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Incidence of Traumatic/Violent Deaths in the Transkei Sub-region of South Africa Over Twenty-Three Years (1993-2015)

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Abstract

Background: Traumatic and violent deaths are the most prominent public health problem in South Africa. The number of such deaths is under-estimated and under-reported in rural and poor parts of South Africa, where the majority of the population resides.

Objective: To study the incidence of traumatic and/or violent death in the Mthatha region of South Africa.

Method: A record review was undertaken from 1993 to 2015 of 24 419 medico-legal autopsies performed at Mthatha Forensic Pathology Laboratory.

Results: Between 1996 and 2015 autopsies were performed on 26972 victims of unnatural death of these, 18703 (69.3%) followed traumatic deaths. The average traumatic and violent death rate is 135 per 100000 of the population annually. There has been a steady decline in the death rate from 156/100000 of the population in 1996 to 123.6/100000 in 2015. Most (32.7%) victims were between 21 and 30 years old. Males outnumbered females at a ratio of 4:1in respect of traumatic and violent deaths in this region of Transkei in the study period.

Conclusion: The incidence of traumatic and/or violent deaths in the Transkei sub-region of South Africa is high. The situation needs urgent intervention to save lives.

Keywords: Trauma; Injury; Wound; Unnatural; Death.

Introduction

Every 5 seconds someone in the world dies as a result of trauma, amounting to about 5.8 million people who die each year as a result of trauma. Every day the lives of over 15 000 people are cut short by injury. This accounts for 10% of the world's deaths, 32% more than the number of fatalities that result from malaria, tuberculosis, and HIV/AIDS combined.[1] Three times more people die each year from homicide than from war-related injury (WHO, 2010). South Africa, a country not at war, faces an unprecedented burden of morbidity and mortality arising from violence and injury. In 2000, violence and unintentional injuries combined were the second leading cause of all death.[2] South Africa registered 59 935 deaths due to injury in 2000, which is an overall death rate of 157.8 per 100 000 of the population.[3] South Africa experiences high levels of violence, as more people are killed by gunfire each year than in motor vehicle accidents (MVA).[4] In 2000, there were 654 homicides of children younger than 5 years, representing an estimated 0.6% of all child deaths in that year.[5] Injuries and violence are unevenly distributed between males and females. The deaths of men from homicide outnumber those of women by more than 7:1. Many female victims of intimate partners have high blood alcohol concentrations at the time of their death, and most of the men who kill them are similarly intoxicated.[7]

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An earlier similar study carried out in the Transkei sub-region between 1993 and 1999 by the author revealed that the average annual incidence of violent and/or traumatic deaths in the Transkei region of South Africa was 162 per 100 000 of the population. This violent and/or traumatic death rate was 2.4 times higher than in Cape Town.[8] Seventy-three percent of the rural people in Eastern Cape were living on less than R300 per month in 2005/2006.[9]

The economic cost of RTA globally has been estimated at USA$ 518 billion annually. In most countries RTA cost between 1–2% of the gross national product (GDP), but it can reach up to 5% in some countries.[1] An analysis of the costs and benefits of a number of selected injury and violence prevention measures show that they yield significant value for money.[1] The purpose of this study is to highlight the problem of traumatic violent deaths in the Transkei–sub region of South Africa. It will also discuss the causative and preventive factors related to these deaths.

Subjects and Method

The retrospective descriptive study was carried out from the records of the post-mortem register from 1993 to 2015 at Mthatha Forensic Pathology Laboratory. The Mthatha Forensic Pathology Laboratory is the only laboratory in this region catering for a population of about half a million in the region of Mthatha. It is attached to the Nelson Mandela Academic Hospital, which is the only teaching hospital in this province. It is associated with the Walter Sisulu University Medical School, and all medico-legal cases in this area of South Africa are dealt with at this facility. In total 26 972 autopsies were conducted between 1993 and 2015 and recorded in the post-mortem register at this laboratory. Between 1993 and 2015 the laboratory dealt with 18703 victims of traumatic violent death. The age groups could not be verified clearly between 1993 and 1995, therefore this period was not taken into account in considering age groups in this study. All traumatic and/or violent deaths have been considered together in this study, for example death caused by mechanical trauma such as MVAs, as well as death related to violence, such as firearm injuries, stab wounds and blunt trauma (assault). Deaths caused by hanging, burns, and even poisoning etc. are labelled non-violent deaths, although it does not mean such deaths are not traumatic and non-violent. The words trauma and injury have been used interchangeably in this study. Decimal points were omitted in calculations to adjust the final figures.

