



Snakebite incidence research in Mozambique – what does this mean for Zambia?

***An extrapolation of snakebite data
from research in Mozambique, to Zambia.***

-Marcel van Driel-

In September 2022, *Farooq et al* published a scientific paper with the title “*Snakebite incidence in rural sub-Saharan Africa might be severely underestimated*”. In their research they interviewed people in rural communities to assess how many people were bitten, went for medical treatment at a health facility, visited a traditional healer and how many died. Their research showed that the number of snakebite cases and deaths due to snakebite are likely much higher than was previously assumed.

Reliable and updated snakebite data for Zambia is not yet available. However, such data is crucial to establish a baseline from which snakebite management interventions can be measured. In this document, the research data for Mozambique is extrapolated to Zambia and presented.

In the table below, the average annual snakebite numbers, extrapolated to 100,000 people in rural areas in Mozambique, taken from the table on page 5 of the paper, is included in the green cells. These numbers form the basis for calculations for Zambia.

In the orange cells on the right, a calculation on annual average is made for Zambia, based on the numbers per 100,000 people from Mozambique. This calculation is conducted for the total rural population of Zambia (in 2021 this number was established at almost ten-and-a-half million people). This calculation provides a rough estimate on how many people are, on average, bitten per year in Zambia, as well as the number of deaths etc. However, the numbers in the orange cells *exclude* the urban and peri-urban population and thus, the figures may be higher.

These numbers in the orange cells give a *rough indication* only. There are several factors that may influence the number of snakebites in any given area, such as population density, main income-generating activity, presence of habitat and food source for snakes (determining the amount of snakes and the number of snake species, etc). These aspects aren't factored in.

Not included in the research, nor in the table below, is the number of victims that suffer long term impact from their ordeal, such as amputation and disabilities. The WHO estimates the ration of snakebite deaths to amputations as 32,000 : 6,000 for sub-Saharan Africa (Gutierrez et al.,2017). Using that ratio on the extrapolated number for Zambia would result in about 1,000 amputations. Apart from the pain and suffering amputations (and other lasting afflictions, such as loss of mobility) cause, they also lead to social-economic problems. The capability of doing physical labour (the main



source of income in the rural areas is agriculture) may be reduced, leading to loss of income.

Despite the mere extrapolation and the omissions as mentioned above, the numbers give an *indication* of the magnitude of the impact of this “*highest priority neglected disease*” (WHO, 2017) in Zambia.

Table 1: snakebite data per year.

Yearly average for 100,000 people in rural areas *)		Rural population Zambia 2021 *)	10,370,034.00
Total snakebite cases	352.16	Total snakebite cases	36,519.11
Total deadly snakebites	45.51	Total deadly snakebites	4,719.40
total nr of snakebite victims reaching health centres	59.21	total nr of snakebite victims reaching health centres	6,140.10
deadly snakebites that reach health centres	3.31	deadly snakebites that reach health centres	343.25

*) source: Farooq, H. et al (2022)

"Snakebite incidence in rural sub-Saharan Africa might be severely underestimated"
Toxicon.

*) source: macrotrends.com

From the orange cells, the following conclusions may be drawn:

- Tens of thousands of people in Zambia are likely bitten by a snake each year.
- Nearly five thousand people may lose their life due to a snakebite annually.
- A relatively small percentage of snakebite victims are registered to have reached a health facility.
- The number of people that die at a health centre from a snakebite is a fraction of those dying from a snakebite.

Source: Farooq, H. et al (2022) "Snakebite incidence in rural sub-Saharan Africa might be severely underestimated". Toxicon September 2022 (DOI:10.1016/j.toxicon.2022.106932).