

# 1 Crime, violence and injury prevention in South Africa: Trends, emerging issues and opportunities

Ashley van Niekerk<sup>1</sup>  
Crime, Violence and Injury Lead Programme

Shahnaaz Suffla  
Institute for Counselling, University of the Western Cape

Mohamed Seedat  
UNISA Institute for Social and Health Sciences and Crime, Violence and Injury Lead Programme

The *Crime, Violence and Injury Prevention in South Africa: Developments and Challenges* is a biennial publication, which is similar in format to other reviews in the social and health sector in South Africa and is intended as a resource for policy-makers, funders and service providers. This review seeks to provide a comprehensive, regular analysis of the crime, violence and injury sector that includes an analysis of the key developments and advancements, as well as the major emerging priorities in the sector. It is hoped that the publication will be utilised as a tool to assist the sector to focus its attempts towards the further development of a coordinated strategy aimed at the prevention and control of crime, violence and injury. The review also serves to identify emerging strategies that show potential as replicable, good prevention practices. It comprises eleven chapters, each of which investigates key trends, issues and opportunities that have recently emerged from the crime, violence and injury sector in South Africa. These contributions are by researchers, academically-oriented activists and practitioners, and represent an attempt to contribute to the further development of a coordinated response by the injury prevention and safety promotion sector. Collectively, the chapters enhance our understanding of the magnitude and determinants of violence and injuries in South Africa. The volume points to specific questions and areas that require further investigations, and highlights issues inherent to recently implemented safety promotion measures.

The generation of scientifically produced data and information is integral to our social responses addressing South Africa's injury-related disease burden. In South Africa, home to 44.8 million people (Statistics South Africa, 2003), between 70 000 to 80 000 non-natural deaths<sup>2</sup> occur each year (Matzopoulos, Cassim & Seedat, 2003). The National Injury Mortality Surveillance System (NIMSS) that presently captures data on about 35% to 40% of all non-natural deaths showed that in 2002 homicide (45%), transport-related incidents (27%), suicide (10%) and other unintentional

<sup>1</sup> To whom correspondence should be addressed.

<sup>2</sup> See *Selected Glossary* on pages 205-206 for definitions of key terms.



injuries, such as burns and poisonings (10%), were among the leading causes of non-natural death. Another study, which analysed 2001 cause of death statistics and the premature mortality burden for the city of Cape Town showed that the top cause of death in Cape Town was homicide, followed by cardiovascular disease and HIV/AIDS. Such mortality data strengthens the long-standing call to have crime, violence, injuries and their prevention prioritised alongside other public health issues such as HIV/AIDS.

In chapter two, *The burden of injury in South Africa: Fatal injury trends and international comparisons*, Matzopoulos, Norman and Bradshaw assert that timely, accurate and reliable injury statistics are an important component of the platform required for the prevention of injury. Their chapter reports that injuries accounted for just over 12% of all deaths in 2000 and, as a category, was ranked as South Africa's third leading cause of death after HIV/AIDS and cardiovascular disease. A comparative analysis with world and African rates indicates that South Africa has a disproportionately large burden of violence and injury mortality and morbidity. This chapter reviews morbidity and mortality due to four injury subcategories: homicide, suicide, road traffic injuries and other unintentional injuries. The authors conclude that reliable and accurate national and city-level information is an important tool for effective evaluation; mortality data provide a useful starting point for injury surveillance, the evaluation of prevention initiatives, and serves as a powerful resource for stimulating research and directing policy.

The *Interpersonal youth violence prevention*, chapter three, by Parker, Dawes and Farr recognises the concentration of violent assault, injury and mortality among South African youth, both as victims and perpetrators. The chapter investigates the challenging task of identifying effective interventions that address the effects of exposure to violence and that can prevent the development of violent tendencies in the young. High levels of interpersonal violence in a context of poverty and limited opportunities for youth pose a serious challenge for violence prevention agencies. The chapter describes a sample of twelve interventions that are aimed at the prevention or reduction of youth violence. Each intervention is described in terms of its programme theory and aims; the development of the intervention; its outcomes, impacts and measures of success; and its evaluation. The interventions are commonly aimed at the reduction of community risk factors and the promotion of support structures for programme recipients. However, the programmes typically struggled to measure programme impacts and indicators of success, with few programmes incorporating any evaluation mechanisms.

The issue of violence against women has come to be unequivocally defined as a national public health priority issue, as reflected in chapter four titled *An overview of gender-based violence in South Africa and South African responses* by Abrahams, Martin and Vetten. In their overview of gender-based violence in South Africa, the authors direct their focus to intimate partner violence specifically, and consider health sector responses and the performance of the criminal justice system in this respect. The authors' scrutiny of the epidemiology of gender-based violence in South Africa reinforces the concern that existing national-level data is inadequate and fragmented. Through their analysis the authors make a compelling argument for the introduction of support services for survivors with a view to improving emergency response systems



and preventing the secondary victimisation of survivors. While recent developments fostering better healthcare for survivors are recognised, institutional obstacles and disparities across provinces that stymie the implementation of policy remain a concern, as does the performance of the criminal justice system in respect of legal reform and criminal sanctions. The authors clearly invite further discussion about the institutional prerequisites for facilitating an efficient and coordinated response to gender-based violence prevention in South Africa.

In *Gun violence in South Africa* (chapter five), Keegan examines the incidence of gun violence and explores factors that appear to be prompting the apparent increased circulation of firearms. She reports that over the last decade, violent crime in South Africa increased by 33%, with the crime rate rising rapidly between 1997 and 2001, but stabilising thereafter. Firearms are reported to be commonly implicated in fatal violent crimes. In her examination of the determinants of gun violence, Keegan places the accent on a complex gun culture formed after centuries of low-level and open violent conflict, masculine identity, the proliferation and increased recent exposure to international criminal syndicates, and the easy access to unlicensed or stolen guns. Keegan also summarises recent arguments about the direct and indirect costs of gun violence, focusing on the physical suffering of individuals and their families, the considerable drain on health-care systems, and the pervasive fear of violence, widespread and prevalent even in communities where violent crime is uncommon. Keegan recognises that gun violence in South Africa is complex and pervasive, and requires a comprehensive approach on the part of both government and civil society. To this end she calls for a coordinated national strategy involving increased police interventions, stricter licensing procedures and the implementation of widespread, effective public awareness campaigns.

In chapter six, *Current perspectives on suicidal behaviour in South Africa*, Schlebusch indicates that suicide accounts for between 8% and 10% of all non-natural deaths in South Africa. In this review of both global and South African trends, the author draws attention to the divergent research findings in this sector, the emerging epidemiological profile of vulnerable groups, and the risk conditions and situations that appear to be associated with an apparent increase in suicide. Recent findings indicate that increasingly it is younger South Africans that are vulnerable to suicide, pointing to the need for the development of school-based prevention interventions. Schlebusch argues that prevention initiatives can begin in early childhood and can be incorporated at the levels of school, university, college and the family. Prevention programmes should target suicidal behaviour in all age groups, but especially among youngsters. The author emphasises a national, coordinated response to dealing with suicide, which incorporates the systematic and accurate collection of information, differentiates the types of suicidal behaviour, and guides the development of prevention models including management responses.

Road traffic injury is another leading contributor to the injury burden in South Africa and so poses as a serious public health problem associated with excessive human and socio-economic costs to the country. In chapter seven, *Road traffic injury in South Africa: An epidemiological overview for 2001*, Sukhai, Noah and Prinsloo provide an overview of the epidemiology of road traffic injuries in South Africa. Drawing from multiple data sources, the authors examine populations at risk, temporal and






spatial characteristics associated with traffic injuries, vehicular-related risks and high-risk driving behaviours. The authors, corroborating the views of the other contributors, emphasise the complex and multifactorial determinants of road traffic injuries, the value of quality data required to inform intervention and policy initiatives, and collaborative partnerships to ensure an integrated national response to traffic-related injuries.

In chapter eight, *Monitoring alcohol and other substance use in South Africa: The alcohol and drug injury nexus*, Marais, Sukhai and Donson recognise the scarcity of recent information on national trends for drug or alcohol use in the country. Although there is some information on alcohol use patterns, less is known about other drugs. In their review the authors confirm the alcohol-fatal injury nexus and indicate that blood alcohol concentrations are particularly high in firearms and sharp instrument related deaths, as well as in pedestrians and drivers who died in motor vehicle crashes. Marais, Sukhai and Donson detail a 3-year study investigating alcohol and illicit drug consumption amongst trauma patients at five health care facilities in three cities between 1999 and 2001. They offer initial recommendations for prevention strategies that may include alcohol screening, law enforcement and educative initiatives. In conclusion they suggest further investigation into substance abuse related injuries.

In chapter nine, *Childhood burn injury: Epidemiological, management and emerging injury prevention studies*, Van Niekerk, Du Toit, Nowell, Moore and Van As report on research examining childhood burn injuries, which are often associated with long-term physical and psychological consequences. Recent South African research has tended to focus on the clinical profile and management of individuals who have sustained burn injuries, and descriptions of the epidemiology of burn injuries. Strategies for preventing burn injuries have received minimal attention in South Africa. Similarly, less attention, if any, has been directed towards the impact of the more transient and modifiable individual, household, familial, and neighbourhood factors and circumstances associated with burn injuries. The authors suggest that the development of accurate diagnostic protocols, appropriate referral and injury management protocols, and the promotion of systematic investigation into burn injury prevention practices be prioritised.

In chapter ten, *Paraffin ingestion*, Carolissen and Matzopoulos expand the Review's focus on unintentional injury among children. They reveal that existing data on paraffin ingestion and paraffin poisoning in South Africa remains sketchy and probably unreliable. Equally, well-defined information on risk factors for paraffin ingestion appears to be lacking, thereby offering inadequate insight into the development of focused intervention and prevention strategies for South Africa. Nonetheless, the response strategies identified by the authors attempt to address the individual, social and economic factors implicated in childhood paraffin ingestion and paraffin poisoning. Clearly, childhood paraffin ingestion and paraffin poisoning needs to be prioritised on South Africa's public health agenda so as to facilitate further research on the subject.

In chapter eleven, *Injury costing in South Africa: The state of the sector*, Bowman and Stevens illustrate that injury costing represents a critical component of decision-



making related to policy, resource allocation and health planning. Injury costing is a valuable means for strengthening the advocacy and lobbying initiatives of safety promotion and injury prevention practitioners. They caution that while developments in injury costing studies are likely to contribute to policy formulation, injury costing is an ideologically loaded concept in that it may contain deleterious implications for disadvantaged populations if applied uncritically and used to replace the “health for all” mission. The authors point us to the limited availability of injury costing data in the public sector, and the consequent implications for the advancement of injury costing initiatives that aim to provide accurate, systematic and timely information on the costs of injury in South Africa’s public health sector. The authors encourage further consideration of the contextual and conceptual issues relevant to injury costing work in South Africa.

