

Study on Climatic Factors Influencing Leptospirosis Transmission in Southern and Eastern Provinces, Sri Lanka

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Leptospirosis is a bacterial disease that can be transmitted to humans via contact with rodents, domestic animals, and contaminated water and soil. The disease is an emerging public health problem around the world. Leptospirosis has become one of the notifiable infectious diseases in Sri Lanka in recent years. This study investigates the impact of climate factors (temperature and rainfall) on leptospirosis transmission in the Southern and Eastern provinces of Sri Lanka through a statistical approach. Initially, the climate data and reported leptospirosis cases from 2015 to 2019 were obtained from the Metrological Department of Sri Lanka and the Epidemiology unit in Sri Lanka, respectively. One-way ANOVA test was used considering 0.05 as the mean significant level. There was a significant leptospirosis occurrence between the districts of Southern and Eastern provinces ($p=0.000$, $DF=1$, $F=105.93$). In contrast, there was a significant difference of temperature versus leptospirosis ($p=0.008$, $DF=60$, $F=1.63$). Also, there was a significant difference of rainfall with the leptospirosis occurrence ($p=0.048$, $DF=345$, $F=2.17$). This study shows a substantial synergism between leptospirosis and climate factors in Southern and Eastern provinces of Sri Lanka. It is important to bring together patterns of leptospirosis transmission compatible with long-term data on climate and other social and ecological changes and this would advance forecast of leptospirosis risk associated with climate change. It will provide the essential information for the formulation of better strategies and methods of preventing leptospirosis.

Keywords: Leptospirosis, Sri Lanka, Southern, Eastern, ANOVA