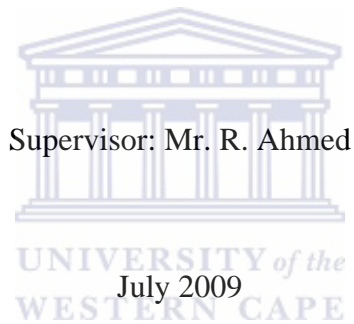


Sharp object fatalities in East London: A descriptive study

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A mini-thesis submitted in partial fulfilment of the requirements for the degree of
Masters in the Department of Psychology,
University of the Western Cape



Sharp object fatalities, interpersonal violence, epidemiology, cross-sectional, National
Injury Mortality Surveillance System (NIMSS), ecological, contextual, homicide,
secondary data analysis, descriptive study

DECLARATION

I declare that *Sharp object fatalities in East London: a descriptive study*, is my own work, that it has not been submitted before any degree or examination in any university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references

Kurt Dixon

June 2009

Signed.....



ACKNOWLEDGMENTS

The victims will not have benefited from the long term objectives of this study, but it is hoped that their families and future generations may indeed benefit from studies of this nature, with a view to implementing prevention programmes to make our communities safer.

Thanks to my supervisor, Rashid Ahmed, who has been patient, always supportive and incredibly non-judgmental. Hilton Donson from the MRC has been most helpful with his passion for statistics and has made the last stretch interesting and has also inspired some enthusiasm in me for numbers and their meaning. My family and friends who have been supportive in understanding the task that I have undertaken and have let me be. My mother, Pamela has without question always been ready to assist at a moments notice; I have still so much to learn from this kind of love. My sister Lynn has been incredibly supportive in ways only a sister can be. Zach my six year old nephew has been patiently waiting for me to complete this. Then to Kim, who in the last and most important stretches has been egging me on with her encouragement and deep understanding of the strains one encounters on these journeys, thanks for all your love.

This has been a long process and I have many people to thank along this journey. It has meant many hours of sacrifice and the loss of a particular lifestyle for a period of time. The completion of this project marks the end of a journey but also the beginning of new one, academically, professionally and personally. This I look forward to...

ABSTRACT

Data from the National Injury Mortality Surveillance System (NIMSS) show that homicide is the major cause of death with firearms and sharp objects as the main external causes of death in South Africa. The current study is a descriptive study, describing the epidemiology of sharp object fatalities in the city of East London (also known as Buffalo City) in South Africa. It is a secondary data analysis of mortuary data collected by morticians trained in data collection methods according to World Health Organisation standards. This descriptive study aimed to develop the profile of sharp object fatalities in East London. Most of the findings were consistent with other literature on sharp object violence/homicide and on homicide in general using rates per population denominator data. It also combined variables to arrive at more complex descriptions. The following risk factors were identified: male, between the ages 30-34, being from a disadvantaged population group, alcohol consumption, weekend, between the times 20h00 and 23h59 and if we discount the place of death, 'unknown' then the greatest percentage of deaths occurred in a private house. The results were interpreted within an ecological and contextual theoretical framework to hypothesize possible etiological factors. The conclusion was that there were multiple variables which all interact and influence one another across all ecological levels and as other studies have recommended, this study too also recommends that more work is needed in order to identify the multiple pathways leading to fatalities, perhaps by way of multivariate studies as well as qualitative studies with perpetrators of sharp object fatalities.

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CHAPTER 1

INTRODUCTION

1.1 Background

Everyday about 4400 people die of intentional acts of self-directed, interpersonal, or collective violence (Krug, Mercy, Dahlberg, & Zwi, 2002) and every year violence kills about 1.6 million people (Rosenberg, Butchart, Mercy, Narasimhan, Waters, & Marshall, 2006). South Africa has one of the highest rates of violence in the world with rates for interpersonal violence five times higher than the global average, accounting for just fewer than 50% of all injury deaths in South Africa (Tonsing & Lazarus, 2008). This seems an increase from the year 2000 where the injury death was at 46% nationally (Norman, Matzopoulos, Groenewald, & Bradshaw, 2007).

Even though interpersonal violence dates back to antiquity (Zollikofer, 2002), the Twentieth Century is known as the ‘long century of violence’ or ‘the century of violence’ (WHO, 2002) because of its scale and magnitude (Bufachi, 2005) and a great amount of effort is being put into studying this phenomenon that affects so many lives. In 1996, the World Health Assembly declared violence within the public health domain and in 2002 the WHO released the first *World Report on Violence and Health* reporting on its social and health implications as well as on risk and protective factors and interventions initiated (Krug *et al.*, 2002). The estimated contribution of fatal injuries to the global burden of disease will have increased from 14.3% in 1990 to 20.9% in 2020. This projection is accounted for by a general reduction in mortality from disease (Hadi, 2005)

and increases in incidences of violent deaths such as homicide (Hadi, 2005; Butchart & Kruger, 2001). Violent related deaths have been generally increasing in the developing countries (Hadi, 2005). It is projected that in the sub-Saharan African region, the injury related disease burden will more than double, not only due to a decrease in communicable diseases, but also to an increase in violence (Butchart & Kruger, 2001). The National Injury Mortality Surveillance System (NIMSS), which records data on incidences of fatal and non fatal injuries in South Africa, shows that firearms and sharp object fatalities are the main external causes of death (Stevens, Seedat & van Niekerk, 2004). Knife violence in particular has overtaken firearms to become the leading cause of external death in South Africa in 2008 (Donson, 2008). Violence prevention, in spite of local and global efforts, remains one the foremost challenges particularly within the South African socio-historical context (Foster, 2004). We cannot ignore the powerful effect of context that the endemic nature of violence has had and still continues to have on individuals and communities over the past few centuries in the history of South Africa (Stevens, Seedat, & van Niekerk, 2004).

1.2 Statement of Problem

Increasing incidences of violence is a significant problem and has become an important public health concern. The challenge is not only aiming to understand this phenomenon more deeply and decrease mortality related to it but also to ascertain how applicable it is to understand this within a public health framework within a South African context, that is, in a developing country. Public health models have been applied within high income countries and to discrete disease entities like communicable diseases but only recently to

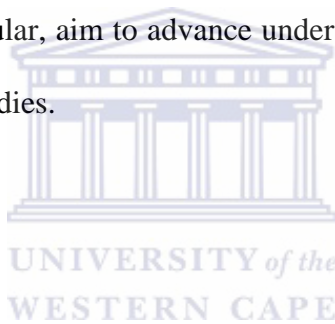
violence. Violence however is not a discrete entity and has complex multiple pathways which increase as the socio-economic status of the country decreases (Stevens, Seedat, & van Niekerk, 2004).

Mortality rates due to violence in South Africa are nearly eight times the global rate of 8.8 deaths per 100 000 population (Matzopoulos, 2005). It not only adds to the burden of disease but is also a financial burden and contributes to approximately 3.3% - 5% of countries' gross national product (Waters *et al.*, 2004; Mirabel, 2006). Exposure to violence is emotionally damaging to children (Govender & Killian, 2001) and is a predisposing factor in the development of a variety of mental problems (Ward, Martin, Theron, & Distiller, 2007) which places further pressures on a country's health care system. Victims are also predisposed to become future perpetrators, (Snider & Lee, 2007; Piquero, MacDonald, Dobrin, Daigle, & Cullen, 2005) and is a threat to community health and social order (Butchart & Emmet, 2000). Internationally, the statistics for sharp object fatalities remain high (Waters *et al.*, 2004). Nationally, sharp object violence accounted for 30% of non-natural deaths in South Africa (Matzopoulos, Seedat, Marias, & van Niekerk, 2004; Smythe, 2004). A later study (Donson, 2008), showed an increase in this figure and that it accounted for 40% of non-natural deaths in South Africa and ranked first among other forms of homicide. The evidence shows that the magnitude of the problem is increasing.

1.3 Rationale and significance of the study

Sharp objects were the main cause of homicides in East London, Cape Town and Port Elizabeth, whereas the main cause of homicide in Pretoria, Johannesburg and Durban was due to firearms (Open Society Foundation, 2004). The most recent NIMSS report, the 9th *Annual Report*, reported that death inflicted due to sharp objects ranked first above firearms in South Africa which accounted for 40% of all non-natural deaths (Donson, 2008). In an earlier report, sharp object fatalities in the Eastern Cape was ranked second in comparison to the other provinces in South Africa (Butchart, Peden, Matzopoulos, Phillips, Burrows, Bhagwandin, Saayman, & Cooper, 2001). Also in this report, the mechanism of homicide in Eastern Cape was highest for sharp object fatalities which was 49.3% compared to 32.5% for guns. South African national sharp object fatalities statistics showed that the most sharp object injuries occurred within the 20-24, 25-29 and 30-34 age groups (Donson, 2008). According to a population based study (Macpherson & Schull, 2007) in Canada, there is a paucity of research into this type (sharp object violence) of violent injury. In countries like Scotland there has been a 164% increase in sharp object violence using a knife between the time period 1982 and 2002 (Leyland, 2006). One of the possible reasons for this increase in the use of sharp objects may be attributed to gun control legislation. In South Africa, a developing country with quite marked disparities between income groups and a host of other risk factors outweighing protective factors in many disadvantaged communities, we may see an increase in sharp object fatalities with a decrease in gun usage in homicides as indicated by previous reports (Donson, 2008). The World Health Organisation (WHO, 2002; Waters *et al.*, 2004) cited violent injury, sharp object fatalities being one of them, an important public

health concern. Therefore developing an understanding of the epidemiology of sharp object fatalities and an analysis of its demographic features according to age, sex/gender, population group or ethnicity, and circumstances of occurrence such as time of day, day of week as well as blood alcohol levels, would benefit intervention programmes, deepen understandings of this phenomenon especially within South Africa, and also contribute to community based epidemiological data. Furthermore, describing and reporting of data on levels of sharp object fatalities in East London will add value to the profile of national sharp object fatalities as well as overall mortality data due to homicide. Finally, contextual understandings into the etiology of homicide in general and in this study, sharp object fatalities in particular, aim to advance understandings of traditionally purely descriptive epidemiological studies.



1.4 Aims of the study

The aim of this study is to:

1. Describe the rates of distribution of incidences of sharp object fatalities with respect to race/population groups, sex, age, and scene of injury, time and blood alcohol levels
2. Determine what are the possible risk factors for sharp object fatalities with respect to race/population¹ groups, sex, age and blood alcohol levels

¹ The author does not, in principle, support the utilization of past apartheid designated terms such as 'White', 'Coloured', 'African', and 'Asian', which have been used in the past to segregate people on the basis of difference in pigmentation. Their usage, in this study, does not imply 'racial' differences but social constructions along which people may relate to their social world. As documented elsewhere (Donson, 2008), the term population group is used as a social construction for particular political purposes and where the labels serve as scientific indicators of social groupings.

The primary research questions guiding the present study are:

1. What are the incidences of sharp object fatalities with respect to sex, race/population groups, age, and scene of injury, time and blood alcohol levels?
2. Are there differences in the rates of distribution of incidences of sharp object fatalities with respect to sex, race/population groups, age, and scene of injury, time and blood alcohol levels?
3. What are the possible risk factors for sharp object fatalities with respect to sex, race/population groups, age and blood alcohol levels?

1.5 Chapter outline



Chapter Two

The outline for this rest of this thesis is to review literature on homicide in general and literature on sharp object violence in particular. This will be done in Chapter Two, which will also define the main concepts of this study. Theories of violence will be discussed and it will be shown why this study chose a contextual theory for its theoretical framework.

Chapter Three

In this chapter the methodology will be outlined. This section will outline the process of this study and instruments used. The design of the study will be explained here and also how the data was collected, how the instruments were reliable and valid and also what measures were used in this study.

Chapter Four

Herein the results are reported on. This chapter contains tables and graphs showing the epidemiology of sharp object mortality in East London according to selected demographics and circumstances of mortality. Firstly, single variables are reported upon and after that variables which are combined such as, population group, sex, age and blood alcohol levels, are reported upon.

Chapter Five

This chapter attempts to contextualize the findings using a contextual and ecological theoretical framework. It, like public health approaches, appreciates the importance of studying phenomena like violence, which has multiple pathways and that all levels of the system influence health outcomes. However, this study aims to contextualize the findings not merely by stating that there are various risk factors involved, but attempts to engage with reasons why particular risk factors apply for particular groups of people in particular contexts within a particular time.

Chapter Six

In this last chapter, it is acknowledged that this study has limitations and makes recommendations for future studies.

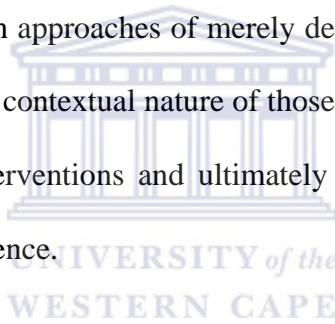
CHAPTER 2

LITERATURE REVIEW

Literature on sharp object violence is scarce in comparison to literature on homicide in general. The scope of this literature review is to review literature on homicide in addition to that on sharp object violence. A review of both the literature on homicide and sharp object violence, which are both forms of interpersonal violence, found that there are common risk factors. A review of literature on homicide in general has been useful in piecing together risk factors across all the ecological levels as opposed to what most of the limited literature on sharp object violence has provided, therefore providing richer understandings into the context of sharp object homicide. Cubbin and Smith (2002) have stated that attempts to explain the causes of interpersonal violence are numerous and complex, which usually involves multiple explanatory factors and borrowing from other studies on homicide, has helped to explore the complex factors surrounding homicide and sharp object violence. What seemed to emerge consistently across the literature on homicide in general and on sharp object violence in particular was that age, sex and alcohol consumption are commonly cited risk factors and that population group or race, appear to be cited as a risk factor in sharp object homicide in South Africa as well as in other studies of homicide in general (both locally and globally). Literature on sharp object violence beyond the borders of South Africa lacks the inclusion of race in their discussions. Socio-economic status and poverty, which are not explicitly stated variables in this study on sharp object violence but could be inferred based on population group status in South Africa, are also broader systemic factors strongly affecting health outcomes of individuals and communities. In other words, membership of a particular

population group in South Africa has become a proxy for disadvantage. The above mentioned risk factors operate on different ecological levels (individual, relational, community and societal) and interact with and affect one another in complex ways.

Within this chapter, a review of some of the theories of violence will be undertaken and will conclude with the theoretical framework used in this study. Sharp object violence is not just an individual and isolated act associated with certain risk factors but a relational act which is part of broader social processes. Bulhan's (1985) theory of violence and other contextual theories will be the theoretical framework for this study, which moves beyond traditional public health approaches of merely describing risk factors. This thesis will attempt to engage with the contextual nature of those risk factors. It is hoped that this will have implications for interventions and ultimately provide further understandings into the elusive concept of violence.



2.1 Definition of concepts

2.1.1 Sharp object fatalities

The term, sharp object *fatalities*, will be used in this study. There are other studies which refer to and utilise similar terminology. Karlson (1998), Ormstad, Karlson, Enkler, Law and Rajs (1986) refer to 'sharp force fatalities' but Karlson (1998) as well as Mazzolo and Desinan (2005) make a distinction between homicidal and suicidal fatalities. Karger, Rothschild and Pfeiffer (2001) and Mazzolo and Desinan (2005) refer to 'accidental sharp force fatalities'. Schmidt and Pollak (2005) refer to 'sharp force injuries'. Within the scope of forensics, as reported in forensic journals, other terminology such as sharp

object homicide is used (Ormstad *et al.*, 1986; Rogde *et al.*, 2000). This study will focus on violence committed with a knife or any other sharp object, which is a form of physical and interpersonal violence. So, when we refer to sharp objects, it will mostly refer to knife violence.

2.1.2 Violence

Violence is defined in both broad and narrow terms. The WHO (2002) defines violence broadly within a public health framework 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, 2002, p. 4).

The WHO distinguishes between different typologies of violence, namely; interpersonal, self-directed and organized violence (WHO, 2002; Krug *et al.*, 2002; Stevens *et al.*, 2004; Rosenberg *et al.*, 2006). Interpersonal violence can be further distinguished between physical, sexual, psychological or verbal violence (Krug *et al.*, 2002; Doolan, 2005). Even though the WHO provides seemingly clear and distinct definitions of violence there is recognition that violence as a concept is elusive (Bufachi, 2005) and an extremely complex and diffuse phenomenon (WHO, 2002). Bulhan’s (1985) theory of violence, however, allows us to further engage and challenge traditional ideas on violence and critically debate these narrow conceptions.

2.1.3 Public health

The main literature on homicide is located within a public health framework. This approach follows a four-step logic (Stevens *et al.*, 2004). Firstly, it defines the magnitude of the problem such as the how, when, where and what of the phenomena; secondly, it identifies what the risk factors are, such as the ‘why’ of violence, occurring across and at different levels of the micro-, meso-, exo- and macro systems, which may also be complimented with contextual social analyses which Stevens *et al.* (2004) suggest is crucial in understanding the complex nature of violence. Thirdly, interventions are developed and tested; and lastly, these tried and tested interventions are implemented.

2.1.4 Population Groups

The author does not, in principle, support the utilization of past apartheid designated terms such as ‘White’, ‘Coloured’, ‘African’, and ‘Asian’, which have been used in the past to segregate people on the basis of difference in pigmentation. Their usage, in this study, does not imply ‘racial’ differences but social constructions along which people may relate to their social world. As documented elsewhere (Donson, 2008), the term ‘population group’ is used as a social construction for particular political purposes and where the labels serve as scientific indicators of social groupings.

2.1.5 Epidemiology

Epidemiology is useful within the public health field so as to define the magnitude of whatever problem is being studied and it usually makes use of injury surveillance systems such as the NIMSS in South Africa (Butchart & Kruger, 2001) and the Emergency Department Injury Surveillance System in the case of Brazil (Gawryszewski,

Alves da Silva, Malta, Kegler, Mercy, Mascarenhas, & Neto, 2008). The aim of public health approaches rather is to define the size and magnitude of problems with a view to designing intervention programmes which usually also involves collaboration between different sectors in society such as education, health and justice for example (Rosenberg, Butchart, Mercy, Narasimhan, Waters, & Marshall, 2006) but it doesn't really aim to alter the fundamental way that society is structured or change the institutions that contribute to structural violence in society. It does not critique the social orderings of society which gives rise to these forms of violence.

2.2 Review of empirical literature on general homicide and violence

Multiple explanatory factors seem to be operating simultaneously which affect health outcomes (Cubbin & Smith, 2002). Further understandings of these relationships by attempting to uncover the mechanisms, which mediate individual behaviour within the social environment, should be sought (Yen & Syme, 1999; Lenthe, 2001; Laflamme, 2001). Risk factors for violence operate on various levels of the ecological system such as;

- *Individual levels* (for example, young age, impulsive and antisocial tendencies, low academic achievement, alcohol and drug abuse, witnessing family violence as a child, demographic factors such as low socio-economic factors, intra-psychic factors such as shame and humiliation and substance abuse).
- *Relational levels* (such as violence in the family, gender relations and roles and family structure).