Underlying all of the contributions we discern a compelling argument calling on funders, research councils, service agencies and government to reinforce their injury surveillance and broader health information systems research and development work so as to strengthen prevention policies and practices. Against this backdrop, in the final chapter of this volume, Shan Naidoo focuses our attention on *Information management systems for injury data*, examines the current status of health information systems, and foregrounds systems considered to have made a significant contribution to the development of specific injury information management systems in South Africa. In his review, Naidoo highlights the essential need for a comprehensive, integrated and coordinated approach to the development of injury and public health information management systems within the national context. Naidoo suggests that the management of data resources, utilisation of multiple frameworks of reference, incorporation of several methodologies, and the development of relevant institutional structures will favour future efforts to improve the management of injury information in South Africa.

## WHERE TO?

The first edition of the *Crime, Violence and Injury Prevention in South Africa: Developments and Challenges* aims to facilitate the development of a fully-fledged subsequent review of research, policy and practice-related developments in the crime, violence and injury prevention sector, help us discern injury prevention priorities and challenges in our quest to promote relevant policies, practices and programmes, and strengthen systematic and co-ordinated responses from the sector itself. South Africa fortunately boasts a creative and vibrant safety promotion sector and infrastructure including governmental, civil society and corporate-based actors who are engaged in relevant service, policy and research-related activities. Our vibrant sector may strengthen itself and further the mission of injury prevention by drawing on the lessons from the tobacco control and HIV/AIDS sectors, which suggest that coordinated, focused and data driven proactive initiatives yield significant relevant interventions. This is the case when priority is accorded to the development of injury surveillance systems, risk-factor and injury-determinants research, the identification of champions and sectorial mobilisation around key issues, the documentation of champions’ work, and the formation of a culture of cooperation.





### Towards a data platform

Most significantly of all, the chapters consistently recognise the centrality of quality and routine epidemiological data on the who, what, where, when and how of crime and injury, as a prerequisite to effective crime and injury control systems and policies. Comprehensive data are also vital for identifying emerging trends and problem areas, and can serve as basis for programme evaluation (Matzopoulos, Van Niekerk, Marais & Donson, 2002). At a regional or provincial level, administrators can use mortuary caseload information to plan staffing and resource requirements, monitor staff performance and react to emerging injury trends. Ongoing surveillance also assists in inter-facility comparisons, and doctors and medical students can use the surveillance system as a tool for identifying subsets of fatalities and a management tool to review caseloads and autopsy outcomes, as well as to conduct research (Matzopoulos *et al.*, 2002).


Although a number of injury and crime registration systems are now in place, there remain limitations; for example, the coverage of fatal injury systems is typically better in South Africa's metropolitan centres, and distinctly poorer in peri-urban and rural settings. Registration systems, where they exist, are often incompatible with others as a result of divergent classification and terminological systems. Surveillance systems focused on non-fatal injuries, contributing to the major part of the injury burden, remain under-developed (Matzopoulos *et al.*, 2002). Institutional difficulties related to conflicting organisational priorities, limited research capacity, an inadequate regard for science, gatekeeping tendencies, professional jealousies, and the competition for discursive and material resources also seriously hamper progress in the development of injury surveillance systems. Institutional, organisational and personal investments are therefore vital for advancing injury surveillance systems.

### The determinants of crime and injury

The contributors to this review also call for greater recognition of research into the determinants of crime, violence and injury. Various contributors draw on the international literature to focus our attention on the determinants of various kinds of injuries, since for the most part South African research on injury risks is in its infancy. Data on the complex combinations of economic, social and individual determinants of injuries and injury surveillance data form the cornerstone of safety promotion work. Accordingly, science councils, research institutes, our tertiary educational institutions and funding agencies, including the relevant ministries of government, are requested to prioritise intellectual and material support for studies on the determinants of violence, injuries and crime.

### Documentation, monitoring and evaluation


Following the urgent need for information on what works, many of the chapters in the *Crime, Violence and Injury Prevention in South Africa: Developments and Challenges* examine a selection of current crime, violence or injury control or prevention interventions in South Africa. The reviewed programmes comprise different strategic foci (e.g. legislation, educational, environmental, product development, community development), are directed at different risk (e.g. children, parents, school staff, enforcement officials, policy makers), and incorporate various geographic levels (city, provincial, national) and different locations (schools, homes, work-places). However, the majority of South African safety promotion



interventions have not been systematically evaluated or costed. This paucity of information on evaluation outcomes appears to be pronounced in interventions coordinated by the smaller intervention agencies, which may have other organisational priorities and limited research capacities. The limited evaluation and documentation of crime, violence and injury prevention interventions has resulted in a consequent lack of clear evidence of the effectiveness, cost efficiency and contextual appropriateness of interventions.

A commitment to the rigorous monitoring and evaluation of prevention interventions requires greater investment in documentation, research-service agency collaboration, enhancement of evaluation expertise, and financial allocations to evaluations. Intervention practitioners could work alongside researchers to prioritise the development of good practice manuals (e.g. World Health Organisation -WHO- Handbook for the Documentation of Interpersonal Violence Prevention Programmes), and document the efficacy and value of the large body of existing prevention work along the lines of the WHO World Report on Violence and Health.

## CONCLUSION: CHAMPIONS, SECTORIAL MOBILISATION AND NATIONAL PLANNING




The recommendations delineated above are not novel to the South African crime, violence and injury sector. These have been articulated by many other public health, social science and community development workers before. Therefore, if we are to successfully translate the recommendations into a coordinated programme of action, it may be essential to identify champions that can help to mobilise the sector and address the range of institutional, psychological, economic and professional issues that continue to compromise the quality and impact of our responses to crime, violence and injury. Recent national campaigns against crime, child abuse, and violence against women, amongst others, offer valuable lessons as to the effective strategies required to meet the challenges to this sector. We suggest that the development of a fully-fledged review can serve as a rallying point to mobilise the sector.

It bears repeating that crime, violence and injury are not inevitable, but can be predicted, understood and controlled (Laflamme, Svanstrom & Schelp, 1999). Much can be done to prevent and alleviate the suffering sustained by individuals, their families and communities. Following the WHO, experiences in the tobacco control and HIV-AIDS sectors and experiences among our global allies, our crime, violence and injury prevention sector may consider investing in the development of a national action plan that focuses on:

- a) The strengthening of injury surveillance systems;
- b) Risk-factor analysis;
- c) The generation of knowledge products detailing what works;
- d) Increasing overall capacity for data collection, analysis and evaluation;
- e) Establishing mechanisms for cross-sectorial and multidisciplinary collaboration; and
- f) The strengthening of existing primary and secondary work.





We invite our readers, as well as the many champions who are currently working energetically and passionately in practice, policy and research arenas, to take a critical and yet constructive look at all of the chapters contained herein, including the recommendations outlined above. In the spirit of our review we would welcome opportunities to dialogue and further the mission of crime, violence and injury prevention in South Africa<sup>3</sup>.

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<sup>3</sup>You may contact Ashley van Niekerk with your suggestions, comments and ideas for collaboration at [Ashley.vanniekerk@mrc.ac.za](mailto:Ashley.vanniekerk@mrc.ac.za).

## 2 The burden of injury in South Africa: Fatal injury trends and international comparisons

Richard Matzopoulos<sup>1</sup>  
Crime, Violence and Injury Lead Programme

Rosana Norman  
Burden of Disease Research Unit, Medical Research Council

Debbie Bradshaw  
Burden of Disease Research Unit, Medical Research Council

Timely, accurate and reliable injury statistics are an important part of the public health approach to injury prevention. Unreliable statistics thwart efforts to monitor and respond to injury prevention and to assess the effectiveness of prevention initiatives. While most South Africans would concur that we have high incidences of injury and violence, official statistics do not explain the full extent of the problem. Police statistics do not describe in detail the causes or circumstances of homicide, and although statistics compiled by the Department of Transport do include considerable detail about injuries, deaths and costs as a result of collisions, there are still questions about the completeness of the information.

This was highlighted at the beginning of 2003, when the South African National Department of Transport's road safety campaign, Arrive Alive, received considerable negative press in view of the number of road fatalities that occurred over the festive season from December 2002 to January 2003. The media reports followed a perceived dramatic increase in road fatalities, from 648 fatalities in December 2001 to 1125 fatalities in December 2002 - an increase of more than 70%. The National Department of Transport's response was that the media had "sensationalised" the statistics for road accidents over the holiday period, and that the figures for fatal road accidents from December 2001 were wrong by about 30%.

More accurate estimates as to the extent of the problem are emerging as local health information and surveillance systems evolve. Within the Medical Research Council both the Burden of Disease Research Unit and the Crime, Violence and Injury Lead Programme are undertaking projects that aim to describe the incidence and causes of violence and injury more accurately.

The recently completed National Burden of Disease study suggests that injuries accounted for just over 12% of all deaths in 2000 and, as a category, they were ranked as South Africa's third leading cause of death, after HIV/AIDS (30%) and cardiovascular disease (17%) (Bradshaw *et al.*, 2003). Injuries mostly kill young,

<sup>1</sup> To whom correspondence should be addressed.





economically active adults, and in 2000 accounted for 17% of male and 6% of female deaths (Bradshaw *et al.*, 2003). Careful interpretation of the mortality profile in South Africa indicates a quadruple burden of disease, with HIV/AIDS adding to a combination of pre-transitional conditions related to under-development and poverty, emerging chronic conditions and injuries (Bradshaw *et al.*, 2003).

In terms of premature mortality (estimated using the standard Global Burden of Disease approach to calculate years of life lost or YLLs), injuries accounted for 16% (22% for males and 8% for females) of the premature mortality burden. Among the specific causes of premature mortality two categories dominate the South African injury profile, namely homicide and road traffic collisions. Suicide and other unintentional injury deaths also contributed significantly to the national injury burden, but it was homicide and road traffic collisions that made the overall injury death rates in South Africa so high. Homicide and road traffic collisions were ranked as the second and fourth leading causes of death respectively among males in 2000 (Bradshaw *et al.*, 2003).


This chapter reviews disability or morbidity and mortality in the four injury subcategories of homicide, suicide, road traffic injuries and other unintentional injuries, in order to contextualise the injury epidemic in South Africa in relation to other countries and, where possible, to identify injury trends.



