



A Study of Post COVID-19 Disaster in Indonesia: A Lesson Learned is a Lesson Earned

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ABSTRACT

The rapid and sudden arrival of the COVID-19 pandemic has overwhelmed everyone. In this article, the author summarizes various issues and problems in Indonesia that arose during the COVID-19 pandemic. These issues included the desecuritization of the COVID-19 issue; the masks scarcity and high price of masks; public confusion over the policy of *testing, tracing, treatment (3T)*, social restriction policies, and terms related to COVID-19 that often change; social problems and poverty; rumors and fake news that accompany vaccination program; shortage of medical equipment and health resources; and the problems experienced by medical personnel such as fatigue, mental health issues, and even death. It is known that COVID-19 is a new virus. Therefore, at the pandemic's beginning, no one knew its characteristics and how to deal with it. This confuses policy makers around the world in formulating a formula to deal with COVID-19. Subsequently, the policies often change according to the development of the virus and science itself. Thanks to the stakeholders' role, the pandemic situation in Indonesia has gradually recovered. However, there are some notes that we can learn from Indonesia's pandemic to avoid the same problem if similar conditions occur in the future. As the title of this paper, "a lesson learned is a lesson earned". Finally, the authors summarize four formulas to minimize similar problems in the future, including: 1) strengthening medical resources and infrastructures; 2) disease prevention through health promotion and education; 3) strengthening the national emergency institutions; and 4) improving crime and corruption surveillance system.

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Introduction

When this manuscript was written, the COVID-19 pandemic has lasted for at least 25 months [1], infected at least 541 million [2] people, and resulted in the deaths of at least 6.32 million [2] people. In Indonesia itself, the first case of COVID-19 was detected on March 2, 2020 [2]. Since then, the COVID-19 virus has infected more than 6.07 million people in Indonesia and resulted in at least 157,000 deaths [2].

The COVID-19 pandemic arises unexpectedly. Unfortunately, this overwhelms everyone, including the stakeholders and the community. In this article, the author summarizes various issues and problems in Indonesia due to the COVID-19 disaster. In addition, the authors present an elaborate discussion about the lessons that can be drawn from the COVID-19 pandemic. Further, this manuscript also discusses several possible solutions that can be applied in the future to avoid similar problems. Thus, all parties might be able to prepare themselves if an incident similar to the COVID-19 pandemic arises in the future so that the casualty can be minimized, and the pandemic can be overcome more quickly.

Problems That Arise During the COVID-19 Pandemic

A. Desecuritization of COVID-19 Issues in the Early Period of the Pandemic

The first case of COVID-19 was reported in Wuhan, China, on December 31, 2019 [2]. In Indonesia, the first COVID-19 infection case was reported on March 2, 2020 [2]. Actually, there is a three months gap that policyholders can use to prepare and anticipate COVID-19 infections so that negative impacts can be minimized.

Table 1. The Government Statements that Considered Underestimating the COVID-19 Issue [4]

Statement Maker	Date	Statement
27 Januari 2020	Former Minister of Health (Terawan Agus Putranto)	Prevention of the corona virus is to not panic and afraid, just "enjoy" and eat enough food. [5]
7 February 2020	Coordinating Minister for Political, Legal, and Security Affairs (Mahfud MD)	Indonesia is the only major country in Asia that has not had a positive case of the corona virus. [6]
11 February 2020	Former Minister of Health (Terawan Agus Putranto)	Discrediting the research of Harvard T.H. Chan School of Public Health [7] which concluded that the corona virus should have existed in Indonesia, but was not detected [8].
15 February 2020	Coordinating Ministry for Economic Affairs (Airlangga Hartarto)	The corona virus cannot enter Indonesia because of complicated bureaucracy [9].
17 February 2020	Minister of Transportation (Budi Karya Sumadi)	Joking that there is no corona virus in Indonesia because people are immune since they like to eat <i>nasi kucing</i> [10].
24 February 2020	Secretary of Ditjen P2P, The Ministry of Health (Achmad Yurianto)	Japanese citizens who tested positive for the SARS-CoV-2 virus after returning from a trip to Indonesia were not COVID-19 cases. He insisted that SARS-CoV-2 was different from COVID-19, even though COVID-19 was the name of the disease, while the virus that caused it was named SARS-CoV-2 by the International Committee on Taxonomy of Viruses (ICTV) [11].
26 February 2020	Vice President (Ma'ruf Amin)	The corona virus is not brave enough to come to Indonesia because of the prayers (<i>doa</i>) and <i>istigasah</i> [12].
29 February 2020	Senior Staffs of The Executive Office of the President of the Republic of Indonesia (Ali Mochtar Ngabalin)	There is no corona virus in Indonesia because the virus does not develop in tropical countries [13].

