

# Sextuple Helix Model for Recovery COVID-19 in Indonesia: A Scoping Review

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**Submission date:** 16-Apr-2022 05:42AM (UTC+0700)

**Submission ID:** 1811704054

**File name:** 1st\_ICASTCS\_Full\_Paper\_28.docx (84.33K)

**Word count:** 5049

**Character count:** 27872

# Sextuple Helix Model for Recovery COVID-19 in Indonesia: A Scoping Review

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**Abstract.** COVID-19 is a new disease caused by the coronavirus since 2019 that occurred in Wuhan, China, which was suspected to be an acute respiratory syndrome that was severe enough to eventually be referred to as SARS-CoV2. Prevention of COVID-19 transmission can be done in several ways, one of the most important is avoiding direct contact with COVID-19 sufferers. If direct contact is unavoidable, maintaining quality personal hygiene is the next major step that is sufficient to ensure prevention. Prevention that can be used is to use the Sextuple Helix model must continue to be used in making important decisions to control a disease or pandemic such as COVID-19. The implementation of comprehensive interventions using academia, social communities, industry, government, media, and the environment is an effective means to reduce the spread of COVID-19. This study uses a systematic review method with a scoping review approach. The conclusion is Researcher and academicsist, Industry, Environment, Media and Information, Government, and Social Groups have a role to recover COVID-19 Pandemic, they need to collaborate provide information, provide a program, and evaluating what has been done to reduce the number of spread COVID-19.

## BACKGROUND

COVID-19 is a new disease caused by the coronavirus since 2019 that occurred in Wuhan, China, which was suspected to be an acute respiratory syndrome that was severe enough to eventually be referred to as SARS-CoV2. WHO has signated COVID-19 as a health problem with a global emergency status with the highest level of vigilance. WHO China Country Office reported the discovery of A case of pneumonia with unknown etiology in Wuhan City, Hubei Province, China, on January 7, 2020, which was later designated as a new type of coronavirus

(novel coronavirus, 2019-nCoV). (Yura Witsqa Firmansyah, Fathan Fuadi, Sugiester S, Widyantoro, & Fadli Raihansyah, 2021)

The spread of SARS-CoV-2 occurs from human to human. The main source of its spread can be found through droplets (fluids from the body) that come out when sneezing and coughing. This causes the spread of this virus to be faster and more aggressive. The high number of COVID-19 cases in the Indonesian province can be caused by one of them, namely the easy access to community mobilization to or from Indonesia.

The Ministry of Health of the Republic of Indonesia issued the 5th Revision of the Coronavirus Disease Prevention and Control (COVID-19) Guidelines in July 2020 in response to the spread of coronavirus due to its increasingly rapid and widespread spread. The guidelines contain an appeal for people in Indonesia to always follow government decisions through the Ministry of Health to carry out COVID-19 prevention protocols.

Prevention of COVID-19 transmission can be done in several ways, one of the most important is avoiding direct contact with COVID-19 sufferers. If direct contact is unavoidable, maintaining quality personal hygiene is the next major step that is sufficient to ensure prevention.

In addition, vaccination can be done to increase the antibody of each individual, but the vaccine does not immediately start a health crisis. Because achieving herd immunity would require vaccination of a large part of the population, and therefore a huge challenge. To succeed in global efforts to immunize billions of people as quickly as possible, governments need to give priority to addressing the issue of trust – trust both in vaccines and in the agencies responsible for vaccination efforts. They need to increase confidence among the public in the effectiveness and safety of vaccines, as well as the capacity of governments to competently manage logistical challenges. (Y. Zhu, Xie, Huang, & Cao, 2020)

Prevention that can be used is to use the Sextuple Helix model, the Sextuple Helix model is an integrated effort that involves cross-sectoral control of cases in an area. The Sextuple Helix must continue to be used in making important decisions to control a disease or pandemic such as COVID-19. The implementation of comprehensive interventions using academia, social communities, industry, government, media, and the environment is an effective means to reduce the spread of COVID-19.

