alternative; if the p -value was less than 5% ($P < 0.05$).



The Pearson's Chi-square (χ^2) statistic was chosen; because the dependent and independent variables are categorical. The Chi-square statistics is a non-parametric test used to assess the level of association between an independent and a dependent categorical variable (Bless, et al., 2006). Chi-square test was done at the 95% confidence interval, with the level of significance set at 5% (0.05).

3.8.2.3 The Kaplan-Meir survival methods

The second differential analysis was done to estimate the survivorship probabilities to violent death victimization by selected demographic, social, behavioural and attitude

variables. In doing so, all the deaths were included in the analysis, including those deaths due to violence coded "1", which was the event category and the deaths due to natural causes were coded "0", which was the reference category.

In this analysis, the type of death (violent or natural) was the dependent variable and the age at death as a continuous measure was the time variable. The method was considered appropriate; because the age at death was a varying covariate, which affects the probability of violent death differently for decedents with various characteristics.

The Kaplan-Meier survival function was used to estimate the differentials in the age at violent death for decedents, with different demographic, social, behavioural and community characteristics. The Kaplan-Meier estimator used was in the form of:

$$\hat{S}(t) = \prod_{t(i) \leq t} \frac{n_i - d_i}{n_i} \dots \dots \dots 9$$

Where: n_i is the number of decedents at risk of violent-death victimization at age $t(i)$; d_i is the number of violent deaths observed at each age $t(i)$; $(n_i - d_i)/n_i$ is the conditional probability of surviving violent death past a given age $t(i)$ given survival to that age. The log rank Chi-square test was used to statistically compare the survival curves between different categories of risk factors. The log-rank test (Q) takes the form:

$$Q = \frac{(\sum_{i=1}^m d_{1i} - \sum_{i=1}^m \hat{e}_{1i})^2}{\sum_{i=1}^m \hat{v}(\hat{e}_{1i})} \dots \dots \dots 10$$

Where: n_i is the total number of decedents at risk of violent deaths; d_i is the total number of decedents who experienced violent deaths in each category of variables; $\hat{e}_{1i}$ is the

expected number of decedents who died of violence at each age (t); V is the variance of $\hat{e}_{1i}$.

3.8.2.4 Multivariate analysis

Two multivariate models were used in this study. The first was the binary logistic regression model. This was used to identify the significant predictors of violent-death victimization (VDV). The predictors are the characteristics of the decedents that are associated with the risk of VDV (Kleinbaum, et al., 2007). In this study, the outcome variable is the cause of death, which has two values; and these are: violent death coded as "1", which is the event of interest, or natural death coded as "0", which was the reference category.

The relationship of the outcome variable with the independent variables is determined by a variety composed of the logistic coefficient(s) and the corresponding independent variable(s). The coefficients for the independent variables are estimated with the logit values, or the odds value, as the dependent measure (Hair, et al., 2006). The model formulations are as follows:

$$\text{logit}_i = \ln \left(\frac{\text{prob}_{\text{event}}}{1 - \text{prob}_{\text{event}}} \right) = b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n \quad \dots\dots\dots 11$$

Or

$$\text{Odds} = \left(\frac{\text{prob}_{\text{event}}}{1 - \text{prob}_{\text{event}}} \right) = e^{b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n} \quad \dots\dots\dots 12$$

Where; $X_1, X_2, \dots, X_n$, are the independent variables; $b_0, b_1, b_2, \dots, b_n$ are the coefficients; e is the error term and $\ln$ is the natural logarithm.

Both forms of the coefficients reflect the direction and the magnitude of the relationship between the dependent and the independent variables. The interpretation of the coefficients for direction and magnitude can either be directly assessed in the original coefficients, which can take a positive or a negative sign, or indirectly by the use of the exponentiated coefficients, which can take a value of less than 1, or greater than 1 (Hair, et al., 2006).

When the coefficients are interpreted for direction, the direction of the relationship reflects the changes in the dependent variable associated with the changes in the independent variable.

The second multivariate method used was the multinomial logistic-regression model. The model was used to identify the significant predictors of having favourable or unfavourable attitudes to violent beliefs and behaviours. In this analysis, the results that are presented in Chapter Six, the dependent variables are two; and they are attitudes to the possession of weapons; because people think it makes them safe; and the attitudes to revenge violence – for the killing of a family member, or a close associate. The attitudes were measured, by using the nominal response of three response categories, which are favourable, unfavourable and ambivalent. The nominal response justifies the use of the multinomial-logistic regression model. In all the cases of the dependent variables, the attitude to violent behaviours was coded "1"; if the respondents reported a favourable

attitude; and “2” if the respondents reported an unfavourable attitude; and “0”; if respondents reported an ambivalent attitude, which was used as the reference category.

The multinomial model uses the maximum-likelihood estimation to evaluate the probability of belonging to any category of each attitude measured. Because the attitude measures were three, this requires the calculation of 3-1=2 equations: one for each category relative to the reference category, in order to describe the relationship between the favourable attitudes and each independent variable in the model.

The multinomial formula used was in the form of:

$$n = \ln \left\{ \frac{p(\zeta_i=n)}{p(\zeta_i=1)} \right\} = \alpha_n + \sum_{k=1}^K \beta_{nk} X_{ik} = Z_{ni} \dots \dots \dots 13$$

Hence, for each case, there were 2 predicted log odds, one for favourable attitudes; and the second for unfavourable attitudes; while maintaining an ambivalent attitude as the reference category. The formula used in this estimation was in the form of:

$$p(\zeta_i = n) = \frac{\exp(Z_{ni})}{1 + \sum_{t=2}^3 \exp(Z_{ti})} \dots \dots \dots 14$$

For the reference category, the formula used was in the form of:

$$p(\zeta_i = 1) = \frac{1}{1 + \sum_{t=2}^3 \exp(Z_{ti})} \dots \dots \dots 15$$

For both the binary and multinomial logistic-regression models, the parameter used to interpret the results was the beta-coefficients (β^x); also known as the Odds Ratio, which took the form of:

$$y = \text{Log}_e \frac{P_1}{1-P_1} \dots \dots \dots 16$$

If the Odds Ratio is greater than 1.00, the independent variable has a positive effect; and therefore it increases the likelihood of the dependent variable on the outcome variable. However, if the Odds Ratio is less than 1.00, the independent variable has a negative effect; and this therefore reduces the likelihood of the outcome variable. The Z statistic was used to assess the statistical significance of each variable in the model. In the analysis, a variable was a significant predictor; if the Z value associated with the Odds Ratio was <0.05 .

The binary logistic-regression results were presented in two models. Model 1 was the unadjusted model of all the variables selected for the analysis. It was also used as the first stage of testing the hypotheses for the study. These are presented in section 3.5. Model 2 was the adjusted model, which was used to confirm or reject the hypotheses after controlling for all the selected variables simultaneously. Regarding the multinomial logistic-regression models, two models were conducted for each dependent variable. Model 1 was the unadjusted model, which assessed the effect of the experience of violent deaths on attitudes to the possession of weapons and the attitudes to revenge violence. This model was used to test the following hypotheses:

- i. Individuals who know a victim of, or have experience of – witnessed – a violent death of a family member or close associate, are more likely than individuals who do not have experience of violent deaths to have favourable attitudes towards the possession of weapons.
- ii. Individuals who know a victim of, or have experience of – witnessed – a violent death of a family member or close associate. They are more likely than individuals

who have not had the experience of violent deaths to have favourable attitudes towards revenge violence.

In Model 2, we adjusted for the effect of experience of violent deaths on the favourable attitude to confirm or reject the above hypotheses – even after controlling for the effects of other explanatory variables simultaneously.

3.9 Ethical Consideration

All research studies are required to have undergone a process of ethical clearance or approval. The ethical approval was sought from relevant bodies of research. The first approval was obtained from the Higher Degrees Committee of Faculty of Human and Social Sciences at North West University-Mafikeng Campus and thereafter ethical approval was obtained from the Universities research ethics committee. Secondly, informed consent was obtained from respondents after explaining to them the objectives and processes of the study. All respondents were asked to sign the consent forms before interview. Respondents were assured of confidentiality of the data collected from them.

3.10 Limitations of the study

This study may have been affected by some limitations. Firstly, some of the variables of interest for analyses, such as drug use, alcohol use, and belonging to gang groups can stigmatize the decedents and the respondents, because of their legal and social desirability implications. Some respondents may have deliberately provided inaccurate information, thereby leading to systematic biases in estimating the violent deaths, attitudes to violence behaviours and their predictors. Secondly, collecting accurate data

on decedents is challenging; since the data on the dead are always obtained from second parties. For example, it is difficult to verify the cause of death; because the respondents may also find it difficult; or they are unwilling to provide information on their departed loved ones; and the events leading to their death, such as being involved in a criminal activity. As a result, the data on the decedents may have errors that contribute to systematic biases. Thirdly, the use of administrative data collected by Home Affairs on decedents could be incomplete; as already noted in the cause of violent death.

Additionally, many variables that are important in assessing the dynamics of violent deaths are not usually collected by the Department of Home Affairs.

Fourthly, some of the respondents may have forgotten the timing of some of the events and their associated information; and this may lead to inaccurate accounts of events; especially if the events occurred a while ago.

The data used in this study were obtained by the use of a cross-sectional research design, which is good for research that is seeking to provide answers to current events. However, this method may be inappropriate for research that requires retrospective data; or for events that may have occurred a while ago; since the conditions might have changed.

Cross-sectional data are also inappropriate for studying the temporality of events that are constantly changing, such as the attitudes and perceptions; since some of the characteristics of the study subjects and the population conditions may change with time.

Chapter Four

Patterns and trends of violent deaths in South Africa

4.1 Introduction

In this chapter, the decedents derived from the civil-registration data from 2001-2015, were used to analyze the patterns and trends of violent-death victimization in South Africa. The analysis included the description of the profiles of all deaths; assessing the differentials of the decedents by violent-death victimization (VDV) and the deaths due to natural causes by selected socio-demographic characteristics. Additionally, the cause of VDV rates and standardized VDV rates were presented. The chapter also presented the patterns, differentials and predictors of VDV by sex for South Africa and Gauteng, KwaZulu-Natal provinces.

Global mortality statistics indicate that death due to violence is increasingly becoming an epidemic. On the African continent, South Africa occupies the unenviable position, as the leading country in violent deaths that are not associated with ideologically promoted violence. Assessing the patterns, trends and the differentials of the decedents of violence by socio-demographic and community-level characteristics, and politico-geographical areas; is therefore important for assessing the effectiveness of violence-prevention interventions in South Africa, as well as identifying the population groups with the greatest need of interventions.

The analysis also provides evidence for planning and implementing health and social interventions, which are important for improving the quality of life of the population. More specifically, and in line with the aim of this study, the chapter provides the data for

monitoring trends in VDV, as an important component for attaining the Sustainable Development Goals (Nunes, 2012) for South Africa.

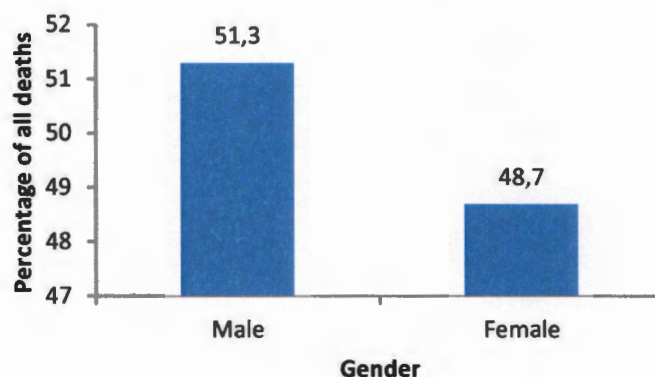
South Africa is one of the most-violent countries in the world. Violent deaths account for more than 30% of annual deaths in South Africa, mostly among young black adults and youths. Although the causes of death analysis presented in this study are broad, partly due to the main focus of the study being violent-death victimization, it is important for developing interventions that can reduce the high rate of unnatural deaths in South Africa.

The systematic analyses of VDV, as presented in this chapter, are few in South Africa. By using the Civil-Registration Systems data for the 2001-2015 periods, this chapter contributes to our understanding of the patterns, trends and predictors of VDV in South Africa in general, and Gauteng and KwaZulu-Natal, in particular.

4.2 Patterns and trends in all deaths by sex

Mortality statistics and the distribution thereof by sex are important, for improving the health status and longevity of the population. Figure 4.1 presents the distribution of all deaths in South Africa by sex for the period 2001 to 2015. The table shows that deaths from any cause were slightly more prevalent among males with 51.3%, than among females with 48.7%. Overall, this pattern of deaths is consistent with the global observations (WHO, 2008).

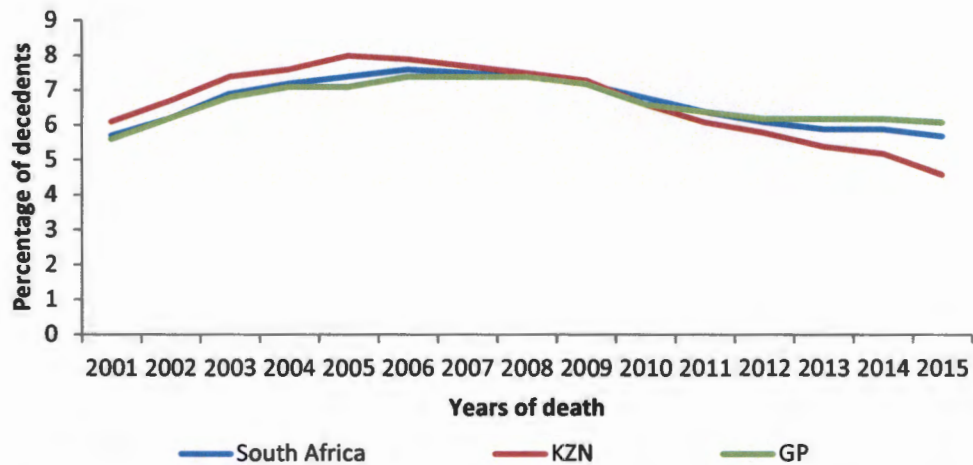
Figure 4.1Percentage distributions of all deaths by sex in South Africa, 2001-2015



Furthermore, trends in all deaths between 2001 and 2015 are also presented in Figure 4.2 for the whole of South Africa, and additionally for KwaZulu-Natal and Gauteng provinces. The figure shows that the average level of all deaths increased, and was higher year on year, from 2001 to 2009 in KwaZulu-Natal, than in Gauteng. However, the proportion of deaths appears to have declined in KwaZulu-Natal – to a level below the average for South Africa and Gauteng in the years after 2010.

Overall, the proportion of deaths in 2001 increased from 5.6% to 5.7%, and then to 6.1% in Gauteng, South Africa; and in KwaZulu-Natal in 2001 from 7.1% to 7.4% and then to 8%, In 2006, the deaths declined to 4.6% in KwaZulu-Natal, to 5.7% in South Africa as a whole; and to 6.1% in Gauteng province in 2015. These results show that overall, there has been a decline in the reported number of deaths in South Africa, as a whole; and also in KwaZulu-Natal and Gauteng provinces over the study period.

Figure 4.2 Trends in percentage of all deaths in South Africa, KZN and Gauteng provinces: 2001-2015

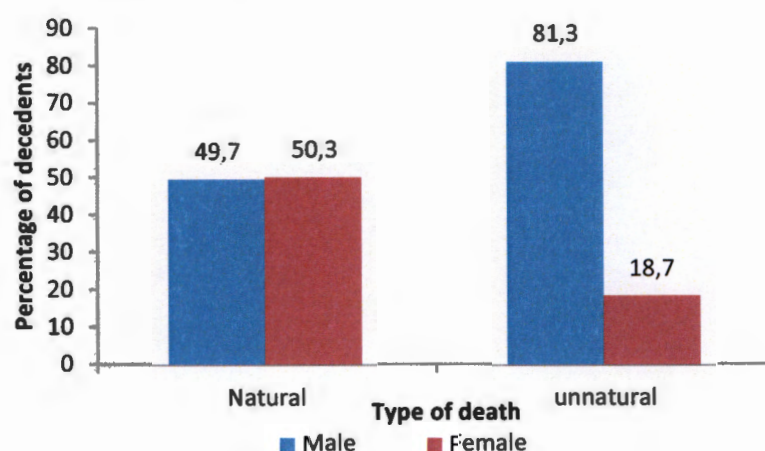


4.2.1 Types of deaths

In this study, decedents were categorized as being due to natural and unnatural causes. The decedents were regarded to have died of natural causes – if the decedent died of a disease or of old age. The decedents of unnatural death, on the other hand, are those who died of suicide; while those who died of homicide and murder – which comprise the deaths caused by accident or the intended action of another individual or individuals. In this study, the main focus was on death due to unnatural causes; and it included only the decedents of violent deaths.

In Figure 4.3, the types of deaths were presented by sex showing that the proportion of decedents who had experienced a natural death was nearly equal for both males and females. However, the figure also shows that unnatural death was predominantly a male problem. Over 8 in 10 deaths were due to unnatural causes in South Africa between 2001 and 2015 among males; while less than 20% occurred among females.

Figure 4.3 Differentials in deaths by type of death and sex, 2001-2015



4.2.2 Profile of all deaths, 2001-2015

Table 4.1 presents the profile of decedents by selected demographic and social characteristics. The table shows that although the decedents were mostly men (51.3%); women represented a significant proportion of the decedents (48.9%). The median age of the decedents was 52 years. This was probably due to the long period under review. The early years of the review were more likely to have accounted for a large number of decedents due to natural causes associated with the HIV and AIDS epidemic, which claimed mostly young adults and youths.

Nevertheless, the age pattern of the decedents shows that their deaths increased with increasing age, which depicts the expected pattern of mortality from young adults aged 15 years to old age of 60 years or older. Again, as expected, 8 in 10 of the decedents were blacks, mainly because of their predominance in the South African population.

Except for those with tertiary education, Table 4.1 shows that the decedents increased with the level of education. The prevalence of decedents increased from 19% with no

education to 33.8% with primary education, and to 43.9% with secondary education. Only 3.2% of these decedents had tertiary education. The educational distribution of decedents was rather surprising; as more deaths are expected among decedents with no education than among those with primary and secondary education. The profile of decedents has also been presented by occupational groups at the time of their death; showing that 7 out of 10, about 16% and nearly 10% of the decedents worked in the agriculture, trade, or elementary and professional sectors, respectively. Only about 4% of the decedents worked in the security outfits.

The distribution of the decedents by marital status show that they were predominantly married or cohabiting (57.8%), followed by never married (24.8%), and those divorced or separated (9.4%). Regarding provincial distribution, Table 4.1 shows that the majority of the decedents were from KwaZulu-Natal, followed by those from Gauteng and the Eastern Cape provinces. The Northern Cape, followed by North West and Mpumalanga provinces, had fewer decedents, which is a reflection of the provincial population sizes.

4.2.3 Differentials in deaths by type, 2001-2015

Examining the patterns and differentials of decedents by the socio-demographic characteristics of the decedents is important for monitoring the effectiveness of health and social policies and programmes. It is also important for understanding the patterns of mortality in a population, which is required for developing evidence-based interventions. In Table 4.1, the distribution of decedents by selected demographic and social characteristics are presented. The data were also presented by province, to help in understanding the provincial differentials of mortality in general, and violent deaths in

particular. Although the focus is on examining violent-deaths victimization (VDV), death due to natural causes has also been presented and described in this section.

Table 4.1 shows that VDV was predominantly male (81.0%), with the majority of decedents of VDV clustered in the 20-29 and 30-39 year age groups. The prevalence of VDV decreased with age from the 40-49 year age group, indicating that VDV in South Africa was predominantly a cause of death associated with young adults and youths. The test statistic show that VDV is significantly associated with sex and age at $p < 0.0001$). Although the prevalence of VDV was higher among blacks than other racial groups, VDV was not significantly associated with racial differences in this study.

Table 4.1 also presents the differentials in VDV by the level of education. The table shows that the proportion of VDV increased from less than 10% among decedents with no education to 28.4% and 58.7% among decedents with primary and secondary education – before declining to only 4.2% among decedents with tertiary education. Although this finding was surprising, education and VDV were significantly associated with VDV at $p < 0.0001$. Additionally, Table 4.1 shows that the differentials in VDV by occupational groups showed that 7 in 10 and nearly 2 in 10 decedents who worked in agriculture and trade or elementary sectors died of VDV.

Occupation was also significantly associated with VDV, at $p < 0.0001$. Furthermore, differentials by marital status showed that with 78%, the decedents of VDV were predominantly married or cohabiting at the time of death, followed by 16.4% of those who had never married decedents and 3.2% of widowed decedents. Only 2.4% of divorced or

separated decedents had died of VDV. Marital status was significantly associated with VDV at $p < 0.0001$.

Table 4.1 Percentage distributions in all deaths by type and selected characteristics in South Africa, 2001-2015

Characteristics	Type of death		X^2	Total N=3,690,416
	Natural	Violent		
	N=3,421,786	N=268,630		
Sex				
Male	49.9	81.0	122908.36, p=0.000	51.3
Female	50.1	19.0		48.7
Age groups				
<20	1.4	9.0	334561.40, p=0.000	1.8
20-29	11.0	34.2		12.1
30-39	18.6	24.6		18.9
40-49	16.0	15.2		16.0
50-59	14.3	8.4		14.0
60+	38.6	8.6		37.2
Racial groups				
Black	81.4	81.3	1.58, p=0.104	81.4
Others	18.6	18.7		18.6
Level of education				
No schooling	19.7	8.7	24246.91, p=0.000	19.0
Primary	34.1	28.4		33.8
Secondary	43.0	58.7		43.9
Tertiary	3.2	4.2		3.2
Occupational group				

Security sector	3.8	4.9	485.67, p=0.000	3.9
Agriculture	70.5	70.0		70.4
Trade/elementary	16.0	18.5		16.1
Professional	9.7	6.6		9.6
Marital status				
Married/Cohabiting	56.7	78.0	54701.49, p=0.000	57.8
Never married	25.2	16.4		24.8
Widowed	8.8	3.2		8.4
Divorced/separated	9.3	2.4		9.0
Province of residence				
Western Cape	8.6	14.3	25123.08, p=0.000	8.9
Eastern Cape	15.0	4.8		15.0
Northern Cape	2.7	2.4		2.7
Free State	8.1	6.2		8.0
KwaZulu-Natal	22.0	20.9		22.0
North West	7.1	5.9		7.0
Gauteng	19.6	24.0		19.8
Mpumalanga	7.9	5.8		7.8
Limpopo	9.0	4.8		8.8
Total	100.0	100.0		

Regarding the differentials of VDV by province, Table 4.1 shows that the overall VDV incidence for the period 2001-2015 was more prevalent in Gauteng and KwaZulu-Natal provinces. Twenty-four percent and nearly 21% of decedents of VDV were in Gauteng and KwaZulu-Natal provinces, respectively. The Western Cape had the third highest proportion of VDV with 14.3%, followed by Free State with 6.2%. The Northern Cape

(2.8%) and Limpopo province (4.8%) had the lowest and second lowest prevalence of VDV decedents, respectively, over the period under review. The same province was also found to be significantly associated with VDV at $p < 0.0001$.

Table 4.1 also presents the data on those decedents who had died of natural causes; and it shows no difference between males and females. As expected, the prevalence of decedents of natural causes increased with age at death; and as expected, the decedents due to natural deaths were predominantly black; because blacks comprised the majority in the population. Surprisingly, the table shows that except for decedents with tertiary education, decedents of natural causes increased with the level of education. The table also shows that decedents of natural causes worked in the agricultural (70.5%) and trade or elementary sectors (16%); and were mostly married or cohabiting (56.7%), followed by those who had never married (25.2%).

Provincial differentials of decedents of natural causes show that they were more common in KwaZulu-Natal (22%), followed by Gauteng (19.6%) and the Eastern Cape (15%), probably because of their larger populations than other provinces. The decedents due to natural causes were the lowest in the Northern Cape (2.7%), followed by Mpumalanga (7.9%) and the Western Cape (8.6%). The province and deaths due to natural causes were significantly associated at $p < 0.0001$. The differences at the provincial level are more likely to be the representation of population differences of the provinces than other factors influencing natural deaths.

4.3 Violent-death victimization in South Africa

Violent-death victimization is reported to be prevalent in South Africa. Despite these reports, systematic analyses of the dynamics of violent deaths in South Africa are few. This has contributed to the paucity of knowledge on this important public health problem. In this section of this chapter, we present the patterns, differentials and predictors of violent deaths in South Africa.

4.3.1 Trends in the causes of VDV

Table 4.2 presents the trends in the violent deaths rates in South Africa. The analysis of trends in VDV rates by various causes show that for all the years under review (2001-2015), the most common causes of VDV were undefined causes, poisoning, firearms and sharp objects. The table shows that overall, other causes of VDV, including beatings, strangulations and others (17.55) collectively accounted for the highest VDV rate in South Africa, followed by sharp objects (13.34) and firearms (8.36). Violent deaths caused by other means and the use of sharp objects continue to increase year on year.

For example, the VDV rates by other means ranged from a low of 6.7 in 2015 to a high of 23.5 in 2006. For the years preceding 2013, VDV rates due to other causes were higher than those caused by firearms and sharp objects.

Furthermore, the VDV rate due to sharp objects also continues to be the second highest cause of VDV in South Africa. The contribution of sharp objects to the total VDV rate rose from 7.6 in 2003 to 17.6 in 2015. Poisoning with rates of 30.4 and 20.3 accounted for the highest VDV rates in 2001 and 2002, respectively. Violent death rates due to poisoning have been declining monotonically since 2003. Table 4.2 also shows that deaths due to

firearms was an important cause of VDV between 2001 and 2006; but this rate has declined significantly ever since. However, the data on firearms VDV rates from 2007 to 2015 should be interpreted with caution; as it does not reflect what is happening in South Africa. This suggests that deaths resulting from firearms have been significantly under-reported in the civil registration system of South Africa.

Table 4.2 Trends and differentials in the causes of violent death rates, South Africa: 2001-2015

Year	Poison	Firearms	Sharp objects	Others
2001	30.4	24.3	10.2	18.0
2002	20.3	29.9	4.5	15.6
2003	3.2	26.3	7.6	23.2
2004	3.2	18.3	11.1	18.1
2005	3.2	15.1	14.7	20.7
2006	3.2	17.4	15.2	23.5
2007	3.0	1.8	16.0	21.0
2008	2.9	0.3	15.8	18.3
2009	3.1	0.2	14.3	18.8
2010	3.0	30	13.9	17.8
2011	2.7	2.7	13.2	15.3
2012	2.6	2.6	16.3	19.8
2013	2.9	2.9	14.6	19.7
2014	3.1	3.1	17.9	6.8
2015	3.5	3.5	17.6	6.7
Total	3.02	8.36	13.34	17.55

In Table 4.3, the trends in sex-specific causes of death are presented. The table shows that the VDV rates for all causes of VDV were higher for males than females in all the years under review. Violent deaths due to other unspecified causes and sharp objects accounted for higher VDV rates for male decedents than for female decedents year on year. Although VDV rates due to firearms also indicate higher prevalence among male than female decedents, the rates dropped sharply between 2007 until 2015, which suggests significant under-reporting of firearms as a cause of violent deaths during this period. This pattern is noted in Gauteng, KwaZulu-Natal and at a national level.

Table 4.3 a. Trends and differentials in the causes of specific violent death rates by sex, South Africa: 2001-2015

Year	Poison		Firearms		Sharp objects		Others	
	Male	Female	Male	Female	Male	Female	Male	Female
2001	3.10	1.56	29.58	4.42	12.31	1.98	19.19	5.81
2002	5.00	2.65	57.19	9.10	12.64	2.29	50.35	11.58
2003	7.02	3.95	45.51	11.78	22.91	3.76	33.80	18.02
2004	4.55	2.23	36.00	4.92	22.12	2.84	31.76	7.84
2005	7.17	2.31	27.16	4.36	27.00	3.64	33.13	9.52
2006	4.17	2.34	31.19	4.90	28.03	3.54	37.37	10.94
2007	4.12	2.03	3.21	0.53	29.51	3.72	34.65	8.72
2008	3.83	2.08	0.56	0.06	29.19	3.71	31.19	6.61
2009	4.32	2.01	0.30	0.08	26.23	3.40	31.57	7.10
2010	3.94	2.19	0.31	0.05	25.40	3.32	30.00	6.57
2011	3.62	1.66	2.78	0.06	23.94	3.08	25.67	5.94
2012	3.28	1.70	0.35	0.06	27.24	2.84	21.54	5.27
2013	3.49	2.06	0.48	0.02	24.00	2.78	22.75	5.66
2014	4.10	2.00	0.73	0.07	26.31	2.93	33.20	6.00

2015	4.70	2.40	0.58	0.07	32.50	3.56	11.48	2.10
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Table 4.3. b. Trends and differentials in the causes of specific violent death rates by sex, Gauteng and KwaZulu-Natal: 2001-2015

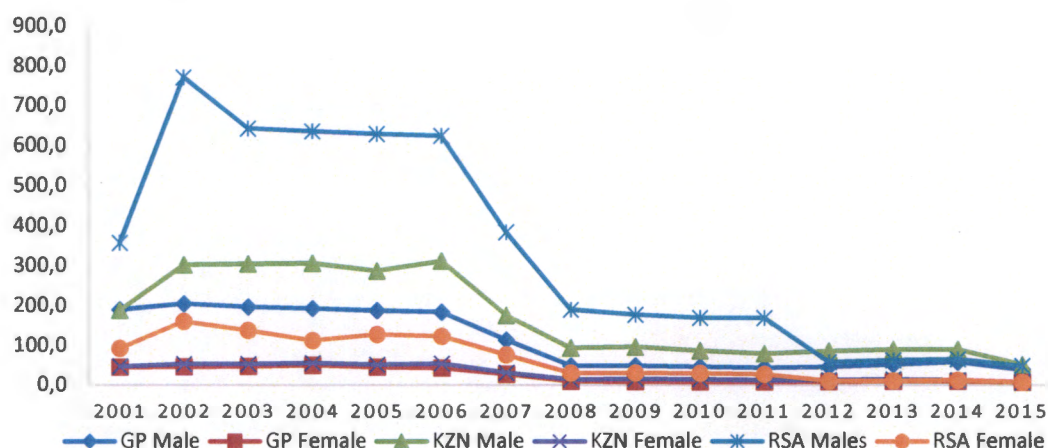
Year	Poinsining Deaths				Firearm Deaths				Sharp Object Deaths				Other Violent Deaths			
	GP Male	GP Female	KZN Male	KZN Female	GP Male	GP Female	KZN Male	KZN Female	GP Male	GP Female	KZN Male	KZN Female	GP Male	GP Female	KZN Male	KZN Female
2001	4.77	2.33	2.43	1.34	52.18	6.79	71.46	10.28	6.54	1.21	17.98	2.94	13.42	4.56	35.53	10.41
2002	4.75	1.90	2.75	1.31	55.10	7.75	84.43	11.64	4.70	0.86	11.21	1.69	17.48	6.15	48.44	10.67
2003	4.48	2.51	2.23	1.36	46.76	6.42	81.13	9.89	3.64	0.76	14.92	2.13	18.49	5.81	48.71	11.46
2004	4.74	2.39	2.56	1.09	35.88	5.70	69.78	9.94	6.32	1.03	24.45	3.65	19.92	6.83	42.23	10.79
2005	2.82	1.31	2.47	1.47	25.78	3.70	51.59	7.91	9.27	1.46	26.21	2.91	23.36	6.70	42.53	10.19
2006	3.68	1.71	2.59	1.45	32.82	5.76	58.35	8.11	10.76	1.46	27.57	3.96	30.13	8.68	46.05	12.51
2007	3.92	1.91	2.86	1.37	2.31	0.58	6.14	0.99	13.39	1.99	29.25	3.65	30.82	9.26	49.51	10.75
2008	2.94	1.78	2.16	1.47	0.32	0.14	1.10	0.06	14.37	2.23	28.63	3.37	29.50	6.41	48.22	9.17
2009	4.39	1.40	3.26	1.65	0.02	0.02	0.24	0.20	11.85	1.84	25.08	2.84	31.91	7.08	50.52	10.58
2010	4.06	1.71	3.80	1.94	0.00	0.02	0.43	0.08	12.59	1.76	26.38	3.96	28.44	6.48	42.98	8.39
2011	3.63	1.32	3.67	1.41	0.04	0.02	0.68	0.19	10.98	1.90	25.15	2.97	27.18	6.58	36.67	7.43
2012	2.87	1.35	3.00	1.56	0.09	0.00	0.70	0.19	9.49	1.40	26.20	2.65	32.12	7.23	42.57	9.00
2013	4.15	2.01	3.52	2.05	0.06	0.00	0.25	0.00	9.04	1.47	25.78	3.40	35.41	7.95	46.78	9.04
2014	5.24	2.47	4.32	1.95	0.12	0.00	0.34	0.05	9.44	1.23	30.98	3.54	39.04	7.78	37.84	6.90
2015	6.41	3.89	3.70	1.68	0.18	0.00	0.67	0.05	17.89	2.35	31.58	3.63	11.85	2.27	13.39	2.36

4.3.2 Trends in standardized violent-death rates for South Africa

Examining trends in standardized VDV by sex and the province of residence of decedents are important for sex and provincial disaggregated planning and interventions to reduce the high rate of VDV in South Africa. This is also important; because it provides information on the trends on gender-based and province-based violence in South Africa. The results presented in Figure 4.4 show that VDV is predominantly a problem that affects males in South Africa and in both provinces Gauteng and KwaZulu-Natal. The figure shows that although VDV rates were highest in 2002 for Gauteng and South Africa and in 2004 for KwaZulu-Natal for both males and females, VDV rates started declining sharply in 2006 for both sexes. The rate of decline was higher from 2006 and 2008; and it has stabilized to less than 100 for males and less than 20 for females ever since.