The details of names, addresses, age, gender and date of autopsy, with cause of death, were recorded. Fourteen forensic officers are engaged in collecting corpses round the clock from 17 different police stations in four municipalities in the area. The combined population was 400 000 in 1993, but this number has been increasing at an average of 3% annually. In 2005 there were five police stations to be taken into account. Therefore, the population in the area of this study has increased. Population statistics were calculated with the help of the South African Statistics Department in Mthatha. However, it is difficult to estimate the total population involved. The data were collected in hard copies designed to reflect post-mortem number, year, gender and cause of death. These data were transferred to an Excel computer program and analysed with the help of the SPSS computer program.

Results

Between 1993 and 2015 medico-legal autopsies were performed on the victims of 26 972 unnatural deaths (Table 1). Of these, 18 703 (69.3%) died traumatic and/or violent deaths (Fig. 1). The average annual rate of traumatic, violent death was 135 per 100 000 of the population (Table 2). It was highest (161.9/100 000) in 1997, and lowest (107.2/100 000) in 2014 (Table 2 and Fig. 2). Overall, homicide (stab, firearm and blunt trauma) was the most important cause of these traumatic and violent deaths, accounting for 80 deaths per 100 000 of the population annually in this study (Table 2). Death as a result of MVA is the single most frequently recorded cause of death, at a rate of 50/100 000 of the population annually (Table 2). On average the majority of homicide deaths were caused by stabbing, at a rate of 34 per 100 000 of the population, followed by gunshot wounds at a rate 30 per 100 000, and blunt trauma at a rate of 21 per 100 000 of the population annually (Table 2 and Fig. 3). Most (80%) of the victims were male in this study (Table 3, 4 and Fig. 4).Most of the victims (32.7%) were between the ages of 21 and 30 years (Table 3, 4 and Fig. 4).

Discussion

This is the first descriptive study considering such a large sample of deaths due to trauma and/or violence in the Transkei sub-region of South Africa,

Table 1: Ranking of percentage of cause of death by gender in the Transkei sub-region of South Africa from 1993 to 2015 (N=26972).

Rank	Males (n = 21 047)		Females (n = 5 925)		Total (n = 26 972)	
	Cause of death	(n) %	Cause of death	(n) %	Cause of death	(n) %
1	MVA	4 789 (25)	MVA	1 840 (31)	MVA	6 629 (24.6)
2	Stabbing	4 706 (22)	Gunshot	706 (12)	Stabbing	5 216 (19.3)
3	Gunshot	3 236 (15)	Collapse	590 (10)	Gunshot	3 942 (14.6)
4	Assault	2 433 (11.5)	Poisoning	537 (9.0)	Assault	2 916 (10.8)
5	Collapse	1 574 (7)	Stabbing	510 (8.6)	Collapse	2 164 (8)
6	Hanging	1 422 (6.6)	Assault	483 (8.2)	Hanging	1 606 (6)
7	Drowning	983 (4.5)	Drowning	338 (5.7)	Drowning	1 321 (4.9)
8	Poisoning	615 (2.8)	Burns	286 (4.8)	Poisoning	1 152 (4.3)
9	Burns	466 (2.1)	Lightning	207 (3.5)	Burns	752 (2.8)
10	Fall from height	467 (2.1)	Fall from height	205 (3.5)	Fall from height	672 (2.5)
11	Lightning	284 (1.1)	Hanging	184 (3.1)	Lightning	491 (1.8)
12	Gas suffocation	72 (0.3)	Gas suffocation	39 (0.6)	Gas suffocation	111 (0.4)
	All causes of death	100%	All causes of death	100%	All causes of death	100%

Table 2: Traumatic and violent deaths in Transkei sub-region of South Africa from 1993 to 2015 (n=18703).

