



The use of remote sensing and GIS in public health: a case study: geo-spatial risk analysis for schistosomiasis in a marginalized community, Kenya

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Abstract:

Schistosomiasis, also known as bilharzia, is a disease caused by parasitic worms. It is prevalent in tropical and subtropical areas, especially in poor communities without access to safe drinking water and adequate sanitation. The field of medical geographic information systems (Medical GIS) has become extremely useful in understanding the bigger picture of public health. GIS has been used to mapping the epidemiological information which includes the burden of disease epidemic transmission, spatial distribution and the determinants of health related states or events in specified population with reference to space and time. Perhaps, remote sensing and GPS has been integrated under the GIS umbrella for disease surveillance, situation analyze and the spatial modeling of disease transmission. GIS tools were used to store, visualize, analyze, and interpret geographic data from the mapped geographical location. These data included factors associated with risk to schistosomiasis. Pertinent data to predict the trends and to portray spatial risk-analysis of the disease was performed. GIS data included attributes, or descriptive information. In this case, the pattern of waters data set that could be mapped as possible areas for the species causing schistosomiasis was done with ArcGis application The descriptive data was searched and display of associated attributes was performed using Raster data set in order to obtain a risk map using a GIS software. Despite of the area not mapped as high risk, the trend seems to have been on a salient change with economic activities being projected towards the use of the lake water for some livelihoods such as fishing, daily chores among



women washing clothes and a common habit of children playing with water. Population was projected to be on upsurge and straining the pastoral activity as the main income source, the deviation to other realted economic activities were perceived to be on rise, especially fishing: Results showed a pertinent information compromising the initiative to mitigate the salient schistosomiasis disease, as being the higher rate of HIV transmission.

Biography:

John Muthuka Kyalo works as a professor in College of Health Sciences, Institute of Tropical Medicine, Jomo Kenyatta University of Agriculture & Technology, Kenya. He also works as a Department of Health Education & Promotion, Kenya Medical Training College, Nairobi, Kenya

Recent Publications:

1. John Muthuka Kyalo, International Journal of Tropical disease& health, 2018

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