



Travel Epidemiology

■ AN INCREASE IN INTERNATIONAL TRAVEL

According to the World Tourism Organization, there were approximately 1.46 billion worldwide international tourist arrivals in the year 2019, an increase of 3.6% from the previous year. Over the past decade, international arrivals have continued to grow with a 3.6 to 6.8% increment each year, except years for the 2020 and 2021, which saw a dip due to the pandemic. The number of people making international trips continues to grow. In 2020, amid the COVID-19 pandemic, there was a decline in international arrivals, but, it continued to increase thereafter and in the year 2022, the international arrivals increased was 111.2% from the previous year.

These arrivals are at their peak in July and August, and month of January has the lowest international arrivals in the past decade, showing a seasonal trend; people prefer to stay at home in the winter months.

International tourist arrivals in India in the years 2009 and 2019 were 5.17 million and 17.91 million, respectively, and then it saw a dip in 2020; however, an increase in arrivals took place the following year, and it continues to grow till today. The year 2014 saw the highest % change from the previous year in the arrivals over the past decade, i.e. 88.1%. On average, international tourist arrivals in India have increased by 14.67% over the past decade. There is a seasonal trend in the arrivals, where May and September are the months with the fewest arrivals, and December and January have the most arrivals. This could be due to the weather conditions in the country.³ Many travelers prefer India during the winter (November–March), when temperatures are more agreeable.

■ REGIONS VISITED BY TRAVELERS

Worlddata.info states that France was the most visited country in the year 2020, Mexico and the United States as the second and

third countries, respectively, in terms of highest tourist arrivals.⁴ Throughout the years, Europe has been the most visited region, followed by Asia, and Pacific, and the Americas.

Internationally, the proportion of Asian guests has been increasing noticeably for several years. Above all, Chinese, South Koreans, and Taiwanese can be seen in more and more countries, and tend to visit significantly more countries during a vacation than is usual for tourists from elsewhere.⁴

India recorded a total of 18 million tourists in 2019, ranking 14th in the world in absolute terms of international tourist visitors. With 0.013 tourists per resident, India ranked 182nd in the world and 5th in South Asia. This corresponds to approximately 78% of all international tourism receipts in South Asia. In 2020, India generated around 13.41 billion US dollars in the tourism sector alone.⁴

Because of India's size, short-term travelers usually select a region of the country to visit for any given trip. A typical itinerary to the north includes the cities of Agra, Delhi, Varanasi, and cities in Rajasthan state (e.g. Jaipur [the Pink City] and Udaipur). More southern routes might swing through the beaches of Goa and the cities of Bengaluru (Bangalore) and Mumbai (Bombay). In the east, Kolkata (Calcutta) is considered the cultural capital of the country.⁵

■ A TRAVELER'S CHARACTERISTICS

Studies reveal that the below 40 years age group makes up the majority of international travelers. Individuals between 18 to 30 years are more likely to travel and stay abroad, whereas male travelers are slightly more likely in comparison to female travelers. Unmarried individuals and individuals with bachelor's and/or master's tend to travel more. Most of them are either European or American.^{6–8}

During the year 2020, the gender-wise distribution of foreign tourist arrivals (FTAs) comprised 57.8% males and 42.2% females. Through the year 2001 to 2020, female foreign tourist arrivals have been lower than male. India had the highest foreign tourist arrivals from Bangladesh, followed by Canada and the United States combined in the year 2020. In 2020, the highest numbers of FTAs in India were from the 35–44 years age group (20.2%), followed by the age groups of 45–54 years (19.7%) and 25–34 years (18.4%).⁹ In the year 2019, Odisha had approximately 15.3 million and 1.1 lakh domestic and foreign tourists, respectively.¹⁰ Foreign tourist flow

was maximum in the states of Maharashtra, Tamil Nadu, Uttar Pradesh, Kerala, and New Delhi.¹⁰

TRAVEL-RELATED ILLNESSES

Travel-related illnesses are varied; it depends upon the degree of endemicity in the area visited, the duration of stay, the individual behavior, and the preventive measures taken.¹¹ Some of the most common travel-related illnesses in tropical countries are hepatitis A, polio, typhoid, Japanese encephalitis, meningitis, yellow fever, malaria, dengue, diarrheal and food and water-borne diseases.¹²

In countries with poor hygiene, Travelers' diarrhea (TD) seems to be the most common ailment among visitors, with an incidence rate between 25–90% in the first 2 weeks of their stay. The risk of TD is lower among visitors of similarly high-risk countries, as some immunity develops.¹¹ A study done in a Berlin travel clinic showed that "Travel to the Indian subcontinent nearly doubled the risk of becoming ill", and the highest risk for TD is reported from travelers to India, the Middle East, and Maghreb countries.¹³

Malaria is another important risk for travelers going to endemic areas with high incidence in some of these destinations. In Tropical Africa, which is quite frequently visited by tourists, 80–95% of the infections are due to *Plasmodium falciparum*. The incidence rates are lower in most endemic areas of Asia and Latin America, where *Plasmodium vivax* predominates.¹¹

Individual travel characteristic also exposes travelers to various risks, as infections like malaria, traveler's diarrhea, and arboviral diseases seem to occur more in adventure travelers, whereas few water sport predisposes the traveler to a certain subset of infections, such as leptospirosis, endemic mycoses, or schistosomiasis.¹⁴

CONCLUSION

Travelers are an epidemiologically important population as their mobility from one place another exposes them to diseases of a foreign land, and they may act as a conduit for diseases from one country to another. The risk of travel-related illness depends upon various factors, but three important factors are an individual's health status, their travel practices, and the destination country.



The burden of travel-related illnesses has been difficult to estimate as the origin and time of infection are not always possible to trace with accuracy, since travelers are a mobile population.

Therefore, it is to be noted that pre-travel consultation, travel vaccinations, and personal protection are a must; however, these measures may not guarantee a disease-free state abroad.