## INJURY MORTALITY

Since 1991 information on causes of death due to injuries, which should be the cornerstone of national injury surveillance, has been missing from the routine national vital statistics compiled by Statistics South Africa (Stats SA). This is because the Births and Deaths Registration Act of 1992 stipulated that details about the cause of a non-natural death need not be reported, in order to streamline the death registration process. To fill the data vacuum, the National Injury Mortality Surveillance System (NIMSS) was established by a consortium of research agencies, including the Medical Research Council, the University of South Africa and the Council for Scientific and Industrial Research, in order to provide information about causes of death due to injuries (Butchart *et al.*, 2001).

NIMSS is a mortuary-based system capturing information on causes of fatal injuries from sentinel sites. The NIMSS has been collecting injury mortality data on an annual basis since 1999. Each year there has been an increase in the number of mortuaries included in the surveillance system and the number of cases recorded. In 1999, 14 829 fatal injuries were recorded at 10 mortuaries in five provinces (Butchart, 2000) and in 2000, 18 876 fatal injuries were recorded at 15 mortuaries, again in five provinces (Burrows, Bowman, Matzopoulos & Van Niekerk, 2001). In 2001, 32 mortuaries in six provinces collected information on 25 361 injury deaths, estimated at between 32% and 39% of the national non-natural mortality caseload. As the sentinel mortuaries were located predominantly in large urban areas, the NIMSS is believed to be reflective of an urban rather than rural injury profile (Matzopoulos, 2002). Nevertheless, the NIMSS is widely accepted as being the only recent source available for estimating a detailed cause of death distribution for injuries on a national level.



The National Burden of Disease Research Unit at the Medical Research Council independently validated NIMSS data against several other data systems, including the South African Police Services Crime Information Analysis Centre, which compiles data on homicide and culpable homicide; the Department of Transport, which collects information on road traffic accidents; the Department of Minerals and Energy, which collects statistics on mining accidents; and the forensic audit conducted by the Department of Health in 1998.

The injury cause of death distribution identified by the National Burden of Disease was compared with the injury cause of death distributions from the 1988/1989 Stats SA death data, 1994 Cape Metropole Mortality Study (Lerer, Matzopoulos & Phillips, 1997), the re-analysed 1990 Cape Metropole Study (Norman, 2002) and the Agincourt and Hlabisa surveillance systems. In all studies, homicide and road traffic injuries accounted for the majority of deaths, with males being at a considerably greater risk than females. In addition, the National Burden of Disease age and sex distribution for the major causes of injury deaths (homicide, road traffic collisions, suicide, fires, and drowning) were compared with the alternative sources mentioned above. These distributions were, without exception, all very similar.

A comparison of the estimates of total deaths for homicides shows that the National Burden of Disease study estimate is reasonable in comparison with the Department of Home Affairs data, and higher than the South African Police Services data (Bradshaw *et al.*, 2003). However, a comparison of the estimates of deaths for road traffic accidents suggests that the National Burden of Disease study estimate is about double the number of deaths reported through the Department of Transport. This is a substantial difference. One possible reason could be that the accident reports on which Department of Transport statistics are based include only deaths at the scene of the accident and exclude deaths that occur on the way to hospital or at some later point. The discrepancies in homicide statistics and transport statistics require further investigation. However, given the agreement noted for the total number of injury deaths, particularly with the forensic audit, it is inevitable that estimates for specific causes would be higher than the reported numbers from other sources and more similar to the NIMSS distribution.

## NON-FATAL INJURIES

Non-fatal injuries need to be included in surveillance systems to ensure that they receive adequate policy attention, since they contribute substantially to burden of disease measures. Estimation of the non-fatal injuries component of burden of disease estimates (years lived with a disability or YLDs) requires incidence, severity and duration of disease data, much of which are not available in South Africa. Given the paucity of population-based morbidity data, the main focus of the first South African National Burden of Disease study was the causes of premature mortality experienced in 2000. Nevertheless, attempts were made to estimate the additional burden contributed by morbidity in order to determine disability adjusted life years (DALYs). The disability component of the DALY was approximated from the AFRO E<sup>2</sup> region of

<sup>2</sup> Sub-Saharan Africa (AFRO) is one of the six World Health Organisation regions of the world and it has been subdivided into two regions according to the levels of mortality (AFRO D and AFRO E). South Africa falls into the AFRO E region, which has high child and very high adult mortality rates.





the Global Burden of Disease (GBD) 2000 study (Murray, Lopez, Mathers & Stein, 2001), and DALY estimates are referred to as AFRO E DALY estimates.

There have been many criticisms concerning the quality of data used to calculate DALYs in the GBD study (Schneider, 2001). In particular, the DALY review group of the WHO's Advisory Committee on Health Research (1996) pointed out that a substantial proportion of the data used in the GBD study has been generated by modelling. The problem of poor-quality data is exacerbated for the Sub-Saharan Africa region where the estimates are considered to be based on an extrapolation from the relatively small part of the population covered by vital registration in South Africa. Cooper, Ostotimehin, Kaufman and Forrester (1998) assert that the estimates for Sub-Saharan Africa do not help define the burden of disease for that region and cannot be compared with developed countries. The more recent estimates of the GBD for the year 2000, however, have drawn on additional data sources such as in-depth demographic surveillance systems and household surveys. Although the quality has improved, the data for the Sub-Saharan Africa region are still of poorer quality than those for other regions.

For injuries an alternative approach was used to quantify the non-fatal injury burden for South Africa in 2000 using a local data source, the Cape Metropole Study (Bradshaw *et al.*, 2003). The Cape Metropole Study was undertaken in 1990 and constituted the first complete cross-sectional metropolitan trauma study in Africa. It was designed to obtain a representative sample of the fatal and non-fatal injury cases that occurred in both the public and private sectors. The Cape Metropole Study data were re-analysed in 2002 and used to estimate the premature mortality and disability components for each cause of injury using the standard GBD study approach with some minor modifications (Norman, 2002). The ratio of YLD to years of life lost (YLL) obtained in the Cape Metropole Study was then applied to injury YLLs obtained in the South African National Burden of Disease Study 2000 by age and sex for each cause of injury category in order to estimate local YLDs and DALYs for injuries in South Africa in 2000 (Bradshaw *et al.*, 2003). These Cape Metropole Study DALY estimates for injuries in South Africa were compared to AFRO E estimates presented in the South African National Burden of Disease Study 2000. It was found that DALY approximations from the AFRO E region result in an underestimation of the disability burden due to intentional injuries and therefore of the total burden for injuries in South Africa when compared to estimates based on local data.

## DATA COLLATION AND ANALYSIS

DALY estimates due to specific injuries based on Cape Metropole Study data (Bradshaw *et al.*, 2003) are shown in Figure 1 for males and females separately. Age-standardised (to the world population) mortality rates per 100 000 were calculated for South Africa in the South African National Burden of Disease Study 2000 (Bradshaw *et al.*, 2003) and are presented in Table 1 for comparisons with World and AFRO estimates from the GBD 2000 study (Murray, Lopez, Mathers & Stein, 2001). Age-standardised DALY rates per 100 000 for each injury category were calculated for South Africa using Cape Metropole Study data (Bradshaw *et al.*, 2003) and are also presented in Table 1 for international comparisons.

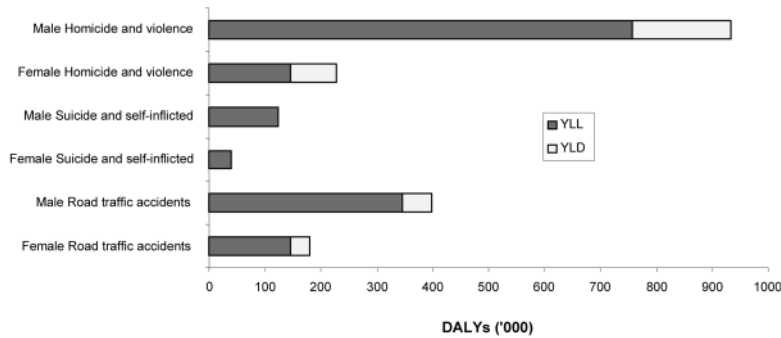


Figure 1. DALY estimates by cause of injury and sex, South Africa 2000

Table 1. Comparison of injury mortality and DALY rates for South Africa with estimates from the Global Burden of Disease 2000 study

	Age-standardised death rates per 100 000			Age-standardised DALY rates per 100 000		
	South Africa 2000	AFRO (GBD 2000)	World (GBD 2000)	South Africa 2000	AFRO (GBD 2000)	World (GBD 2000)
Total intentional	87.8	60.4	28.7	3094.3	1595.3	761.1
- Homicide and violence*	72.5	53.8	14.0	2605.0	1462.4	428.9
- Suicide and self-inflicted	15.3	6.5	14.5	363.3	132.9	326.1
Total unintentional	70.0	79.1	58.2	2766.0	2744.3	2186.5
- Road traffic accidents	43.0	34.0	21.6	1236.4	949.2	673.1
- Other unintentional injuries	27.0	45.1	36.6	1530.0	1795.1	1513.5
<b>Total Injuries</b>	<b>157.8</b>	<b>139.5</b>	<b>86.9</b>	<b>5896.1</b>	<b>4339.6</b>	<b>2947.6</b>

\*Includes interpersonal violence, legal intervention and war.

Two data sets were extracted from the electronic NIMSS database from 1999 to 2001. The first data set comprised fatal injury data from the 10 sentinel mortuaries in five provinces that were described in the first NIMSS annual report (Butchart, 2000): in the Eastern Cape, Woodbrook mortuary (East London) and Mount Road and Gelvandale mortuaries (both Port Elizabeth); in the Northern Cape, Kimberley mortuary; in the Western Cape, Salt River and Tygerberg mortuaries (both Cape Town); in KwaZulu-Natal, Gale Street mortuary in Durban; and in Gauteng, MEDUNSA mortuary (Pretoria) and Germiston and Roodepoort mortuaries (both Johannesburg). It was necessary to omit data from the additional mortuaries added to the NIMSS in 2000 and 2001 in order to make the sample for the 3-year period comparable.

Another 3-year data set comprising deaths from the two Cape Town mortuaries at Salt River and Tygerberg was extracted from the NIMSS database. The data were complemented by fatal injury information collected from the same mortuaries in 1994 and 1995 by the Cape Town Metropolitan Non-natural Mortality Study Group, which pioneered in South Africa the surveillance methodologies later used by the NIMSS (Cape Town Metropolitan Non-natural Mortality Study Group, 1996; Lerer, Matzopoulos & Bradshaw, 1995). These two years of additional Cape Town data enabled the review of trend data over a much longer period than was possible by reviewing only NIMSS data (8 years versus 3 years).