Year	Estimated population | MVA/100 000		Stab/100 000	Gun/100 000	Assau/100 000	Total deaths/100 000
1993	40 0000	62	42	27	25	156
1994	41 2000	64.6	27	34	21	146.6
1995	42 4360	52.8	27	30	27	136.8
1996	43 9091	61.3	28	37	25	151.3
1997	45 2264	61	26	51	24	161.9
1998	46 5832	59.9	32	47	23	160
1999	47 9807	39.8	29	53	19	140.8
2000	49 4201	41.5	29	49	19	138.5
2001	50 9027	32.2	24	54	19	127.2
2002	52 4298	32.6	27	45	16	120.6
2003	54 0027	43.5	29	39	21	132.5
2004	55 6227	41.2	28	31	17	117.2
2005	72 0304	46.2	29	23	21	119.2
2006	74 1913	38.3	36	26	16	116.3
2007	76 4171	47.9	40	25	16	128.9
2008	78 7096	41.2	38	19	17	115.2
2009	81 0708	43.4	35	14	17	109.4
2010	83 5030	45.5	41	14	23	123.5
2011	86 0081	42	42	13	24	121
2012	88 5883	44.2	42	15	23	124.2
2013	91 2460	40.5	42	20	22	124.5
2014	93 9833	33.2	39	15	20	107.2
2015	96 8028	41.6	44	13	25	123.6
Average	64 8810	50	34	30	21	135

Table 3: Age-wise distribution of traumatic and violent deaths among males in the Transkei Sub-region of South Africa from 1996 to 2015 (both genders, n=15 460).

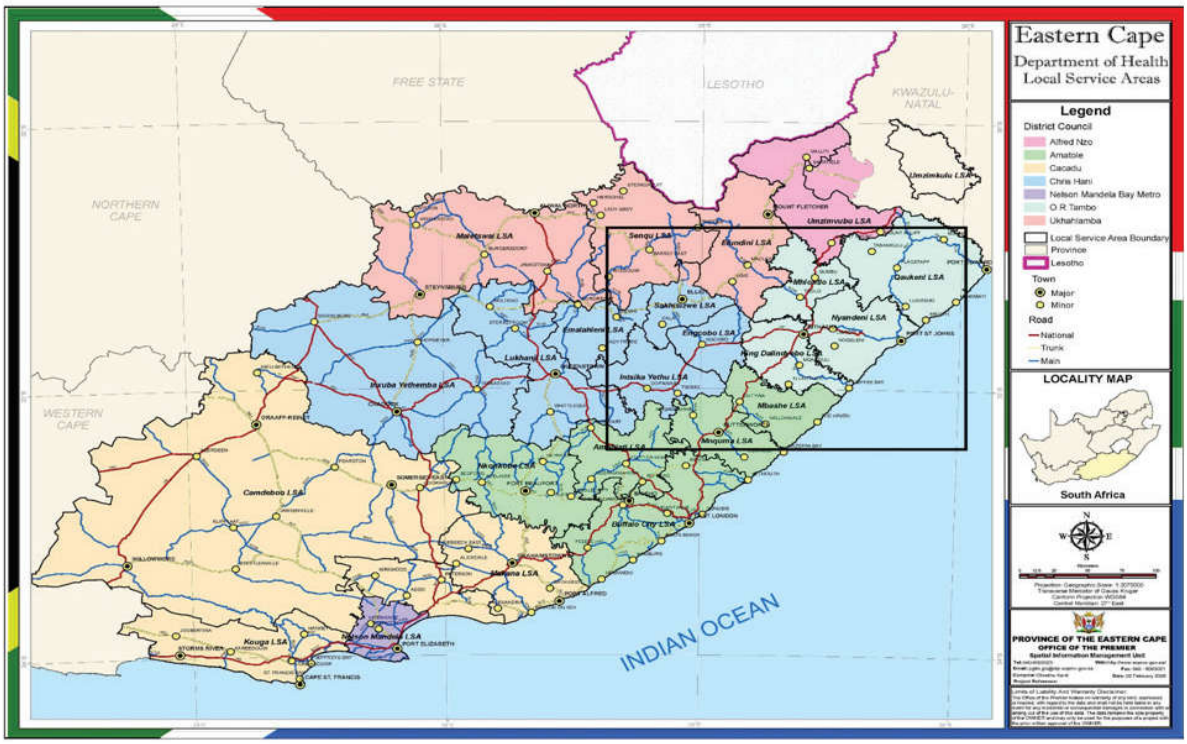
Age groups	MVA	Stab	Firearm	Assault	Sub-total
1-10	382	35	36	48	501 (3.24%)
11-20	556	977	392	527	2 452 (15.86%)
21-30	1 120	1 723	945	663	4 451 (28.8%)
31-40	747	668	621	314	2 350 (15.2%)
41-50	523	291	415	195	1 424 (9.2%)
51-60	319	143	199	137	798 (5.16%)
61-70	170	69	113	83	435 (2.81%)