## METHOD

This study uses a systematic review method with a scoping review approach. Topics generally, what is studied is general in nature and can be researched with various designs studies. The purpose of this method is to assess the size and coverage of the COVID-19 control literature in Indonesia that available and provide information on new research areas to other researchers, resulting in potential practical and research implications. The articles used in the results and discussion are 20, below is the article screening process,

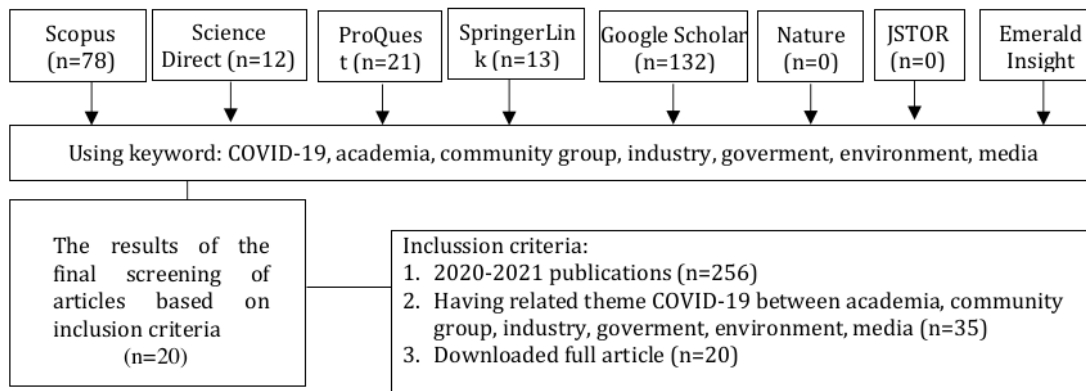


FIGURE 1. Screening Article Process

## RESULTS AND DISCUSSION

### Researcher and Academicist

The ability of available human resources to control COVID-19 must be met, both in terms of academic qualifications and educational background. Several planned programs and activities have been prepared by these human resources. Decision-making based on the facts of the case study has been well done. This case study is used to prevent the transmission of COVID-19.

The success rate lies in the available and newly created knowledge according to the sextuple Helix Model. Sextuple Helix is an innovation model that can overcome the existing COVID-19 pandemic through the application of knowledge and knowledge because it focuses on social exchange (society) and knowledge transfer within a particular country or nation-state subsystem. Sextuple Helix's 'nonlinear' innovation model that combines knowledge, and natural environmental systems together into one 'interdisciplinary' and 'transdisciplinary' framework to provide a step-by-step model for understanding quality-based effective development management, restoring balance with nature, and enabling future generations to live in plurality and diversity on earth. (Shodiq, 2021)

Sextuple Helix in the academic or knowledge field has links with five other factors such as social communities for exchanging information, industry for developing science and technology, the government in making policy on the results of the studies discussed, media for distributing all the results that have been studied, and environment which plays an important role in the spread of COVID-19.

A person's insight and education is very influential on the recovery of covid. As in the book Trustcovid-EP, Role THE, Governments OF, 2021 states that efforts to improve the community's ability to detect misinformation as well as their media and scientific literacy can help to reduce the uncertainty that drives the spread of covid by not being hesitant about vaccinations. (Bashir MF, Ma B, Bilal, Komal B, Bashir MA, Tan D, 2020; F. Zhu et al., 2019)

### Industry

Industry is part of the sextuple helix model which also has a role in supporting the recovery against COVID-19. Basically, all types of industries are required to ensure the health of their workers. One way that can be done is through health protocol education. The industry provides a place to wash hands with soap, performs temperature screening for employees who will enter the office, supports and organizes vaccinations for workers. Service industries such as hotels, travel, etc. have an obligation to protect consumers against the transmission of the coronavirus. The hospitality industry is required to ensure hygiene and sanitation of rooms, toilets, swimming pools, breakfast rooms, meeting rooms. Tightening visitors can be done by showing a vaccine card, visitors who do not have a vaccine card are not allowed to stay. The hospitality industry can be used as an alternative place for isolation and treatment for COVID-19 patients when hospitals are overlapping. (Qi H, Xiao S, Shi R, Ward MP, Chen Y, Tu W, 2020)

Basic industries such as chemical production have a role to play in the recovery of COVID-19. By providing affordable medicines for COVID-19 patients. The health industry goes hand in hand with the basic chemical production industry, in terms of providing isolation and patient care facilities with good hygiene and sanitation. The educational qualifications of health workers are expected to be in accordance with their duties and functions, to minimize the risk of transfer of duties and functions to health workers. (Asweros, 2020; Y. Zhu et al., 2020)

The food service industry can play a role in the recovery of COVID-19 in a way, food production and processing activities must be carried out properly and correctly. Cooking utensils sanitation must be in good condition, the hygiene of chefs and waiters must be ensured to comply with health protocols. The distance of the place to eat is 2 meters from the others. (Dijk, 2020) The food service industry can innovate by implementing online food ordering with the involvement of online motorcycle taxis as partners. (Kimes & Laque, 2011) In addition, if there are consumers who come, purchases can be directed to an electronic wallet to reduce direct contact and interaction. (Jiang, Yang, & Jun, 2013) The creative economy industry can help recover from COVID-19 by applying discipline to all crew and artists who will interact. All crew and artists comply with health protocols such as wearing masks, face shields, conducting PCR swabs before shooting activities, and ensuring all workers have access to vaccinations. (Liu Y, Ning Z, Chen Y, Guo M, Liu Y, Gali NK, 2020)

