

Incidence of Blunt Force Trauma Deaths in the Transkei Sub-Region of South Africa (1993-2015)

B. Meel

Professor, MBBS, MD, DHSM (Natal), DOH (Wits), MPhil HIV/AIDS Management (Stellenbosch). Research Associate, Nelson Mandela University, Port Elizabeth 6031 South Africa

Abstract

Background: Trauma is a serious health problem especially when an individual is poor. They cannot reach hospital timeously, and also could not afford to get a quality of care in hospital. Transkei is the poorest region in South Africa with poor infrastructure like transport and health care.

Objective: To study the incidence of blunt force trauma deaths in the Transkei sub-region of South Africa.

Method: An autopsy record review study at Forensic Pathology Laboratory at Mthatha over a period of 23-years (1993-2015).

Results: There were 26 855 autopsies were conducted over the period of 23 years. Of this, 2960 (11 %) deaths are related with blunt force trauma. Majority were males 2477 (9.2%). The male to female ratio is 6:1. About one-fourth 720 (30.21%) are between 21 and 30 years of age group. The average blunt force trauma fatalities is 20.2 per 100 000 per year. The highest rate of deaths, 25 per 100 000 has recorded in the year 1993.

Conclusion: There has been an increasing trend of deaths as a result of blunt force trauma in the Transkei sub-region of South Africa. Poverty is probably a major underlying factor in these deaths.

Keywords: *blunt, trauma, assault, unnatural, death*

Introduction

Blunt force trauma is one of the most common injuries encountered by forensic pathologists in different scenarios such as motor vehicle accident, jumping of falling from heights, blast injuries and struck by firm objects.¹ Injuries result in 5.8 million deaths per year and the projections for year 2020 show that 8.4 million deaths per year are expected in the world.² As a consequence of this, injury in particular blunt force injury will be the second most common cause of disability adjusted years of life lost within the next 13 years (second to HIV/AIDS).² More than 90% global deaths from injuries occur in low-and middle-income countries.³ Males in Africa and the low-and middle-income countries of Europe, and females in Africa and India, have the highest injury-related mortality rates worldwide.⁴

South Africa, a country not at war, faces an unprecedented burden of morbidity and mortality

arising from violence and injury.⁵ South Africa had 59935 deaths due to injury in 2000, which is an overall death rate of 157.8 per 100 000 population.⁶ The rate is higher than the African continental average of 139.5 per 100 000, and is nearly twice the global average of 86.9 per 100 000 population.⁷ The blunt –force trauma to the body noted in most cases in a study carried out by Herbst et al in 2015 at Cape Town mortuary. The sticks, metal bars and sjamboks are the common objects, used for causing death by blunt force trauma. These objects were ordinary items that were incidentally found at the scene and easily accessible to the perpetrators of the presumably spontaneous assaults.⁸ A mortuary based audit conducted at provincial capital in Kwa-Zulu Natal has shown that trauma trends do seem to be changing. Blunt trauma contributed to 55.7% of all deaths. This is in contrast of 90% of trauma mortality being secondary to penetrating trauma in Durban in the 1990.^{9, 10} Males account for 82% of all homicide victims, and the highest

among them between 15 and 29 years of age group, followed by aged 30-44 years.¹¹ Blunt force trauma contributed 27% of all homicide deaths in South Africa.¹¹ Nearly half of the violent and /or traumatic deaths occurred in the 21-to 40-year age groups according to this study.¹²

A detailed analysis of the relation between socio-economic inequalities and violence, based on survey data from 63 countries, shows that income inequality, low economic development, and high gender inequality are strong positive predictors of rates of violence.¹³ The health and social cost of alcohol misuse are estimated to be R9 billion per year, which is roughly twice the amount received in excise duties in alcohol in South Africa.¹⁴ The purpose of this study is to highlight the problem of blunt force trauma related deaths in the Transkei sub-region of South Africa.