71-80	86	40	52	50	228 (1.47%)
81-90	31	2	7	11	51 (0.32%)
>90	0	0	1	3	4 (0.02%)
Total	3 934 (25.4%)	3 948 (25.5%)	2 781 (18%)	2 031 (13.1%)	12 394 (80.2%)

Table 4: Age-wise distribution of traumatic and violent deaths among females in the Transkei Sub-region of South Africa from 1996 to 2015 (both gendes , n=15 460).

Age groups	MVA	Stab	Firearm	Assault	Sub-total
1–10	263	12	21	18	314 (2%)
11–20	282	89	83	42	496 (3.2%)
21–30	298	110	130	64	602 (3.9%)
31–40	223	65	108	61	457 (2.9%)
41–50	183	59	104	57	403 (2.6%)
51–60	151	42	80	43	316 (2%)
61–70	104	25	64	42	235 (1.5%)
71–80	85	20	34	46	185 (1.2%)
81-90	21	10	5	17	53 (0.3%)
>90	2	0	1	2	5 (0.03%)
Total	1 612 (10.4%)	432 (2.8%)	630 (4%)	392 (2.5%)	3 066 (19.8%)

Photograph 1: Map of Transkei sub-region of South Africa – population catered for by Forensic Pathology Laboratory indicated by a square.



covering 23 years. An earlier study was published by the author on a similar topic but it covered only a limited number of years and involved a smaller sample. 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.[9] The South African Institute of Race Relations believes that more than half of the crimes in South Africa are not reported.[10]

The 26 972 unnatural deaths considered were recorded in the post-mortem register of Mthatha Forensic Pathology Laboratory (Table 1). Just less than three quarters (69.3%) of all deaths were related with trauma, which could be the highest rate in the world, but is definitely the highest in South Africa (Table 1). A recent (1997) study published by the author has shown that the number of unnatural deaths was very high in this region, and needed

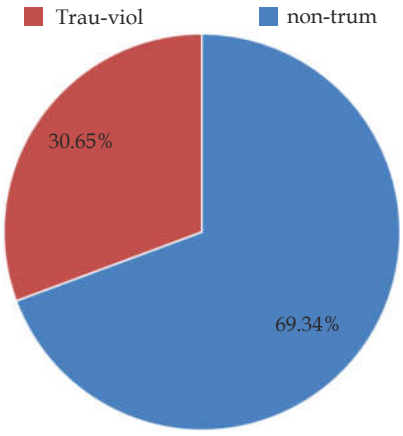


Fig. 1: Traumatic and violent deaths vs. non-traumatic deaths in the Transkei sub-region of South Africa (n=2 6972).

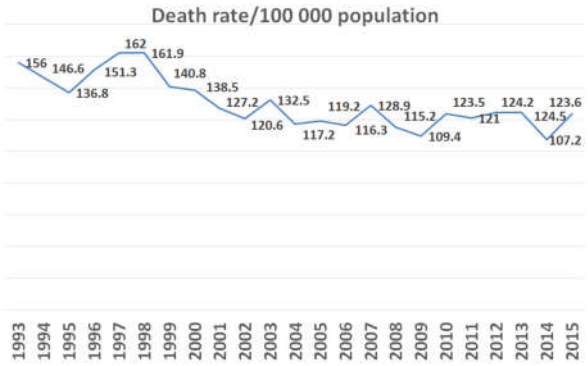


Fig. 2: Incidence of traumatic and violent deaths in Transkei sub-region of South Africa from 1993 to 2015 ((n=18703).