- *Community levels* (such as patriarchy, low social capital, poverty, poor social support).
- *Societal levels* (such as socio-economic and political dynamics, structural inequalities and high tolerance for violence, cultural norms and values and gender relations in society) (Jewkes, Levin, & Penn-Kekana, 2002; Rosenberg *et al.*, 2006; Tonsing & Lazarus, 2008).

Although the following sections are discussed as separate entities they are in reality by no means so and interact and influence each other in complex ways.

2.2.1 Individual risk factors



Individual risk factors are predisposing or precipitating factors specific to particular individuals which may put them at risk for a particular outcome. Age, sex, personality traits, low education levels, poor insight, low income and individual activities like alcohol consumption are all examples of individual factors which may affect health outcomes.

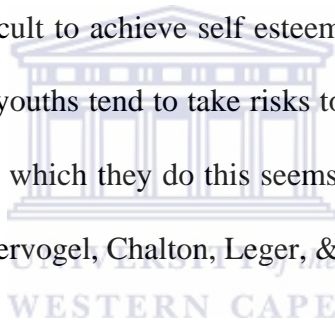
Individual biological factors such as low heart rate (Farrington, 1998), male hormones and testosterone (Rosenberg & Mercy, 1991), psychological factors like psychopathology (Flannery, Singer, & Wester, 2001; Neumann & Hare, 2008), the combination of heavy drinking with impulsive personality (Caetano, Cunradi, & Schafer, 2001), the lack of remorse toward others (Gray, 2003), as well as poor self control (Hern, Glazebrook, & Beckett, 2005), are all individual level risk factors for interpersonal violence. Texts such

as the Diagnostic and Statistical Manual-IV (DSM-IV) may refer to personal characteristics with a propensity toward violence acts as features of Anti-Social Personality Disorder (DSM-IV, 2007). Individuals, who implicitly believe that solving problems by violent means is the norm, (Polaschek, Calvert, & Gannon, 2009) may further contribute to violent outcomes. These factors listed above, combined with low education, low income and poor insight into personal problems may predispose one to increased alcohol abuse, as a coping method, (Sharps, Campbell, Campbell, Gary, & Webster, 2001), and also violence, and are also considered individual risk factors.

Many reports suggest that alcohol seems to be a strong risk factor in interpersonal violence as reported in three different WHO Reports on interpersonal violence namely; Youth Violence (WHO, 2006), Intimate Partner violence (WHO, 2006) and Sexual Violence (WHO, 2006), as well as other studies (Chervyakov *et al.*, 2002; Eckhardt, Samper, & Murphy, 2008). Intoxicated individuals are more likely to instigate a dispute with strangers and alcohol may render them also less capable of defense against a counter-attack (Eckhardt & Pridemore, 2008).

Sex, but more specifically being male, has been found to be a risk factor for violence as documented by many studies on homicide (Chimbos, 1993; Mouzos, 1999; Carcach & Conroy, 2001; Hadi, 2005; Moniruzzaman & Andersson, 2005; Eckhardt & Pridemore, 2008) and it has also found to be strongly associated with alcohol abuse. In South Africa, and consistent with other studies abroad, the impact of sex on homicide rates is clear and uncontested (Altbeker, 2008). Men in South Africa are 3.4 times more likely to be murdered than women, compared to 6.4 times amongst other men around the world. The

WHO data on homicide rates in 2000 reported that the male murder rate was 13.6 per 100 000 compared to the female murder rate of 8.8 per 100 000. In addition to this, a social assumption about how boys should be raised also contributes to the psychology of male violence. Boys are made to feel shameful about feeling fearful, vulnerable or weak. Furthermore, they are encouraged to emotionally separate from their mothers at an early age, so rather than deal with these feelings of shame, boys will engage in a range of activities that avoid these emotions or engage in intense aggressive outbursts (Pollock, 1998). The need for power and status and peer pressure is common among all boys and a major cause of youth crime but this is aggravated by youth in impoverished communities and townships where it is difficult to achieve self esteem and empowerment (Matthews, Griggs, & Caine, 1999). Male youths tend to take risks to define themselves and achieve social status and the manner in which they do this seems to be affected by the resources they have available (Flisher, Ziervogel, Chalton, Leger, & Roberston, 1996).



Age, like many other individual risk factors, is influenced by time and context as well as by other risk factors across other ecological levels. South African general homicide rates peaked in the male age group 15-29 at 184 per 100 000 which was nine times the global rate. The rate for women was lower, 31.7 per 100 000, which was seven times the global rate (Norman, *et al.*, 2007). The highest global and South African rate for male victims has been recorded for the age group 15-29 followed by 30-44 (Tonsing & Lazarus, 2008). The age group 15-44 had higher incidences of fatal mortality due to homicide. The age cohort 15-44 ranked the highest across all income based economic groups and gender. However, in the females' age cohort 45-64 for low income and low to middle income countries, they ranked first (Moniruzzaman & Andersson, 2005). It is interesting to note

that among high income and low mortality nations, there are wider discrepancies between age patterns in lethal violence generally compared to age patterns of mortality from all causes, and relate more closely to social conditions.

Youth, as a transitional developmental process toward adulthood, and as a departure from the dependent state of childhood, brings with it particular vulnerabilities which could be particularly emotionally taxing, such as leaving school, departing from home, forming new relationships, deciding on careers and entering the job market, and may predispose one to certain risks (Griffin, 1997; Carr, 2006), violence being one of them. In contemporary western societies the developmental trajectory from youth to adulthood is met with much less challenges than those youth from developing and underdeveloped countries, frustrating this pathway to adulthood. More economically well off states or countries are able to better support families and youth if they have the social and human capital to provide support during important life transitions such as moving from school into the job market (Braithwaite, 2001). This is a good example of how the structuring of one part of the system can impact on the health outcomes of individuals in another system.

Other stressful experiences of being young such as group integration and interpersonal conflict are not easily mediated by youth than their older and more mature counter parts. This may be due to the lack of internal resources which come with age and maturity. Cohort size and changes in family structure or society may contribute to increase rates of homicide (Pampel & Williamson, 2001) and has possibly, contributed to rising homicide among youth in recent years by reducing their social capital, by overloading institutions

of social control and also by placing strain on the family and community resources. Single-parent families have therefore had fewer time and income resources to monitor and supervise youth. Increased competition for increasingly scarce resources among larger cohorts of youth harms their education, occupational opportunities and financial well-being. Young adults, suffering mostly from the loss of family and community controls, experience the greatest loss of social capital, and face the insecurity of their occupational and financial future. This in turn can have the psychological effects of alienation, pessimism and mental stress (Pampel & Gartner, 1995), if there are no feelings of being successful or having a sense of achievement. Large cohorts of older ages, however, sometimes enjoy greater advantages in political expression and economic power than smaller cohorts because large cohorts have sufficient numbers to influence public policy and garner consumer resources. As a result, there seems to be a greater sense of empowerment and life satisfaction in the older ages (Pampel & Williamson, 2001).

It seems that age, particularly youth, appears to be more affected by social conditions; therefore youth are more vulnerable to social conditions and environmental influences than what the elderly are (Pampel & Williamson, 2001; Pickett & Pearl, 2001). Even though there are many studies (Pampel & Gartner, 1995; Farrington, 1998; Pritchard & Evans, 2001; WHO, 2006) that document the association of youth with homicide and offending behaviour, others (McCall & Nieuwbeerta, 2008, p. 181) caution that, “Researchers have yet to discover what appear to be the dynamics of youthful population composition and violent offending”. The level of propensity to crime will of course also be mediated by time period and other contextual factors. All the risk factors listed above,

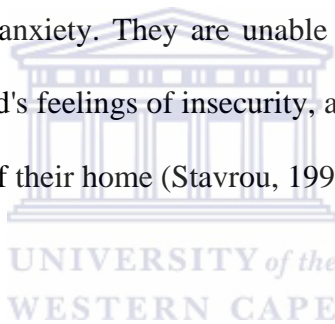
collectively puts individuals at a higher risk for committing acts of violence. It is not only a combination of several individual risk factors that predispose violence outcomes, but also factors from other ecological levels such as relationships and events in both the community and broader society, which the following sections will show.

2.2.2 Relational risk factors

Violence in the family, gender relations and roles, family structure (Tonsing & Lazarus, 2008), poorer attachment histories and witnessing violence in the home (Corvo, 2006) are some of the relational patterns contributing to violent outcomes. In addition, poor parent supervision, harsh discipline and violent parents (Farrington, 1998) also appear to be predisposing factors for violent outcomes. Poor parenting, for example, does not instill and reinforce boundaries. As a result, children do not internalise a moral code. Harsh discipline does not encourage or teach self-control and violent parenting methods, through modeling and shaping, reinforce future dysfunctional behavior (Carr, 2007). As documented earlier, single-parent families have therefore had fewer time and income resources to monitor and supervise youth (Pampel & Williamson, 2001) and this loosening of social control within the family, places youth at risk. Also, the loosening of social controls as a result of wider social processes such as political changes (Campbell, 1992) also plays a role. Single parent households which are headed by mothers are seen to worsen the experiences of inequalities of race and sex (Braithwaite, 2001). The loss of a male role figure plays a role in predisposing boys into perpetrators in a way that creates a vacuum in male culture for emotions like humiliation, loneliness and self-critical

thought than reinforces the ego against anxiety. This leads to denied emotions which are 'acted out' in aggressive behaviour (Ramphela, 1995).

When men's power is being challenged in the broader political and social arena, the one place where they may still assert this diminishing power may be in the family. It is in the context of the home where younger males learn from their fathers that "...violence [is] a socially sanctioned means of resolving conflict" (Campbell, 1992, p. 626). In situations of violence and danger (either interpersonal or in the community), parents, without realising it, often become distant from their children as they grieve for their own loss and cope with their own fear and anxiety. They are unable to fulfill the role of parent, let alone compensate for their child's feelings of insecurity, and the possible loss of a brother or another parent - or the loss of their home (Stavrou, 1993).

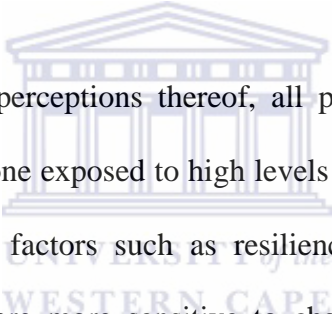


2.2.3 Community

Various features of the community contribute to its collective health and disease. Features of communities such as neighbourhoods (Cantillon, Davidson, & Schweiter, 2003), number of schools, availability of workplaces, unemployment rates, residential mobility, population density, poverty, etc. are all factors (Rosenberg *et al.*, 2006) that places communities at risk for various health outcomes, one of which being violence. Particular features of neighbourhoods such as public image, physical appearance such as its housing and the availability of community resources like notice boards, social characteristics (ownership of own homes versus rented domiciles, migration in and out of the neighbourhood), neighbourhood stability, life style and quality, child abuse,

neighbourhood involvement of families and informal settlements, are indicators that help determine the level of impoverishment of that community (Garbarino & Sherman, 1980). Neighbourhoods are part of children's exosystem and are an important feature of their developmental pathways (Farver, Gosh, & Garcia, 2000). It is not only the features of a community in themselves that plays a role in the community's health or disease, but also children's perceptions thereof. Children were found to be more critical of their neighbourhoods than their parents and one could say that children are important barometers of measurement of a community's well being or 'dis-ease'. Those who rated their neighbourhood low were more prone to an external locus of control and low self esteem compared to those who rated their communities high. These victims of violence are, in this context, at risk of becoming offenders as other studies have documented (Piquero *et al.*, 2005). What they (Farver *et al.*, 2000) concluded was that not all risk factors affect children negatively and acknowledged the role that resiliency played in mediating this. Due to limitations in their study, they recommended a more precise understanding of how multiple risk factors operate simultaneously to affect health outcomes. Similarly, Cantillon *et al.*, (2003) found that a sense of community, i.e., a feeling of belonging which members of a particular community share, mediated the effects of neighbourhood disadvantage on youth outcomes. The results of Cantillon *et al.*'s., (2003) study also found that a sense of community did not significantly mediate the relationships between neighbourhood advantage and delinquency. In support of the above arguments, other studies have found positive associations between neighbourhoods that were disorganised and adolescent violence (Reyes, Robles, Colon, Negron, Matos, Calderon, & Perez, 2008). Adults, who engaged openly in violent and aggressive behaviour in the community, have influenced adolescent perceptions of their

neighbourhoods negatively, reinforcing and modeling violence as the norm. Furthermore, the occurrence of negative experiences limits the availability of social support and community resources. Braithwaite (2001) argues that poor social capital, that is the availability of human and other material resources in the community, increases ones chances of unemployment and we have already seen elsewhere how unemployment rates are a predisposing factor for violence. An example of poor social capital is a loosening of social networks such as the decrease in the involvement of extended families in child rearing practices due to the structural changes of society (Pampel & Gartner, 1995) and this may also predispose youth to violence.



Community features, as well perceptions thereof, all play a role in mediating health outcomes. However, not everyone exposed to high levels of violence become violent due to consideration of protective factors such as resilience. Furthermore, it seems that although, youth and children are more sensitive to changes in the environment, they could also impact their environment through acts of violence. In other words, there is a very real possibility that exposure to violence, such as being a victim of violence, may in turn lead to that victim becoming the perpetrator of violence given time, and thus continuing the vicious cycle of violence.

2.2.4 Societal

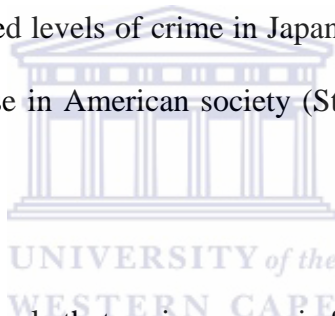
Socio-economic

There appears to be a dearth of literature on broader social processes such as socio-economic status, which seems to mediate health outcomes in individuals as well as in

communities. Incidences of violence seem to be unequally distributed between low to middle income and high income countries and/or regions (Waters, Hyder, Rajkotia, Basu, Rehwinkel, & Butchart, 2004; Sethi, Racioppi, Baumgarten, & Bertolinni, 2006). In the case of South Africa's socio-political historical context, the current levels of poverty, socio-economic inequities, social fragmentation and patterns of social relationships (Butchart & Emmet, 2000; Stevens *et al.*, 2004), are important risk factors to consider in studies of violence. Even though existing knowledge on socio-economic inequality and injury risk is scarce as well as inconsistent (van Lenthe, 2001), other studies seem to support the hypothesis that socio-economic determinants are important contributors or influences on health outcomes and found that socio-economic factors had the highest contribution to explained variance in reports of violence towards others (Cubbin & Smith, 2002; Khoury-Kassabri, Astor, & Benbennishty, 2009) and that income and social class were also found to be risk factors associated with homicide (Hadi, 2005; Doolan, 2005).

Other studies, however (Chervyakov, Shkolnikov, Pridemore, & McKee, 2002), report no difference in the incidences of violence between certain high and low income countries. For example, Chervyakov *et al.* (2002), states that economic development will not automatically lead to a fall in rates in homicide arguing that in the 1960's to 1980's there were no obvious association between economic circumstances and homicide rates. So, even though there seems to be strong evidence and literature to support the findings that socio-economic status affects health outcomes negatively, Petridou and Tursz (2001) also state that low socio-economic status is not always associated with high injury risk. McCall and Nieuwbeerta (2007), report that there are studies showing both positive and

negative relationships between homicide rates and economic deprivation. Rosenberg *et al.* (2006) agrees that income equality seems to be a universal risk factor associated with interpersonal and collective violence, but adds that it is not poverty itself but rather the marked contrast between wealth and extreme poverty which fuels violent outcomes in societies. These inequalities could be measured by the Gini-coefficient (Moniruzzaman & Andersson, 2005). In South Africa the Gini-coefficient (the gap between the rich and poor) is wider now than before 1994 and nothing significant has changed for the majority of the poor and black (Gibson, 2001). The notion that health outcomes are mediated by differences in income and the economy is supported by other studies (Laflamme, 2001; Hadi, 2005) where the decreased levels of crime in Japan (Doolan, 2005) and decreasing rates of child and women abuse in American society (Strauss & Gelles, 1986) are such examples.



Despite strong evidence for the role that socio-economic factors play in violent outcomes, a clearer elucidation of environmental factors, which play a role in social deprivation, is needed and that 'people and places' should be accounted for when developing policies for injury risk prevention (Cubbin, LeClere, & Smith, 2000). It is therefore important that socio-economic status is considered when studying violence, despite the inconsistent findings.

Race and ethnicity

Data on mortality rates among and across different ethnic and population groups should be interpreted with caution so as not to make unsound assumptions based on stereotypes. It is also, therefore, important to be careful of how results are interpreted and framed.

Altbeker (2008), for example, concludes that in South Africa, there is no definitive answer as to whether, or to what extent, belonging to a population group would be a risk factor in homicide. His reason for this conclusion is based on methodological inconsistencies in interpreting data and sampling techniques of studies done in this regard. Where, in some instances, it appears that homicide rates in the 'Coloured' population is higher compared to other population groups, he in fact refutes this finding based on the fact that the 'Coloured' population are greatly concentrated in and around urban areas near where the data is collected at particular mortuaries. In other studies, he points out that the 'African' population group is again under-represented as it is not consistent with the fact that they make up a greater portion of the national average. In South Africa, membership to a population group is still strongly associated with income, poverty, unemployment, geographical location, educational access and achievement and other socio-economic variables (Altbeker, 2008). These variables are well associated with mortality despite them not being reported in the NIMSS (Donson, 2008) publications. Other reports do however cite belonging to disadvantaged groups such as 'African' and 'Coloured', as having exposure to more types of harmful activity such as homicide, not by virtue of their group membership, but by the historical association of that group with low levels of poverty (Matthews, Griggs, & Caine, 1999).

Results from other studies abroad seem to suggest less ambiguous outcomes in how membership to a particular population group affects health and mortality. Piquero *et al.* (2005) found that the dynamics of race has an important role to play in homicide rates. Karlsen and Nazroo (2002) conclude that experiences of racism has negative effects on health outcomes in terms of experienced attacks, perceived discrimination, concentration

of ethnic minority groups in lower social classes and unemployment levels and that 'Blacks' are still more at risk for homicide compared to 'Whites' (Cubbin *et al.*, 2000). McCall and Nieuwbeerta (2007) found that most studies on homicide and race in the United States, in particular, consistently documented strong co-variations between race and violent outcomes despite no relationships found in a few other studies (Parker, 1989). High violent rates among 'Blacks', McCall and Nieuwbeerta (2007) state, might stem from frustration and alienation resulting from discrimination, or the harsh realities of underclass living of which gang culture may also be a feature (Miller, 1958; Anderson, 1999). African-Americans are most likely to be affected by homicide since they are mostly concentrated in poorer neighborhoods (Hannon, 2005) which are, in turn, a significant indicator for violent outcomes (Cubbin *et al.*, 2000). There are certain neighbourhood effects that mediate these outcomes which decrease the magnitude when introduced (Cubbin *et al.*, 2000). African American women were particularly at risk of death due to intimate partner violence. It was hypothesized that they may be more so at risk than Caucasian women because of limited resources, their chronic experiences of racism and the social contexts in which they live (Campbell, Sharps, Gary, Campbell, & Lopez, 2002). Models that account for differences in ethnic mortality by including both individual and ecological variables are more reliable than those that account for individual and ecological variables separately and therefore propose multiple models to predict mortality (Krueger, Huie, Rogers, & Hummer, 2004).

