

# The high burden of injuries in South Africa

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**Objective** To estimate the magnitude and characteristics of the injury burden in South Africa within a global context.

**Methods** The Actuarial Society of South Africa demographic and AIDS model (ASSA 2002) – calibrated to survey, census and adjusted vital registration data – was used to calculate the total number of deaths in 2000. Causes of death were determined from the National Injury Mortality Surveillance System profile. Injury death rates and years of life lost (YLL) were estimated using the Global Burden of Disease methodology. National years lived with disability (YLDs) were calculated by applying a ratio between YLLs and YLDs found in a local injury data source, the Cape Metropole Study. Mortality and disability-adjusted life years' (DALYs) rates were compared with African and global estimates.

**Findings** Interpersonal violence dominated the South African injury profile with age-standardized mortality rates at seven times the global rate. Injuries were the second-leading cause of loss of healthy life, accounting for 14.3% of all DALYs in South Africa in 2000. Road traffic injuries (RTIs) are the leading cause of injury in most regions of the world but South Africa has exceedingly high numbers – double the global rate.

**Conclusion** Injuries are an important public health issue in South Africa. Social and economic determinants of violence, many a legacy of apartheid policies, must be addressed to reduce inequalities in society and build community cohesion. Multisectoral interventions to reduce traffic injuries are also needed. We highlight this heavy burden to stress the need for effective prevention programmes.

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Une traduction en français de ce résumé figure à la fin de l'article. Al final del artículo se facilita una traducción al español. الترجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة.

## Introduction

International recognition of and assistance for injury control efforts are well below the levels directed at other health problems, particularly in developing countries.<sup>1,2</sup> A lack of reliable statistics has largely hidden the health and development impacts of injuries, but global burden of disease assessments identified their substantial role in premature mortality and disability among young adults, particularly males.<sup>3,4</sup> It has been estimated that injuries accounted for 9% of deaths and 12% of the burden of disease worldwide in 2000.<sup>5</sup>

More than 90% of global deaths from injuries occur in low- and middle-income countries.<sup>5</sup> Males in Africa and the low- and middle-income countries of Europe, and females in Africa and India, have the highest injury-related mortality rates worldwide. Zwi et al. highlight this neglected health problem in developing countries and argue for an immediate policy response.<sup>1</sup>

South Africa is a developing country with a unique history. Constitutional racial segregation and exploitation has

given way to a non-racial democracy. This was achieved by a protracted liberation struggle, characterized by political violence and state-sponsored oppression. Political conflict has receded but high levels of interpersonal violence remain, fuelled by rapid urbanization and ongoing socioeconomic disparities.

The high proportion of deaths from injuries in South Africa had been identified as one part of a triple burden – in combination with pre-transitional causes related to poverty and development and the emerging chronic disease burden.<sup>6</sup> The impact of the HIV/AIDS epidemic has produced a quadruple burden.<sup>7</sup> However, the lack of reliable health statistics has made it difficult to assess societal changes' impact on the rate of injuries or to compare the South African situation with other settings. Furthermore, there is a need to incorporate non-fatal outcomes in the measure of the injury burden – for each death there are several survivors with permanent disabling sequelae.<sup>8</sup> This is a challenge given the weak information base for disability for most conditions.<sup>9</sup>

The South African Burden of Disease study used multiple sources of information to derive coherent and consistent estimates for the level and causes of mortality in 2000.<sup>10</sup> The focus was on deriving mortality estimates, given the paucity of population-based morbidity data. This paper extends the initial injury estimates by developing revised age- and sex-specific estimates of injury mortality rates, calculating age- and sex-specific disability adjusted life years (DALYs) for selected types of injuries, and comparing the burden with African and global estimates.

## Methods

Global Burden of Disease methodology<sup>11,12</sup> was used to estimate the injury burden from a range of data: population- and mortality-level estimates; causes of death and disability; and incidence, severity and duration of disabilities arising from injuries.