Cape Town population figures were calculated by adjusting population estimates from the 1996 Census by provincial population growth estimates. The Census data were obtained from the South African Municipal Demarcation Board (Demarcation Board of South Africa, 2002) and adjusted to the actual catchment areas of the two Cape Town mortuaries (i.e. the whole of Cape Town, excluding Helderberg, which falls under the Stellenbosch mortuary catchment area). As city-specific growth rates were unavailable, we used a provincial growth estimate of 2.5% per annum obtained from the Actuarial Society of South Africa (2002). Only crude estimates for the total population were possible since detailed demographic data to compare population trends by age and sex were unavailable.

The Chi-squared statistic for linear trends was used to analyse the trend data. Different control groups were used for the two data sets (i.e. the 10 original NIMSS mortuaries and Cape Town data set). Since the original 10 NIMSS mortuaries do not provide full coverage of a geographical area, trend data are based on the distribution of injury types as a proportion of all injury deaths in that year. These data are not sensitive to overall increases in injuries from year to year (i.e. the controls are all deaths in the data set excluding the outcome being measured).

However, for Cape Town the rest of the city's population (survivors, who did not die as a result of injuries) were used as the control group exposed to risk (i.e. living in Cape Town), and the results therefore refer to actual increases and decreases in the incidence of fatal injuries. This was only possible because full, city-wide coverage of injury deaths negates the effect of logistical and resource allocation decisions that may cause year-to-year fluctuations in the distribution of fatality caseloads at different mortuaries.

## INTENTIONAL VS. UNINTENTIONAL INJURIES

Age-standardised death rates and DALY rates per 100 000 population for injuries in South Africa are higher than the average rates for countries in the AFRO region, which were already among the highest in the world and considerably higher than the global average (Table 1). The unintentional injury rates in South Africa are similar to those for the AFRO region, which are about 30% higher than the global average. It is the disproportionately large number of intentional injuries that makes South African injury death and DALY rates among the world's highest.

Age-standardised death rates for intentional injuries were nearly 50% higher than in the AFRO region and more than three times higher than the global average, whereas DALY rates were nearly double the AFRO region rates and more than four times higher than the global average (Table 1).

Analysis of data from the original 10 mortuaries included in the NIMSS in 1999 showed that there were no noticeable and certainly no statistically significant changes in the percentage of deaths due to intentional or unintentional injuries over the 3-year period from 1999 to 2001. Intentional fatalities accounted for 61.1% of cases in 1999 compared to 62.4% in 2000 and 61.1% in 2001 (Table 2). However, in the Cape Town data there was a significant increase in the rate of intentional injury deaths

per 100 000 population ( $p < 0.001$ ), and in intentional injuries as a percentage of all injury deaths ( $p < 0.001$ ) between 1994 and 2001 (Table 3). Deaths due to intentional injuries increased from 2080 in 1994 to 2750 in 2001, whereas unintentional injury deaths decreased from 1806 to 1634 over the same period. Overall, the mortality rate due to injuries in Cape Town increased significantly ( $p = 0.011$ ), from 168.0 to 169.8 per 100 000 population between 1994 and 2001.

Table 2. Injury mortality by cause for the 10 original NIMSS mortuaries, 1999-2001

	1999		2000		2001		p value
	Total deaths	Percent	Total deaths	Percent	Total deaths	Percent*	
Intentional injuries	8030	61.1*	7506	62.4*	7666	61.1*	0.983
Homicide	6868	52.3*	6301	52.4*	6420	51.2*	0.076
- firearm homicide	3449	26.2*	3141	26.1*	3202	25.5*	
Suicide	1162	8.8*	1205	10.0*	1246	9.9*	0.003
Unintentional injuries	5090	38.7*	4518	37.6*	4885	38.9*	0.784
Transport deaths	3911	29.8*	3227	26.8*	3502	27.9*	< 0.001
- road traffic fatalities	3709	28.2*	2966	24.7*	3258	26.0*	< 0.001
Pedestrians	1524	11.6*	1325	11.0*	1493	11.9*	0.472
Other unintentional injury deaths	1179	9.0*	1291	10.7*	1383	11.0*	< 0.001
Undetermined	1720	11.6*	1456	10.8*	1153	8.4*	< 0.001
ALL INJURY DEATHS	14 840		13 480		13 704		

\*Percent of all injury deaths where the manner of death had been determined (i.e. undetermined deaths are excluded from the denominator/total)

\*Undetermined deaths as a percentage of all injury deaths

Table 3. Injury mortality rates for Cape Town for 1994, 1995, and 1999-2001

Year	1994		1995		1999		2000		2001		p value	
	Estimated population	2 335 657	2 394 049	2 642 582	2 708 646	2 777 536	Total deaths	Deaths/100 000 pop.	Total deaths	Deaths/100 000 pop.		
Intentional injuries		2080	89.1	2221	92.8	2446	92.6	2671	98.6	2750	99.0	< 0.001
Homicide		1789	76.6	1962	82.0	2220	84.0	2354	86.9	2436	87.7	< 0.001
- Firearm homicide		462	19.8	627	26.2	945	35.8	1025	37.8	1122	40.4	< 0.001
Suicide		291	12.5	259	10.8	226	8.6	317	11.7	314	11.3	0.228
Unintentional injuries		1806	77.3	1572	65.9	1589	60.1	1632	60.3	1634	58.8	< 0.001
Transport deaths		1135	48.6	968	40.4	1105	41.8	1128	41.6	1165	41.9	0.023
- Road traffic fatalities		996	42.6	834	34.8	962	36.4	978	36.1	1015	36.5	0.012
Pedestrians		761	32.6	577	24.1	643	24.3	611	22.6	623	22.4	< 0.001
Other unintentional injury deaths		671	28.7	609	25.4	484	18.3	504	18.6	469	16.9	< 0.001
ALL INJURY DEATHS		3924	168.0	3817	159.4	4502	170.4	4649	171.6	4717	169.8	0.011





## Homicide

Interpersonal violence rates in South Africa are exceedingly high compared to other regions (Table 1). South Africa's age-standardised homicide rate was more than five times higher than the global average and 30% higher than the AFRO region's rate. South Africa's DALY rates were nearly 80% higher than the AFRO region rates and more than six times the global average. It must also be emphasised that most of South Africa's violence is interpersonal, whereas internationally, and particularly in the AFRO region, deaths due to violence are often the result of war and conflict.

Data from the original 10 NIMSS mortuaries indicate that homicide accounted for an average of 52.4% of injury deaths in 1999 and 2000 and decreased to 51.2% in 2001 (Table 2). The decrease in homicide as a proportion of non-natural mortality over the 3-year period was not significant ( $p=0.076$ ). By comparison, homicide in Cape Town increased significantly ( $p<0.001$ ) from 1994 to 2001 (Table 3), and residents of the city were 15% more likely to be the victim of homicide in 2001 than in 1994.

Firearms were the leading external cause of death for homicide, accounting for approximately half of homicides from 1999 to 2001. The use of firearms for homicide decreased from 50.2% in 1999 to 49.9% in 2001. However, the decrease was not statistically significant and it remains to be seen whether the incidence of firearm homicide has peaked and is beginning to decrease due to better policing and more stringent gun control, or whether the reduction is temporary.

Again the picture was different in Cape Town. There were only 462 firearm homicides in 1994 (26% of homicides), but by 2001 firearm homicides had increased significantly to 1122 deaths, accounting for 46% of the homicides in the city. Since the number of non-firearm homicides remained relatively stable (1327 cases in 1994 compared to 1314 in 2001), the significant increase in the Cape Town homicide rate is almost entirely due to the increase in firearm homicide.

Although there seems to have been a dramatic increase in firearm homicide in Cape Town, it is worth noting that the problem is even more acute in other large urban centres. Review of the NIMSS 2001 data set showed that the Durban firearm homicide rate of 48/100 000 population was higher than Cape Town's 40/100 000, and that firearms accounted for 70% of the homicides in Johannesburg, a rate of 63/100 000 population.

Females accounted for an average of only 13% of homicide victims from 1999 to 2001. Although the percentage of female homicides decreased from 13.3% in 1999 to 12.5% in 2001, the decrease was not significant, nor was the slight increase in male homicide from 86.7% to 87.5%.

There has been an interesting shift in the pattern of homicides between 1999 and 2001. Children younger than 4 years accounted for a significantly increasing proportion of homicides, growing from 0.7% in 1999 to 1.7% in 2001 ( $p<0.001$ ). This pattern was reflected for both boys and girls. There were no significant trends among children aged 5 to 14 years. There was a significant increase in the proportion of homicides occurring in the 15 to 24 age range, accounting for 24.2% of homicides in 1999 and 26.3% in 2001 ( $p<0.009$ ). This was due to the increase in male homicides in

this age category ( $p < 0.003$ ). There was a significant decrease in the proportion of homicides in the 55 years and older age category ( $p = 0.029$ ), from 5.2% in 1999 to 4.3% in 2001, which was attributable to the decrease in the proportion of male homicides in this age category ( $p = 0.02$ ).

Comparison of the South African and global homicide rates by sex and age category (Table 4) showed that homicide in South Africa exceeded the world rates for both sexes in all age categories except the 5 to 14 year age category. However, for both sexes it was in the 30 to 44 year age categories where the differences were most pronounced.

**Table 4.** Comparative South African and global homicide and suicide rates and road traffic fatalities by sex and age category, 2000

Age group (yrs)	Males			Females		
	South Africa rate (per 100 000)*	World rate (per 100 000)*	Ratio SA rate: World rate	South Africa rate (per 100 000)*	World rate (per 100 000)*	Ratio SA rate: World rate
<i>Homicide</i>						
0-4	13.5	12.9	1.0	11.5	7.4	1.6
5-14	6.2	7.0	0.9	3.2	4.3	0.7
15-29	202.0	28.1	7.2	30.0	7.8	3.8
30-44	219.4	27.7	7.9	42.4	6.5	6.5
45-59	113.5	21.9	7.7	21.9	6.4	3.4
≥60	64.4	22.2	5.2	18.1	7.0	2.6
Total <sup>a</sup>	124.7	21.3	5.9	23.7	6.6	3.6
<i>Suicide</i>						
0-4	0.0	0.0	-	0.0	0.0	-
5-14	2.2	1.7	1.3	1.1	2.0	0.6
15-29	28.9	15.6	1.9	8.8	12.2	0.7
30-44	35.8	21.5	1.7	11.4	12.4	0.9
45-59	36.6	28.4	1.3	7.8	12.6	0.6
≥60	29.2	44.9	0.7	6.9	22.1	0.3
Total <sup>a</sup>	24.5	18.6	1.3	6.9	10.6	0.7
<i>Road traffic injury fatalities</i>						
0-4	25.6	13.4	1.9	21.1	11.3	1.9
5-14	24.1	11.2	2.2	11.4	8.4	1.4
15-29	57.1	35.7	1.6	22.7	9.2	2.5
30-44	102.4	37.6	2.7	32.3	9.8	3.3
45-59	83.3	39.6	2.1	28.0	12.9	2.2
≥60	67.1	49.0	1.4	28.9	19.0	1.5
Total <sup>a</sup>	63.7	32.1	2.0	24.2	11.1	2.2

\*Source: South African National Burden of Disease Study 2000 (Bradshaw *et al.*, 2003)  
<sup>a</sup> Source: World Health Organisation Global Burden of Disease study for 2000, Version 1 (Murray, Lopez, Mathers & Stein, 2001)  
<sup>a</sup>Age-standardised

### Suicide

Suicide and self-inflicted injury rates in South Africa were similar to the world rates (Table 1), but were between two and three times higher than in the rest of the AFRO region.