Furthermore, there is an overrepresentation of African American males with low education, low income and perhaps restrained insight for recognizing their alcohol problems or having the resources to enroll in alcohol treatment programs (Sharps,

Campbell, Campbell, Gary, & Webster, 2001). Alcohol related problems among both male and female partners were found to be important predictors of intimate partner violence across racial/ethnic groups. However, after controlling for socio-demographic and psychosocial covariates, male and female alcohol-related problems remained the strongest predictors of intimate partner violence for African American couples, but not for Caucasian and Hispanic couples (Caetano, Nelson, & Cunradi, 2001; Cunradi *et al.*, 2000).

Evidence that supports the association of belonging to a particular population group or ethnic minority, particularly in the United States, and also from other South African studies (Matthews, Griggs, & Caine, 1999), is strong, although there may be exceptions. However, there still appears to be a lack of further discussion into the reasons for these strong associations. What also appear to be lacking in the literature reviewed, is the antecedents to these findings or perhaps a lack of the contextual and historical background. What are the socio-historical contexts to these differences? McCall and Nieuwbeerta (2007) alludes to the notion of alienation and frustration from discrimination but it is felt that there are still some silences around this debate, for example, silences about the psychic fragmentation and trauma that these communities have collectively experienced as a result of institutional racism. These silences are the gaps that Bulhan's (1985) theory would hope to account for.

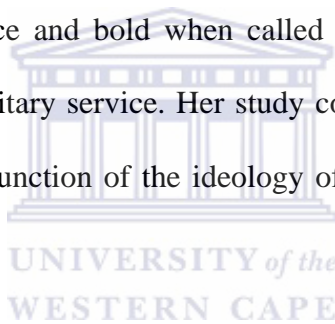
Patriarchy

The rapidly changing political and social landscape in South Africa has indirectly contributed to the erosion of 'African masculinity' and loss of identity of many young

men (Campbell, 1992). Older men in competition with younger men who are asserting themselves more within the political arena and choosing lifestyles contrary to what their elders preach, have found their power and respect being eroded. Furthermore, younger men have had access to different experiences than those of their elders and also higher expectations from the new political dispensation. However, the high levels of unemployment, a lack of resources and a slow response in meeting these expectations to match the level of enthusiasm of the youth, has led to disappointment. Youth then, without the guidance of their elders and a bleak future, experience this loss of identity which is compensated with by reassertion of their masculinity in the form of violence (Campbell, 1992). This is especially so in poorer communities as they lack the resources where males can assert themselves. As Campbell (1992, p. 623) aptly state, "...violence is a manifestation of the structural forces of patriarchy reasserting themselves at a time when race and class oppression has dealt men a particularly a severe blow." In more stable societies, the inter-generational transmission of values would enjoy continuity, but in cases with rapid social change and social fragmentation, this lack of continuity can lead to a breakdown of values (Campbell, 1992) and interpersonal conflict. Violent acts may, therefore, be a collective expression of these underlying frustrations.

In a qualitative analysis of men's narratives, it was apparent from the results that their notions of masculinity was dominated by patriarchal ideologies, evidence of western cultural discourse and which also provided them with a sense of entitlement to use violence in heterosexual relationships (Bettman, 2009). This type of behaviour is also reinforced when males seek support and interaction with peers, during perceived stressful periods and when they perceive that their authority is being challenged within the context

of their intimate relationship. Within this support system they seek validation to reinforce and even encourage physical aggression against the female partner (Sellers, Cochran, & Branch, 2005). Although Bettman's (2009) study premised that masculinities were constructed, the participants seemed to believe that masculinity was a genetic and evolutionary concept. On the contrary, to further support her argument that masculinity is constructed and framed within a particular cultural, social and political milieu, Bettman (2009) compared these western cultural discourses to other non-western cultures and found that domestic violence did not exist in these societies where there was no patriarchal ideology. Despite the absence of this patriarchal ideology, this in no way took away men's ability to be fierce and bold when called upon, such as when needed to defend oneself or during a military service. Her study concludes that domestic violence perpetrated by men is then a function of the ideology of patriarchy and a function of a particular society.



Transitions within society

Rapid social change has also been cited as a risk factor in the public health literature (Tonsing & Lazarus, 2008). A departure from laws that has fragmented South African society on all levels such the Mixed Marriages Act (Statutes of the Union of South Africa, 1949), the Group Areas Act (Statutes of the Union of South Africa, 1950), the Population Registration Act (Statutes of the Union of South Africa, 1950), and the Immorality Act (Statutes of the Union of South Africa, 1950), which was an amendment of the Immorality Act of 1927 (Statutes of the Union of South Africa, 1927), toward a new and democratic political dispensation has brought about with it major and rapid social changes. There are still high levels of interpersonal violence which is fueled by

socio-economic disparities and rapid urbanization (Norman *et al.*, 2007). In other words, these economic inequalities combined with the social change, compounds the amount of risk factors for violence. Other literature has also documented the ways in which rapid social change has affected violent outcomes within society. During 1994, the peaks in injury mortality in the Baltic States coincided with major political and social transitions (Ekman, Kaasik, Villerusa, Starkuviene, & Bangdiwala, 2007). As documented earlier, rapid social change and social fragmentation can contribute to a lack of continuity which can, in turn, lead to a breakdown of values (Campbell, 1992). Loosening of social controls could therefore also precipitate violent outcomes.

2.3 Review of sharp object violence literature



The previous section focused on a review of the risk factors usually associated with other, more widely studied, forms of homicide. After reviewing literature relating specifically to sharp object violence, similar risk factors emerge.

The literature on sharp object violence is scant (Ciallella *et al.*, 2002; Ambade & Godbole, 2006; Macpherson & Schull, 2007). The following section will review some of the studies on sharp object violence and will explore possible reasons why sharp objects are used instead of other implements. Literature on sharp object violence reports on demographic details of victims, manner and circumstances surrounding the death of victims, and some on wound morphology. During this section I will, at times, refer to some studies of homicide. Of the literature reviewed, none reported on the demographic variable of ethnicity or population group.

Studies found that the most common ways of committing a murder is by sharp force (Ciallella, Caringi, & Aromata, 2002), usually by using a knife (Rogde, *et al.*, 2000; Ciallella *et al.*, 2002; Ambade & Godbole, 2006; Bohnert, Hutterman, & Schmidt, 2006; Leyland, 2006). In Scotland, in particular, there were findings reporting a 164% increase in sharp object violence using a knife between the time period 1982 and 2002 (Leyland, 2006). Karlson (1998) writes that not only is the use of a knife in sharp object violence the case for Sweden but for other countries in Europe, Africa and Asia as well. In South Africa death by sharp objects accounted for 30% of non-natural deaths (Matzapoulos *et al.*, 2004; Smythe, 2004).

2.3.1 Individual

Various individual risk factors are associated with sharp object homicide. Risk factors such as being male and being under the influence of alcohol appear to be common as well as co-occur (Ormstad, Karlsson, Enkler, Law, & Rajs, 1986; Rogde *et al.*, 2000; Mohanty, Kumar, Mohanram, & Palimar, 2005; Bohnert *et al.*, 2006; Leyland, 2006; Ambade & Godbole, 2006) with some findings as high as 74% of cases testing positive for alcohol. Ratios for male and female profiles in victim data were found to be as high as 12:1 (Ambade & Godbole, 2006). Even a study reviewed with low male to female ratios still reported more than half male involvement at 53.7% (Leyland, 2006). In South Africa this ratio is 6:1 (Tonsing & Lazarus, 2008).

The ages 15-29 are seen as the crime prone ages (Pampel & Gartner, 1995). The increase of knife murders and fatal attacks in the United Kingdom needed to be addressed by particularly targeting the adolescent age group (Hern, Glazebrook, & Beckett, 2005) with

24% of boys reported carrying knives and 19% admitting intent to harm someone. In Scotland during 2005 alone there were 15 murders involving a knife. A National Profile of Injuries in South Africa in the same year, reported that in the age group 15-24, the leading causes of external death was by sharp force, which stood at 44, 8% (Prinsloo, 2007).

2.3.2 Relational

Other studies (Schmidt & Pollack, 2006) demonstrate some level of sophistication through analysis of wound morphology. Through this they are able to make distinctions or produce hypotheses between perpetrators and victims, which could therefore assist with criminal investigations. Wound morphology, such as comparisons between multiple and single wounds, was able to provide clues as to the relationship between the victim and perpetrator and also suggest possible motives for the homicide (Ormstad *et al.*, 1986). Ormstad *et al.*'s (1986) study reported that where multiple wounds have been inflicted, it was an indication that the victim and perpetrator were known to each other, and that the motive appeared to be of a 'passionate type' between partners in an intimate relationship. Other studies (Ambade & Godbole, 2006) were able to distinguish whether the injuries inflicted were defensive in nature and thus were able to ascertain whether the deceased was the victim or the perpetrator. This particular study differed from Ormstad *et al.* (1986) who concluded that multiple wound entries meant that the crime was of a 'passionate type'. Ambade and Godbole, (2006) however, concluded that multiple wound entries suggested the intent to kill, which could mean that the deceased was the one who had initiated the attack and thus suffered the fatality as a result of a counter-attack. Victims were also found to be members of family and acquaintances (Bohnert *et al.*,

2006). Ambade and Godbole (2006) confirmed this, finding that in 15% of all cases, the victim and perpetrator were related in some way or another and in 84% of cases no relationship was evident.

Further associations, such as between sex and relationship, were made between victim and perpetrator. Rogde *et al.* (2000) found that where the victims were female they were involved in a family row and where the victims were male they were involved in a dispute. In studies that were able to distinguish between perpetrator and victim, 88% of the perpetrators were identified as male (Ormstad *et al.*, 1986), and 80% of males had high blood alcohol concentrations. As males are more likely to be involved with or initiate a row (Rogde *et al.*, 2000; Eckhardt & Pridemore, 2008, Tonsing & Lazarus, 2008), this would suggest that in most cases males are the perpetrators. Other qualitative evidence in South African studies seems to further support the notion that a major percentage of perpetrators are male (Mathews, Abrahams, Martin, Vetten, Van de Merwe, & Jewkes, 2004; Abrahams & Jewkes, 2005).

2.3.3 Scene of injury

In the literature on sharp object violence most victims were killed near or in their own homes (Bohnert *et al.*, 2006, Rogde, 2000). Some studies inferred that because the weapon of choice was a knife that the incident occurred near the home (Leyland, 2006). Other studies (Ambade & Godbole, 2006), in contrast, found that 64% of victims were killed outdoors and 16% were killed near or in their own home. From these findings, it was ascertained that where victims were killed near their own home that the relationship between victim and perpetrator was familial (Bohnert *et al.*, 2006) and where victims

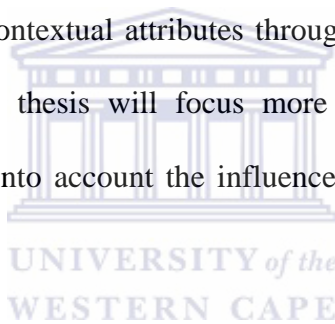
were killed outdoors, there was no relationship. This occurred in 84% of the cases (Ambade & Godbole, 2006).

Currently there are no specific theories of sharp object homicide in an already under-researched area of study. Furthermore, none of the literature reviewed reported findings relating to the ethnic background of victims. There are a few studies that do make certain suggestions on theories of knife violence; however, they are not strongly supported. Perhaps the use of knives emerged as part of a white youth gang subculture which arose in post Second World War South Africa (Mooney, 1998). Ciallella *et al.* (2002) suggests that knives are not controlled by legislation and that they are easily accessible, especially in “spur of the moment” crisis. Others studies also seem to support the latter hypothesis (Hern, Glazebrook, & Beckett, 2005; Leyland, 2006; Mohanty *et al.*, 2005), i.e. that knives are used simply because of its accessibility. Knife violence may be more common in places where there is heavy legislation controlling gun use (Scotland and Russia) and also away from wealthier urban areas (like in the Eastern Cape). The use of knives may also signal a stronger intention to cause fatality rather than to simply maim and it does not attract much attention when used in execution.

The literature reviewed specifically on sharp object homicide focuses more on the epidemiology of this phenomenon. Risk factors for sharp object violence are similar in other forms of interpersonal violence. These risk factors do not exist within a vacuum but within a social and historical context.

2.4 Theories of interpersonal violence

Why? Why are people violent and why males in particular? Can we attribute causes to individual characteristics, the context or both? These questions are linked to the eternal nature/nurture debate, which although is not the focus of this thesis, it is nonetheless important to mention. Is human behaviour attributable to something inherent within us or to forces operating in the environment that we live in and inhabit? The following section will review some of the individual and contextual theories of violence. It is felt that both have to be considered and as echoed throughout the literature review, it is the complex interaction of individual and contextual attributes throughout the ecological system that precipitates violent acts. This thesis will focus more on the contextual theories of violence but it will also take into account the influence of other individual theories of violence.



2.4.1 Biological theories

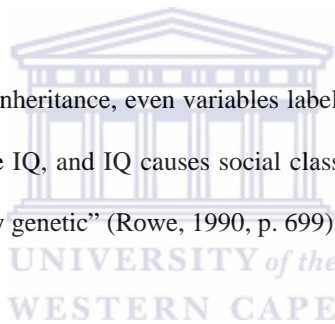
Explanations for violent behaviour based on particular genes or hormones are found to be unsound (Hunter, 1991) and whether these behaviours are limited to men because of biological reasons are also unfounded because it has been found that maternal behaviours in women includes aggression as well (Goldstein, 2002). Despite certain inclinations for biological explanations, there is acknowledgement that sociological perspectives still dominate literature on etiology for crime (and violence) (Rowe, 1990).

Rowe (1990), who reviews a book *On Biology and Violence* which advocates for the search for more biological explanations but by using a multivariate analysis, concludes

that both biological and social variables should be considered. Scarpa and Ollendick (2003) also seem to support the interaction of biological and social processes in explaining aggressive behaviour.

The review generated by Rowe (1990), criticizes the methodology of the study undertaken in an attempt to integrate biological and social etiologies for human behavior such as criminal behaviour. However, the arguments presented in the review are questionable such as which variables cause which outcomes. For example, they present that certain environmental variables may in fact be genetic in origin,

“On the other hand, through genetic inheritance, even variables labeled environmental may present genetic variation: for instance, if genes cause IQ, and IQ causes social class via social mobility, then variation in measures of social class may be partly genetic” (Rowe, 1990, p. 699).



From the example above, one can argue that perhaps certain individuals who belong to a certain class or group of people may in fact be better off even though they may be disadvantaged despite their IQ level. Variation in measure of social class in this instance may therefore be environmental.

Thus, it seems then that these types of arguments are inconclusive and does not serve for the betterment for those who are currently disadvantaged.

2.4.2 Psychological theories

Other psychologically predisposing factors for future violent outcomes may be due to poor boundaries in the home, poor parenting, low intelligence and poor attachment (Carr, 2007). These poor earlier experiences may contribute to individuals developing an impulsive personality (Caetano, Cunradi, & Schafer, 2001) where they are not able to respect the personal boundaries of others. Individuals' un-integrated aggressive aspects of their personality may be projected onto others (Mizen, 2003) which could invade and destroy the boundary of the other (Elliot, 2002). Projection (that is, the projection of one's own feeling on another then acting on it) is a defense mechanism which is employed to avoid conflict. Defense mechanisms are, therefore, a means of coping with emotional pain. Freud theorised that the conflict which determined all behaviour is located within the psyche of individuals and is therefore said to be biologically and psychically determined (Meyer, Moore, & Viljoen, 1997). This may not even result in physical harm but rather it could be an expression or a form of relating which is seen to be dysfunctional in nature.

Mizen (2003) mentions a failure to integrate normal, aggressive aspects of personality. This failure to integrate all aspects of experience so that individuals are able to withstand emotional pain may partly be due to parents not being emotionally attuned to their children. Furthermore, a distinction between other theories of behaviour and this psychological explanation is made, in that behavioural phenomenon is drawn upon as a source of data whereas psychological theories focus on mental experience. The difficulty with behavioural definitions is that violence is confined to an act which is divorced from underlying psychological states. It seems that what Mizen (2003) is trying to explain is

that violence, as a psychological state, is where parts of the psyche which is not integrated, is ‘split-off’ or rejected. ‘Split-off’ is a psychoanalytic concept used to define aspects of one self that is not integrated into the personality structure as whole and that it is more of an affective state. Individuals then tend to ignore the parts of themselves which they find painful to bear. Freud (1938 in Stevens *et al.*, 2004) postulated that violence was the conscious manifestation of unconscious drives which individuals were unable to contain.

2.4.3 Group theories

While psychological theories may be useful in explaining what causes individuals to behave violently at an intra-psychic level (and this is precisely where it falls short), it fails to encompass or include other factors responsible for violent outcomes. *Social Identity Theory* has provided a framework for understanding individual behaviour within a group setting. Bandura’s social learning theory (Bandura, 1966, 1977, 1986 in Stevens *et al.*, 2004), on which *Social Identity Theory* is based, is based on ‘modeling’ which is behaviour that is learnt in the context of a family where significant or influential others influence the behaviour of those receptive to the behaviour. It further suggests that continued exposure to acts of violence is likely to induce a process of learning and imitation (Govender & Killian, 2001).

Social Identity Theory has failed to account for the social content of identity and its influence in contributing to reproducing oppressive social relations (Campbell, 1992). Furthermore, the group has not been considered against the background of power relations, race, class and sex. In a study of intergenerational transmission of domestic

violence, Corvo (2006) stated that besides witnessing violence, there may be other past experiences of trauma such as child abuse, which may predispose individuals to become violent. These earlier childhood experiences, teaches children that others' intentions are hostile and that violent reactions to these perceptions are appropriate and the norm (Aromaki, Lindman, & Eriksson, 1999). Other studies found that weaker correlations between family origin of violence and current violence, and were not as strong and may be mediated by other variables (Holtzworth-Munroe *et al.*, 1997). There are a significant amount of children who do not become violent even after exposure to violence (Dawes, Tredoux, & Feinstein, 1989; Straker, Moosa, Becker, & Nkwale, 1992). Therefore, according to Govender and Killian (2001), violence explained by a universal set of psychological mechanisms is inadequate on its own when there are socio-cultural contexts which have powerful influences on individual behaviour.

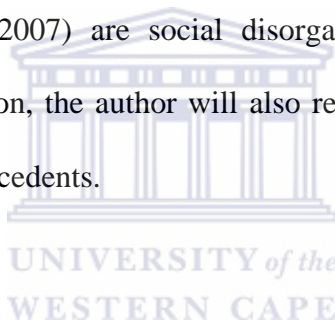
Protective factors within the family and individual protective factors such as internal locus of control, adaptability and frustration tolerance may mediate against exposure to negative life events such as witnessing violence (Ward *et al.*, 2007). Corvo's (2006) study suggests that violence in contemporary adult relationships is best attributed to earlier disruptions in attachment and child abuse. Social learning processes are therefore not solely accountable for violent behaviour in adulthood, or in domestic violence in the case of this study, but rather to complex familial social conditions.