In fact, until February 2020, the Indonesian government seemed to be trying to desecuritize the COVID-19 virus. This can be seen from government statements that did not consider the COVID-19 virus as a threat, even though experts have predicted that the COVID-19 virus may already exist in Indonesia [3]. The government also did not immediately close the

immigration gate for foreign nationals, including those from the COVID-19 epicenter, Wuhan, the People's Republic of China. The government statements that are considered to underestimate the COVID-19 issue, among others, are summarized in Table 1

In addition, there were several blunders on the part of the government. Instead of an epidemic approach, the government used an economic approach in dealing with the COVID-19 problem in the initial infection period. Even at some points, the government encourages tourists to come and travel to Indonesia by relaxing the regulations and reducing the travel's fee. This blunder might have increased the level of infection with the COVID-19 virus in Indonesia. These are summarized in Table 2.

Table 2. The Government Statements that Indicates Economical Approach in Dealing with COVID-19 [4]

Statement Maker	Date	Statement
7 February 2020	Staff of the Ministry of Transportation (Irawati)	The government asked domestic airlines to offer cheaper flight tickets to Bali, North Sulawesi and Bintan [14].
12 February 2020	Minister of Transportation (Budi Karya Sumadi)	The government is considering incentives for the tourism and aviation industries, including cutting the amount of non-tax revenue levies, instructing PT Angkasa Pura I and II to lower landing fees, and urging hotels to provide room rental discount [15].
17 February 2020	President (Joko Widodo)	The government is considering providing incentives for tourists and travel agencies [16].
20 February 2020	President (Joko Widodo)	The government decided to intensify investment to accelerate economic growth [17].
20 February 2020	Coordinating Minister of Maritime and Investment Affairs (Luhut Binsar Panjaitan)	Want foreign workers from China to be able to return to Indonesia immediately after the corona virus subsides [18].
20 February 2020	Minister of Transportation (Budi Karya Sumadi)	The government will provide financial aid measures to revitalize the economy and support airline operators [19].
24 February 2020	Coordinating Ministry for Economic Affairs (Airlangga Hartarto)	The government will allocate IDR 72 billion for influencers to encourage the tourism sector, IDR 98.5 billion for airlines and travel agents, IDR 103 billion for promotional activities, and IDR 25 billion for tourism activities [20].
25 February 2020	President (Joko Widodo)	The government provides discounted flight ticket prices and waives hotel and restaurant taxes [21].
25 February 2020	Minister of Finance (Sri Mulyani)	The government will provide a stimulus package worth IDR 10.3 trillion, which will focus on the tourism, airlines and housing sectors [22].

On the other hand, the government has actually begun to respond to the COVID-19 issue, as evidenced by the announcement by the Ministry of Health that on January 27, 2020, 195 thermal scanners were installed at 135 entrances to Indonesia [23], and 100 hospitals had been prepared to treat infected patients, and then followed by instructions to the hospital to create an isolation room [24]. Furthermore, on January 31, 2020, the government planned to temporarily stop imports from China to prevent infection [25], and on February 5, the government decided to close access to and from China [26]. Moreover, the government evacuated 238 Indonesian citizens from Wuhan and placed them in quarantine in Natuna for 14 days [27]. Further, after Singapore announced its orange warning for the COVID-19 outbreak, Indonesia also raised its travel alert for Singapore [28]. In addition,

the Ministry of Manpower also stopped the placement of Indonesian migrant workers in mainland China on February 7, 2020 [29].

B. Challenges in COVID-19 Prevention Efforts through National Innovations

In response to the Pandemic situation, the government has accelerated the research and development. These efforts include vaccine developments, covid disinfectant spray booth, and *eucalyptus* necklaces.

Until now, the government continues to strive to meet the needs of vaccines in Indonesia, one of which is by producing domestically made vaccines, namely the Merah Putih vaccine and the Nusantara vaccine. Significant progress is shown in the development of inactivated virus-based vaccines [30] (Dwipayana, 2020). The Merah Putih vaccine has criteria that must be met, which are safe, effective, halal, and can be produced in sufficient quantity to meet the needs of the Indonesian people. Furthermore, in contrast to Pfizer and Moderna vaccines, which require a temperature of -25°C to -28°C for storage, the Merah Putih vaccine has an uncomplicated supply chain in storage, which can be stored at a temperature of $2-8^{\circ}\text{C}$ [31] (Ministry of Health, 2021). Pre-clinical trials of this vaccine were carried out in 2021, and the kick-off phase 3 clinical trials were conducted in June 2022 [32] (Ministry of Health, 2022).

