

ABSTRACT

Background: Diarrhea is a public health problem in Indonesia. At District of Timor Tengah Utara the incidence of diarrhea is still relatively high and often becomes an outbreak. Diarrhea often causes death in underfives. Risk factors of diarrhea are generally related to environmental sanitation and behavior. Other factors such as demography and topography of region are characteristics that epidemiologically affect health problems such as diarrhea.

Objective: To identify association between factors of environment, demography and topography and the incidence of diarrhea using spatial approach.

Method: The study was analytical with cross sectional design and quantitative method. Data analysis used spatially weighted regression (spatial error model) and LISA multivariate (Significance Map, Cluster Map) with GeoDa software.

Result: Incidence rate of diarrhea at District of Timor Tengah Utara in 2006 was 20 per 1,000 people, in 2007 was 24 per 1,000 people and in 2008 was 24 per 1,000 people. As much as 54.67% of cases happened to underfives. Access of the household to clean water was 68.28% (2008), access to family toilet was 49.09% (2008). Population density was 84/km² (2008), percentage of underfives was 10.87% (2008) and education of the housewives was 43.09 (2008) of junior high school to university level. The result of analysis showed (1) there was no association between access of the household to clean water and diarrhea ($p=0.8070$), (2) there was association between access to household to family toilet and diarrhea ($p=0.0205$), (3) there was no association between population density and diarrhea ($p=0.9850$), (4) there was association between education of the housewives and diarrhea ($p=0.0003$) (5) there was no association between the location (altitude) of the region and diarrhea ($p=0.7476$).

Conclusion: There was association between the incidence of diarrhea and factor of access of the household to family toilet, education of the housewives and quantity of underwives.

Keywords: *spatial analysis, diarrhea, sanitation, demography, topography*