A REGRESSION ANALYSIS FOR THE EFFECT OF METROLOGICAL FACTORS ON MALARIA IN IBARAPA CENTRAL LOCAL GOVERNMENT.

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ABSTRACT

Malaria has become a major global health problem. It affects 3.5-5.0 billion people worldwide with environmental factors contributing about 70-90% of the disease risk. The World Health Organization has estimated that over one million cases of Malaria are reported each year, with more than 80% of these found in Sub-Saharan Africa. The malaria situation in Nigeria is typical of sub-Saharan Africa, presenting a serious health problem in Nigeria. It is hyper endemic with a crude parasite rate ranging from 10 – 70% with Plasmodium falciparum dominating.

Disease incidence with environmental covariate has long been effective in disease modeling, monitoring, evaluation and providing major intervention for areas at risk.

The metrological factors dependency of the malaria risk was explored using regression analysis and the risk was used to know when the disease are much in summer and winter, using data of malaria cases and metrological data from 2009 to 2010 to identify if the community is at risk.

Temperature and rainfall had different and independent influence on the malaria prevalence.

In summer season of both years, the rainfall covariate is associated with malaria incidence in the model where it is considered the only covariate except in 2010 both covariate. While temperature is associated to malaria incidence in all the models it is included except in 2009 summer as the only covariate. In the dry season of year 2009, the temperature is not associated to malaria incidence in the model with both covariates. However, it is associated to malaria in the model with temperature covariate. Rainfall is associated to malaria incidence in the models with both covariates and with rain only. For year 2010, temperature is associated with malaria incidence in the model of temperature covariate and the rainfall, temperature are associated in model with both covariates. The rainfall environmental factor however, is associated with malaria in the model with rainfall covariate.

The study also showed that rainfall had an effect on the yearly disease incidence.