In the manufacturing process, the Merah Putih vaccine has technical, clinical, and funding challenges. To maintain the quality of vaccine products, GMP (Good Manufacturing Practice) regulations are needed, which are only owned by a few pharmaceutical industries [33] (Jatraningrum, 2021). These limitations are an obstacle in developing the Merah Putih vaccine. Another obstacle is the potential for the emergence of new mutations, so it is feared that these variants are immune to the Merah Putih vaccine.

Government efforts in accelerating vaccination can help minimize the emergence of new mutations. On the other hand, the more people get vaccinated, the more difficult it is to get research subjects for the Phase 3 Merah Putih vaccine clinical trial. It should be noted that the requirement to be a research subject in a vaccine clinical trial is a person who has never received a COVID-19 vaccine. In this case, it takes commitment and support from the government both in technical and financial aspects to be able to realize this vaccination program which still has many challenges that need to be resolved immediately.

Meanwhile, *Vaksin Nusantara* which was developed by the former minister of health, Terawan Agus Putranto, received skeptical views from many academia and the society itself. The development of *Vaksin Nusantara* is controversial because it does not follow the typical stages of vaccine development. Eventually, the former minister of health is kicked out of the Indonesian Doctors Association or *Ikatan Dokter Indonesia* (IDI) due to his controversial vaccine development [34]. Experts have argued that *Vaksin Nusantara* is not an actual vaccine since it uses dendritic cells previously loaded with the spike protein of SARS-CoV-2. Until the time when this manuscript was written, the government has never approved the public use of this 'vaccine' due to its failure to meet good clinical practice (GCP) [34].

According to the Drug and Food Supervisory Agency (BPOM), 71% of the 28 volunteers in the trial experienced side effects such as muscle pain, headache, fever, rashes, sore throat, cough, and nausea. Among them, at least three volunteers experienced an unusual rise in cholesterol levels, and one volunteer experienced hyponatremia, or a high concentration of sodium in the blood, after receiving a shot [34].

Despite its controversy and failure to meet GCP, many prominent figures from cabinet members, lawmakers, and businessmen to celebrities and artists have voluntarily participated in the development.

On the other hand, efforts to install disinfectant spray booths in various government institutions and facilities were later found to be ineffective. In fact, the WHO does not recommend someone to spray disinfectant on the body because of the dangerous risk if it comes in contact with mucous membranes [35]. Inhalation of chlorine gas (Cl₂) and chlorine dioxide (ClO₂) may cause severe irritation of the respiratory tract.

The government's efforts to prevent COVID-19 through the ministry of agriculture by developing a COVID-19 eucalyptus antidote necklace were also accompanied by controversy. Minister of Agriculture Syahrul Yasin Limpo stated that the ministry of agriculture would expand the use of eucalyptus tree-based Covid-19 antidote necklaces [36]. The necklace is claimed to be effective in killing the coronavirus. The necklace made by the Ministry of Agriculture has passed laboratory results at the Agricultural Research and Development Agency or *Badan Penelitian dan Pengembangan Pertanian* (BALITBANGTAN) and has been tested to kill viruses in 15-30 minutes of use. However, many experts doubt this claim and state that this claim is too premature because this necklace has only been tested in vitro or at the cellular level and has not used the COVID-19 virus directly [37].

C. Masks Scarcity and Masks' Price Explosion

The emergence of the COVID-19 pandemic has forced the government to issue policies to regulate public behavior in order to mitigate the COVID-19 pandemic. These policies are adapted to the problems that arise during the COVID-19 pandemic. Subsequently, the new policies require the community to adapt to a new life paradigm that has never been experienced before, one of which is the application of health protocols.

Implementing the health protocol recommended by the Indonesian Ministry of Health, such as wearing masks, washing hands, and keeping a social distance, is one of the important efforts in mitigating COVID-19. This set of policies requires people to wear masks during their daily activities. The soaring demand for masks, coupled with the limited supply of masks, made the price of masks increase drastically in the first few months of the pandemic. During the pre-pandemic conditions, one box of surgical masks was around Rp. 25,000.00 - Rp. 30,000.00. Meanwhile, at the beginning of the pandemic, the price of the mask jumped to more than Rp. 200,000.00 [38]. In fact, such a high price does not guarantee that someone will get a mask. Even though the price given by the seller is already very high, there is still a shortage of masks in the market. The drastic increase in the price of masks made it difficult for people to buy, thus exacerbating the pandemic situation.