Other factors, such as external events occurring in the broader social and political context or meso-systems, that have an effect on individuals and families in the micro-system, which may in turn contribute to the poor development of sense of self and disregard for others, will now be considered as the previous theories have been too narrow. So, while

the above theories of violence may be useful in certain respects, they have been consistently criticised for ignoring historical, social and ideological dimensions in the analyses of violence (Stevens *et al.*, 2004).

2.4.4 Contextual theories

There are theories which assert that crime and other forms of dysfunctional human behaviour are due to a dysfunction of broader social institutions. Violence is then caused by features and characteristics of the environment which exert powerful influences on individuals and communities. The three types of structural theories which are reviewed by McCall & Nieuwbeerta (2007) are social disorganisation theory, urbanism and strain/anomie theory. In addition, the author will also review the feminist theory which also contextualizes violent antecedents.



Social disorganisation theory

The main thrust of this classic criminological theory is that crime is a result of weakened social bonds and networks (McCall & Nieuwbeerta, 2007). These weakened bonds are as a result of rapid social change which creates conditions conducive to deviant behaviour. This occurs particularly in societies undertaking transformations from a primitive means of production to a more industrialized form of production. Areas that were socially disorganised and characterised by population heterogeneity, poverty and high population turnover, were found to have high rates of juvenile delinquency. In addition to this, these structural barriers obstructed forms of social cohesion and community mechanisms which could combat social challenges such as crime (Bursick & Grasmick, 1993). McCall & Nieuwbeerta (2007), report that several United States (U.S.) homicide studies provide

evidence consistent with the social disorganisation perspective. Various other indicators of the U.S. homicide rate are percentages of population divorced, female-headed households, single-parent households and percentages of children not living with both parents. Some studies have utilised one or more of these indicators with other indicators of social disorganisation, therefore lending further support, indices such as the structural poverty index (Huff-Corzine, Corzine, & Moore, 1986) or the resource deprivation/affluence index (Messner & Golden, 1992).

Urbanism

Urbanism theory, which has found mixed support, (McCall & Nieuwebeerta, 2007) looks at how population size and density affect social relationships. These two variables debilitate social cohesion and weaken social control. The fact that there are residents which are living in close proximity to one another where the quality of relationships are poor due to anonymity, contributes to weaker social controls. It seems that studies that have used more complex analyses such as city size and population density in a population structure index, have had more favourable outcomes (McCall & Nieuwebeerta, 2007).

Strain/Anomie

McCall & Nieuwebeerta (2007) cite Merton's (1938) strain/anomie theory as another structural force predicting violent outcomes. Merton (1938) states that individuals who face economic hardship and who have poor, little or no access to resources, may experience a sense of injustice and resentment. In this case they may then direct the anger and aggression towards the source of this frustration. Individuals, who are predisposed to violent outcomes, may be further marginalized by areas suffering an economic decline.

According to this theory then, crime and violent offending is related to poverty levels. Although previous research reported associations between generalized aggression and absolute deprivation (in the form of poverty concentration), and relative deprivation (measured by the Gini coefficient), others have found little associations in this regard (McCall & Nieuwebeerta, 2007). Studies that have suggested associations between unemployment rate and homicide rates have been met with inconsistent results.

It seems studies that have combined variables into a composite index have been met with more consistent results where structural covariates predict homicide rates (Lee, Maume, & Ousy, 2003; Messner, Baumer, & Rosenfeld, 2004).

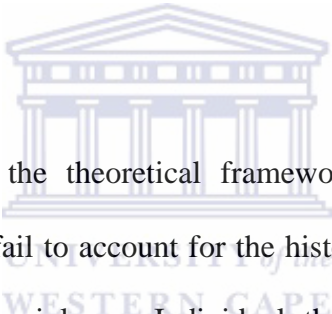
While the above mentioned contextual theories suggest flaws in the social structure that predict violent outcomes, which are a bit more comprehensive than the previously mentioned individual biological and psychological theories, they still do not account for the reasons for those structures and the kinds of power that it exerts on individuals and communities.

Feminist theory

One of the most frequently cited socio-cultural theories is feminist theory, which suggests that violence against women emanates from potent socializing messages from families, peer groups, media, the law and other institutions of a sexist society that leads to the acceptance and normalization of gender-based violence. Feminist theory is difficult to operationalize for empirical examination and is not often used or tested in research for this reason (Raj, *et al.*, 1999).

Earlier on it was mentioned that patriarchy is crucial in defining relationships between men and women and discerning the imbalance in power relations between male and female. Feminist theory unpacks this social construct further by challenging the notion that patriarchy is a universally understood construct. Traditional feminism understood women to be universally oppressed but ignored and that there may be different experiences of patriarchy on the basis of class and race. In other words, the experience of a black woman may be very different from the experiences of a 'Coloured' woman and likewise 'White' woman.

2.5 Theoretical Framework



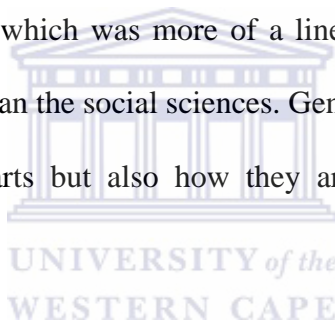
This section aims to outline the theoretical framework for this study. The above mentioned contextual theories fail to account for the historical and political processes in occurring phenomena such as violence. Individual theories are discussed as if the individual does not belong to a group, is part of a broader context or the impact that it has on individual action. Individual and contextual theories of violence do not necessarily stand apart from one another. Bronfenbrenner's (1979) ecological theory merely acknowledges that there are systems that interact and influence one another. Bulhan's (1985) theory of violence can compliment Bronfenbrenner's (1979) ecological theory in a way that acknowledges the complex interactional nature of subsystems in a multidimensional fashion by acknowledging historical, social and ideological patterns.

2.5.1 Ecological theory

Bronfenbrenner (1979), in his ecological theory, postulates, that the context of human development occurs within environments. Furthermore, the person and environment have an evolving and interactional effect on one another. We would therefore, look not only at what people are doing in the environment, but also at what effect the environment has on people which contributes to their behaviour. Bronfenbrenner's (1979) ecological theory postulates that we are affected by more than just those who are within our immediate social environment such as our family or within what he calls the *microsystem*. Rather, the ecological environment consists of a '...nested arrangement of concentric structures...' (Bronfenbrenner, 1979, p. 22), which are referred to as, micro-, meso-, exo- and macro systems. The microsystem would consist of the individual within patterns of interpersonal relations occurring within a setting such as the family. The mesosystem would refer to the relations between two microsystems in which the individual participates. The exosystem includes one or more settings in which the individual does not participate but which has an effect on the individual such as the local school board of a child. Finally, Bronfenbrenner (1979), states that the macrosystem refers to consistencies in form and content of lower order systems in the form of culture or ideology, or belief systems that underlie these structures. Also, more importantly is the person's perception of the environment in which they participate and how this perception influences the kinds of activity and the influence that it has within a particular context (Bronfenbrenner, 1979). Other writers have supported this notion that individuals and groups in a particular context mediate experience by their minds (Dawes & Donald, 1999; Lindegger, 2004). Moore (2003) states that, systems within society such as the individual, family and community, interact and influence each other in complex and

sometimes unpredictable ways. Individual behaviour occurring in the context of larger systems such as the family, peer group and community, is affected by changes in other parts of that system. Individual behaviour and society, therefore, have an interactional effect on one another. Most public health approaches (Butchart & Emmet, 2000) identify risk factors at different levels of the social system but fail to account for other contextual factors, like power (Green & Engelbrecht, 2007) and gender (Confortini, 2006) for example.

General systems theory, which is similar to ecological theory, was derived from the natural and physical sciences, which was more of a linear model (Dowling, 1985) and more precise and predictable than the social sciences. General systems theory investigates not just the whole and its parts but also how they are related to one another (von Bertalanffy, 1968).



According to the above theoretical framework, we would have to acknowledge that many social problems of our time such as violence, living in poverty or divorce, to name but a few, impact on multiple levels of the environment (Garbarino, 1995; Sarason, 1996; Sampson, 1999; Wandersman & Nation, 1998 in Maton, 2000), such as the individual, family, social and broader political and ideological spheres. Interventions on all levels are necessary if we are to have some kind of effect (Maton, 2000). In fields such as mental health and in education, individuals are seen in the context of their family, school and community (Dowling, 1985; Green & Engelbrecht, 2007). In the mental health field for example, child and adolescent pathology is accounted for by not only looking at individual and biological factors but also contextual factors as well (Carr, 2006).

The above theory explains, more broadly, the interactional nature of subsystems within a broader system. Bulhan's (1985) theory of violence indirectly acknowledges this as well, but speaks more specifically about certain social groupings within a system who are disadvantaged while others are not and attributes this state of affairs to certain historical and social processes with particular power dynamics.

2.5.2 Bulhan's theory of violence

Bulhan (1985), unlike the other theories above, makes valuable links between individual and group phenomenon to the prevailing political and social realities. Using his theory we are also able to see how certain groups of people partake in certain kinds of activities as a result of being oppressed in various ways. So, in a sense, he moves beyond what traditional ecological theory states, that is, that there are various systems which are interconnected and interact, but also that power, politics and the psychological effects thereof are all infused. This section will show how this is so and also provide some of the insights of Fanon (1986) that Bulhan (1985) draws upon.

Violence, according Bulhan, (1985, p.135) is '...any relation, process, or social condition within society which violates the physical, social and / or psychological integrity of an individual or group'. Thus structures and institutions, such as past apartheid laws, current existing inequities and lack of service delivery, can be considered violent because of their effect on society, individuals, and on specific groups or communities. Bulhan (1985) draws upon the insights of Fanon (1986), an Algerian psychiatrist, who commented upon the colonial condition and the psychological effects this had on those who were deeply

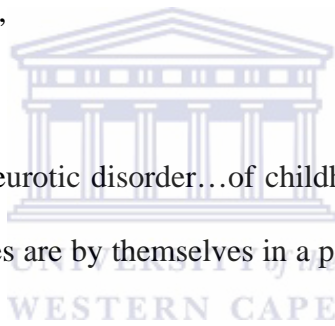
affected. Both writers reflected critically upon their social and political realities of their time.

Fanon (1986) reflected critically on the alienation of the black man and showed how powerful forms of psychic distress were locked up in the workings of power within the social and economic realities of the colonial condition. Within the colonial condition there were huge power differentials between those who were enslaved, who were black and their masters who were white. Bulhan (1985) distinguished between vertical and horizontal violence. Vertical violence manifests in the form of a struggle for power, property, security and justice. Horizontal violence manifests as self-victimisation, violence between relatives and peers. In other words, vertical violence occurs between 'master' and 'slave', whereas horizontal violence occurs between the 'slaves'. There are huge power differentials between 'master' and 'slave'. The 'master' in contemporary society would be those who wield power and control over resources and the 'slaves' would be those who are disempowered. Those who lack the power to exert an influence on the system, usually the 'slaves' 'acts out' these feelings of being disempowered through violent acts among themselves, relatives and community. 'Acting out' is a psychological defense mechanism used to describe the manner in which unexpressed feelings are disposed of and is usually dysfunctional and harmful to productive human relationships. This 'master/slave' relationship gave rise to neuroses and tensions in the black man. Neurosis is a term used to denote a relatively mild mental disorder with predominantly distressing symptoms and without loss of insight (Colman, 2001). It (neuroses) can occur when psychic conflicts within an individual emerge as a result of powerful unconscious wishes striving for expression, which have their origin in

childhood. Instead, the individual defends against these tensions by repressing them. Repression is a psychological defense mechanism to ward off painful feelings (DSM IV, 2007).

Freud (1905) investigated the origins that neuroses had in childhood:

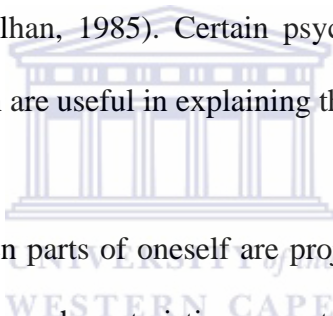
‘...the influence of childhood makes itself felt already in the situation at the beginning of the formation of a neurosis, since it plays a decisive part in determining whether, and at what point, the individual shall fail to master the real problems of life (p. 54).’



‘The occurrence of a neurotic disorder...of childhood proves, first and foremost, that infantile experiences are by themselves in a position to produce a neurosis (p. 54).’

Fanon used Freud’s psychoanalytic description of neurosis to explain conflicts between powerful unconscious wishes within the colonial context (Hook, 2004). Human psychology is inextricably linked to and conditioned by sociopolitical and historical forces. The realm where politics and psychology are inextricably linked and influence one another, is what Hook, (2004) termed ‘psycho-politics’. The laws of South Africa, for example, contributed largely to the creation of structures and institutions that had adverse effects on the daily lives and psyches of people. This mimicked the colonial condition in many ways that Fanon (1986) was commenting on. Current public discourses in South Africa around perceived racism (James, 2005; Kassiem, 2005; du

Toit, 2005) is still constructed in conversation as talk of 'us' and 'them' and 'we' and 'you'. These forms of talk open themselves up to subtle as well as overt forms of oppression (Bulhan, 1985). This largely influenced and still influences the way that those who were oppressed, related to those who oppressed. According to Hook (2004) colonialism comprised not only of appropriated land, but also of the means and resources of identity which has led to powerful forms of psychic distress. The colonial condition and apartheid, has obliterated the indigenous social structure, culture, language and history of the oppressed, causing disconnect from one's personal identity and that of one's community. Identity development among the oppressed is compromised leading to a psycho-existential crisis (Bulhan, 1985). Certain psychological defense mechanisms such as projective identification are useful in explaining this relation.



Projective identification is when parts of oneself are projected into others and then they are related to as if they are those characteristics or parts (Klein, 1981). The oppressed, however, relate to the dominant group by way of introjections (which is taking in positive aspects of the 'Other') and identification. When this happens they not only take in good parts but also bad parts. Since the oppressed lack safe objects to project these bad attributes onto, they project onto and among themselves the negative attributes cast on them by the dominant group. This process further compounds their oppressive experience and inferiority complexes and thus they become victims of themselves and others. Bulhan (1985) states that the external enemy is more often than not an internal representation of parts of oneself that is unacceptable. He quotes from Pinderhughes (1972);

“Violence to another cannot occur in a moment of introjective relationship, when the would-be victim is perceived as an acknowledged and valued part of the self. Violence can only occur under circumstances of projective relationship,” (Bulhan, 1985, p. 151).

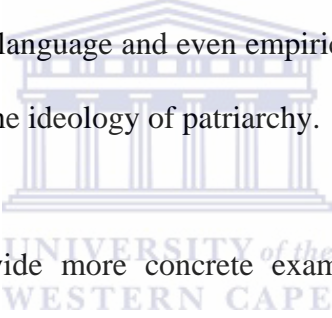
WHO definitions of violence cite intent as an important component of their definition. Bulhan (1985) however, states that there are many processes or social conditions which are violent where there was no intent.

The violence that Bulhan (1985) is referring to, as explained earlier, is that which is embedded in the structure of society which always isn't discernable from more apparent forms of violence such as knife violence, domestic violence, wars, etc. Knife violence, for example, is one form of a physical manifestation of an internal process in individuals and communities. The concept of violence has been extended beyond the more crude and observable and narrow concepts. Galtung (1969), who also formulates a contextual theory of violence, states that, ‘... violence is that which increases the distance between the potential and the actual, and that which impedes the decrease of this distance’. What he refers to here is that if someone dies from a disease today where there should be no reason to die from because of modern technological advances in medicine, then violence is present. Similarly, if one's life expectancy is thirty years old today, which was an actual mortality rate prevalent during the Neolithic times, then violence would be present in the system. If a particular group monopolises resources such that other groups do not realise their actual potential then by way of Galtung's (1969) definition, the system is violent because this decreases the difference between ‘what is’ and ‘what could be’. Galtung (1969) stated that,

‘...when one husband beats his wife there is a clear case of personal violence, but when 1 million husbands keep 1 million wives in ignorance there is structural violence’

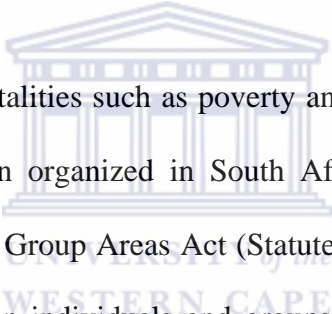
(Confortini, 2006).

He goes on to further discuss that there are many institutions and perhaps that the general structure of society, with its unequal balances of power and therefore unequal distribution of resources, is violent in many forms which cannot be fully explored here. The way that violence is embedded within social institutions is when it is built into culture (Galtung, 1969). Symbolic violence built into a culture does not kill or maim like direct violence or the violence built into the structure. However, it is used to legitimize either or both in the form of ideology, religion, and language and even empirical and formal science. This has been discussed earlier such as the ideology of patriarchy.



Bulhan (1985) seems to provide more concrete examples of what Galtung (1969) theorised about. He brings life to Galtung’s formulations of violence by way of empirical and statistical data such as mortality rates, and shows how structural inequities within society are responsible for discrepancies in mortality rates between various population groups in the United States of America as well as in South Africa. In South Africa, there were unequal death rates for the different racial groups. Homicide was the leading cause of death for ‘Blacks’, second for ‘Coloureds’ and did not seem to feature in the top five leading causes of death for ‘Whites’ and ‘Asians’. These unequal distribution of mortality rates occurred because of a particular ordering of social relations brought about through the institutionalization of apartheid.

Violence in South Africa is borne out its apartheid past where it has been institutionalized in its laws and also in how unequally resources have been distributed among the various population groups. Bulhan (1985) points this out in the way health resources, infant mortality and mortality rates for example, have been statistically skewed among the various population groups. For example, in a country where 83% of the population is 'black', which means a political grouping of disadvantaged communities which includes 'Africans' and 'Coloureds', and who received less than a third of the nation's income, compared to 'Whites' who make up about 13% of the population and who own more than two thirds of the nation's income, is an example of structural violence.



Risk factors for sharp object fatalities such as poverty and alcohol, have a history in the way social relations have been organized in South African society, such as the 'tot system' (Sparks, 1990) and the Group Areas Act (Statutes of the Union of South Africa, 1950) which predisposes certain individuals and groups to certain kinds of behaviours such as violence and perhaps even certain forms of violence. The way society and institutions are structured have certain psychological and behavioural effects on individuals and groups within that society. Patterns of relating and social practices are usually inherited from previous generations. The trauma suffered and the dysfunctional ways that communities and individuals have coped with it as a result of apartheid, has also been inherited by the following generations.

2.6 Summary

In summary, we have to acknowledge that despite the increasing attention that is being paid to this phenomenon of violence, there is still much to understand about the effects of violence on society (Govender & Killian, 2001; WHO, 2002) and that much more still needs to be done in order to intervene effectively. The literature review is testament to the complex causal factors of violence. Also, many theories attempt to explain violent outcomes but what seems to be the case is that contextual theories, more so than not, seems to override individual level explanations of violence. Individual behaviour mostly occurs within a particular historical context and there is a link between the psychological self and the broader context. South Africa is one such example where behaviour occurring in particular groups is because of the historical context. What is also less clear and what the literature review does not seem to address more in detail are the reasons why sharp objects are used as opposed to other objects.

