

## Fast Food Consumption Among Adolescent and Its Related Factors: Findings from NHMS Adolescent Nutrition Survey 2017

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### ABSTRACT

**INTRODUCTION:** Fast food consumption is increasing among adolescents. Fast food is generally favoured due to its easy availability despite of its high calorie with high salt and sugar content. This study aims to determine the prevalence of fast food consumption among adolescents in Malaysia and its associated factors. **METHODS:** Data was derived from the Adolescents Nutrition Survey (ANS) 2017, a cross sectional study using a two-stage stratified random sampling design. **RESULTS:** This study found that 86.9% of the adolescents in Malaysia consumed fast food. Multiple logistic regression analyses showed that Chinese adolescents had significantly lower odds to consume fast food (aOR 0.32, 95%CI: 0.27, 0.39), and those with overweight or obese BMI (aOR 1.27, 95%CI: 1.05, 1.54) had higher odds of consuming fast food compared to underweight adolescents. Adolescent who eat outside (aOR 5.14, 95%CI: 4.58, 5.76) and also had a habit of snacking (aOR 4.19, 95%CI: 3.59, 4.91) significantly higher odds of consuming fast food. **DISCUSSION:** The prevalence of fast food consumption among adolescents is very high. Efforts need to be taken to educate adolescents regarding healthy eating. Prompt actions also need to be taken with regards to laws and regulations associated with advertising and marketing of fast food for adolescents.

**KEYWORDS:** adolescent, fast food, Malaysia, NHMS

## Forecasting Hand-Foot and Mouth Disease (HFMD) Cases Using Weather Variables and Google Search Queries in Sabah, Malaysia

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### ABSTRACT

**INTRODUCTION:** Climate change and population dynamics have been postulated as driving hand-foot and mouth disease (HFMD) transmission. This study aims to develop a forecasting tool utilising climatic predictors and internet search queries in developing preventive strategies that would alleviate the burden of HFMD in Sabah. **METHODS:** Nine years of data was collected, consisting of temperature, humidity and rainfall from the Malaysia meteorological department, HFMD cases from the Sabah State Health Department and internet search queries from Google trends of years 2010-2018. Correlations between dependent and independent variables and their lagged functions were executed and integrated into a Seasonal auto-regressive moving average (SARIMA) model and subsequently, in measuring fit, the Akaike's Information Criterion (AIC) and log-likelihood metrics were utilised to select the best model. All statistical analysis was carried out using R. **RESULTS:** Google search trends evinced moderate positive correlations to HFMD cases ( $r_{0-6weeks}$ : 0.47-0.56) with temperature revealing weaker positive correlations ( $r_{0-3weeks}$ : 0.17-0.22). The autocorrelation functions revealed moderately positive correlations ( $r=0.15-1.0$ ) at lags of zero and five weeks. Fit and parsimony were prioritised in selection, with a single model integrating mean temperature at lag zero-week and google search trends at lag one-week producing best fit (AIC: 4077.22, log-likelihood: -2030.61). **DISCUSSION:** Trajectorial forecasting oscillations of the model are stable up to four weeks in advance with accuracy being highest at one and two weeks justifying it as a low-cost, time-sensitive tool to be used in outbreak preparedness and mitigation. However, the model still requires validation and will carried out in the near future.

**KEYWORDS:** Coxsackie, EV71, prediction model, weather, google trends, ARIMA