visits. Furthermore, the mental health of workers was also supported and monitored. In recent survey, 31.7% of respondents reported having fear when work resumed, and 28.6% of respondents reported having anxiety when work resumed.[15] Local universities made mental health hotlines available to provide assistance, psychological consultation services, and even social support. For those with severe illness, psychological intervention by a specialist was recommended to minimize the impact of COVID-19 across the community.

Last but not least, the establishment of public health centers has been suggested to undertake in communities in first- and second-class cities. Their function includes providing medical supplies, as well as storage and distribution of medical products for emergency use (ie, masks, and disinfectants), not only for healthcare workers but also for local residents. We learned the lesson of a rapid increase in the demand for the medical products during early outbreak, and these facilities will quickly meet the medical needs of the community as well as reduce the risk of community spread of the virus.

In the latest press conference, WHO reiterated that although some countries have planned to relax restrictions due to socioeconomic concerns, the COVID-19 pandemic is not over in any country. Ending the COVID-19 pandemic requires continued efforts by individuals, communities, and governments to suppress and control this deadly virus. Finally, the WHO not only welcomes the accelerated advancement and implementation of SARS-CoV-2 antibody testing, which will help map infections in the community population; but will also provide technical, scientific, and financial support for sero-epidemiological investigations worldwide.

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Regional difference in the rate of spread of SARS-CoV-2

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To the Editor—After the first case of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was reported in Wuhan, China, in December 2019, the total number of confirmed cases had risen to 1,800,000, globally, and the total number of deaths had exceeded 120,000 by April 15, 2020.[1] During this period, vast

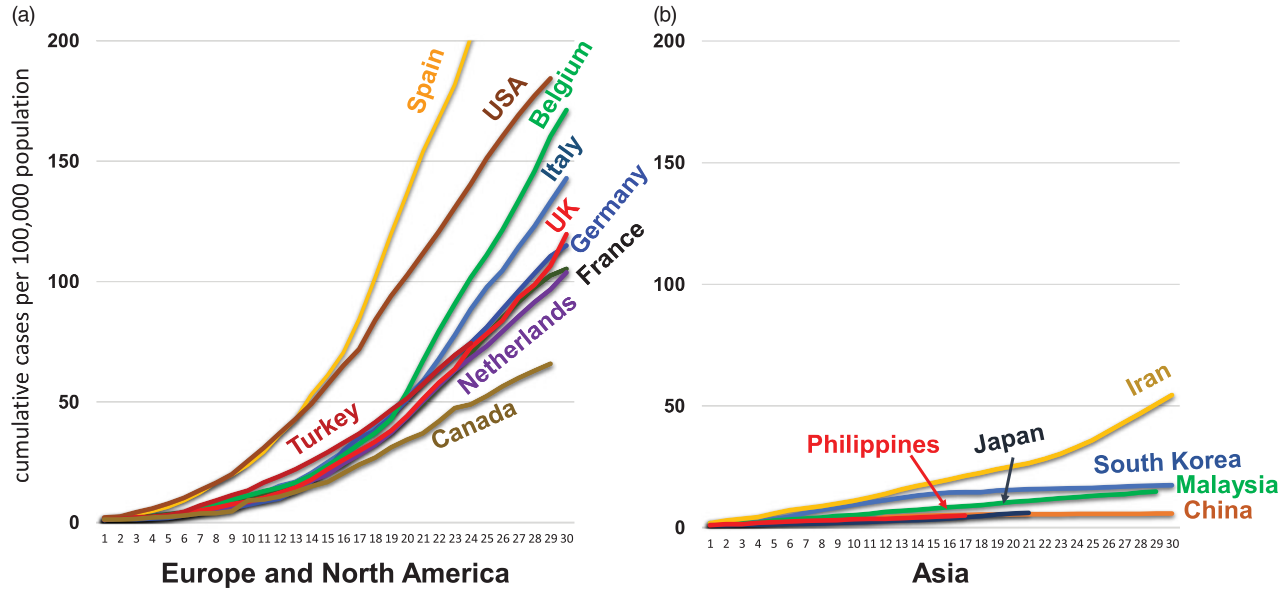

Fig. 1. Cumulative incidence of SARS-CoV-2 infection in countries in Europe, North America, and Asia.
The rate of spread is shown by the slopes of the cumulative incidence curves in (1) Europe and North America and (b) Asia. The cumulative incidence is shown per 100,000 population.

epidemiological data were collected globally that can provide clues about how to address this pandemic.

Here, we focus on the regional differences in the rate of spread of SARS-CoV-2 in Asia, Europe, and North America, and we discuss how these differences arose. All of the data we analyzed were obtained from the World Health Organization.[1]

To assess the regional differences in the rate of spread, we prepared growth curves of the cumulative cases per 100,000 population in 16 countries by calculating the ratio between the total number of confirmed cases and the country's population. The target countries were chosen using 2 criteria: countries (1) with >10 million population and (2) with >3,000 confirmed cases by April 6, 2020. Overall, 6 Asian countries met these criteria (China, Japan, South Korea, Malaysia, Philippines, and Iran); 8 European countries met these criteria (France, Germany, Spain, Italy, United Kingdom, Belgium, Netherlands, and Turkey); and 2 North American countries met these criteria (United States and Canada). The growth curves for the subsequent 30 days were plotted, starting once the cumulative incidence exceeded 1 case per 100,000 population. India was not included, despite meeting the first 2 criteria because it had not reached the cumulative incidence threshold of 1 case per 100,000 population by April 6, 2020. This analysis revealed that the cumulative incidence of European and North American countries rose exponentially in a similar manner (Fig. 1a), whereas those of Asian countries did not (Fig. 1b).

