

# A Hundred Lives Lost: *Doctor Deaths in India During the Times of COVID-19*

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## Abstract

### Background:

Over 900,000 cases of COVID-19 and 23,000 deaths have been reported till 13 July in India. Preserving the limited healthcare workforce is part of the strategy against the pandemic. Mortality and morbidity data have a role in customising this strategy. At this time, there is no published study on COVID-related mortality among doctors or other healthcare workers in India.

### Methods:

A multi-pronged search was made for all reported deaths linked with COVID-19 among doctors in India. Details of COVID-linked deaths reported by mainstream media and by multiple professional social media sources were collected, screened, verified and analysed. Violent deaths occurring in the setting of pandemic-related work were separately listed. Deaths from other diseases were excluded.

### Results:

Among 108 COVID-linked deaths among doctors, there were four pandemic-related violent deaths including three road accidents and a suicide. Of the 104 non-violent deaths, 55.5% were below 60 years of age, while 29.6% and 21% were below the age of 50 and 40 respectively. The average age at death was 56.3 (range 22 - 96).

Over half of the deaths occurred among general practitioners, while surgical specialties accounted for 27% of the mortality. The geographic distribution of deaths of doctors correlated with the reported number of COVID-19 patients in each state.

The total number of COVID-related healthcare worker deaths was 136, out of which eight (5.8%) were violent, and occurred in young individuals with an average age of 27.8 years.

### Conclusions:

The majority of the 104 COVID-related non-violent deaths among doctors (55.5%) occurred below the age of 60. The average at death was 56.6 years. The states with highest number of COVID-19 cases had greater number of doctor deaths. Violent deaths among young healthcare workers in the setting of the pandemic requires special attention.

**Keywords:** COVID-19; deaths; doctor; nurse; pharmacist; healthcare worker; frontline; occupational risk; suicide; violent death; accident; pandemic; SARS-CoV-2

## Introduction:

Doctors are frontline health workers during the COVID-19 pandemic, and are exposed to the infection as a result. Deaths among doctors have been reported from all over the world in the context of the pandemic, and have predominantly been among older doctors (1).

Over 900,000 cases of COVID-19 and 23,000 deaths have been reported till 13 July in India, with numbers continuing to rise. In contrast to western nations, healthcare workers in India could be at higher risk of contracting the infection from the workplace due to the relatively large volume of patients and frequently congested working conditions. There are no published data about the deaths of doctors in India.

Healthcare workers are a precious resource and are difficult to replace. Preserving the limited healthcare workforce is therefore part of the global strategy against the pandemic. Mortality and morbidity data have a role in customising this strategy. This is the first study that looked at the profile of doctor deaths in India.

## Methodology:

Since there are no peer-reviewed published papers or professional society websites furnishing the details of pandemic-related doctor deaths in India, data from public domain that reported COVID-related deaths till 13 July were utilised. Deaths occurring among doctors on COVID duty that were attributed to COVID-19 were also included. Mortality from unrelated illness was excluded. Violent deaths from suicide and road accidents occurring among those on COVID-19 duty were counted separately. Greater emphasis was given to information published by mainstream news media companies, as this had already been subjected to at least one editorial review. Although the primary objective was to study doctors' deaths, available information on other healthcare worker deaths was also collected using the same criteria.

A significant source of information on healthcare worker deaths worldwide is social media, although the overall credibility is considered to be lower than conventional news media. Information about COVID-related deaths was gathered from Twitter handles of doctors who reported on their colleagues' demise, from online forums dedicated to healthcare worker deaths and from the official Facebook page of hospitals, clinics, professional societies and medical colleges. Before including in the final list, each name was verified through at least one independent professional source.

The generated list included the names of doctors from all systems of medicine who were practising or residing in India and whose deaths were apparently COVID-linked. Considerable effort was taken to check if any of the information provided was erroneous. Five fake death reports were noted in the process; these were not included in the analysis.

## Findings:

A total of 108 COVID-linked deaths were reported among doctors in India till 13 July 2020. Age was known in 85 cases. The age range was 22-96. Nine among the deceased were women. Among the 108 deaths, three doctors died in road accidents, and one death occurred by suicide.

The average age at death was 56.3, excluding the four violent deaths.

Percentage\* of deaths below 60 was  $45/81 = 55.5\%$

Percentage\* of deaths below 50 was  $24/81 = 29.6\%$

Percentage\* of deaths below 40 was  $17/81 = 21\%$

\*Excluding violent deaths

The majority of the deceased (57%) were general practitioners and physicians, while 27% of the deaths occurred among various surgical specialties. There were three deaths each among doctors working in the fields of orthopaedics, pulmonology, anaesthesia, dentistry and emergency care. Two doctors each from the fields of ophthalmology, general surgery, cardiothoracic surgery and paediatrics were also among the deceased (Fig 1). It was not clear whether the infection was related to work in all cases. The state-wise distribution of doctor deaths correlates with the total number of reported cases (Fig 2,3).