During the pandemic, customers have high concerns about food hygiene. Therefore, restaurant owners strive to maintain customer trust by documenting the food manufacturing process according to health protocol, disinfectant for restaurant hygiene. (M. Ahmadi, A. Sharifi, S. Dorosti, S.J. Ghouschi, 2020)



## Environment

Environmental conditions also affect the recovery of COVID-19. This is related to air pollution and climatological-meteorological conditions such as temperature, humidity, rainfall and wind speed that have an influence on the recovery of COVID-19. Spread of the corona virus through droplets that can be scattered in the air conditions of temperature, humidity, rainfall, and cardinal directions are related to the immune condition of the human body. With an extreme climate, humans experience a decrease in immunity so that Covid can easily enter the body. an environment with normal temperatures makes the virus not easily spread because these conditions are related to an environment that is not humid. In addition, the impact of Covid-19 in the world is also related to environmental conditions, namely reducing gas emissions caused by the greenhouse effect. (M. Ahmadi, A. Sharifi, S. Dorosti, S.J. Ghouschi, 2020; Moriyama M, Hugentobler WJ, 2020)

This is because the world's flights are down 100% and there are restrictions on social activities and transportation. Activities that need to be carried out when climatic conditions are uncertain and extreme, so we need to improve healthy environmental conditions. starting from hygiene and environmental sanitation such as washing hands using soap and providing public equipment by minimizing it to touch.

The use of alcohol hand sanitizer below 60% should be avoided because it can cause bacterial and viral replication. The best soap for washing hands is liquid soap but it is still allowed to use bar soap as long as it is given water first so that there are no viruses / bacteria that land. In Indonesia, the Indonesian Government Response In COVID-19 Disaster Convention, the recommended standards are set by the Ministry of Health of the Republic of Indonesia to prevent human-to-human spread of covid-19 is to visit the community to carry out PHBS (healthy and clean lifestyle) first on the environmental conditions where they live so that the environment supports the recovery of covid and a healthy lifestyle by washing hands regularly, apply etiquette coughs and sneezes, cooks meat and eggs until cooking and avoiding contact with sufferers respiratory ailments such as cough. (Kemenkes RI, 2020)

In a review article (Firmiyah et al., 2021), air pollution such as PM2.5, PM10, CO and O<sub>3</sub> parameters have a positive relationship value on COVID-19 transmission (Y. Zhu et al., 2020). Even though the study is in China, Indonesia must consider the aspect of air pollution because it has a risk of transmitting COVID-19. Indonesia is a tropical country with very good access to temperature. In a similar case, a study was conducted in Jakarta, Indonesia that the temperature from the minimum average temperature to the transmission of COVID-19. (Bashir MF, Ma B, Bilal, Komal B, Bashir MA, Tan D, 2020)

The study was conducted globally, countries with high rainfall have a high risk of COVID-19 transmission as well. (Rosario DKA, Mutz YS, 2020) High rainfall climate is related to the temperature and humidity in the area that experiences rainy condition in China, temperature and humidity have a bad influence on daily significance COVID-19 cases, as well as temperature and humidity have a strong relationship with daily COVID19 cases (Qi H, Xiao S, Shi R, Ward MP, Chen Y, Tu W, 2020). Besides that, the air temperature is also the most correlated with viral transmission in research in subtropical countries such as China (Liu Y, Ning Z, Chen Y, Guo M, Liu Y, Gali NK, 2020) and Iran (M. Ahmadi, A. Sharifi, S. Dorosti, S.J. Ghouschi, 2020). In a country subtropical, the difference between the minimum temperature and the maximum is very significant, even the results Liu's (2020) research in China shows that minimum temperature can reach less than 5°C. In theory Moriyama et al. (2020) that the virus that attack the respiratory organs will have higher transmission rate at high humidity and low temperature. The theory is in accordance with the research results Ahmadi (2020) Iran, where the province with higher humidity conditions have higher infection rate than other province. (M. Ahmadi, A. Sharifi, S. Dorosti, S.J. Ghouschi, 2020; Moriyama M, Hugentobler, 2020)