CHAPTER 3

METHODOLOGY

3.1 Research Design

The research design of this study is empirical in nature and utilizes numerical data which is quite common with this type of design (Mouton, 2001). A research design which aims to explore social phenomenon in the form of numbers or quantitative variables is also known as quantitative research (Durrheim, 1999; Babbie, 2004). In this study then a description on the incidences and occurrences of sharp object fatalities will be undertaken. This study is also epidemiological in nature because it describes health related phenomenon or disease, such as sharp object fatalities, within a particular population across a time period as well as looking at the occurrence of this in terms of person, place and time (Butchart & Kruger, 2001; Lindegger, 2004). Descriptive studies more commonly, look for patterns of disease and aims to measure the occurrence of disease in a population (Webb, Bain, & Pirozzo, 2005).

This descriptive study is a secondary data analysis of survey data which in this case is mortality data. This type of data (mortality data) is usually cross sectional in nature (Mouton, 2001) and therefore may provide a ‘...snapshot of the injury problem for a particular time-period’ (Butchart & Kruger, 2001, p. 221). It has a descriptive component and it allows researchers to calculate prevalence of risk factors and of disease (Katzenellenbogen, Joubert, & Karim, 1997).

3.2 Current study

The current study is part of a larger study conducted by the Medical Research Council's (MRC) Crime, Violence and Injury Lead Programme where one of its aims is to conduct and disseminate public health oriented research into the extent, causes and consequences of injuries due to crime, violence and accidents in South Africa. The present study will draw from the database on fatalities recorded by National Injury and Mortality Surveillance System (NIMSS) from mortuaries in the Buffalo City (also known as East London) area. This two phased study focuses firstly on, the magnitude and identification of risk, and then secondly, on the association between variables and relative contribution of risk to outcome measures. As reported in the literature review, the literature on sharp object fatalities is scarce and this study is a further contribution to this lack. Further work is needed though on multivariate studies which maps out the multiple pathways leading to violent outcomes in general.

3.3 Study site

East London or Buffalo City is located in the Eastern Cape which is one of nine provinces in South Africa, is the third largest at 14, 4% (Statistics South Africa, 2004) and by far the poorest province in the country with only 62% of households having access to piped water (Statistics South Africa, 2004) and 47% of households below the poverty line Buffalo City, according to definitions in Census 2001, is the *Place Name* which consists of many smaller *Main Places* under it. This is equivalent to suburbs, towns or villages falling under a broader geographical area. The population demographics

of the Eastern Cape such as sex, population group and age, reflect general population demographic trends in South Africa. Similar trends also apply to Buffalo City. These figures are illustrated in *Annexure B*. The unemployment rate according to labour force statistics was at 32%, which was the third highest in the country and according to Census 2001 at 54, 6% which was the highest in the country in 2001. 22, 8% of the population above 20 years of age has no education in the Eastern Cape. This is the third highest in the country (Statistics South Africa, 2004). More than 50% of the population in the Eastern Cape is not economically active. This is the second highest number for the provinces in South Africa (Statistics South Africa, 2004).

3.4 Aim



Most of the studies on sharp object fatalities provide univariate descriptions or analyses with respect to race/population group, sex, age, scene of injury and blood alcohol levels (BAC). This study firstly aims to provide univariate descriptions of the occurrences of sharp object fatalities with respect to race/population group, sex, age, scene of injury and blood alcohol levels (BAC), and secondly, provide multivariate descriptions with respect to race/population group, sex, age and blood alcohol levels (BAC) occurring within the City of East London. These descriptions will add to developing a profile of sharp object fatal victims in East London, as well as add to the data base of homicide victims of the NIMSS and may further inform future interventions.

The primary research questions guiding the present study are:

2. What are the incidences of sharp object fatalities with respect to sex, race/population groups, age, and scene of injury, time and blood alcohol levels?
3. Are there differences in the rates of distribution of incidences of sharp object fatalities with respect to sex, race/population groups, age, and scene of injury, time and blood alcohol levels?
4. What are the possible risk factors for sharp object fatalities with respect to sex, race/population groups, age and blood alcohol levels?

3.5 Population

The sample consists of 1219 valid protocols (cases) of all recorded sharp object fatalities within the City of East London from the period 2001 to 2005. Of the total sample, 155 cases were female, 1058 were male and 6 cases were unidentified. With respect to the population group descriptions, 4 were 'Asian', 1123 were 'African', 68 were 'Coloured', and 15 were 'White' while there 9 that were unidentified. The age ranged from 0-85 years.

3.6 Measures

3.6.1 Injury data

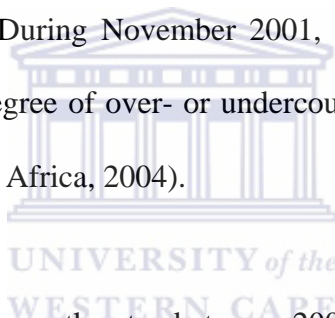
Data on the when, who, and what of sharp object fatalities from the National Non-Natural Injury and Mortality Surveillance System (NIMSS) Data Collection Form is used as measures for this study (*Appendix A*). The NIMSS records 21 items of information

ranging from biographical details such as person's age, sex, population group to place of death such as province, town and suburb of injury as well as apparent manner and circumstances of death (Matzopoulos *et al.*, 2002). Primary medical causes of death, using the International Classification of Disease version 9 (ICD 9) to which a probable manner of death code is assigned to each, is also recorded. Forensic laboratory reports also reports on the presence of alcohol and other narcotic substances in the deceased. The information from these forms is recorded by police and forensic pathologists at each mortuary, and captured onsite into a computerized database by clerks and secretarial staff (Matzopoulos, Van Niekerk, Marais, & Donson, 2002). Routinely kept data is actively collated and centralization by qualified professionals (Prinsloo, 2007) and cleaned and integrated by specialist researchers (Butchart *et al.*, 2001). Inconsistencies are prevented by the continual analysis of the effectiveness and reliability of the Data Collection Form. By January 2000, validations had been performed on 90% of the mortuaries included in the system (Butchart *et al.*, 2001). The National Non-Natural Mortality Surveillance System Data Collection Form was developed in collaboration with the World Health Organisation guidelines on recording fatal injuries.

3.6.2 Denominator data

The Census 2001 description was the most comprehensive database available for the analysis of East London data (Statistics South Africa, 2004). The Census 2001 database was used as a base for denominator extrapolations, based on parameters and growth rates specified by a population model developed by the Actuarial Society of South Africa (ASSA) (Dorrington, 2005). Denominator data is the data available for population statistics such as births, deaths, diseases etc.

The population for East London was obtained from the community profile sets for the Census 2001 municipality for sex, age and population group (Statistics South Africa, 2004). Statistics South Africa is mandated by The Statistics Act (No. 6 of 1999) to conduct a population census every five years (Statistics South Africa, 2004). Census 2001 data was collected on the night of 9-10 October 2001, where South Africans were counted for the first time in a democratic South Africa. Information on persons and households were collected by fieldworkers throughout the country using a uniform methodology. This information was processed at the Census processing centre in Pretoria. Data was captured on computer via scanning. The captured data was edited and made accessible for analysis. During November 2001, a post-enumeration survey was undertaken to determine the degree of over- or undercounting. This is common practice in all censuses (Statistics South Africa, 2004).



Provincial annual exponential growth rates between 2001 and 2005 were derived from the ASSA 2003 (Dorrington, 2005) model for the Eastern Cape. It is assumed that similar if not the same growth rates would apply for East London by age, gender and population groups. These provincial growth rates were then utilised to make projections about sex, age and population growth rates exponentially for the city for each year over the period 2001 to 2005. Fairly accurate estimates of population number per population group per age over the period 2001 to 2005 were derived.

Variables that are descriptive of the socio-demographics will be extracted from Census 2001 data which is the most current and accurate description of the socio-physical conditions of East London (van Niekerk, 2007). The variables that will be used in this

study are magnitude, population demographics such as sex, race, age, and circumstances of fatalities such as scene of injury, day and times of occurrences and blood alcohol levels across the time frame 2001 to 2005.

3.7 Procedure

Data was not collected by the researcher as this was an analysis of secondary data which had already been collected by the MRC. Access was granted to the data through a release form. The ethics committees of both institutions, UWC and MRC approved the study. A statistician at the MRC provided the researcher with data in tabulated form using SPSS, a statistical software programme. Microsoft Excel was further used to create tables and graphs, calculate rates based on population denominator data and other basic calculations such as percentages so that comparisons could be made between sharp object fatalities of population groups, sex, age, years, times, days and scenes of fatality.

3.8 Data analysis

The aim of the secondary data analysis was to describe the profile of sharp object fatalities for East London and to develop hypotheses around possible risks. The first part of the results (Part 1 in Chapter Four) is a basic description of occurrences and the second part of the results (Part 2 in Chapter Four) is a multivariate description around association of possible risk factors.

3.8.1 Sharp object fatality data

The statistical software programme, SPSS, was used to create tables of all incidences of sharp object homicide in the East London area for the period 2001 to 2005 for the categories sex, population group, age, scene of injury, blood alcohol levels and total number of incidences across the time frame 2001 to 2005. Data was also provided in cross tabulated format. The combinations of single variables that were used were race, sex, and age, race and alcohol, sex and alcohol, and age and alcohol.

3.8.2 Mortality rates

The NIMMS data only reports on the occurrences. Once the population denominator data was derived (extracted from Census 2001 data) (Statistics South Africa, 2004), the crude mortality data was calculated for the categories population group, sex, age, time of day, scene of injury, day of week and blood alcohol levels. The formula for calculating the rates was: $\text{incidences/population denominator data} \times 100\ 000$, using *Microsoft Excel* calculations. The end result was either crude mortality rates, age specific, sex specific or population group specific rates per 100 000 population recorded on spreadsheets on *Microsoft Excel*. This is a standard unit of measurement commonly used in reporting rates of incidences in public health literature (Webb, Bain, & Pirozzo, 2005). Rates per 100 000 for the multivariate descriptions were also calculated. Obtaining rates would also enable uniformity of data which would allow comparisons between other studies.

3.9 Ethical considerations

This project involves secondary data analysis and no ethical consent is required. Ethical clearance for the data was obtained by the researchers involved with the MRC Lead Programme on Crime, Injury and Violence. Access to the data will be possible after ethical clearance by the University of the Western Cape. The researcher, although not embarking on collecting data, still has ethical responsibilities. These are; objectivity and integrity in research, avoiding plagiarism, accountability to the institution who owns the data and to protect the identities of the victims if there are names that will be divulged (Mouton, 2001). Ethical responsibilities include appropriate referencing of work done as well as contributions by members and staff of the MRC.



CHAPTER 4

RESULTS

4.1 Introduction

The results section will be discussed in two parts. Part One will be a basic description of the distribution of sharp object fatalities with regard to the magnitude, demographic features or risk factors (population group, sex, age), and circumstances of occurrences (blood alcohol levels, day, time of incident). Part Two will be a multivariate description by combining variables such as population group, sex, age, and blood alcohol levels. Population group, sex and age results will be reported in rates per 100 000 while time of day, day of week, scene of injury and total blood alcohol levels, will be reported as percentages of occurrences. The reason for this difference is that population group, sex and age groups have population denominator data whereas none exist for days of week, time of day, scene of injury and blood alcohol levels. However, if we compare the differences of alcohol levels between population group, sex and age then the results are reported in rates per 100 000.

4.2 Part One: A univariate description of the magnitude, circumstances and risk for sharp object fatalities

The focus in the literature is on univariate analysis and descriptions and the variables described below have been identified as important to obtain a picture of the magnitude, circumstances and risk for sharp object fatalities.

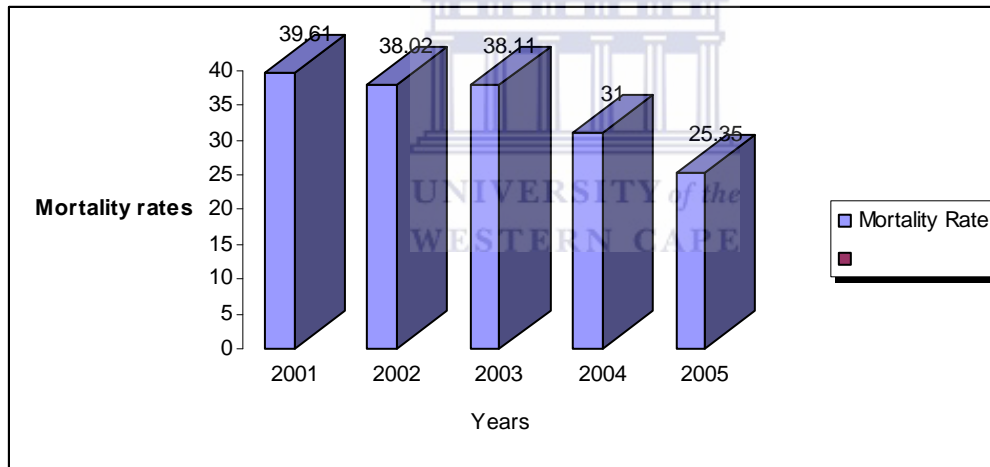
4.2.1 Magnitude of sharp object homicide over the period 2001 to 2005

The following *Table 1* and *Figure 1* describes the magnitude of sharp object fatalities in rates per 100 000 from 2001 to 2005.

Table 1: The overall sharp object fatalities (SOF) per 100 000, 2001-2005, N=1219

Crude sharp object mortality rates for East London 2001-2005										
Year	2001	R/1000000	2002	R/1000000	2003	R/1000000	2004	R/1000000	2005	R/1000000
Population	701884		704869		708524		712845		717848	
Total SOF	278	39.61	268	38.02	270	38.11	221	31.00	182	25.35

Figure 1: The overall sharp object fatalities per 100 000, 2001-2005, N=1219



The overall incidences of sharp object fatalities for East London for the period January 2001 to December 2005 is reported in *Table 1* (SOF row). Over the period 2001 to 2005, there has been a progressive decrease in the number of cases involving sharp object fatalities (Donson, 2008) with sharper decreases in the years 2004 and 2005.

The overall sharp object fatality rates has gradually declined from 39.61 deaths per 100 000 population in 2001, to a low of 25.35 deaths per 100 000 population in 2005. There

were slight increases in sharp object fatalities in 2003 which then gradually dropped in 2005. These are listed in *Figure 1*.

4.2.2 Sharp object fatalities by population groups

Figure 2 reports the total rates of sharp object violence by population groups for the years 2001 to 2005. *Table 2* on the other hand shows the rates of incidences for population groups per year. *Table 2* also shows the number of incidences and population denominator data. For both *Figure 2* and *Table 2* (N=1210).

Figure 2: Rates of sharp object fatalities for population group per 100 000, 2001-2005, N=1210

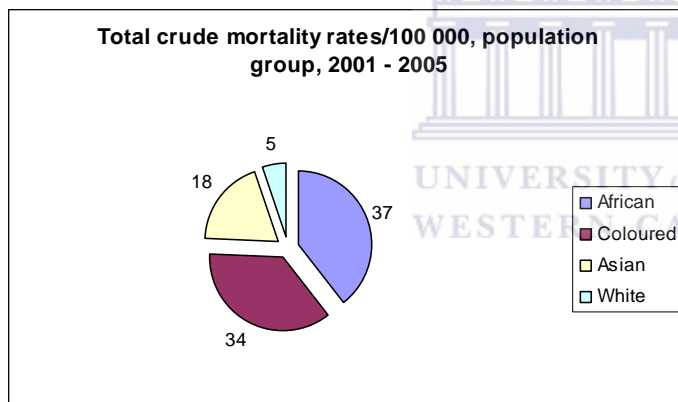
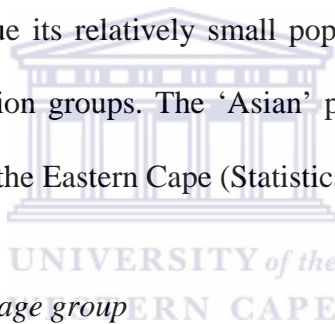


Table 2: Rates and incidences of sharp object violence for population group per 100 000, 2001-2005, N=1210

Year	2001		2002		2003		2004		2005	
	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
African	253	42.29	242	40.28	246	40.71	211	34.68	171	28.36
population	598302		600806		604265		608374		603008	
Coloured	19	47.50	10	24.91	19	47.13	10	24.67	10	24.67
population	40002		40143		40317		40529		40529	
Asian	2	45.72	2	45.54	0	0.00	0	0.00	0	0.00
population	4374		4392		4413		4413		4413	
White	2	3.38	10	16.80	2	3.36	0	0.00	1	1.67
population	59206		59529		59529		59529		59898	
T/cases	276	Total	264		267		221		182	1210

The incidence among the 'African' population group is much higher than the other population groups. The second most number of cases occurs within the 'Coloured' population group, followed by 'Whites' and then the 'Asian' population group. However, the gap is narrowed and in fact almost similar when the total rates are averaged for the time period 2001 to 2005, for 'Coloureds' and 'Africans'.

The inverse seems to apply when comparing the incidences to mortality rates of the 'White' and 'Asian' population groups. The 'Asian' population group has a higher mortality rate (18 per 100 000) than 'Whites' (5 per 100 000), and has lower incidences than 'Whites'. This may be due its relatively small population size which is miniscule compared to the other population groups. The 'Asian' population group comprises just 0.6% of the total population in the Eastern Cape (Statistics South Africa, 2004).



4.2.3 Sharp object fatalities by age group

Table 3 describes the rates of sharp object violence for age groups for the period 2001 to 2005 (N=1168). 51 (4.2%) cases were not accounted for. A general description of the developmental age period is useful for the age category and they are; child to adolescence (0-14), adolescence to adulthood (15-29), adulthood to late adulthood (30-44), late adulthood to middle age (45-59) and middle age to elderly (60-74+). (4.2%) cases were not accounted for.

