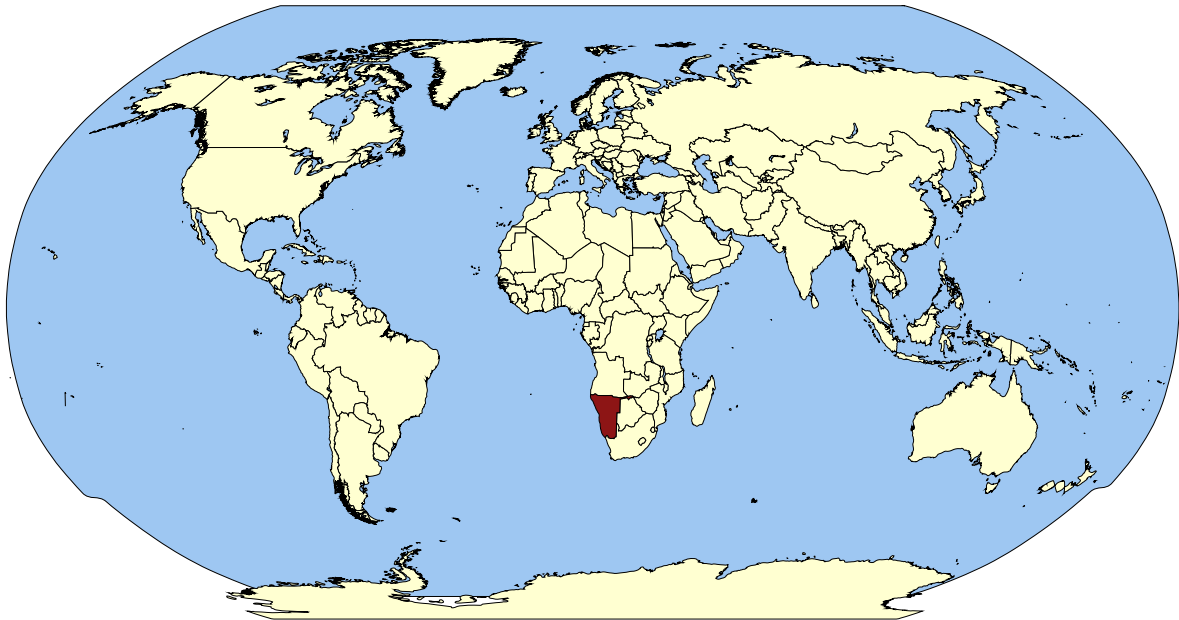


Namibia



The History of Schistosomiasis in Namibia

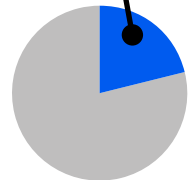
Namibia obtained independence from South Africa in 1990. As an upper middle income country, Namibia's economy today is relatively strong for the region, dependent heavily on mining, including mining diamonds and uranium; however, income inequality has led to poverty that is still a major challenge for the country (1). Since its discovery, schistosomiasis has been found mostly in the northernmost areas of Namibia. The country is one of only two countries (along with Gabon) with both a per capita income of over \$1,000 and a lack of any historical schistosomiasis control program, despite schistosomiasis having been documented as endemic for decades (2). The first reports of schistosomiasis in Namibia date to 1967; during these early investigations, schistosomiasis was assessed in three target regions: the Caprivi region, in the northeastern tip of the country; the Kavango region, another northeastern province along the Okavango River, and in northwestern and north-central Namibia (3). Though the study's researchers found no cases of the disease in the northwest and no cases in the north-central region of Namibia, the other two regions showed signs of endemicity for both *S. haematobium* and *S. mansoni* (3).

Schistosomiasis in Namibia [10]

Almost half a million people require treatment annually

21.3% of the population requires preventative chemotherapy for schistosomiasis

42% of the population requiring treatment for schistosomiasis are school-age children



Overview of Namibia [1]

- » Population in 2015: 2,212,307
- » Official Language: English
- » Capital: Windhoek
- » Presidential Republic
- » Percentage of Population with Access to Improved Drinking Water in 2015: 91%
- » Percentage of Population with Access to Improved Sanitation in 2015: 34.4%

History Continued...

A decade later, a survey for intestinal parasites in the Kavango region during the late 1970's found schistosomiasis at only one hospital site, near the Kavango River (4).