The scarcity of the masks lasts for several months. After that, the availability of masks on the market gradually recovered. This is due to the emergence of new mask manufacturers as a response to the market situation. However, the price of the masks remains relatively high.

This problem drives people to innovate by making face shields, cloth masks, and scuba masks at a relatively lower price and can be used several times, which indirectly increases the income of micro small and medium enterprises or *usaha mikro kecil menengah* (UMKM) and provides new jobs. However, later on, it is found that scuba is not recommended by the WHO due to its inability to prevent the spread of COVID-19 [39].

D. Public Confusion on the Social Movement Restriction Policy

Another policy issued by the Indonesian government to reduce the transmission of COVID-19 is the implementation of social restrictions. Social restrictions are carried out to minimize virus transmission between individuals. In its journey, the Indonesian government has repeatedly changed the terms used.

The term that was first used was social restrictions in the form of large-scale social restrictions or *Pembatasan Sosial Berskala Besar* (PSBB) [40]. PSBB is defined as restrictions on certain activities of residents in an area suspected of being infected with

Corona Virus Disease 2019 (COVID-19) in such a way as to prevent the possible spread of Corona Virus Disease 2019 (COVID-19). The first PSBB was applied between April - June 2020. PSBB policy includes at least offline school and workplace shutdown, restrictions on public religious activities, and/or restrictions on activities in public places or infrastructures.

After the spread of COVID-19 was considered to be under control, the social restriction policy was changed to the transitional PSBB or *PSBB Transisi* [41], which takes effect from June to October 2020. The transitional PSBB aims to loosen permits to open public places such as recreational parks, salons, and zoos. The provisions in the transitional PSBB include: (1) Clean and healthy living behavior or *Perilaku Hidup Bersih dan Sehat* (PHBS), wearing masks, and maintaining distance, (2) Offices are allowed to open with a maximum of 50% of employees working in the office, (3) Places of worship are allowed to open with congregational capacity a maximum of 50%, (4) Enterprises, public spaces, parks, and beaches are opened with a maximum capacity of 50%, (5) Private vehicles, mass transportation, and taxis are allowed to operate with a maximum capacity of 50%.

The rate of infection and death due to COVID-19 has increased again. Therefore, the government issued a new policy called the implementation of restrictions on community activities or *Pemberlakuan Pembatasan Kegiatan Masyarakat* (PPKM) [42]. Later on, Micro PPKM is carried out on a local basis in several cities/districts with high risk [42]. The Micro PPKM aims to reduce the spread of COVID-19 to the sub-district/village level while at the same time continuing to strive for a gradual increase in the economy of the Indonesian people (Minister of Home Affairs Decree No. 41 of 2021 [43]; Decree of the Minister of Transportation No. 18 of 2020 [44]). The implementation of Micro PPKM is regulated based on the Instruction of the Minister of Home Affairs Number 01 of 2021, issued on January 6, 2021. Micro PPKM is enforced from January 11, 2021 and extended until March 2021. Micro PPKM regulates a number of things, including (1) Limiting workplace (maximum 75% of working from home (WFH) by implementing strict health protocols, (2) Teaching and learning activities need to be carried out online, (3) Essential sectors related to the basic needs of the community continue to operate 100 percent by regulating operating hours and capacity, and maintain strict health protocols.

After the implementation of the micro PPKM policy, the government issued an instruction to Thicken Micro PPKM (*Penebalan PPKM mikro*) [45] to Emergency PPKM (*PPKM Darurat*) [46] because the infection rate of COVID-19 had not been controlled. Emergency PPKM is applied to Java and Bali areas that have a level 3 and level 4 pandemic situation assessment, and is valid from 3 - 20 July 2021. Emergency PPKM was later changed to PPKM level 3 and level 4 and was extended from 21-25 July 2021, 26 July 2021- 2 August 2021, 3-9 August 2021, 10-16 August 2021, 17-23 August 2021, 24-30 August 2021. Some rules regarding Emergency PPKM include restrictions on teaching and learning activities, non-essential and essential sectors, eating and drinking activities in public places, places of worship, transportation, and other activities that cause crowds [46]. The implementation of the 5M public health protocol, namely wearing masks, washing hands, maintaining distance, avoiding crowds, and reducing mobility (*Mencuci tangan, Menggunakan masker, Menjaga jarak, Menjauhi kerumunan, Mengurangi mobilitas*) is also further enhanced in the emergency PPKM.