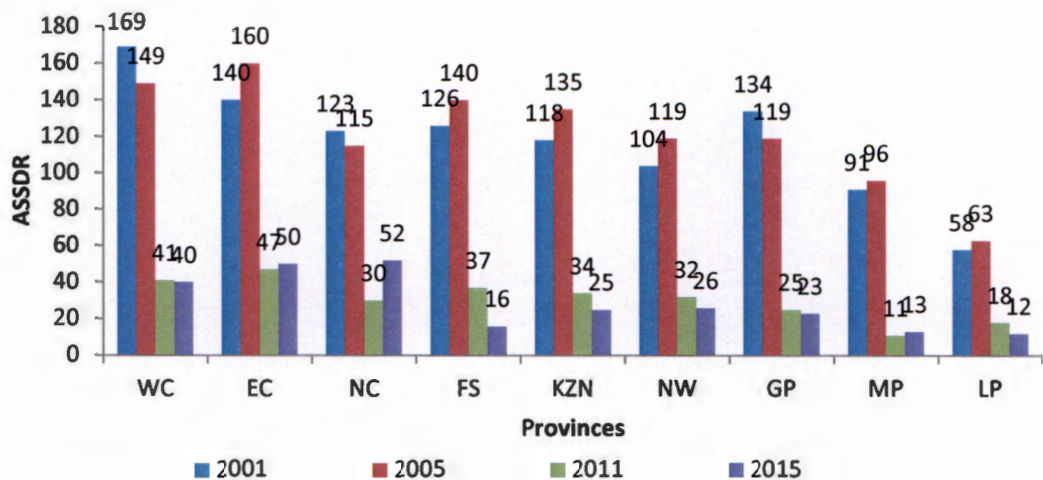
This result could suggest that VDV prevention efforts are beginning to yield results. However, it is also possible that the reporting of VDV statistics from 2008 was inaccurate; especially when we consider the unexpected decline in deaths from firearms reported in the official mortality statistics in South Africa since 2007.

Figure 4.4 Trends in standardized violent death rates by sex in Gauteng, KwaZulu-Natal and South Africa: 2001-2015



Trends in standardized VDV rates by provinces is presented in Figure 4.5, showing that the highest rate of VDV in all provinces was reported in the Western Cape and Gauteng in 2001; and that the rate of VDV had declined in nearly all provinces between 2002 and 2015. However, 6 provinces have reported an increase in VDV in 2005. These include in a decreasing order the Eastern Cape, the Free State, KwaZulu-Natal, North West, Mpumalanga and Limpopo. In 2011, the Free State, followed by KwaZulu-Natal, North West and Gauteng reported higher rates of VDV; while Mpumalanga reported the lowest rate of VDV. The rather sharp decline in VDV rates in all provinces from 2011 suggests that there might have been under-reporting of VDV cases in South Africa.

Figure 4.5 Trends in age-standardized violent death rates by province for selected years: 2001, 2005, 2011, 2015



4.3.3 Patterns and differentials of violent-death victimization in South Africa

In the previous section, it was observed that sex was significantly associated with VDV; and it was more prevalent among men than women. In this section, the patterns and the differentials of decedents of VDV were examined by sex; and the results are presented in Table 4.4. The table shows that for both male and female decedents, the prevalence of VDV decreased with age. Among male decedents, the prevalence of VDV increased from less than 10% in the <20 year age group and peaked at 36% in the 20-29 year age group; and it then declined monotonically to 6.9% in the 60 years or older age group.

Among female decedents, however, the prevalence of VDV increased from 10% in the <20 year age group and peaked at 17%; and it declined thereafter to nearly 10% in the 50-59 year age group.

Differentials by racial group show that there was almost no difference in the prevalence of VDV for black males and females in South Africa. The prevalence of VDV for both males and females was about 80 among black male and female decedents. Conversely,

among decedents of other racial groups, more women than men experienced VDV. The result shows that age and racial group were significantly associated with VDV at $p < 0.0001$ for both males and females.

Table 4.4 presents the differentials of decedents of VDV by level of education. The table shows that, with the exception of tertiary education where the prevalence of VDV decedents was the lowest; VDV has increased with the level of education for both men and women. More female decedents without any education (12.3%) experienced VDV than male decedents without any education (7.7%). For decedents with primary education and secondary education, the experience of VDV was more prevalent among male than among female decedents.

Furthermore, Table 4.4 presents the differential of decedents of VDV by their occupational groups – showing that for both male and female decedents, VDV was more prevalent for decedents who worked in agriculture and trade or elementary sectors. However, more female (75.3%) decedents than male (69.1%) decedents in the agricultural sector experienced VDV. The proportion of male decedents in the trade or elementary (20.5%) sector experiencing VDV was nearly 4 times more than that of females (5.7%) in the same sector.

Overall, female (13.9%) decedents in the professional sectors were more than twice likely to have experienced VDV than males (5.5%) in the same sector. The results show that the level of education and occupational groups was significantly associated with VDV at $p < 0.0001$ for both male and female decedents.

Differentials in decedents of VDV was also examined by marital status; and the results are presented in Table 4.4, showing that more married or cohabiting male decedents (80%) than married or cohabiting female decedents (70.9%) had experienced VDV. However, the proportion of never-married (18.3%), widowed (4.5%) and divorced or separated (6.3%) female decedents who had experienced VDV was higher for those never-married (16%), widowed (2.9%) and divorced or separated (1.5%) male decedents. Marital status and VDV were also significantly associated for both male and female decedents at $p < 0.0001$.

Regarding the provincial differentials, the data presented in Table 4.4 show that in 4 provinces, the experience of VDV was more prevalent among male decedents than among female decedents. Of these provinces, Gauteng was leading with 24%, followed by KwaZulu-Natal with 21%, the Eastern Cape with 15.7% and the Western Cape with 14.7%. The 5 provinces, by order of prevalence from the highest to the lowest, show that VDV was higher for female decedents in the Free State, North West, Mpumalanga, Limpopo and the Northern Cape. The results also show that the province of residence was significantly associated with VDV – for both male and female decedents at $p < 0.0001$.

Table 4.4 Percentage distribution of violent deaths by selected characteristics and sex: 2001-2015

Characteristics	Male	Female	X ²	Total
	N=268,630	N=62,982		N=331,612
Age groups				
<20	8.7	10.0	5860.39, p<0.0001	9.0
20-29	36.0	14.8		34.3
30-39	25.2	17.0		24.6
40-49	15.0	16.2		15.3
50-59	8.1	9.9		8.5
60+	6.9	15.1		8.4
Racial groups				
Black	82.1	77.6	558.27, p<0.0001	81.3
Others	17.9	22.4		18.7
Level of education				
No schooling	7.7	12.3	1000.41, p<0.0001	8.6
Primary	28.6	27.2		28.4
Secondary	59.7	55.2		58.8
Tertiary	3.9	5.3		4.2
Occupational group				
Security sector	4.0	5.0	813.68, p<0.0001	4.9
Agriculture	69.1	75.3		70.0
Trade/elementary	20.5	5.7		18.5
Professional	5.5	13.9		6.6
Marital status				
Married/Cohabiting	79.6	70.9	5214.34, p<0.0001	78.0
Never married	16.0	18.3		16.4

Widowed	2.9	4.5		3.2
Divorced/separated	1.5	6.3		2.4
Province of residence				
Western Cape	14.7	12.8	293.13, p<0.0001	14.3
Eastern Cape	15.7	16.1		15.8
Northern Cape	2.3	2.6		2.4
Free State	6.1	6.6		6.2
KwaZulu-Natal	21.0	20.4		20.9
North West	5.8	6.2		5.9
Gauteng	24.0	23.6		23.9
Mpumalanga	5.7	6.1		5.8
Limpopo	4.7	5.6		4.8
Total	100.0	100.0		100.0

4.3.4 Predictors of VDV by sex

Table 4.5 presents the results of a logistic-regression model predicting violent death victimization (VDV) by sex. The model tested the hypothesis that “violent death victimization is significantly more likely among Blacks than [among] other population groups, regardless of socio-demographic and contextual factors.”

Model 1 presents the results predicting VDV among male decedents. The model shows that the risk of VDV increased with the increase in age group of the men, showing that male decedents in the <20, 20-29 and 30-39 year age groups were more than 32 (CI=30.82-34.66), 22.35 (CI=21.29-23.47) and 7.54 (CI=7.47-7.92) times significantly more likely to have suffered a violent death than male decedents in the 60 years or older age group. The model also shows that the male decedents were 4.73 (CI=4.51-4.97) and 3.02 (CI=2.86-3.18) times significantly more likely to have suffered violent death if they were in the 40-49 and 50-59 year age groups, than those in the 60 years or older age groups.

The model also shows that black male decedents were 1.72 (0.71-0.75) times significantly more likely to have experienced violent death than male decedents of other racial groups. The result confirms the hypothesis that “violent death victimization is significantly more likely among Black decedents than [among] decedents of other population groups, regardless of socio-demographic and contextual factors.”

Furthermore, Model 1 shows that marital status was a significant predictor of violent deaths in South Africa. The model shows that never-married male decedents (OR=1.31 (CI=1.21-1.42), followed by married male decedents (OR=1.29, CI=1.19-1.40) were

significantly more likely to have died a violent death than divorced or separated male decedents. The result for the provinces also shows that the male decedents were more likely to have suffered a violent death if they were in the Western Cape (OR=2.24, CI=2.10-2.38), Gauteng (OR=1.86, CI=1.78-1.95), Eastern Cape (OR=1.72, CI=1.64-1.80), KwaZulu-Natal (OR=1.64, CI=1.57-1.71) and Free State (OR=1.31, CI=1.24-1.37) than if they were in Limpopo.

The model further shows that compared to Limpopo, VDV among male decedents was significantly more likely in the North West (OR=1.30, CI=1.23-1.38) and in the Northern Cape (OR= 1.20, CI=1.12-1.29). Conversely, Model 1 shows that compared to male decedents with tertiary education and male decedents in Limpopo province, VDV among male decedents was significantly less likely if the men had no education (OR=0.77, CI=0.73-0.83) and lived in Mpumalanga province (OR=0.73, CI=0.69-0.77).

Model 2 presents the predictors of VDV among female decedents in South Africa. The model shows that the risk of VDV among female decedents was 21.27 (CI=19.35-23.38), 6.94 (CI=6.41-7.51) and 3.62 (CI=3.34-3.92) significantly higher if the women belonged to the <20, 20-29 and 30-39 year age groups, respectively. Additionally, women in the 40-49 and 50-59 year age groups were 3.29 (CI=3.04-3.56) and 2.32 (CI=2.13-2.52) times significantly more likely to have suffered VDV than women in the 60 year or older age group.

Additionally, VDV among women; it was significantly more likely if the women were Black (OR=1.46, CI=0.43-0.49) than if they were of other races, which also confirms the

hypothesis that “violent death victimization is significantly more likely among Blacks than other population groups, regardless of socio-demographic and contextual factors.”

Table 4.5 Logistic regression model showing odds ratios predicting violent deaths for South Africa by sex and selected characteristics of decedents

Variables	Model 1		Model 2		Difference %
	Males		Females		
	Odds Ratio	CI	Odds ratio	CI	
Age groups					
<20	32.69***	30.84-34.66	21.27***	19.35-23.38	114.2
20-29	22.35***	21.29-23.47	6.94***	6.41-7.51	154.1
30-39	7.54***	7.19-7.92	3.62***	3.34-3.92	39.2
40-49	4.73***	4.51-4.97	3.29***	3.04-3.56	14.4
50-59	3.02***	2.86-3.18	2.32***	2.13-2.52	7.0
60+	1.00		1.00		
Racial groups					
Black	1.72***	0.71-0.75	1.46***	0.43-0.49	26.0
Other races	1.00		1.00		
Level of education					
No schooling	0.77***	0.73-0.83	0.71***	0.64-0.79	6.0
Primary	0.96	0.91-1.01	0.70***	0.64-0.77	26.0
Secondary	1.02	0.97-1.08	0.71***	0.65-0.78	31.0
Tertiary	1.00		1.00		
Occupational group					
Agriculture	1.08	1.04-4.12	0.87***	0.80-0.94	21.0
Security	1.03	0.95-1.12	1.41***	1.11-4.80	38.0

Services	0.98	0.94-1.02	0.87**	0.79-0.96	11.0
Professionals	1.00		1.00		
Marital Status					
Married	1.29***	1.19-1.40	1.27***	1.14-1.40	2.0
Never married	1.31***	1.21-1.42	1.52***	1.37-1.68	21.0
Widowed	1.07	0.97-1.18	0.69***	0.61-0.79	38.0
Divorced/separated	1.00		1.00		
Province of residence					
Western Cape	2.24***	2.10-2.38	1.71***	1.52-1.92	53.0
Eastern Cape	1.72***	1.64-1.80	1.44***	1.32-1.58	28.0
Northern Cape	1.20***	1.12-1.29	0.94	0.81-1.08	26.0
Free State	1.31***	1.24-1.37	1.28***	1.17-1.41	3.0
KwaZulu-Natal	1.64***	1.57-1.71	1.63***	1.51-1.76	1.0
North West	1.30***	1.23-1.38	1.40***	1.26-1.56	10.0
Gauteng	1.86***	1.78-1.95	1.87***	1.72-2.05	1.0
Mpumalanga	0.73***	0.69-0.77	0.68	0.61-0.76	5.0
Limpopo	1.00		1.00		
Constant	0.008***		0.009***		
Nagelkerk R ²	0.17		0.07		

Level of significance: *<0.05; **<0.01; ***<0.001

Furthermore, Model 2 shows that VDV experience among decedent females was significantly more likely if the women decedents were never married (OR=1.52, CI=1.37-1.68) and married (OR=1.27, CI=1.14-1.40); and if the women decedents lived in Gauteng (OR=1.87, CI=1.72-2.05), Western Cape (OR=1.71, CI=1.52-1.92), KwaZulu-Natal (OR=1.63, CI=1.51-1.76) and Eastern Cape (OR=1.44, CI=1.32-1.58). Furthermore, the

women were more likely to have suffered VDV if they lived in North West (OR=1.40, CI=1.26-1.56) and Free State (OR=1.28, CI=1.17-1.41) than if they lived in Limpopo province. However, Model 2 shows that the risk of violent death among decedents was significantly less likely among female decedents without any education (OR=0.71, CI=0.64-0.79), secondary education (OR=0.71, CI=0.65-0.78) and primary education (OR=0.70, CI=0.64-0.77); among female decedents, who worked in the agricultural sector (OR=0.87, CI=0.80-0.94) and the service sectors (OR=0.87, CI=0.79-0.96); and among widowed female decedents (OR=0.69, CI=0.61-0.79).

The comparison of the effects of predictor variables between men and women shows that male decedents in South Africa were more likely to have experienced VDV than women decedents at all age groups. The risk of VDV for male decedents in the <20, 20-29, 30-39, 40-49 and 40-59 years age groups were 114%, 154%, 39%, 14% and 7% higher than that for female decedents at the same age groups, respectively. The risk of VDV among Black decedent men was 26% higher than among Black decedent women; and the risk of VDV among decedent men in the Western Cape, the Eastern Cape, the Northern Cape and KwaZulu-Natal were 53%, 3%, 26% and 3%, respectively higher than for decedent women in the same provinces, respectively. However, the risk of VDV among never-married decedent women was 21% higher than among never-married decedent men; and the risk of VDV among decedent women in North West province was 10% higher than that for decedent men.

4.4 Violent-death victimization in Gauteng and KwaZulu-Natal provinces

In the following sections, violent death victimization in Gauteng and KwaZulu-Natal provinces are presented and discussed. These include cause-specific violent death rates,

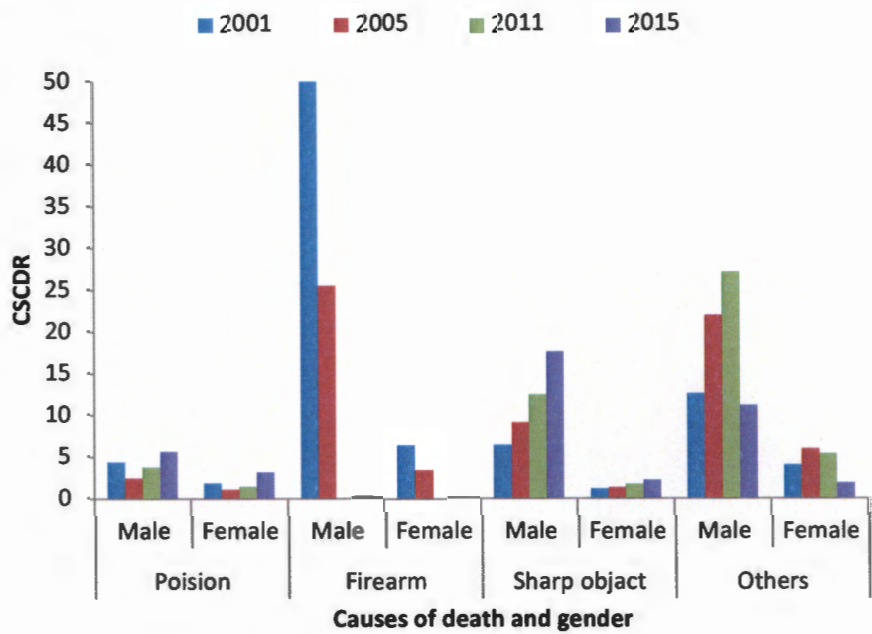
trends in violent death rates, patterns and differentials of violent deaths and predictors of violent deaths.

4.4.1 Trends in cause-specific death rates

The distribution of decedents, according to the cause of violent death is presented in Figure 4.6(a) by sex in Gauteng province. The main causes of violent death among male and female decedents in Gauteng province was firearms, followed by other undefined causes, sharp instruments and poison. As observed for the whole of South Africa in the previous section, the decedents of VDV were more prevalent among men than women in Gauteng province. The firearm was the main cause of death for males in 2001 and 2005, followed by other undefined causes and sharp objects.

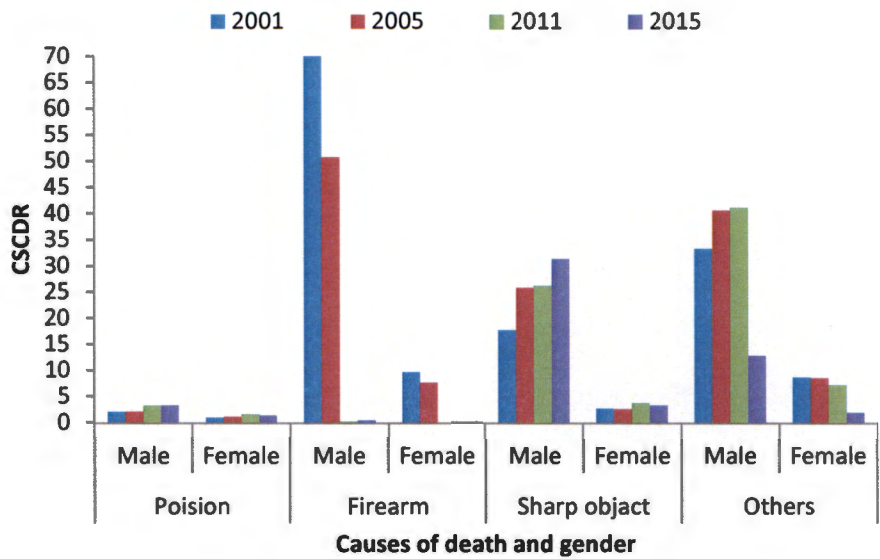
Among female decedents, however, other undefined causes of death were the main causes of VDV, followed by poison. The result also shows that for the year 2001 and 2015, VDV among males and females declined sharply.

Figure 4.6(a) Trends in cause-specific death rates by sex, Gauteng province: 2001, 2005, 2011 and 2015



A similar pattern for the causes of VDV for males and females has been observed in KwaZulu-Natal. The data presented in Figure 4.6(b) show that in KwaZulu-Natal, firearms, followed by other undefined causes and sharp objects were the main causes of VDV among men and women decedents. However, the prevalence of VDV resulting from firearms, other undefined means and sharp objects was higher for men than for women decedents – for all the years under review. The data also show that deaths from firearms were higher in 2001, followed by sharp objects in 2015 for male decedents. Conversely, violent deaths due to firearms and undefined causes were higher among female decedents in 2001 and 2015.

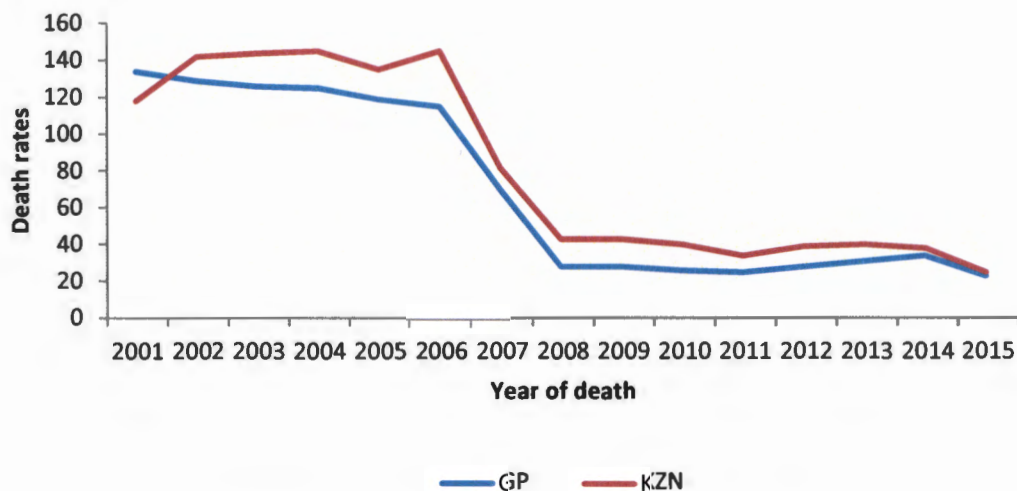
Figure 4.6(b) Trends in cause-specific death rates by sex, KwaZulu-Natal province: 2001, 2005, 2011 and 2015



4.4.2 Trends in VDV rates in Gauteng and KwaZulu-Natal

Figure 4.7 presents the trends of violent death rates in Gauteng and KwaZulu-Natal. Overall, for all the years under review, VDV rates were higher in KwaZulu-Natal than for those in Gauteng province. In both provinces, the VDV rate was high above 120 between 2002 and 2004; but it remained much higher in KwaZulu-Natal above 130 until 2006. In both provinces, the VDV rate started to decline sharply from 2007; and it stabilized at more than 20 in Gauteng between 2008 and 2011. However, in KwaZulu-Natal, the VDV rate was higher than 30 between 2008 and 2011. The VDV rates increased slightly above the 2011 mark for both provinces until 2014 – before declining to just over 20 in 2015 for both provinces.

Figure 4.7 Trends in violent deaths rates, Gauteng and KwaZulu-Natal: 2001-2015



4.4.3 Patterns and differentials of VDV in Gauteng and KwaZulu-Natal provinces

Anecdotal evidence from various reports suggests that Gauteng and KwaZulu-Natal are among the top four provinces in South Africa affected by VDV. However, the patterns and differentials of these deaths have not been investigated for some of the important characteristics of decedents. These include: level of education, occupational group and marital status. In this section and Table 6, patterns and differentials of VDV in Gauteng and KwaZulu-Natal are presented by the above and other characteristics of decedents, for which the data were unavailable in the Vital Statistics System of 2001-2015.

The table shows that in both provinces, the decedents of VDV were more prevalent among males than females; and that sex was significantly associated with VDV in both provinces at $p < 0.001$. The differential also shows that in both provinces, the median age at VDV was 30 years; and the decedents of VDV peaked at the 20-29 year age group at nearly 34% in Gauteng and 36% in KwaZulu-Natal; and it then decreased monotonically

thereafter, as age increased. The age group was also significantly associated with VDV at $p < 0.001$.

Table 4.6 shows that in both provinces, the decedents of VDV were more prevalent among blacks than in other racial groups. While the decedents of VDV in Gauteng among blacks were 82%, that in KwaZulu-Natal among Blacks was 89%. Race group and VDV were also significantly associated at $p < 0.001$ in both Gauteng and KwaZulu-Natal.

Table 4.6 also presents the differentials in decedents of VDV in Gauteng and KwaZulu-Natal, according to the level of education, showing that in both provinces, the decedents of VDV were more prevalent at the level of secondary education, with 67.5% in Gauteng and 59% in KwaZulu-Natal. Conversely, only 5.7% and 5% of decedents without any education, respectively in Gauteng; and 8.3% of decedents without any education and 3.7% of decedents with tertiary education in KwaZulu-Natal experienced VDV.

The reasons for the unexpected low prevalence of VDV among decedents with low education are unclear; as VDV is expected to be higher among decedents without any education, who also belong to the lowest socio-economic groups. However, we postulate that the cases of VDV among decedents without any education could have been under-reported. The table also shows that VDV and the level of education was significantly associated in both provinces at $p < 0.001$.

In South Africa as a whole, the majority of decedents in Gauteng (65.5%) and KwaZulu-Natal (65.4%) who worked in the agricultural sector experienced VDV. This was expected; as this occupational group is not only the largest; but it also employs mostly black people, among whom VDV prevalence is high. However, in both provinces, the lowest incidence

of VDV was among decedents working in the security sector. This is also to be expected, mainly because of the small proportion of the population employed in this sector. The type of occupation and VDV were significantly associated at $p < 0.001$ in both provinces.

Table 4.6 Patterns and differentials of decedents by type of death in Gauteng and KwaZulu-Natal

Variables	Gauteng			KwaZulu-Natal		
	Other deaths	violent deaths	X^2	Other deaths	violent deaths	X^2
Sex						
Male	51.4	81.3	26859.8	49.1	80.1	28893.9
Female	48.6	18.7	$P < 0.001$	50.9	19.9	$P < 0.001$
Age groups						
<20	1.2	6.2	75374.5	17	9.3	54545.2
20-29	10.0	33.9	$P < 0.001$	13.9	35.8	$P < 0.001$
30-39	18.6	27.3		21.6	23.7	
40-49	16.8	16.1		15.6	13.8	
50-59	15.0	8.6		13.0	8.3	
60+	38.4	7.9		34.2	9.1	
Racial groups						
Black	76.3	82.1	1028.7	87.8	89.4	150.9
Other races	23.7	17.9	$P < 0.001$	12.3	10.6	$P < 0.001$
Level of education						
No schooling	10.5	5.7	1950.5	20.3	9.3	7650.5
Primary	26.1	21.9	$P < 0.001$	34.6	28.0	$P < 0.001$
Secondary	57.5	67.5		42.6	59.0	
Tertiary	5.9	5.0		2.5	3.7	
Occupational group						

Agriculture	7.3	7.8	325.0	3.6	5.5	163.6
Security	65.1	65.5	P<0.001	70.4	68.4	P<0.001
Services	12.7	18.4		15.6	18.7	
Professionals	15.0	8.4		10.4	7.4	
Marital Status						
Married	51.7	74.3	14495.3	65.1	83.0	9162.3
Never married	27.9	20.0	P<0.001	20.8	12.7	P<0.001
Widowed	9.0	3.3		7.1	2.5	
Divorced/separated	11.4	2.4		7.0	1.8	
Total	100.0	100.0		100.0	100.0	

Regarding the differentials of decedents by marital status, the table shows that over 7 in 10 and over 8 in 10 of the decedents in Gauteng and KwaZulu-Natal provinces respectively were married or cohabiting at the time of death, followed by nearly 28% and 13% of never-married decedents in Gauteng and KwaZulu-Natal, respectively. This can be explained by the relatively high level of domestic and gender-based violence involving married or cohabiting relationships in South Africa. Only 2.4% and 1.8% of divorced or separated decedents in Gauteng and KwaZulu-Natal experienced VDV. Marital status was also significantly associated with VDV at $p<0.001$ in both provinces.

4.4.4 Predictors of violent death victimization by provinces

In Table 4.7, the results of the logistic-regression models predicting violent death victimization (VDV) are presented in two models. The two models tested two hypotheses. Firstly, “young adults, regardless of sex, behavioural and contextual factors are significantly more likely than older decedents to have suffered a violent death victimization”; and secondly, “violent death victimization is significantly more likely among

Black decedents than other population groups, regardless of socio-demographic and contextual factors.”

Model 1 presents the predictors of VDV in Gauteng province. The results show that VDV is significantly more likely among male decedents ($OR=3.85$, $CI=3.66-4.05$) than female decedents. The results also show that the likelihood of VDV decreases, as age increases. Young decedents aged under 20 years of age ($OR=27.88$, $CI=24.53-31.69$); those aged 20-29 years of age ($OR=23.53$, $CI=21.33-25.96$); those in the 30-39 years age group ($OR=10.05$, $CI=9.12-11.07$); those aged 40-49 years of age ($OR=6.02$, $CI=5.45-6.64$); and older decedents aged 50-59 years of age ($OR=3.61$, $CI=3.25-4.02$) were significantly more likely to have experienced VDV than older decedents in the 60 years or older age group.

Model 1 also shows that VDV was significantly more likely among Black decedents ($OR=1.76$, $CI=0.71-0.80$) than among decedents of other racial groups in Gauteng province. These results confirmed the hypotheses that “young decedents, regardless of sex, behavioural and contextual factors were significantly more likely than older decedents to have died a violent death”. And “violent death victimization is significantly more likely among Black decedents than [among] other population groups, regardless of socio-demographic and contextual factors.”