In 1987, a high rate of *S. mansoni* was reported in some parts of Caprivi, in contrast to the low rates found in the studies two decades earlier during the late 1960's: in 3 villages in West and North Caprivi, *S. mansoni* prevalence ranged from 82 to 95% in 1987 whereas no cases of *S. haematobium* were found; in 3 villages surveyed in East and South Caprivi, *S. haematobium* prevalence ranged from 4-47% and *S. mansoni* prevalence ranged from 0 to 10% (5). The region's most comprehensive survey tested 8,000 individuals in 9 villages in 1995, with no *S. haematobium* cases found and a range of 63-96% *S. mansoni* prevalence (6).

In addition to the changes in schistosomiasis prevalence noted between the 1960's, 1970's and 1980's across northern Namibia, dam construction, specifically the Calueque and Olushandia Dams in north-central Namibia led to an increase of *S. haematobium* incidence upstream (2, 7). In 2000, the first nationwide schistosomiasis appraisal in Namibia found that, of 1.5 million total Namibians, 187,000 (12.5%) were at risk and 9,000 (0.6%) were infected (2). This 0.6% nationwide estimate remained the accepted estimate for years - it was cited in 2003 [7], in 2006 [8] and again in 2010 [7]. A recent reappraisal of the schistosomiasis burden in northern Namibia, spearheaded by the Namibian National Ministry of Health and Social Services (with some external support), found that, of 17,896 children from 299 schools in northern Namibia, the overall schistosomiasis prevalence was 9.0% (5.1% for *S. haematobium*, 4.4% for *S. mansoni*), with the highest prevalence in those areas without access to safe water or improved sanitation services (8). A geostatistical analysis, published in 2015, affirmed the higher national rate of schistosomiasis, with an estimate at 8.0% nationwide (6.3% for *S. haematobium* and 1.5% for *S. mansoni*) (9). With support of the End Fund, Namibia has re-

cently established a national program for control of neglected tropical diseases, with schistosomiasis one focus of the program, but only mapping activities initiated so far (8). The recent mapping exercise for schistosomiasis in Namibia has been based on a "rapid mapping protocol" aimed at estimating drug requirements and priority areas to guide future praziquantel distribution through mass drug administration programs (8).

References

1. The World Factbook Washington, D.C. : Central Intelligence Agency; 2013-14 [cited 2015 Oct]. Available from: <http://www.cia.gov/library/publications/the-world-factbook/>.
2. Chitsulo L, Engels D, Montresor A, Savioli L. The global status of schistosomiasis and its control. *Acta tropica*. 2000;77:41-51. PubMed PMID: 10996119.
3. Geldenhuys PJ, al e. Bilharzia survey in the eastern Caprivi, northern Bechuanaland and northern South West Africa. *South African medical journal*. 1967;41:767.
4. Kyrönseppä HJP, Goldsmid JM. Studies on the intestinal parasites in African patients in Owamboland, South West Africa. *Transactions of the Royal Society of Tropical Medicine and Hygiene*. 1978;72:16-21. PubMed PMID: 635971.
5. Schutte CHJ, VanDeventer JMG. Schistosomiasis in eastern Caprivi. Part I. The prevalence of *Schistosoma* species and other infections in school children. *Southern African Journal of Epidemiology and Infection*. 1987;2:71-5.
6. Schutte CH, Evans AC, Pammenter MD, Cooppan RM, Pretorius SJ, Joubert PH, et al. Epidemiology and control of schistosomiasis mansoni in communities living on the Cuando River floodplain of East Caprivi, Namibia. *Annals of Tropical Medicine and Parasitology*. 1995;89(6):631-44. PubMed PMID: 8745938.
7. Berger S. *Infectious diseases of Namibia*. Los Angeles: Gideon Informatics, Inc.; 1995. Available from: <http://www.gideononline.com/ebooks/country/infectious-diseases-of-namibia/>.
8. Sousa-Figueiredo JC, Stanton MC, Katokele S, Arinaitwe M, Adriko M, Balfour L, et al. Mapping of schistosomiasis and soil-transmitted helminths in Namibia: The first large-scale protocol to formally include rapid diagnostic tests. *PLoS neglected tropical diseases*. 2015;9(7):e0003831. PubMed PMID: 26196386.
9. Lai Y-S, Biedermann P, Ekpo UF, Garba A, Mathieu E, Midzi N, et al. Spatial distribution of schistosomiasis and treatment needs in sub-Saharan Africa: A systematic review and geostatistical analysis. *The Lancet Infectious Diseases*. 2015;15:927-40.
10. WHO. PCT Databank for Schistosomiasis from: http://www.who.int/neglected_diseases/preventive_chemotherapy/sch/en/.