The government has several times changed the terms of social restriction policies, ranging from PSBB, transitional PSBB, PPKM, micro PPKM, thickening of PPKM, to emergency PPKM. Lastly, the government uses a PPKM scale of 1-4 to measure the level of strictness of the PPKM used. Unfortunately, the lack of good communication and socialization from the government made people confused with these various terms.

E. Public Confusion on the New Terms Related to COVID-19

Based on the Presidential Decree No. 7 of 2020 [47], the Task Force for the Acceleration of Handling Corona was formed. In an effort to accelerate the handling of COVID-19, the task force made the guidelines for handling COVID-19. In the guidelines, several terms are used to define COVID-19 cases, such as people under surveillance or *Orang Dalam Pengawasan* (ODP), patients under surveillance or *Pasien Dalam Pengawasan* (PDP), and people without symptoms or *Orang Tanpa Gejala* (OTG). Based on a study by Saputra et. al [48], the use of these terms is acceptable and well understood by medical personnel. However, the findings indicate that the guidelines are too difficult for the public majority to understand. This is because the guidelines have many medical terms and complicated language. On July 13, 2020, the Indonesian government officially changed the terms ODP, PDP, and OTG to suspect, probable, close contact, and confirmed cases [49], adding confusion to the public. Along with the changing pandemic situation and the development of knowledge related to COVID-19, the government has updated the guidebook for handling COVID-19 in Indonesia in 4 editions. Of course, rapid changes require adaptation from medical personnel and the community to avoid confusion in the implementation.

F. Ambiguous Policies on *Testing, Tracing, and Treatment*

The effort to prevent the spread of COVID-19 is also continuously carried out by strengthening the 3T policy, namely *testing, tracing, and treatment*. *Testing* is targeted to match the level of positive COVID-19 numbers, case *tracing* is targeted at 15 close contacts per confirmed case, and the *treatment* given to patients must be in accordance with the severity of the COVID-19 symptoms experienced (Minister of Home Affairs, 2021 [50]). However, in practice, various polemics and problems accompany the implementation of the 3T policy.

Testing is an attempt to find out a person's COVID-19 status. COVID-19 testing can be done with the Genose test, antibody, antigen, and PCR swabs. Article 14 of Law Number 36 of 2009 concerning Health states that the Government's responsibility for health is to plan, regulate, organize, foster, and supervise the implementation of equitable and affordable health efforts by the community, which is devoted to public services [51].

In the early period of the COVID-19 pandemic, PCR swab test prices were very high. Even in January 2021, or about ten months since the COVID-19 pandemic took place in Indonesia, the price of PCR tests in Yogyakarta is still around IDR 2.5 million (results within 24 hours) and IDR 1.5 million (results within 2-4 days). The relatively high price prevents most people from accessing PCR test swabs. This high price, coupled with the government's policy that requires public transport passengers to have negative PCR swab results, catalyze the reduction of the community's economic strength. The high price of PCR swabs also occurs due to the absence of strict regulations governing the highest price threshold for PCR services. After lasting for more than 3 months, this condition gradually improved. The government has loosened the mandatory PCR policy for domestic travelers and replaced it with mandatory antigens, which were relatively cheaper. In addition, the price of PCR tests is also gradually falling.

When this article was written (July, 2022), PCR swabs in Jakarta ranged from Rp. 250,000.00 to Rp. 450,000.00. However, there are differences in prices from one area to another. Based on a survey conducted by the Financial and Development Supervisory Agency or *Badan Pengawasan Keuangan dan Pembangunan* (BPKB) in September 2020, there are significant differences in the prices of PCR Swab tests in Indonesia [52]. The swab test with the highest cost of Rp. 2.800.000, 00 was in Sulawesi, and the lowest cost was around Rp. 200,000.00 in Central Java. The problem remains that there is a disagreement between the government and the non-government subsidized health service providers on the cost of rapid antigen tests (RAT) and PCR swab tests. The high price for sample testing

makes it difficult for people to carry out independent tests for various purposes. This makes it difficult for early detection of COVID-19 cases in Indonesia.

In addition, expressed by the Chairperson of the Eijkman Institute, Prof. Amin Soebandrio, that reagents for COVID-19 test kits were not available in Indonesia until early February 2020 [53]. The Sydney Morning Herald reports that in Indonesia, the number of patients screened for COVID-19 is still very low compared to neighboring countries [54]. Only patients with symptoms were tested for COVID-19, but preventive tests were not carried out in the at-risk group. According to the Minister of Health Terawan [55], this is done as an effort to budget efficiency.