Table 3: Distribution of sharp object violence incidences and rates per 100 000 respectively for age groups for 2001 to 2005, N=1168

Age	Incidents	Rate/100000	Population
0-4	22	8.71	252570
5-9	1	0.31	324715
10-14	8	2.23	358833
15-19	112	27.47	407715
20-24	226	56.14	402585
25-29	200	64.16	311715
30-34	191	70.15	272278
35-39	129	51.86	248754
40-44	116	49.69	233455
45-49	65	31.96	203370
50-54	49	34.02	144051
55-59	13	12.32	105554
60-64	15	16.48	91040
65-69	8	11.70	68367
70-74	4	7.67	52156
75-79	6	18.14	33080
80-84	2	8.77	22795
85+	1	7.73	12936
Total	1168		3545969

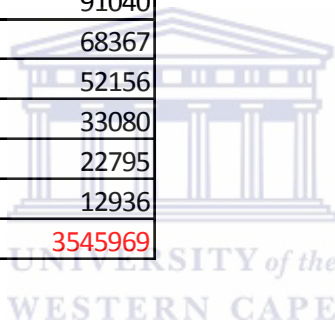
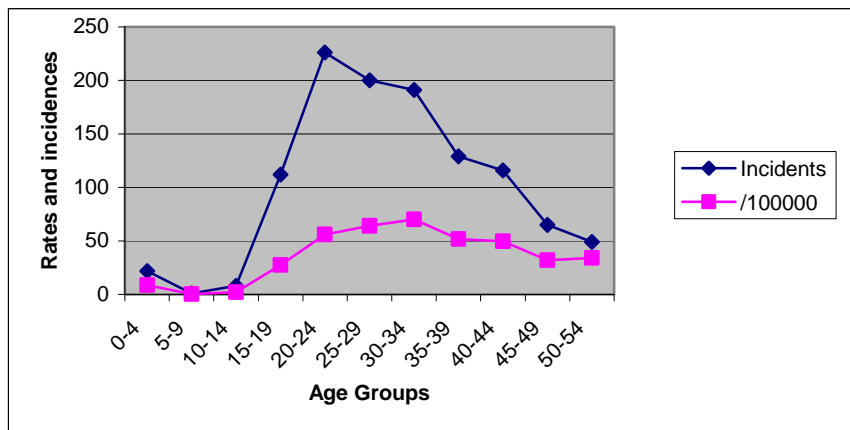
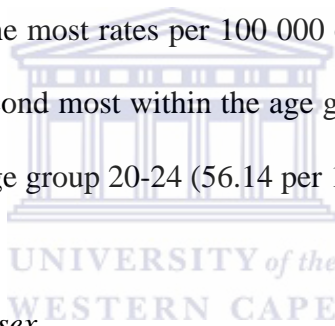


Figure 3: Distribution of sharp object violence incidences and rates per 100 000 respectively for age groups for 2001 to 2005, N=1168, 51 (4.2%) cases were not accounted for



The incidences of sharp object violence for age groups (0-80+) across the time frame from 2001-2005, including males and females and all population groups, seems significant between the ages 15-44. Within this age group (15-44), which comprises 83% of all deaths recorded, the majority of incidences appears to occur between the ages 20-24 (21%), the second most between the ages 25-29 (19%) and the third most between the ages 30-34 (18%), and seem to decrease from 55 years onward. Data on the distribution of mortality rates per 100 000 show a bell shaped curve (*Figure 3*) peaking within the age group 30-34, and gradually dropping off after the ages 49 and reaching lows after the age 69. Analysis of the rates of incidences per 100 000, reveal an inverse ranking order compared to the incidences. The most rates per 100 000 occurs within the age group 30-34 (70.15 per 100 000), the second most within the age group 25-29 (64.16 per 100 000) and the third most within the age group 20-24 (56.14 per 100 000).



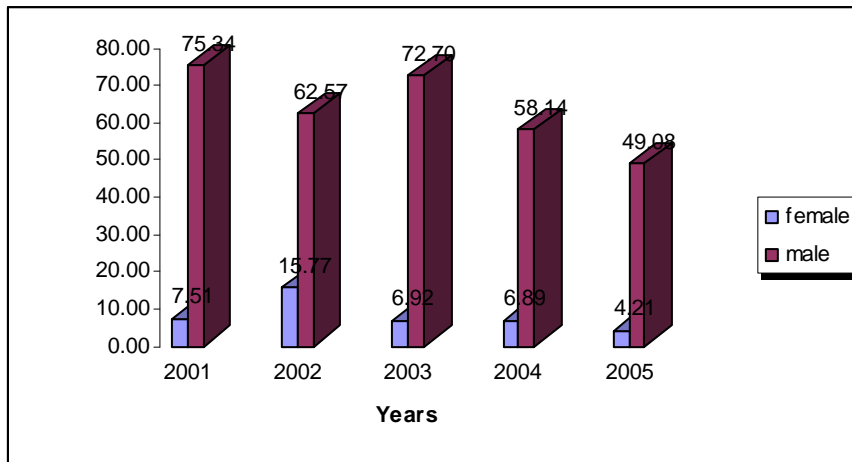
4.2.4 Sharp object fatalities by sex

Table 4 reports the mortality rates for females and males for the years 2001 to 2005. It also reports incidences as well as population denominator figures for the years 2001 to 2005. *Figure 4* reports the mortality rates for males and females over the time period 2001-2005.

Table 4: Occurrence of sharp object violence for sex over time period 2001- 2005, N=1219, incidents and rates per 100 000

Year	2001		2002		2003		2004		2005		
T.fatalities	276	Rate	266	Rate	268	Rate	221	Rate	182	Rate	T/Rate
male	248	75.34	207	62.57	242	72.70	195	58.14	166	49.08	63.49
P/denom.	329158		330813		332892		335372		338201		
female	28	7.51	59	15.77	26	6.92	26	6.89	16	4.21	8.25
P/denom.	372726		374056		375632		377473		379647		

Figure 4: Occurrence of sharp object violence for sex over time period 2001- 2005, N=1219



There are observably more incidences of sharp object violence for males compared to those of females across the years 2001 to 2005 with a ratio of 7:1 respectively. *Table 4* shows that rates per 100 000 also indicates a higher mortality rate for males as opposed to females for years 2001 to 2005. The rate seems to fluctuate for males until 2003 and then drops gradually with a lower rate in 2005. The same applies for females, with rates fluctuating and dropping to a low in 2005.

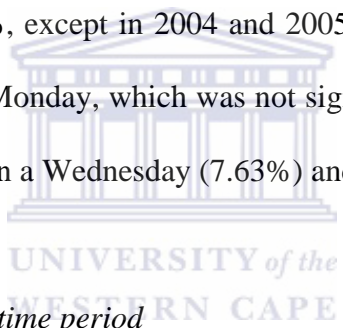
4.2.5 Sharp object fatalities by day of the week

Table 5 reports the occurrences of sharp object violence during the day of the week, for the time period 2001-2005, with (N=1219). *Table 5* also reports on the percentage frequency of incidences.

Table 5: Occurrences and percentage of occurrences of sharp object fatalities during the day of the week, for the time period 2001-2005, N=1219

	2001	2002	2003	2004	2005	Total	%
Sunday	57	37	62	45	37	238	19.52
Monday	11	28	20	47	40	146	11.98
Tuesday	23	30	12	22	22	109	8.94
Wednesday	18	33	16	20	6	93	7.63
Thursday	12	33	23	12	12	92	7.55
Friday	38	32	34	21	12	137	11.24
Saturday	119	75	103	54	53	404	33.14
	278	268	270	221	182	1219	100.00

Most of the cases were recorded over a weekend on Saturday (33.14%) and Sunday (19.52%) with a total of 52.6%, except in 2004 and 2005 where most of the cases were recorded over a Saturday and Monday, which was not significant. The lowest cases were recorded during the midweek on a Wednesday (7.63%) and Thursday (7.55%).



4.2.6 Sharp object fatalities by time period

Table 6 reports on the percentage frequency of incidences as well as the incidences per year and total incidences from 2001 to 2005.

Table 6: Occurrence of sharp object violence in East London by time period, 2001 - 2005 N=1162, 57 (4.67%) of cases were not accounted for

Time	2001	2002	2003	2004	2005	Total	%
0h00-3h59	52	43	41	42	36	214	18.42
04h00-7h59	32	32	37	43	65	209	17.99
08h00-11h59	22	34	30	53	38	177	15.23
12h00-15h59	28	25	41	25	10	129	11.10
16h00-19h59	54	48	50	19	13	184	15.83
20h00-23h59	59	72	65	35	18	249	21.43
Total	247	254	264	217	180	1162	100.00

Table 6 illustrates that more than half (57%) of cases of sharp object violence occurred between the times 20h00 and 7h59 of the next day. The largest number of cases (N=249) occurred within the time period 20h00 to 23h59 and this accounted for 21% of the total amount of cases. The least cases (N=129), or 11%, occurred within the time frame 12h00 to 15h59.

4.2.7 Sharp object fatalities by scene of injury

Table 7 describes the incidences and percentage of occurrences of sharp object fatalities for scene of injury for the years 2001 to 2005. The scene of injury is coded according to numbers 1-18 (Annexure A, see also Legend).

Table 7: Sharp object violence distribution according to scene of injury, 2001-2005, N=1211, 8 (0.65%) cases were not accounted for

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
2001	102	36	3	0	44	5	4	0	2	0	0	1	10	0	1	53	16	1	278
2002	69	39	8	2	54	0	1	1	18	0	3	2	5	2	1	37	7	19	268
2003	63	41	4	3	48	2	1	1	2	1	4	0	11	1	0	64	1	15	262
2004	0	29	0	2	6	0	6	0	0	2	4	0	1	0	0	62	0	109	221
2005	2	33	0	0	2	0	3	2	0	2	4	1	1	0	0	77	1	54	182
Total	236	178	15	7	154	7	15	4	22	5	15	4	28	3	2	293	25	198	1211
	19.49	14.70	1.2	0.6	12.72	0.6	1.2	0.33	1.8	0.4	1.24	0.3	2.31	0.2	0.17	24.19	2.1	16.35	100.00

Legend

- | | | | | |
|---------------------|-----------------------------|--|---------------------|------------------------|
| 1. Private house. | 2. Residential institute. | 3. Bar, shebeen, disco. | 4. Sports area. | 5. Road/street. |
| 6. Railway station. | 7. shop, bank, retail area. | 8. School, educational area. | 9. Medical s/ area. | 10. Industrial area. |
| 11. Farm etc. | 12. sea, lake river, dam. | 13. Open land/beach. | 14. Countryside. | 15. in custody/prison. |
| 16. Place unknown. | 17. Other. | 18. Informal settlement/squatter camp. | | |

The records were unable to indicate where most of the incidences of sharp object deaths (24.19%) occurred either due an inaccuracy in reporting, or it was really unknown. This may also be due the fact that the scene of injury may differ to the scene of death. The second and third highest cases occurred in a private house, or yard and informal

settlement or squatter camp, with incidences at 19.49% and 16.35% respectively. Residential institutes and highways also had relatively higher incidences compared to incidences recorded at other scenes of fatal injuries, with incidences at 14.70% and 12.72%. If we examine the trends over time of the two highest percentages of cases, and compare them, it is apparent that there has been a decrease in occurrences in private houses, and an increase in occurrences in ‘place unknown’.

4.2.8 Sharp object fatalities by blood alcohol concentration

Table 8 illustrates the levels of blood alcohol concentration in victims of sharp object violence. There were no figures for the year 2001. The total number of cases, N=432, comprised of 35.43% of the total number of cases (N=1219).

Table 8: The proportion of sharp object violence reported above or below the legal limit for BAC, 2001-2005, N=432

	2001	2002	2003	2004	2005	Total	%
Zero		33	50	35	7	125	28.94
0.01-0.04		0	1	1	1	3	0.694
0.05-0.14		10	14	19	6	49	11.34
0.15-0.24		26	65	55	9	155	35.88
0.25+		28	39	27	6	100	23.15
Total		97	169	137	23	432	100

Only 432 cases were tested for alcohol. The reason for this was because of resource constraints and because it was the policy of the forensic departments not to test victims under the age of ten. There were no results for 2001 due to logistical reasons and a lack of resources. Of the number of cases (432) where BAC was recorded, approximately 71% of them tested positive for alcohol. More than 70% of cases tested positive for alcohol, were at or above the legal limit of 0.05g/100dl. The year 2003 had the most percentage of

total cases (69.8%) while 2005 had the least percentage of total cases (5%). Despite the discrepancies in the amount of cases, it was interesting to note that there were high levels of alcohol content in the victims for all the years with more than 50% being above or at the legal limit of 0.05g/100dl. The BAC level of 0.15-0.24/100dl indicated the largest percentage at 35.88% which means that of those tested for alcohol, there were high rates of victims who were highly intoxicated.

4.3 Part Two: Multivariate descriptions of population group, sex, age and blood alcohol levels

The following section reports on the selected multivariate descriptions. The following, population group, age, sex and blood alcohol, were chosen because these were the variables that the literature on homicide and sharp object fatalities reports as risk factors. The results are reported as rates per 100 000.

4.3.1 Population group, sex, and age multivariate descriptions of sharp object fatalities

The following *Table 9a* describes the total population group, sex (male), and age distribution of sharp object fatalities across the periods 2001 to 2005. *Table 9b* reports the total population group, sex (female) and age distribution of sharp object fatalities across the periods 2001 to 2005. The total number of male cases (Nm=1012) and total number of female cases (Nf=148), together totaled 1160. There were 59 (4.84%) cases that were not accounted for.

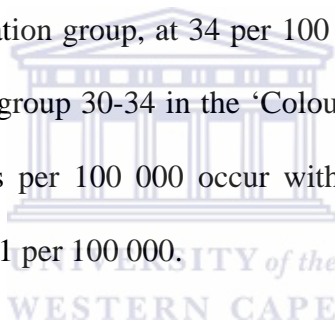
Table 9a: Population group, sex (male) and age group multivariate description, number of cases and rates per 100 000, Nm=1012

Ages	African		Coloured		White		Asian		
	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	
0-4	19	17	0	0	1	13	1	127	
5-9	1	1	0	0	0	0	0	0	
10-14	7	4	1	9	0	0	0	0	
15-19	95	54	7	62	1	8	1	97	
20-24	194	112	9	85	1	10	0	0	
25-29	164	126	10	116	3	30	0	0	
30-34	149	138	10	116	0	0	1	115	
35-39	101	108	7	99	1	10	0	0	
40-44	90	106	7	115	1	9	0	0	
45-49	51	70	3	65	0	0	0	0	
50-54	34	63	2	57	2	19	0	0	
55-59	10	27	0	0	0	0	0	0	
60-64	12	43	1	56	0	0	0	0	
65-69	6	33	0	0	0	0	0	0	
70-74	3	21	0	0	0	0	0	0	
75-79	3	35	0	0	0	0	0	0	
80-84	1	18	0	0	1	56	0	0	
85+	1	40	0	0	0	0	0	0	
Total	941		57		11		3		1012

Table 9b: Population group, sex (female) and age group multivariate description, number of cases and rates per 100 000, Nf=148

Ages	African		Coloured		White		Asian		
	Cases	Rates	Cases	Rates	Cases	Rates	Cases	Rates	
0-4	1	1	0	0	0	0	0	0	
5-9		0		0		0		0	
10-14		0	0	0	0	0		0	
15-19	8	4	0	0	1	9	0	0	
20-24	20	11	2	20	0	0	0	0	
25-29	20	14	3	34	1	10	0	0	
30-34	26	21	2	22	1	9	0	0	
35-39	16	14	0	0	0	0	0	0	
40-44	16	14	1	15	1	8	0	0	
45-49	8	8	0	0	0	0	0	0	
50-54	11	18	0	0	0	0	0	0	
55-59	2	4	0	0	0	0	1	266	
60-64	2	5	0	0	0	0	0	0	
65-69	2	6	0	0	0	0	0	0	
70-74		0		0		0		0	
75-79	3	21	0	0	0	0	0	0	
80-84		0		0		0		0	
85+		0		0		0		0	
Total	135		8		4		1		148

The age, population group and sex multivariate descriptions per 100 000 show that the most rates for sharp object fatalities occurs within the male sex, between the ages 30-34 and within the 'African' population group at 138 per 100 000. The second most rates of incidences also occur within the male sex, between the ages 25-29 and also within the 'African' population group at 126 per 100 000. The third most rates of incidences occur within both the age groups 25-29 and 30-34, also within the male sex, within the 'Coloured' population group at 115 per 100 000. The results seem the inverse with reference to population groups when analyzing the female rates per 100 000. Although still much lower than the males, the most rates per 100 000, occur within the age group 25-29 in the 'Coloured' population group, at 34 per 100 000. The second most rates per 100 000, occur within the age group 30-34 in the 'Coloured' population group at 22 per 100 000. The third most rates per 100 000 occur within the age group 30-34 in the 'African' population group at 21 per 100 000.



Within the 'White' and 'Asian' population groups, there are extraordinarily high rates which may be due to statistical anomalies rather a representation of what is occurring in reality which may be due to the small sample sizes in their population groups.

4.3.2 Population group and alcohol multivariate descriptions of sharp object fatalities

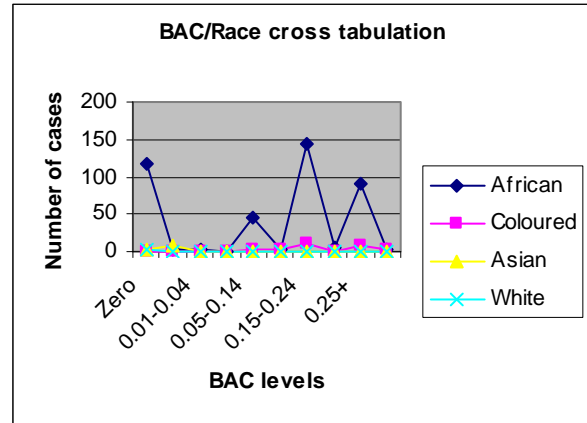
Table 10 reports the levels of alcohol in the different population groups at time of injury. It reports the number of cases as well as the rates per 100 000. There were 4 cases (0.9%) unaccounted for out of the 428 cases.

Table 10 and Figure 5: BAC/ Population group multivariate descriptions, N=428, 4 (0.9%) were unaccounted for

Table 10

	African	Coloured	Asian	White
Zero	117	1	2	3
	3.88	0.50	9.09	1.01
0.01-0.04	3	0	0	0
	0.10	0.00	0.00	0.00
0.05-0.14	45	4	0	0
	1.49	1.98	0.00	0.00
0.15-0.24	144	10	0	0
	4.78	0.98	0.00	0.00
0.25+	90	8	0	1
	2.99	3.97	0.00	0.34
T/pop.	3014755	201520	22005	297691
Total BAC	282	22	0	1
Total BAC rate	9.35	10.92	0.00	0.34

Figure 5



The number of cases is also illustrated by *Figure 5* where it is quite evident that there are significantly more ‘African’ cases compared to the other population groups. The rate of those who were at or above the legal limit was greatest among the ‘Coloured’ population group at 10.92 per 100 000, followed by the ‘African’ population group at 9.35 per 100 000. There were negligible amounts among the other population groups.

4.3.3 Sex and alcohol multivariate descriptions of sharp object fatalities

The levels of alcohol in male and female victims are shown in *Table 11* and *Figure 6*.

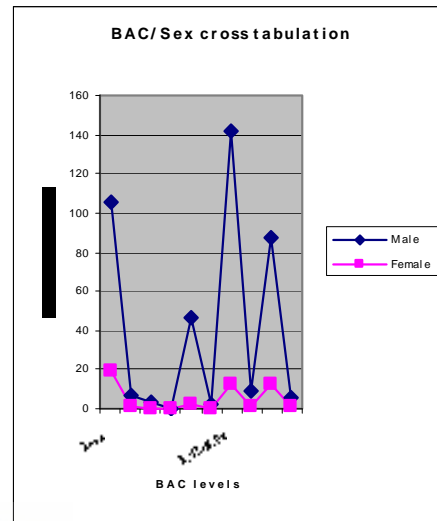
The number of cases that were unaccounted for was 3 (0.69%).