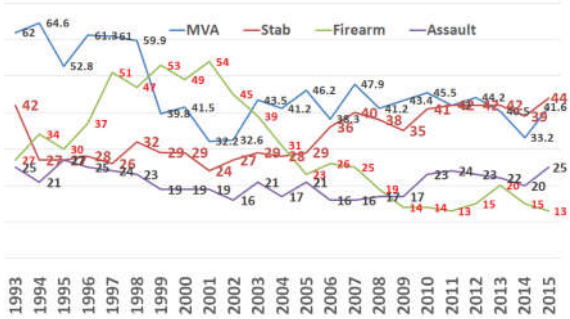


Fig. 3: Incidence of traumatic and violent deaths (MVA, stab, firearm and assault) in the Transkei sub-region of South Africa from 1993 to 2015 (n=18 703).

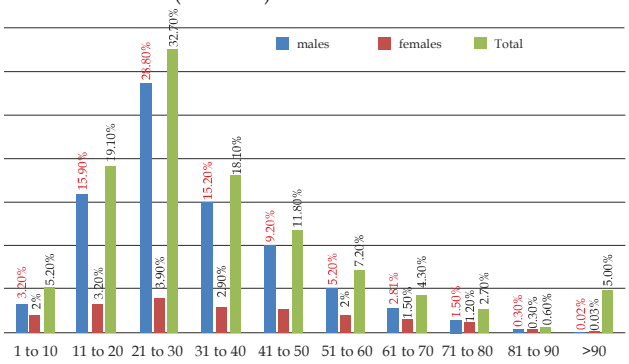


Fig. 4: Age-wise distribution of traumatic and violent deaths in the Transkei sub-region of South Africa from 1996 to 2015 (n=15 460).

urgent attention from the government.[11] Such a high (26 972) number of unnatural deaths would normally only be expected in large-scale disasters such as an earthquake or tsunami. More people died unnatural deaths in the Transkei sub-region in the period under study than in Iraq, although South Africa is a country that is not at war. A report published in 2011 estimated that approximately 500 000 Iraqis had died as a result of the conflict since the invasion.[12]

Death has no meaning for the people in the region, as they are so used to it. The Transkei region is also unique in respect of its political history and its social and economic inequalities, which have been identified as some of the factors possibly contributing to the high rate of interpersonal violence.[7] The average annual rate of traumatic and/or violent deaths was 135 per 100 000 of the population in this study (Table 2 and Fig. 2), which is lower than indicated in an earlier report by author in 2004.[11] There is hardly any literature available to compare the combined number of traumatic and/or violent deaths. There has been a change in the trend in traumatic and violent death over a period of 23 years (1993–2015). It has come down from 156 per 100 000 (1993) to 123.6 per 100 000 of the population (2015) (Table 2 and Fig. 3). RTAs are the leading cause of traumatic death in this region. The average RTA death rate was 50 per 100 000 of the population in the study period (Table 2 and Fig. 3). It has come down from 62 per 100 000 (1993) to 41.6 per 100 000 (2015), but is still almost twice as high as the national average. South Africa has the 42nd highest road mortality rate in the world, with 25.1 RTA deaths annually per 100 000 of the population.[13]

About two-thirds (58 per 100 000) of the violent and traumatic deaths were caused by homicide in this region (Table 2 and Fig. 3). In the Transkei, people could be killed when they are sleeping in their homes, going to market or church or school. Poverty is both a cause and effect of these violent traumatic deaths. Because of being poor, one is at a disadvantage at all levels. Poverty and inequality are inseparable and often lead to a mindset in which human life becomes cheap. This is a key driver of death as a result of violence.[7]