The new Actuarial Society of South Africa (ASSA 2002) demographic and AIDS model (calibrated to survey, census and adjusted vital registration data)

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was used to obtain revised estimates of population size and mortality levels in 2000.<sup>13</sup> For the same year, vital registration data on the proportion of deaths due to external causes<sup>14</sup> were applied to the estimated total number of deaths to estimate the total number of injury deaths, by age and sex.

The National Injury Mortality Surveillance System (NIMSS) is the only recent data source available for estimating the injury cause of death distribution. This sentinel, mortuary-based study captures information on the causes of fatal injuries, mainly in urban areas.<sup>15</sup> Within the data constraints, NIMSS 1999 and 2000 data were reclassified according to the South African Burden of Disease list's injury classifications.<sup>10,13</sup> These were based on the global and Australian cause lists<sup>11,16</sup> using the International Classification of Diseases, ninth revision (ICD-9).<sup>17</sup>

The estimate for deaths related to mining injuries was increased to that reported by the Mine Health and Safety Inspectorate<sup>18</sup> and deducted from the other unintentional injury category. Interpersonal violence injuries were defined as those resulting from violence of a physical or sexual nature including that between family members and intimates, and between acquaintances and strangers.<sup>19</sup> It was not possible to distinguish between these subcategories as perpetrator/victim relationships were not recorded. Fatal interpersonal and self-inflicted injuries were referred to as homicides and suicides, respectively. No injuries were sustained in wars.

Premature mortality was estimated using the same assumptions used in the Global Burden of Disease study.<sup>11,12</sup> Years of life lost from premature death (YLLs) were calculated using age weighting, discounting at 3% per annum and standard life expectancies based on the West model, levels 25 and 26.<sup>20</sup>

The Cape Metropole Study (CMS) is a local data source covering fatal and non-fatal injury cases first presenting at any level of public- and private-sector services in the Cape Town metropolitan area in 1990.<sup>21</sup> This was used to estimate incidence, average duration and severity of injury disability disaggregated by age and sex to calculate the years lived with disability (YLDs), the non-fatal component of DALYs.

CMS data were reanalysed and recoded to the type of external cause of

injury list within the limitations of the CMS questionnaire.<sup>22</sup> The actual bodily harm caused by the type of injury was coded on the basis of the abbreviated injury scale (AIS) diagnosis codes<sup>23</sup> from which an injury severity score was calculated. The AIS codes were collapsed into the 33 nature of injury categories (combining similar outcomes)<sup>11,24,25</sup> and the injury severity profiles for each diagnosis were assessed.<sup>22</sup> This enabled the adoption of the Global Burden of Disease assumptions for the duration and disability weights associated with each nature of injury category (including the distinction between short- and long-term disability within some categories)<sup>11</sup> with some minor modifications used in the Australian study.<sup>16</sup> It was found that 10% of "fractured femurs" were considered likely to lead to long-term disability;<sup>22</sup> therefore we used local estimates rather than the 5% assumed in the global study.<sup>11</sup> YLDs calculated for all 33 nature of injury categories by age and sex were added for each of the type of injury categories. Lifelong durations were modified using South African life expectancy in 1990 (pre-AIDS).<sup>22</sup>

Age-sex specific disability to premature mortality (or YLD/YLL) ratios calculated for the CMS sample were applied to national premature mortality estimates for each cause of injury category to estimate national injury disability. For fire-related injuries, the CMS male age-specific ratios were used for both sexes due to the inexplicably low incidence of these injuries in females over five years old.<sup>22</sup> The mortality component for falls and other unintentional injuries was almost negligible in the CMS data. The non-fatal components were determined by applying the proportions of these two injury types within total unintentional injuries observed in the sample data to national unintentional injury YLDs (once all the other categories had been estimated). Age-standardized South African mortality and DALY rates per 100 000 for each injury category were calculated using the standard world population<sup>26</sup> and were compared with the geographical regional estimates from the Global Burden of Disease 2000 database, version 1.<sup>27,28</sup>

## Results

Of the estimated 59 935 injury deaths in 2000, 46% (27 563) were homicides. Road traffic and self-inflicted injuries

accounted for 26.7% and 9.1% of the injury mortality, respectively (Table 1). Homicide was the leading cause of fatal injury in males; road traffic injuries ranked second. This order was reversed in females (Table 1).