Table 11 and Figure 6: BAC/Sex multivariate descriptions, N=429, 3 (0.69%) were unaccounted for

Table 11

	Male	Female
Zero	105	19
	6.30	1.01
0.01-0.04	3	0
	0.18	0.00
0.05-0.14	47	2
	2.82	0.11
0.15-0.24	142	12
	8.52	0.64
0.25+	87	12
	5.22	0.64
T/pop.	1666436	1879533
Total BAC	279	26
Total BAC rate	16.74	1.38

Figure 6



Males accounted for 65% of the sample tested for the presence of alcohol in victims while females accounted for 6% while 28% of the sample was found to have no alcohol present. Males by far had the highest rate, 16.74 per 100 000 of victims at or above the legal limit of 0.05g/100dl compared to females which was 1.38 per 100 000. The results seem to suggest that drinking, particularly more than legally required, is an activity that males engage in.

4.3.4 Age and alcohol multivariate descriptions of sharp object fatalities

The levels of positive test for alcohol at or above the legal limit of 0.05g/100dl of the age groups 10-84 is reported in Table 12. By law they are not required to test for alcohol in victims under the ages of 10.

Table 12: BAC/Age multivariate descriptions, N=417, 20 cases (4.6%) were unaccounted for

	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84
Zero	2	14	23	17	24	10	10	4	6	2	2	0	1	1	1
	0.56	3.43	5.71	5.45	8.81	4.02	4.28	1.97	4.17	1.89	2.20	0.00	1.92	3.02	4.39
0.01-0.04	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0
	0.00	0.25	0.00	0.32	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.05-0.14	1	7	13	6	6	6	3	2	3	1	0	0	0	0	0
	0.28	1.72	3.23	1.92	2.20	2.41	1.29	0.98	2.08	0.95	0.00	0.00	0.00	0.00	0.00
0.15-0.24	0	15	35	24	20	23	18	7	3	0	2	2	0	1	0
	0.00	3.68	8.69	7.70	7.35	9.25	7.71	3.44	2.08	0.00	2.20	2.93	0.00	3.02	0.00
0.25+	0	5	11	16	20	19	15	4	4	1	1	0	2	1	0
	0.00	1.23	2.73	5.13	7.35	7.64	6.43	1.97	2.78	0.95	1.10	0.00	3.83	3.02	0.00
T/cases	3	42	82	64	70	58	47	17	16	4	5	2	3	3	1
T/BAC	1	28	59	47	46	48	37	13	10	2	3	2	2	2	0
T/Pop.	358833	407715	402585	311715	272278	248754	233455	203370	144051	105554	91040	68367	52156	33080	22795
T/rates	0.28	6.87	14.66	15.08	16.89	19.30	15.85	6.39	6.94	1.89	3.30	2.93	3.83	6.05	0.00

The most amount of cases that were above the legal limit appeared to conglomerate around the age groups 20-24 to 40-44. Within this range the age group with the most amounts of cases tested above the legal limit was 20-24. The age group with the most rates per 100 000 was the age group 35-39 at 19.3 per 100 000. Among victims of sharp object fatalities who were tested for alcohol, it seems that the age group 35-39 was the ones who engaged most in drinking above the legal limit. It also appears that the older age groups, 30-34 and 35-39, were the ones who engaged in heavier drinking (0.25+/100dl). The younger age groups, 20-24, 25-29 and 30-34, seem to have BAC levels in the 0.15-0.24/100dl range. The results indicate that victims for sharp object fatalities more likely to have high levels of alcohol in their system, were in the 35-39 age range, followed by the ages 20-24, 25-29 and 30-34 in no particular order. It has also been noted that rates increase suddenly with the onset of adolescence, jumping from 0.28 per 100 000 for the age group 10-14 to 6.87 per 100 000 for the age group 15-19. Drinking, in victims of sharp object death, is likely to be an activity among those in early

adulthood and late adulthood. Also the onset of adolescence seems to precipitate some risk taking behaviour.



CHAPTER 5

DISCUSSION

5.1 Introduction

The first part of this discussion will engage in the univariate results of the magnitude, circumstances and risk for sharp object fatalities. Next it will discuss the multivariate results and draw on Bulhan's (1985) contextual theory of violence. Bulhan's (1985) theory does not specifically explain sharp object homicide, nor does it explain why sex or age is possible risk factors. Rather, it is a general theory of violence and may explain its occurrence within particular communities or groups. It is also useful for theorizing about the causes of violence, especially within the South African context, where discrimination of particular groups in society has given rise to forms of violence.

5.2 Magnitude, circumstances and risk for sharp object fatalities

5.2.1 Magnitude of sharp object fatalities

The rate of sharp object fatalities in East London has gradually decreased from 2001 to 2005. It is not clear what has contributed to this decrease in rates. Within the same period the opposite is true of Port Elizabeth (Ahmed, Barendilla, Donson, & Van Niekerk, 2008), which is the nearest major city in South Africa. Migration patterns could possibly also explain the differences in mortality rates over time between these two cities, however there are no models to which this hypothesis could be applied. Perhaps then this could be a recommendation for further studies. What may also further explain decreases

in occurrences may also be an increase in protective factors such as improvements in social policies, better community policing and less social fragmentation. However, there is no data to support these hypotheses and could also be topics for future discussion. The population in East London may also be susceptible to other burdens of disease.

5.2.2 Sharp object fatalities by population groups

There appears to be a significantly more number of incidences of sharp object violence among the 'African' population group, which makes up 85% of the total population in East London, compared with other population groups. The second most number of cases occurs within the 'Coloured' population group, which makes up 5.7% of the total population. The mortality rate per 100 000 is almost the same for the 'African' and 'Coloured' population groups which are 37 per 100 000 and 34 per 100 000 respectively. The 'White' population group which makes up 8% of the total population, has a rate of 5 per 100 000. In comparison there is a higher rate of sharp object violence in a smaller 'Coloured' population compared to a much lower rate of sharp object violence in a larger 'White' population. Other studies also reported that 'blacks' seem to be disproportionately represented among persons arrested for committing acts of violence. A significant indicator is violent prevalence in poor urban communities (Oliver, 2000).

It is also therefore important to be careful how results are interpreted and framed. Our stereotypes could powerfully influence the way we interpret reality (Harrison & Esquede, 2001). So, rather than belonging to a particular population group being a risk factor, it is the context in which that particular population group has been exposed to over time that has predisposed it to violent outcomes, so therefore it is the context rather than ones

ethnic background which influences behaviour. As is discussed fully later both in pre- and post-apartheid, population group membership is a proxy for social disadvantage.

5.2.3 Sharp object fatalities by age group

The results discussed in this section on age groups are discussed in its entirety irrespective of population group or sex. Studies (Saaymen & Wadee, 2007; Norman *et al.*, 2007) seem to differ in the way that they report the results of age groups. It seems that age categorisations are reported in 5, 10 or 15 year age gaps. The World Health Organization (1996) reports cause-specific mortality data for males and females for seven adult age groups: 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, and 75 and over. This study presents results for 18 categories but it will also make comparisons to other studies by collapsing the age categories. It is noted that the way this study reports age group results and the way other studies and the WHO (1996) categorises age groups, does not discretely align with Erikson's psychosocial developmental age categories. Reference will be made to Erikson's psychosocial model (Carr, 2006) for the age groups discussed here in order to lend further support to the discussion as to the possible risk factors of sharp object fatalities.

The three age groups in this study with the majority of incidences occurs between the ages 20-24 (21%), the second most between the ages 25-29 (19%) and the third most between the ages 30-34 (18%). The inverse applies when analyzing the results in terms of rate per 100 000 population where the age group 30-34 has a rate of 70.15 per 100 000, 25-29 has a rate of 64.16 per 100 000 and 20-24 a rate of 56.14 per 100 000.

The National Profile of Injuries (Prinsloo, 2007) seems to collapse age groups into broader age ranges and report similar results with the age cohort 15-24 as a risk factor. Other studies (Norman *et al.*, 2007) reported that the general South African homicide rate for the age group 15-29, was at 184 per 100 000 which was nine times the global rate which was 20.44 per 100 000. If we were then to collapse the age breakdown into broader categories then the results of this study for the same age group, 15-29, are way below the national average at 47.94 per 100 000 but still over double the global rate. However, within the age group 30-44, the rate was at 57.78 per 100 000 which was still lower than the national average homicide rate but almost treble the global rate. Where some studies report that the age group 15-29 is seen as the crime prone ages (Pampel & Gartner, 1995), in the case of East London, it appears to be between the ages 30-44 followed by 15-29. According to this age categorization, it is young adults to middle aged adults, rather than adolescents to younger adults who are mostly the victims of sharp object violence. This is not to say that they may be at risk, but from the results in this study it appears to be the young adults to middle aged adults that have higher rates of mortality. Of, course further analysis is required to verify these findings and hypotheses.

In East London, the age group 15-29 makes up 31.64% of the total population, 2001-2005, while the age group 30-44, comprises 21.28% of the total population. Together these two age cohorts make up more than 50% of the total population, which makes it a fairly youthful and young population (Statistics South Africa, 2004). Larger cohorts of youth (Pampel & Gartner, 1995), in a population may predispose that population to higher rates of crime and homicide. Another reason why there are higher rates of sharp object fatalities in the age group 30-44, may be because still a larger proportion of the age

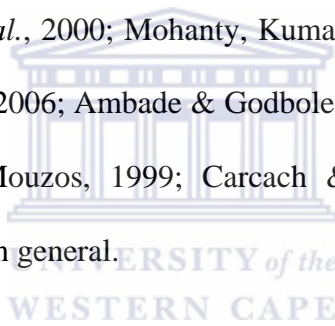
group 15-29 is still in school and a larger proportion of the age group 30-44 is unemployed which can place one at risk for violent outcomes (Rosenberg, *et al.*, 2006). This hypothesis cannot be verified at this stage which may be a focus of more multivariate future studies. However, based on this hypothesis there may also be a whole range of responsibilities and expectations that come with post-thirties. The age group 30-44, according to Erikson (Carr, 2006), is where individuals face the developmental task of being productive or stagnate.

Above we have looked at rates of sharp object fatalities for age groups and have categorized them in two ways namely, in five year age bands and fifteen year age bands. What appears consistent with both types of categorisations is that there are higher rates of fatalities in the older age groups where 30-34 has a rate of 70.15 per 100 000 and 30-44 with a rate of 57.78 per 100 000. Also, in most studies, including this one, the onset of adolescence seems to precipitate risks for violent behaviour and because it is a transitional developmental process toward adulthood which brings with it a host of psychosocial challenges (Griffin, 1997; Carr, 2006).

An increase in knife murders and fatal attacks in the United Kingdom was addressed by particularly targeting the adolescent age group (Hern, Glazebrook, & Beckett, 2005) with 24% of boys reported carrying knives and 19% admitting intent to harm someone. Such qualitative work is scarce and perhaps recommended in future. Perhaps this kind of qualitative work could be carried out among both these age cohorts.

5.2.4 Sharp object fatalities by sex

The ratio of male to female occurrences of sharp object violence in East London is 7:1. In South Africa, national results indicate that this ratio is 6:1 (Tonsing & Lazarus, 2008). The leading cause of death amongst males in South Africa is violence (Prinsloo, 2007) but whether the same applies to East London is uncertain at this point, however it certainly applies to sharp object violence. Males make up 47% of the total population in East London, while females make up 53% of the population, yet there are more incidences of violence and also a higher rate among the male sex group. These findings are consistent with other studies of sharp object violence (Ormstad, Karlsson, Enkler, Law, & Rajs, 1986; Rogde *et al.*, 2000; Mohanty, Kumar, Mohanram, & Palimar, 2005; Bohnert *et al.*, 2006; Leyland, 2006; Ambade & Godbole, 2006) and also other studies of homicide (Chimbos, 1993; Mouzos, 1999; Carcach & Conroy, 2001; Hadi, 2005; Eckhardt & Pridemore, 2008) in general.



It may seem too simplistic to explain the high male-female ratios of violence to individual predisposing factors such as hormones and genes (Hunter, 1991) or aggression (Goldstein, 2002). It would therefore be important to look at what is happening within society and communities that is contributing to this high rate of violence amongst men.

5.2.5 Time and day of week of sharp object fatalities

The most amount of cases (N=249) occurred within the time period 20h00 to 23h59 and this accounted for 21% of the total amount of cases. Most of the cases were recorded over a weekend on Saturday (33%) and Sunday (20%). These findings were consistent with many other studies of sharp object fatalities and homicide in general. The weekend marks

the end of a work week and is a recreation space. This also means engaging in increased alcohol use which precipitates violent acts. East London being poor and under resourced in many of its poor communities, limits the amount of recreational activities available. On the other hand, drinking over the weekend may also be way of self-soothing against the general conditions of oppressive living (Bulhan, 1985).

5.2.6 Scene of sharp object fatalities

A large percentage (24%) of sharp object fatalities occurred in places that were unknown. As to what 'unknown' means is unclear. With or without the inclusion of this result, the ranking of where the most deaths occurred remains the same. The most amount of deaths occurred in a private house and the second most deaths occurred in a yard and informal settlement or squatter camp. With the exception of the informal settlement, it is not clear what the socio-economic status of private house is. In both cases there is no distinction as whether the death occurred near or away from home. Other studies make the distinction between near the home or away from home. The value of this data would indicate the nature of conflict, whether it was a domestic or intimate dispute, or a dispute related to an argument between strangers. Studies (Ormsstad *et al.*, 1986; Rogde *et al.*, 2000; Eckhardt & Pridemore, 2008, Tonsing & Lazarus, 2008) have shown that males are more likely to get involved in disputes with other males away from home and that is it also likely to be alcohol induced. Deaths occurring near or in the home is most likely to be relational and of an intimate nature. Given the demographic profile of East London, the second highest place of death, namely the informal settlement, is an indicator that 'place' may be a risk factor. Informal settlements within the South African context are characterized by poverty and a host of other socio-economic challenges such as violence, unemployment,

over crowding, high rates of alcohol consumption and are an under resourced and marginalized section of the South African population. It is also a proxy for race.

5.2.7 Blood alcohol concentration of sharp object fatalities

Even though the total number of cases (N=432) which was 35.43% of the total sample (N=1219) was tested for alcohol, approximately 71% of them tested positive for alcohol and more than 70% of cases tested positive for alcohol, were at or above the legal limit of 0.05g/100dl. The results from this sample seems consistent with other reports which suggest that alcohol seems to be a strong risk factor in interpersonal violence as reported in three different WHO Reports on interpersonal violence namely; Youth Violence (WHO, 2006), Intimate Partner violence (WHO, 2006) and Sexual Violence (WHO, 2006), as well as other studies (Chervyakov *et al.*, 2002; Eckhardt, Samper, & Murphy, 2008). Intoxicated individuals are more likely to instigate a dispute with strangers and alcohol may render them also less capable of defense against a counter-attack (Eckhardt & Pridemore, 2008).

5.3 Multivariate and contextual discussion of population group, sex, age and BAC levels of sharp object fatalities

The previous discussion engaged with the variables separately. This section will attempt to link all of what was discussed above and also include Bulhan's (1985) theory of violence into this discussion.

The profile that we see in sharp object fatalities in East London is being male, 'African' and 'Coloured', between the ages 30-34 and 30-44 and being under the influence of alcohol. However, when we combine the variables, sex, population group and age (5 year age bands), the profile does not change much except for age where the highest rates are between the ages 30-34. The rate of those who were at or above the legal limit was greatest among the 'Coloured' population group at 10.92 per 100 000, followed by the 'African' population group at 9.35 per 100 000. There were negligible amounts among the other population groups as illustrated by *Table 10*. The results seem to suggest that drinking, particularly more than legally required, is an activity that males engage in. Males by far had the highest rate, 16.74 per 100 000 of victims at or above the legal limit of 0.05g/100dl compared to females which was 1.38 per 100 000 as shown by *Table 11*. With regards to combining age and alcohol levels, it seemed apparent that there was a dramatic increase during the onset of adolescence which is congruent with literature on high risk taking behaviour of adolescents. Drinking, in victims of sharp object death, is likely to be an activity among those in early adulthood and late adulthood. The age group with the most rates per 100 000 was the age group 35-39 at 19.3 per 100 000. The results indicate that victims for sharp object fatalities more likely to have higher levels of alcohol in their system, were in the 35-39 age range. These results are indicated in *Table 12*.

These trends may be explained partly and possibly largely by the fact that the Eastern Cape is one of the poorest provinces in South Africa and like the rest of South Africa has a large portion of its population that belongs to the historically disadvantaged group ('African' and 'Coloured'). This membership is associated with economic hardship and many other forms of oppression. Bulhan (1985) talks about dimensions of being

oppressed and these are time, mobility, bonding, identity, space and energy. These dimensions are also the basic foundations of human psychology and violations of these, of which apartheid was a gross experience thereof, is akin to a modern day form of slavery. The majority of the population in South Africa has been oppressed in all six of these dimensions.

These groups, 'Coloured' and 'African' are historically the most disadvantaged in comparison to other population groups in South Africa. There is a history of intergenerational trauma as a result of institutionalized racism. Bulhan (1985) has also shown that 'Africans' have been overrepresented in prisons as a result of structural violence inherent in society. Many studies also report that socio-economic factors had the highest contribution to explained variance in reports of violence towards others (Cubbin & Smith, 2002; Khoury-Kassabri, Astor, & Benbennishty, 2009). In the case of South Africa's socio-political historical context, the current levels of poverty, socio-economic inequities, social fragmentation and patterns of social relationships (Butchart & Emmet, 2000; Stevens *et al.*, 2004), are important risk factors to consider in studies of violence. In the case of South Africa, due to the way society has been structured in the past, there is an association between class and race which was referred to as apartheid capitalism (Wolpe, 1988), which therefore becomes a proxy for disadvantage. In post-apartheid South Africa, the large majority of the poor are still the previously disadvantaged (Bond, 2000). Income and social class were also found to be risk factors associated with homicide (Hadi, 2005; Doolan, 2005). So, if you were 'African' or 'Coloured' then the likelihood that you would be poor is high and would also be predisposed to more risk factors responsible for violent outcomes.

With regards to the higher age groups (30-34) being a risk factor, it is important to ask why this is so compared to other studies which cite being younger as a risk factor. It may possibly be related to the economic and social conditions under which people live in East London, the structural inequities and the various forms of oppression people live under (Bulhan, 1985), as well as not being able to fulfill developmental tasks essential to one's psychological growth due to material conditions, which can precipitate violent outcomes. So, due to a lack of resources young males may be staying at home longer and are therefore dependent longer on their parents which may also contribute to frustrations. Staying at home longer may also be a function of collectivist cultures. Then again, not being productive has its own set of frustrations. This according to Bulhan (1985) is also a form of violence since it limits the realization of one's full potential.

Bulhan (1985) does not mention patriarchy in his explanations of violence, so there seems to be a lack of explanations as to why males are engaged more in violent acts. Patriarchy (Hansen & Harway, 1993) and rapid social change (Norman *et al.*, 2007; Tonsing & Lazarus, 2008) are some of the forces that are influencing health outcomes in communities. These forces in the meso-system have an adverse effect on families and individuals in the micro-system.

