

# Association between climatic factors and COVID-19 transmission in a global South megacity

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## Abstract

A flu-like disease (COVID-19) caused by a novel coronavirus has emerged in Wuhan, China in December, 2019 that is shortly turned into a public health concern globally. The effect of climatic variables on COVID-19 transmission is of paramount importance. However, the interactions are still controversial. This study investigated the association between climatic factors and COVID-19 spread in Dhaka megacity, Bangladesh. Data on the daily confirmed new cases of COVID-19 and climate parameters were collected from March 8, 2020 to April 30, 2020 in Dhaka City, Bangladesh. A log-linked negative binomial regression model was applied to estimate the association between climatic factors and transmission of COVID-19 cases. The daily new confirmed cases of COVID-19 were found positively associated with 14-days moving average of the daily average temperature (AvgT) and Relative Humidity (RH). Each 1°C increase of AvgT was associated with 2.76 times increase of daily confirmed new cases whereas 1% increase of RH was linked to an increase of 18% of the daily confirmed new cases of COVID-19. The study also found RH to be the stronger predictor and moderator between the AvgT and the daily cases of COVID-19 in Dhaka City. The results provide no evidence that COVID-19 could fade out itself when warmer season arrives. Thus, effective public health control measures must be implemented to prevent the further transmission of COVID-19.

## Association between climatic factors and COVID-19 transmission in a global South megacity: Case study in Dhaka, Bangladesh

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