Patients and Method

This is a retrospective descriptive study from the autopsy register of Mthatha Forensic Pathology Laboratory. The Mthatha Forensic Pathology Laboratory is the only laboratory in this region catering for more than half a million of the population in the region of Mthatha. A total number of 27036 autopsies were conducted between 1993 and 2015 (Photograph 1). It is difficult to determine the cause of death in cases of advanced putrefied human remains, and therefore also excluded from study. The terms 'blunt trauma' and 'assault' are used interchangeably and mean the same. All the cases of assault (blunt force trauma) are recorded in the post mortem register year wise. Data were collected on a sheet of paper designed to record the post-mortem number, year, gender and cause of death. These data were transferred to the Excel computer program and analysed by using the SPSS computer program.

Results

There were 26 855 medico-legal autopsies performed between 1993 and 2015 on the victims of unnatural deaths (Table 1). Of this, 2960 (11%) were died as a result of traumatic violent deaths by a blunt objects (Table 1). The average annual rate of blunt force trauma deaths was 20.2 per 100 000 (Table 2). It was the highest (25/100 000 population) in the year 1993, and lowest (16/100 000) in the year 2002 (Table 2 and Figure 1). Among males the average deaths rate as a result of blunt force trauma was 16.2 per 100 000, and among females, it is 3.4/100 000 (Table 2 and Figure 1). It was

highest 21.5/100 000 in the year 1993 among males, and 5.6/100 000 in 2003 in females (Table 2 and Figure 1). Males' subjects were outnumbered than females with ratio of 6:1 ((Table 1, 2 and Figure 1).

The highest (30.21%) victims were between the age group of 21 and 30 years of age, followed by 23.66% between 11 and 20 years of age in this study (Table 3 and Figure 2). Surprisingly, there are victims of deaths from blunt force trauma 2.72% under the age of 10 years, and 1.29% above the age 80 years in this study (Table 3 and Figure 2). Blunt force trauma deaths were taking over to the gunshot injury deaths in the Transkei sub-region of South Africa (Figure 3).

Discussion

Seventy-three percent of the rural people in the Eastern Cape were living on less than R300 per month in 2005/2006., and more than half of them on less than R220 per month.¹⁵ There were 26 855 non-natural deaths recorded in the post mortem register over a period of 23 years (1993-2015) in the Transkei sub-region of South Africa. Out of this, 2960 (11%) deaths as a result of blunt force trauma, which ranks 3rd in homicide, and 4th in traumatic deaths in this sub-region (Table 1). Assault also ranked the 4th cause of death among males, and 5th among females (Table 1). The average annual rate of blunt force trauma deaths was 20.2 per 100 000 population in this study (Table 2 and Figure 1), which is little less than an earlier study (1993-1999) carried out by the author (24/100 000) in the same region.¹² There was one third fall (33%) in rate of murder by blunt objects between 1993 and 2002. i.e. from 25/100 000(1993) to 16/100 000 (2002) in this region (Table 2 and Figure 1). This fall could not sustained any more, and it started climbing up from the 2003, and reached almost at the same level in year 2015 i.e. 24.7/100 000 (Table 2 and Figure 1). This dipping in murder rate by blunt objects is an interesting finding in this study (Table 2 and Figure 1). It is difficult to understand the pattern of fall and rise of murder rate by blunt force trauma (Table 2 and Figure 1). The benefit of 'gun control act of 2002' was nullified by the excessive use of blunt object in committing deaths (Figure 3) Deaths as a result of gunshot has almost come down to more than half over a period of 23 years (1993-2015), but the deaths due to blunt force trauma has reached the same high level, as it was in 1993 (Table 2 and Figure 3).

