ISSN 0970-9274
JOURNAL OF HUMAN ECOLOGY
International Interdisciplinary Journal of Man-Environment Relationship

J Hum Ecol, 59(2-3): 92-99 (2017)
DOI:10.31901/24566608.2017/59.2-3.04

Assessment of Risk Determinants in the Regularity of Malaria Using the Binary Logistic Approach

Ruffin Mutambayi*, Ndege James, Azeez Adeboye, Odeyemi Akinwumi and Qin Yong Song

Department of Statistics, University of Fort Hare, Private Bag X1314, Alice 5700, South Africa

KEYWORDS Regularity. Malaria. Binary. Logistic

ABSTRACT Malaria is a deadly sickness caused by parasitic organisms and it is transmitted to humans through the bite from an infected female anopheles mosquitoes. The spread of the mosquito parasites responsible for malaria infection is often traceable to living in an unhygienic condition such as poor environmental sanitations. Binary logistic regression was applied to verify the determinants influencing malaria patients' relapse after treatment and the cloglog model was found to fit the data well (log-likelihood = 31.6994; AIC = 63.607). Indicative threat factors were diagnosed utilizing the likelihood statistical ratio tests and the Wald. It was found that patients residing in poor types of dwelling were more predominantly hit by treatment relapse of malaria (Wald = 6.85; *p-value* <0.05). For the evaluation of the adequacy of the chosen mathematical model, different tests such as Lemeshow and Hosmer test, deviance goodness of fit and Pearson were utilized.