Temperature and COVID-19: India

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India is under nationwide lockdown from 25 March 2020, in an effort to curb the spread of COVID-19, with closed borders and enforcement of quarantine/isolation. Life under lockdown witnessed a reduction in the acceleration of COVID-19 in the country, as evident by the gradual improvement in doubling rate in the total number of ‘diagnosed’ infected persons. Until 21 May 2020, more than 112,000 cases have been diagnosed in the country, with 3,435 deaths.

There is literature suggesting the possible role of temperature on the pandemic. A sound understanding would help us in deciding the strategies for mitigation of the existing health crisis. Therefore, two areas from India were examined to find the association between ambient temperature and daily number of new cases of COVID-19. Average temperature was also calculated. Data on COVID-19 were taken from government websites. Correlation coefficient (r) was used.

Delhi, the national capital (28.7041° N, 77.1025° E), has been a major contributor in India to the pool of COVID-19-infected citizens. Until 21 May 2020, it has recorded more than 11,000 cases, with 176 deaths. When the number of new cases diagnosed daily is examined from 1 April to 18 May 2020, it was found to be moderately related to maximum temperature (r=0.337). The minimum temperature and the average temperature seemed to have a similar association with the number of new diagnosed cases (r=0.430 and r=0.410, respectively) (figure 1).

When Indore (22.7196° N, 75.8577° E), a district in the state of Madhya Pradesh, is taken into account, the pattern changed. The district has contributed more than 2,700 cases and 105 deaths until 18 May 2020. The associations between maximum, minimum and average temperatures with number of new cases were tested (r=0.335, r=0.296 and r=0.320, respectively) (figure 2).

To sum up, different weather parameters may affect the relation between COVID-19 and human beings. For mitigating ongoing disaster, there is a need to explore such attributes to understand its future course. Further research in this regard would be helpful in preparing for upcoming battle against the pandemic.

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