

UGM Researcher: Natural Herd Immunity Application Is Unsafe

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The herd immunity approach to prevent the spread of the new type of coronavirus that causes COVID-19, SARS-CoV-2, is currently bringing a controversy in the community.

Dr. Mohamad Saifudin Hakim, M.Sc., Ph.D., as a lecturer and virus researcher at the Faculty of Medicine, Public Health, and Nursing (FKKMK) UGM, explained that herd immunity is a condition when a group or human population is immune or resistant to the spread of an infectious disease. To achieve this group immunity, a large portion of the community must have protection within their body against infection. Therefore, the majority of the society that has been protected will be able to defend a small proportion of people who do not have good immunity, for example, because there are contraindications to the act of vaccination.


"The virus does not need a host (host) to persevere its life cycle. And when individuals in the population are resistant to the virus, the virus can no longer find a host to live," he explained on Thursday (4/6).

Hakim said there were two ways to create resistance for this group. First, artificially through vaccination. Vaccination aims to stimulate the body to form immunity before being exposed to infection by a disease naturally.

Second, with natural infections. This group's immunity is obtained when a person is infected naturally with the disease. Furthermore, the body will respond by forming protection when it has been successfully recovering from the infection.

"So, there are two ways to form herd immunity. They are infected by viruses or bacteria naturally or by vaccination," said the alumnus of Erasmus University Medical Center, Rotterdam, the Netherlands.

According to him, herd immunity through vaccination is much safer compared to natural



infections. It is because the vaccine has been designed in such a way either from a viral component or a weakened virus. The function is to stimulate the formation of immunity but does not cause illness or disease. Besides, vaccination does not generate an individual to become infectious or can be contagious because the vaccine material is only made from virus particles (one part of the body of the virus) or an attenuated live virus that has lost the potential or transmission genes. The method of vaccination has also been studied through thousands of studies worldwide. It only causes minimal side effects to the body known and can be anticipated by trained health workers.

In contrast to it, herd immunity with natural contamination is very risky. Not only does it cause illness or disease, but individuals affected by natural infections also can become agents of transmission. These conditions will increasingly take many casualties until the stage of transmission can stop after the remaining individuals can survive and have resistance. Meanwhile, in the case of COVID-19, there is no certainty whether the naturally acquired immunity against SARS-CoV-2 really can protect a person for a long time. Besides, there is also no guarantee that it will not be infected again.

"Unfortunately, for the current condition, the vaccine is still quite far from the development stage to be able to overcome COVID-19 effectively," explained the lecturer of the Department of Microbiology, FKMK UGM.


The discovery of an effective vaccine and still a long way to go makes many countries have to suppress the transmission of the SARS-CoV-2 virus with strict social activity restrictions. He continued, applying the herd immunity scenario with natural infections to overcome the spread of SARS-CoV-2 in the eyes of scientists is undoubtedly not upright. Because practically, it is the same as allowing certain vulnerable groups of people to be affected by severe infections. For example, old age groups, community groups with comorbid diseases, and individuals with autoimmune disorders or gifted allergies.

Many countries, including Vietnam, have proven that they can control the transmission of the SARS-CoV-2 virus with strict activity restrictions. They do not need to wait for herd immunity to form. World experience with previous SARS-CoV outbreaks in 2002-2003 also shows that outbreaks can be suppressed by isolation, quarantine, lockdown, identification of carrier animals, without having to wait for herd immunity to form.

Therefore, Hakim stressed that the concept of herd immunity must not be applied or be a goal in tackling the outbreak of COVID-19, where the infection was still growing wildly. Society should not be left free, like the conditions before there was an outbreak.

"The government must continue to apply strict rules such as recommending to keep wearing masks when doing activities outside the home. In addition, also keeping a distance, maintaining cleanliness by washing hands, avoiding public crowds, limiting social activities, conducting isolation and quarantine for those exposed to viruses and others," explained Hakim who is currently in the middle of preparations with a research team of the Children's Health Review Center to conduct a Phase III Rotavirus Vaccine Clinical Trial.

Meanwhile, some people understand the discussion of easing large-scale social restrictions (PSBB)



and the application of New Normal in Indonesia as a strategy of herd immunity freely and uncontrolled. However, he considered it as a wrong assumption. New normal does not mean that the government does not let the society move like there is no outbreak spreading. The intent of the government applied the New Normal regulation is to make people start to resume their normal activities. However, they should still implement health protocols such as washing hands with soap, wearing masks, keeping a distance, avoiding crowds, and implementing clean and healthy lifestyles with efforts to control the spread of infection.

"In the New Normal era, the government did not implement herd immunity without control, but with a slightly opened social restrictions accompanied by a behavior change campaign. Nevertheless, this step still has implications for the formation of herd immunity, even in the long run," he explained.

However, according to him, this step is still at risk of failure. The certainty of whether herd immunity really can be achieved or not is still questionable. The reason is, until now, there is no valid data and evidence on how resistance to SARS-CoV-2 formed after natural infection.

Some studies report that immunity to the SARS-CoV-2 virus that causes COVID-19 only appears in only 10 percent of all infected individuals. Thus, protocols that should be emphasized more by the government are measures to prevent the spread of epidemics.

However, he hopes that the government will not be too hasty in implementing the New Normal next July. He hopes that the government is still willing to review the plan. We know from seeing the national trend, the number of positive cases of COVID-19 in the country still tends to increase in various regions. Therefore, efforts to prevent the spread of the virus still need to be optimized supported by an increased capacity to conduct tests, contact tracing, and accompanied by various quarantine contingency/emergency efforts to prevent the emergence of new clusters.

"National trends continue to rise, and there has not been a sign of a consistent significant reduction. The government should only apply New normal after a sloping curve or a consistently considerable decrease in the number of cases. So, if New Normal applied in July, the government must be prepared if there will be more new cases appeared," he explained.

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