DAILY HOSPITALIZATION COUNTING AND CLIMATE VARIATIONS IN THE CITY OF SÃO PAULO: A BAYESIAN APPROACH

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ABSTRACT: In this paper, we introduce a study on the count of daily hospital admissions in São Paulo in the period 01/01/2002 to 31/12/2005 due to pneumonia and chronic diseases. This daily count may be related to some covariates such as temperature, relative humidity, seasons and weekends. Considering the daily count data classified in different age groups, we assumed a model of Poisson regression in the presence of a random factor that captures the correlation and extra-Poisson variability among scores for the day, and found that both the number of hospitalizations for pneumonia and chronic diseases is influenced by humidity and temperature, especially in younger children and the elderly.

KEYWORDS: Climatic variations; count hospitalization data; Poisson regression model; Bayesian Analysis.

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