

Impact of COVID-19 restrictions on corneal tissue donation and utilization rate - Time to bring reforms?

Dear Editor,

During COVID-19, eye-banks across the world changed their practices to safeguard the health of their personnel and the

patients receiving a corneal transplant.^[1] India intensified strict and consecutive lockdowns in 2020–21 with stringent healthcare regulations, especially in highly affected states/union territories (UTs). We correlated severely affected COVID-19 areas to corneal donation/utilization rates. Retrospective data (corneal tissues procured and utilized) were collected between April 2020 and March 2021 and compared with 2016–19. States/UTs affected with COVID-19 are listed

Table 1: Data of states/union territories affected with COVID-19. Donor tissue collection and utilization rate and states that collected >1000 tissues during the COVID-19 period

Highest confirmed cases (Over 30 per 1000 individuals of the total population)	Highest death (Over 40 per 100,000 individuals of the total population)	Lowest confirmed cases (Less than 4 per 1000 individuals)	Lowest deaths (Less than 3 per 100,000 individuals)
Goa (36)	New Delhi (58)	Bihar (2.1)	Dadra and Nagar Haveli and Diu and Daman (0.3)
New Delhi (35)	Goa (52)	Uttar Pradesh (2.6)	Mizoram (0.8)
Ladakh (35)	Puducherry (48)	Jharkhand (3.2)	Bihar (1.2)
Kerala (31)	Ladakh (45)	Madhya Pradesh (3.4)	Lakshadweep (1.3)
	Maharashtra (44)	Mizoram (3.6)	Jharkhand (2.8)
Highest drop in tissue collection (>90%)	Lowest drop in tissue collection (<50%)	Highest utilization (>90%)	Lowest utilization (<50%)
Mizoram (100%)	Jharkhand (-76%)	Madhya Pradesh (99%)	Puducherry (45%)
Chattisgarh (100%)	Rajasthan (34%)	Punjab (91%)	Gujarat (28%)
Gujarat (96%)	Uttar Pradesh (38%)	Jharkhand (90%)	Haryana (7%)
Punjab (95%)	Bihar (46%)	West Bengal (90%)	
Madhya Pradesh (92%)			
Average highest tissue collection in 2016-19 (>7000 tissues)	Highest tissues collected during COVID-19 (>1000 tissues)		
Tamilnadu (11352)	Telangana (4122)		
Telangana (8549)	Tamilnadu (2915)		
Gujarat (8141)	Karnataka (1512)		
Maharashtra (7465)	Maharashtra (1351)		
	New Delhi (1302)		
	Uttar Pradesh (1121)		
	Andhra Pradesh (1063)		

