MASSIVE DEVELOPMENT

MORE ZOONOTIC DISEASES NOW DUE TO HABITAT LOSS

Covid-19, a new zoonotic disease, is believed to have originated from bats

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SINCE Covid-19 made its appearance, the spotlight has been thrown once again on zoonotic diseases and their impact on human health. The question is: why are we seeing an increase in zoonotic diseases now?

Zoonotic diseases are infections that can be transmitted two ways, either from animals to humans or from humans to animals (reverse zoonosis), said Universiti Teknologi Mara senior lecturer in pharmacology, Faculty of Pharmacy, Associate Professor Datuk Dr Vellayan Subramaniam.

Associate Professor Datuk Dr Vellayan Subramaniam

He said some animals do carry harmful microorganisms — such as bacteria, viruses, fungi or parasites (endo, ecto, blood parasites and tissue parasites) — that can spread to humans.

Vellayan, a former assistant director and head of veterinary services at Zoo Negara and now a consultant on wildlife and exotic animals, said it's important to remember that some infected animals might not show signs of being diseased.

"A healthy animal wouldn't cause an infection. The infection to humans occurs only if the harmful microorganism is in the animal," said Dr Vellayan, a former president of the Malaysian Society of Parasitology and Tropical Medicine and the Veterinary Association Malaysia.

Zoonotic diseases are increasingly common.

The United States' Centres For Disease Control and Prevention estimated that more than six out of every 10 known infectious diseases among humans could be spread from animals.

Additionally, three out of every four new or emerging infectious diseases in people will come from animals.

Covid-19 is a new zoonotic disease caused by a coronavirus. Coronaviruses are a large group of viruses, and animals that carry this virus include hedgehogs, bats, leopard cats, civet cats, ferrets and pangolins.

But not all coronaviruses jump directly from the host animal to humans.

Vellayan said most of the time, when a disease is transmitted from animals to humans, there will be an intermediate host.

In the case of Covid-19, this intermediate host was suspected to be pangolins or a wild animal at the now infamous seafood market in Wuhan, China, which sold exotic animals for consumption.

The original source of Covid-19 is believed to be bats.

The severe acute respiratory syndrome (SARS) virus was also said to have originated from bats and jumped to civet cats before infecting humans.

As for the Nipah virus (another zoonotic infection) that once affected Malaysia, Vellayan said everyone assumed pigs were the culprit and, as such, pigs were culled in large numbers.

However, pigs were only the intermediate host. The source of the Nipah virus was also bats, he added.

Besides pigs, other animals that usually act as the intermediate host for zoonotic infections include rats, lizards, mosquitoes and cockroaches.

Pangolins are suspected to be the intermediate host for Covid-19. FILE PIC

But why is there an increase in diseases originating from animals?

Before Covid-19, there were SARS and the Middle East Respiratory Syndrome and it's only to be expected that more will follow.

Vellayan said in the past, zoonotic diseases were rare in Malaysia because wildlife was well protected in the jungles and humans did not come into contact with these animals.

Now, with massive development and the disappearance of forests and habitats, contact between wild animals and humans is increasingly common.

"We are seeing sick wild animals encroaching on human settlements, and contact with these ill animals can cause infections in humans."

He said when animals get stressed, they start to shed or expel the harmful viruses or bacteria in their bodies.

"For example, when we catch these animals and keep them trapped for days in small cages, they get very stressed and start to expel viruses and bacteria, which can infect humans who come into contact with them."

The way wildlife is consumed also plays a role. If it's served raw or half cooked, it's very dangerous, he said.

He said Malaysia had yet to identify all potential zoonotic diseases that can arise from its wildlife, but some local universities are working on this area with the Health Ministry, Veterinary Services Department and the Wildlife Department.

"For example, in those days, we knew of only four types of malaria. Now, we have a fifth type, called monkey malaria.

"If people get infected by it, which happens when a mosquito bites an infected monkey and then bites a human, it can be difficult to diagnose."

Vellayan said it's crucial for more research and documentation to be done on zoonotic diseases given their impact on human health.

He said Malaysians will not get Covid-19 from their pets, but infected people can transmit the infection to companion and farm animals.

However, no such case has been recorded in Malaysia.

He said given the pandemic, it's crucial that those handling animals, whether at zoos, animal shelters, farms or those working with wild animals, get themselves checked and practise preventive measures at work.

This includes washing their hands and changing their clothing after coming into contact with animals.

Zoos should be thoroughly cleaned and the animals checked regularly to ensure they are healthy.

He said zoo workers, staff and farm workers must be screened for Covid-19 as they may spread the disease to animals if they are infected.

Professor Dr Syafinaz Amin Nordin, Universiti Putra Malaysia's (UPM) Medical Microbiology and Parasitology Department head, said based on reported genomic studies, bats could be a source of Covid-19, while pangolins were another possible source. Further study may provide more information, she said.

Professor Dr Syafinaz Amin Nordin

Syafinaz, a clinical microbiologist based at UPM's Faculty of Medicine and Health Sciences, said examples of domestic and production animals that may carry zoonotic diseases include cattle, pigs, camels and birds.

In addition, wildlife such as bats may also carry unknown or novel diseases.

"Among the reasons for increased outbreaks of zoonotic diseases is the loss of wildlife habitats due to development, consumption of wildlife and human intrusions on animal ecosystems, which have increased the exposure of humans and domestic animals to wildlife," she said.

Hunting and illegal trafficking of wildlife for pets and food is also a factor.

She said when it comes to breeding animals for consumption or handling wildlife, handlers should always keep hands clean and wash with soap and water.

They should also use gloves, protective outerwear or other Personal Protective Equipment and cover any cut or abrasions they may have to prevent transmission of infections through broken skin.