A Student *t* test of the difference in cumulative incidence per 100,000 population at 17 days in Asian countries compared to that in European and North America countries revealed a statistically significant difference ($P < 0.001$), suggesting that some underlying factors may be affecting the rate of spread.

We questioned why the rate of spread of SARS-CoV-2 has been much slower in Asian countries than in European and North American countries. The reason for the small number of confirmed cases and total deaths due to SARS-COV-2 in Japan has been a subject of debate. Some have attributed it to the high level of discipline exhibited by Japanese people, such as full-time wearing of face masks and frequent handwashing. However, we propose that the limited number of PCR tests conducted is the main reason for the small number of confirmed cases and that the underdeveloped private practice system and strict government policy have prevented people from undergoing PCR testing in Japan.[2] Although the low cumulative incidence per 100,000 population in Japan is striking, the incidence rates of the other Asian countries are also much lower than those of European and North American countries.

The small number of cases reported by China and South Korea since the incidence peaked in these countries has also been a subject of debate. Despite the large size of the susceptible population in China and South Korea, the number of new cases per day has been 100 or less since the middle of March 2020. One hypothesis is that Bacillus Calmette-Guérin (BCG) vaccination protects against respiratory viruses.[3] BCG vaccination is routine in most Asian countries; however, scientific evidence supporting that BCG protects against coronavirus is currently lacking. Habitual physical contact (hugging, kissing, and shaking hands) or hesitation in wearing face masks in public have been proposed as reasons for the faster spread in Europe and North America.

These hypotheses may account for some of the differences in the of spread among regions; however, we present a new hypothesis that Asians have resistance to coronaviruses. There have been several coronavirus outbreaks in Asia in the past. SARS coronavirus caused an outbreak in China in 2002 (8,422 persons were infected and 916 people died in 37 countries)[4]; Middle East respiratory syndrome (MERS) coronavirus led to 858 deaths due to severe respiratory illness in Saudi Arabia in 2012[5] and in South Korea in 2015.[6]

Considering the multiple opportunities for exposure to coronavirus in Asia, Asian people may have acquired some degree of immunological or genetic resistance to coronaviruses through repeated exposure over a long period, and this might have reduced the impact of the COVID-19 pandemic in Asia. We acknowledge the need for further research to determine the reasons for the variable rate of spread; however, the COVID-19 pandemic could provide clues that could help prevent future pandemics.

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A case of COVID-19 with an ultralong incubation period

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To the Editor—A large global outbreak of coronavirus disease 2019 (COVID-19), caused by SARS-CoV-2, has become a critical public health issue since December 2019.[1,2] SARS-CoV-2 spreads by human-to-human transmission mainly via droplets or direct contact, and it has been estimated to have mean incubation period of 6.4 days and a basic reproduction number of 2.24–3.58.[3,4] An understanding of the incubation period is essential to detect epidemiological cases and helpful to determine the quarantine and medical observation period of intimate contacts. Whether SARS-CoV-2 can be transmitted during the incubation period remains controversial.[5-7] Here, we report the case of a patient who had a long incubation period (38 days) and infected 1 close contact with SARS-CoV-2 during the incubation period.

A 50-year-old man (person 1), who worked in Hankou District, Wuhan, China, returned home on January 21, 2020, to a small village in the rural area of Wuhan City. First, he took the city subway, then he boarded an intercity train to a rural town, and finally his brother-in-law (person 2) drove him home by car. After returning home, person 1 lived with his elder brother (person 3), who was a single man with mild deafness who lived alone during ordinary (nonoutbreak) times. From then on, both men did not leave their home. Person 3 lived in an independent house in the small village and had neither gone to other places nor had contacted other people since January 1, 2020. Person 2 sent some food to the house of person 3 on January 17, but at that time, person 3 was not at home because he was doing farm work in the field. Persons 1 and 3 were at home together beginning January 21, 2020, and during this period they met nobody.

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Person 3 developed symptoms of cough and wheezing on February 5, 2020. On February 6, he underwent a chest computed tomography (CT) examination and was suspected of COVID-19 pneumonia. Person 3 was admitted to the hospital for treatment on February 7, and the next day his throat swab test for SARS-CoV-2 was positive by quantitative RT-PCR (qRT-PCR) analysis. During the hospitalization, person 3 was in stable condition without severe complications such as acute respiratory distress syndrome or shock. After treatment, person 3 was discharged on February 23 and isolated himself.

Person 1 began a 14-day quarantine on February 7 and ended on February 21. On February 24, he underwent a routine CT examination before returning home. The results showed very slight inflammation of the lung, but at that time, he still did not have any symptoms. On February 27, person 1 started to have a cough, and he underwent another chest CT test, which indicated progressive pulmonary inflammation, so he was admitted to the hospital for quarantine and treatment. His SARS-CoV-2 test was also positive by qRT-PCR analysis. After treatment, he had 2 throat swab test for SARS-CoV-2 a week apart. The results of these tests were negative, and another chest CT image showed that the inflammation was absorbing. Thus, person 1 was discharged on March 2.

Person 2 was the other man who had initial contact with person 1 on January 21. He lived with his family (his wife and son) from then on, and he had a family dinner with his other 2 relatives (his brother and sister-in-law) on January 24. These 5 people were in good health until March 6. Under strict isolation control, the villagers basically had no contact, and no other people were reported to have COVID-19 in the village where person 1 and person 3 lived (Fig. 1).

Except for person 1, who came from the Hankou District of Wuhan, the epidemic area on January 21, when COVID-19 was rapidly spreading, person 3 had no contact with other people, especially with infected or suspected persons, for more than a month