The most common reported source of contracting the infection was the workplace. Some of the general practitioners reportedly saw over a hundred patients in their clinic every day, often in congested settings. There was insufficient information about use of PPE. The first reported death among doctors in India occurred on 9 April, in a 62-year-old general practitioner from Indore. There are anecdotal reports of surgeons acquiring infection from patients during surgery. A 50-year-old doctor got infected after taking care of his mother with COVID-19 at home; both succumbed to the illness. A senior doctor is reported to have developed the fatal infection after a relative visited from overseas. Family members were infected in several cases. There were two instances where both the doctor and wife succumbed to COVID-19. Comorbidity, prolonged working hours, working without breaks, work-related stress, unexpected sudden deterioration, working without PPE, inadequate availability of PPE, inadequate testing facilities, shortage of hospital beds, insufficient ICU beds, were highlighted in a few of the reports.

A 25-year-old doctor who was doing her training in neonatology committed suicide, while a 22-year-old intern was found dead inside her room while on COVID duty. A 53-year-old male physician was killed in a road traffic accident while cycling home from COVID-related work, and a 23-year-old intern was killed when her two-wheeler collided with another vehicle. A few months into his first job after graduating, a young doctor with disability was killed in an accident involving his two-wheeler while returning home from night duty.

Ten nurses died from non-violent deaths apparently related to COVID-19; their average age was 49.6 years. A total of fifteen deaths occurred among other healthcare workers,

including three pharmacists, one of whom apparently died after consuming a self-concocted herbal preparation against the Corona virus.

Two 22-year-old nurses and a 31-year-old ambulance driver were killed in separate road accidents during their COVID-related work, while at least one 22-year-old nurse is reported to have committed suicide while on COVID duty.

### **Discussion:**

The findings indicate that the majority of COVID-related deaths among healthcare workers are from younger age groups. This parallels the reported COVID-19 mortality pattern among the general population in India, where 60% or more of the deaths occurred among people below the age of 60 (2,3). This is consistent with a relatively young workforce in the country, with an average population age of twenty-nine (4). More people in the younger age group get infected with the virus in the course of their work, and this translates to greater number of deaths.

Even though the total number of young deaths in this series is considerable, this does not mean that the individual risk of dying is greater among younger people. The study is not designed to determine age-specific mortality risk. Estimating this will require a denominator that defines the total number of infected individuals in each age group; this information was not available for the study. Limited published data indicate that age-specific mortality trends in India are similar to other nations, with higher absolute death risk among older age groups (2). In other words, an older person is more likely to die if he were to develop COVID-19, when compared to a younger person.

Apart from contracting the infection from outside the workplace, doctors as a group have additional occupational exposure risk to the virus. Unlike western nations, in India, it is common practice for older doctors to see patients at their home-based clinic or at private healthcare establishments after retiring from their regular job. Therefore, there is no arbitrary age limit that excludes work-related exposure for doctors in India. Also pertinent is whether doctors have greater comorbidity or frailty from a sedentary lifestyle, and are therefore more vulnerable. Limited data have suggested that life expectancy of doctors in India is nine years lower than the general population (5).

The question whether healthcare workers are more likely to die during the pandemic than the general population is important, and had been addressed in England and Wales (6). Although initial data from the UK reported no difference between COVID-related mortality rates between healthcare workers and the working age (20-64 years) population, subsequent publications revealed a 50% higher mortality risk among male healthcare workers. A separate subgroup analysis for doctors was not available in that series. Systematically collected age-matched data are needed to reliably compare the death rate among doctors with other groups in India.

The fact that the five states with the most doctor deaths, also happen to have the highest number of reported COVID-19 cases in the same descending order indicate that the data is not skewed, and is a true representation of doctor deaths in the country (Fig 2,3).

This study also brings to focus the topic of violent deaths among healthcare workers in the setting of COVID-19, a problem that was reported from other countries (7). Healthcare workers and their support systems must be aware of the risk of violent deaths from fatigue, stress or aggravation of an underlying mental illness. In addition to standard precautions and surgical protocols, COVID-specific administrative and engineering measures require to be implemented as appropriate for each healthcare setting (8).

### **Limitations:**

Relying on media for information on doctors' deaths has limitations. Not all doctor deaths get reported by news media or social media. Reported clinical information is frequently incomplete, and occasionally erroneous at the source. Some deaths get announced exclusively in doctors' social media forums. As these forums are numerous and disconnected with one another, it is easy to miss several of these announcements. Privacy settings limit access to the content posted in certain professional forums. Without direct access to medical records, it is not always possible to verify if an individual was infected with the SARS-CoV-2 virus. False negative results are known to occur. Deaths from COVID-19 may occur without viral testing being performed. Several COVID-related deaths might be attributed to other causes and not get reported. These factors contribute to underestimation of the number of deaths. A few individuals could die of unrelated cause even if they were positive for SARS-CoV-2. All violent deaths that have an apparent connection to the pandemic need not necessarily be caused by it.