Wind speed is inversely proportional to significant effect on the addition of Covid-19 cases in the research conducted by Ahmadi 2020. Meanwhile, research in Brazil conducted by Rosario et al. (2020) shows speed to the addition of Covid-19 cases at the level of moderate. Results of numerous studies on transmission Covid-19 by airborne transmission conducted by Feng et al. (2020) shows that the wind speed and relative humidity is very influential on transmission of Covid-19 through the air. (M. Ahmadi, A. Sharifi, S. Dorosti, S.J. Ghouschi, 2020; Rosario DKA, Mutz YS, 2020; Y. Zhu et al., 2020)

## Media and Information Technology

Media and information technology have an important role in overcoming Covid-19, where currently the outbreak of the virus has been going on for a long time and there are also many victims who can be cured, eventually die. For

this reason, the role of media and information technology is very much needed by the community in fighting the deadly virus Covid-19.

Some of the important roles of the media in dealing with Covid-19 include providing the media with the latest news about the Covid-19 virus, at least it can help the public to find out the latest information about the impact of this deadly virus. so that it indirectly affects people's lifestyles, especially concern for personal hygiene and the environment is increasing. (Hao Yu, Xu Sun, Wei Deng Solvang, & Xu Zhao, 2020)

This proves that the role of the media is very important, especially to increase awareness of the Covid-19 virus outbreak. and also the role of the media in providing information about health protocols that must be applied in order to provide understanding to people who are still confused so that a virus and disease-free environment can be created. the role of the media can also be used to prevent the spread of hoaxes, this is because there are parties who are not responsible for the news being disseminated who do not know the truth, for that the public must be wise in filtering all types of information correctly. with this the role of the media is very much needed in disseminating the validity of information so that it can be useful for the wider community if the information submitted can be trusted to be true. (Kemenkes RI, 2020; Shodiq, 2021; Sukmana M, Aminuddin M, 2020)

The role of information technology is no less important in dealing with Covid-19, especially in learning in the world of education, where the outbreak of this virus throughout the world has become an inhibiting factor in the field of education because many educational institutions require learning from home. For this reason, many educational institutions are forced to carry out learning using E-Learning (Shodiq, 2021). This is where the role of technology cannot be underestimated because it sees many educational institutions competing to develop internet and electronic-based learning facilities for the continuity of the teaching and learning process. the role of technology information during this pandemic is very clear because there is a change from face-to-face meetings in the classroom to meetings using electronic media. if educational institutions take the wrong steps, it will result in learning not being able to run well. For this reason, it is necessary to get used to adapting to changes in new teaching and learning activities because educational institutions must cover all needs educators and students during the teaching and learning process.

Pandemic forced restaurant owners to review food delivery as a also in restaurant marketing by using online services or instant couriers. This step is taken for maintain business and increase revenue due to reduction in quantity customers who come directly to the restaurant. In addition, to minimize transmission, payments are made with digital wallets, the risk of transmission can be reduced because customers and business owners or employees are not in direct contact. (Widyasari MC, 2021)

Technology and media are very influential on the recovery of covid. As in the book Trustcovid-EP, Role THE, Governments OF, 2021 states that other approaches include toolkits to help detect false information. Other countries have created educational materials on disinformation. The Danish Health Authority has published a video on a website that provides guidance on how to detect fake news, including, for example, by verifying whether it is comes from an authoritative source and is published in several outlets (Trustcovid- EP, 2021)

## Government

Covid-19 is a new virus that can spread quickly. Therefore, the efforts of the government in the recovery of the Covid-19 have played a major role in suppressing the number of Covid cases so that they do not increase. Various countries are competing to make new government policies to reduce the rate of covid in various ways according to the environment of each country.

In Indonesia, the role of the government is very large. The government has issued many new policies or regulations, such as the preventive efforts carried out by strict supervision at the entrance to Indonesia from other countries including airports, ports, and land border crossing posts. early detection as a form of supervision, especially for 19 areas that have direct access to China, namely Jakarta, Padang, Tarakan, Bandung, Jambi, Palembang, Denpasar, Surabaya, Batam and Manado. In addition, the government also issued a policy regarding tourism activities that were temporarily closed and the implementation of the Community Activity Restriction (PPKM) which was contained in several stages in operation and was enforced starting from office activities, education, places of worship, restaurants, and so on. The number of Covid cases is decreasing over time. This shows that the government's program related to the recovery of covid in Indonesia is successful. (Sukmana M, Aminuddin M, 2020; Velasquez CN, 2018)

In addition, the government's recovery from COVID-19 is related to the implementation of vaccinations. Information regarding the need to vaccinate has led to various perceptions and assumptions among the public.