Data from the original 10 NIMSS mortuaries indicate that suicide accounted for 8.9% of injury deaths in 1999 and rose to 10% in 2000 and 9.9% in 2001 (Table 2).





The figures represent a significant increase in suicide as a proportion of non-natural mortality ( $p < 0.003$ ). There was no significant linear increase in suicide in Cape Town in the 8-year period between 1994 and 2001 (Table 3), but consistent with the rest of the country, data from 1999 to 2001 showed an increase from 8.6/100 000 to 11.3/100 000.

Access to the means to kill oneself is not only an important risk factor for a suicide attempt, but also an important determinant of whether the attempt will be successful or not (World Health Organisation, 2002). Firearms satisfy both criteria, and are among the leading external causes for successful (fatal) suicides in South Africa. Nevertheless, data from the original 10 NIMSS mortuaries indicate that there was a significant decrease in the percentage of suicides caused by firearms between 1999 and 2001, both nationally ( $p = 0.013$ ) and in Cape Town ( $p < 0.003$ ). Correspondingly, the proportion of suicides due to hanging has increased significantly ( $p < 0.008$ ).

Whereas firearms were the preferred instruments for suicide among whites, hanging was preferred among Africans and accounted for more than half of all African suicides over the 3-year period. The data show a steady, although not yet significant increase in African suicides between 1999 and 2001. There were no significant trends in the age distribution of suicide fatalities, either nationally or in Cape Town.

Comparison of the South African and world suicide rates by sex and age category (Table 4) showed that suicide in South Africa exceeded the world rates among males in all age categories between 5 and 59 years, but that the world rate was higher among males older than 60 years and among females in all age categories.


### Transport and road traffic injuries

Whereas South Africa's road traffic mortality rates are comparable with other countries in the AFRO region (only 26% higher), they are approximately double the global rate (Table 1).

Data from the original 10 NIMSS mortuaries indicate that there was a significant decrease ( $p < 0.001$ ) in the proportion of non-natural deaths due to transport-related injuries between 1999 and 2001, as well as a significant decrease ( $p < 0.001$ ) in the proportion of non-natural deaths due to road traffic injuries (Table 2). However, there were no significant changes in the proportion of transport-related deaths for different user groups (drivers, passengers, pedestrians, etc.).

In Cape Town there was a significant decrease ( $p = 0.023$ ) in the transport mortality rate from 48.6/100 000 in 1994 to 41.9/100 000 in 2001 (Table 3), which could largely be attributed to the significant decreases in road traffic fatalities ( $p < 0.001$ ) and, in particular, in the rate of pedestrian fatalities ( $p < 0.001$ ). However, closer inspection of the data revealed that this was mainly due to the unusually high proportion of transport deaths in 1994. A similar analysis for the 1995 to 2001 period revealed that there were no significant trends for transport, road traffic or pedestrian mortality rates.

The proportion of transport fatalities that tested positive for alcohol remained constant except in Cape Town, where the percentage of pedestrians with elevated blood alcohol levels decreased significantly ( $p < 0.001$ ).



Comparison of the South African and world road traffic fatality rates by sex and age category (Table 4) showed that South African mortality rates were on average double the world rates for both sexes. For both sexes the mortality rates in the 30- to 44-year age categories were the highest and also exceeded the world rates by a greater degree than the other age categories.

### Other unintentional injuries

Only among other unintentional injuries (injuries from fires and burns, falls, drowning, exposure, electrocution, etc.) are South African mortality rates lower than the world and AFRO region rates (Table 1). However, DALY rates from other unintentional injuries in South Africa are higher than the world rates due to the high proportion of injuries from fires, which contribute substantially to disability measures.

Data from the original 10 NIMSS mortuaries showed a significant increase in the proportion of deaths due to other unintentional injuries from 9% in 1999 to 10% in 2001 ( $p < 0.001$ ), which was the result of significant increases in the proportion of fatalities due to fires or burns and falls. The proportion of deaths due to poisoning and drowning did not differ significantly.

In Cape Town in the 8-year period between 1994 and 2001 there was a significant decrease in the mortality rate due to other unintentional injuries from 28.7/100 000 to 16.9/100 000 (Table 3), mainly as a result of significant decreases in the rates of burn, poisoning and drowning fatalities. The mortality rates due to falls did not differ significantly.

## CONCLUSION

Injuries and violence constitute one of South Africa's most important public health concerns. Although the analysis of local injury mortality data from the NIMSS does not indicate whether there has been an overall increase, the comparative analysis with world rates and those for the AFRO region clearly shows that South Africa has a disproportionately large burden of violence and injury mortality and morbidity. Also, the South African injury pattern is somewhat different to that of the rest of the world.

The belief that the transformation from apartheid to democracy would bring a cessation in violence (Butchart & Peden, 1997) has proved unfounded. A decade later, violence continues to be the single largest contributor to the burden of injury. Butchart and Peden (1997) surmised that the majority of intentional injuries do not result from clearly identifiable traits or political motives, but from interpersonal violence as a result of disrupted community structures and failed interpersonal relationships. The problem is not likely to abate of its own accord, as technological development and urbanisation are accompanied by increasing per capita injury rates (Butchart & Peden, 1997). This has been demonstrated in Cape Town, where the collection of fatal injury data over 8 years has shown a significant increase in the homicide rate.

Unreliable data collection systems can lead to entire safety awareness and injury prevention programmes being brought into question. Reliable and accurate






information is an important tool for effective evaluation, and mortality data provide a useful starting point for injury surveillance. This kind of information is important for the effective evaluation of prevention initiatives, and a powerful resource for stimulating research and directing policy.

The Crime, Violence and Injury Lead Programme hopes to continue to expand the NIMSS until full coverage is achieved. As the number of mortuaries included in the NIMSS increases and the time period also increases, the data will become more sensitive to changing injury trends and will provide clear indicators of changing mortality profiles for different injury categories and different cities. The Crime, Violence and Injury Lead Programme will also undertake (in collaboration with the Burden of Disease Research Unit) a validation project to explain the discrepancies in the injury mortality data from various sources, and suggest measures to address the problem.

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### 3 Interpersonal youth violence prevention

Zareena Parker  
Children's Institute, University of Cape Town

Andrew Dawes<sup>1</sup>  
Department of Psychology, University of Cape Town; Child Youth and Family Development Research Programme, Human Sciences Research Council of South Africa

Vanessa Farr  
Children's Institute, University of Cape Town

South Africans are not new to violence. Even during the years of apartheid oppression, rates of criminal violence far outstripped political violence, and rates of abuse against women and children were already very high (Dawes & Donald, 1994). A culture of violence has been evident in the society for many years.

The National Injury Mortality Surveillance System's (NIMSS) Third Annual Report for 2001 showed that contemporary youth are particularly vulnerable to violent assault. In that year, 36% of all non-natural deaths occurred in the 15- to 29-year-old group. Firearms were the major cause of death among children aged 10 to 14 years, and accounted for 48.3% of all homicides in this age group. Sharp objects accounted for 36.6% of homicides in the 15 to 19 year age group, a higher percentage than for any other age group (Matzopoulos, 2002). The NIMSS data have also revealed a relatively high percentage of child homicide victims under the age of 20 (10.1%), and Peden (2000) reported that gunshot wounds accounted for 16% of all violent injuries presenting at hospitals. Males account for the overwhelming majority of these victims.

The evidence indicates that many of those who perpetrate this violence are themselves of school-going age or young adults (Matzopolous, 2002). Perhaps it is not surprising that in the early 1990s, Flisher and his colleagues found that around 10% of secondary school males and 1.5% of females in Cape Town carried knives to school (Flisher, Ziervogel, Chalton, Leger & Robertson, 1993).

It has become imperative to determine effective ways to address the effects of exposure to violence, and to prevent the development of violent tendencies in the young. This is a very challenging task in a context of high levels of poverty, few opportunities for youth, and a well-embedded culture of violence. Public health initiatives have a role in rising to the challenge. However, we need to be aware that they are not likely to have a major impact in the absence of significant reductions in unemployment and chronic poverty – the major contextual drivers of violence and criminal activity (Krug, Dahlberg, Mercy, Zwi & Lozano, 2002).

<sup>1</sup> To whom correspondence should be addressed.



South African children's exposure to violence does not occur in pure forms, and violence against children may be political, criminal, domestic and structural. These forms of violence include child abuse, gangsterism, beatings, stabbings, and school shootings, which lead to heavy casualties. Although a focus on violence against children is necessary for a review such as this one, it is not the emphasis of this chapter. This chapter addresses interpersonal youth violence prevention, more precisely, initiatives which focus on how to prevent children from becoming violent. It commences with a brief outline of the various developmental pathways that lead toward aggressive conduct, and then discusses a framework for violence prevention, drawing on relevant international models and research. In the final section we report on some lessons learned from a preliminary investigation of South African youth violence prevention and peace education (VPE) initiatives, that point the way towards the development of 'good practice' violence prevention programmes.

## MATTERS OF DEFINITION

It is important to be clear about how we are defining interpersonal violence for present purposes. The WHO defines violence as follows:

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, physical harm, maldevelopment or deprivation (Krug, Dahlberg, Mercy, Zwi & Lozano, 2002, p. 5).

The following is a more limited definition, which we devised and use in this chapter. It has been particularly framed for interpersonal violence, which excludes intergroup violence and self-injurious behaviour:

Interpersonal violence refers to acts that involve the intentional use of physical force on another person in order to achieve some objective.

The definition does not include terms sometimes evident in the literature, such as emotional violence, nor does it consider the violence inherent in structurally determined relations of power (say between men and women).