South Africa's homicide rates peaked in the male 15–29 age group at 184 per 100 000, nine times the global rate (Table 2). Homicide rates for women peaked in the 30–44 age group at 31.7 per 100 000. While much lower than for men, this was seven times the global rate (Table 2). Interestingly, homicide rates for children under five were equally high for girls and boys – more than double the global average. The age-standardized homicide rate per 100 000 was estimated at 113.4 for males and 21 for females separately, and 64.8 overall.

Road traffic age-specific mortality rates were about double the global rate in both sexes, peaking at 2.5 times the global rate in adult women aged 30–44 (Table 2). Even in children aged 0–4 and boys aged 5–14 the South African road traffic fatality rate was twice the global rate (Table 2). The age-standardized road traffic injury mortality rate was estimated at 39.7 per 100 000 (59.4 for males; 22.6 for females).

Suicide rates were higher than the global average in males but lower in females. The rate (26.3 per 100 000) in males aged 15–29 was particularly high, 1.7 times greater than the global average (Table 2).

Injuries were responsible for an estimated 2.3 million DALYs; the male burden was three times the female. There was a large fatal component: the YLD contribution to total injury DALYs was only 32%. Interpersonal violence (6.5%) and road traffic injuries (3.0%) were ranked as the second and fourth leading single causes of all DALYs in South Africa in 2000.<sup>13</sup>

Age-standardized DALY rates were compared with WHO regions (Fig. 1). Unintentional injury rates in South Africa were comparable with other regions although the burden from road traffic injuries was even higher than in the African and South-East Asia regions. The injury burden profile for South Africa differs from most regions of the world as intentional injuries exceed unintentional. Self-inflicted injury rates are similar to global rates but South Africa has by far the highest rates of the interpersonal violence-related burden.

Table 1. Percentage of injury deaths by cause, South Africa 2000

Rank	Males n = 45 237		Females n = 14 698		Persons n = 59 935	
	Cause of injury death	%	Cause of injury death	%	Cause of injury death	%
1	Homicide/interpersonal violence <sup>a</sup>	50.9	Road traffic injuries	32.6	Homicide/interpersonal violence <sup>a</sup>	46.0
2	Road traffic injuries	24.8	Homicide/interpersonal violence <sup>a</sup>	30.8	Road traffic injuries	26.7
3	Suicide/self-inflicted violence	9.3	Fire <sup>b</sup>	12.5	Suicide/self-inflicted violence	9.1
4	Fire <sup>b</sup>	5.1	Suicide/self-inflicted violence	8.6	Fire <sup>b</sup>	6.9
5	Drowning	2.4	Surgical/medical misadventure	4.3	Drowning	2.3
6	Other transport injuries	1.7	Falls	2.6	Surgical/medical misadventure	2.0
7	Falls	1.4	Drowning	2.2	Falls	1.7
8	Other unintentional injuries	1.3	Other unintentional injuries	1.7	Other transport injuries	1.7
9	Surgical/medical misadventure	1.2	Poisoning	1.7	Other unintentional injuries	1.4
10	Poisoning	0.8	Other transport injuries	1.5	Poisoning	1.1
11	Mining injuries	0.5	Suffocation and foreign bodies	0.9	Suffocation and foreign bodies	0.4
12	Suffocation and foreign bodies	0.3	Natural and environmental factors	0.4	Mining injuries	0.4
13	Natural and environmental factors	0.3	Mining injuries	0.0	Natural and environmental factors	0.3
14	War <sup>c</sup>	0.0	War <sup>c</sup>	0.0	War <sup>c</sup>	0.0
	<b>All injuries</b>	<b>100.0</b>	<b>All injuries</b>	<b>100.0</b>	<b>All injuries</b>	<b>100.0</b>

NIMSS, the national injury mortality surveillance system.