A reduction in deaths as result of firearm injuries has made a significant difference in the total number of traumatic violent deaths in this region. The rate of firearm-related death has almost halved, from 27 per 100 000 to 13 per 100 000 of the population in this study (Table 2 and Fig. 3). A recent report on firearm deaths by Matzopoulos et. al. in 2016 asked

where all the gun deaths have gone. Stricter gun control after the implementation of the 'Firearm Control Act of 2000 accounts for this decrease.[14] The number of guns per capita per country is a strong and independent predictor of firearm-related deaths in a given country.[15] The number of traumatic and/or violent deaths could be lowered even further if government could pass an 'Act on Sharp Weapon Control' similar to the Firearm Control Act. Sharp-edged pointed weapons are the single most frequent cause of homicide deaths in this region. The average rate is 34 per 100 000 of the population annually (Table 2 and Fig. 3). The rate of death inflicted by sharp and pointed objects has been showing an increasing trend from 27 per 100 000 (1994) to reach a level of 44 per 100 000 of the population in 2015 (Table 2 and Fig. 3). There has not been much change in the rate of death as a result of blunt trauma (assault), as it was the same in 1993 and 2015, namely 25 per 100 000 of the population annually (Table 2 and Fig. 3).

Traumatic violent deaths are unevenly distributed among males and females as well as among age groups in this study (Table 3, 4 and Fig. 4). The rate is four times (80.2%) higher among males than among females, and it is at least three times (59.8%) higher in the age group 11–40 years than in the rest of the age groups (Table 3, 4 and Fig. 4). According to the WHO, the worldwide rate is much less than Transkeian figures, since only twice as many men as women die each year as a result of injury.[1] In the Transkei deaths of men from homicide outnumber those of women by more than 7:1.7 This has been a constant feature in all earlier studies published by the author in this region: traumatic violent deaths among males outnumbered those among females.[16,17] Xhosa women do not kill others, but they are killed. Most of the time, their male partners or husbands kill them in their homes. Males are involved in most of the deaths related with violence and trauma. Beyond the measurable costs, violence causes pain and suffering, can lead to chronic trauma, affects child development, and can increase the risk of chronic health outcomes later in life.[18] Spending money on prevention strategies would be much more beneficial than turning a blind eye to an ongoing serious problem.

Poverty, illiteracy, alcoholism, and psychiatric illnesses are the main factors that are propagating traumatic and violent death. There has always been extreme poverty in the Transkei region of South Africa.[9] It has been part of the culture for generations, since ancient times. This is going to demand a huge educational effort that might only bear fruit in a generation or two, if economic conditions and the entire lifestyle could be improved. Poor men also consume excessive alcohol in an effort to forget their problems of poverty. Alcohol consumption rates in South Africa are the highest in the world, and are continuing to rise.[19] South Africa is a hard-drinking country. It is reckoned that we consume in excess of 5 billion litres of alcohol annually.[20] In the study period about half (49.5%) of traumatic deaths were related to alcohol in the Transkei region.[21] Alcohol and psychiatric illnesses also have a cause and effect relationship. A third of South Africans suffer from mental health disorders. More than 17 million people in South Africa are dealing with depression, substance abuse, anxiety, bipolar disorder and schizophrenia.[22] Despite the fact that the number of traumatic and violent deaths is so high, there is hardly any trauma care centre to deal with these cases and prevent deaths. Apart from inadequate facilities, few, if any, qualified professionals are prepared to work in rural areas, especially in view of the conditions under which they have to work. A study carried out by the author showed that at least 12% of pre-hospital deaths are preventable.[23] Trauma-related deaths have also been compounded by the high HIV infection rate in this region, which poses an even bigger threat to the country than does violence.[24]

Conclusion

Although the incidence of traumatic and/or violent deaths has declined somewhat, it has remained a serious problem in the Transkei sub-region of South Africa over the 23 years of the study (1993–2015). Annually, a little less than half (64 per 100 000 of the population) of the violent and traumatic deaths were caused by penetrating weapons. About one third (28.8%) of the victims of these deaths are young men between 21 and 30 years of age. Males are predominantly both the perpetrators and victims of these traumatic and violent deaths. There is a need to improve the health care delivery system in the region. Stricter law enforcement, along with political will and determination, is important to curb the high incidence of traumatic and violent deaths in the Transkei sub-region of South Africa.

Ethical Issue

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

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