

A Time Series Analysis: Weather Factors, Human Migration and Malaria Cases in Endemic Area of Purworejo, Indonesia, 2005-2014

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Abstract	<p>Background: Climatic and weather factors become important determinants of vector-borne diseases transmission like malaria. This study aimed to prove relationships between weather factors with considering human migration and previous case findings and malaria cases in endemic areas in Purworejo during 2005-2014. Methods: This study employed ecological time series analysis by using monthly data. The independent variables were the maximum temperature, minimum temperature, maximum humidity, minimum humidity, precipitation, human migration, and previous malaria cases, while the dependent variable was positive malaria cases. Three models of count data regression analysis i.e. Poisson model, quasi-Poisson model, and negative binomial model were applied to measure the relationship. The least Akaike Information Criteria (AIC) value was also performed to find the best model. Negative binomial regression analysis was considered as the best model. Results: The model showed that humidity (lag 2), precipitation (lag 3), precipitation (lag 12), migration (lag1) and previous malaria cases (lag 12) had a significant relationship with malaria cases. Conclusion: Weather, migration and previous malaria cases factors need to be considered as prominent indicators for the increase of malaria case projection.</p>
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