### **Key Messages:**

- 1. Over a hundred doctors have died from the pandemic in India**
- 2. The majority of the deaths occurred in doctors who were younger than 60**
- 3. Most of the deceased were general practitioners**
- 4. More deaths occurred in states that had greater number of COVID-19 cases**
- 5. Young healthcare workers suffer violent deaths during the pandemic**

<b>Doctors' specialty</b>	<b>No. of deaths</b>
Physician/General practice	46
Anaesthesia	3
ER (Casualty)	3
Orthopedics	3
Pulmonology	3
Dentistry	2
Pediatrics	2
Cardiothoracic surgery	2
General surgery	2
Gynaecology	2
Ophthalmology	1
ENT	1
Neurosurgery	1
Pathology	1
Research	1
Urology	1
Retired	4
Internship	1
Violent deaths	4
Not specified	24
Total	108

Fig 1. Doctors deaths categorized by speciality

State/UT	C	A	R	D
Maharashtra <span>(i)</span>	2,60,924	1,05,638	1,44,507	10,482
Tamil Nadu <span>(i)</span>	1,42,798	48,199	92,567	2,032
Delhi <span>(i)</span>	1,13,740	19,017	91,312	3,411
Gujarat	42,808	10,946	29,806	2,056
Karnataka <span>(i)</span>	41,581	24,569	16,249	759
Uttar Pradesh	38,130	12,972	24,203	955
Telangana	36,221	12,177	23,679	365
Andhra Pradesh <span>(i)</span>	<span style="color: red;">↑1,916</span> 33,019	15,144	<span style="color: green;">↑1,003</span> 17,467	<span style="color: grey;">↑43</span> 408
West Bengal	31,448	11,279	19,213	956
Rajasthan	<span style="color: red;">↑98</span> 25,034	5,759	<span style="color: green;">↑124</span> 18,754	<span style="color: grey;">↑3</span> 521

Fig 2. Distribution of Covid-19 among states in India, 14 July 2020

Source: Covid19India.org

C=cases, A=Active, R=Recovered, D=died

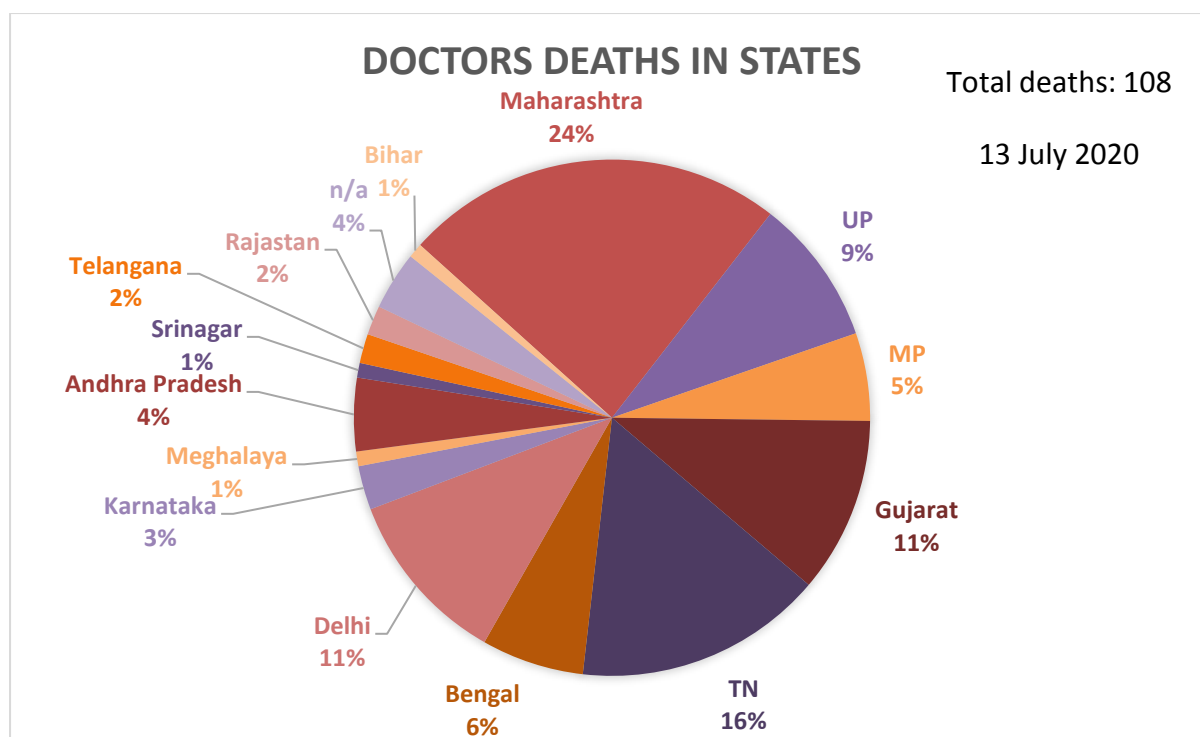


Fig 3. Distribution of Covid-19 doctor deaths among states in India

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**Authors contribution:** Dr Rajeev Jayadevan is the sole author



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