Furthermore, Model 1 shows that the likelihood of VDV in Gauteng province decreased with the level of education of decedents after controlling for the effects of other covariates. The model shows that compared to decedents with tertiary education, VDV was significantly more likely if the decedents had primary ($OR=1.29$, $CI=1.16-1.44$) and

secondary (OR=1.29, CI=1.16-1.41) education. Model 1 also shows that VDV was significantly predicted by marital status. The model shows that never-married decedents and married decedents were significantly 2.27 (CI=1.11-1.45) and 1.17 (CI=1.08-1.34) times more likely than the divorced or separated decedents to have died a violent death after controlling for the effects of other covariates. However, no occupational group was found to predict VDV in Gauteng province.

Model 2 presents the results for KwaZulu-Natal, showing that compared to females, male decedents were 4.01 (CI=3.51-4.86) times more likely to have died a violent death. The result also shows that VDV in KwaZulu-Natal decreased with increase in age of decedents and death. Model 2 shows that compared to decedents in the oldest age group of 60 years or older, young decedents in the less than 20 year age group (OR=18.42, CI=16.89, 20.09), followed by those in the 20-29 year age group (OR=10.42, CI=9.70-11.19); 30-39 years age group (OR=3.89, CI=3.62-4.18); decedents in the 40-49 year age group (OR=2.89, CI=2.66-3.08); and those in the 50-59 year age group (OR=2.09, CI=1.94-2.26) were significantly more likely to have died a violent death.

The model also shows that Black decedents (OR=1.59, CI=0.66-0.77) were significantly more likely than decedents of other racial groups in KwaZulu-Natal to have died a violent death. The results confirmed that "young decedents, regardless of sex, behavioural and contextual factors were significantly more likely than older decedents to have suffered violent death victimization" and "violent death victimization is significantly more likely among Black decedents than other population groups, regardless of socio-demographic and contextual factors."

Furthermore, Model 2 shows that marital status is also a significant predictor of VDV in KwaZulu-Natal. The model shows that decedents who were never married and married decedents were 1.51 (CI=1.01-1.30) and 1.24 (CI=1.09-1.41) times, respectively more likely than the divorced or separated decedents to have died a violent death.

Conversely, the result presented in Model 2 shows that in KwaZulu-Natal, compared to decedents with tertiary education, violent deaths were significantly less likely among decedents without any education (OR=0.70, CI=0.66-0.77), primary education (OR=0.75, CI=0.0.70-0.82 and secondary education (OR=0.82, CI=0.75-0.88).

The model also shows that regarding occupational groups, the decedents who were in agricultural occupations (OR=0.93, CI=0.88-0.98) were significantly less likely than those in professional occupations to have died a violent death.

Table 4.7 Logistic-regression model showing odds ratios predicting violent deaths for Gauteng and KwaZulu-Natal provinces and selected characteristics of the decedents

Variables	Model 1		Model 2		% Difference
	Gauteng		KwaZulu-Natal		
	Odds Ratio	CI	Odds ratio	CI	
Sex					
Male	3.85***	3.66-4.05	4.98***	4.51-4.86	11.3
Female	1.00				
Age groups					
<20	27.88***	24.53-31.69	18.42***	16.89-20.09	94.6
20-29	23.53***		10.42***		131.1
30-39	10.05***	21.33-25.96	3.89***	9.70-11.19	61.6
40-49	6.02***	9.12-11.07	2.86***	3.62-4.18	31.6
50-59	3.61***		2.09***	2.66-3.08	15.2
60+	1.00	5.45-6.64	1.00	1.94-2.26	
		3.25-4.02			
Racial groups					
Black	1.76***	0.71-0.80	1.59***	0.55-0.62	17.0
Other races	1.00		1.00		
Level of education					
No schooling	0.91	0.80-1.04	0.70***	0.66-0.77	21.0
Primary	1.29***	1.16-1.44	0.75***	0.70-0.82	54.0
Secondary	1.27***	1.16-1.41	0.82***	0.75-0.88	45.0
Tertiary	1.00		1.00		
Occupational group					
Agriculture					

Security	1.01	0.95-1.08	0.93*	0.88-0.98	8.0
Services	1.03	0.81-1.30	0.93	0.76-1.15	10.0
Professionals	0.95	0.87-1.02	0.95	0.89-1.02	0.0
	1.00		1.00		
Marital Status					
Married	1.17*	1.08-1.34	1.24***	1.09-1.41	7.0
Never married	1.27***	1.11-1.45	1.51*	1.01-1.30	24.0
Widowed	1.03	0.86-1.21	0.96	0.82-1.13	7.0
Divorced/separated	1.00		1.00		
Constant	0.003***		0.009***		
Nagelkerk R ²	0.19		0.16		

Level of significance: * <0.05 ; ** <0.01 ; *** <0.001

Comparison of the predictors of VDV in Gauteng and KwaZulu-Natal shows that, apart from occupational groups, all the other covariates in Models 1 and 2 predicted VDV. The differences in the odds ratios were used to compare Gauteng and KwaZulu-Natal. The table shows that the effect of being a male in predicting VDV was higher in KwaZulu-Natal by 16% than in Gauteng province. Furthermore, never-married and married decedents in Gauteng were 24% and 7%, respectively, more likely than those in KwaZulu-Natal to have died of VDV.

Conversely, the effects of age groups in predicting VDV in Gauteng province more than doubled at all age groups from under 20 to 50-59 than in KwaZulu-Natal. The results of the model also show that the effect of being a victim of VDV among black decedents in Gauteng was 17% higher than among black decedents in KwaZulu-Natal. Furthermore,

decedents in Gauteng with primary and secondary education were 54% and 45%, respectively more likely to have died of VDV than in KwaZulu-Natal.

4.5 Summary

In this chapter, the individual level predictors of VDV were examined for South Africa, as a whole; and for Gauteng and KwaZulu-Natal provinces using the administrative data obtained from the Vital Registration System. The results suggest that VDV is prevalent in South Africa; and it is mostly attributed to other undefined causes, firearms and sharp objects. The trend of VDV between 2001 and 2015 also suggests that VDV is on the decline; although this remains questionable, because of the probable under-reporting of violent deaths. This has been notable, especially with regard to the deaths caused by firearms.

The main aim of the study was to examine the patterns, differentials and trends of VDV in South Africa in general, and Gauteng and KwaZulu-Natal, in particular; since these are the provinces in South Africa with the leading prevalence of VDV. In this regard, the analysis aimed at testing the hypotheses that “young decedents, regardless of sex, behavioural and contextual factors were significantly more likely than older decedents to have suffered violent death victimization”. And, “violent death victimization is significantly more likely among Black decedents than [among] other population groups, regardless of socio-demographic and contextual factors.” The results appear to have confirmed the above hypotheses. Among the control factors, the results show that being male and having primary and secondary education are predictors for experiencing VDV in South Africa in general, and in Gauteng and KwaZulu-Natal, in particular.

The findings in the chapter for South Africa, Gauteng and KwaZulu-Natal are consistent with other studies around the world that examined the effects of individual level factors on the experience of VDV. However, the comparison of VDV by sex for South Africa shows that for most predictor variables, namely: age group, racial group and level of education, the risk of decedents experiencing VDV was higher for males than for female decedents. Regarding the differences in the effects of explanatory variables between Gauteng and KwaZulu-Natal, the results show that; while the risk of decedents experiencing VDV was higher for males, never-married and cohabiting decedents in KwaZulu-Natal than in Gauteng, the effect of age across all age categories and being a black decedent was higher in Gauteng than in KwaZulu-Natal.

To the best of our knowledge, therefore, apart from the findings on the level of education, occupational groups and marital status, the comparative approach of the effect of predictor variables by sex, and the two provinces where VDV is prevalent adds new perspectives on the dynamics of violent deaths in South Africa. In this regard, this chapter has contributed to our understanding of the dynamics of violent-death victimization in South Africa.

Chapter Five

Dynamics of violent-death victimization in Gauteng and KwaZulu-Natal

5.1 Introduction

The World Health Organization (2008) defined violence as “the intentional use of physical force or power, threatened or actual, against oneself, or against a group or community that either results in, or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation.” Violent-death victimization (VDV) is a major public health problem all over the world. The global incidence of VDV is on the rise; and interpersonal violence is at all times high in many parts of the world; and it accounts for 2.5% of global mortality (Butchart, 1996; Butchart, et al., 2015; Dahlberg, et al., 2004).

Most of the lives lost to interpersonal violence occur in low- and middle-income countries; and mostly in Sub-Saharan Africa and Latin America; where the institutional frameworks for violence prevention are weak (Matzopoulos, et al., 2008). A number of factors, including demographic, social, behavioural and community or societal factors have been identified as contributors to the phenomenon of VDV.

Among the demographic factors, sex is one of the important risk factors of VDV, mainly because of the differences in exposure and propensity for aggression between the sexes. Many studies have found that men are more inclined and exposed to VDV than women; because of their greater exposure to violence – usually involving other men (Ratele, 2013; Laubscher, 2005). The propensity for violent behaviour is also higher at younger ages, which accounts for the higher susceptibility of VDV to young adults, than to people of other ages (Murray, et al., 2013; Caicedo, et al., 2010). Racial differences in VDV also

show that it is more prevalent among black people than amongst other racial groups (VPC, 2018; O'Flaherty & Sethi, 2010). This is an indication that VDV is just not a racial issue; but it is exacerbated by the disproportionate deprivation of the black race.

Another set of predictors of VDV are the socio-economic characteristics of the victims and the perpetrators. Being a high-school dropout, or having no or low education; being unemployed, and therefore poor (Breault & Kposowa, 1997); and living in a sprawling urban area –these issues have all been correlated with VDV or VDV in a number of countries (O'Flaherty & Sethi, 2010; Sampson, et al., 2005).

The individual behavioural predictors of VDV include alcohol and drug abuse. Excessive consumption of alcohol is associated with several vices of a violent nature, including homicide, assault, sexual violence against women and girls, as well as child abuse (Darke, et al., 2014); mainly because alcohol causes impairments and misunderstandings that can promote aggressive behaviours (Naimi, et al., 2016).

The use of illicit drugs also contributes to violent crime, mainly through its effects on market control, as well as the impulsive behaviour of drug users, of whom most are socially and economically living under conditions that promote aggression (Hoaken & Stewart, 2003). The problems caused by alcohol and drugs are further exacerbated by gang subcultures which provide the frameworks that engender these vices.

Another factor correlated with VDV is marital status, which is a relationship variable. Previous studies have found that never-married people are at a higher risk of VDV than married or cohabiting people (Stack, 1980; Stack, 2007 ; Roberts, 2015). However, among the married, female spouses are at greater risks of VDV, in which their spouses

are largely the offenders (Conroy, 2014; Breault & Kposowa, 1997; Palmer & Humphrey, 1980). Another relationship factor that increases the likelihood of VDV is belonging to a gang subculture. Gangs are extremely violent; and they contribute significantly to VDV through their fight for supremacy and territorial control.

Many of these gangs that preside over violence are criminal in nature; and they are common features in sprawling urban areas; where the use of violence, as a method of advancing their illegal interest, such as drug trafficking, burglary and racketeering, or resolving inter- and intra-gang disputes is normative (Bangerter, 2010).

Violent-death victimization is common in South Africa – making it one of the leading causes of premature deaths. It is characteristically more common in large urban townships than in rural areas. South Africa has one of the highest VDV rates in the world, and definitely the highest in Africa (Norman, et al., 2007). Most of the victims of VDV are male, young, black (Seedat, et al., 2009) and in the poorer socio-economic groups, which is the result of decades of unequal development propagated under the apartheid social, economic and political system of South Africa (United Nations Office on Drugs and Crime, 2011; Doolan, et al., 2007).

The prevalence of VDV in South Africa is, therefore, a complex mix of individual, relationship and societal conditions. However, the systematic analysis of these factors to identify their relative contribution to VDV, using a community-level perspective, is lacking.

What we know about the effects of these factors on VDV in South Africa is based on the administrative data from law-enforcement agencies and medical institutions, which are not systematically collected; and consequently, they not representative of the population.

These data also lack some of the key individual, relationship and community-level factors that characterize VDV and provide the contexts in which VDV takes place, respectively. In this chapter, therefore, we use the social-ecological model to examine the dynamics of VDV in Gauteng and KwaZulu-Natal; since these are two of the highest VDV-prevalent provinces in South Africa.

The data used in the analysis were cross-sectional data collected from households in Gauteng and KwaZulu-Natal in 2015. From our perspectives, therefore, the data are representative of the populations in the two provinces.

5.2 The Social-Ecological Model



Violent-death victimization is the final result of complex interactions and processes involving individual, relationship, community and societal factors. In this regard, the Social-Ecological Model (SEM) presents a very realistic theoretical basis for not only understanding the risk factors of VDV, but also what needs to be done to prevent it. The main feature of the model is the overlapping rings, which illustrates how factors at one level influence the factors at another level. In this way, it is possible to address the factors at each level simultaneously, in order to understand VDV and its risk factors.

In this study, the individual factors comprised the demographic, social and behavioural attributes of the victims. These include sex, age and the level of education, employment status, alcohol-consumption status and drug-use status. At the second level, there are the relationship factors that increase the opportunity for contact violence that increases the risk of VDV. In this study, the two relationship factors examined were marital status and sub-culture membership. The third-level factors examined were community factors, which influence the behaviour of community members through the wider interactions in the

community. The main factor that has been included in this regard is the type of neighbourhood residence. The characteristics of residential neighbourhoods, such as the crime levels, neighbourhood-security situation and the availability of economic opportunities were used to assess the likelihood that VDV would occur. The societal risk factors of VDV examined in this study were the cultural and social factors, including racial groups and religious groups, which provide the cultural and social contexts, respectively, that define and influence violent attitudes, beliefs and behaviours.

Previous studies elsewhere correlated these individual, relationship, community and societal factors with the risk of VDV. However, it is important to note that the above risk factors are by no means exhaustive. Only those factors available in the dataset used were examined in this study.

5.3 Variables and measures

The outcome of interest in this chapter is the prevalence of VDV relative to other deaths. In this regard, the outcome variable had two categories, namely: violent deaths and natural deaths. A death is defined as a violent death if it is caused by the action of another individual or self (victim), by the use of a weapon including a firearm, a sharp object, by beating using a blunt object, or by any other means. All other deaths due to illness from any cause were classified as natural deaths. The data on violent and natural deaths were obtained from proxy respondents by asking them two questions. Firstly: Has anyone died in this household in the past year? What was the cause of the death of this victim?

The exposure variables comprised the selected individual demographic, socio-economic and behavioural characteristics of the decedents, which were identified in the literature as important in predicting violent deaths. The individual-level demographic characteristics

were sex; which was categorized as male or female; age categorized as <20, 20-29, 30-39 or 40 years or older; and racial group categorized as black, or other (Coloured, Asians and Whites).

The socio-economic characteristics of the decedents included in the analysis were religion, categorized as Christian or other (all minority non-Christian religious groups, such as Muslims, indigenous beliefs etc); the level of education categorized as none, or primary, secondary or higher education; and the employment status at the time of death, which was categorized as employed, unemployed or other (students, pensioners and decedents, whose employment status was unknown).

The behavioural characteristics of the decedents included in the study were: alcohol use status, smoking status and drug-use status. Alcohol-use status was categorized as yes or no; cigarette-smoking status was categorized as yes or no; and the drug-use status was also categorized as yes or no.

The relationship-level factors analyzed were the marital status, categorized as married (currently married, cohabiting, widowed and divorced) or never married; and whether or not they belonged to a sub-culture or group. The sub-culture or group of the decedent was grouped as a gang member, or not a gang member. Community-level factors were also analyzed; and these include the attitudes, such as "violent crime is a way of life in the community", categorized as agreed, disagreed or ambivalent; "carrying a weapon makes people feel safe" categorized as agreed, disagreed or ambivalent; and attitude that "it is okay to use violence to get what one wants" categorized as agreed, disagreed or ambivalent. Also included in the analysis as a community-level factor were the type of

residential neighbourhoods categorized as rural, urban or informal, and the province of usual residence categorized as Gauteng and KwaZulu-Natal. The data on these variables were examined to assess the extent to which they are a risk factor of VDV.

The data on these characteristics of the decedents were obtained from a family member of the deceased, who had lived with him or her prior to their deaths.

5.4 Methods of data analysis

Although the method of data analysis was thoroughly described in the chapter on methodology; it is appropriate now to provide an overview of these methods, in order to remind us in this chapter. The first step of the analysis was the description of the profile of the decedents – as a way of examining the data for further detailed analysis. To do this, a frequency distribution of the decedents, according to their demographic, socio-economic, behavioural and community characteristics, was conducted.

In the second step, the bivariate analysis was done by first exploring the differentials in the VDV relative to natural deaths. In conducting the bivariate analysis, the Pearson Chi-square statistic was used to examine the association between violent deaths and the selected characteristics of the decedents. In doing so, the chi-square statistic used was of the form: $\chi^2 = \sum_{i=1}^I \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$. The association between VDV and the decedent's characteristics were significant if the $p < 0.05$.

The Kaplan-Meier survival function was also used to estimate the probability of VDV at a given age (t). It was also used to estimate the differentials in VDV, according to the selected characteristics of the decedents. The Kaplan-Meier estimator used was of the

forms(t_i) = $\prod_{j=1}^i \left(1 - \frac{d_j}{n_j}\right)$, where $S(t_i)$ is the estimated survival probability for any particular one of the t time periods; n_i is the number of subjects at risk of VDV at the beginning of interval t_i ; and d_i is the number of people who had survived VDV during the period t_i . The log-rank chi-square test was used to associate the significance of variations in VDV by the selected characteristics of the decedents. Because of the small number of cases of VDV, the categories of factors associated with the decedents were statistically and significantly different if the $p < 0.1$.

At the third level of analysis, the multivariate analysis, the binary logistic-regression model was conducted. In the analysis, VDV was coded "1"; as the event of interest and natural death was coded "0"; and it was used as the reference category. Two logistic regression models were conducted. Model 1 was the unadjusted model of all the variables selected for the analysis. It was also used at the first stage of testing the hypotheses for the study. Model 2 was the adjusted model, which was used to confirm or reject the hypotheses after controlling for all the selected variables simultaneously.

To test the hypotheses, the logistic-regression model used was of the form: $y = \text{Log}_e \frac{P_i}{1-P_i}$.

The parameter used to interpret the results was the beta-coefficients (β^x) - Odds Ratio. In the analysis, a variable was a significant predictor of VDV, if the p value associated with the Odds Ratio was < 0.05 .

5.5 The profile of the decedents

In this section of the chapter, the profile of the decedent was described, according to selected demographic, socio-economic, behavioural and community characteristics.

Figure 5.1 presents the percentage distribution of all the decedents in the study population. The figure shows that the decedents were more prevalent at age group 30-39; and this increased from 5.7% at the <20 year age group to 17.7%; at the 20-29 years age group; and it peaked at 24.1% at the 30-39 year age group. Thereafter, the percentage of decedents declined monotonically to the 90 years or older age group.

Figure 5.1 Percentage distributions of all the decedents by age in Gauteng and KwaZulu-Natal 2005-2015

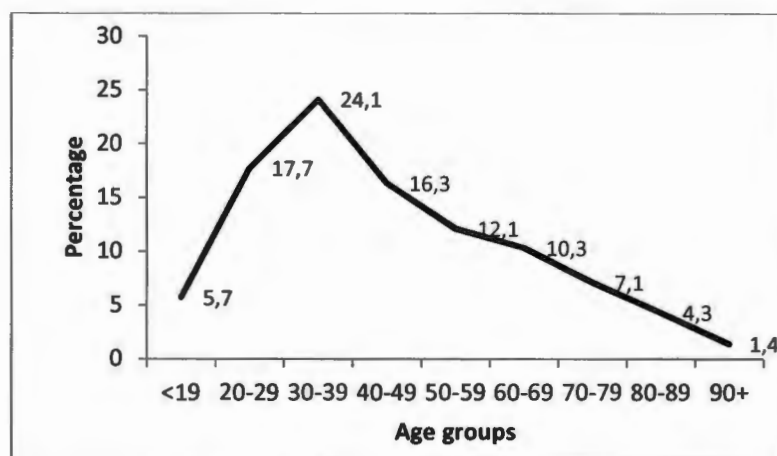


Figure 5.2 presents the distribution of the decedents by the type of death. The figure shows that, as expected, the majority of the decedents died of natural causes. Just over 7 in 10 of the decedents died of natural causes; and nearly 3 in 10 of the decedents were victims of violent death, which is consistent with the earlier results. The profile of the decedents, according to the cause of death shows that VDV contributed significantly to the overall mortality experience in the two provinces. This magnitude of violent death is a serious concern; as it is an indication that violence is a serious public health problem.

Figure 5.2 Percentage distributions of decedents according to the type of death in Gauteng and KwaZulu-Natal, 2005-2015

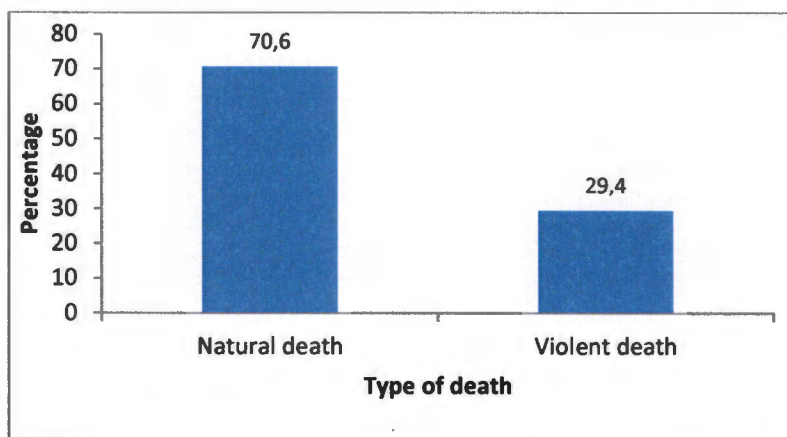


Table 5.1 presents the decedents, according to their demographic characteristics. The table shows that nearly 6 in 10 and 4 in 10 of the decedents were males and females, respectively. Overall, the median age of decedents was 40; over half of them (53.5%) were in the 40 years, or older age group; while 24.5% were in the 30-39 year age group; and 17.7% were aged 20-29 years old. Only 5.3% were under 20 years old (10-19 years). The distribution of the decedents by racial groups shows that the sample for this study, with 89.7% was predominantly African. The remaining 11.3% comprised Coloureds, Asians and Whites.

Table 5.1 Percentage distribution of the decedents by demographic characteristics in Gauteng and KwaZulu-Natal, 2005-2015

Characteristics	%	Number
Sex		
Male	59.9	169
Female	40.1	113
Age group		
<20	5.3	15
20-29	17.7	50
30-39	24.5	69
40+	53.5	148
Median age	40	
Racial group		
Black	89.7	253
Others	10.3	29
Total	100.0	282

Table 5.2 presents the profile of the decedents, according to their socio-economic characteristics, including their religious groups, the level of education, the marital status, the employment status, the type of residential neighbourhood; and the province of usual residence at the time of death. The table shows that over three-quarters (76.6%) of the decedents were Christian; and 23.4% belonged to minority religious groups; while over 6 in 10 had attained secondary or higher-level education. Just over 50% of the decedents were never married and 48.2% were currently married.

The distribution of the decedents, according to their employment status at the time of death shows that 57.6% and 40.4% were unemployed and employed, respectively, at the time of death; and just over 3 in 10, nearly 6 in 10 and about 13% of the decedents were residing in rural, urban and informal neighbourhoods, respectively. Regarding the province of usual residence, Table 5.2 shows that the majority (68.1%) of the decedents resided in KwaZulu-Natal province; while only 31.9% resided in Gauteng province at the time of their death.

Table 5.2 Percentage distribution of the decedents, according to their social characteristics in Gauteng and KwaZulu-Natal, 2005-2015

Characteristics	%	Number
Religious affiliation		
Christian	76.6	216
Others	23.4	66
Level of Education		
No/primary	36.2	102
Secondary or higher	63.8	180
Marital Status		
Currently married	48.2	136
Never married	51.8	146
Employment status		
Employed	40.4	114
Not employed	57.6	168
Type of residential neighbourhood		
Rural	30.0	92
Urban	56.8	155
Informal settlement	13.2	36
Province of usual residence		
Gauteng	31.9	90
KwaZulu-Natal	68.1	192
Total	100.0	282

The distribution of the decedents, according to their behavioural characteristics is presented in Table 5.3 – by alcohol, cigarette and drug-use status, and by their subculture status. The table shows that 44.7% of the decedents consumed alcohol; 34.4% smoked cigarettes; and only 5.3% used drugs at the time of death. Distribution by subculture status, which is a group that has unique beliefs and behaviours that are different from the main culture to which they belong shows that nearly 3% and only 97% of the decedents were gang members; and they did not belong to any subculture respectively.

Table 5.3 Percentage distribution of decedents by behavioural characteristics in Gauteng and KwaZulu-Natal, 2005-2015

Characteristics	%	Number
Alcohol use		
Yes	44.7	126
No	55.3	156
Cigarette smoking		
Yes	34.4	97
No	65.6	185
Drug-use status		
Yes	5.3	15
No	94.7	267
Subculture-group status		
Member of a gang	3.3	9
Not a member of any grouping	96.7	271
Total	100.0	282

Figure 5.3 described the decedents, according to their societal level of crime, security and socio-economic conditions being important risk factors of VDV. In societies, where crime levels are high, security structures are weak; and there is a high level of deprivation; the levels of VDV are high (Choe, et al., 2012; Bangerter, 2010). In this study, the attitudes of the respondents to the level of crime, security and access to basic needs are examined. Figure 5.3 shows that only 18.4%, 57.1% and 24.5% of the respondents agreed, disagreed and were ambivalent, respectively to the statement that violent crime is a way of life in their society.

Furthermore, Figure 5.3 describes the attitudes of the respondents to their community-level security by assessing their attitudes to carrying weapons, as a means of ensuring their safety. The figure shows that slightly more than 3 in 10 and more than 4 in 10 of the respondents reported favourable and unfavourable attitudes, respectively to the statement that carrying a weapon makes people safer. Only 23.4% reported that they were ambivalent to carrying a weapon, due to their perceived vulnerability.

Figure 5.3 Attitudes of family members of decedents to levels of crime, carrying weapons and the use of violence in Gauteng and KwaZulu-Natal, 2005-2015

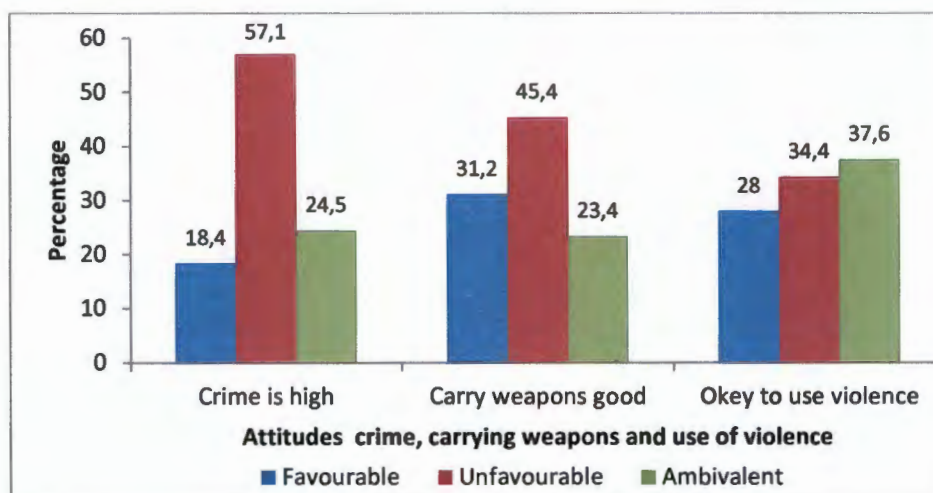


Figure 5.3 also presents the attitudes to using violence to get what people want. The figure shows that only 28% of the respondents had favourable attitudes to the statement that using violence is admissible to get what people want, compared to 34.4% and 37.6% who reported unfavourable and ambivalent attitudes, respectively, to the statement that using violence is acceptable to get what one wants.

5.6 Differentials in violent-death victimization

In this section of the chapter, the results in differentials of VDV by selected demographic, socio-economic, and behavioural and community characteristics of the decedents are presented. Chi-square statistics was used to assess the significance of the differentials in VDV, according to the categories of the selected variables.

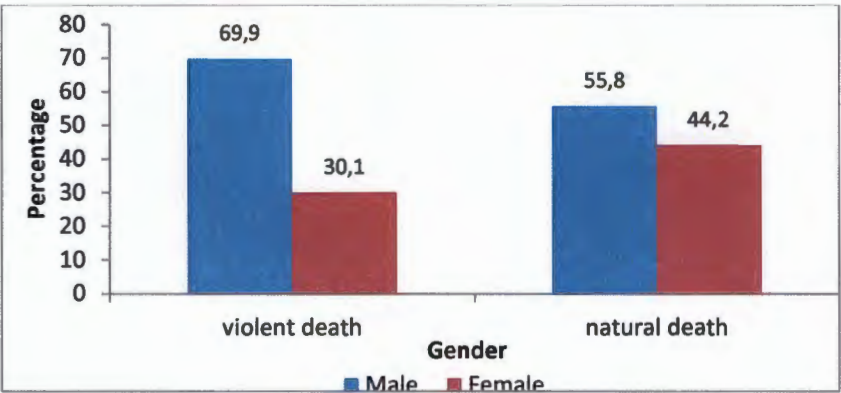
5.6.1 Differentials of violent-death victimization by demographic factors

This sub-section describes the differentials in violent death by selected individual-level demographic characteristics, including sex, age and population, or racial groups. Sex is an important risk factor of all deaths in general and VDV in particular; because of the

variations in the propensity for violence between the sexes. In this regard, the study examined the differentials in VDV according to sex, showing that 7 in 10 of men and 3 in 10 of women died of violence (Figure 5.4).

The result is consistent with those of previous studies elsewhere, which found that men are more at risk of VDV than women (Sonderman, et al., 2014; Kibusi, et al., 2013). The result also shows that sex is significantly associated with violent death at $p < 0.01$.

Figure 5.4 Percentage distribution of type of death by sex in Gauteng and KwaZulu-Natal, 2005-2015

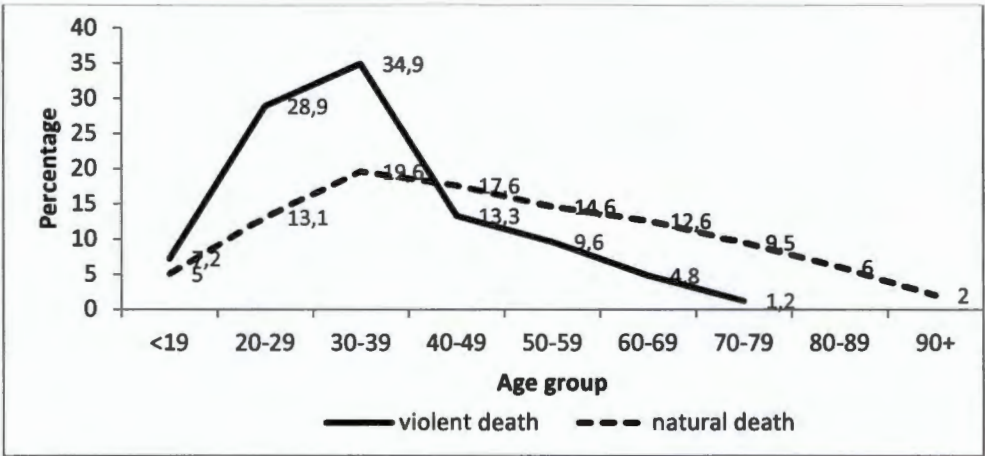


$X^2\ 4.80,\ p < 0.01$

Age is another important individual-level variable for the classification of deaths. In this regard, the study examined the differentials in violent deaths by age; and the results are presented in Figure 5.5. They show that the prevalence of VDV increased from 7.2% at less than 20 years of age; and it peaked at nearly 35% at the age group 30-39, before declining monotonically to 1.2% at the age of 70 years or older. The results show that the prevalence of VDV followed the expected gradient; and it dropped below natural death as people age beyond 40-49 years of age. The result is consistent with those of other previous studies, which found that violent deaths are more prevalent at younger ages

than older ages (Otieno, et al., 2015). These results shows that age is significantly associated with violent death at $p<0.0001$.