Tracing is an effort to find people infected with COVID-19 by tracking people who have contact with COVID-19 sufferers. One of the efforts to control and limit the spread and transmission of the COVID-19 virus is by tracking and surveillance. However, Global Health Security (GHS) index reveals that Indonesia is ranked the third lowest in Southeast Asia in case tracing [56]. Early detection through examination and contact tracing has not been implemented effectively in Indonesia. In Indonesia, case tracking is mostly coordinated by the police, military, or village officials. However, these community elements have limitations in terms of tools and facilities for examination, as well as knowledge and expertise in identifying cases and possible contacts. It also leaves doubts about the actual number of cases which may be much higher than the official data by the government [57]. Furthermore, government policies that allow COVID-19 sufferers to be treated at home independently or in hospitals according to the severity (COVID-19 Task Force, 2021 [58]) also add to the confusion in the community.

G. Medical Equipments Crisis

During the COVID-19 pandemic, oxygen cylinders have become an essential requirement in treating COVID-19 patients who experience desaturated oxygen levels. It is known that the increase in cases of COVID-19 infection in Indonesia causes a significant increase in demand for oxygen cylinders. When there was a surge in positive cases in Indonesia on July 1, 2021, there was an increase in oxygen demand of up to 48% compared to the previous week [59]. Quoted from the news channel *ugm.ac.id* [60], until July 2021, 72% of the production of oxygen cylinders is distributed for industrial purposes, while the remaining 28% is for medical purposes. Another country that experienced a similar crisis was India [61]. However, they were able to get through the crisis with several strategies, including limiting the use of oxygen cylinders other than for medical use, accelerating its distribution, and receiving assistance from other countries. This was also followed by accelerated vaccination and increased restrictions on population mobility [62].

In addition, during the COVID-19 pandemic, the hospital became overloaded, and the patient's need for ventilators (breathing apparatus) was increased. The increasing need for ventilators cannot be fulfilled by their availability in health services [63]. These limitations have triggered the development of research to develop and create ventilators in emergency situations such as those carried out by Universitas Gadjah Mada [64], Institut Teknologi Bandung [65], and Institut Teknologi Sepuluh November [66]. While the developments are still in the preliminary stage, these developments are expected to reduce the burden on health services related to the availability of ventilators, especially during emergency situations.

H. Public and Society Problems

In society, various new problems arose during the COVID-19 pandemic in Indonesia. In the early phase of the pandemic, uncertain conditions led to the public's panic buying. At this time, people compete to buy and stockpile basic needs on the market because they are

worried about price spikes or market scarcity. As a result, there is a buildup in shopping centers, which indirectly plays a role in increasing the transmission of COVID-19 cases.

This uncertain condition also opens a gap for individuals who want to take advantage of the pandemic situation. Among them are the viral videos of vaccination staff who do not inject vaccines into patients and stockpile the vaccine instead [67] and swab test staff who use used swab devices [68]. In addition, during the COVID-19 pandemic, a new phenomenon emerged in the form of 'vaccine jockey' or '*calo vaksin*'. The government enforces mandatory vaccination rules for people who want to travel or do their daily activities. However, because many people do not believe in the safety and effectiveness of vaccines, there is a 'vaccine jockey'. The 'vaccine jockey' are willing to receive vaccine injections on behalf of others in exchange for some money. The same thing happened in the swab test. Because many people are afraid of swab tests, they are willing to pay others as 'swab jockey' or '*calo swab*' to do swab tests. These things made the COVID-19 pandemic became more difficult to overcome.

Moreover, the pandemic condition in Indonesia is exacerbated by fake news. Among the fake news are: "the thermo-gun temperature test equipment will damage the brain [69]"; "the vaccine contains a dangerous microchip [70]"; the issue of a fake oximeter [71]; and the issue that the swab test kit is inaccurate because when the device is tested on food, the results are reactive.

I. Death of Healthcare Workers due to Fatigue and Virus Infection

The Indonesian Central Statistics Agency or *Badan Pusat Statistik* (BPS) in April 2022 has recorded that 2087 Indonesian medical personnel have died while fighting COVID-19 [72]. It is undeniable that health workers are at the forefront of dealing with this outbreak because they are in direct contact with patients and therefore have a high risk of being exposed to the COVID-19 virus. In an effort to develop Hospital Occupational Health and Safety or *Keselamatan dan Kesehatan Kerja Rumah Sakit* (K3RS), health workers create prevention strategies for work accidents and infection with more emphasis on Personal Protective Equipment (PPE). However, in reality, the PPE used is sometimes inappropriate. In fact, many hospitals or health services in Indonesia are still lacking PPE.

