The burden of Road Traffic Injuries (RTIs) in Africa: We need to act now to forestall a neglected epidemic

A team of WHO experts give an insight into Road Traffic injuries in Africa and why it is a neglected epidemic

Classical epidemiological definitions have often described an epidemic as "an unexpected increase in the number of disease cases in a specific geographical area at a given time[1]. Corona Virus Diseases such as SARs-COV-2 (the cause of COVID-19), the Influenzas, Ebola Virus Disease, Cholera, Meningitis, Measles, Malaria, Yellow Fever, Lassa Fever, Mpox (Monkexpox), and Poliomyelitis to mention just a few are prime examples of potential infectious disease epidemics[2]. However, in contemporary epidemiology, an epidemic does not necessarily have to be an infectious disease. For example, the rapid increase in obesity, cigarette smoking, alcohol consumption, inappropriate drug use, diabetes mellitus, hypertension, antimicrobial resistance, and Road Traffic Injuries (RTIs), while not infectious diseases are also considered epidemics[3]. In other words, an epidemic should be defined for a disease or any other health-related event, condition or behavior with rates that are clearly above "normal" in a community or region at a given time. The "normal" for most diseases, events and conditions is zero incidence[4]. Indeed, in the World Health Organisation (WHO) African Region this has clearly been articulated in the guidelines for Integrated Disease Surveillance and Response (IDSR) that refer to priority diseases, as well as events, and conditions with defined alert and epidemic thresholds[4].

In this viewpoint, we contend that RTIs are a neglected epidemic in Africa. The current rates of RTI fatalities globally, but more so, in Africa require urgent collective interventions from governments, development partners and all relevant stakeholders. RTIs are a major development issue in Africa because they have major health, social and economic impacts. However, they have not been given the priority they deserve. It is our considered view that the Health Sustainable Development Goals (SGDs) will not be met unless we act now to forestall the RTIs epidemic. We need to act now to meet the 2030 targets, we are only 7 years away. We have no excuse, we have the tools, we know what works and what doesn't, and we can draw on lessons learnt from other regions that have reduced RTI. Here we articulate why it is urgent and needed now rather than later.

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Increasing global burden of RTIs

Globally, every year approximately 1.3 million lives are cut short because of a road traffic accident[5]. Up to 50 million people suffer non-fatal injuries, with many incurring a disability because of their injury[5]. Globally, in 2019, RTIs were the 9th leading cause of death in men and the 6th global cause of disability adjusted life years-DALYs [6]. Road traffic injuries cause considerable economic losses to individuals, their families, and to nations[7]. These losses arise from the cost of treatment, as well as lost productivity for those killed or disabled by their injuries, and for family members who need to take time off work or school to care for the injured[7]. Road traffic crashes cost most countries 3% of their gross domestic product (GDP)[5]. Moreover, RTIs are the leading cause of death among people between 5 and 29 years old[5]. Over ninety percent (90%) of the world's fatalities on the roads occur in low- and middle-income countries, even though these countries have approximately 60% of the world's vehicles[5]. Nearly half of those dying on the world's roads are "vulnerable road users": pedestrians, cyclists, and motorcyclists[7]. Without sustained action, it is predicted that road traffic crashes will become the seventh leading cause of death by 2030[8].

Worrisome situation in Africa

In the WHO African Region, ten percent (10%) of all deaths are caused by injuries, the highest in the world. Most injuries are caused by road crashes, falls and drowning[9]. Road injuries are the most prevalent form of injury and represents about 40% of all injuries in the region[9]. Growing vehicle ownership and rapid unplanned urbanization have increased the incidence of road crashes in Africa[7]. Despite being the least motorized, the WHO African Region has the highest road traffic fatality rates in the world with an estimated 27.2 deaths per 100,000 population[9]. This translates into 814 deaths per day, nearly half of them vulnerable road users such as pedestrians, cyclists, and motorcyclists. The socio-economic impacts of road crashes and related injuries are not only harming the continent's development, but also affecting the livelihood of families[10].

Of the estimated 297,000 people that died of RTIs in 2019, ~ 97,000 were men aged 15-49 years old-the most productive period of their lives[9]. Although the WHO African region represents 14% of the world's population and 3% of the automobile fleet, the region contributes 20% of all road crashes deaths globally[11]. Road crashes were the 11th cause of death in 2000 but presently they are the 9th cause of death[9].

