Factors associated with mortality from COVID 19: Indian perspective

Sir,

The article on COVID 19 pandemic in developing countries is really interesting. India, like other such countries, witnessed the onslaught by COVID 19. Till May 16, 2021, India recorded more than 274,000 deaths attributed to COVID 19. Keeping great variation in mortality rate noted in different parts of the country, the present study aimed to find out the association between different demographic factors and COVID mortality rate.

An ecological approach was adopted, considering 30 states. The number of confirmed cases from COVID 19 was retrieved till May 16, 2021. Economic condition was expressed in terms of per capita Net State Domestic Product for the year 2019–20. Some other factors such as the proportion of elderly people, comorbidities, and literacy were also considered. The association between COVID cases and different individual factors was determined, using correlation coefficient. \( P < 0.5 \) was considered significant.

States like Goa and Delhi recorded exceptionally high mortality rates (>1000/million) while Bihar and Mizoram recorded low death rates (<40/million).

Economic condition \( (r = 0.751, P = 0.000) \), diabetes \( (r = 0.512, P = 0.005) \), hypertension \( (r = 0.464, P = 0.011) \), overweight \( (r = 0.518, P = 0.004) \), obesity \( (r = 0.588, P = 0.001) \), and literacy \( (r = 0.484, P = 0.022) \) were seen to be associated with COVID 19 mortality [Figure 1]. Both demographic and clinical conditions seemed to play roles behind COVID casualty.

On regression, economic condition, diabetes, hypertension, overweight, obesity, and literacy were significant. At multivariate level, only overweight (adjusted odds ratio = 30.304 [1.022–59.586]) was significant. The model could explain the death burden in 58.9% of cases.

The impact of socioeconomic status (SES) on susceptibility to COVID 19 is crucial. One study outlined a higher mortality risk among indigenous people and those living in areas with low SES. People with subsidized health insurance schemes, more often unemployed or engaged in informal work are more prone to succumb to the infection. For poor people, accessing medical services or affording out-of-pocket expenditure could be an important factor. A study from Chile noticed higher testing in wealthier areas. A high positivity rate was noticed in areas with low SES. When we consider the Indian scenario, it is no different. The testing rates were much higher in affluent states like Goa, Delhi than in poor states like Bihar and Uttar Pradesh. Poor health care infrastructure may find it difficult to count a high number of cases, expand surveillance systems within a small period, or track additional deaths.

Comorbidities are believed to play a significant role in determining mortality. Few studies from India suggested the same. The present study also found higher COVID deaths in states with a higher proportion of people with...
diabetes and hypertension. However, no relation was found between preexisting chronic liver disease and COVID mortality. Overweight, particularly obesity was found to have a strong correlation with COVID deaths.

Literacy seemed to have a moderate correlation with the death burden from COVID. A study from Brazil also suggested that lack of education is a risk factor for mortality from COVID. Another study from Mumbai also suggested the same. The present study suffers from the lack of individual patient characteristics. The study did not consider the availability of hospital beds in different states or overcrowding or the trend in the proportion of reported deaths over the years. Still, a national perspective with relevant demographic factors for COVID mortality is the first of its kind from India. In the setting of a low-income country, the study highlighted the importance of demographic factors while planning strategies for mitigation of the impact of the pandemic. It is expected to pave way for other in-depth studies in future.

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Conflicts of interest
There are no conflicts of interest.

Manas Pratim Roy
Directorate General of Health Services, Ministry of Health and Family Welfare, New Delhi, India. E-mail: manas_proy@yahoo.co.in

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