ABSTRACT

Background : Diphtheria is an acute infectious disease caused by the bacteria is easily transmitted *Corynebacterium diphtheriae* . Diphtheria still a public health problem because they often lead to extraordinary events (outbreaks) and death cause. **Objective** : analyze the spatial distribution of diphtheria patients and determine the strongest risk factors associated with the incidence of diphtheria in Blitar . **Methods** : this type of research is observational analytic study using case control group were 42 respondents case and control groups were 84 respondents. **Results** : The pattern of the spread of the incidence of diphtheria in Blitar in 2015 in terms of areal form three clusters significantly according to the time of transmission with a density of population per district. The results of the bivariate analysis using chi square test , immunization status (0,001) , humidity of the room (0,000) , lighting (0,000) , ventilation (0,000) , the presence of health services (0,000). Multivariate analysis using logistic regression there are only two variables that are risk factors on the incidence of diphtheria is humidity room (OR = 29,983) and lighting (OR = 5,115). **Conclusion**: The pattern of spread to form four clusters , there is a relationship between population factors (immunization status), environmental factors (room humidity , lighting and ventilation) and the presence of health-care facilities with the incident diphtheria. The risk factors most influence on the incidence of diphtheria is room humidity and lighting. **Suggestion** : the socialization and counseling as well as monitoring the local area so that cases of diphtheria can be reduced

Key word : spatial, diphtheria, population, environment, health care.