ABSTRACT

Title of Abstract : Exploration of Diarrhea Infection Sources Based on Fly Density and Total Bacteria in Semarang

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Background : Indonesia has faced recurring diarrhea outbreaks, with Central Java ranking third among provinces with the highest case numbers. In Semarang City, the incidence rate (IR) reached 26 per 1,000 population, while the Tlogosari Wetan Health Center recorded an IR of 20. Diarrhea is often caused by bacteria transmitted by flies, which breed in markets and surrounding residential areas such as the Pedurungan Semarang Market.

Objective : This study aimed to analyze the relationship between fly density and the total number of bacteria on flies with diarrhea incidence and to identify environmental factors affecting fly density, including temperature, humidity, food, open garbage, and distance from the landfill.

Research Methods/ Implementation Methods : An observational analytic study with a cross sectional design was conducted in 171 population locations, with 40 selected as samples. Independent variables were fly density and environmental conditions, while the dependent variable was diarrhea incidence. Data were analyzed using Chi square and correlation tests.

Results : Diarrhea incidence showed significant associations with fly density ($p = 0.004$) and the total number of bacteria on flies ($p = 0.037$). Fly density correlated with the presence of food ($p = 0.006$) and open garbage ($p = 0.014$). Temperature had a moderate negative correlation ($p = 0.000$; $r = -0.572$), while humidity showed a weak positive correlation ($p = 0.018$; $r = 0.373$).

Conclusion/Lesson Learned : Diarrhea is influenced by bacteria carried by flies. Fly density in markets and settlements is affected by temperature, humidity, and environmental hygiene.

Keyword : Diarrhea, Fly density, Total bacteria, Environment, Semarang.