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**Exploration of the impact of climate change on schistosomiasis transmission dynamics**Tayo Alex Adekiya<sup>1</sup>, Kazeem Oare Okosun<sup>1</sup> and Abidemi Paul Kappo<sup>2</sup><sup>1</sup>University of Zululand, South Africa<sup>2</sup>Vaal University of Technology, South Africa

Climate change has been suggested to elicit significant impact on the interactions between pathogens and their hosts. Vector-borne diseases are predominantly sensitive to climatic factors because temperature variability can alter vector development rates, transmission dynamics, as well as cause alteration in their geographical distribution. Schistosomiasis, ranked the second most widespread among neglected tropical diseases is caused by flatworms belonging to the genus *Schistosoma*. Symptoms of the parasitic infections include acute and chronic diseases, predisposition to cancer of the bladder, as well as pulmonary and portal hypertension and in extreme cases, death. This study employs a deterministic climate-based model using differential equations to investigate the impact of rainfall and temperature on the population dynamics of schistosomes in South Africa. Numerical simulations of the system were done using mathematical models to examine the effect of climate variability on the transmission dynamics of schistosomiasis. Results showed climate variability increases reproduction number of schistosomes and snails. Hence, schistosomiasis transmission was suggested to be seasonal. Snails' reproduction was found to peak during summer and at the minimum during spring and autumn. So, sensitivity analysis showed reproductive number of schistosomes is more sensitive to the reproduction rate of snails and the probability of infections. Finally, the model used suggested future opportunity for modification and refinement for effective prediction of climate variability on the transmission dynamics of schistosomiasis.

**Biography**

Tayo Alex Adekiya is currently pursuing his Postgraduate studies in the Department of Biochemistry at the University of Zululand. Presently, he is the Secretary General of postgraduate student's association at the university. He has recently published three papers in reputed journal.

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