Role of climatic conditions on malaria transmission in Chhattisgarh state of India through a modelling study

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India represents 3% of the global malaria burden. Chhattisgarh is the second-most endemic region in India in terms of malaria transmission. The research related to the effect of weather variables on malaria transmission through dynamic modelling is at an early stage in India. We attempted to do it with the help of the VECtor borne disease community model of International Centre for Theoretical Physics, TRIeste model for the Chhattisgarh region during 2000–2019. The highest malaria transmission is found in August and September. We also found that the malaria transmissions are found to be more endemic in the districts, namely Baster, Dantewada, Sukma, Bijapur, Narayanpur, Kondagaon, Raigarh, Jashpur, Balrampur, Bemetara and Baloda-Bazar.

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which is 58%, compared to Indonesia and Myanmar, which contribute 30% and 10% respectively[10].

Malaria is identified as a major health problem in India[11]. The ecological and topographical diversity of India makes the microbiology of malaria even worse. The disease is transmitted by the parasites, namely *Plasmodium* species, *Plasmodium falciparum* and *Plasmodium vivax*, and malaria is transmitted by different *Anopheline* species. *Anopheles culicifacies*, being isomorphic with five siblings, is widely distributed and is the principal vector of rural malaria[12]. The incidences of *P. vivax* and *P. falciparum* are the main variants in India[13].

India has 28 states and 8 union territories. Among them, the states which contribute maximum to the malaria burden are Odisha, Chhattisgarh, West Bengal and Northeastern regions, Jharkhand, Karnataka, Madhya Pradesh, Uttar Pradesh, Rajasthan, Tamil Nadu, Andhra Pradesh, Maharashtra and Goa[14]. According to the WHO report of 2019, there has been a decline in malaria cases by 27.6% in 2018