Road traffic injury fatality rates have been increasing since 2015. For example, from 2015 to 2018 RTI rates increased from 26.6 to 27.2 per 100,000 population [9]. By comparison, all other WHO regions, except the North American region had reduced RTI fatalities during the same period [9, 12]. This

is worrisome because we are observing these trends yet there are concerns about poor data quality, under reporting, and lack of detail on the circumstances and consequences of injuries. The discrepancies between reported and WHO estimates are largest in the WHO African Region compared to other parts of the world. Estimates show that the burden of RTIs in Africa is probably 4-fold higher than what is currently reported [7]. The lack of research and reliable data on the burden of RTIs in Africa, the associated healthcare expenditure and household/income loss in most countries is concerning. The current burden of RTIs in Africa is certainly worse than what the published numbers tell us. Moreover, there are large disparities amongst countries in the region, with RTI fatality rates varying from 11.3 per 100,000 population in Seychelles (the lowest) to 41.2 per 100,000 in Zimbabwe (the highest)[13].

Vulnerable road users-pedestrians and cyclists represent 44% of all RTI deaths in the WHO African region[11]. This is concerning because close to 78% of people walk for transport every day[14].The economic losses due to RTIs and deaths are also immense. For example, the estimated GDP loss is 8% in Senegal, 9.1% in Kenya and 10.1% in Burkina Faso[15].

We have also reviewed the global health observatory (GHO) database for the entire African continent Africa has the highest traffic death rate per 100,000 population. It is estimated that 28 people die per 100,000 population in Africa which is higher than the average of 17 per 100,000 population globally[22]. In the GHO database, the median rate for road traffic deaths in Africa is 28 per 100,000 population (Range: 10.1-42.2).

Risk factors for RTIs in Africa

The main risk factors for RTIs in Africa include poor road infrastructure, inadequate law enforcement, and a lack of education and awareness about road safety. In addition, many African countries are low or middle-income, making them a dumping ground for cheap, used, un-roadworthy and poorly maintained vehicles in dangerous mechanical condition. Moreover, lack of access to timely and prompt emergency medical care such as ambulances with the right equipment and the appropriate paramedical staff often results in many preventable deaths enroute to emergency health care facilities which are also often ill equipped to offer emergency injury care in of terms human, financial and logistical resources. Further, there is a high rate of reckless over speeding, drink, and drive. Worryingly, not wearing helmets or seat belts exacerbates the high rate of severe RTIs, several of them fatal. Here we provide some details about the major risk factors.

Excessive alcohol consumption: Alcohol abuse as an attributable factor for RTIs in Africa and is a common cause for all injuries [16]. According to a 2018 global status report on road safety, only one country (Burkina Faso) demonstrated best practices for drink driving[7]. Most countries in the region have not established the recommended limits for blood alcohol content (BAC)[7, 16]. The BAC is a measure of alcohol in the blood as a percentage and it is calculated in grams per 100 mL or dL of blood. A blood alcohol content (BAC) of 0.08 means your blood is 0.08% alcohol by volume. The recommended standard is a BAC below 0.05g/dl for the general population and below 0.02g/dl for novice or professional drivers[17]. Despite the requirement to implement standard recommendations of the BAC as an effective intervention and proven measure to reduce RTIs, its enforcement in Africa remains dismal.

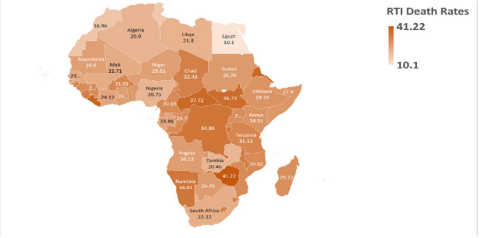

***Figure 1**. Crude death rates per 100,000 population from Road Traffic Injuries in Africa, 2019*

Weak legislation and implementation of evidence-based interventions to reduce risk factors: Weakness in legislation and enforcement to ensure no drink driving, use of seat belts, speed limitation, helmet use, and child restraints is a major risk factor for RTIs in Africa. Less than a third of the countries in the Africa region meet the required best practice criteria for any of these road user behaviors [11]. A population-based survey in 12 African countries demonstrated that weak enforcement is a leading risk factor for RTIs[18]. For example, 42% of motorcyclists reportedly exceeded speed limits; 11% of drivers were reported to drink and drive; 75% of motor vehicle passengers did not use safety belts; and almost 50% of motorcycle riders did not use helmets[18].

