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Correspondence/Letter to Editor

Epidemiological studies on coronavirus disease 2019 pandemic in India: Too little and too late?

Dear Editor,

The severe acute respiratory syndrome coronavirus 2 (CoV-2) is wreaking havoc across the world, with 3,435,894 cases and 239,604 deaths (as of 4th May 2020) so far attributed to it.[1] Considering the novel nature of the infection, World Health Organization (WHO) has identified and suggested areas for research, inter-alia, in corona virus disease 2019 (COVID-19) epidemiology.[2] India, a South-East Asian Country recorded its first COVID-19 case on 30th January 2020. As on 4th May 2020, a total of 42,533 cases and 1373 deaths have been reported in the country.[1] Though the dashboard of Government of India (GOI) daily updates the number of confirmed, recovered, and death cases, state wise, there is no further epidemiological information available for planning public health interventions locally and nationally. Our literature search (PubMed, WHO, GoI, and Google Scholar) retrieved only three epidemiological studies/report namely (a) a compiled data of 12,296 cases of Maharashtra state[3]; (b) a case series of first 21 COVID-19–positive cases from a tertiary care hospital of New Delhi[4]; and (c) a study on COVID-19 positivity among all severe acute respiratory illness (SARI) cases from 41 sentinel sites of India.[5]

Of the 168,374 tests performed in Maharashtra (till 3rd May 2020) and 5911 SARI cases (till 2nd April 2020) from 41 sentinel sites, 12,296 (7.3%) and 104 (1.8%) patients were found positive for COVID-19.[3,5] Of the cases for whom data were available from Maharashtra (n-12271), New Delhi (n-21), and sentinel sites (n-102), 7476 (60.9%), 14 (66.7%), and 85 (83.3%) were males; and mean/median age was 39.7, 40.3, and 54 years, respectively.[3–5] The details of clinical presentation at the time of testing was available only with New Delhi study. Of the 21 cases, 9 (42.9%) were asymptomatic, and 6 (28.6%) had comorbidities most commonly hypertension (23.8%) and diabetes mellitus (14.2%).[4] Of the symptomatic patients, fever and cough (42.9%), sore throat (23.8%), headache (13.6%), and breathlessness (4.8%) were the common clinical presentation.[4] A total of 134 (1.2%) and 521 (4.7%) patients were critically ill and deceased (case fatality rate [CFR]), respectively in Maharashtra (n-11056) and none in New Delhi.[3,4] Though higher CFR has been reported among males of Maharashtra (4.8%) compared with females (4.0%), no significant association was found between gender and mortality ($p = 0.05$). The age-specific mortality rate was also high among patients aged 61–70 years (19.2%), 71–80 years (15.8%), and 80 years and older (13.9%).[3] No details are available on clinical presentation and mortality other than SARI from sentinel site study.

New Delhi study was able to trace the source of infection to foreign travel history or to close contact with all cases.[4] However, of the 192 cases for whom source investigation was completed in Maharashtra (based on cases reported till 5th April 2020), 84 (43.8%) had a travel history and 60 (31.3%) had a contact history with confirmed COVID-19 case.[6] Source of infection was inconclusive among 48 (25.0%) cases.[6] Similarly, of the 102 COVID-19 cases among patients with SARI from sentinel sites, source history was not available, and the source could not be traced among 59 (57.8%) and 40 (39.2%) cases, respectively.[5] The considerable proportion of cases for whom the source of infection could not be traced indicates that the community transmission may be happened already in India.[7] The discrepancy in tracing the source between these three studies may be due to the differences in approach, study population, and the study period. It was a cluster or community-based approach in Maharashtra and hospital-based approach in New Delhi and sentinel site study. Further, New Delhi study investigated all COVID-19–positive cases, and sentinel site study investigated all SARI cases for COVID-19.

Though the aforementioned three literature provides insight into some basic demography of the COVID-19 cases in India, they could not provide representativeness and comprehensiveness, together or alone. They also differ with each other in terms of severity, source of infection, and clinical outcomes. It has been more than three months that the disease has emerged into the country. Yet, India lacks basic and comprehensive epidemiological information such as sociodemography, risk factors, and comorbidities, modes of transmission and its dynamics, clinical presentations, the different testing strategies and its positivity rates, and clinical outcomes.

Though the early, extended nationwide lockdown of the country should be applauded, this alone is not sufficient to defeat the COVID-19.[8] Data are the key in the fight against COVID-19.[9] There are more than a couple of prediction articles published based on this limited epidemiological data with varied assumptions. At times, actions are taken based on

these predictions with many limitations, which may affect the country economically and politically in addition to individual level adverse effects. Though the evidence generated so far in India is indeed too low to comment on the complete epidemiology, it is definitely not late to start, streamline and systematically collect the data and disseminate. In this crisis, the research community can be linked with the people delivering healthcare services at various levels for collecting quality-assured data. Hence, it is recommended to generate local epidemiological data through robust studies supported with (a) timely and adequate funding/resources; (b) collaboration with research and development community; (c) fast-tracking ethical and administrative procedures and (d) prompt dissemination of findings to the stakeholders by fast-tracking the publications for evidence-based decision.

Disclosure of competing interest

The authors have none to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.mjafi.2020.05.003.

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