We could say that violence is gendered. The way society is structured accords more power to men than to women. This system of social relations is called patriarchy. Patriarchy is a hierarchical social system where men are imbued more powerful status than women (Hansen & Harway, 1993) and that this status quo is believed to be 'natural'. Actions of men, such as violence and its effects such as homicide are a function and

reflection of broader social values and beliefs (Hansen & Harway, 1993). This view is supported elsewhere by other studies which also suggest that high mortality among men may be related to patriarchy (Stanistreet, Bamba, & Scott-Samuel, 2005). Even though it privileges men as a group, it also has negative consequences for men as a group, such as committing acts of violence (de la Rey, 2001).

Mental health, for example, is gendered and also lends support to how violence is gendered. There are generally higher incidences of depression and psychosomatic disorders among women compared to higher incidences of conduct disorders, alcoholism and drug abuse among men (de la Rey, 2001). These differences of mental health presentations may be attributed to the way men are socialized in expressing themselves. Expressing feelings and accessing health care are seen as signs of weakness and un-masculine and therefore risk taking is a more socially accepted form of expressing masculinity.

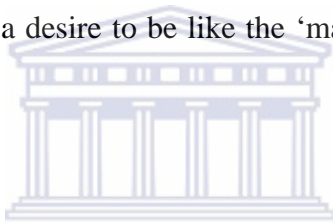
Unemployment can be known to affect mental and physical health. It may be expected to increase anxiety and depression, lead to lower self esteem and produce physical health consequences (Linn, Sandifer, & Stein, 1985). Again as stated above, the way men may express their feelings of apathy associated with unemployment may be to indulge in higher incidences of conduct disorders, alcoholism and drug abuse among men (de la Rey, 2001).

Rapid social change in societies and rapid urbanization can precipitate violence outcomes (Norman *et al.*, 2007; Tonsing & Lazarus, 2008). This has been the case in South Africa

post-1994 (Campbell, 1992) which has placed many stressors on families and communities. Abroad peaks in injury mortality in the Baltic States coincided with major political and social transitions (Ekman, Kaasik, Villerusa, Starkuviene, & Bangdiwala, 2007). As documented earlier, rapid social change and social fragmentation can contribute to a lack of continuity which can, in turn, lead to a breakdown of values. Loosening of social controls could therefore also precipitate violent outcomes.

We now see how the structuring of society impacts social relations and on individual behaviour and psyches. In any form of slavery there is a 'master' and 'slave' which in this context would be those who oppressed and those who were oppressed. Within this relationship we observe how the 'slave' engages in interpersonal and institutional violence, experiences what Bulhan (1985) calls 'natal alienation' which is the experience of having one's culture uprooted and history distorted resulting in a social deadness, and has a poor sense of self-worth and autonomy. Because these six dimensions of oppression were so pervasive within South African life, people internalised the oppressors values and norms and therefore had to struggle the oppressor internally as well as in the streets. This dual struggle took immense toll on the psyche of individuals and communities such that it leaves one vulnerable to a number of dysfunctional behaviours such as homicide. Bulhan (1985) does not explain knife violence in particular but it would be included in the type of dysfunctional behaviour that individuals engaged in. So, once you have internalised oppression you in fact become the agent of your own oppression and be locked in a vicious circle of self-destructive behaviour, such as knife violence.

Alcohol use by older males and particularly ‘African’ and ‘Coloured’ population groups is done in a way that is destructive to self and community. It is an attempt to compensate for lack of self worth, a destroyed psyche and an inability to adequately express oneself. It can also be seen as self-soothing behaviour to quell underlying psychic pain. Alcohol can provide a temporary form of omnipotence and belonging among those who collectively feel disempowered. It may also lead to aggression or lower inhibitions to provoke aggression. This may then lead to conflict and in extreme cases death. There are limited amount of material resources and social capital that oppressed communities have available to them in order to deal with the realities of everyday living. Within the ‘master-slave’ relation there is a desire to be like the ‘master’ but this is impossible and thus tensions exist.



It is therefore no coincidence that these kinds of behaviours are happening in oppressed communities. The pathways to violent behaviour is well documented but also complex and becomes even more complex the more economically disadvantaged communities are. It means they are restricted to certain kinds of activities. For example, it has been documented earlier how important parenting is in influencing children. However, when parents are paid poorly, live far from work and have large families, they are unable to have enough resources to raise their children who then grow up with resentment. This may then lead to various forms of ‘acting out’ behaviour. It may also then lead to poor education. The cycle then repeats itself. Poor communities may then remain poor. So, it may then be easy to explain violent behavior as the function of individuals, but when the patterns are clearly occurring within certain groups over time, and then it is clearly, or maybe not so clearly, the structure which maintains these dysfunctional behaviors. Sharp

object fatalities are therefore one form of homicide among a host of other destructive behaviours in oppressed communities which is a symptom of the huge structural inequities in society rather than something that is inherent among people living in impoverished communities.

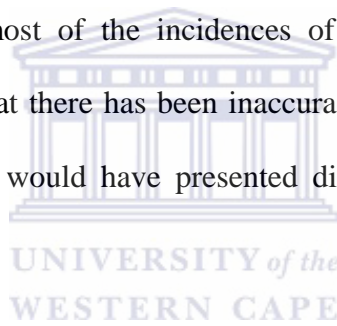


CHAPTER SIX

CONCLUSION

6.1 Limitations

The limitations of the study is that secondary data analysts are not able to control for data collection errors and are constrained in the analysis in the original objectives of the research (Mouton, 2001). A drawback of secondary data analysis could be poor documentation of the secondary data set (Mouton, 2001), so for instance the records were not able to indicate where most of the incidences of sharp object deaths (24.19%) occurred. This could mean that there has been inaccuracy in reporting, or it was really unknown. Clarity around this would have presented different results around scene of injury.



Another limitation of the study is that because it is a descriptive study it does not account for complex causal explanations of sharp object fatalities. The results do not permit causal explanations in that it may not be generalisable to other contexts or situations (Durrheim, 1999). Also, the socio-economic data on victims does not exist and we can only develop hypotheses based on area level descriptors such as the type of area they were killed in. There is therefore a limitation in the instrument in what information it reports about victims.

Some of the methodological difficulties that are associated with epidemiological research in developing countries such as South Africa are the difficulty in definitions of urban

areas and residence thereof. Rapid urbanisation in developing countries is associated with under development rather than economic progress as in developed countries and is usually the result of the overflow of rural poverty. This then has impact on comparability across areas of exposure, the identification of intra-urban variability and selection bias in cross-sectional studies (Yach, Mathews, & Buch, 1990).

In ecological studies, proxy measures for exposure and disease have to be used, such as mortality as a proxy for disease. The degree of association between exposure and disease is made tenuous by the use of such proxies and by the fact that measurements are averages over groups. Other factors may be responsible which may not always be readily available and appropriate analysis cannot be done. There is no direct measure of socio-economic status and race as a measure of socio-economic status has been used. Despite the limitations, ecological studies are useful for describing differences between groups and pointing out possible avenues for further investigation. Ecological level variables are more appropriate than individual (Katzenellenbogen, Joubert, & Karim, 1997). There may be other factors which we are unaware of, which were not available on the *NIMSS Data Collection Form*, that may be contributing to the outcome of disease which may make results of ecological studies difficult to interpret (Webb, Bain, & Pirozzo, 2005).

Others again see this type of study, a descriptive study as the first step to more complex analytical studies (Webb, Bain, & Pirozzo, 2005). Cross sectional studies are not known to search for causation and aims rather to serve to explore and generate hypotheses which could be tested in other studies. It is also cheaper and easier to do (Moniruzzaman & Andersson, 2005).

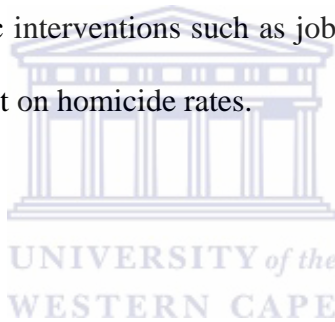
6.2 Recommendations

This study was merely descriptive and aimed to generate hypotheses about possible risk factors for sharp object fatalities. It has identified multiple factors that may cause or contribute to sharp object fatalities. Descriptive studies aim to identify health problems and generate ideas about causality which more formal analytic studies aim to test. It is recommended that future studies test these hypotheses through multivariate analysis using statistical significance testing and (Webb, Bain, & Pirozzo, 2005).

The results seem to suggest that the population most at risk is adult males from disadvantaged communities and any interventions at community level should involve them. Most of the studies reviewed have relied on routine data collected. In addition to this, it may be useful to investigate the subjective experiences of perpetrators or survivors of homicide so as to gain further insight into push factors around circumstances of sharp object fatalities, exploring for example, whether the precipitants for violent outcomes are different in young males compared to middle aged men. Also, this type of study may want to explore what the resiliency factors are among women for example that prevents them from being involved in violent acts. This study has drawn on Bulhan (1985) which has been useful for explaining group membership but further research is needed on why knives are used. And then, more specific to sharp object fatalities, explore why the choice of knife or any other sharp object is used as opposed to guns for example. This would further insights into a limited field of study.

6.3 Conclusion

It seems that this phenomenon of chronic violence and aggression in our society is so complex and interacts at various ecological levels that multi-sectoral interventions are needed in order to address this problem. This descriptive study is limited in the ways mentioned above and perhaps more. However, a profile of victims of sharp object fatalities has been identified and hypotheses have been generated using a contextual analysis. This study can by no means with certainty claim what the risk factors are simply because they are so many and interact in complex ways. Eastern Cape as a province is poorly resourced and economic interventions such as job creation remain a primary goal and will probably have an effect on homicide rates.



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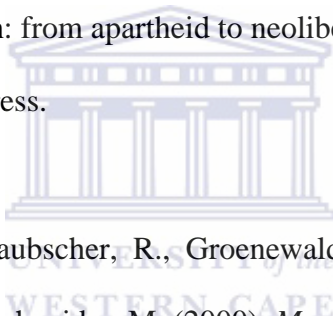
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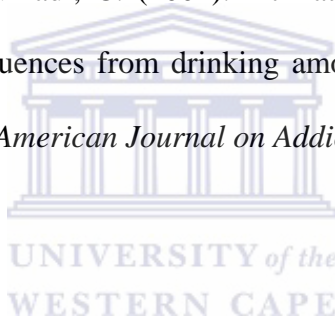
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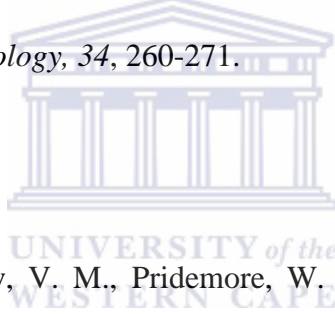
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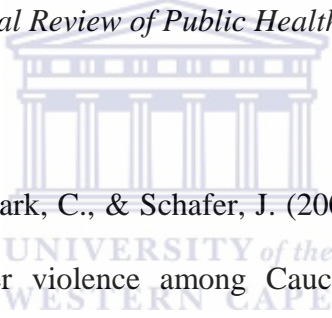
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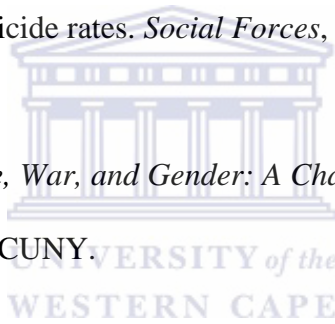
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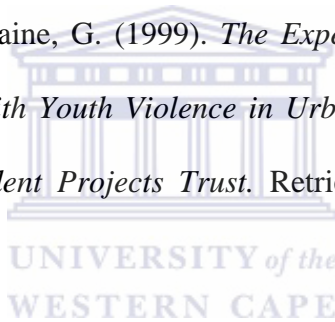
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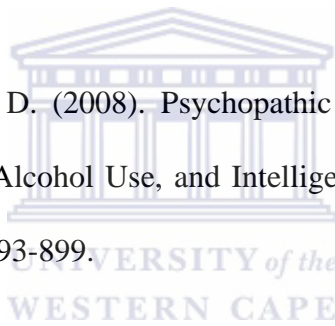
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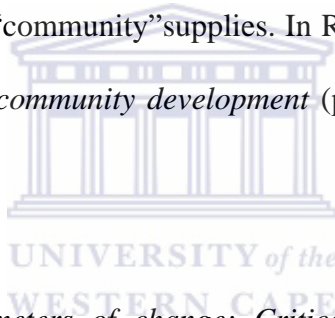
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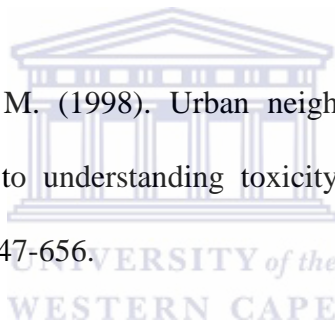
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ANNEXURE A

NMSS DATA COLLECTION FORM

Mortuary _____ Police No. _____ Officer collecting body (Surname) _____

PM no. _____ PM Date

d	d	m	m	y	y	y	y
---	---	---	---	---	---	---	---

 Pathologist (Surname) _____

Date & Time of Injury

d	d	m	m	y	y	y	y
---	---	---	---	---	---	---	---

h	h
---	---

 Race

A	B	C	W	U
---	---	---	---	---

 Sex

M	F	U
---	---	---

Date & Time of Death

d	d	m	m	y	y	y	y
---	---	---	---	---	---	---	---

h	h
---	---

 Age

--	--

--	--

Years Months

Medical treatment of injury prior to death (check only ONE) 1 None 2 Emergency care at scene 3 Hospital care

Province of Injury (may differ to province of death) 1 Gauteng 2 W. Cape 3 K.Z. Natal 4 E. Cape 5 N. Cape 6 Free State 7 Mpumalanga 8 Northern Province 9 North West 10 Unknown 11 Other (specify) _____

Province of Injury (may differ to province of death)		Scene of Injury (may differ to scene of death)	
1	Gauteng	1	Private house & yard (in c. pool)
2	W. Cape	2	Residential institute
3	K.Z. Natal	3	Bar, shebeen, N'Club, disco
4	E. Cape	4	Amusement park, sports area
5	N. Cape	5	Road/street/highway
6	Free State	6	Railway track, station
7	Mpumalanga	7	Shop, bank, retail area
8	Northern Province	8	School, educational area
9	North West	9	Medical service area
10	Unknown	10	Industrial & construction area, mine
11	Other (specify) _____	11	Farm, primary production area
		12	Sea, lake, river, dam
		13	Open land, beach
		14	Countryside
		15	In custody, prison
		16	Place unknown
		17	Other (specify) _____

Town of Injury _____

Suburb or District _____

External Cause or Circumstance of Injury

1	Firearm Discharge	9	Fall/push/jump from height	17	Motor vehicle Driver	24	Abandoned baby
2	Sharp Object	10	Other fall/push/jump	18	Motor vehicle Unspecified	25	Electrocution
3	Blunt Object	11	Crushing	19	Railway casualty	26	Explosive blast
4	Strangulation, suffocation, asphyxia	12	Choking, aspiration	20	Bicycle, motorcycle	27	Natural cause
5	Hanging	13	Drowning, immersion	30	Aviation casualty	28	Unknown
6	Poisoning, ingestion	14	Lightning	21	Medical Procedure	29	Other Specific Cause
7	Poisoning, gassing	15	Motor vehicle Pedestrian	22	Sudden Infant Death		
8	Burn	16	Motor vehicle Passenger	23	Abortion, still birth		

Apparent Manner of Death

1 Homicide 2 Suicide 3 Accident 4 Natural 5 Undetermined

Samples Taken (check ALL)

1 None 2 Blood 3 Tissue 4 Other fluid

Alcohol and Other Substances (for completion by surveillance consortium staff)

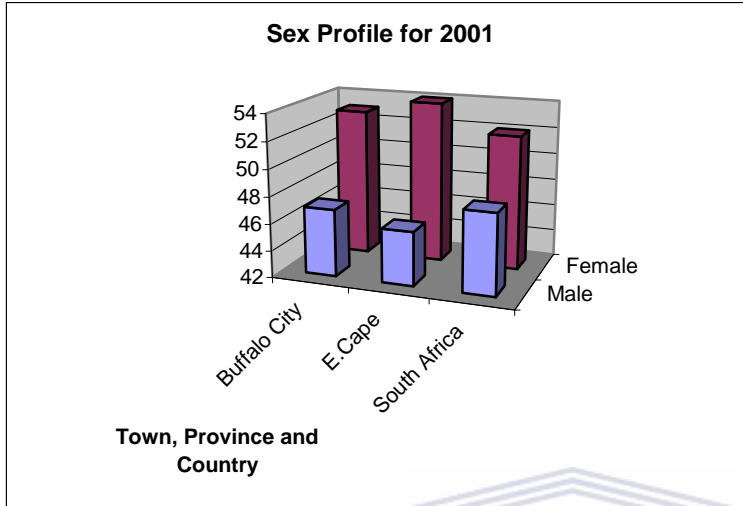
Blood Alcohol Level _____ Eye Fluid Alcohol _____ Other Substances (specify) _____

Type of Intentional Violence		Perpetrator - Victim Relationship	
1	Interpersonal	1	Spouse, Partner
2	Self Directed	2	Parent
3	Legal Intervention	3	Other relative
4	Gang, Syndicate	4	Unrelated Caregiver
5	War/civil insurrection	5	Friend
6	Rape, Sexual	6	Official/Legal Authority
7	Child Abuse	7	Stranger
8	Other (specify) _____	8	Acquaintance
9	Unknown	9	Unknown
		10	Other Specified Person(s)

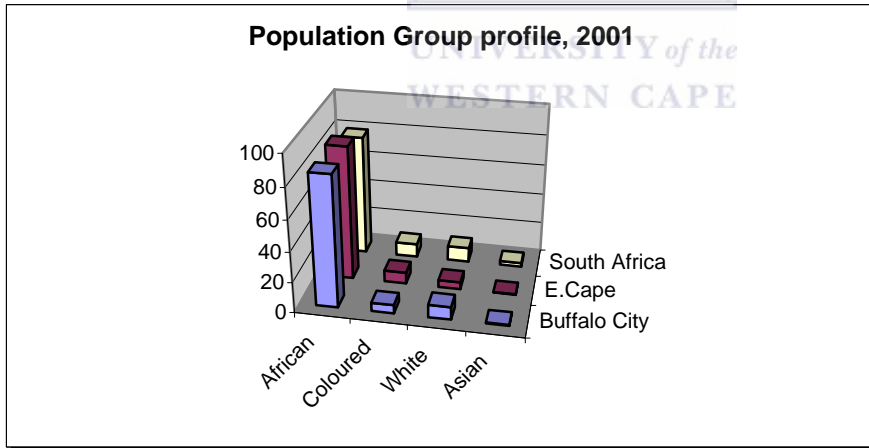
Context of Violent Attack (Code from court record) _____

ANNEXURE B

Sex Profile for Buffalo City, Eastern Cape and South Africa, 2001 (Statistics South Africa, 2004)



Population Group profile for Buffalo City, Eastern Cape and South Africa, 2001 (Statistics South Africa, 2004)



Age Group profile for Buffalo City, Eastern Cape and South Africa, 2001 (Statistics South Africa, 2004)