Figure 5.5 Percentage distributions of all deaths by type and age at deathin Gauteng and KwaZulu-Natal, 2005-2015



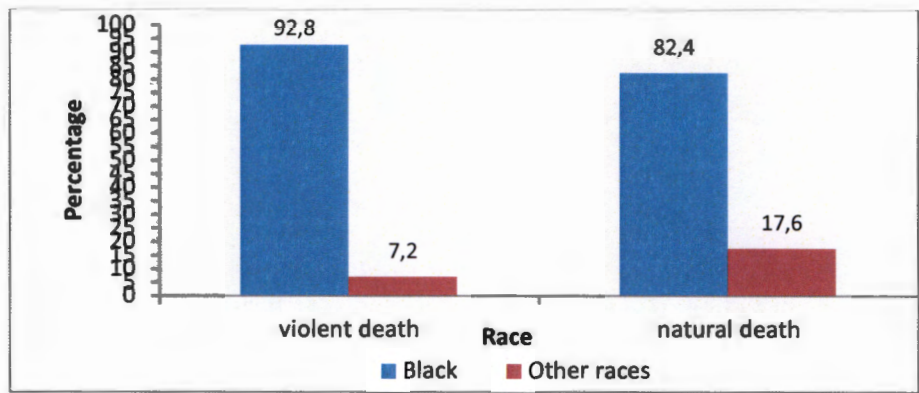
$$X^2\ 32.11,\ p<0.0001$$

Another individual-level demographic factor that influences VDV is race (also known as population groups in South Africa). Previous studies, mostly in the United States, indicated that race is one of the most important risk factors of homicide victimization (Kramer & Ratele, 2012; Phillips, 2002; Sampson, et al., 2005). In this study, the differentials of VDV by age were examined; and the results are presented in Figure 5.6. The figure shows that VDV was more prevalent among blacks than other races. Nearly 93% of violent deaths were among blacks; and only about 7% were among Coloureds, Indians or Whites.

The study also shows that the population group is significantly associated with the differences in violent deaths at $p<0.01$. The results observed in this study are consistent with other previous studies in South Africa. For example, a study by Harris (2003) found

that violent deaths were more prevalent among the black population. This was blamed on the social and economic inequalities created during the apartheid era.

Figure 5.6 Percentage distribution of death by type and race in Gauteng and KwaZulu-Natal, 2005-2015



χ^2 5.06, $p < 0.01$

5.6.2 Differentials of violent deaths by individual-level socio-economic factors

Socio-economic factors contribute significantly to the risk of dying from all causes. The rate of intentional injury due to violence, leading to death has been found to vary, in accordance with the socio-economic characteristics and the conditions of populations (Kibusi, et al., 2013; Harish, et al., 2006). Understanding of the variations in violent death by social characteristics of populations is, therefore, important in the prevention of violent deaths in those populations, where it is prevalent. This section, therefore, examined the differentials in violent deaths by selected characteristics of the decedents, including religious affiliation, level of education and employment status.

Also examined for variation in VDV was the relationship-level factor of marital status, and the community-level factors on the types of residential neighbourhoods and the province of residence. The results of the analysis are presented in Table 5.4.

Education has been considered to be essential for reducing violence and crime. A number of studies on the effect of the level of education have shown that the higher the level of education, the lower the rate of homicide (Machin, et al., 2011; Buonanno & Leonida, 2006). One study in the literature, however, found that the risk of homicide victimization decreased with the level of education (Pridemore & Shkolnikov, 2004). The results in Table 5.4 show that the prevalence of VDV increases with the level of education. Violent-death victimizations were more prevalent among people with secondary or higher education (75.9%) when compared to only 24.1% among people with no education or primary education only in this population.

The results in this study are consistent with the observations of a study by (Owens, 2008) on intimate-partner homicide victimization and Otieno et al. 2015 for both sexes in South Africa. The results show that education and violent death are significantly associated at $p < 0.01$.

Employment status is another important determinant of violence; mainly because it is the source of livelihood for every individual and family. In societies where self-employment in agriculture and the informal sector of the economy is low, such as in South Africa, the formal sector becomes the only source of income for the basic necessities (Gilbert, 1996). Where the rate of unemployment is high, the unemployed are likely to get their livelihood off the employed through crime. In this study, differential in VDV was examined by the employment status of the decedents. The results in Table 5.4 show that with more than 5 in 10, VDV was more prevalent among the employed than among the unemployed (4 in 10).

People whose employment status was unknown reported the lowest proportion of VDV of only 4.8%. The result shows that employment status is significantly associated with VDV at $p < 0.001$.

Marital status as a relationship-level variable has also been identified as one of the social factors influencing the risk of VDV. Previous studies (Sonderman, et al., 2014; Cubbin, et al., 2000) found that being in union was a strong protective factor against homicide. The low prevalence of homicide among married couples was attributed to the perception that marriage is a sphere of acceptance, affection; and it shields against the stressful and violent environment (Goetting, 1989).

In this regard, the differential in VDV according to the marital status of the decedents and the result in Table 6.4 show that VDV were more prevalent (60.2%) among the not-yet married than among the ever-married (39.8%). The result from this study is consistent with that reported by the above previous studies. The result also shows that marital status is significantly associated with VDV at $p < 0.05$.

The type of residential neighbourhoods as a community level factor has also been found to influence differentials in violence and VDV. These variations are in part influenced by differences in quality of governance structures, degree of social cohesion, inadequate public infrastructure and security (Krug, et al., 2002). Table 5.4 presents differentials of VDV by types of residential neighbourhoods. The table shows that VDV was more prevalent in urban neighbourhoods followed by rural and informal settlement neighbourhoods. Nearly 4 in 10 and 14.3% of the decedents in urban and rural neighbourhoods respectively were victims of violent death. The higher prevalence of VDV

in urban neighbourhoods could be the result of the pervasive violent crimes in urban townships in South Africa. This result is consistent with the findings of another study, which found that security concerns, fears and homicides using violent means are prevalent in poorly policed poor suburbs of major cities (Pinheiro, 2006c; Chen, et al., 2004). The result also shows that type of residential neighbourhoods is significantly associated with VDV at $p < 0.001$.

Additionally, differentials by province of residence also show that over half; and nearly 45% of VDV were in KwaZulu-Natal and Gauteng, respectively. The national violent-crime statistics of the South African Police Service for 2015/16 reported that KwaZulu-Natal had the third-highest homicide and attempted cases of homicide in South Africa. This high rate of violence is the outcome of the situational and social forces of deprivation, alcohol and drug use in the area. The province of residence was also found to be significantly associated with VDV at $p < 0.01$.

Regarding the differential of violent death, according to the religious group, the results presented in Table 6.4 did find a significant association between religion and VDV. Nevertheless, the result in the table shows that violent deaths are more prevalent among Christians (69.9%) than amongst other religious groups (30.1%).

Table 5.4 Percentage distribution of deaths by type and demographic and social characteristics in Gauteng and KwaZulu-Natal, 2005-2015

Characteristics	Type of deaths				Chi-square
	Natural		Violent death		
Religious group					
Christian	77.9	(155)	69.9	(61)	0.63, P>0.1
Other	22.1	(44)	30.1	(22)	
Level of education					
No/primary	41.2	(82)	24.1	(20)	7.42, P< 0.001
Secondary or higher	58.8	(117)	75.9	(63)	
Employment status					
Employed	34.2	(68)	55.4	(46)	11.03, P<0.001
Unemployed	57.8	(115)	39.8	(33)	
Unknown	8.0	(16)	4.8	(4)	
Marital status					
Currently married	51.8	(103)	39.8	(33)	2.93; P<0.05
Never married	48.2	(96)	60.2	(50)	
Type of settlement					
Rural	36.2	(53)	14.5	(12)	14.59; P<0.001
Urban	50.8	(65)	73.5	(61)	
Informal	13.1	(26)	12.0	(10)	
Province					
Gauteng	26.6	(53)	44.6	(37)	8.68; P<0.001
KwaZulu-Natal	73.4	(146)	55.4	(46)	
Total	70.6	(199)	29.4	(77)	

5.6.3 Differentials of violent deaths by behavioural characteristics of the decedents

The individual-level behavioural characteristics of individuals constitute some of the important risk factors of violent victimization. In this section, the results of the examination of selected behavioural risk factors are presented. These include: alcohol consumption, cigarette smoking and drug use. The consumption of alcohol is one of the major public health challenges globally. Abusive alcohol consumption does not only damage body tissues; but it also increases the risk of violent behaviour, leading to injuries and death. There is a strong association between alcohol consumption and intentional-interpersonal violence, many of which end up in death (Cremonte & Cherpitel, 2014; Goodman, et al., 1986).

In this study, the differential of VDV was examined, according to the alcohol consumption status of the decedents; and the result is presented in Table 5.5. The table shows that 61.4% of violent-death victims consumed alcohol, compared to 38.6% of those who did not. This result clearly shows that alcohol consumption increases the risk of VDV; and it is consistent with the results of similar studies elsewhere (Stamatel, 2016; Kibusi, et al., 2013). For example, a study in Australia found that 26% of male and 17% of female violent-death victims had drunk alcohol shortly before their death (Dearden & Payne, 2009). Our study shows that alcohol consumption is significantly associated with VDV at $p < 0.0001$.

Table 5.5 Percentage distribution of deaths by type and behavioural characteristics in Gauteng and KwaZulu-Natal, 2005

Characteristics	Type of death		Chi-square
	Natural	Violent deaths	
Used alcohol			
Yes	37.7 (75)	61.4 (51)	13.37, p<0.0001
No	62.3 (124)	38.6 (32)	
Used tobacco			
Yes	31.7 (63)	41.0 (34)	1.83, p<0.1
No	68.3 (136)	59.0 (49)	
Used drugs			
Yes	3.0 (6)	10.8 (9)	8.12, p<0.01
No	97.0 (199)	89.2 (73)	
Belonged to a social group			
Gang member	1.0 (2)	8.4 (9)	9.03, p< 0.01
Not a gang member	99.0 (197)	91.6 (76)	
Total	70.6 (199)	29.4 (83)	

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The use of drugs has also been linked to VDV in nearly all countries. In many poor urban communities, where the use of drugs is common, homicide rates are high; and they common because of the violent nature of the drug business and the psychopathological effects that drugs have on users. These effects include mood swings, depression, anxiety, paranoia and violence. In this study, the differential of VDV was examined by the drug-use status of the deceased.

The results presented in Table 5.5 show that people who used drugs were nearly 30. 3 times (97%) more likely than those who did not use drugs (3%) to have died a violent

death. The result is consistent with the findings of other studies on mortality associated with the use of drugs (Stamatel, 2016; Cooper & Smith, 2011). The result also shows that using drugs is significantly associated with VDV at $p < 0.01$.

Furthermore, belonging to a subculture is an important relationship-level predictor of violent behaviour; and it increases the likelihood of violent-death victimization. Studies elsewhere found that gang homicide accounts for the majority of homicides among youths (Howell, 1999). In Cape Town, South Africa, the police crime statistics indicate that in 2013, most of the 2,580 murders committed in the province were gang-related (SAPS 2005). Much of the gang violence is exacerbated by the concurrent use of, and the trafficking of drugs (Bjerregaard, 2010).

In this regard, the study examined the differential in VDV by social-group status and the result is presented in Table 5.5 showing that more than 9 in 10 of the deaths were not gang-related; and only 8.4% of the deaths were gang-related. This finding is inconsistent with the previous studies on gang homicides (Swart, et al., 2016; Loeber, et al., 2005). This was probably because of the small number of decedents who used drugs that were reported in this study. Nevertheless, the results show that gang status is significantly associated with violent-death victimization at $p < 0.01$.

5.6.4 Community crime, security and socio-economic situation

Studies on violent-death victimization are determined by community crime levels, security and socio-economic conditions. The differential in VDV was examined by the community's perception of the level of crime, personal security and survival mechanisms; and the results are presented in Table 5.6. The table shows that 33% and 42.7% of VDV occurred in settings where the respondents favoured and were ambivalent, respectively, to the statement that "carrying a weapon makes people feel safe," thereby indicating that they perceived their security situation to be poor. Only 20.4% of the decedents of violence were in settings in which the respondents disagreed with the statement that "carrying a weapon makes people feel safe."

The attitude towards vulnerability to violent crime is significantly associated with VDV at $p < 0.01$.

The Table 5.6 further revealed that VDV was more prevalent in community settings where the respondents reported that they were ambivalent towards the statement that "it is okay to use violence to achieve what people want" (more than 5 in 10). Conversely, only 19.3% of VDV occurred in community settings in which the respondents expressed a favourable attitude towards the statement that "it is okay to use violence to achieve what people want." The result also shows that the attitudes towards the use of violence to achieve what people want and VDV are significantly associated with VDV at $p < 0.01$. However, no significant association was observed between the attitude towards the statement that "violent crime is a way of life in the community" and VDV.

Table 5.6 Percentage distributions of deaths by type and community perceptions of crime, security and the use of violence in Gauteng and KwaZulu-Natal

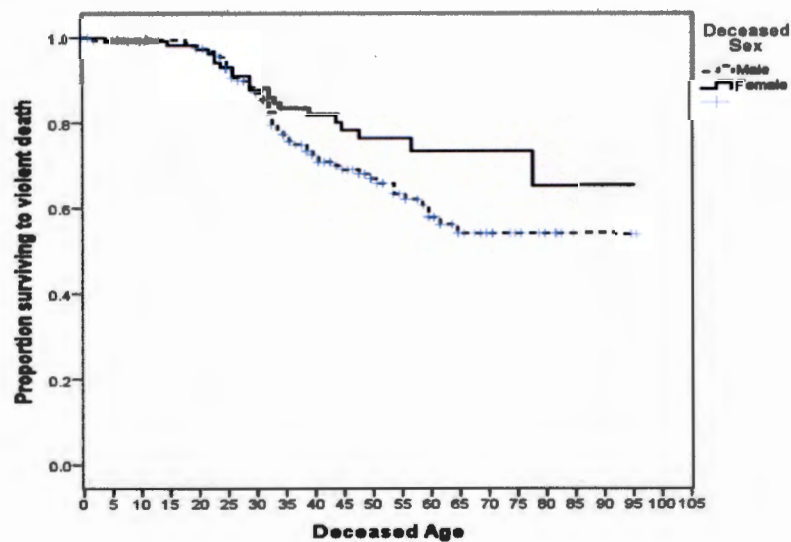
Characteristics	Type of death		Chi-square
	Natural	Violent deaths	
Attitude that violent crime is a way of life			
	20.1 (40)	23.1 (12)	4.48, p<0.10
Agree	58.8 (117)	27.3 (44)	
Disagree	21.1 (42)	32.5 (27)	
Ambivalent			
Attitude that carrying weapons is necessary for safety			
	29.6 (59)	33.0 (29)	11.01, p<0.01
Agree	51.3 (102)	20.3 (26)	
Disagree	19.1 (28)	42.7 (28)	
Ambivalent			
Attitude that it's okay to use violence			
	31.9 (63)	19.3 (16)	9.13, p<0.01
Agree	36.2 (72)	30.1 (25)	
Disagree	33.2 (64)	50.6 (42)	
Ambivalent			
Total	70.6 (199)	29.4 (83)	

5.7 Differentials in violent death victimization using the Kaplan-Meier survival method

In this section, the Kaplan-Meier survival method (Efron, 1988), also known as the "product-limit method" was used to estimate the probability of surviving VDV past a given age. The analysis is presented for selected characteristics of the decedents including: sex, age, race, level of education, marital status, employment status, alcohol consumption status, drug-use status and subculture groups.

Figure 5.7 presents the differentials in proportion surviving to VDV by sex. The figure shows that VDV started more or less at the same age for both men and women. However, the proportion surviving violent death decreased rapidly from more than 80% at age 30 to just over 64% among men compared to 78% among women by 43 years of age. The proportion surviving violent deaths continued to decline at a faster rate among men than women; as the population of decedents' age to 60 years or older. The differential in VDV by age was significantly associated with sex at $p < 0.05$.

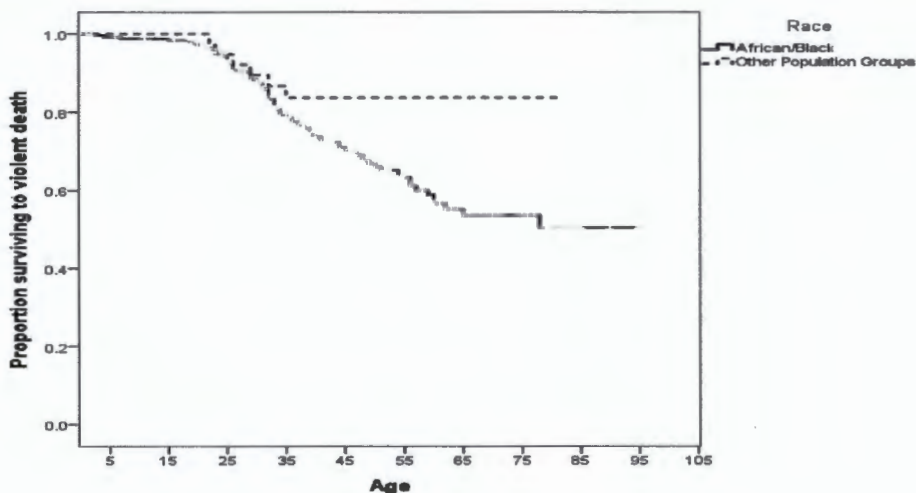
Figure 5.7 Kaplan-Meier Plot showing survivorship to age at violent death by sex



Log Rank $X^2=4.67$, $p<0.05$

Figure 5.8 presents the differentials in the proportions of decedents surviving to age at violent death by racial groups. The figure shows that age at violent death is significantly different for blacks and other racial groups in the study population, with blacks dying of violence at much younger ages than other races. Although the proportion of surviving violent death beyond age 40 is over 80% among other races, it was only 65% among blacks; and blacks surviving VDV continued to increase monotonically to age 75 years. The figure shows that the differential in age at VDV was significantly associated with race at $p<0.05$.

Figure 5.8 Kaplan-Meier Plot showing survivorship to age of violent death by race



Log Rank $X^2=5.51$, $p<0.05$

Furthermore, the differential in surviving VDV by marital status of the decedents is presented in Figure 5.9 showing that VDV differs, according to the marital status of the decedents. The proportion surviving VDV at each age is higher among the never-married

than the currently married decedents. Violent death victimization for the never-married decedents was 38% compared to only 16% of the currently married decedents at 40 years of age; but these increased to 55% and 22% at 58 years of age among the never married and the currently married, respectively. The result shows that age at VDV was significantly different by marital status at $p < 0.0001$.

Figure 6.9 Kaplan-Meier Plot showing survivorship to age at violent death by marital status

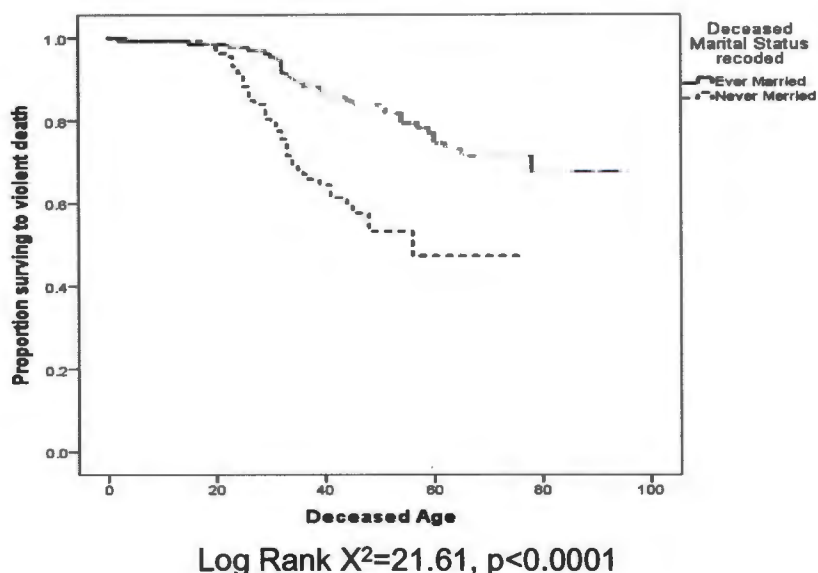
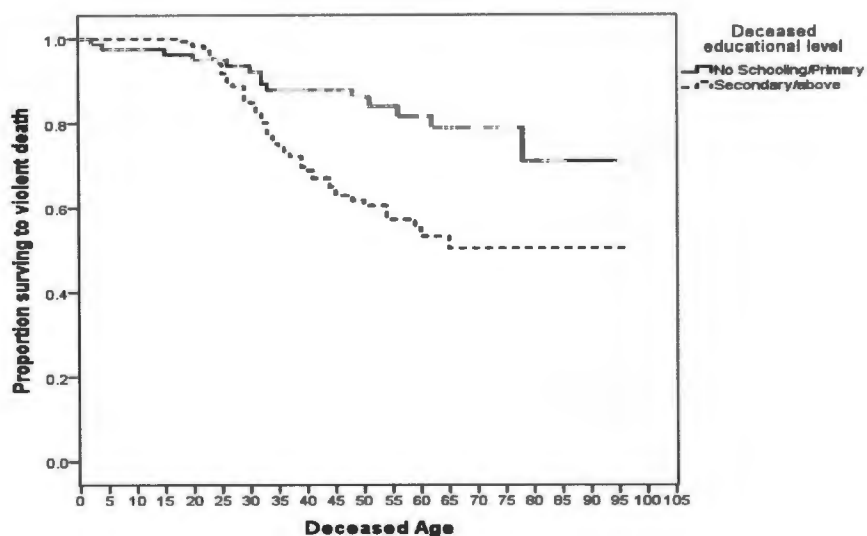


Figure 5.10 presents the differential in age at VDV, according to the level of education. Higher education has been perceived to lower the risk of VDV by reducing the propensity for violence. However, the results presented in Figure 5.10 show that the probability of VDV was higher among persons with secondary or higher education than those without any primary education. The figure shows that the difference between the two educational levels becomes clearer after age 30 years. By 35 years of age, more than 20% of the decedents with secondary or higher education had experienced VDV compared to 15% of those without any primary education. The proportion increased to 44% and 20% for decedents with secondary or higher education and those without any education, or only primary education, respectively, by 60 years of age. The results show that the level of education and age at VDV were significantly associated at $p<0.001$.

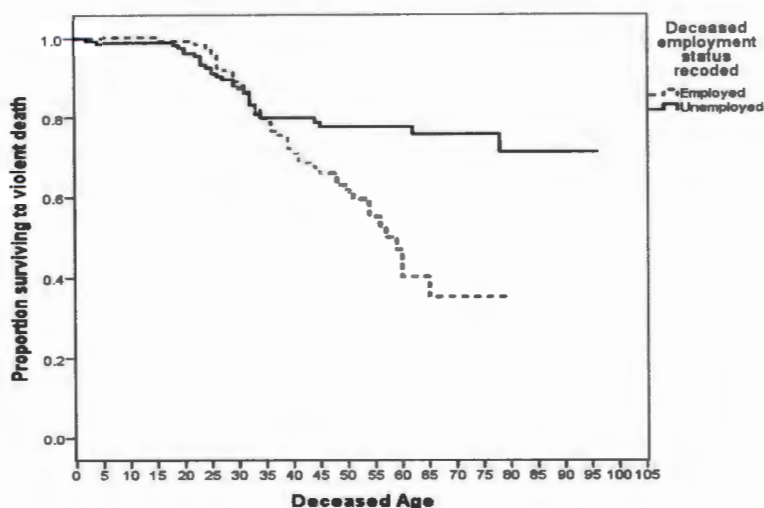
Figure 5.10 Kaplan-Meier Plot showing survivorship to age at violent death, according to the level of education



Log Rank $X^2=10.91$, $p<0.001$

Differential in age at violent death victimization by employment status is presented in Figure 5.11 – showing that for both the employed and unemployed, VDV increased with age; but there were no differences up to 30 years of age. However, after 30 years of age, more employed decedents were reported to have experienced VDV than unemployed decedents. By 50 years of age about 50% and 22% of the employed and unemployed decedents, respectively, at the time of death had died of violence. The results also show that employment status was significantly associated with age at VDV at $p<0.01$.

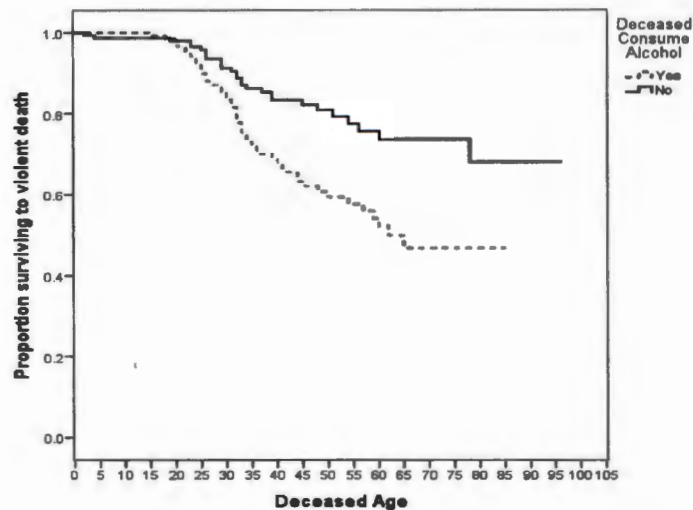
Figure 5.11 Kaplan-Meier Plot showing survivorship to age at violent death by level of education



Log Rank $X^2=10.01$, $p<0.01$

Alcohol consumption is an important risk factor of VDV. Figure 5.12 presents the differentials in age at VDV, according to the alcohol-consumption status. The results in the figure show that decedents who consumed alcohol died of violence at earlier ages than those who did not consume alcohol. By 35 years of age, about 20% and 15% of the decedents who consumed alcohol and did not consume alcohol, respectively at the time of death were victims of violent death. The proportion of violent deaths increased to 40% among those who consumed alcohol; and to 20% among those who did not consume alcohol by 50 years of age. Age at violent death according to alcohol consumption status and was significantly associated at $p<0.001$.

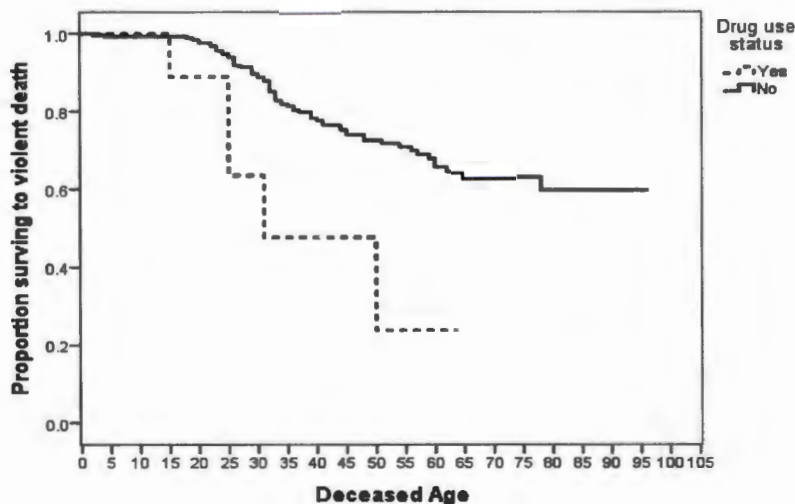
Figure 5.12 Kaplan-Meier Plot showing survivorship to age at death by alcohol-consumption status



Log Rank $X^2=11.75$, $p<0.001$

The use of illicit drugs has been identified as an important challenge in public health. Drugs alter the functioning of the brain by creating emotional and psychological instability among users, thereby leading to violence and death. In this regard, the differential in age at death, according to the drug-use status was examined; and the results are presented in Figure 5.13. The figure shows significant differences between drug users and non-drug users in the proportion of dying a violent death. By 25 years of age, about 38% of drug users had died of violent death compared to only 5% of non-drug users. This figure increased to about 78% among drug users; and only 25% among non-drug users by 50 years of age. The result shows that age at VDV was significantly different for drug users and non-drug users at $p<0.01$.

Figure 5.13 Kaplan-Meier Plot showing survivorship to age at death by drug use status



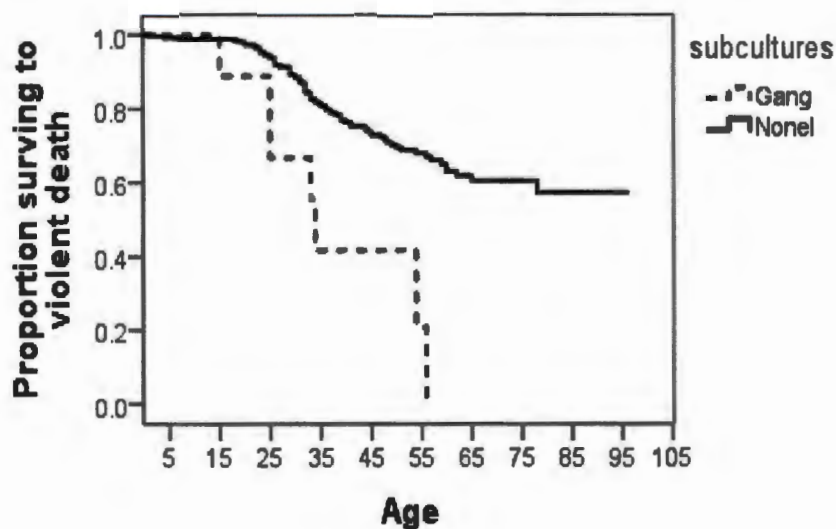
Log Rank $X^2=8.73$, $p<0.01$

Belonging to a gang subculture is an important relationship-risk factor of VDV, because of the high propensity of gang involvement in violence. In Figure 5.14, the result when examining the differential in VDV by the type of subculture is presented. The figure shows that VDV among gang members increased rapidly by age. By 35 years of age, nearly 75% of the decedents, who were gang members at the time of death, had died of violence compared to only 20% of decedents who were not gang members.

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The proportion of gang members dying of violence increased to almost 100% compared to only 25% among non-gang members by 55 years of age. The result shows that age at violent death victimization was significantly different, according to the subcultures at $p<0.0001$.