<sup>a</sup> Using NIMSS data, it was not possible to distinguish deaths due to legal intervention from homicide/interpersonal violence-related deaths, as all of these deaths are coded as homicide. Although the proportion of deaths from legal intervention probably is small, it was necessary to combine homicide and legal intervention (other intentional) injuries when comparing this with data from other WHO regions.

<sup>b</sup> It was not possible to differentiate deaths from fire-related burns (flame burns and respiratory damage due to smoke inhalation) from other burns. The majority of burn deaths are fire-related. It was possible, however, to distinguish between different burn categories in the Cape Metropole study (CMS) data.

<sup>c</sup> There were no war-related deaths in South Africa in 2000.

## Discussion

The study yielded exceedingly high estimates of injury rates for South Africa in 2000. Interpersonal violence caused around 1.0 million (6.5% of all) DALYs, followed by road traffic injuries, which were responsible for almost 0.5 million (3.0% of all) DALYs. Intentional and unintentional injuries combined were the second leading cause of all DALYs after HIV/AIDS, accounting for 14.3% of the total 16.2 million DALYs.<sup>13</sup>

In contrast to other regions, South African homicide rates were greater than road traffic and suicide rates. However, the suicide rate cannot be considered low. At 14.0 per 100 000 it is comparable to the global rate (14.5 per 100 000)<sup>28</sup> and double the rate for the African region (6.5 per 100 000).<sup>28</sup> The high suicide rate in young males needs further investigation to understand underlying circumstances and monitor future trends.

The age-standardized homicide rate (64.8 per 100 000) places South Africa among the most violent countries in the world. An equally high homicide

rate has been reported in Colombia (60 per 100 000).<sup>29</sup> Age-specific rates were even higher in certain geographical areas. In Cape Town's poorer townships of Khayelitsha and Nyanga, male youth violence is reflected in extremely high homicide rates (451 and 485 per 100 000, respectively) in the 15–24 age group.<sup>30</sup> Similarly, in Antioquia Department, Colombia, the highest homicide rate (728 per 100 000) was reported in males aged 18–24 in 2001;<sup>29</sup> in Cali the overall homicide rate was about 90 per 100 000<sup>31</sup> with high rates for males aged 15–25.

High levels of gender-based violence are evident in excessive rates of female homicides. Family violence is beset with problems of under-reporting, and homicide data do not specify victim-perpetrator relationships. A recent study has shown that one of every two women killed by a known perpetrator in South Africa is killed by an intimate partner. This country has the highest reported intimate female homicide rate in the world at 8.8 per 100 000.<sup>32</sup> Rates of homicides per 100 000 children under five years of age were 14.0 for boys and

11.7 for girls (Table 2). This is more than double the corresponding rates in low-income (6.1) and middle-income (5.1) countries.<sup>19</sup>

A lack of longitudinal data makes it difficult to establish how long South Africa has endured these extraordinarily high rates of interpersonal violence, although reported homicides have decreased in recent years.<sup>33,34</sup> The underlying determinants of violence, many of which are a legacy of the apartheid past, are intertwined with the disintegration of the social fabric. Income inequality and poverty, high unemployment, rapid social change, corruption and poor rule of law, gender inequalities and family breakdown have contributed to this climate of violence. Gang violence and easy availability of firearms are leading facilitating factors – more than half (54%) of all homicides are firearm-related.<sup>30,35</sup> Drugs and alcohol are major contributors – 52.9% of fatal,<sup>35</sup> and up to 73.4% of non-fatal,<sup>36</sup> patients with interpersonal violence injuries in urban areas tested positive for alcohol in 2001. The Russian Federation also

Table 2. Estimated South African and global self-inflicted, interpersonal violence and road traffic injury mortality rates by age and sex for 2000