Unregulated vehicles: In Africa, the vehicle fleet is expected to grow 4-5-fold by 2050 and 80- 90% of these vehicles will come from imported used vehicles[19]. In addition to their increased risks of causing road crashes, these unregulated vehicles are major contributors to air pollution and climate emissions causing other health conditions, including strokes, chronic respiratory diseases, lung cancer and other non-communicable diseases[20].

Inadequate road infrastructure: This is also a major risk factor for RTIs in Africa. Roads should be planned and designed considering the needs of the most vulnerable such as pedestrians, cyclists, children, and persons with disabilities. Although there are a few published reports for some countries on the status of road infrastructure, they aren't standardized, and the indicators often vary. Consequently, comparisons within and amongst countries are challenging. The global status report on road safety for 2018 (GSRRS-18) provides information on design standards for roads as a proxy to quality. While several countries have set standards enforcement when constructing roads dismal. About half[22] of the countries in the WHO African region report conducting systematic assessment of their existing roads[7].

Inadequate Post-crash care: This is very limited in many countries where basic first response mechanisms and care are unavailable or out of reach for most of the population [11].

WHO's response to RTIs in Africa

The decade of action for road safety 2011-2020, ended with very little progress on road fatalities and injuries and the region did not meet the 2020 targets[12]. The second decade of action for road safety 2021-2030 has set a target of reducing RTIs by at least 50% by 2030[21]. To support countries, WHO has developed recommendations and guidelines for all risk factors. WHO is also leading the generation of a comprehensive data, including mortality estimations, and monitoring of policies, laws and regulations relevant to road safety.

Key challenges

Like other determinants of health, the causes of RTIs have roots outside the health sector, in this case, they lie in transport, infrastructure, legislation and law enforcement. Because of competing priorities, there is insufficient investment in road safety by African countries. Secondly, data is limited and does not fully describe the extent of the physical and mental suffering, disability, and costs to the healthcare system due to RTIs. Thirdly, there is limited awareness and inadequate training for first responders. Finally, there is inadequate capacity building and research on data collection and reporting for RTIs in Africa.

Perspectives for the future

A cursory look at the above risk factors suggests that no single sector can address the epidemic of RTIs in Africa. Hence the necessity for a multisectoral and multidisciplinary approach to the RTIs epidemic. Moving forward there is a need for ministries of health to collaborate with other sectoral ministries such as transport, law enforcement, road works, urban design, and finance, as well as the sectors that are responsible for standards to ensure that processes are transparent and corruption free.

In addition, there is an urgent need for all African countries to institutionalize a multi-sectoral approach to address RTIs, including promoting the strict use of helmets, seat belts, and child restraints; regulating the importation of used vehicles and improving road infrastructure; and increasing enforcement of traffic laws. Further, WHO, the Africa Centers for Disease Control and Prevention (Africa CDC) and all relevant partners should work with African governments and their partner organizations to raise awareness about the importance of road safety and to educate the public about safe driving practices, and advocate for strict laws to be implemented. We urge all African countries to adopt a "Safe System" approach, which aims to make the road environment as safe as possible, even if human error occurs. This includes measures such as lower speed limits, separating vulnerable road users from fast-moving traffic, and improved vehicle safety standards. Further, we call upon all African countries to conduct training, formulate and implement effective road safety programs, including regulation, enforcement, as well as, improving capacity for emergency medical services, and data management and analysis for better decision making.

Finally, we propose that all African countries conduct thorough after-action reviews following every major road traffic accident to assess what went wrong to put in place measures to prevent a repeat or to mitigate the effects of the next road traffic accident. After action reviews have been institutionalized for infectious disease epidemics. The same should be applied to RTIs in Africa.

Summing up

In closing, it is our considered view that African countries ought to take a comprehensive, multi-sectoral approach to address the "epidemic" of RTIs. This could include but is not limited to improving road infrastructure, vehicle safety, increasing enforcement of traffic laws, and raising public awareness about road safety. Importantly, investments are urgently needed to build capacity for health care in emergency trauma, including RTIs and any other forms of mass trauma, from prehospital care, referral capacity and emergency health care capacity for RTIs. RTIs are a major development issue in Africa because they have major health, social and economic impacts. However, they have not been given the priority they deserve. The health SGDs will not be met unless we act now to forestall the RTI epidemic. We need to act now to meet the 2030 targets, we are only 7 years away.

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