Figure 5.14 Kaplan-Meier Plot showing survivorship to age at death by subcultures



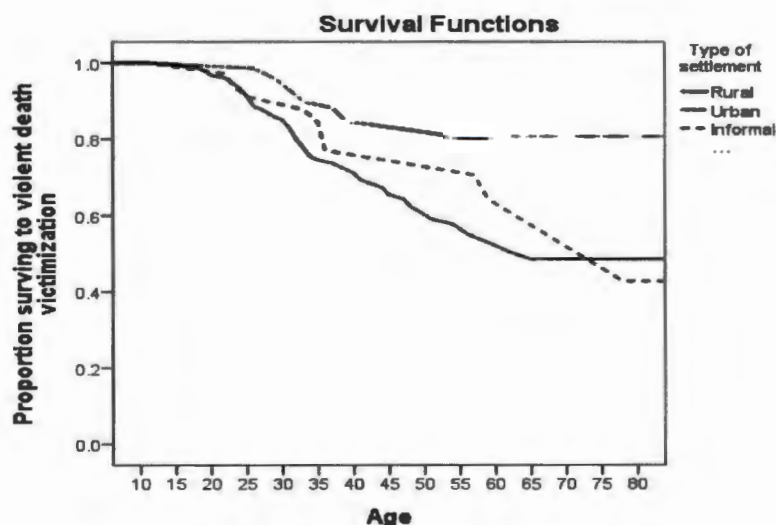
Log Rank $X^2=14.51$, $p<0.0001$

The type of residential neighbourhood has also been identified as an important community-level risk factor of VDV. In this regard, the differential in age at VDV was examined; and the result is presented in Figure 5.15. The figure shows that indeed the age at violent death victimization varied, according to the type of neighbourhood in which the deceased persons resided. Violent-death victimization occurs at an earlier age in urban residential neighbourhoods than in rural and informal residential neighbourhoods. Figure 5.15 shows that by 30 years of age, nearly 25% of violent death victims occurred in urban neighbourhoods compared to about 16% and under 15% in informal and rural neighbourhoods, respectively.

The proportion of violent deaths escalated to nearly 40% in urban neighbourhoods compared to 25% and 20% in informal and rural neighbourhoods, respectively. The

results also show that age at VDV was significantly different, according to the type of residential neighbourhood at $p < 0.001$.

Figure 5.15 Kaplan-Meier Plot showing survivorship to age at death by type of residential neighbourhood



Log Rank $X^2=8.00$, $p < 0.001$

5.8 Predictors of violent-death victimization

In this section, the predictors of VDV were identified and described. The analysis was performed by using unadjusted and adjusted logistic-regression models. The analysis tested the hypothesized relationships between VDV and the selected decedent's characteristics that were found by previous studies and reports to be associated with VDV. The hypotheses were confirmed if the odds ratio associated with the variable category was greater than 1.00 and the p-value associated with that category was less than 0.05 or 95% confidence interval (CI). The tested hypotheses were:

- i. Young adult decedents, regardless of sex, were significantly more likely than older adults to have become the victims of violent death – even after controlling for other individual, relationship and community variables;
- ii. Blacks decedents, regardless of sex, were significantly more likely than other races to have been victims of violent death – even after controlling for other individual, relationship and community variables;
- iii. Decedents with secondary or higher education were significantly more likely to have died of violence than decedents with less than a secondary education – even after controlling for other individual, relationship and community variables;
- iv. Decedents who consumed alcohol were significantly more likely to have died of violence than those who had never consumed alcohol – even after controlling for other individual, relationship and community variables;
- v. Urban decedents were significantly more likely to have died of violence than decedents from rural and informal settlements, even after controlling for other individual, relationship and community variables.

The unadjusted logistic-regression results of individual-level factors are presented in Table 5.7. The results show that VDV was significantly more likely, if the sex of the decedents was male (OR=1.89, $p<0.05$) compared to if sex of the decedents was female. The decedents were also significantly more likely to have died of violence if they were in the age group 20-29 (OR=4.76, $p<0.0001$) and 30-39 (OR=3.97, $p<0.0001$) at the time of death compared to decedents who were 40 years or older.

Furthermore, black decedents (OR=2.73, $p<0.05$) were significantly more likely to have been victims of violence than decedents of other races (Coloureds, Indians or Whites). However, surprisingly, and contrary to observations by previous studies, having less than secondary education and being unemployed significantly decreased the risk of VDV by 55% ($p<0.001$) and 61% ($p<0.001$), respectively in this study population. Among the individual level behavioural factors included in the unadjusted logistic regression model, only alcohol-consumption status and drug-use status were significant predictors of VDV. The results presented in Table 5.7 show that decedents who consumed alcohol were 2.63 ($p<0.0001$) times more likely to have suffered VDV compared to those who did not consume alcohol; and the decedents who used drugs were also nearly 4 ($p<0.01$) times significantly more likely than those who did not use drugs to have suffered VDV.

Table 5.7 also presents the unadjusted logistic-regression results describing the effect of relationship-level factors on VDV. The results show that decedents were significantly more likely to have died of violence if they were currently married (OR=1.63, $p<0.05$). Furthermore, decedents were significantly more likely to have been victims of violent death if they belonged to a gang subculture (OR=9.07, $p<0.01$). Regarding community level factors, the results in Table 5.7 show that VDV was significantly more likely in settings in which the respondents agreed with the statements that crime is a way of life in their community (OR=1.34, $p<0.01$) and had an unfavourable attitude to the statement that it is okay to use violence to get what one wants (OR=2.01, $p<0.001$).

Violent-death victimization was also more likely if the decedents lived in urban neighbourhoods (OR=3.62, $p<0.0001$); and if they were residents of Gauteng province (OR=2.21, $p<0.001$).

The results of the adjusted logistic-regression model, also presented in Table 5.6, show that; although being male as an individual-level variable remained a significant predictor of VDV, its effect were attenuated by 55%. On the other hand, belonging to the <20 (OR=5.80, $p<0.05$), 20-29 (OR=7.83, $p<0.0001$) and 30-39 (OR=6.58, $p<0.0001$) years age groups remained significant predictors of VDV and VDV at these ages increased by 321%, 307% and 261%, respectively, after the effect of other covariates had been controlled simultaneously.

Regarding the effect of race, the risk of VDV for blacks increased (OR=3.89, $p<0.01$) by 116%; and being a black was a significant predictor of VDV in this study population after controlling for the effects of other covariates. Conversely, the results show that although being unemployed remained a significant individual level predictor of VDV, and the odds increased by 27%, being unemployed reduced the risk of VDV by 34% after controlling for the effects of other covariates simultaneously.

Regarding the individual-level behavioural factors included in the model, the results in Table 5.7 show that alcohol consumption remained a significant predictor of VDV. Violent-death victims who had consumed alcohol were 2.80 ($p<0.01$) times significantly more likely to have died violent deaths. The effect of consuming alcohol enhanced the risk of VDV by 27%. Conversely, having less than secondary education and being a drug user, which were significant predictors of individual level factors at the unadjusted model, were not significant predictors of VDV after controlling for the effects of other covariates.

Among the relationship-level factors, Table 5.7 shows that being a gang member was the only significant predictor of VDV in the study population. Being a gang member

significantly increased the likelihood of VDV by 4.19 ($p < 0.05$) times. However, the effect of being a gang member was attenuated by nearly 49% after controlling for other covariates simultaneously. Being currently married as a relationship-level predictor lost its significant effects on VDV after controlling for the effects of other covariates.

Table 5.7 Unadjusted and adjusted logistic-regression models presenting odds ratios of selected demographic, socioeconomic and behavioural factors predicting violent death victimization

Factors	Unadjusted		Adjusted	
	OR	95% IC	OR	95% IC
Sex				
Male	1.89*	1.06-3.17	1.34	0.64-2.81
Female	1.00		1.00	
Age group				
<19	2.59	0.81-5.29	5.80*	1.27-26.44
20-29	4.76****	2.37-9.74	7.83****	2.95-20.73
30-39	3.97****	2.10-7.64	6.58****	2.85-15.15
40+	1.00		1.00	
Race				
Black	2.73*	1.10-6.78	3.89**	1.28-11.79
Others	1.00		1.00	
Religious groups				
Christian	1.27	0.70-2.29	0.688	0.31-1.46
Other	1.00		1.00	
Level of education				
Less than secondary	0.45***	0.25-0.81	0.87	0.39-1.92
Secondary or higher	1.00		1.00	
Employment status				
Employed	1.00		1.00	
Unemployed	0.39***	1.42-4.04	0.66****	1.84-7.30
Marital status				
Ever married	1.63*	1.09-2.73	0.68	0.32-1.47
Never married	1.00		1.00	

Type of neighbourhood				
Rural	1.00		1.00	
Urban	3.62****	1.82-7.21	5.14****	2.25-11.76
Informal	2.31		2.91*	1.01-9.17
Province of residence				
Gauteng	2.21***	1.29-3.78	1.64	0.82-3.26
KwaZulu-Natal	1.00		1.00	
Alcohol use status at death				
Yes	2.63****	1.55-4.46	2.80**	1.23-6.34
No	1.00		1.00	

Factors	Unadjusted		Adjusted	
	OR	95% IC	OR	95% IC
Cigarette smoking status				
Yes	1.49	0.88-2.54	0.59	0.24-1.46
No	1.00		1.00	
Drug use status				
Yes	3.91**	1.34-11.37	2.38	0.56-10.04
No	1.00		1.00	
Sub-culture group				
Gang member	9.07**	1.84-44.64	4.19*	2.62-28.20
Not a gang member	1.00		1.00	
Crime is a way of life here				
Agree	1.34**	1.53-5.62	1.22*	1.65-5.21
Disagree	1.51	0.89-2.34	1.05	0.94-2.56
Not sure	1.00		1.00	

**It is okay to use violence to
get what one wants**

Agree	1.12	0.75-4.36	1.02	0.23-1.28
Disagree	2.68**	1.25-4.56	1.32*	1.54-3.54
Not sure	1.00		1.00	
Constant			0.006****	

Table 5.7 also presents the adjusted results of community-level factors on VDV, thereby showing that residing in urban neighbourhoods and informal settlements were significant predictors of VDV, after controlling for the effects of other covariates. The odds of being a violent-death victim increased to 5.14 ($p < 0.0001$) and 2.91 ($p < 0.05$) for residents of urban and informal neighbourhoods. This was an enhancement of 152% and 60%, respectively. Other community level factors that remained significant were attitudes to crime and the use of violence as a *modus operandi*. The results show that agreeing with the statement that “crime is a way of life in the community” increased the risk of VDV by 1.22 ($p < 0.05$) times; but its effect was attenuated by 12%. Additionally, having an unfavourable attitude to the statement that “it is okay to use violence to get what one wants” also remained a significant predictor, as a community-level variable, on VDV and increased the risk of VDV by 1.32 times ($p < 0.05$); but its effect was attenuated by 69%.

However, being a resident of Gauteng province became an insignificant predictor of VDV in the adjusted logistic-regression model.

From the above results, we can confirm the hypotheses that “young adult decedents, regardless of sex, were significantly more likely than older adults to have been victims of violent death”; “black decedents, regardless of sex, were significantly more likely than

other races to have been victims of violent death”; and “urban decedents were significantly more likely to have died of violence than decedents from rural and informal settlements” – even after controlling for other covariates.” However, for the effect of the level of education, we reject the null hypotheses and accept the alternative hypotheses that “decedents with secondary or higher education were significantly more likely to have died of violence than decedents with less than secondary education” – even after controlling for other covariates.

5.9 Summary

Overall, our study found that VDV was prevalent, high and comparable with the national rates of South Africa. The results also found that, despite the very high prevalence of VDV by continental African standards, the risk factors and predictors of VDV are not quite unique to those observed by other studies elsewhere. This suggests that VDV prevention strategies in other countries should be applicable to South Africa. For example, VDV was significantly predicted by age – with the younger age groups being more susceptible to violent deaths than older populations; black Africans were more likely than other races to become victims of violent death; people living in urban and informal settlement neighbourhoods are more at risk of VDV, than those in rural areas; and alcohol users and membership to gang subcultures were also significantly predicted to have an increased risk of VDV.

Additionally, the population perception of crime levels and attitudes to the use of violence as mechanisms for survival also significantly predicted the increased risk of VDV. Our findings, therefore, suggest that VDV is significantly predicted by the complex interplay of factors at the individual, relationship, community and societal levels. The use of VDV

preventive strategies that address these four interconnected components is therefore recommended. We also recommend more in-depth studies to identify and conduct intervention studies to reduce the VDV epidemic in South Africa.

However, there are some possible limitations in the study. Firstly, the sample size for the study was small, which could thereby have suffered from selection bias. This could have explained some of the rather unexpected results, such as those on the effect of level of education, residential neighbourhoods and unemployment on VDV.

Secondly, the data on decedents were obtained from the surviving respondents, who are essentially third parties; and they could have biased the reporting of the data on the cause and the type of death, alcohol and drug behaviour, and also subculture memberships of decedents; since there was no means of effectively verifying their responses. The third limitation is the cross-sectional nature of the study design, which was only able to collect the data on events that occurred in a short period of time. This design omitted the data on decedents who had died many years ago; and therefore, they could have impeded the estimation of violent deaths.

Lastly, the data on alcohol and drug-use behaviour of the decedents at the time of death could not be verified, in order to ascertain whether or not the decedents had used drugs, or alcohol, or both at the time of death. The only information available from third party reporting was on whether or not the decedents usually used alcohol or drugs.

Nevertheless our study has made some contribution to the prevalence of VDV in Gauteng and KwaZulu-Natal; and it has proved that the SEM is a useful model for explaining the dynamics of violent-death victimization in South Africa.

Chapter Six

Community attitudes and beliefs towards violent behaviours

6.1 Introduction

The World Health Organization defined 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, maldevelopment or deprivation” (Krug, et al., 2002). On the other hand, interpersonal violence, which is the most common form of violence in South Africa, refers to violence within family settings, intimate partners or between individuals, regardless of whether or not they are known to each other (Rutherford, et al., 2007).

South Africa continues to be a violent country. The high level of violence is demonstrated by the pervasiveness of interpersonal violence, which has been ranked as a major cause of morbidity, mortality and disability. Interpersonal violence continues to be a national phenomenon that impacts on many groups across diverse settings. It has been described as synonymous with a “cultural” trait; and it is a significant problem in both urban and rural neighbourhoods. This “culture of violence” has its roots in the apartheid social, economic and political system, which institutionalized and embedded violence in the psyche of the population, as not only normative, but also a legitimate means of resolving interpersonal social, economic and ideological conflicts (Simpson, 1993).

Attitudes and beliefs towards interpersonal violent behaviour remain an important domain in understanding the dynamics and prevalence of interpersonal violence. A study by (Chan & Frei, 2013) suggests that the experience of violence, as a primary or secondary

victim, or the witnessing of violent acts could significantly contribute to having violent attitudes and behaviours. Another study elsewhere by (Langhinrichsen-Rohling & Neidig, 1995) found that exposure to violence increases tolerance to violent attitudes, beliefs and behaviours.

Previous studies attributed the culture of violence in South Africa to three main inter-related factors. These include: the pervasive poverty among the majority of black population; the rapid urbanization, mostly driven by rural-urban migration of the black population after the transition from the apartheid social and political system and the failure to adjust effectively to the urban social and economic environment (Dissel, 1997); and youth gangsterism, which is common in sprawling urban areas and informal settlements in South Africa – where it has become an effective substitute for the traditional rite of passage to adulthood (Pinheiro, 2006c).

The failure of the traditional family structures and support systems, as agents of socialization has also contributed to the gradual adoption of criminality and other forms of deviant attitudes and beliefs, which either tolerate or encourage the use of violence, as a necessary means of survival, as well as being heard by authorities.

6.2 Attitudes to violent beliefs and behaviours

The broad objective of this chapter is, therefore, to examine community attitudes to violent beliefs and behaviours in South Africa. In the chapter, the definition of attitudes provided by (Ajzen, 2005), as dispositions “to respond favourably or unfavourably to an object, person, institution or event” was adopted. In this chapter, the attitudes of respondents

towards violent behaviour were assessed by the use of two domains. These include attitudes to:

- i. The possession of a weapon as a means of ensuring personal safety; and
- ii. Revenge violence for the killing of a family member of close associate.

These attitudes were assessed by the use of a three-point scale, including favourable, unfavourable and ambivalent. Furthermore, differentials in these attitudes were examined and tested against the experience of violent deaths and other selected characteristics of the respondents, which included age, sex, population group, marital status, level of education, religion, employment status, and type of neighbourhood and region of usual residence.

Also examined were the effects of income and the influence of alcohol on each attitude. The assessment of the effects of the experience of violence on attitudes to violent beliefs and behaviours and its predictors have not yet been done in South Africa. However, previous research elsewhere suggests that individuals who have experience of violence have significantly favourable attitudes and beliefs towards violent behaviours (Gwartney-Gibbs & Stockard, 1989).

These attitudes, in turn, fuel violent behaviours that lead to violent-death victimization.

6.2.1 Attitudes towards the possession of weapons

In South Africa, interpersonal violence is the primary factor that contributes to shaping the attitude of the population towards the possession of weapons. A study on violence in South Africa suggests that favourable attitudes towards the possession of weapons is

encouraged by the perception that it is normative in a society; where violence has become more or less a legitimate means of resolving inter-personal disagreements. This belief dates back to the apartheid era (Simpson, 1993). Previous studies attributed the culture of violence in South Africa to mainly four inter-related factors. These include: the pervasive poverty among the majority of the black population; rapid urbanization after the end of apartheid, mostly driven by rural-urban migration of the black population in search of social and economic opportunities (Campbell, et al., 2003); the failure to adjust effectively to the urban social and economic environment, in which economic opportunities are limited (Dissel, 1997); and gangsterism, which is common in sprawling urban neighbourhoods (Pinheiro, 2006c).

These conditions could have contributed to the adoption of favourable attitudes to the possession of weapons, as a means of protection in response to the actual or the perceived threat of violent victimization, as well as a means of livelihood for certain sections of the population.

Attitudes and beliefs towards violent behaviour comprise an important factor in understanding the dynamics and the prevalence of interpersonal violence. One of such beliefs and behaviours is the attitude towards the possession of weapons in settings where violence or the threat of violence is prevalent. These attitudes are based on the perception that the possession of a weapon makes people feel safe (Ncontsa & Shumba, 2013; Miller, et al., 2002).

A previous study found that people adopt favourable attitudes to the possession of weapons; when they are faced with their vulnerability to violent victimization (Kleck, et al.,

2011). Another study by Chan and Frei (2013) suggests that the experience of violence as a primary or secondary victim, or the witnessing of violent acts significantly contribute to having favourable attitudes to violent behaviours, including the possession of a weapon.

Previous studies elsewhere identified some individual and community level factors that encourage the possession of weapons. The demography of violence suggests that this favourable attitude towards the possession of a weapon is prevalent and pervasive among young people, who are the main victims and perpetrators of violence (Jones, et al., 2013; Cock, 1997). Age is one of the factors that are significantly correlated with possession of weapons, with young adults being more likely to have favourable attitudes to the possession of a weapon (Lizotte, et al., 2000).

Another factor significantly influencing the possession of a weapon is being a male. A study by (Kodjo, et al., 2003) found that being a male is a significant risk factor for the possession of a weapon. Another factor that influences a favourable attitude towards the possession of a weapon is race. For example, despite having a lower rate of firearm-related mortality, more whites than blacks in the United States have very strong favourable attitudes towards the possession of weapons (O'Brien, 2013).

The same study by Kodjo et al (2003) also found that living in poor neighbourhoods and having a low education significantly increased the risk of the possession of weapons. Other studies also found that high risk behaviours, including the use of illicit drugs and the consumption of alcohol are associated with the possession of weapons (Fuggles & Rajan, 2014; Carter & Walton, 2013).

In South Africa, the ownership of firearms legally and illegally is widespread (Bopape, 2014). The ownership of weapons, especially firearms in South Africa, has been viewed both negatively as a tool for perpetuating criminality and violence (van Kesteren, 2013); and also positively, as a tool for self-protection, and thereby reducing violent crime in a violent society. However, what is not known is that the characterization of a favourable attitude towards the possession of weapons in South Africa, which could tacitly encourage the actual possession of weapons. This study, therefore, assessed the prevalence and identified the predictors of favourable attitudes towards the possession of weapons in Gauteng and KwaZulu-Natal provinces, where violent victimization by the use of weapons is prevalent.

To examine the factors influencing the attitudes towards the possession of weapons, the experiential-learning theory proposed by Kolb et al. (2001) was used. The theory proposed that learning is a holistic process of human adaptation, which can be applied to nearly all aspects of human behaviour, including the attitudes to beliefs and behaviours towards violence. This is because experience is a major factor of learning dynamics; and it shapes learning processes, as well as their outcomes. The experiential learning theory argues that knowledge comes from understanding experiences through actual or abstract conceptualization; and this is influenced by the individual's demographic and social characteristics, their life experiences, as well as the nature of their current and previous environment. We, therefore, hypothesized that individuals who have some experience of violent death are more likely than individuals, who have not experienced violent death, to have favourable attitudes towards the possession of weapons. However, the favourable

attitude is mediated by the social identity of individuals, which is based on their individual, relationship and social environment.

6.2.2 Attitudes to revenge violence

Revenge is a personal emotional retaliatory action, in which a victim derives pleasure or satisfaction by causing a perpetrator of harm to suffer in the same measure as themselves or even more. Simply stated, it is “paying back in the same currency”, or an “eye for an eye.” Revenge or at least accepting an attitude to revenge is pervasive and considered by many a justified response to injustice (Schumann & Ross, 2010); and it can help to prevent future transgressions by others against oneself or kin (Knutson, 2004). The attitude to revenge violence in South Africa, where violent victimization is a daily order, is unknown.

In this section, we examine the hypothesis that “individuals who know a victim of or have experience of having *witnessed* the violent death of a family member, or close associate, are more likely than individuals who do not have [any] experience of violent deaths to have favourable attitudes towards revenge violence.”

Revenge violence can be variously defined, depending on the perspective one takes. According to Uniacke, revenge violence is a form of retaliation, which seeks the satisfaction of returning a perceived or actual humiliation, insult or injury (Uniacke, 2000). Barton described revenge violence as an act of damage, injury or punishment inflicted by a victim or a close family member on an adversary (Barton, 1999).

On the other hand, (Crombag, et al., 2003) referred to revenge violence as harm against an aggressor, which involves costs and risks to the perpetrator. Regardless of how

revenge violence is defined, there is agreement by most scholars on the subject that revenge killing is a common feature of inter-personal and inter-communal, or group feuds (Boyle, 2010).

Revenge violence can be a spontaneous, irrational or a well thought-out and planned action of an individual, or the collective action of a group –*mob justice*– against a victim or victims on the basis of the perceived or the actual wrong done to a group, society or one of its members. It is reciprocal to the wrong; and it is aimed to achieve some form of satisfaction (Boyle, 2010). Revenge violence has been metaphorically referred to as “wild justice” or “jungle law”, denoting a negative sentiment. It is also perceived to be committed more commonly in settings and conditions, in which the perpetrators thereof believe that the formal system of justice will not deliver justice to the aggrieved party(s); and this failure in the justice system could explain the incidence and prevalence of retaliatory cycles of violence in such settings.

The universal and naturalist nature of revenge violence is in human nature and historically described in the Hammurabi code in statements like “a life for a life”, an eye for an eye” and “a tooth for a tooth (Miller, 2006).

The death of a family member can be devastating on its own. However, death caused by someone else through a violent act has far-reaching emotional and psychological implications on the survivors. When violent death occurs in a family, the family unit undergoes permanent changes that are difficult to overcome. Studies have shown that friends and family members of murder or homicide victims report extreme anger and feelings of vengeance (Fish, 2008). Revenge violence, therefore, becomes an emotional

response towards the feeling that justice is better served through retaliation in the same measure –“getting even” by punishing the offender reciprocally (Schumann & Ross, 2010).

Revenge violence is also the only means of squaring up in groups, such as gangs and criminal syndicates that operate outside the law (Quinn & Koch, 2003; Dixon & Johns, 2001). A study among university students found that a favourable attitude towards revenge violence is motivated by the desire for retribution and authority, with the respondents having a preference for retribution; and authority expressing favourable attitudes to revenge (McKee & Feather, 2008).

Another study by (Shteynberg, et al., 2009) found that attitudes towards revenge vary, according to the culture with people in individualistic cultures being more likely to have favourable attitudes to revenge violence. Matsuda and others (Matsuda, et al., 2013) also argue that the norm of reciprocity applies to groups, such as peers, gangs and family members; since “an attack on one is an attack on all” and a threat or actual violence is reciprocated, not only as a show of strength; but also to ensure that future violent threats or acts against group members are deterred.

Anecdotal evidence suggests that revenge violence is pervasive in South Africa. However, the unanswered question is: What characterizes the attitudes to revenge violence in South Africa? In this study, we have examined the prevalence and the predictors of favourable attitudes to revenge as a violent behaviour.

In answering the above question, we used the theory of experiential learning Kolb et al (2001) to characterize and identify the factors influencing favourable attitudes and beliefs towards violent behaviour. The theory proposes that learning is a holistic process of human adaptation, which can be applied to all aspects of human behaviour, including whether or not to adopt favourable attitudes and beliefs towards violent behaviours. This is because experience is a major ingredient of learning dynamics; and it shapes learning processes, as well as their outcomes.

Experiential learning theory posits that knowledge comes from understanding experiences through actual or abstract conceptualization. Knowledge also comes from reflective observation or personal experience and experimentation. All the above learning processes are influenced by the individual's social identity, which is defined by an individual's characteristics, their life experiences and the nature of their environment. We, therefore, propose that by using the experiential learning theory, we can hypothesize that individuals who know a victim of, or have had an experience of – *witnessed*– a violent death of a family member or close associate, are more likely than individuals who do not have any experience of violent deaths to have favourable attitudes towards revenge violence. However, whether or not these individuals will have accepting attitudes to revenge violence is, additionally mediated by their social identity.

6.3 Data and Methods

The data used in this chapter were part of the cross-sectional data on the dynamics of violent-death victimization and attitudes and beliefs in violent behavioural studies in Gauteng and KwaZulu-Natal provinces of South Africa. The data were collected in 2014 as part of this doctoral study. The sample for the study was derived by the use of a two-

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stage cluster sampling design, which has already been described in detail in Chapter three. In the first stage, we selected enumeration areas as clusters. In the second stage, we selected 1500 households headed by a person aged 15 years, or older. From the selected households, we collected the data on 3786 surviving individuals and the data on 1318 of these were on individuals aged 18 years or older, who were interviewed at the household level. The analysed data are based on the 1318 respondents interviewed.

The data were collected on deceased and surviving members of the households by the use of a structured questionnaire. The data collected on the deceased included their cause of death and demographic, social and behavioural characteristics. The data collected on surviving members of the households comprised the demographic, social and behavioural characteristics, household characteristics and attitudes towards violent beliefs and behaviours.

6.3.1 Variables and measures

The dependent variables in this chapter were two; and they formed the main analytical sections presented in this chapter. These are:

- iii. Attitude to the possession of weapons, which were measured by using a scale of three categories, including favourable, unfavourable or ambivalent attitudes, which was the reference category. In this study the possession of a weapon referred to the ownership and carrying of a weapon, regardless of its legality status (licensed or not licensed). In this study, the definition of a weapon as prescribed in the Dangerous Weapons Act, 2013 is “any object, other than a firearm, capable of causing death or inflicting serious bodily harm, if it were used for an unlawful

purpose” was adopted. In this regard, such weapons include firearms, knives, machetes, spears, clubs and other objects; if these are used as a weapon.

- i. The attitude to revenge violence for the killing of a family member or close associate. A violent death was defined as death caused by the intentional or unintentional action of another individual by the use of a weapon, including a firearm, a sharp object, by beating – using a blunt object, or any other means. The attitudes were measured by using a scale of three categories, namely favourable, unfavourable or ambivalent attitudes. Ambivalent attitude was the reference category.

6.3.2 Explanatory variables

The explanatory variables comprised the main independent variable, which was the experience of a violent death, which had two categories. These are: Either the respondent has had the experience of a violent death; or has had no experience of a violent death. The experience of a violent death was defined as the knowledge of an individual, who was killed by the use of a weapon, or the witnessing of a violent act perpetrated by another individual on another person leading to death. The experience of a violent death was coded “1”; and the non-experience of a violent death was coded “0”.

The other explanatory variables analysed were the characteristics of the respondent, which were used as control variables. These characteristics are demographic and socio-economic in nature; and they were identified in the literature as important in predicting violent beliefs and behaviours. The demographic characteristics consisted of the sex of the respondent (male or female); the age of the respondent, which was categorized as

<25 years, 25-34, 35-44 and 45 years, or older age groups; and racial groups categorized as black, who were the majority, or others (Coloured, Asian or White).

The socio-economic characteristics of the respondents were the religious affiliation, which was categorized as Christian, or other (Muslim, Traditional, Hindu, no religion); and the marital status, which was categorized as currently in union (married or cohabiting), formerly in union (married or cohabiting) and never in union. The level of education was categorized as: no education, primary, secondary and tertiary education; employment status was categorized as unemployed and employed; and having a regular source of income was categorized as yes or no; and these were also analysed.

Also included as socio-economic variables in the analysis was the type of residential neighbourhood, which was categorized as rural, urban or informal; and the province of usual residence, which was categorized as Gauteng or KwaZulu-Natal. An important behavioural variable included in the analysis was alcohol-use status, which was categorized as 'used alcohol' or 'did not use alcohol'.

6.3.3 Methods of data analysis

The data were analysed at three stages by the use of SPSS version 22. The first stage involved the description of the profile of the respondents by selected demographic, socio-economic and behavioural characteristics. This was done by the use of a frequency distribution. In the second stage, we used the Pearson's Chi-square statistic to explore the differentials in the attitudes towards the possession of weapons. In doing so, the chi-square statistic of the form $\chi^2 = \sum_{i=1}^j \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$ was used. The association between

attitudes to any of the two measures of violent beliefs and behaviours and the respondents' characteristics were considered significant if the $p < 0.05$.

The third stage was the multivariate analysis. At this stage, we used the multinomial logistic-regression model to identify the predictors of a favourable attitude towards the possession of weapons and revenge violence. In this model, the attitude towards the possession of weapons and the attitudes to revenge violence were coded "1" if the respondents reported a favourable attitude; "2" if the respondents reported an unfavourable attitude; and "0" if the respondents reported an ambivalent attitude, which was also the reference category.

Two multinomial logistic-regression models were conducted for each analysis. Model 1 was the unadjusted model, which assessed the effect of experience of violent deaths on the attitudes towards the possession of weapons and the attitudes to revenge violence. This model was used to test the following hypotheses:

- iii. Individuals who know a victim of, or have experience of – *witnessed*– a violent death of a family member or close associate, are more likely than individuals who do not have experience of violent deaths to have favourable attitudes towards possession of a weapon; and
- iv. Those individuals who know a victim of, or have experience of – *witnessed*– a violent death of a family member or close associate, are more likely than individuals, who do not have any experience of violent deaths to have favourable attitudes towards revenge violence.

In Model 2, we adjusted for the effect of experience of violent deaths on the favourable attitude to confirm or reject the above hypothesis: "Individuals who know a victim of, or have experience of – *witnessed*– a violent death of a family member or close associate, are more likely than individuals who do not have any such experience of violent deaths to have favourable attitudes towards the possession of weapons or revenge violence" even after controlling for the effects of other explanatory variables, simultaneously. To test the hypothesis, the multinomial-logistic regression model used was of the form:

$$\text{logit}(y=1) = \log\left(\frac{p(y=1)}{1-(p-1)}\right) = \beta_0 + \beta_1 \cdot x_{12} + \beta_2 \cdot x_{12} + \dots + \beta_p \cdot x_{1n} \text{ for } i = 1 \dots n.$$

and the parameter

used to interpret the result was the beta-coefficients (β^x) – Odds Ratio of the form: $y = \text{Log}_e \frac{P_i}{1-P_i}$. Variables having Odds Ratios with $p < 0.05$ were significant predictors of a favourable attitude towards the possession of weapons or revenge violence.