The trauma burden consisted predominantly of

blunt trauma (69.6%) followed by penetrating trauma (30.4%).⁹ This is not the case in Transkei sub-region. The average murder rate as a result penetrating injuries were increased to three times (62 per 100 000) than that of blunt force trauma (20.2/100 000) (Table 2 and Figure 1). Of the 615 deaths related to blunt trauma, 153 (24.87%) were secondary to assault.⁹ There is 9580 case of blunt trauma deaths were admitted in mortuary between 1993 and 2015 (Table 1). Of this, 2960 (30.89%) were related with assault (Table 1). It indicated that the total number of deaths as a result of assault were more common in this region than Pietermaritzburg.⁹ This difference is because of the level of poverty, which is more profound in Transkei region than Pietermaritzburg area.¹⁵

It is a well-known fact that South Africa is unique country in the world with a high number of traumatic deaths, and it is also true that Transkei region is unique in South Africa with excessive number of deaths.¹⁶ An Average (16.8/100 000) blunt force trauma related deaths were recorded among males (Table 2 and Figure 1). It is complimentary and congruent to total number of murders by blunt force trauma (Figure 1). Xhosa women are more resilient and have more survival skills than their male counterpart. An average deaths were accounted in this study is only 4 deaths /100 000 population, which one sixth of male's deaths (Table 2 and Figure 1).

The victims of blunt force traumatic deaths were young adult (41%) males between the age of 21 and 40 years (Table 3 and Figure 2). This is the age where they takes maximum risk to the life and also consume a lot of alcohol. South Africa is a hard drinking country. It is reckoned that we consume in excess of 5 billion litres of alcohol annually.¹⁷ A study carried out by the author has shown that about half (49.5%) of traumatic deaths were related with alcohol in Transkei region.¹⁸ More than one-fifth (22.11%) victims were teenager and young- young adults, school boys between the age of 11 and 20 years in this study (Table 3 and Figure 2). A study carried out in schools of six African countries showed that risky drinking and illicit drug use were common in the school children.¹⁹ It is surprising that 2.72% children of the age of ten, and under ten were also get murdered by blunt objects (Table 3 and Figure 2). Of this, it is difficult to understand that male's child is almost 3 times (2.01/100 000) more vulnerable to death by blunt object than a female child (0.71/100 000) in this study (Table 3 and Figure 2). Traditional custom of lobola, also known as "bride-price" or "bride-worth", may sometimes be misunderstood by western eyes but

in African culture, it is a ritual that helps to bring two families closer together.²⁰ Dowry system was the root cause of female foeticide in India, thus it should be treated first.²¹ A victim of blunt force trauma has fair chances of survival than the victim of penetrating injury, provided one will get an early emergency care. A study carried out by the author in the Transkei region showed that about 12% pre-hospital deaths are preventable.²²

Both trauma and HIV are competing and complimenting each other, and have cause and effect relationship. The 2013 Mortality and Causes of Death release shows that HIV disease has moved from being ranked sixth in 2012 to being ranked third in 2013.²³ Traumatic deaths (homicide) are also ranked high in the Transkei sub-region (Figure 2). A published study by Chiumia et al in 2014, showed that a third of South African suffering from mental health disorder. More than 17-million people in South Africa are dealing with depression, substance abuse, anxiety, bipolar disorder and schizophrenia.²⁴ During his first address to Parliament in 1994, former President Mandela specifically singled out alcohol abuse as a major cause of crime, poverty, reduced productivity, unemployment, dysfunctional family life, political instability, the escalation of chronic diseases such as AIDS and TB, injury and premature death.²⁵

Limitations

The annual growth in population is accepted as 3%, which may not be strictly accurate in view of the lack of precise death and birth ratios. However, the author has tried to estimate as accurately as possible.

Conclusion

There is an increasing trend of blunt force traumatic deaths in the Transkei sub-region of South Africa over a 23 years study period (1993-2015). Murder as a result of blunt force trauma is neutralising the beneficial effect of Gun Control Act of 2002. It is a frightening finding in this study, as a little less than a quarter (23.66%) of school age children (11 and 20) were murdered by blunt objects. Female child were having some protective effect than males. Poverty alleviation is an important steps to curb these premature deaths in this region along with improvement in pre-hospital and hospital care to avoid these preventable deaths. Community education, and deterrent law enforcement could be helpful in reduction of crime.

Ethical Issue: The author has ethical permission for collecting data and publication (approved project No. 4114/1999) from Ethical committee of University of Transkei, South Africa.

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