Currently, there are still many Indonesians who are not ready to inject vaccines, because they are still afraid and hesitant to carry out the vaccination process. The lack of clear information conveyed is also a factor in the lack of public confidence in the type of vaccine used. So, what is the role of the government in building public confidence to be willing to vaccinate?(Moriyama M, Hugentobler WJ, 2020)

Basically the vaccine is to stimulate antibodies, so it is important to do in preventing the transmission of the virus. So, the government must carry out persuasive public communication to the public, such as explaining in detail and easy to understand about vaccines, what processes and procedures are, how safe is the type of vaccine used, how the vaccine works, as well as straightening out information and assumptions that are not Correct. the government must also collaborate with several parties so that people can have confidence and are willing to vaccinate. Parties such as the media, community leaders, and religious leaders are parties who have a big influence in the community, so that the communication process with the community will be easy.

Actually, there are only three things the government needs to do, namely communication, education and information. These three things must be intensively explained to the public, so that if the information obtained is clear and comprehensively transparent, public trust in the government will be built and they will be willing to vaccinate. To support the running of the vaccination, the government has implemented in several public facilities and when we apply for a job, it is mandatory for someone to have previously vaccinated. So that government programs related to vaccination for covid recovery can run optimally until the target is achieved.

Covid recovery carried out by the government also reveals the health sector in the policies made. in accordance with Velasquez, 2018 there is a law that mandates citizen participation in regulating health. This mandate refers to community participation, particularly in planning, monitoring, implementing, and administering health programs which are key actions to ensure the right to health. In this initiative, community members make many decisions, with guidance and support provided by government collaborators.(Velasquez CN, 2018)

## Social Groups

A social group is two or more people who have a common identity and interact with each other in a structured way to achieve a common goal. The role of social groups in the recovery of covid is also very much needed (Calancie L & et al, 2021). Define socialization or community engagement can build awareness of the problem, gain insight into a problem, and can develop the capacity of community members to solve problems, especially in this case the context of the Covid-19 virus.

Social groups can start from the environment where they live, work, hobby activities, and so on where they support each other and help each other in overcoming this covid. There are many small things that have a big impact on social groups related to their role in the recovery of covid. when compared to other countries, the Indonesian people have a strong culture of mutual cooperation because the collectivity culture of interdependence of the community can spontaneously work together to help each other for their brothers and sisters who are affected by Covid-19 (Baker, Wilkerson, & Brennan, 2012). These aids can be related to health, materials, basic materials and so on. In Indonesia, social groups are very visible within the scope of the population, which is dominated by neighborhood units (RT), RWs, and cluster areas where if one relative is exposed to Covid, other residents assist in the reporting process. consumption needs when the resident undergoes isolation. In addition, in some places there is also cooperation which is divided into several shifts to wash hands before entering the complex or residential area. This is done so that the community can also live a cleaner life to prevent the spread of the covid virus.(Kemenkes RI, 2020; Sukmana M, Aminudin M, 2020)

Research Petiwala 2021, There is evidence that health-oriented cross-sectoral collaboration can have a positive impact on public health outcomes, where there is a role for social groups in reducing morbidity in the community. Active community be strategy possible more suitable for promoting sustainability because they tend to go beyond a one-time activity(Huang, R. H., Liu, D. J., Tlili, A., Yang, J. F., & Wang, 2020). with this, they would indeed need some time and resources of everyone involved, and they can produce an action that is expected by organizations or social groups in a system of alignment of processes and outcomes. (Chicago: Health Research & Educational Trust, 2017) According to Mansuri, 2004, it is very important that community empowerment through social groups can create fewer new problems for those who have the resources to cope with the increased engagement requirements. In addition, the voice of a community or social group can add intellectual capacity and experience to harmonize society by welcoming zero cases on covid.(Mansuri G, 2004; Petiwala A, Lanford D, Landers G, 2021)



## CONCLUSION

Sextuple Helix in academics or knowledge is related to five other factors such as social communities to exchange information, industry to develop science and technology, government to make policy on the results of the studies discussed, media to distribute all the results that have been learned, and a conducive environment. play an important role in the spread of COVID-19. The hospitality industry can be used as an alternative place for isolation and treatment of COVID-19 patients when hospitals overlap. The food service industry can implement online food ordering by involving online motorcycle taxis as partners. Regarding the environment, countries with high rainfall have a high risk of COVID-19 transmission. The role of the media is very important, especially to increase awareness of the Covid-19 virus outbreak and provide information about health protocols. In addition, the government's recovery from COVID-19 is related to the implementation of vaccinations. The role of social groups in the recovery of covid is also very much needed. There are many small things that have a big impact on social groups related to the recovery of covid.

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