In addition to the PPE problem, the health workers in Indonesia are far from enough and have not been evenly distributed. The continuous wave of the pandemic has overloaded hospitals several times during the peak period of the pandemic in Indonesia. It is reported that during the COVID-19 pandemic, many workers are experiencing an overload which makes them experience fatigue. In addition, during the COVID-19 Pandemic, health workers were required to deal with COVID-19 and non-COVID-19 patients simultaneously. This situation contributes to fatigue, eventually leading them to sickness and even death.

J. Poverty and Corruptions

The COVID-19 pandemic has had complex impacts on the health, social, economic, and security sectors. Therefore, the government has issued various policies in order to suppress the problems that arise so that the problems do not get worse. During the pandemic, in addition to the health sector which had been the main concern, the government also paid attention to other aspects. These aspects include socio-economic aspects, especially regarding the increase in the poverty rate in Indonesia. The Central Statistics Agency or *Badan Pusat Statistik* (BPS) stated that "compared to September 2019, the poverty rate in Indonesia rose by almost 1% in September 2020, bringing the number of poor people to nearly 28 million people or 10.19%" [73]. In addition, COVID-19 caused many people to experienced layoffs, reduced companies', and enterprises' profits, and even

caused the bankruptcy of many companies. These problems make many people fall into poverty, thus encouraging them to commit crimes to fulfill their needs [74].

The poverty in Indonesia has been worsened by the corruption cases, which increased during the pandemic. The emergency situation of the COVID-19 pandemic is being used by irresponsible parties to commit acts of corruption. The survey results from the Indonesian Survey Institute or *Lembaga Survei Indonesia* (LSI) showed that the trend of corruption cases during the COVID-19 pandemic was increasing, with 39.6% of survey results stating that there was an increase in the level of corruption during the COVID-19 pandemic [75]. Since everyone focuses on COVID-19 itself, corruption and crime control have weakened. The COVID-19 pandemic opened a new gap in corruption. Corruptions that occurred during the COVID-19 pandemic, such as the corruption of social assistance or *bantuan sosial* funds by the Minister of Social Affairs [76], within the Ministry of Agriculture [77], Social Department Head or *Kepala Dinas Sosial* Karangasem [78], within the Regional Disaster Management Agency or *Badan Penanggulangan Bencana Daerah* (BPBD) Indramayu [79]; and the corruption of *Program Keluarga Harapan* (PKH) social funds [80] had worsened the economy and poverty in Indonesia.

K. Vaccinations Paradigm in Indonesia

Vaccines are one of the government's main efforts in overcoming the COVID-19 pandemic. In Indonesia, there are five types of vaccines used: Sinovac, Sinopharm, AstraZeneca, Moderna, and Pfizer. Among the five vaccines, Sinovac is the first vaccine used in Indonesia. To date, there is no evidence to suggest a safety threat from using these vaccines. Meanwhile, in terms of efficacy, Sinovac has the lowest efficacy of 78% (Palacios et.al, 2020 [81]), while the highest efficacy is delivered by Pfizer, 95% [82].

The government targets around 208 million people to get vaccinated. As of July 2022, more than 97% met the government's vaccination targets for the first dose of vaccine, 81.57% of the second dose of vaccine, and 26.38% of the third dose. The low coverage of three doses of vaccination in Indonesia could be influenced by the loosening of government regulations regarding restrictions on mobilization. At the beginning of the pandemic, vaccination was an obligation and became mandatory in various policies. Hence many people are taking the first and second doses of the vaccine. However, the vaccination regulations began to be relaxed since the PPKM regulations were discontinued following the reduction in the COVID-19 infection rate.

In addition, fake news spread on the internet also plays a role in public doubt about receiving the COVID-19 vaccine [83][84]. For example, the results of large-scale experimental research [85] showed that surfing in an anti-vaccination site for 5-10 minutes impacted the decision to get vaccinated. In Indonesia, several issues related to vaccination that had made people doubtful were related to safety, halalness, side effects, and the vaccine's efficacy [85]. In addition, false information about the microchip content in the vaccine itself also adds to public doubts. In general, public confidence in vaccination is influenced by the belief in the safety and effectiveness of vaccines, trust in health workers, and trust in policy makers [86]. That way, it will be an effective strategy if the government and health service providers disseminate information on vaccinations and pandemics in complete and periodic developments through the internet. For this matter, the government's efforts to minimize public confusion on hoaxes and fake news through their *hoax buster* section on their official page: *covid19.go.id* should be appreciated. In addition, the government also routinely uploaded updates on the new regulations, news, and recommendations on combating COVID-19 through their official page.