6.4 The Results

The results of the chapter are presented in two sections. These are attitudes to the possession of a weapon in section 6.4.1; and the attitude to revenge violence in section 6.4.2.

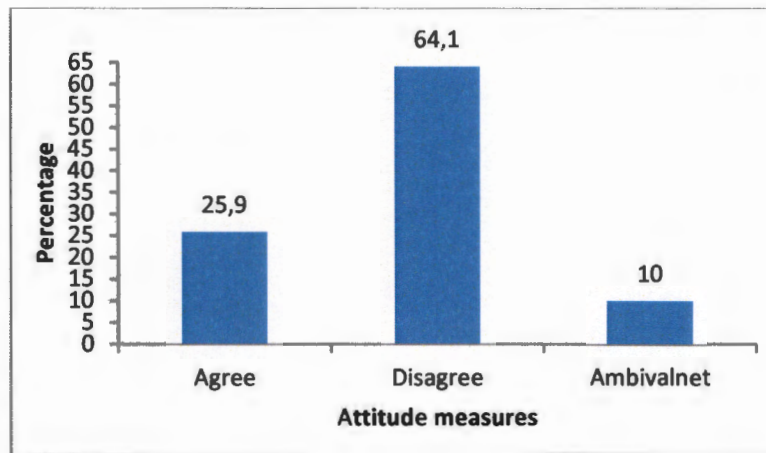
6.4.1 Attitudes and beliefs towards the possession of weapons

Weapons are used for a variety reasons, including for defence, to intimidate others, to obtain what one wants by the use of force – and even to harm another person. Weapons included in this analysis comprise the possession of firearms, knives and others that can cause harm. The non-institutionalized possession of weapons, whether regulated or otherwise, has been found to pose a serious threat to individual and community safety. A previous study found that the possession of small weapons, especially small firearms, is

strongly correlated with deaths rates (CDC, 2012). These weapons have also been blamed for undermining and disrupting economic and political developments in the most-affected societies.

Attitudes and beliefs towards violent behaviour were assessed by asking the respondents to report their attitudes on the possession of weapons by members of the public. The respondents were asked to report attitudes to the statement that "The possession of a weapon makes people feel safe." The results of the assessment are presented in Figure 6.1, which shows that more than one-quarter of the respondents reported favourable attitudes to the statement that "The possession of weapons makes people feel safe"; more than 6 in 10 disapproved of the statement that the possession of weapons makes people feel safe; and only 10% reported an ambivalent attitude to the statement.

Figure 6.1 Distribution of respondents by attitudes to the possession of weapons



6.4.1.1 Differentials in attitudes to the possession of weapons

The need to possess and carry weapons is high in settings, where the prevalence of violence is high and people with favourable attitudes to weapons' possession argue that they do so for protection, because of the perception that official social institutions, such as the law-enforcement agencies do not offer them sufficient protection from criminal elements in their society (Carter & Walton, 2013; Shaw, et al., 2011). In this section, the differentials in accepting, or favourable attitudes to the possession of weapons was assessed by examining the attitudes of respondents to the statement that "The possession of weapons makes people feel safe" by the selected demographic, social and behavioural characteristics of respondents.

6.4.1.2 Demographic differentials in attitudes towards the possession of weapons

Differentials in favourable attitudes to weapons' possession were examined by the demographic characteristics of the respondents, including sex, age, population group,

household size and the experience of a violent death. The results are presented in Table 6.1. The table shows that favourable attitudes towards the possession of weapons due to perceived or actual vulnerability varied by sex. More males (26.7%) than females (23.3%) reported favourable attitudes to the possession of weapons, because of the belief that it makes people feel safe. Favourable attitudes to the possession of weapons as a safety measure were significantly associated with sex at $p < 0.0001$. The table also shows that favourable attitudes towards the possession of a weapon, because of the belief that it makes people feel safe were significantly more prevalent in the 25-34 year age group (28.8%), followed by the 35-44 (25.1%) year age group. Conversely, fewer respondents (24.8%) in the less than 25 year age group (24.8%) and only 21.5% of respondents in the 45 years, or older age group reported favourable attitudes to the possession of weapons, because of perceived, or actual vulnerability to violent victimization. Favourable attitudes towards the possession of a weapon were significantly associated with age at $p < 0.01$.

Table 6.1 also presents the differentials in favourable attitudes towards the possession of weapons by population groups. The table shows that more blacks than other races significantly reported favourable attitudes to the possession of weapons, because of the perception that it makes people feel safe. Although, favourable attitudes to the possession of a weapon on the grounds of safety were significantly associated with population groups at $p < 0.05$, this result could have been affected by the small number of other races in the study. The result presented in Table 6.1 also suggests that the need to possess a weapon, because of perceived or actual vulnerability, was affected by household size.

Favourable attitudes towards the possession of a weapon, because of the perception that it makes people feel safe, were significantly more prevalent among respondents from smaller households. More than 4 in 10 and 2 in 10 of the respondents from households with 2-3 and one member, respectively, reported favourable attitudes to possession of a weapon compared with households with 4 or more individuals. Attitudes towards the possession of weapons, because of the perception that it makes people feel safe were significantly associated with household size at $p < 0.0001$.

Table 6.1 Distribution of attitudes to possession of weapons by demographic characteristics

Characteristics	Agree	Disagree	Ambivalent	Number	X2
Sex					
Male	26.7	66.8	6.6	641	15.8, p<0.0001
Female	23.3	63.7	13.3	679	
Age group					
<25	24.8	65.2	10.1	577	17.2, p<0.001
25-34	28.8	57.2	14.0	278	
35-44	25.1	66.3	8.6	175	
45+	21.5	72.3	6.2	289	
Population group					
Black	25.3	65.4	9.3	1227	6.6, p<0.05
Others	20.7	62.0	17.4	92	
Household size					
1	20.6	69.1	10.3	165	156.1, p<0.0001
2-3	40.5	40.5	19.0	378	
4-6	16.3	77.1	6.6	497	
7+	21.9	75.3	2.9	279	
Deaths in household					
Natural or no deaths	23.8	65.9	10.3	1224	14.0, p<0.001
Violent deaths	40.0	55.8	4.2	95	
Total	24.9	65.2	9.9	1319	

Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; *=included because the subject of investigation is a rare event

The experience of a violent death defined in this study, as witnessing or the knowledge of a victim of violence perpetrated by other persons, has been reported by a previous study, as the reason for some people to have favourable attitudes to possess weapons. The data presented in Table 6.1 show that the attitudes towards the possession of a weapon, due to the perception of vulnerability, are significantly more prevalent among respondents who reported experience of violent deaths.

Forty percent of the respondents with some experience of violent deaths reported a favourable attitude to the possession of a weapon, than only 23.8% of those with no experience of violent deaths. The experience of violent death was significantly associated with attitudes to the possession of a weapon at $p < 0.001$. The differential results confirm the hypothesis that attitudes to the possession of a weapon, because of perceived or actual vulnerability are significantly influenced by the experience of violent deaths in the study population.

6.4.1.3 Socio-economic differentials in the attitudes towards the possession of weapons

The need for the possession of a weapon is often fuelled by ideological views, which could have serious socio-economic consequences. In this sub-section, the differentials in favourable attitudes towards the possession of a weapon were examined by the selected social characteristics of the respondents, which include religious affiliation, level of education, employment status, current regular source of income status and marital status. Also examined are the differentials in attitudes to the possession of a weapon by the type of residential neighbourhood and the province of usual residence. Some of the

characteristics listed above were found to positively predict favourable attitudes to the possession of weapons by a previous study in the United States (Carter et al., 2013).

The effect of religious beliefs towards attitudes on the possession of weapons for personal safety had not been previously examined. In this study, we examined the attitudes of religious groups on the possession of weapons; and the result is presented in Table 6.2. The table shows that having a favourable attitude towards the possession of weapons was more prevalent among respondents from minority religious affiliations (31.5%) than among Christians (22.5%), who comprise the majority in the population. The result also shows that religious affiliation was significantly associated with attitudes to the possession of weapons at $p < 0.001$.

The association between the possession of weapons and marital status have not yet been previously examined in South Africa. However, the possession of weapons has been found by a previous study to be an important factor in influencing the prevalence of marital violence. A study in the United States of America found that more marital homicides of women by their husbands involved the use of own weapons. Most of the weapons are legally acquired, because of the perception that having a weapon in the home increases personal and family safety (Rennison, 2001). In this study, the differential attitudes towards the possession of a weapon, because of the perception of vulnerability was examined, according to the marital status of the respondents and the results are reported in Table 6.2.

The table shows that one quarter of those currently in union reported a favourable attitude to the possession of a weapon, compared with about 21% of formerly married

respondents. Over one-quarter of never-married respondents also reported favourable attitudes to the possession of a weapon. Attitudes to the possession of weapons was found to be significantly associated with the marital status at $p < 0.05$.

Table 6.2 also present the differentials in favourable attitudes towards the possession of a weapon, because of the belief that it makes people safe, according to the highest level of education of the respondents. This has not been previously examined in South Africa. The table shows that the prevalence of favourable attitudes to the possession of weapons, because of one's perceived vulnerability decreases with an increase in the level of education. Thirty percent of the respondents without any education reported favourable attitudes to the possession of a weapon compared to 24.7%, 23.1% and 23.2% of the respondents with primary, secondary and tertiary education, respectively.

Attitudes towards the possession of weapons because of perceived vulnerability were significantly associated with the level of education at $p < 0.001$.

Gauteng and KwaZulu-Natal in South Africa are among the most affected provinces by violent crime. The high levels of violent crime in these two provinces have been attributed to the high levels of poverty and inequality, and the proliferation of small firearms in the metropolis in these provinces. Accordingly, this study examined the attitudes of respondents in the two provinces of Gauteng and KwaZulu-Natal to the possession of weapons, because of the belief that it makes people feel safe. The results are presented in Table 6.2, showing that compared to only 22.6% of the respondents reporting a favourable attitude in KwaZulu-Natal province, the prevalence of a favourable attitude towards the possession of weapons was higher in Gauteng province (34.6%). The

province of residence was also significantly associated with the attitudes towards the possession of weapons at $p < 0.0001$.

The current study also examined the effect of income on the attitude towards the possession of weapons. This approach to weapon possession has not been previously examined in an African country; but anecdotal evidence indicates that the wealthier groups are more likely to not only support, but also to possess weapons, because of their fear of crime and their vulnerability from the poor. In South Africa, Whites, who are wealthier than other races put together, were legally entitled to possess weapons as opposed to blacks until the country regained its democracy.

Table 6.2 Distribution of respondents by attitudes to the possession of weapons by socio-economic characteristics

Characteristics	Agree	Disagree	Ambivalent	Number	X2
Religious affiliation					
Christian	22.5	68.0	9.4	967	13.5, p<0.001
Others	31.5	57.4	11.1	352	
Marital status					
Currently in union	25.0	62.4	12.6	452	9.5, p<0.05
Formerly married	20.9	73.4	5.8	139	
Never married	25.7	65.2	8.9	728	
Highest level of education					17.8, p<0.001
No education	30.0	56.1	13.9	287	
Primary	24.7	69.0	6.3	300	
Secondary	23.1	67.0	10.0	663	
Tertiary	23.2	69.36	7.2	69	
Type of neighbourhood					
Rural	25.2	67.7	7.2	405	4.9, p<1.00
Urban	25.1	63.9	11.0	717	
Informal	23.9	65.0	11.2	197	
Province of residence					
Gauteng	34.6	53.3	12.1	257	20.5, p<0.001
KZN	22.6	68.1	9.3	1062	
Employment status					
Unemployed	26.4	63.4	10.2	941	4.5, p<0.101

Employed	21.4	69.6	9.0	378	
Have a regular income					
Yes	22.3	68.8	9.0	746	9.7, p<0.001
No	28.4	60.6	11.0	573	
Alcohol-use status					
Uses alcohol	31.3	57.9	10.8	297	9.6, p<0.001
Does not use alcohol	23.1	67.3	9.6	1022	
Total	24.9	65.2	9.9	1319	Total

Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; *=included because the subject of investigation is a rare event of apartheid in the 1990s. A study in the United States of America also suggested that the higher the level of income, the more likely it is to need the possession of weapons (O'Brien et al. 2013). However, the results in Table 6.2 show that having favourable attitudes to the possession of a weapon, because of the perception that it makes people safe, was more prevalent among respondents having no regular source of income (28.4%). Having a regular source of income status was significantly associated with the attitudes towards the possession of weapons for protection at p<0.01.

Alcohol consumption has variously been linked to violence, involving the use of various types of weapons. A meta-analytical study by Smith found that firearm usage was common in the context of alcohol consumption, mostly involving young adults (Smith, et al., 1999). Most of the violations involving weapons occur at alcohol sale outlets (Branas, et al., 2009; Branas, et al., 2011). The above finding suggests that alcohol consumption is associated with favourable attitudes towards the possession of weapons – mainly because of the high violence expectancy. In this study, the effect of alcohol consumption

on the attitudes to the possession of a weapon was examined; and the result is presented in Table 6.2. The table shows that favourable attitudes to the possession of a weapon were more prevalent (31.3%) among people who reported they consumed alcohol, than among those who do not consume alcohol (23.1%). The result also shows that alcohol consumption was significantly associated with attitudes towards the possession of weapons at $p < 0.001$.

6.4.1.4 Predictors of favourable attitudes towards the possession of weapons

The multinomial logistic-regression model was used to identify those factors that influenced favourable attitudes to the possession of weapons, because of the perception that it makes people safe. In the analysis, a respondent was considered as having experience of a violent death and coded "1" if he/she knows a victim of violent death, or has witnessed a violent death event of someone, who was a victim of violence. If a respondent did not know a victim of a violent death, or had not witnessed a violent-death event, then he/she did not have any experience of a violent death and was coded "0". The dependent variable in the analysis was attitude towards the possession of weapons. This was categorized as favourable, unfavourable or ambivalent. The model was used to test the hypothesis that "individuals who know a victim of, or have experience of – *witnessed* – a violent death of a family member or close associate, are more likely than individuals who do not have such an experience of violent deaths to have favourable attitudes towards the possession of weapons." The results are presented in Table 6.3 and Table 6.4.

Table 6.3 presents the unadjusted results on the effect of experience of violent death status on attitudes to the possession of weapons. The model fit was assessed by the use of the Likelihood Ratio Test, which revealed a -2 likelihood ratio of 35.5; a chi-square test of 13.58 and a $p < 0.001$. These all indicated that the model was a good fit. The result shows that compared to the respondents with an ambivalent attitude, the respondents were significantly more likely to have had a favourable attitude towards the possession of weapons if they have had an experience of a violent death (OR=4.11, CI=1.43-11.76).

Some of the respondents who had experienced a violent death were 2.06 (CI=0.73-5.81) times more likely to have had an unfavourable attitude to the possession of weapons; since the experience of violent death was not a significant predictor of an unfavourable attitude (CI=0.73-5.81) towards the possession of weapons.

Table 6.3 Unadjusted multinomial logistic- regression model showing Odds Ratios predicting favourable and unfavourable attitudes towards the possession of weapons

Predictors	Favourable vs Not sure		Unfavourable vs Not sure	
Experience of deaths				
Violent deaths	4.11**	1.43-11.76	2.06	0.73-5.81
Natural/no deaths ®	1.00		1.00	

Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; ®=included because the subject of investigation is a rare event

Table 6.4 presents the adjusted effects of the experience of violent deaths on favourable and unfavourable attitudes towards the possession of weapons after controlling for the effects of selected demographic, social and behavioural characteristics of the respondents simultaneously. The model fit test revealed a likelihood ratio of 1332; a chi-square of 111.11; and $p < 0.0001$, indicating that the model was a good fit. The result shows that although the experience of a violent death on a favourable attitude towards the possession of weapons was attenuated by 41% to 3.47 (CI=1.41-8.56) times, the effect of the experience of a violent death remained a significant predictor of a favourable attitude towards the possession of weapons. The 41% attenuation suggests that the control variables eroded some of the effects of the experience of a violent death on having a favourable attitude to the possession of weapons. In this regard, we confirm the hypothesis that “individuals who know a victim of, or have had an experience of – *witnessed*– a violent death of a family member or close associate, are more likely than individuals who have not had an experience of violent deaths to have had a favourable

attitude to the possession of weapons – even after controlling for the effects of other covariates simultaneously.

The control variables predicting the favourable attitude towards the possession of weapons due to one's perceived vulnerability as a male, African, aged 24-34 years old and being in a union or married. The results presented in Table 6.4 show that the respondents were significantly more likely to have had a favourable attitude to the possession of weapons; if they were male (OR=2.29, CI=1.46-3.59) and African (OR=2.02, CI=1.01-4.21). The finding suggests that being male and African significantly increased the perception of the vulnerability to violent-death victimization, leading to having a favourable attitude towards the possession of weapons. Conversely, Table 6.4 shows that compared to being aged 45 years or older and never having married, the respondents were significantly less likely to have had a favourable attitude towards the possession of weapons if they were 25-34 years old and currently in a relationship or married, respectively.

Regarding the predictors of unfavourable attitudes, Table 6.4 shows that the respondents were significantly more likely to have had an unfavourable attitude to the possession of a weapon; if they were male (OR=2.42, CI=1.80-3.67); and African (OR=2.07, CI=1.09-3.94). Conversely, the respondents were significantly less likely to have had an unfavourable attitudes to the possession of weapons, due to the perceived vulnerability to violent victimization if they were under 25 years of age (OR=0.41, CI=0.21-0.78) and 25-34 years of age (OR=0.26, CI=0.14-0.78); currently in union or married (OR=0.56, CI=0.35-0.86); and having no education or only a primary education (OR=0.37, CI=0.12-

1.03). Additionally, the respondents were significantly less likely to have had an unfavourable attitude to wards the possession of weapons if they lived in Gauteng province (OR=0.59, CI=0.36-0.97). However, although alcohol consumption was a weakly significant predictor of an unfavourable attitude towards the possession of weapons, alcohol consumption was a less likely predictor of an unfavourable attitude to the possession of weapons, due to the perceived vulnerability of violent victimization.

Table 6.4 Multinomial logistic regression model showing Odds Ratios predicting favourable and unfavourable attitudes to the perception that possession of weapons makes people feel safe

Predictors	Favourable vs Ambivalent		Unfavourable vs Ambivalent	
Experience of deaths				
Violent deaths	3.70***	1.28-10.70	2.00	0.70-5.70
Natural/no deaths ®	1.00		1.00	
Sex				
Male	2.29****	1.46-3.59	2.42*****	1.80-3.67
Female ®	1.00		1.00	
Age groups				
<25	0.58	0.28-1.18	0.41***	0.0.21-0.78
25-34	0.52*	0.26-1.05	0.26*****	0.14-0.51
35-44	0.77	0.34-1.75	0.56	0.26-1.21
45+ ®	1.00		1.00	
Population Group				
Blacks	2.02*	0.96-4.21	2.07**	1.09-3.94
Others ®	1.00		1.00	
Marital status				

Currently in union	0.61*	0.38-0.98	0.56***	0.35-0.86
Formerly in union	1.15	0.48-2.78	1.58	0.69-3.51
Never in union ®	1.00		1.00	
Level of education				
No/Primary	0.58	0.18-1.78	0.37*	0.12-1.03
Secondary	0.57	0.19-1.69	0.49	0.18-1.36
Tertiary	1.00	1.00	1.00	
Have regular source of income				
Yes	1.02	0.64-1.55	1.23	0.0.82-1.85
No	1.00		1.00	
Type of neighbourhood				
Rural	1.66	0.83-3.34	1.38	0.73-2.60
Urban	1.15*	1.08-1.98	0.96	0.55-1.61
Informal	1.00		1.00	
Province of residence				
Gauteng	1.24	0.73-2.08	0.59**	0.36-0.97
KwaZulu-Natal ®	1.00		1.00	
Alcohol use status				
Uses alcohol	0.88	0.50-1.55	0.63*	0.36-1.03
Do not use alcohol	1.00		1.00	

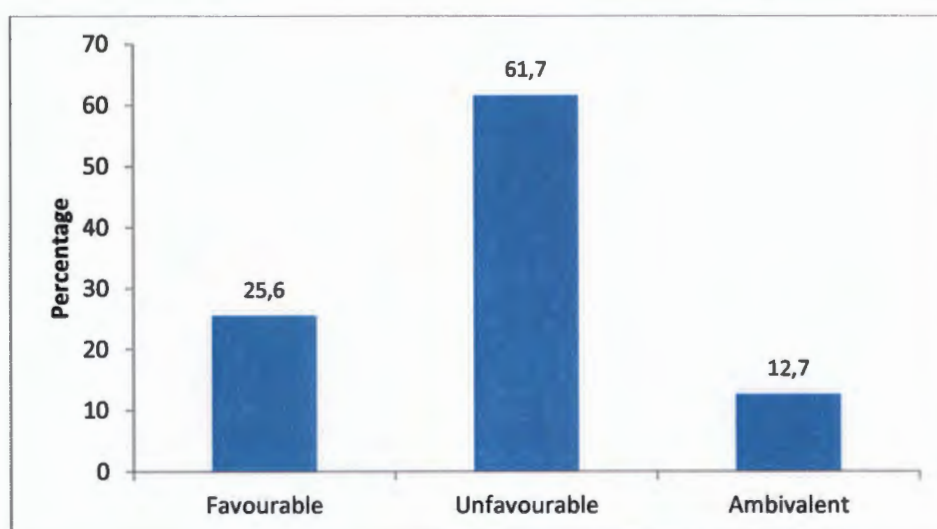
Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; *=included because the subject of investigation is a rare event

6.4.2 Attitude to revenge

In this study, the respondents were asked to report their attitudes to revenge violence by asking them to report attitudes to the statement that "It is alright to avenge the violent

death of a family member or a close associate.” The attitudes were measured by a three scale response, namely favourable, unfavourable and ambivalent attitudes. The results of the assessment are presented in Figure 6.2, indicating that more than one-quarter and 6 in 10 of the respondents had a favourable or an unfavourable attitude to avenging the killing of a family member or close associate, respectively. Only 12.7% of the respondents were ambivalent to the statement that “it is alright to avenge the violent death of a family member or a close associate.”

Figure 6.2 Distribution of respondents by attitudes towards revenge



6.4.2.1 Differentials in attitudes to revenge violence by selected demographic factors

As expressed earlier, revenge appears to be a universal human trait, regardless of its cause and cost to the actual or potential perpetrator. However, the prevalence of a favourable attitude to revenge is assumed to vary, according to the individual characteristics of the respondents, which are presented in Table 6.5. The main hypothesis being tested in this analysis is “individuals who know a victim of or have experience of –

witnessed— a violent death of a family member, or close associate, are more likely than individuals who do not have experience of violent deaths to have a favourable attitude towards the possession of weapons.” This implies that experience of violent death is an independent predictor of a favourable attitude to revenge violence; and this may attenuate the effect of other characteristics of the respondents on their attitudes to revenge. Previous studies on the experience of violent behaviour suggest that individuals who have experienced violent behaviours are more likely than those who have not, to have retaliatory attitudes (Goetting, 1989). The results presented in Table 6.5 shows that 37.9% and only 24.7% of respondents with an experience of a violent death and no experience of violent death of a family member or close associate, respectively, expressed a favourable attitude towards revenge violence. The result showed that exposure to violent death is significantly associated with a favourable attitude to revenge violence at $p < 0.0001$.

Sex is one of the factors that influences revenge violence. A previous study found that generally, males are more likely to take revenge than females (Stuckless & Goranson, 1992) because of their greater propensity for violence and aggression than females. A study by (Cota-McKinley, et al., 2001) found that males are more accepting of vengeful attitudes. In this study, we examined the differentials in favourable attitudes to revenge violence by sex. The results presented in Table 6.5 show that females were more likely than males to have reported a favourable attitude to revenge. The results show that more than one quarter (26.1%) and 25.1% of the male and female respondents, respectively, expressed favourable attitudes to revenge.

However, despite the difference observed, the result did not reveal any significant association between sex and the attitude to revenge violence.

Furthermore, age is an important determinant of vengeance. The study by Cota-McKinley et al. (2001) found that vengeance attitudes decreased with age, which is consistent with the observations by (Björkqvist, et al., 2000), which showed that the susceptibility to aggressive behaviour decreased with increasing age. This implies that the desire to avenge and retaliate is predominantly prevalent at younger ages, than at older ages.

In Table 6.5, the findings on the differentials in favourable attitudes to revenge violence by age are presented. The result agrees with the above studies that favourable attitudes to revenge violence are higher at younger ages. A favourable attitude to revenge is more prevalent among the less than 25 years age group (32.2%), followed by those in the 25-34 years age group (23%) and the 35-44 years age group (22.9%). Only 16.6% of the respondents aged 45 years or older expressed a favourable attitude to revenge. The finding shows that age is significantly associated with attitude to revenge at $p < 0.0001$.

The result suggests that as people grow older, they become less impulsive and less aggressive; and they are better able to control their anger and emotions over the violent death of a family member or a close associate.

Table 6.5 Distribution of attitudes to avenging death of a family member by demographic characteristics

Characteristics	Agree	Disagree	Ambivalent	Number	X2
Deaths in household					
Natural or no deaths	24.7	62.2	13.2	1224	9.85, p<0.01
Violent deaths	37.9	55.8	6.3	95	
Sex					
Male	26.1	59.7	14.2	641	3.48, p<0.175
Female	25.1	63.8	11.1	678	
Age group					
<25	32.2	54.1	13.7	577	37.03, p<0.000
25-34	23.0	62.2	14.7	278	
35-44	22.9	69.1	8.0	175	
45+	16.6	72.0	11.4	289	
Population group					
Black	26.1	61.8	12.1	1214	5.06, p<0.08
Others	20.0	61.0	19.0	105	
Household size					
1	9.7	73.9	16.4	165	87.11, p<0.000
2-3	24.6	52.6	22.8	378	
4-6	29.0	62.2	8.9	497	
7+	30.5	65.9	3.6	279	
Total	338	814	167	1319	

Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; *=included because the subject of investigation is a rare event

Differentials in the attitude to violence and revenge over the death of a family member or a close associate were also examined, according to the population group. A number of previous studies have reported a strong association between violence and race relations. Most of these have focused more on pitting whites against black and *vice versa* (Harris & Radaelli, 2007). In South Africa, the period of apartheid strongly pursued a racially violent agenda, during which reprisal violence among blacks and whites for perceived or actual transgressions was widespread – especially in the industrial and mining regions (Breckenridge, 1998a; Breckenridge, 1998b).

Revenge and retribution were also widespread among blacks – pitting black groups against each other in the four years leading to the democratic transition in 1994. For some, during these four short years, South Africa suffered an unprecedented inter- and intra-community reprisal violence of both an ideological and a criminal nature (Walker, 2005).

In this section, the differentials in attitude to revenge were examined by population groups and the results are presented in Table 6.5, showing that compared to other population groups, which comprised Coloureds, Whites and Asians (20%), favourable attitudes to revenge violence were more prevalent among the black population (26.1%). However, the result shows that population groups and revenge violence were weakly significantly associated at $p < 0.08$.

Regarding differentials, according to household size, no studies that examined household size and the differentials of revenge were found in the literature. However, anecdotal evidence obtained from access to social support in the form of having other members to

help at the time of trauma, suggests that individuals who have other people to turn to for support are less likely to desire vengeance than people with no, or fewer, members to turn to for support (Briere, 2006; Briere & Jordan, 2009). The results presented in Table 6.5 show that favourable retaliatory or revenge-violence attitudes increased inversely with the household size. Larger households reported favourable attitudes to revenge than smaller households. Slightly more than 3 in 10 respondents in the largest households (7 or more members) reported favourable attitudes than only 10% of households with only one member. The results suggest that larger households act as social capital; and that this ensures that violence against its members can be punished. The result shows that household size is significantly associated with attitudes towards revenge at $p < 0.0001$.

6.4.2.2 Differentials in attitudes to revenge by socio-economic and behavioural factors

In this section, the socio-economic and behavioural effects of the respondents on attitudes to revenge were examined. The variables examined included religious affiliation, marital status, type of neighbourhood, highest level of education and employment status. Also examined were having a regular source of income, the province of residence and the alcohol-use status. The results of the analysis are presented in Table 6.6.

Throughout human history, religion has played a key role in inter- and intra-group violence. It has been used to build and sustain nation states; and in the contemporary world, it continues to play a key role in defining the relationships between competing ideologies. In these ideological rivalries, religion has been used to moderate the extent of violence, to promote violence and also retaliatory violence in the process of achieving ideological, as well as material superiority and goals (Thomas, et al., 2005). At the

interpersonal level, a study among the Waorani of eastern Ecuador, a society with one of the highest rates of homicide, suggested it took the conversion to Christianity to end the vicious cycle of revenge killings in that society (Beckerman, et al., 2009; Boster, et al., 2003).

In this study differentials in attitudes to revenge by religion were examined and the results are presented in Table 6.6. The table reveals that the religious affiliation of the respondents did not influence their attitudes towards revenge violence. However, the results showed that more respondents (27.1%) affiliated to other religions expressed favourable attitudes towards avenging the violent death of a family member, or that of a close associate, than was the case for Christians (25.1%), who were the majority in the study population.

Violence, including lethal and non-lethal forms is a common feature in marital and non-marital relationships. The prevalence of intimate-partner violence varies by marital status and sex. A previous study found that the prevalence of intimate partner violence, regardless of its form, is the highest among divorced or separated couples, followed by never-married couples; and it was the lowest among the widowed (Rennison, 2001).

Another study found that the violence rates are highest among cohabiting couples, than amongst other form of marital status. In South Africa, Jewkes and colleagues observed that marital violence, in which women are the victims is common; and this is an expression of power relations (Jewkes, et al., 2009). Despite having sufficient literature on violence in relationships, we have not been able to find literature on explicit revenge violence associated with marital status. In this chapter, we have, therefore, examined the

differentials in the attitude to revenge violence by marital status; and the results are presented in Table 6.6. The results showed that with nearly 3 in 10, the prevalence of favourable attitudes to revenge was higher among the never-married respondents, followed by the currently married respondents (23.7%). Only 16.5% of the formerly married (widowed, separated, divorced) respondents expressed favourable attitudes to revenge violence for the killing of their loved ones.

The results revealed that marital status and attitudes to revenge violence are significantly associated at $p < 0.01$.

Neighbourhoods are known to impact on the prevalence and the nature of violence and retaliatory behaviours. The impact of neighbourhoods on the incidence of violence can best be explained by the theory of social capital. The theory was first used by Shaw and McKay to investigate spatial differences in crime rates; and they found that crime rates were more prevalent in neighbourhoods where the institutions of social control were weak; and consequently, the social-capital effect attributed to these institutions could not prevent crime (Sampson, 1987; Sampson, et al., 2005).

In this study, the association between the type of neighbourhoods and revenge violence was examined; and the results are presented in Table 6.6, showing that favourable attitudes towards revenge violence were more prevalent in rural neighbourhoods (29.2%) followed by informal settlements (28.4%). Conversely, fewer respondents in urban neighbourhoods expressed favourable attitudes to revenge violence. The type of neighbourhoods was found to be significantly associated with the attitudes to revenge violence at $p < 0.05$.

Furthermore, Table 6.6 presents the differentials in favourable attitudes to revenge violence, according to the highest level of education. Although we have not been able to find literature on the impact of education on revenge, anecdotal evidence suggests that violence-induced revenge is more prevalent among people with no or low levels of education. This assertion is justified by previous studies on violence in developing countries, which found that education is an important moderating variable in interpersonal violence (Jewkes, et al., 2009; Jewkes, et al., 2002).