It is not helpful that the terms "aggression" and "violence" are often used interchangeably. "Aggression" may refer to an emotional state or to a range of behaviours. As overt behaviour it may be verbal or non-verbal, intentional or unintentional. The definition of violence presented here is closest to the term "instrumental aggression", used to describe behaviour that is intended to hurt in order for the perpetrator to gain something from the victim (Cole & Cole, 2001).

## THE DEVELOPMENT OF VIOLENT BEHAVIOUR

Violence prevention is challenging because the causes and maintaining factors associated with interpersonal violence are complex. They have individual, familial, community and cultural components, and the power of their influence varies across child and adolescent development. The brevity of the current contribution permits only a brief outline of some pertinent findings derived from this complex field.



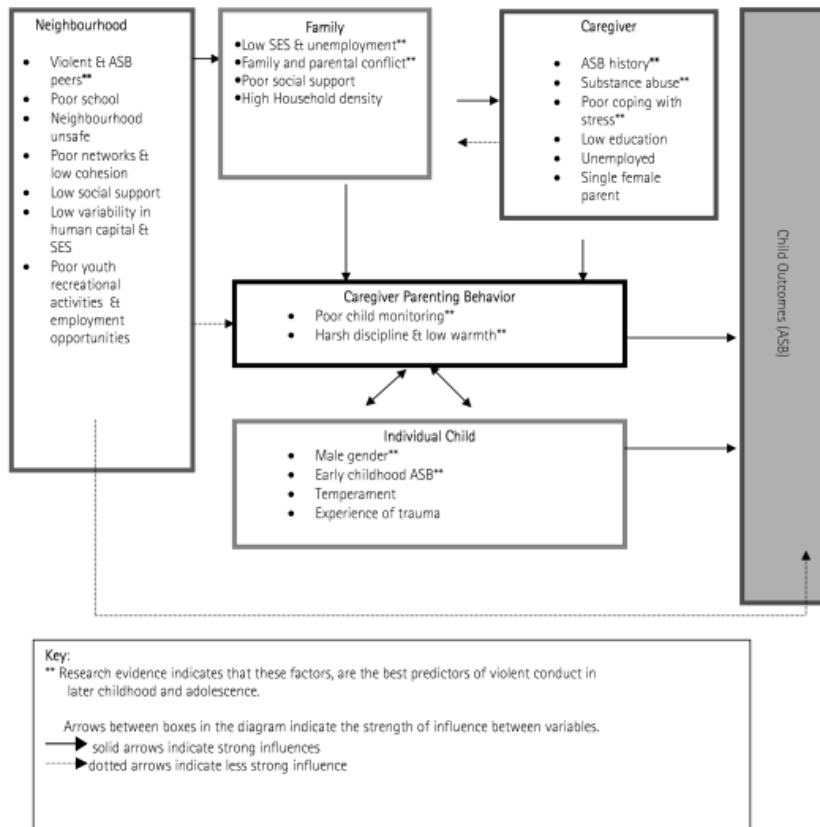
Some idea of the intricacy of the determinants of violent behaviour is evident from the ecological model (Tolan & Guerra, 1998), which was originally formulated to address the causation of child abuse. Tolan and Guerra (1998) postulated three linked influence systems which, with some adaptation, remain useful in the present context. The systems are: the macro-societal system, proximal social contexts, and the behavioural system of the individual child.

The macro-societal system provides cultural scripts for the use of interpersonal violence. There is variable adherence to the scripts within and between different cultural communities and families. Proximal social contexts refer to the primary settings of development outside the family, such as the neighbourhood, school and peer group within which styles of conflict management are practiced and learnt. At the next level, particularly powerful sources of influence are close interpersonal systems, which refer to enduring contexts of development, such as the family. At this level, for example, family codes of practice for discipline, problem-solving and attitudes toward violent behaviour are repeatedly evident. Finally, the individual level addresses proclivities to aggression that have their roots in the child's biological and psychological make-up, and which may be particularly important in the causation of early conduct problems (Rutter & Herzov, 1985). The complex challenges for violence prevention should already be evident from this brief outline of the various potential sources of the problem.

Historically the focus of research and intervention has been of a clinical tertiary nature, and has focused on addressing the problem at the individual psychological and family levels (e.g. Dodge & Coie, 1987; Patterson, 1982). More recently, models of the pathways along which different groups of children proceed on their way to disruptive, violent and serious antisocial behaviour in adolescence have been constructed by Loeber and Farrington (1997), Loeber *et al.* (1993) and Moffitt (1993). Based largely on retrospective and prospective longitudinal research, path studies attempt to ascertain the stable sequences of behaviour that are evident on the road to violence (typically, behaviour A is followed by B and then C, etc.). The research evidence is that when disruptive overt antisocial conduct starts in early childhood, is associated with authority conflict, and does not diminish prior to school, it is likely to continue into adolescence and youth. On the other hand, Moffitt (1993) shows that adolescence is a period during which many males engage in antisocial behaviour (including violence). However, unlike the group on the life course path identified above, for most youth antisocial behaviour is limited to adolescence.

In sum, the sources of violent conduct in the young are multiple. They involve complex interactions between child factors and those located in familial and social environments.

Figure 1 outlines the key contextual and individual risk factors that have been shown to influence the development of antisocial behaviour, particularly interpersonal violence. They include characteristics of the neighbourhood, the family, the caregiver and the child. The figure shows how each of these elements combine to exert both direct and indirect influences on child outcomes. For example, dangerous neighbourhoods can have a direct influence on both the child and the care



**Figure1:** Anti-social behaviour (ASB): Sources of influence and risk factors

environment. In the latter instance, the influence on child outcomes is indirect. Here the caregiver's (caring) response to a high-risk neighbourhood could be harsh discipline in order to protect the child from bad influences. However, the unintended consequence may be that the child, particularly if male, develops aggressive behaviour and resentment of the caregiver. Ironically, the home becomes an unpleasant place to be, and the child heads for the street.

Neighbourhood factors also have direct influences on the individual child, such as when the presence of many antisocial peers increases the risk that a child will become absorbed into an antisocial group.

It is also well known that a family characterised by adult conflict has a negative influence on children and is associated with antisocial outcomes in boys in particular (Patterson, DeBaryshe & Ramsey, 1989). Patterson *et al.* also note that caregiver risk factors, such as a history of antisocial behaviour and substance abuse, are associated with aggressive antisocial behaviour in children.

Finally, caregiver characteristics and parenting behaviours interact with the characteristics of the individual child to contribute to child outcomes (Patterson *et al.*, 1989).



**Table 1:** Developmental periods and risk factors for violent conduct


Period	Major Risks
<ul style="list-style-type: none"> <li>• Prenatal</li> </ul>	Maternal nutrition and substance abuse
<ul style="list-style-type: none"> <li>• Infancy</li> </ul>	Caregiver inconsistency and abuse Difficult disruptive child temperament
<ul style="list-style-type: none"> <li>• Early childhood</li> </ul>	Coercive caregiver discipline Exposure to violent conflict at home Disruptive defiant child behaviour
<ul style="list-style-type: none"> <li>• Middle childhood</li> </ul>	Negative scholastic experience Engages in fights Poor parental monitoring & involvement
<ul style="list-style-type: none"> <li>• Adolescence</li> </ul>	Academic failure Engages in fights Poor parent-child relationship Poor parental monitoring & involvement Presence of high risk peers

Different types of risk for aggressive and antisocial conduct are influential at particular points in childhood. Table 1 illustrates the main risks associated with each developmental period (Reid & Eddy, 1997).

Insults to the child's neurological system may occur *in utero*, predisposing the child to attention deficits and poor impulse control. Both are associated with aggressive traits.

During infancy and early childhood the child's temperament and interactions with key socialisation agents may reduce or escalate the probability of later child behaviour problems. During this developmental period, therefore, preventive family level interventions that focus on improving supportive and non-authoritarian caregiver discipline and pro-social 'family management' skills may be most appropriate (Patterson *et al.*, 1989).


During middle childhood, the child's circle of peer and adult relationships expands and opportunities for learning both pro-social and antisocial conduct increase. The child's scholastic performance will also influence engagement with the learning process. Success is likely to increase self-esteem, while repeated failure is likely to increase the risk that the child will reject academic activity and draw closer to peers with similar negative school experiences. Initiatives to promote pro-social behaviour may need to focus on changing teacher and/or child behaviour, or on a wide range of practices in the school as a whole (Samples & Aber, 1998). For conduct-disordered preschool and school age children, tertiary level individual clinical interventions may be necessary, preferably complemented by family interventions (e.g. Dodge & Coie, 1987; Petersen & Carolissen, 2000; Webster-Stratton, 1985).



The school experience continues to have a powerful effect in early adolescence – a time when boys from high-risk communities may drop out of school. Peers have an increasingly important influence in the adolescent period. Allen, Weisberg and Hawkins (1989, in Samples & Aber, 1998) contend that whether the child's peer group is primarily pro-social or antisocial in orientation affects the probability of the development of aggressive and violent behaviour. Community level interventions may be necessary to reduce the possibility of adolescent and youth drug-taking and violent behaviour, which places younger children living in that area at risk for engaging in these activities (Hawkins, Arthur & Olson, 1997).

The findings of research in this area therefore not only assist in mapping the various risk factors in the causation of violence in young people, they also suggest points for intervention (McGuire, 1997; Reid & Eddy, 1997). Reinforcing the point that knowledge of developmental pathways toward violence is essential for programme development, Reid and Eddy state that "developmental life span targeting is a critical ingredient to effective prevention trials" (1997, p. 348).

## INTERPERSONAL VIOLENCE PREVENTION



By the late 1980s a variety of South African stakeholders had adopted a public health approach to violence (Stevens, Wyngaard & Van Niekerk, 2001). In the past decade public health adherents have advocated for the recognition of violence as a high-priority threat to the health and well-being of South Africans (Butchart, Hamber, Terreblanche & Seedat, 1997). Public health practitioners have conceptualised violence in terms of determinants, risk factors, incidence and cost consequences (Butchart, 1996; Krug *et al.*, 2002). Those engaged in interpersonal violence prevention have taken a similar approach (for a full discussion of violence prevention within this framework see Offord, 1997). Epidemiological research has been employed to understand patterns of violence that affect inner-city youth in the United States of America and place them at risk for involvement in violence (Garbarino & Sherman, 1980). South African work on this topic has emerged in recent years (e.g. Ensink, Robertson, Zissis & Leger, 1997; Louw, 2000; Seedat, Van Nood, Vythlingum, Stein & Kaminer, 2000; Van der Merwe, 2001). Epidemiological studies are also important in understanding determinants of violence and for intervention planning. They "provide data on the burden of suffering, which can be useful to policy makers ... in justifying the scope of the intervention and the evaluation enterprise needed to advance our knowledge about how to prevent antisocial behavior" (Offord, 1997, p. 359).

