Spatial Analysis of Food Poisoning Cases and Its Environmental Relations in Sabah, Malaysia

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ABSTRACT

Introduction: Food poisoning usually occurs with the consumption of contaminated food. Some related factors are unsafe water supply, poor sanitation, unhygienic waste disposal and unhygienic practices or poor personal hygiene by food handlers. The purpose of this study is to describe the spatial epidemiology of food poisoning cases in the four districts of Sabah. **Methods:** This review consists of all food poisoning cases reported from 2011 to 2014 from Kota Kinabalu, Penampang, Putatan and Papar, Sabah. The coordinates used for locations of cases are based on home addresses. Tools such as SPSS v20, ArcGIS v10 and CrimeStat IV were used for data analysis and mapping. **Results:** A total of 1,787 cases of food poisoning were reported during this review period. In 2011, only Kota Kinabalu and Papar illustrated significant food poisoning clusters. Meanwhile, in the year 2012 to 2014, Kota Kinabalu, Penampang and Putatan had clustering of cases. Analysis of nearest neighbour hierarchical clustering analysis showed 32 food poisoning clusters. There were 4 food poisoning points at 500 meters radius around a market place, 2 food poisoning points near a sewage plant and 1 food poisoning point near a water treatment plant. No cases were near a municipal landfill. For rivers and coastline, there were 37 points of food poisoning cases in the proximity of 500 meters. **Conclusion:** Food poisoning usually occurs in clusters with possible associated environmental factors.

Keywords: Food poisoning, GIS, Spatial analysis, Clusters