Age group (years)	Males			Females		
	South African rate (per 100 000)	Global rate (per 100 000) <sup>a</sup>	Ratio SA rate: global rate	South African rate (per 100 000)	Global rate (per 100 000) <sup>a</sup>	Ratio SA rate: global rate
<b>Homicide/interpersonal violence<sup>b</sup></b>						
0–4	14.0	5.9	2.4	11.7	5.1	2.3
5–14	5.6	2.3	2.5	2.6	2.1	1.3
15–29	184.0	19.8	9.3	22.5	4.5	5.0
30–44	180.2	19.1	9.4	31.7	4.5	7.1
45–59	107.7	15.2	7.1	21.0	4.6	4.6
≥60	85.2	13.3	6.4	32.3	4.7	6.9
<b>All ages<sup>c</sup></b>	<b>113.4</b>	<b>13.9</b>	<b>8.2</b>	<b>21.0</b>	<b>4.2</b>	<b>5.0</b>
<b>Suicide/self-inflicted violence</b>						
0–4	0.0	0.0	–	0.0	0.0	–
5–14	2.1	1.7	1.2	0.8	2.0	0.4
15–29	26.3	15.6	1.7	6.5	12.2	0.5
30–44	29.4	21.5	1.4	8.7	12.4	0.7
45–59	35.0	28.4	1.2	7.7	12.5	0.6
≥60	38.1	44.9	0.8	10.9	22.1	0.5
<b>All ages<sup>c</sup></b>	<b>23.3</b>	<b>18.6</b>	<b>1.2</b>	<b>6.1</b>	<b>10.6</b>	<b>0.6</b>
<b>Road traffic injury</b>						
0–4	26.7	13.4	2.0	21.3	11.3	1.9
5–14	21.4	11.2	1.9	9.9	8.4	1.2
15–29	51.9	35.7	1.5	16.8	9.2	1.8
30–44	84.2	37.6	2.2	24.4	9.8	2.5
45–59	79.9	39.6	2.0	27.0	12.9	2.1
≥60	81.9	49.0	1.7	44.7	19.0	2.4
<b>All ages<sup>c</sup></b>	<b>59.4</b>	<b>32.1</b>	<b>1.8</b>	<b>22.6</b>	<b>11.1</b>	<b>2.0</b>

NIMSS, the national injury mortality surveillance system.

<sup>a</sup> Global burden of disease 2000, version 1 estimates. Available at: <http://www.who.int/healthinfo/bodgbd2000v1/en/index.html>.

<sup>b</sup> Using NIMSS data, it was not possible to distinguish deaths due to legal intervention from homicide/interpersonal violence-related deaths, as all these deaths are coded as homicide. Although the proportion of deaths from legal intervention probably is small, it was necessary to combine homicide and legal intervention (other intentional) injuries when comparing this with data from other WHO regions.

<sup>c</sup> Age-standardized.

has high homicide rates: fluctuations in mortality seem to correlate strongly with underlying economic and societal factors, and alcohol use is also a major factor in violence there.<sup>37</sup>

Clearly, the prevention of violence is a major public health priority in South Africa demanding an intersectoral response. This requires interventions that target the interaction between firearms and alcohol, as well as multimedia interventions to reduce the social acceptability of violence. It is hoped that the new Firearms Control Act will reduce gun numbers with a resultant reduction in firearm-related injuries. Weaknesses in the medico-legal management of murder cases, as highlighted in the study of female intimate partner homicide, should be addressed as a priority.<sup>32</sup> Also, there

is an urgent need to develop policies that nurture community cohesion and promote equity, thereby reducing the threshold for everyday violent behaviour.<sup>38</sup> The gross inequalities in society will have to be addressed in order to make headway in building social capital and preventing crime and violence in the long term.<sup>39</sup>

Worldwide, road traffic injuries are responsible for the highest injury mortality.<sup>5</sup> In South Africa, road traffic injuries ranked second to interpersonal violence but the road traffic fatality rate (39.7 per 100 000) was higher than for any WHO region and almost double the global average.<sup>28</sup> Unlike the global pattern, these accounted for a higher proportion of female (32.6%) than male deaths (24.8%) as the exceedingly high

number of male interpersonal violence-related injuries reduced the relative proportion of road traffic injuries.