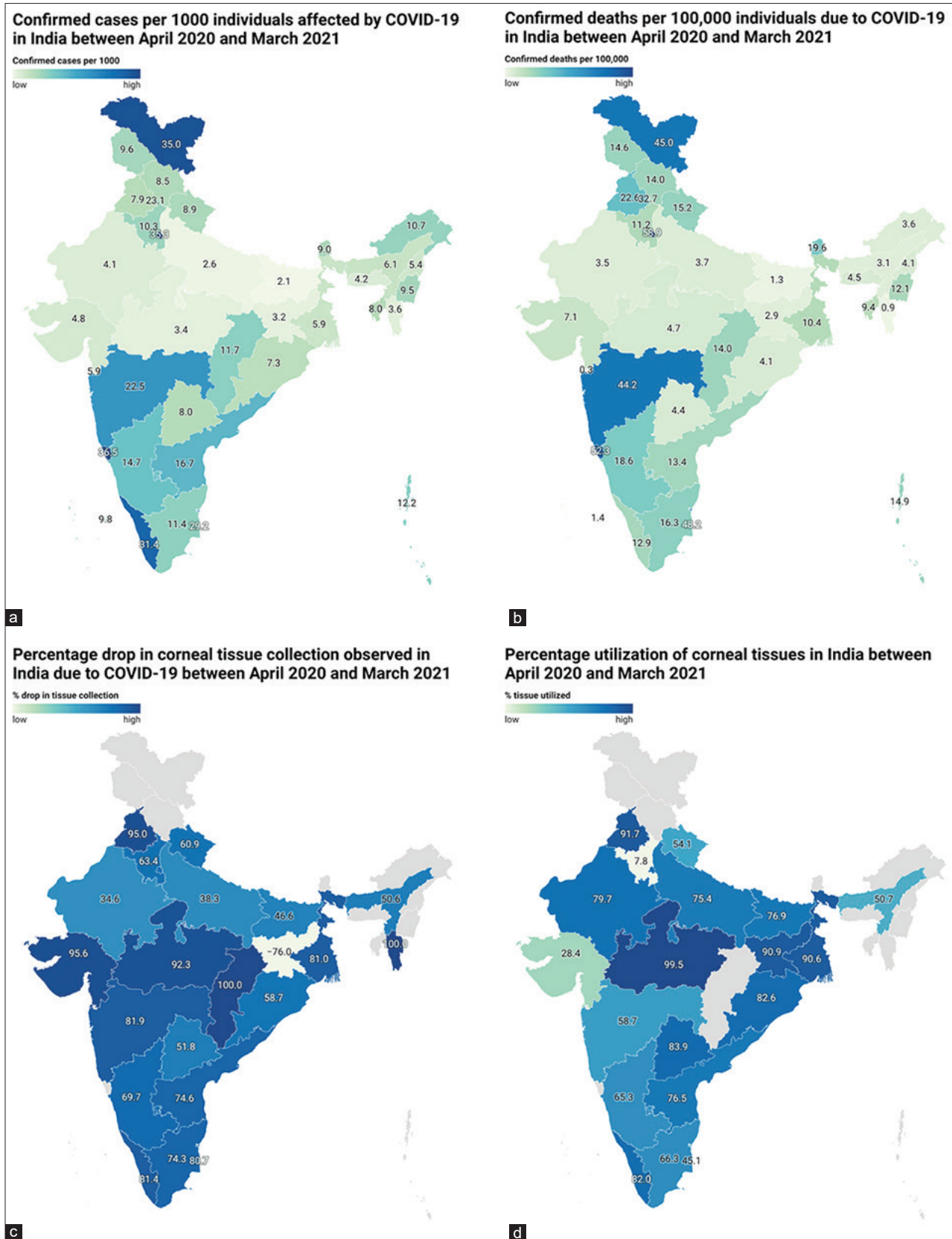


Figure 1: State/union territory-wise demographic data of COVID-19 in India between April 2020 and March 2021. (a) Individuals affected by COVID-19, (b) deaths due to COVID-19, (c) percentage drop in corneal tissue collection compared to the data observed in 2016–2018, and (d) percentage utilization of corneal tissues during COVID-19. Note: The data were not available for the states/UT marked in gray

in Table 1. Complete or partial lockdowns were observed in multiple regions, which resulted in a significant drop in donor tissue collection and utilization rate [Table 1]. However, many states managed to collect more than 1000 tissues, reducing partial dependency on other states [Table 1]. Although India, along with the United States, procures 55% of the total corneas worldwide, the number of patients waiting for a corneal transplant in India is over 7 million.^[2] In 2019, the death rate in India was 0.73% (approximately 10 million deaths). Theoretically, at least 35% donation is required to suffice the national needs. However, only 68,409 tissues (0.34%) were procured in 2018–19. Due to COVID-19, the corneal collection in 2020–21 was 18,359 (approximately 73% drop compared to 2016–19). The tissue utilization was 12,998, which is 71% compared to approximately 50% in 2019.^[3] It implies that there is a desperate need for corneal tissues to cover the waiting list of patients due to COVID-19. A sharp rise in the demand and utilization of corneas during the immediate post-lockdown period has also been reported.^[4] With the lack of donor tissues, carrying out preventive and sight-saving surgeries will be challenging. States with low COVID-19 cases/deaths did not have strict lockdowns, which maintained the tissue collection and utilization active [Fig. 1]. The drop in tissue donation from many states was observed due to precautionary state guidelines for the eye banks. It would be important to ensure that states with a history of high tissue donation rates keep up with their collection numbers, whereas those that have shown promising results even during COVID-19 should be encouraged to improve the donation rate. In conclusion, it would be important to educate the mass on certain ideologies, misconceptions, and superstitions to improve the donation rate. Moreover, the transplant and retrieval centers need to be upgraded and increased in numbers. New policy frameworks mandated by the state and federal government to advance the eye banking field must thus be implemented.^[5]

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Conflicts of interest

There are no conflicts of interest.

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