ABSTRACT OF MASTER'S DISSERTATION

No. 1

Course	Masters in Tropical Medicine	Name	Aden Kay Celis-Seposo
Thesis Title	Incidence of Kawasaki Disease in Children in the Philippines, its Seasonality, and Association with Ambient Air Temperature		

Background:

Kawasaki Disease (KD) is a systemic febrile illness with unknown etiology that mostly affects children under 5 years old. While literature regarding KD epidemiology have been steadily increasing, studies regarding its temporal variability, in the context of seasonality, as well as the role of temperature have been scarce. In addition, studies in tropical countries have been limited, especially in the Philippines. Hence, providing new insight on the up-to-date KD epidemiology, its seasonality, and its association with ambient air temperature in the Philippines would better equip both practitioners and health policymakers alike for subsequent response.

Objectives:

This study aimed to describe the KD incidence in children in the Philippines, assess its seasonality, and determine its association with ambient air temperature.

Methods:

An ecological study design was utilized for this study. Our main outcome was monthly KD cases obtained from the Philippine Pediatric Society (PPS) disease registry, whereas the main exposure, ambient air temperature, was obtained from the National Oceanic and Atmospheric Administration (NOAA). The epidemiology of KD in the Philippines with age-specific and year-specific incidence rates from 2009 to 2019 were reflected in the summary statistics. We then used a generalized linear model (GLM) with quasi-Poisson regression to assess the seasonality of KD and determine its association with ambient air temperature after adjusting for the relevant confounders.

*The abstract, containing background, objectives, methods, results and conclusion should not exceed 300-500words and printed double sided on A4 paper).

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No. 2

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Results:

A total of 6483 KD cases were recorded from January 2009 to December 2019, with 3332 (51.4%) cases belonging to 1 to 4 years old age group, and 3831 (59%) cases were male (male:female ratio of 1.44:1). Mean incidence rate was 3.71 cases per 100,000 population of children under 5 years old from 2009 to 2019, with the highest incidence (4.83 cases per 100,000 population of <5 years old) in the year 2017. The rate of annual increase of incidence is 0.14 (p=0.01, 95% confidence interval [95% CI]: 1.04-1.27) during the study period. It was also noted that there was a unimodal shape of seasonal pattern of KD cases in children with its estimated highest number of cases occurring during month of March and its lowest during month of September. After adjusting for seasonality and long-term trend, it was noted for every one-degree Celsius increase, the monthly mean temperature was significantly associated with monthly KD cases (Relative Risk [RR]: 1.08, 95% CI: 1.02-1.15). Furthermore, monthly mean temperature during the dry season (December to May) was positively associated with monthly KD cases (RR: 1.06, 95% CI: 1.01-1.11), while there was no evidence of an association during the wet season (June to November) (RR=1.10, 95% CI 0.95-1.27).

Conclusion:

Kawasaki disease incidence rate in children in the Philippines though small in magnitude, has increased through the years. Also, KD was noted to have a unimodal seasonal variation with its peak of cases in March and nadir in September. Year-round ambient air temperature was linearly associated with KD cases. Furthermore, linear association was only noted for the dry season, but not for the wet season.

(484 words)

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