In this study, the differentials in revenge violence were examined, according to the level of education; and the results are presented in Table 6.6. The table shows that, as expected, the prevalence of revenge violence decreases, as the level of education increases in this study population. More respondents without any education (32.8%) followed by those with primary education (29%) expressed favourable attitudes to revenge violence. Conversely, only 21.4% and 21.7% of respondents with secondary and tertiary education expressed favourable attitudes to revenge violence.

The level of education was found to be significantly associated with revenge violence at $p < 0.0001$.

Table 6.6 Distribution of attitudes to violent revenge by socio-economic and behavioural characteristics

Characteristics	Agree	Disagree	Ambivalent	Number	X2
Religious affiliation					
Christian	25.1	63.2	11.7	965	4.30, p=0.116
Others	27.1	57.6	15.3	354	
Marital status					
Currently in union	23.7	3	15.0	452	14.46, p<0.01
Formerly married	16.5	4	10.1	139	
Never in union	28.6	8	11.7	728	
Type of neighbourhood					
	29.4	61.0	9.6	405	10.14, p<0.05
Rural	22.7	63.0	14.2	717	
Urban	28.4	58.4	13.2	197	
Informal					
Highest level of education					
	32.8	46.7	20.6	287	46.10, p<0.0001
No education	29.0	61.7	9.3	300	
Primary	21.4	67.3	11.3	663	
Secondary	21.7	71.0	7.2	69	
Tertiary					
Employment status					
Unemployed	28.9	57.5	13.6	941	25.57, p<0.0001
Employed	17.5	72.2	10.3	378	
Have a regular income					
	22.5	66.5	11.0	746	16.58, p<0.0001
Yes	29.7	55.5	14.8	573	
No					
Province of residence					

Gauteng	24.5	56.8	18.7	257	10.52, p<0.005
KZN	25.9	62.9	11.2	1062	
Alcohol-use status					
Uses alcohol	26.9	61.3	11.815.5	297	5.49, p=0.064
Does not use alcohol	21.2	63.3	15.5	1022	
Total	338	814	167	1319	

Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; *=included because the subject of investigation is a rare event

The types of profession, or the employment to which individuals belong, have been found to be an important situational predictor of violent behaviour (Kerr, et al., 2006). From these and other studies, it is possible to predict that violent revenge could be predictably higher among unemployed individuals than among employed individuals. This is expected because of the differences in the availability and the nature of regulatory mechanisms that guide and influence behaviour between the two groups.

In this regard, the differences in the prevalence of violent revenge were examined between unemployed and employed individuals; and the results are presented in Table 6.6. The table shows that the prevalence of favourable attitudes to revenge violence was higher among unemployed (28.9%) than among employed individuals (17.5%).

Furthermore, the differential of violent revenge was also examined by the income status of the respondents. The results presented in Table 6.6 show that with nearly 3 in 10, the prevalence of a favourable attitude to revenge violence was higher among individuals with a regular source of income, than among people without any regular source of income.

The results also show that both employment status and regular source of income status were significantly associated with revenge violence in this study population at $p < 0.0001$.

Globally, large metropolises, and other areas with large and diverse populations, are known to have higher prevalence of violent crimes. This phenomenon has been attributed to the failure of the systems of informal social control, as an important item of social capital (Laubscher, 2005). Homicide is the most important form of violent crime common in metropolises; because it is an indicator of safety and security. Examining the homicide rate in particular, and other violent crimes in general, in Gauteng and KwaZulu-Natal provinces is important; because they are not only the most populous, but also important destinations for the large rural-urban migration flows of predominantly young people looking for work.

Revenge violence is one of the unreported causes of homicide or attempted homicide in South Africa. In this regard, the present study has examined the differentials in attitudes to revenge violence in KwaZulu-Natal and Gauteng provinces; and the results are presented in Table 6.6. The table shows that favourable attitudes to revenge violence were higher in KwaZulu-Natal (26.9%) than in Gauteng (21.5%). The table also shows that the province and attitudes towards revenge violence were significantly associated at $p < 0.01$.

The relationship between alcohol consumption and violence has been reported in a number of studies. These studies have found that alcohol consumption increases the risk of all forms of interpersonal violence (Goodman, et al., 1986; Collins & Messerschmidt, 1993). A number of them have also noted that violent behaviour after alcohol consumption, especially by men against women, is premeditated because of the

perception that it is culturally and socially expected (Abrahams, et al., 2009). Such behaviours are expected to apply – even in the context of revenge violence. Although knowledge on the effect of alcohol consumption on violent behaviour is widely known, its effect on vengeance as a specific form of violence has remained relatively unknown. In this study, we have examined the differential effect of alcohol consumption on revenge violence; and the results are presented in Table 6.6. The table shows that favourable attitudes to vengeance are more prevalent among people, who reported that they consumed alcohol (26.3%), than among people who said they do not consume alcohol (21.9%).

The results show that alcohol consumption is weakly and significantly associated with the attitude to revenge violence at $p=0.064$.

6.4.2.3 Predictors of favourable attitudes to revenge violence

The multinomial logistic-regression model (Table 6.7) was used to identify the predictors of favourable attitudes to revenge violence. In the model, having an ambivalent attitude was used as the reference category; and it was compared with having favourable and unfavourable attitudes to revenge violence. The model fit test revealed that the -2 likelihood ratio test is 33.02; the chi-square test is 6.70; and the $p<0.05$. This indicates that the model was a good fit. The results of Model 1 are presented in Table 6.7, showing that the respondents were 69% times ($OR=1.31$, $p<0.01$) significantly more likely to have had a favourable attitude to revenge violence if they had experienced a violent death of a family member or a close associate.

Additionally, the respondents who had experienced the violent death of a family member or associate were 46 times more likely to have had an unfavourable attitude to revenge violence. Consequently, the experience of violent death was not a significant predictor of an unfavourable attitude to revenge violence.

Table 6.7 Unadjusted multinomial logistic-regression model showing Odds Ratios of experience of violent death on favourable and unfavourable attitudes to revenge violence

Covariate	Attitude towards revenge violence			
	Favourable vs Don't know		Unfavourable vs Ambivalent	
	OR	95% CI	OR	95% CI
Experience of violent death	1.31**	0.13-0.76	1.54	0.23-1.26
No violent death	1.00		1.00	

Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; *=included because the subject of investigation is a rare event

From the results in Model 1, we can confirm the hypothesis that individuals who know a victim of or have experience of – *witnessed*– a violent death of a family member, or that of a close associate, are more likely, than individuals who do not have experience of violent deaths, to have favourable attitudes towards revenge violence.

The results of Model 2 present all of the variables that were significantly associated with favourable attitudes to revenge violence at the bivariate analysis were entered in the model. The results of the model fit test revealed a -2 likelihood ratio test of 3070.31; chi-square of 362.65; and $p < 0.0001$. The model results are presented in Table 6.8. The

results revealed that the effect of the experience of a violent death of a family member or a close associate (OR=1.30, 0.12-0.76) did not change; and this remained a significant predictor of a favourable attitude to revenge violence, after controlling for the effect of all other covariates.

The results also show that the experience of violent death is an independent predictor of a favourable attitude to revenge violence. However, although the respondents were 1.53 (CI=0.22-1.30) times more likely to have had unfavourable attitudes to revenge violence, the experience of the violent death of a family member, or a close associate was not a significant predictor of an unfavourable attitude to revenge violence after controlling for the effect of all other covariates.

The results, therefore, confirm the hypothesis that “individuals who know a victim of or have experience of – *witnessed*– a violent death of a family member or close associate, are more likely than individuals, who do not have the experience of violent death of a family member or close associated to have had a favourable attitude towards revenge violence after controlling for the effects of other explanatory variables.

Table 6.8 also presents the results of the control factors that predicted favourable attitudes to revenge violence. The table shows that being male (OR=1.45, $p<0.05$), belonging to the <25 (1.76, $p<0.05$) and 35-44 years age group (OR=2.06, $p<0.01$) and being African (OR=1.96, $p<0.05$) significantly increased the likelihood of having had a favourable attitude to revenge violence. Having no education also significantly increased (OR=1.24, $p<0.05$) the likelihood of having a favourable attitude to revenge violence. Conversely, being currently married (OR=0.60, $p<0.01$) significantly reduced the

likelihood of having a favourable attitude to revenge violence. Additionally, the respondents were also significantly less likely to have had a favourable attitude to revenge violence if they had at least a primary level of education (OR= 0.49, $p<0.05$).

Regarding having an unfavourable attitude to revenge violence, the results in Table 6.8 show that the respondents were significantly more likely to have had an unfavourable attitude to revenge violence if the respondents were aged 35-44 (OR=1.16, $p<0.05$) and had primary education (OR=1.13, $p<0.001$). Conversely, having an unfavourable attitude to revenge violence was significantly less likely; if the respondents were aged <25 years (OR=0.39, $p<0.01$) and 25-34 years old (OR=0.50, $p<0.05$); were married (OR=0.62, $p<0.05$); lived in Gauteng province (OR=54, $p<0.01$); and had no education (OR=0.43, $p<0.05$).

Table 6.8 Adjusted multinomial logistic-regression model showing Odds Ratios for factors predicting favourable and unfavourable attitudes to revenge violence

Covariates	Attitude to revenge violence			
	Favourable vs Ambivalent		Unfavourable vs Ambivalent	
	OR	95% CI	OR	95% CI
Experience of deaths				
Violent deaths	1.30**	0.12-0.76	1.53	0.22-1.30
Natural/no deaths ®	1.00		1.00	
Sex				
Male	1.43*	1.07-2.28	1.56	0.95-2.15
Female ®	1.00		1.00	
Age groups				
<25	1.79*	1.41-3.53	0.39**	0.22-0.71
25-34	2.06**	1.45-4.60	0.50*	0.28-0.89
35-44	1.76	0.92-2.85	1.16*	1.56-2.38
45+ ®	1.00		1.00	
Population Group				
Blacks	1.96*	1.91-4.51	1.89	0.98-3.65
Others ®	1.00		1.00	
Religious affiliation				
Christian	0.69	0.41-1.15	0.80	0.50-1.29
Other ®	1.00		1.00	
Marital status				
Currently in union	0.60**	0.38-0.95	0.62**	0.41-0.95
Formerly in union	0.86	0.39-1.87	1.65	0.84-3.26
Never in union ®	1.00		1.00	
Province of residence				

Gauteng	0.67	0.40-1.11	0.54**	0.34-0.85
KwaZulu-Natal ®	1.00		1.00	
Level of education				
No education	1.24*	0.07-0.77	0.43**	0.04-0.38
Primary	0.49*	0.15-1.59	1.13***	0.43-0.15
Secondary	0.39	0.13-1.18	0.49	0.18-1.33
Tertiary®	1.00		1.00	
Have a regular source of income				
Yes	1.09	0.68-1.75	1.22	0.79-1.89
No®	1.00		1.00	
Alcohol-use status				
Uses alcohol	0.96	0.53-1.74	1.26	0.75-2.14
Does not use alcohol®	1.00		1.00	

Level of significance: * <0.10; **<0.05; *** <0.01; ****<0.001; *****<0.0001; OR=Odds Ratio; CI=Confidence interval; *=included because the subject of investigation is a rare event

6.5 Summary

Overall, the study found that although the attitude to the possession of weapons was predominantly unfavourable, a large proportion of the study population has a favourable attitude towards the ownership of weapons – primarily as a means of protection. In this regard, the favourable attitude towards the possession of weapons appears to be the direct response to the increasing level of vulnerability in South African society. The high prevalence of violent crime and the high homicide rates in South Africa attest to the high perception of vulnerability. The male preponderance of favourable attitudes to the possession of weapons is also consistent with the view that men, as protectors of the

family, may feel obliged to possess a weapon in the face of the high rate of violent crime in South Africa. The higher likelihood to positive attitudes towards the possession of weapons by Africans compared to other races is expected. The high level of violence and homicide rates among Africans, than any other population group, make favourable attitudes to the possession of weapons inevitable. For the African, the possession of weapons is a symbol of power, freedom and entitlement, of which they were deprived under decades of apartheid.

However, disapproval towards the possession of weapons by Africans, the young and the married is also important here; as it is an indication of their consciousness of the danger of weapons proliferation in a society that is already far too violent. The unfavourable attitude could have been the effect of weapon-control legislation, now in force, more than the ability of security agencies in controlling violent crime in South Africa.

Additionally, violence can have a profound impact on the families and friends of the victims, as well as on their communities; and this could lead to having a favourable attitude to and enacting revenge violence. This explains why revenge is a universal human trait; and it is often enacted in settings, where violence is prevalent. The study found that overall, attitudes to revenge violence are not favourable; but a significant proportion of the study population reported having a favourable attitude to revenge violence, in response to the killing of a family member, or a close associate.

A favourable attitude to revenge violence was characterized by sex, age, racial group and educational level of the study's respondents.

Although some of the findings of this study are consistent with some previous studies on the possession of weapons and revenge violence, the results could have been influenced by some limitations. One of these is the disproportionately high African respondents compared to other races. The data used in this chapter are based on the violent-death data. This is always a past event; and, therefore, could not provide a large sample. In this regard, the sample did not have statistical power to enable comparison by racial groups, which could have influenced the findings on racial differences in attitudes to the possession of weapons and revenge violence.

The cross-sectional nature of the study was also a limiting factor, in that it only provided data on the attitudes at the time of the study, which could have changed over time. Nevertheless, the study was able to identify some of the predictors of favourable attitudes towards the possession of weapons and revenge violence in the population. The results suggest that these attitudes in part influence the high prevalence of violent death victimization in South Africa.

Chapter Seven

Summary of key findings, discussion of findings, conclusion and recommendations

7.1 Introduction

This chapter presents the summary of the main findings and a discussion of the results of the study. Also presented are the main knowledge and programme implications of the study and recommendations and areas for further research. First of all, the study on the dynamics of violent death and community attitudes to violent beliefs and behaviours was justified by the high number of deaths, due to violence and the paucity of knowledge on individual, relationship and community-level factors influencing the prevalence of and predictors of VDV in South Africa, where the problem of violence and violent-death victimization has more or less become an “epidemic”; and therefore, a matter of grave public health and public-security concern.

This is because violence in general, and violent deaths in particular, impede the attainment of most SDG. Violence in South Africa that has led to death is manifested in various forms. These include child maltreatment, domestic violence, intimate-partner violence, youth-gang violence and violent crimes, such as murder, homicide and robbery.

Apart from the large number of premature deaths and injuries, violence impacts negatively on population productivity, because of the fear it imposes and the changes it causes to population lifestyles and to the patterns of activity over the life course, which affects population years of productive engagement in development activities. In populations, where violence and VDV are high, the most productive years of life usually in the 15-49 years age range, are wasted by the impacts of violence. Violence, especially

in developing countries, also costs these countries billions of dollars each year in health care and law enforcement; and violence slows down economic growth; as it erodes personal and collective security in those countries in which it is prevalent. The realization of the negative impacts of violence has led to the inclusion of three goals in the new SDG. These goals are to: (1) reduce the number of people killed, or physically harmed by violence; (2) reduce the number of people and groups affected by violence and; (3) strengthen institutional responses to prevent and reduce violence, wherever they may occur.

The high prevalence of violent deaths in South Africa in general and Gauteng and KwaZulu-Natal in particular, which are the two largest provinces in terms of population size and Gross Domestic Product (GDP) of South Africa occur against the backdrop of policies created to reduce violence and mitigate its impacts. The failure of these policies suggests inadequacies in understanding the dynamics of violence and community attitudes to violent beliefs and behaviours in South Africa. In this regard, the present study addressed the following specific objectives:

- v. To assess the prevalence, patterns and trends of violent-death victimization in South Africa, focusing on Gauteng and KwaZulu-Natal, by using administrative records from the Civil-Registration System;
- vi. To assess the prevalence of violent-death victimization in Gauteng and KwaZulu-Natal by using community-level household data on decedents;
- vii. To use the Social-Ecological Model (SEM), as a theoretical model to examine and identify the factors that may influence violent-death victimization in Gauteng and KwaZulu-Natal provinces; and

- viii. To use the Experiential Learning Theory (ELT) as a theoretical model to examine the community attitudes to violent beliefs and behaviours and to identify their predictors in Gauteng and KwaZulu-Natal provinces.

7.2 Key study findings

The study on the violent death and its predictors has several findings that inform our understanding of violent-death victimization and community attitudes to violent beliefs and behaviours in South Africa. These findings can best be summarized into two main sections. The first are on the dynamics of violent-death victimization in South Africa in general, and in Gauteng and KwaZulu-Natal in particular; while the second are on the community attitudes to violent beliefs and behaviours in Gauteng and KwaZulu-Natal.

Accordingly, the main findings for each of these major themes are presented below.

7.2.1 Violent-death victimization

The analysis, based on the Vital-Statistics System data, revealed that VDV in South Africa as a whole and Gauteng and KwaZulu-Natal in particular were consistent with the results of the community-level household survey in Gauteng and KwaZulu-Natal. Overall, the findings indicate that VDV, nearly 30%, is prevalent in South Africa, and in Gauteng and KwaZulu-Natal. The findings also show that the SEM is an appropriate theoretical paradigm for examining and assessing the patterns, differentials and predictors of VDV in Gauteng and KwaZulu-Natal provinces. Specifically, the study identified a number of individual, relationship, community and societal-level factors that predict VDV in South Africa in general and Gauteng and KwaZulu-Natal provinces, in particular.

Among the individual level factors, the study found that:

- Violent-death victimization at both national and provincial levels was significantly higher among male decedents than among female decedents; and these findings are consistent with the findings of previous research conducted elsewhere. However, the likelihood of being decedents of VDV was higher among males than females; and in KwaZulu-Natal province than in Gauteng province.
- Regardless of sex, the study found that the prevalence of VDV at both national and provincial levels decreases with the increase in age of the decedents at death.
- Violent-Death Victimization was also more prevalent in the younger age groups than in the older age groups. However, the risk of VDV was higher in Gauteng province at all age groups than in KwaZulu-Natal province.
- Compared to the decedents of other racial groups, VDV was significantly more prevalent among the black population in Gauteng province and KwaZulu-Natal province, regardless of sex. However, at the national level, VDV among the non-black population was higher among female decedents than among male decedents.
- At the national level, the results show that among male decedents, VDV was less likely among decedents without any education. However, among females, compared to decedents with secondary education, those with no, primary and secondary education significantly experienced lower levels of VDV.
- At the provincial level, although education was a significant predictor of VDV among decedents in both Gauteng and KwaZulu-Natal, the likelihood of VDV was higher for decedents in Gauteng province at all levels of education than in KwaZulu-Natal province.

- The study also found that although the consumption of alcohol was a significant predictor of increased VDV among decedents in Gauteng and KwaZulu-Natal provinces at both unadjusted and adjusted logistic-regression models, drug use was only a significant predictor among decedents of the unadjusted logistic-regression model.

Among the relationship-level factors, the results of the study at both bivariate and multivariate levels show the following:

- The results, based on the Vital Statistics-System data found that being never married, followed by being married or cohabiting, significantly increased the likelihood of VDV for both males and females. A comparison between male decedents and female decedents for both the never married, and among those currently married or cohabiting, showed that VDV was higher among males than among females in South Africa. Furthermore, comparison between Gauteng and KwaZulu-Natal provinces showed that VDV for the never married and the married and cohabiting decedents was higher in KwaZulu-Natal province than in Gauteng province.
- Conversely, when the data at the community level were used, the results revealed that there was no significant association between marital status and VDV.
- Additionally, the study found that among the relationship-level factors, belonging to the drug sub-culture group was a significant predictor of increased risk of VDV at both the unadjusted and adjusted logistic models.

At the community and societal-level factors, the results based on the community level survey presented in Chapter five revealed that:

- Violent-death victimization was significantly more likely for decedents living in urban areas at both the unadjusted and adjusted logistic-regression models. However, the risk of VDV increased for decedents in urban areas, after controlling for the effects of all other covariates.
- The community perception of crime was also found to predict the likelihood of VDV. Compared to communities, where community members were ambivalent towards the level of crime, the likelihood of decedents dying of violence was significantly higher in communities, where the crime was perceived to be a way of life. This implies that where communities believed that crime levels were high, the level of VDV was also high.
- The study also found that the risk of decedents dying of VDV was elevated if the study respondents believed that it is acceptable to use violence to get what one wants.

7.2.2 Community attitudes to violent beliefs and behaviours

In this section, the findings on community attitudes to violent beliefs and behaviours are presented. The findings are based on community-level data collected for this study; and they are divided into two attitudes towards the possession of weapons and the attitudes towards revenge violence. The study findings on attitudes towards the possession of weapons show that:

- More than 64.1% of respondents reported unfavourable attitudes to the possession of weapons; and over one quarter of the respondents reported favourable attitudes to revenge violence.
- However, the study also found that individuals who know a victim of; or have experience of – *witnessed*– a violent death of a family member or close associate, were significantly more likely than those who had not experienced violent deaths to have favourable attitudes to the possession of a weapon. In this regard, the study confirmed that having the experience of violent death is a predictor of increased favourability towards the possession of weapons.
- Among the control factors, the study found that being male was a significant predictor of having increased favourable attitudes to the possession of weapons. Being a black was also found to be a significant predictor of increased favourability towards the possession of weapons in the study population at both the unadjusted and adjusted logistic-regression models.
- Conversely, the study found that being a young adult aged <25 years of age, 25-34 years of age, currently married and having no or primary education were significantly less likely predictors of having favourable attitudes to the possession of weapons.
- The study also found that, despite the high level of VDV experiences in Gauteng province and among decedents who consumed alcohol, the study results found that residing in Gauteng and alcohol consumption were significantly less likely predictors of favourable attitudes towards the possession of weapons than

in KwaZulu-Natal province, and among consumers who did not consume any alcohol.

Regarding the attitudes of respondents to revenge violence, the study found that:

- Over 6 in 10 of the respondents reported an unfavourable attitude to revenge violence. However, over 25% of the respondents reported favourable attitudes to revenge violence.
- The study also found that individuals who know a victim of, or have experience of
 - *witnessed*— a violent death of a family member or close associate, were significantly more likely than individuals who did not have any experience of violent deaths to have favourable attitudes to revenge violence. In this regard, the study confirmed the hypothesis that attitude to revenge violence was more likely among people who have experienced of violent death.
- Furthermore, the study found that having a favourable attitude to revenge violence was also significantly more likely among males than females; among young adults aged <25 years of age and among young adults aged 25-34 years of age; and among the black population in South Africa. Having no education, or only primary education, was also a significant predictor of having increased favourability to revenge violence.
- Conversely, the study found that among the control factors, being currently married and belonging to the 25-34 year age group were significantly less likely predictors of revenge violence.

7.3 Discussion of the results on the dynamics of violent-death victimization

Violent death is a serious public health problem; and it places a huge burden on the well-being of families, friends and communities of the decedents. It exacerbates fear in communities and places significant pressures on public security, safety and justice systems. The main objectives of this study were to estimate the prevalence of, and investigate the predictors of violent-death victimization in Gauteng and KwaZulu-Natal provinces of South Africa, where the burden of violent crime is high.

The study used the Social-Ecological Model (SEM), which is appropriate for identifying the risk factors that operate at individual, relationship, community and societal levels to predict VDV.

The study found that 29.4% of decedents were victims of violent death, which is just slightly higher than the 28.8% reported for the whole of South Africa by a previous report (STATSSA, 2014). One of the individual-level predictors of VDV was being male. The prevalence of VDV was higher among males than females; and the Kaplan-Meier survival plots show that men experienced VDV at earlier ages than women, which is consistent with the previous studies in South Africa (Abrahams, et al., 2010; Lyons, 2016; Allgulander & Nilsson, 2000). The higher prevalence of violent death among men has been attributed to the higher propensity for aggression involving mostly strangers and acquaintances alike (Abrahams, et al., 2013) and in their desire and pursuit of domineering behaviours (Kalichman, et al., 2007).

Other studies attributed the higher prevalence of VDV among younger men to risky behaviours, including the excessive consumption of alcohol (Collins & Messerschmidt,

1993). Conversely, most female victims of violent death are perpetrated by people they know, usually spouses or intimate partners (Abrahams, et al., 2013; Abrahams, et al., 2009).

The study further found that VDV was significantly higher among younger adults aged less than 40 years of age, as an individual-level predictor of VDV. This result supports previous evidence from other studies that have reported higher levels of aggression and violence among young people (Otieno, et al., 2015; Kibusi, et al., 2013). These studies argued that the failure to control emotions, the inability to deal with anxiety and the involvement in high-risk behaviours, such as drinking alcohol, using illicit drugs by young adults and the show of power increased the risk of being victims or perpetrators of violence. Routine activities by youths and spending more time outside the home expose them to violence and the risk of homicide victimization (Baron & Hartnagel, 1998; Schreck, et al., 2002; Maimon & Browning , 2010).

Our results confirm the hypothesis that VDV is significantly influenced by age – after controlling for the effects of all the other covariates.

Compared to other races, being a black person was found to be a significant individual level predictor of VDV in this study. The findings agree with those of previous studies in South Africa and in the US; where the risk of homicide as a form of violent death was higher among blacks than other racial groups (O'Flaherty & Sethi, 2010; Leggett, et al., 2002b).

The higher risk of violent deaths among black people in both countries was explained by the structural problems, such as the low level of education, unemployment and poverty,

resulting from historical disadvantages. Blacks in both countries are the least educated, having higher levels of unemployment, employed in low-wage and low-skill inferior occupations and living in sprawling poorly resourced urban settings. These structural conditions place blacks into violent crime; since the conditions handicapped them from pursuing economic freedom (Sampson, et al., 2005; Oliver, 2016); and they suffer the unprecedented inequalities and poverty, which makes life outside the law through violence very attractive (Pridemore & Shkolnikov, 2004). Using the result of the study, we accept the hypothesis that black decedents, regardless of sex, were significantly more likely than other races to have been victims of violence – even after controlling for the effects of other covariates.

Our study also found that the type of residential neighbourhood was a significant predictor of VDV. The study found that living in an urban neighbourhood was a significant community- and societal-level predictor of VDV, which is also consistent with previous studies, which indicated that urbanization is associated with higher levels of violent deaths (Cubbin, et al., 2000). The lack of social capital and structured relationships that regulate behaviour in urban areas could explain the increased risk of VDV in urban areas. The risk of violent deaths in informal settlement neighbourhoods, which are inhabited largely by the unemployed, low educated, poorly serviced populations, was surprising.

It is highly possible that in the case of Gauteng, which is predominantly urban, people in informal settlement neighbourhoods live off the more organized urban and township population through violent crime. The result confirms the hypothesis that urban decedents were significantly more likely to have died of violence than decedents in rural neighbourhoods – after controlling for the effects of other covariates.

Additionally, agreeable attitudes to the statements that “crime is a way of life here” and “it is okay to use violence to get what one wants” are significant societal predictors of VDV that could explain the increased risk of VDV in urban neighbourhoods. The belief that crime and violence are normative in many townships in South Africa has been reported by previous studies and reports. It is also important to note that the majority of people in urban neighbourhoods in South Africa live in these violence-ridden townships.

A study by Schreck and others (Schreck, et al., 2002) attributed the high level of violent crime and delinquency to social disorganization in large urban areas. Park and Burgess also associated criminal activity with “zones in transition”, which are located around and in the inner city centre (Winton, 2004). In the case of South Africa, the concentration of poor people in townships with no or very little and inferior economic opportunities appears to have increased the degree of competition for the scarce available resources – making people resort to crime and violence to achieve individual resource goals for both those who want to get what they want, and those who want to protect what they already have.

The use of alcohol is also a key individual-behavioural factor in creating a violent environment. Our study has found that excessive alcohol use increases the likelihood of violence, which is consistent with the violence expectancy in the context of alcohol – even at home. In South Africa, anecdotal evidence suggests that domestic violence ending in homicide involves acute alcohol use as a catalyst. Our findings are consistent with previous clinical research in South Africa, which found that many victims and perpetrators of violence had high levels of alcohol in their systems (Parry, et al., 2005; Carpenter, 2006). The finding is also consistent with studies elsewhere, which confirm that alcohol is an important factor in homicide victimization among young, never-married and

metropolitan black males in the United States of America (Naimi, et al., 2016). Another study by (Rubanzana, et al., 2015) in Rwanda also found that alcohol consumption similarly increased the risk of homicide victimization for both men and women.

According to Miller and colleagues, victims of violence who consumed alcohol as a coping substance to poverty and the experience of violence, increased their risk of VDV (Miller, 2006). In this regard, therefore, we accept the hypothesis that decedents who consumed alcohol were significantly more likely to have died of violence than decedents who had never consumed alcohol – even after controlling for the effects of other covariates.

The results of this study also show that being a gang member is a significant relationship predictor of VDV. Being a gang member significantly increased VDV in this study population, which is in agreement with the findings of other studies on gang behaviour (Aldridge, et al., 2011). These studies argued that gangs are a high-risk subculture for violence, which increases their risk of violence victimization and perpetration. In South Africa, gang rivalry and VDV are highly influenced by the social structure of gangs and the relative placement of members in that structure.

This implies that it is often the foot-soldiers of gangs who occupy lower-level positions in the structure, who are the victims and perpetrators of VDV. The nature of violence in gangs is also retaliatory or vengeful; in that perpetrators do not act in their own self interest or volition, but rather to that of the group and its standing in neighbourhoods. These levels of violence can be triggered by an event involving an individual gang member during high-risk behaviours, such as the drinking of alcohol, drug use and

trafficking or institutionalized rivalry over territorial control between gang subcultures (Bangerter, 2010; Dixon & Johns, 2001).

Contrary to previous studies in South Africa, which found a positive relationship between poverty, low social status, lack of income and violence (Maimon & Browning , 2010), we found that being unemployed actually reduces the risk of VDV in this study population. Although the reasons for this observation are not clear, it is likely that the unemployed are the main perpetrators of VDV. This is because they earn their livelihood off the gainfully employed, by perpetrating violent crimes, such as armed robberies, car-jacking and contract killing, which are sometimes executed very cheaply. Previous studies in the more-developed countries found that violent crime is prevalent and significantly associated with long-term unemployment among young people (Nordin & Almén, 2017; Fougère, et al., 2009).

In this regard, we reject the hypothesis that VDV is more likely among unemployed than employed people in Gauteng and KwaZulu-Natal provinces – even after controlling for the effects of other covariates.

7.4 Discussion of attitudes to violent beliefs and behaviours

In societies where violent death victimization is rampant, violent beliefs and behaviours are also common. There are many factors that have been identified to increase the likelihood of having favourable attitudes to violent beliefs and behaviours. One of the objectives of this study was to examine community attitudes to violent beliefs and behaviours. In this regard, attitudes to two forms of violent beliefs and behaviours were

examined; and they include attitudes towards the possession of weapons and revenge violence. In the following sub-sections, the findings on these attitudes will be discussed.

7.4.1 Discussion on attitude to the possession of weapons

A few studies have shown that people adopt a favourable attitude to the carrying of weapons for self-protection in response to the experience of, or threat of, violent victimizations in their communities (O'Brien, et al., 2013; Kleck, et al., 2011; Hemenway & Solnick, 2015). However, to the best of our knowledge, such a study has not been conducted in South Africa; where violence is perceived to be widespread. In this study, we examined the attitudes to the possession of weapons, based on actual or perceived vulnerability to violence victimization. Attitudes to the possession of weapons were assessed by the statement "the possession of weapons makes people feel safe".