Public health interventions typically define three levels of prevention based on the problem and the target group of interest, namely primary, secondary and tertiary prevention (Flannery & Williams, 1999).

Primary prevention is universal and population-based (for example, training all primary school children in non-violent conflict resolution skills) (Samples & Aber, 1998).

Secondary prevention programmes target selected groups at high-risk for violent conduct due to the nature of their proximal extra-familial social contexts or interpersonal factors (e.g. boys in dysfunctional families in high crime neighbourhoods). Normally they have not sought help but have been identified by screening or other methods. Particularly during early and middle childhood, growing





up in dysfunctional families predicts later delinquency (Eron, 1997; Loeber *et al.*, 1993). Other risk factors for the development of antisocial pathways derive from internal child states such as social skills deficits and poor impulse control. Dodge's Social Information Processing (SIP) model addresses these dysfunctions and has been used to design interventions with at-risk children (Dodge & Schwartz, 1997). Petersen and Carolissen's (2000) early school-based child and parent intervention programme for aggressive preschool children is a South African example of an early preventative intervention.

Tertiary prevention is normally high cost- and treatment-based, targeting clinical populations who have already sought help and who have already been diagnosed with conduct or other antisocial disorders. The problem is commonly conceptualised to have a primarily individual level source and solution.

However, it is also crucial to note the importance of non-clinical aspects of the problem. Children who are diagnosed with conduct disorder or antisocial behaviour represent only a small part of the general population within which a generalised acceptance of aggressive modes of problem-solving may be apparent. The high prevalence of conduct disorder and aggressive behaviour together with the difficulty and expense of treating established cases make the search for effective primary and secondary prevention programmes of central concern to workers in the field (Offord, Boyle & Rancine, 1991, in Pepler & Rubin, 1991). The literature so far derives from clinical psychology and the public health perspective. Further literature derives from peace education, with its roots in the education sector and the philosophy of non-violence.



While prevention initiatives may focus on one source of the problem of violence among the young (namely, the child or the family or the school), it is clear that given the complexity of causal factors and pathways, multi-site multi-focus programmes are likely to have the best and most sustained outcomes. This is particularly true in the case of primary and secondary level interventions for children living in disadvantaged communities characterised by high levels of violence (Bierman, Greenberg & CPPRG, 1996; Offord, 1997; Thornton, Craft, Dahlberg, Lynch & Bauer, 2000). Such programmes are very expensive to mount (K. Bierman, personal communication, 2001). However, in terms of cost- effectiveness it may well be better to spend more money and time on a complex multi-site programme that has good outcomes, than to devote fewer resources to a programme that has little to show for the effort. As with any other intervention, violence prevention programme designs require a theoretically sophisticated evidence-based understanding of the several sources and developmental pathways that may lead to violent conduct in children and youth. Without such an understanding, money may be wasted on well-intentioned initiatives that do not take sufficient account of the developmental level of the target population and the complex range of influences to which they are subject.

Regardless of their type, prevention programmes require several basic ingredients. Thornton *et al.* (2000) have provided the following checklist. If their outcomes are to be adequately assessed and if they are to have a basis for success, violence prevention programmes require:

- a) Clear goals and objectives.
- b) Clear target populations and a good rationale for their selection for this particular intervention for the target group in question.
- c) Designs that are informed by theory, evidence and good practice models appropriate to the target population and problem.
- d) Carefully designed delivery systems that take account of potential threats to the implementation and success of the programmes at the intervention sites. Here one must note that programmes imported from elsewhere that were successful under different conditions may not transfer well.
- e) Well-trained delivery staff whose own programme delivery behaviour is monitored as part of the process evaluation.
- f) Appropriate and valid measures of key programme variables.
- g) Evaluation and monitoring systems built into the process from inception until termination – preferably carried out by programme outsiders.
- h) In the case of primary and secondary level interventions in particular, the support of the target community and key persons who can affect delivery is essential.

As already noted, the challenge facing violence prevention practitioners in South Africa is considerable. Psychosocial initiatives alone can only hope to have a very limited impact on the problem, given the significant structural violence evident in the country. There is a need for a critical examination of South African programmes in order to improve practice.

How do South African initiatives shape up? In the section below we report on some first steps in answering this complex question. Our discussion is based on findings from a preliminary investigation of local primary and secondary level violence prevention and peace education (VPE) initiatives.

## PRIMARY AND SECONDARY LEVEL YOUTH VPE PROGRAMMES IN SOUTH AFRICA: A PRELIMINARY INVESTIGATION

The objective of this investigation (Farr, Dawes & Parker, 2003) was to examine programmes in order to ascertain the extent to which they met the basic criteria outlined in the section 'Interpersonal Violence Prevention' earlier. In particular, we were interested in the extent to which evaluations were undertaken, and whether the programmes had clearly articulated theoretical and research underpinnings that informed their design and delivery.

This task was not easily undertaken. The lack of a comprehensive database of violence prevention programmes<sup>2</sup> precluded the programme survey approach we had intended (since we did not know the population of programmes, we were unable to sample from it). We therefore adopted a snowball sampling approach, starting with known

<sup>2</sup>Institutions such as the Medical Research Council and the Centre for Peace Action (UNISA) have, in the past, attempted to create and maintain such a database, but since violence prevention programmes are intended for the highly mobile school population and are often precariously funded, they found it an impossible task (G. Stevens, personal communication with Dawes, June 2002).





larger-scale initiatives based in academic institutions, governmental departments and non-governmental organisations around the country.

Senior staff members were invited to participate, and if the request was accepted an interview schedule was e-mailed to them prior to an interview. The schedule was based on Thornton *et al/s* (2000) proposed set of essential principles or 'best practice' guidelines to follow when designing and/or implementing a youth violence prevention programme. These guidelines are based on knowledge derived from rigorous evaluations of interventions reported in reviewed United States literature. The schedule solicited information on: programme origin and aims; programme resources and sustainability; programme staff and target recipients; the rationale for the programme (theoretical and research underpinnings), its evolution and mode of delivery; programme outcomes, and evaluation methods; and programme costs.

A total of 12 programme managers were interviewed (one withdrew from the study; the related programme and views are therefore not included here). Table 2 provides a brief overview of the programmes included in this investigation, their location and predominant focus. As will be evident, the intervention site for all but one of the programmes is the school.

Similar to practices in other parts of the world, the three preventive intervention tiers can be identified in the interventions we studied. Primary level interventions are typified by the school safety programmes that seek to create environments in which the possibility of injury and violence within the school are proactively reduced, and effective school management is enhanced.

While the majority of secondary level interventions in our study were confined to schools, wilderness diversion programmes for adolescents at risk for criminal behaviour were also included. These emphasise capacity-building and risk reduction through improvement of personal relationships, anger management and family strengthening. We did not initially intend to include any tertiary prevention programmes (designed for individuals who have already entered the justice system as violent or chronic offenders) in our assessment, but the chronic rates of violence in South Africa and the youthfulness of many offenders means that some school-based programmes are also paying attention to rehabilitating young offenders to prevent future violent activity.



Interpersonal youth violence prevention

## LESSONS LEARNT FROM SOUTH AFRICAN PROGRAMMES

Key lessons learnt from the interviewees are presented below. They highlight the design and evaluation challenges that they faced.

### Programme theory and aims

Those who design psychosocial interventions need to understand and articulate their theoretical and research basis (Louw, 2000). In general, respondents described an eclectic theoretical underpinning to their work, in that they felt free to draw from a variety of different approaches in planning their programmes. However, there was often vagueness concerning how they had evolved the particular programme theory

**Table 2:** List of V.P.E. programmes, location & focus

V.P.E. PROGRAMME	LOCATION	FOCUS
1. ACCORD: Bellville Schools Programme (BSP) and UWC Honours BA module in Conflict Studies (UWC).	Bellville, Western Cape	Peace education and group transformation
2. Alternatives to Violence Programme (AVP).	Gauteng and national	Peace education and working in the juvenile justice system
3. Centre for conflict Resolution (CCR)	Cape Town	General peace education training
4. Centre for the Study of Violence and Reconciliation (CSV)	Gauteng, especially Soweto	Violence prevention and school safety
5. Community Psychological Empowerment Services (COPE) (part of Trauma Centre for Victims of Violence and Torture and New World Foundation )	Cape Town	Works with primary school children and educators: emphasis on positive discipline and classroom management
6. Directorate for Education Management & Governance Development (including National Safe Schools Programme)	National	School safety
7. Educo	Cape Town	Wilderness therapy initiative/ diversion programme
8. Independent Projects Trust (ITP)	KwaZulu-Natal.	school safety; specific work with SGBs and other management.
9. Khulisa	Gauteng	Diversion and violence prevention; works with at-risk youth in schools and youth in prisons
10. Project for Conflict Resolution and Development (CRD)	Port Elizabeth	Violence prevention; specific work with school management
11. School and Community Programme of the Quaker Peace Centre (QPC)	Cape Town	Positive discipline, in-service training
12. South African Ecotherapy Institute(part of National Peace Accord Trust)	Cape Town	Wilderness therapy



that they used, and few were able to locate the design and delivery of their work in relevant current research literature. Greater attention to evaluation (see below) would be of significant benefit in helping practitioners explain more clearly what it is that makes their intervention work (Louw, 2000).

Among those interviewed there was a high level of awareness of the need to distinguish between immediate programme outcomes, such as improved classroom and school management (e.g. CRD and IPT) or personal assertiveness (QPC), and longer-term impacts. In the majority of cases the ultimate programme goal was individual self-transformation. This included a capacity to take responsibility for oneself (Ecotherapy Institute and Educo), to shift perspectives and move forward from past trauma (AVP, CRD, CCR, and COPES), and to develop strategies for dealing with new manifestations of violence (CSV).

Linking these aims to the earlier discussion of sources of risk for the development of violent conduct (see Figures 1 and 2), it seems that South African violence prevention programmes are more commonly directing their efforts towards community risk factors and resources (e.g. school quality, and social support/isolation), and the developmental periods of middle childhood and adolescence.