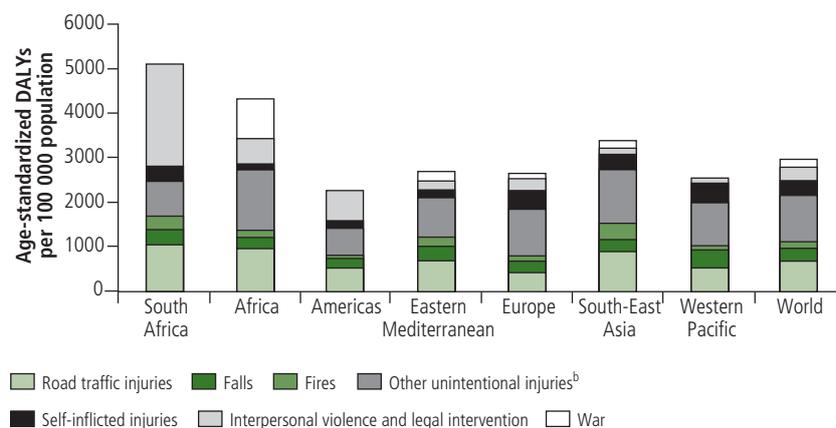
This high burden is caused by unsafe road environments, poor enforcement of existing traffic laws, road rage and aggressive driving. Alcohol misuse appears to be a major contributor. A recent study in the United States of America showed that the incidence of alcohol-related mortality in motor vehicle crashes was lower during periods when zero tolerance and administrative licence revocation laws were in effect.<sup>40</sup> In South Africa, legislation sets drivers' maximum blood alcohol concentration at the internationally acceptable level of 0.05 g/100 ml, yet almost half (46.5%) of all drivers killed in motor vehicle collisions were above this legal limit.<sup>41</sup>

Pedestrians are involved in more than half (52%) of road traffic fatalities.<sup>41</sup> Although alcohol plays a major role in pedestrian injuries, equal attention should be given to safe and convenient crossing points, good lighting and the use of reflective clothing.<sup>42</sup> Lack of adult supervision is an important contributing factor in child pedestrian injuries, highlighting the need to include adults in road safety education and awareness campaigns.<sup>43</sup>

Strong political will is key to prevention efforts; a directorate for injury prevention could perhaps be established within the national Department of Health. However, it is important to investigate the appropriateness of injury prevention strategies, as those that are successful in high-income countries may not work in low- and middle-income countries. It is also important to develop and evaluate strategies adapted to cultural, social and economic realities.<sup>8</sup> In South Africa, this can be achieved by building capacity in the injury prevention and control field of behavioural and social science research, as suggested by Gielen and Sleet.<sup>44</sup>

Country-level data on the injury burden in sub-Saharan Africa are limited despite the high incidence of injuries.<sup>45</sup> Even South Africa does not yet have complete vital registration and injury statistics<sup>10,13</sup> and it was necessary to make significant assumptions to overcome the shortcomings of available data and arrive at these estimates. The cause of death profile of the urban-based NIMSS data has been extrapolated to all areas, and the ratio of disability to premature mortality in Cape Town in 1990 has been applied to more current estimates for all South Africa without adjustment. It is assumed that the injury mortality rates are lower in rural areas but that the profile of the causes of injuries are the same on the basis of data from two demographic surveillance sites in rural settings.<sup>10</sup> These assumptions were considered reasonable as they yield estimates consistent with data from several other sources: the national forensic audit conducted in 1997,<sup>46</sup> the Department of

Fig. 1. Age-standardized DALY rates for persons by cause for South Africa and WHO regions in 2000<sup>a</sup>



<sup>a</sup> Global burden of disease 2000, version 1 estimates. Available at: <http://www.who.int/healthinfo/bodgbd2000v1/en/index.html>.

<sup>b</sup> Balance of the total unintentional injury category excluding road traffic, falls and fire injuries.