The main independent variable was the experience of violent death. We hypothesized that "individuals who know a victim of, or have experience of – *witnessed*– a violent death of a family member or close associate, are more likely than individuals, who do not have experience of violent deaths to have favourable attitudes to the possession of weapons."

Overall, the result shows that the majority of respondents, 6 in 10, had an unfavourable attitude to the possession of weapons. Only just over one-quarter of the respondents reported a favourable attitude to the possession of weapons. The question is, therefore: What characterizes having a favourable or an unfavourable attitude to the possession of weapons, and why? Historically, weapon possession was valued for various reasons including self-defence, sports, hunting and ceremonial purposes. However, the escalation



of the level of violent criminal events appears to have focused on having a favourable attitude to the possession of weapons, for one purpose: self-defence.

In this study, the unadjusted and adjusted multinomial logistic-regression model results confirmed that individuals who know a victim of or have had experience of – *witnessed*– a violent death of a family member or close associate, were more likely than individuals who do not have any experience of violent deaths to have a favourable attitude to the possession of weapons. The result is in agreement with those previous studies that suggested that the possession of a weapon is encouraged for self-protection, the demonstration of power, to enhance one's self-image and confidence in the face of, or the fear of violent victimization (Hemenway & Solnick, 2015; Shepherd & Brennan, 2008).

In South Africa, the firearm Act allows people to possess licensed weapons for various uses – including self-defence.

However, the possession of traditional weapons, such as knives in public is prohibited because they have been used in factional violence and in homicides. Studies in the Western Cape show that the use of firearms and traditional weapons in gang violence which leads to homicide is widespread. Gang members argue that the weapons are intended to protect themselves from violent victimization by other gangs (Seedat, et al., 2009). Our finding is also consistent with those of another study, which suggested that people who possess weapons are those who knew the victims of violence, have been threatened with a weapon usually a firearm, have been victimized with a firearm, or have friends or relatives who possess weapons (Cook et al., 2015).

Our study also found that an attitude to the possession of weapons is significantly more favourable and unfavourable among males than females. From historical accounts, the possession of weapons has mostly been a masculine attitude intended to reinforce masculine identity. The weapons men possess vary from simple walking sticks, clubs, knives and spears among nomadic and pastoral societies to hand firearms and rifles among hunters and warriors. Male obsession with weapons is common in South Africa; and it includes all forms of weapon paraphernalia, including the Assegai of the Zulu's in KwaZulu-Natal, knives among the Xhosa in Eastern Cape, firearms among Coloured gang members in the Western Cape and Whites. Although some of these behaviours were and continue to be cultural, in many instances they were and continue to be used to perpetrate violent crime. The findings of this study are therefore consistent with those of Jones (2013), who found the men are five times more likely than women to own firearms, which was attributed to the differences in the activities of men and women.

In contemporary societies, men favour the possession of weapons for the purpose of perpetrating violent crime at the personal and organizational levels (Blumstein, 2002; Zawitz, 1995). Men also have favourable attitudes to the possession of weapons; because they claim to use weapons to defend themselves and family members against violent victimization by criminals (O'Brien, et al., 2013).

Another predictor of increased favourability towards the possession of weapons was being African, who compared to respondents of other races, significantly reported more favourable attitudes to the possession of weapons. This attitude appears to be inconsistent with traditional African societies, where the possession of traditional

weaponry, such as a walking stick and spears was normative and served ceremonial purposes and prestige, as well as security purposes against wild animals and rarely against other people. Favourable attitudes to the ownership of weapons have increased all over Africa, including in South Africa, where most weapons, which previously were legally the monopoly of Whites, are now legally accessible to blacks, who use them lawfully – mainly for personal protection.

However, the proliferation of illegal weapons, some of them remnants of anti-apartheid struggles and others illegally brought into the country, or stolen from legal owners and the State security agencies are now in the hands of criminals (Fleshman, 2001). A study by Cock revealed an attitudinal change in favour of firearm ownership by black South Africans – indicated by the increasing number of Africans purchasing firearms after 1994 (Cock, 1997). In this case, the ownership of a firearm may be construed as a sign of power and freedom; and it can improve an individual's social standing. Favourable and unfavourable attitudes of Africans to the possession of weapons as a form of protection were also observed during the civil-rights movements in the United States of America; where the favourable attitude to the possession of weapons by blacks dissipated overtime; but the favourable attitude to the possession of weapons increased among whites, which was motivated by the fear of black people (Kleck, et al., 2011).

Our study also found that the favourable attitude to the possession of weapons was influenced by the type of neighbourhood residence. The study showed that a favourable attitude to the possession of weapons is significantly more likely in urban neighbourhoods than in rural neighbourhoods. This finding is consistent with other studies elsewhere,

which found that the possession of weapons in urban areas is highly defended, because of the widespread violent crime in urban neighbourhoods (Seal, et al., 2014).

In South Africa, crimes involving weapons are more prevalent in urban overcrowded and poor townships occupied mostly by Africans and Coloured populations. These urban townships, which were created by the apartheid social, economic and political system symbolize a history of violence (Kynoch, 2011). In the township neighbourhoods, gang groups that involve children as young as 15 years or younger are common. The most preferred weapon of choice used by these gangs is the hand firearm (De Wet, 2016).

The high level of violence in these urban townships, therefore, greatly contributes to a favourable attitude to the possession of weapons.

Contrary to our expectations, favourable attitudes to the possession of weapons was significantly less likely among younger age groups, thereby implying that favourable and unfavourable attitudes to the possession of weapons is more likely among the older age groups. The finding is inconsistent with the higher prevalence of violence perpetrated by young people, and by a previous study in the United States of America, in which many young people reported a favourable attitude to and the actual possession of a weapon mainly for protection (Carter, et al., 2013). This suggests that the level of vulnerability was perceived to be high by young adults.

However, our finding agrees with that of another study on firearm control, which found that favourable attitudes towards weapon ownership was more prevalent among older adults aged 50 years or older firearm-owners, and those who did not own firearms alike.

The low prevalence of violence and crime involving older people in South Africa suggests that the favourable attitude expressed by older people is in support of the legal possession of weapons.

A study by Pederson and colleagues on attitudes towards firearm ownership was more favourable among older Whites aged 50 years or older, than among young Whites (Pederson, et al., 2015). Earlier studies by Steidley attributed the favourable attitudes to the possession of weapons by older White people to the desire to protect themselves (Steidley, 2016). The carrying of concealed weapons by older adults in public spheres is an indication that older people feel more susceptible to violent victimization; and they, therefore, need personal protection – even in public places.

The study found that a favourable attitude to the possession of weapons is less likely among currently married couples. This finding tacitly supports the view that ownership of weapons, such as a firearm by a couple has been found to be one of the factors increasing fatalities during domestic violence. A study by Kellerman and others found that the presence of a firearm in a household increased the risk of domestic homicide by 3 times and more than 8 times when the offender was an intimate partner (Kellermann, et al., 1993). In most such homicides, the victim is a woman. In South Africa, firearm ownership, whether legally or illegally, is a preserve of men who consider it as a means of demonstrating manhood (Abrahams, et al., 2010).

Considering that South Africa has one of the highest rates of domestic violence, in which women are often the victim (Abrahams, et al., 2013), the finding of low favourable and

unfavourable attitudes to the possession of weapons by married couples could reduce the number of marital homicides in the study population.

7.4.2 Discussion on attitudes to revenge violence

Revenge has been described by a number of studies as a universal human trait and considered to be a pervasive and justified response to injustice (Schumann & Ross, 2010). Revenge violence has also been found to be common in societies; where violence is prevalent. Attitude to revenge violence in South Africa, where violent victimization is prevalent, is still unknown. We, therefore, investigated favourable and unfavourable attitudes to revenge violence by examining the hypothesis that “individuals who know a victim of or have experience of – witnessed – a violent death of a family member or close associate, were more likely than individuals who do not have any experience of violent deaths to have a favourable or unfavourable attitude to revenge violence.”

The finding shows that the majority of the respondents, nearly 62%, did not have a favourable attitude to revenge violence; and just over one quarter of the respondents reported having favourable attitudes to revenge violence. The finding shows that revenge violence is not as prevalent in the study area, as was previously believed. The finding also agrees with those of Schumann and Ross (2010), who argued that revenge is more often desired than enacted. They coined the term “revenge in the heart” was a common response to people who had experienced violence, disputes and disappointments. Regardless of the relatively low favourability to revenge violence leads, it is an important factor in perpetuating the cycle of violence in society; and it could explain the high level of inter personal and group violence in South Africa.

The results also show that a favourable attitude to revenge violence is more likely among respondents who had reported an experience of the violent death of a family member, or a close associate. The finding is consistent with a number of studies, which previously found that the propensity to revenge is high in settings where individuals or group members want to avenge transgressions against them, or against their loved ones (Crombag, et al., 2003; Boyle, 2010). Revenge violence has been described as a copying mechanism or healing following the experience of violence (Orth, 2004; Orth, et al., 2006). In this regard, we can confirm the hypothesis that "individuals who know a victim of or have experience of – witnessed – a violent death of a family member or close associate, were more likely than individuals, who did not have any experience of violent deaths to have had favourable attitudes to revenge violence."

Among the control factors that increased favourable attitudes to revenge violence is being male. The result shows that compared to females, being male is a significant predictor of having a favourable attitude to revenge violence. The finding is consistent with several other studies (Stuckless & Goranson, 1992). This could be explained by the high level of violence among males in South Africa. This line of thought is also consistent with the findings of previous studies, which suggested that males are more prone to aggression than females; as one of the mechanisms of proving manhood in the face of adversity (Goldstein, 1985; Wilson, et al., 2015). Males are also socialized to have accepting attitudes to aggression and the use or resort to the use of aggression, as a means of resolving conflicts, if necessary (Berkowitz, 1993; Tripp, et al., 2002). This could explain the finding that males in this study were significantly almost 2 times more likely to have had a favourable attitude towards revenge violence than females.

Another control variable that increased the favourable attitude to revenge violence was age. In our study, we found that a favourable attitude to revenge violence was significantly more likely among young people in the age group <25 and 25-34. In the case of South Africa, this finding is expected; as most of the victims and perpetrators of violence are young people. This finding is particularly important in the context of gang violence, in which retaliatory behaviours are prevalent and normative (Seedat, et al., 2009; Motimele & Ramugondo, 2014).

The finding also shows that reprisals between youth gangs, which are common in South African Townships is the only legitimate way of conflict resolution; as youth gangs operate outside the law; and they cannot, therefore, take advantage of the established legal frameworks to resolve inter-gang conflicts.

The study also found that race has a strong influence on revenge-violence predictability. We found that being black was significantly more likely to be associated with having a favourable attitude to revenge violence, as a way of getting justice for the killing of their loved ones or associates. The finding is consistent with those of previous studies in South Africa and in the US; where black people were at greater risk of not only being victims of violent death, but also the perpetrators of violent death themselves – mostly against another black person (O’Flaherty and Sethi, 2010b; Mathews et al., 2013; Leggett, Louw, and Parry, 2002b). Just as it was in the Americas, in South Africa has a favourable attitude to revenge violence, which has its roots in the apartheid era structured violence, which was perpetuated through the structural disadvantages imposed by the apartheid era’s social, economic and political policies, which in a way legitimized the use of violence in

the psyche of black people; since the legal frameworks failed to deliver justice (Oliver, 2016; Khenti, 2014; Khenti, 2013).

Addressing the structural basis of violence; and ensuring that the formal justice system works for all, is the only effective means of changing attitudes in favour of revenge.

Marital status was another predictor of favourable and unfavourable attitudes to revenge violence. Our finding shows that people in unions or married were significantly less likely to have had a favourable attitude to revenge violence. Previous research on crime and violence has shown that marriage reduces the chances of people engaging in violence and other crime-related activities (Bersani, et al., 2009; Sampson, et al., 2006). This was explained by the role that marriage plays as an institution of social and emotional support and dependence (Laub & Sampson, 2001). Marriage also creates a system of interdependence, which obliges people to have mutual support and also to restrain them from engaging in risky violent behaviour. Consistent to this, other research has shown that males with unstructured socializing activities with their peers increased deviant behaviour (Paternoster, et al., 2003). However, this is not a guarantee that marriage can stamp out inter-personal violence between spouses, which explains the phenomenon of intimate-partner revenge violence. Nevertheless, the findings of this study suggest that, if used effectively, the marriage institution has the potential of reducing favourable attitudes to revenge violence.

The findings of this study also show that compared to people with tertiary education, those with no education were significantly more likely to have a favourable attitude to revenge violence. Conversely, people with primary education reported a greater likelihood of

having an unfavourable attitude to revenge violence. A study by McKee and Feather (2008) found that people who are vengeful are those who are motivated by and have authority and they are seeking status, which is consistent with the view that better-educated people have other ways of demonstrating their power and authority, other than by the use of violence, which is a more prevalent *modus operandi* among people of low education.

7.5 Conclusion

Overall, the study found that VDV is prevalent in South Africa in general and in Gauteng and KwaZulu-Natal provinces in particular. The finding suggests that inter-personal violence leading to VDV was pervasive in the study population. The dynamics of violence can also be effectively explained by the Social-Ecological Model, which argues that VDV is largely the interaction between individual, relationship, community and societal-level factors. The study found that the key individual-level factors influencing VDV were: being a male decedent, belonging to the young adult age group, being a black decedent and consuming alcohol and drugs, while alive. Among the relationship level factors, the study found that the never-married, the currently married or cohabiting decedents and decedents who belonged to gang sub-cultures were more likely to have experienced VDV. Additionally, decedents in urban areas also have higher VDV rates. Regarding community-level factors, the study found that decedents who lived in communities having favourable attitudes to the possession of weapons and revenge violence were more likely to experience a higher prevalence of VDV.

Furthermore, just over one quarter of the surviving study respondents reported a favourable attitude to the possession of weapons. This could be influenced by the high prevalence of violent crime and high homicide rates in South Africa, which attests to the high perception of vulnerability to violent victimization. The male preponderance to favourable attitudes in the possession of weapons is also consistent with the view that men, as the more aggressive sex, provider and protector of the family may feel obliged to possess a weapon in the face of the high rate of violent crime and deprivation.

The study also suggests that being younger and black are factors significantly associated with a favourable attitude to the possession of weapons, which could explain the high prevalence of violent-death victimization among younger decedents in the study population. It is, therefore, likely that the possession of weapons is not only a symbol of power and a sense of freedom and entitlement, but could also reflect the perception of vulnerability to violent victimization in the black population in South Africa.

Additionally, more than one quarter of the study population expressed a favourable attitude to revenge violence, which is consistent with the universality of revenge, as a human trait. The favourable attitude to revenge violence was more prevalent among males, people of younger age groups and low levels of education. The favourable attitude to revenge could also be explained by the population's perception that the formal and legal justice system is unlikely to deliver commensurate justice to the victims of violence, which is consistent with the findings of other studies.

These studies suggested that in situations where justice is not seen to be served, aggrieved parties are more likely to take the law into their own hands and seek revenge

against those have wronged them. In South Africa, there is a general perception that the wheels of the justice system turn very slowly, and often unsuccessfully, which could encourage favourable attitudes towards revenge violence.

7.6 Recommendations

From the results of the study, we make the following recommendations, which aim to reduce the prevalence of inter-personal violence and VDV in South Africa, in general and Gauteng and KwaZulu-Natal, in particular. These recommendations attempt to address all the main perspectives of SEM and ELT models that guided the study. These strategies also reflect our understanding of the effective and sustainable prevention of violence by strengthening knowledge, skills and the abilities of individuals, families, community institutions, such as schools and community forums that can influence the relationships and environments that create and seek to prevent violence.

— The individual level

It is important to note that most VDV's occur among young people. This requires that young people are provided with skills that help them develop socially and emotionally. They should also be provided with life-skills that can foster positive relationships; help young people to choose non-violent behaviours and conflict-resolution approaches; and empower them with effective problem-solving, communication, anger-management, impulse control, and emotional-regulation abilities. The school environment provides the best place for inculcating the above skills to young people in South Africa; as most of them pass through the school system at some stage in their lifetime.

School-based teaching and learning aids that can help young people deal with and cope with loss, disappointment, stress and depression should be institutionalized in the schooling system.

The home provides the best place where young people can learn and put into practice both practical and personality traits learned during socialization. However, the family and household structures in South Africa are not appropriate for developing balanced personalities; because of the high level of family and household instability. Efforts to regain the family functions fully and make it an effective agent of socialization aimed at developing young people as responsible members of society, are therefore required.

Fostering a safe, stable, nurturing relationships between young people and their parents and significant others in families and communities must be promoted. These people have a profound influence on young people's beliefs and behaviours, which is transmitted through socialization throughout the life course. Young people learn from these adults through monitoring, support supervision, strong parent-child connectedness, and good parent-child communications.



— Relationship level

Creating family support and mentorship systems to promote positive relationships in the family between parents and children and among spouses is important in the reduction of domestic and gender-based violence and child abuse that are prevalent in South Africa. These two forms of violence, which take place mostly at home, contribute a large proportion of VDV in South Africa. Creating the mentioned support systems can build family-based resilience to prevent and mitigate violence in the domestic sphere.

A peer program based at school and community settings should also be promoted to help inculcate positive relationship values and norms. Of greater importance, is the prevention of sub-cultures, such as gang groups through socially acceptable alternatives, such as livelihood clubs, learning clubs, game and sporting clubs that have been successful in promoting positive values and healthy relationships in society.

One of the main problems that lead to domestic or gender-based violence and VDV is the poor communication skills of spouses. Relationship workshops for couples that address communication challenges and mutual respect are important for conflict prevention and resolution; and they should, therefore, be promoted.

— **Community level**

Most VDV incidents in South Africa are directly a result of insecurity in communities. Improving the security situation of communities through neighbourhood watch groups, community-policing forums, ensuring the availability of secure public places, street lighting and safe recreational areas for residents would greatly improve the security situation in townships and informal settlements, where the threat and incidence levels to VDV are higher.

Community-level socio-economic conditions, poverty and unemployment are key predictors of violence and VDV in South Africa. These conditions are more important in the black townships; where unemployment among young people is high. In this regard, the establishment of community-level business forums and an increase in community employment opportunities are important for ensuring the development and nurturing of legitimate livelihood systems in poor communities.

Most communities, where violence is prevalent, have poor infrastructures. Creating the required infrastructure, incentives and security architecture needed for businesses to expand and thrive in poor communities, in which unemployment is prevalent, are required. This will attract investments in these areas and create employment opportunities and make communities more economically stable.

— Societal level

Attitudes supporting violent beliefs and behaviours are prevalent in South Africa. Some of these attitudes have been widely expressed even during legitimate and approved public demonstrations against crime and the lack of service delivery across the country. Changing attitudes towards violent beliefs and behaviours is, therefore, important in stemming out violence and reducing VDV. For example, favourable attitudes to the possession of a weapon or instigating violence as a necessary tool to protect themselves from becoming a victim; or favourable attitudes to revenge violence by taking the law into their hands; or the use of violence to settle disputes, should be prohibited.

Additionally, a community's violence-prevention plan can focus on changing norms about violence from being an acceptable behaviour. This could include the management of social interactions and conflict-resolution. Communities should encourage the belief that individuals have the power and the responsibility to prevent violence, and help them with the knowledge and skills they need to intervene safely and appropriately.

- In this regard, enhancing legislation against violence and violent attitudes is recommended;

- A national media campaign, using the mass media and community forums to create awareness and change the way people think about violence, is also recommended.

— Further Research

Given the above mentioned limitations and recommendations of the study and data, there is need for further studies with systematic approaches to investigate weapons used in violent death; the relationship between the deceased and the killer and also the reasons for suicides. Future research should opt for holding a broader perspective, studying what are the social, economic and political effects of violent death.

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ppendices

Community Attitudes and Perceptions on Violent Death

AP This section covers particulars of each person in the household

The following information must be obtained for every person who is considered to be a member of the household. Only add persons who had stayed here for at least 14 nights on average per week for the last four weeks. **Do not forget babies.** If there are more than 10 persons in the household, use a second questionnaire.

H H M M			
INTERVIEW START TIME			

	Person (respondent) number											
	0	1	0	2	0	3	0	4	0	5	0	6
First name and surname Write down first name and surname of each member of the household, starting with the head or acting head. If more than one head or acting head take the oldest												
Has stayed here (in this household) for at least four nights on average per week during the last four weeks? 1 = Yes 2 = No → If "No", End of interview												
Is a male or a female? 1 = Male 2 = Female	1 2		1 2			1 2		1 2		1 2		1 2
What is 's date of birth and age in completed years?												
Day (dd)												
Month (mm)												
Year (yyyy)												
Age (less than 1 year = 000)												

E	What population group does belong to? 1 = AFRICAN/BLACK 2 = COLOURED 3 = INDIAN/ASIAN 4 = WHITE 5 = OTHER, specify in the box at the bottom	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
F	What is's present marital status? 1 = MARRIED 2 = LIVING TOGETHER LIKE HUSBAND AND WIFE 3 = WIDOW/WIDOWER 4 = DIVORCED OR SEPARATED 5 = NEVER MARRIED	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
G	What is the highest level of education that..... has successfully completed? <i>Diplomas or certificates must be of six months plus study duration full-time (or equivalent) to be included</i> 0 = No schooling 1 = Primary School not completed 2 = Primary School completed 3 = Secondary School not completed 4 = Secondary School completed 5 = Tertiary certificate 7 = Tertiary diploma 8 = Tertiary degree 9 = Post graduate degree 0 = Other, Specify	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
H	During the last calendar week (Sunday to Saturday) didwork for a wage, salary, commission or any payment in kind (including paid domestic work), even if it was for only one hour? 1 = Yes 2 = No 3 = Do not know	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3

I	During the last calendar week (Sunday to Saturday) did ... run or do any kind of business, big or small, for yourself or with one or more partners, even if it was for only one hour? Examples: Commercial farming, selling things, making things for sale, construction, repairing things, guarding cars, brewing beer, collecting wood or water for sale, hairdressing, crèche businesses, taxi or other transport business, having a legal or medical practice, performing in public, having a public phone shop, etc. 1 = Yes 2 = No 3 = Do not know	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
J	During the last calendar week (Sunday to Saturday) did help without being paid in any kind of household business, even if it was for only one hour? Examples: Commercial farming, production of agricultural produce to sell, help to sell things, make things for sale or exchange, doing the accounts, cleaning up for the business, etc. 1 = Yes 2 = No 3 = Do not know	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
K	In the past calendar week (Sunday to Saturday), even though you did not do any work for pay or profit, do you have a job or business that you would definitely return to? 1 = Yes 2 = No 3 = Do not know	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
L	Is's work 1 = Permanent 2 = A fixed period contract 3 = Temporary 4 = Casual 5 = Seasonal	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

[illegible][illegible]

5= Other (specify)

SECTION 2: HOUSEHOLD MEMBERS' BEHAVIOUR

AD OUT: I would like to now ask you questions about the experiences and the way in which people in this household behave. (For Children below 10 years record NO)

	Person (respondent) number																			
	0	1	0	2	0	3	0	4	0	5	0	6	0	7	0	8	0	9	1	0
Does the use the following substances? 1=Yes, 2=No Drink Alcohol Smoke Tobacco Use drugs	1 2		1 2	1 2		1 2	1 2	1 2		1 2	1 2	1 2		1 2	1 2	1 2		1 2	1 2	0
How often doesuse the following substances? (complete only to those who indicated Yes above) 1=Daily 2=Once/twice a week 3=Occasionally	1 2		1 2	1 2		1 2	1 2	1 2		1 2	1 2	1 2		1 2	1 2	1 2		1 2	1 2	0
Has been? 1=Yes 2=No (IF NO GO TO SECTION 3) Jailed In prison Given a community-service punishment	1 2		1 2	1 2		1 2	1 2	1 2		1 2	1 2	1 2		1 2	1 2	1 2		1 2	1 2	0
How many times in the past 10 years has been? (complete only to those who indicated Yes above) 1=Once 2= Twice a week 3=Three or more Jailed In prison Given a community-service punishment	1 2 3		1 2 3	1 2 3		1 2 3	1 2 3	1 2 3		1 2 3	1 2 3	1 2 3		1 2 3	1 2 3	1 2 3		1 2 3	1 2 3	0

	Person (respondent) number																			
	0	1	0	2	0	3	0	4	0	5	0	6	0	7	0	8	0	9	1	0
What were the reasons for the person or persons to be.....?																				
Jailed																				
In prison																				
Given a community service punishment																				

SECTION 3: GENERAL ATTITUDES AND BELIEFS ON VIOLENCE

AD OUT: I would like to start by asking you some questions about your perceptions and general attitudes and beliefs on violence in your life.

WEAPON	AGREE	DISAGREE	NOT SURE
Carrying a firearm or a knife would help me feel safer.			
It's okay to carry a firearm or a knife if you live in a rough neighbourhood.			
It's okay to do whatever it takes to protect myself.			
It's good to have a firearm.			

GANG

I could see myself committing a violent crime.

I could see myself joining a gang.

It's okay to use violence to get what you want.

People who use violence get respect.

Lots of people are out to get you.

ECONOMIC

It is better for me to kill myself when I do not have money.

I would rather commit suicide than live without a job and always asking for help.

I would rather kill myself and my family than watch them suffer in poverty.

I would rather die than have lots of debt.

Parents should tell their children to use violence if necessary.

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If someone tries to start a fight with you, you should fight them.

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I'm not afraid of getting hurt by violence.

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ECT1Q4: Neighbourhood characteristics

READ OUT: *I would like to start by asking you some questions about your neighbourhood*

It is ok to kill someone who killed your family member.

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I am always scared that one of my family members can be killed.

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Violence and crime are a way of surviving in our neighbourhood.

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Staying away from violence is a sign of being weak.

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Lots of people are out to get you.

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If a person hits you, you should hit them back.

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It's okay to beat up a person for badmouthing me or my family.

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NEIGHBOURLY

	YES	NO	DON'T KNOW
Do neighbours do favours for each other?			
Do neighbours share information with each other?			
Do neighbours watch each other's property?			
Do neighbours ask for personal advice?			
Do neighbours have parties together?			
Do neighbours visit each other's homes?			



SUBSTANCE ABUSE

Is Nyaope a problem in your neighbourhood?			
Is Marijuana a problem in your neighbourhood?			

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Is Woonga a problem in your neighbourhood?

Are other drugs not mentioned above a problem in your neighbourhood?

Is alcohol abuse a problem in your neighbourhood?

NEIGHBOURHOOD FACILITIES AND SERVICES

Is there a neighbourhood park in your area?

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Is there a neighbourhood gym in your area?

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Is there a neighbourhood police station?

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Is there a neighbourhood clinic?

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Is there a neighbourhood hospital?

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Is there a neighbourhood watch at night?

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OTHER NEIGHBOURHOOD PROBLEMS

Are there vacant/ abandoned store fronts in your neighbourhood?

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Are there vacant/ abandoned homes common in your neighbourhood?

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Are there burned-down buildings in your neighbourhood?

Are unemployed people hanging out in your neighbourhood?

Have residents solved a community problem together?

Is litter/trash a problem in your neighbourhood?

Is graffiti a problem in your neighbourhood?

SECTION 5: Mortality in the Household

READ OUT: I would like to start by asking you some questions about your deaths that occurred in this household. (If more than one death occurred in the household ask first if one those was killed or committed suicide. If a person was killed or committed suicide take information about that death. If not record the death that occurred the last time)

A	Has any member of this household passed away in the past 10 years?	
B	What was the first name of the deceased?	
C	What was the deceased age at his/her death? Date of birth?	
D	What was the month and year of the deceased death?	
E	Was the deceased male or female? 1= Male and 2= Female	
F	What was the deceased marital status? 1 = Married, 2 = Living together like husband and wife, 3 = Divorced, 4 = Separated, but still legally married 5 = Widowed, 6 = Single, but have been living together with someone as husband/wife before, 7 = Single and have never been married	
G	What was the deceased highest level of education?	
H	What was the deceased employment status?	
	What was the deceased population group?	

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P	Was the death due to natural or unnatural cause? 1= natural, 2= unnatural	
Q	If unnatural was it due to.....? 1=Accident, 2=Murder, 3=Homicide, 4=Suicide	
R	If accident...was he/she...? 1=Car accident, 2=Drowned, 3=Fell, 4=Other, specify....	
S	If Murder or homicide....was it by ...? 1=Family member, 2=Someone known in the family, 3=Someone known in the community, 4=Someone not known	
T	If suicide, did he/she leave a note? 1=Yes, 2=No	
U	What were the reasons for the person committing suicide?	
V	Did the deceased have close ties with neighbour? 1= Yes, 2=No	

Section 6: Perceived Impact of violent deaths

READ OUT: I would like to start by asking you some questions about how you feel the deceased death impacted on your household.

Household Level

BEFORE	1= Yes 2= No	AFTER	1= Yes 2= No
Was the deceased the bread winner in this household?	1 2	Since the deceased passing, is there a breadwinner currently in this household?	1 2
If you suddenly needed a small amount of money, was the deceased able to provide you with money?	1 2	If you suddenly needed a small amount of money, are you able to obtain money?	1 2
What was your source of income for this household when the deceased was alive?		What is your current source of income?	
Child Grant	1 2	Child Grant	1 2
Disability/old age grant	1 2	Disability/old age grant	1 2
Remittances	1 2	Remittances	1 2
Earnings	1 2	Earnings	1 2
Charity from other people		Charity from other people	
Charity from church		Charity from church	
None		None	

Other (Specify)	Other (Specify)
Did this household have the following when the deceased was alive?	Does this household have the following when the deceased passed on?
Medical Aid	Medical Aid
Medical Insurance	Medical Insurance
Was this household able to afford medical care when the deceased was alive?	Is this household able to afford medical care since the deceased passed on?
How often were you able to go for movies or eat out in a month when the deceased was alive?	How often does you household go out for movies or eat out in a month since the deceased passed on?
1= never 2= Once 3= two or more times	1= never 2= Once 3= two or more times
Did any member of this household go to bed at night hungry due to lack of money when the deceased was alive?	Does any member of this household go to bed at night hungry due to lack of food since the deceased passed on?
To your knowledge was any member of this household consuming any drug when the deceased was alive? (By drug we mean drugs that are not taken for medical purposes but for the person to get high)	To your knowledge is any member of this household taking drugs since the deceased passed on?
Were all school-going age members of this household attending school when the deceased was alive?	Are all school going members of the household attending school since the deceased passed on?
If no, what were the reasons for not attending school?	If no, what are the reasons for not attending school?
1= Could not afford tuition 2= Could not afford transport 3= Other (specify)	

What kind of school were school-going age members of this household attending? 1= Home-based school 2= Private school 3= Public no tuition 4= Public with tuition

1 2 3 4

What kind of school are school going age members of this household attending? 1= Home based school 2= Private school 3= Public no tuition 4= Public with tuition

1 2 3 4

Section 7: Community Level

READ OUT: I would like to start by asking you some questions about how you feel on the deaths due to violence impacted on your community.

	1=Yes 2=No
What is your view about the effects of violent death on the community regarding the following?	
We lose young people who are the future of our country.	1 2
It creates fear in our community.	1 2
It promotes the carrying of dangerous weapons in the community.	1 2
It leads to an increase in alcohol consumption.	1 2
It leads to young people being involved in drugs.	1 2
It encourages community members to work together in solving the problem.	1 2
It creates mistrust and suspicion between households or among groups?	1 2
It leads to school drop-outs.	1 2
It leads to an increase in crime in our neighbourhood.	1 2
It creates poor households.	1 2

HANK THE RESPONDENT!!!

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END OF INTERVIEW

h h m m
INTERVIEW END TIME

Question Number	Person Number	General comments about the conditions of the household and situations