### Programme evolution

The achievement of long-term behavioural changes requires, of course, that interventions be sustainable. However, a sustainable programme if it is to be effectively evaluated will also be one that demonstrates changes over time (Louw, 2000). A significant change that was reported by programmes related to the target audience. In two cases school programmes had started by focusing on youth (single target focus), soon realising that this group would not ultimately maintain the programme's goals unless educators became involved. Also, the programmes initially failed to take into account that educators themselves are often survivors of violence and need to be "empowered before they can embrace the policies of the programme" (CCR). In the case of IPT another lesson learnt was that it is school management who offer the best chance of sustainable change, and so school-based programmes need to take into account the level of school management functioning. It was noted earlier that interventions with complex problems, such as violence, normally require a multi-pronged approach rather than a single focus if they are to have a chance of lasting impact. The experience of the ITP echoes this observation in the South African school context.

Several programmes commented on having become "more South African in focus", a process which one respondent described as having made her organisation "amazingly adaptable and flexible" (AVP). Others described the increasingly indigenous heart of their work as having come from a better understanding of local conditions. The wilderness programmes both commented on the difficulty of expecting programmes such as theirs to stand alone (again a realisation that single-focus interventions on personal change, on their own, are not adequate to reduce risk). These programmes reported that they have now developed careful strategies to support participants on their return to their communities (Ecotherapy Institute and Educo) (see also Roberts, undated). Those involved with work with youth in prisons (AVP and Khulisa) also spoke of the importance of developing broad-based support structures for programme recipients.





### **Programme outcomes, impacts and measures of success**

Several programmes commented on the importance of baseline assessments in the preparatory period before a programme is instituted. Having learned to take time in setting the groundwork in place before programme implementation was described as a valuable lesson. Few of the programmes actually started in this way.

All the respondents felt that the programmes they offered had an impact beyond the individuals they trained. One respondent felt that the effect was qualitative, not quantitative and best seen in a “reduction in crime in schools and improved feelings of safety in target schools” (IPT). This was echoed in a comment that learners change when “educators use the proper language to manage them” (QPC). It was felt that the training spreads “through people’s future relationships” (CCR) both at home and at school, and through broader professional connections. “We hope teachers might share things with other teachers and we encourage this especially,” said one respondent (COPEs). Another felt that parents were impacted “because their kid’s behaviour changes. Children grow and leave those behind who don’t mature with them, and they become less troublesome” (QPC).

However, it was evident from the interviews that it was very difficult for programmes to provide objective evidence of these claims. Indeed, while most programmes believed they were having an effect as a result of informal feedback, they did not attempt to measure this effect. An example of an exception to this trend is evident in the Khulisa programme, which uses its mentors to speak to family members and record their responses to changes in the person in the programme.

Those who had not found concrete measures to assess their broader impact were nevertheless engaged in considering how to do so. The IPT interviewee remarked that:

Measuring effectiveness is quite difficult, especially if you work in schools that don’t keep effective records. In such cases, sometimes it looks like violence has worsened but in reality, people are talking more about their experiences. Denial has been a strategy for coping with violence in schools since a cover-up is one way to keep them running; and it’s hard to overcome that tendency.

### **Programme evaluation**

If measures are not adequate, evaluation is compromised. The best way to improve performance and establish whether interventions are effective is to incorporate “an evaluative way of thinking into... everyday activities while integrat[ing] evaluation into programme processes, to strengthen the intervention and make the evaluation a built-in part of it” (Louw, 2000, p. 60). Unfortunately, evaluation is often far down the list of programme priorities. However, for a variety of reasons, including good practice, programmes must be able to account for their actions, offer documented evidence of their effectiveness, and learn from their own experiences as well as the insights of others in the field. In order for good practice to be identified, sustained, and replicated, evaluation must be central to the design and delivery of VPE initiatives. Where this is not the case, claims of success may rely solely on anecdotal evidence that improvements are felt after an intervention has taken place.





At present we do not know if inadequate evaluation methods are a widespread problem among the population of South African programmes. In our sample, both the need for evaluation and successful processes to undertake evaluation studies were well-recognised. Only two programmes did not undertake any formal internal evaluation at all. Both of these had experienced at least one external evaluation. In neither case was the external evaluation considered entirely helpful. It was felt that the evaluators had done too little to prepare themselves for their work, and had missed many of the most valuable nuances of the programmes they were assessing. We infer from these respondents that their pre-existing scepticism about the difficulty and utility of evaluation was reinforced by the evaluations they have experienced thus far. It is of note that in both these cases the absence of a systematic collection of baseline and outcome measures would have made the evaluator's task difficult.

In contrast to these two initiatives, seven programmes reported that the measurement of the outcome of the programme is explicitly built into their process and that the full spectrum of internal evaluations – formative, process and outcome – as well as external evaluations are undertaken (AVP, COPEs, CRD, CSVr, IPT, Khulisa and QPC). All of these respondents were able to offer concrete examples of how their programmes have benefited from the evaluation process, and all of them are striving to improve their evaluations along with the programmes they deliver. However, it was evident that programmes' ability to measure outcomes was not well developed. Their notions of evaluation did not always accord with good practice.

There was a general consensus among interviewees that there is a paucity of good external evaluators in South Africa and that in their experience, external evaluations do not always produce as much useful feedback as those conducted internally. Perhaps as a result of this problem, there was a high level of commitment to training programme implementers to develop and manage their own evaluation processes. Interestingly, programme staff felt that focus groups are one of the most appropriate forums for conducting evaluations. They argued that people feel intimidated by questionnaires requiring written responses. The onus of writing up reports falls squarely onto the workshop facilitator, and so many programmes have paid particular attention in their training of trainers to simplifying and professionalising this process (AVP, COPEs, CSVr, Educo and Khulisa). It is of concern that one (not necessarily appropriate) methodology predominates, for reasons that may not necessarily be sound. The method should be driven by the best way to address the evaluation question, and not the other way around.

Discussions with participants addressed the question of how to overcome the lack of adequate theory to inform practice. Respondents suggested that one way of addressing this problem is to put more energy into sharing the results of different interventions. Here, IPT has perhaps made the greatest progress in disseminating their findings. They have a policy of publishing as much as possible about their work, both in book form and online, and making products easily accessible to other programme staff that have internet access. Of course, it is not known how many programmes have computers, let alone Internet access. One cannot assume that this technology will be available to all, particularly in smaller programmes and rural areas.

## RECOMMENDATIONS

We conclude the chapter with a set of recommendations based on our findings and the most comprehensive review of eight school-based interventions in South Africa, Preventing Crime and Violence in South African Schools (Griggs, 2002). The report proposes eight best practices for the VPE community, most of which are consonant with our findings on school-based programmes. They recognise the obstacles to implementation noted earlier (outlined in italics):

- a) In programmes that target educators, the latter must be thoroughly trained in the use of learner support materials on VPE so that programmes are delivered properly and are sustainable (*addresses the risk of poor indirect modes of delivery*).
- b) Research-based resources, information and training must be offered on the subject of drug education so that schools can play a greater part in the prevention of substance abuse and related problems (*recognition of an opportunity for addressing a range of co-occurring problems in one programme*).
- c) Democratic school management must be facilitated by better training and resources, and nurtured through community partnerships so that school security plans can be developed, implemented and sustained (*recognition of the need for community support and school functioning as central to implementation success*).
- d) Recognise that many learners (and educators) are themselves traumatised by violence and need healing and introspection, as well as skills for anger management.
- e) Active learning techniques work best in helping schools and communities learn new ways of taking ownership of, and finding solutions to problems (*awareness of the need for sustainability*).
- f) Learners (and educators) need specific training in how to identify, understand and reject gender-based violence.
- g) Democratic classroom management techniques should be taught to parents so that behaviours that promote pro-social responses can also be modelled at home (*recognition of the limits of one-site interventions for this complex problem*).
- h) School safety teams are key to the development, implementation and maintenance of school security plans, and resources must be directed towards their training (Griggs, 2002).

It is of note that Griggs does not mention the need for improved measurement and evaluation in this list. This is no doubt because all the programmes he examined had at least adequate systems in place.

Griggs alludes to the difficulty of forging alliances between NGOs to address programme difficulties in an environment characterised by competition for resources. In contrast, among our interviewees we found a high level of willingness to co-operate and share information and materials. The frequency of contacts between the organisations we interviewed suggests that firm relationships have already been founded, but that they are often being informally maintained. We propose, therefore, that an attempt be made to create and maintain a comprehensive database of all violence prevention programmes in South Africa. This would not only facilitate contact between organisations operating in this area, but would also, with careful planning and sufficient stakeholder buy-in, provide a means to monitor and more systematically evaluate existing programmes and design new ones. The Department of Education,



which is currently establishing a comprehensive call-in centre for school security, would seem a logical place to house and develop this national database.

We also recommend regional meetings of VPE practitioners (perhaps facilitated by an umbrella organisation, such as the Directorate for Education) in order to strengthen their connections and to allow for a better exchange of information and resources.

In our view the ITP information dissemination model should be harnessed to overcome what one programme staff member referred to as “the ongoing problem of a lack of documented evidence of what’s happening” in South African programmes. This sort of initiative could also go some way to building evaluation capacity.

Finally, attention should be focused on increasing the numbers of trained evaluators. This is a key role for social sciences departments in tertiary institutions.

Perhaps the most important observation we can make from our study is that all the programmes we interviewed found measurement and evaluation a challenge. Some were inclined to make claims of success that even they recognised were not based on hard evidence. However, it is encouraging that as a function of self-reflection, all had established some form of evaluation mechanism and were seeking to improve their practice.

It is disturbing that none of those interviewed employed the best practice of randomised controlled trials to test their models. Indeed, only COPES employed some form of quasi-experimental comparison of treatment of control groups. For almost all of the programmes under discussion, one cannot say whether or not the observed changes would have occurred by chance in any event. The lack of rigorous studies is not surprising, and is probably not unusual. A scan of South African psychological and medical journals over the past 10 years revealed no reports of evaluation studies on interpersonal violence prevention that used best or even good practice research designs. While it is recognised that real world evaluations are expensive and complex to undertake, they remain the best way to demonstrate programme effectiveness.

Due to our limited sample of school-based initiatives, we cannot answer the question posed earlier: “How are we doing in South Africa with regard to violence prevention programme quality?” Several (though by no means all) programmes employed pre-post testing to establish change. However, as we have noted, only one (COPES) utilised a control group design. If this observation reflects a more general trend, as we suspect it does, judging from the journal scan, this is a situation that needs serious attention.

## ACKNOWLEDGEMENTS


We would like to thank the respondents to our rather searching questions for their frankness and their willingness to reflect on the difficulties they face – as well as for sharing with us the pleasures inherent in doing work that is designed to move young South Africans and their caregivers forward to a more positive future. We were struck by their high levels of commitment, and the creativity shown in overcoming difficult challenges. They agreed to us naming their programmes – a brave and encouragingly open approach.

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