Home Affairs,<sup>10</sup> city-level analysis of the NIMSS data and cause of death statistics in some of South Africa's main cities<sup>30,47</sup> and the recent report by Statistics South Africa.<sup>48</sup> The high injury burden estimated by this study reiterates the need to improve the availability of quality data to respond to this important public health problem.

## Conclusion

This is the first study to describe the magnitude and impact of the injury-related burden in South Africa and to contrast local patterns with those of the WHO regions. The study reveals an exceptionally high burden from injuries related to violence and road traffic, and provides an important benchmark against which to compare future trends. It is encouraging that the number of injury deaths among young adults (15–49) appears to have declined in recent years.<sup>49</sup> Nevertheless, there remains a need for research to understand the determinants of violence and road traffic injuries and to evaluate interventions to reduce these burdens. There is an urgent need to improve injury statistics because timely, accurate and reliable statistics are a cornerstone of effective law enforcement, violence prevention, informed

priority setting, decision-making and public health practice. ■

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## Résumé

## Forte charge de morbidité due aux traumatismes en Afrique du Sud

**Objectif** Estimer l'ampleur et les caractéristiques de la charge de traumatismes en Afrique du Sud par rapport à la situation dans le monde.

**Méthodes** Le Actuarial Society of South Africa demographic and AIDS model (ASSA 2002, calibré à l'aide de données d'enquête et de recensement et de données d'état civil ajustées) a été utilisé pour calculer le nombre total de décès au cours de l'année 2000. Les causes de décès ont été déterminées à partir du National Injury Mortality Surveillance System profile. Les taux de décès par traumatisme et les années de vie en bonne santé perdues ont été estimés par la méthodologie élaborée pour l'Etude sur la charge mondiale de morbidité. Le nombre d'années de vie vécues avec une incapacité pour l'Afrique du Sud a été calculé en appliquant aux nombres d'années de vie perdues par décès prématuré des taux provenant d'une source de données locale sur les traumatismes, la Cape Metropole Study<sup>1</sup>. Les taux de mortalité et de DALY (nombre d'années de vie corrigées de l'incapacité) ajustés pour l'âge obtenus pour l'Afrique du Sud ont été comparés aux estimations correspondantes pour le continent africain et pour le monde entier.

**Résultats** Les violences interpersonnelles représentaient une composante dominante de la gamme de traumatismes relevée en Afrique du Sud, avec des taux de mortalité ajustés pour l'âge atteignant sept fois les taux mondiaux. Les traumatismes constituaient la seconde cause majeure de perte d'années de vie en bonne santé, avec 14,3 % de l'ensemble des DALY pour l'Afrique du Sud en 2000. Les traumatismes dus aux accidents de la circulation sont la cause principale de traumatismes dans la plupart des régions du monde, mais en Afrique du Sud leur taux est le double du taux mondial.

**Conclusion** Les traumatismes sont un problème de santé publique important en Afrique du Sud. Les déterminants socioéconomiques de la violence, dont un grand nombre sont un héritage des politiques d'apartheid, doivent être pris en compte pour réduire les inégalités au sein de la société et établir une cohésion communautaire. Des interventions multisectorielles pour faire baisser la fréquence des traumatismes dus au trafic routier s'imposent aussi. Nous attirons l'attention sur le poids des traumatismes pour souligner la nécessité de programmes de prévention efficaces.

## Resumen

## La gran carga de lesiones en Sudáfrica

**Objetivo** Calcular la magnitud y las características de la carga de lesiones en Sudáfrica y compararlas con las estimaciones mundiales.

**Métodos** Para calcular el número total de muertes en el año 2000 se utilizó el modelo demográfico y de SIDA de la Sociedad Actuarial de Sudáfrica (ASSA 2002) —calibrado para datos de encuestas, censos y registros civiles—. Las causas de muerte se determinaron a partir del Sistema Nacional de Vigilancia de la Mortalidad por Lesiones. Las tasas de mortalidad y los años perdidos por muerte prematura (APP) debido a lesiones se calcularon con el método de la carga mundial de morbilidad. Los años perdidos por discapacidad (APD) en el país se calcularon aplicando una razón entre los APP y los APD registrados en una fuente local de datos sobre lesiones: el *Cape Metropole Study*. Las tasas de mortalidad y los años de vida ajustados en función de la discapacidad (AVAD) se compararon con las estimaciones mundiales y africanas.

