

Effects of Variability of Selected Climatic Elements on Malaria Prevalence in Awendo Division, Rongo District, Migori County, Kenya, 2014

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Abstract:

Malaria burden continues to increase in the tropical developing countries of the world such as Kenya. In Kenya, it is blamed on climatic influences on the environment. The historically high rainfall, temperature and relative humidity encourage prevalence in Western Kenya especially around Lake Victoria. This study investigated the effect of seasonal variation of selected climatic elements on malaria morbidity and mortality in Awendo Division, Rongo District, Migori County, Kenya. It was based on the Kate's basic impact and the MARA/ARMA world models. Awendo Division is in the transition zone between the lake region endemic and the epidemic Kisii Highlands, an altitude of between 1450m and 1700m above sea level. This means that it must have characteristics independent of the two areas yet it is categorized under the endemic lake region. Using a case study design, the study relied on secondary data obtained from Sonysugar meteorological station and Awendo Division Health facilities from 2001-2010. The target population was the at-risk population of Awendo Division (108,913). A flooded sampling was done consisting of all recorded malaria morbidity and mortality cases from the health facilities. Descriptive and inferential statistics were used. Pearson's moment correlation coefficient was used to investigate the strength of the relationship between malaria cases and the selected climatic elements, ANOVA was used to study the variation of malaria morbidity within and over the years. The selected climatic elements and malaria morbidity did not show clear patterns during the surveillance period. The elements however formed two seasons within the years. They also showed insignificantly positive trends during the ten-year period. Malaria on the other hand had a significantly positive trend during the same period. Although all the selected climatic elements correlated negatively with malaria morbidity, they constantly offer optimal malaria transmission windows throughout the year except rainfall which drops below the optimal ranges. The study further revealed both endemic and epidemic characteristics of malaria in Awendo. Although malaria was found to be persistently present in Awendo, it annually peaks in the months of July and January. In summary although malaria was seen to be present throughout the year, its occurrences patterned with the selected climatic elements. The study recommends that intervention measures be in place throughout the year. The medical personnel and the meteorologists should hold frequent consultative forums to lay early strategies against epidemics. There is need for further research to unearth more information on the pereniality and the positive significant trends of malaria in the study area. If no action is taken to control the significant growth, then malaria will have worse consequences in future. This study will provide the latest information on the malaria situation in Awendo which will be very useful to the National Malaria Control

Programmes and the epidemiological service providers in formulating policies that may promote the mitigation of malaria in Awendo Division and the rest of the country.