**Resultados** En Sudáfrica, la causa predominante de lesiones fue

la violencia interpersonal; las tasas de mortalidad por esta causa, normalizadas en función de la edad, fueron siete veces mayores que a nivel mundial. Las lesiones fueron la segunda causa de pérdida de años de vida sana, representando un 14,3% de la totalidad de los AVAD registrados en Sudáfrica en el año 2000. Los accidentes de tránsito son la principal causa de lesiones en la mayoría de las regiones del mundo, pero las cifras son mucho más elevadas en Sudáfrica (el doble de la tasa mundial).

**Conclusión** Las lesiones constituyen un importante problema de salud pública en Sudáfrica. Es necesario abordar los determinantes sociales y económicos de la violencia, en buena parte heredados de las políticas de *apartheid*, con el fin de reducir las desigualdades sociales y cohesionar la comunidad. Asimismo, son necesarias intervenciones multisectoriales para reducir las lesiones por accidentes de tránsito. La gran carga de lesiones registrada destaca la necesidad de disponer de programas de prevención eficaces.

## ملخص

## ارتفاع عبء الإصابات في جنوب أفريقيا

**الغرض:** استهدفت هذه الدراسة تقدير حجم عبء الإصابات وخصائصه في جنوب أفريقيا ضمن الإطار العالمي.

**الطريقة:** تم استخدام النموذج الديمغرافي الخاص بالأيديز للجمعية الإكتوارية لجنوب أفريقيا (ASSA 2002)، المتناسب مع بيانات المسح والتعداد وتسجيل الأحوال المدنية، بغرض حساب العدد الكلي للوفيات في عام 2000. وتم تحديد مسببات الوفاة من واقع بيانات النظام الوطني لترصد الوفيات الناجمة عن الإصابات. وتم تقدير كل من معدلات الوفاة الناجمة عن الإصابات وسنوات العمر المفقودة، باستخدام المنهجية العالمية لقياس عبء الأمراض. كما تم حساب سنوات العمر التي يعيشها الشخص في عجز، وذلك

بعمل نسبة بين سنوات العمر المفقودة وبين سنوات العمر في ظل العجز استناداً إلى مصدر محلي للبيانات المتعلقة بالإصابات (دراسة كيب متروبول). وأجريت مقارنة بين معدل الوفيات ومعدل سنوات العمر المصححة باحتساب مدد العجز، وبين التقديرات الأفريقية والعالمية.

**الموجودات:** يأتي العنف بين الأشخاص على رأس مرتسم الإصابات في جنوب أفريقيا، حيث تصل معدلات الوفيات بحسب العمر إلى سبعة أضعاف المعدل العالمي. وتأتي الإصابات في المرتبة الثانية ضمن المسببات الرئيسية لفقدان الحياة الصحية، إذ تسببت في 14.3% من جميع سنوات العمر المصححة باحتساب مدد العجز في جنوب أفريقيا في عام 2000. ولوحظ أن إصابات

العديد منها إلى موروث سياسات الفصل العنصري، وذلك للحد من مظاهر عدم المساواة في المجتمع والعمل على تماسك المجتمع. كما يستلزم الأمر تدخلات للحد من إصابات المرور. والهدف من تركيزنا على هذا العبء الثقيل أن نؤكد على أهمية الحاجة إلى برامج فعّالة للوقاية.

حوادث المرور هي المسبب الرئيسي للإصابة في معظم أقاليم العالم، غير أن معدل الإصابات في جنوب أفريقيا يصل إلى ضعف المعدل العالمي. الاستنتاج: تمثل الإصابات قضية صحية عمومية هامة في جنوب أفريقيا. ويتعين التصدي للمحددات الاجتماعية والاقتصادية للعنف، التي يُعزى

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