L. Mental Health Issues Among Healthcare Workers During and Post Pandemic

With the COVID-19 outbreak around the world, health care workers encounter a variety of stressors every day in clinical practice, such as increased workloads, adaptation to various rules, and emotional problems such as feelings of guilt and fear [87]. Mental disorders at risk for health workers include anxiety disorders, depression, and PTSD (post-traumatic stress disorder). For example, the CDC (Center for Disease Control) reported that the percentage of people with symptoms of depression or anxiety increased by 5%, and mental health needs that were not met increased by 2.5% from August 2020 to February 2021. Meanwhile, recent meta-analysis studies report the prevalence of PTSD symptoms related to the pandemic as high as 15-22% [88].

The incidence of PTSD is estimated to be higher in health workers than in the general population [89]. In addition, there was a cross-sectional study in Norway in 2020 attended by more than a thousand participants to assess PTSD symptoms in health workers [90]. As a result, health workers who work directly with COVID-19 patients have higher PTSD symptoms than workers who do not have direct contact with the virus. The study also stated that the factors that influence PTSD symptoms in participants include lack of emotional support, excessive burnout, concerns about health and the economy, and increased interpersonal problems. These results are also supported by a similar study conducted in Greece [91]. In this study, it was found that medical service workers experienced moderate levels of PTSS (Post Traumatic Stress Symptoms) caused by the COVID-19 crisis.

There is a framework proposed in [92] to recover the mental crisis caused by the pandemic called the "five essential elements". These elements include the promotion of a psychological sense of safety, the promotion of calm (calming) to overcome anxiety, the promotion of a sense of self-efficacy by increasing self-confidence in one's abilities, the promotion of social bonds, and fostering of hope. In addition to the above elements, to overcome the mental crisis during a pandemic, several strategies can be carried out in the form of providing support and education to the affected population, providing adequate health services, providing various types of flexible interventions, utilizing technology to provide appropriate therapy, and evaluating mental health services which have existed.

Considering the mental issues that are experienced by healthcare workers post-COVID-19 pandemic, research on the impact of the pandemic on frontline workers, especially public service providers, as well as on the provision and development of therapy or prevention for mental problems during current and future pandemics is urgently needed.

Discussion

The COVID-19 pandemic came at an unexpected time. Subsequently, the emergence of problems that accompany the COVID-19 pandemic is unavoidable. The problems that arise are our collective responsibility. Therefore, significant and ongoing efforts are needed to prevent the emergence of similar problems in the future. The authors summarize these efforts into four points below.

A. Strengthening of Medical Resources and Infrastructures

The COVID-19 prevention and control strategy aim to slow and stop transmission, provide optimal health services, and minimize the pandemic's impact. However, these goals are still difficult to achieve and meet challenges due to limited infrastructure and medical resources. The limitation of medical resources was apparent at the peak of positive cases of COVID-19, where many health workers were also exposed to the virus, causing a reduction in the operating hours of health services which had an impact on overcapacity. In fact, many healthcare facilities had been closed for a time due to the rapid COVID-19 infections among their workers.

Furthermore, improving health workers' quality is still needed to handle new diseases or infections. It is hoped that strengthening human resources in health services will enable health workers to master the latest innovations in disease management and, in the long term, can become a strong foundation for the national health system. In addition to limitations in human resources, infrastructure limitations are also still experienced during the COVID-19 pandemic, such as the number of ICU facilities, ventilators, vaccines, and oxygen cylinders that are not sufficient. The stakeholders play an essential role in providing health facilities and ensuring they are evenly distributed.

B. Disease Prevention Through Health Promotion and Education

Efforts to prevent and control the spread of COVID-19 cases in the community can be made through health promotion. Health promotion activities can be delivered directly to society or indirectly through community leaders via socialization, education, or other information media. The content of the information must be as effective and complete as possible. In order for information to be received by the target group, the selection of information media should be adjusted to the information-seeking behavior of the group. Furthermore, through its information media, the government must be able to consistently educate and provide clarification regarding fake news to avoid confusing the community. Finally, the success and adherence to health promotion in the community in the form of socialization and education must be supported by law enforcement efforts against the government's regulations.

C. Strengthening the National Emergency Institutions

The COVID-19 task force chaired by the head of National Board for Disaster Management or *Badan Nasional Penanggulangan Bencana* (BNPB) has the leading role in preventing and controlling COVID-19 in Indonesia. In the task of socializing and educating the community, the disaster task force is expected to be able to convey information as accurately and consistently as possible through the information media it has. Furthermore, socialization and education can be carried out in collaboration with other communities, such that good communication between related institutions is formed.

In addition, in terms of data collection, the disaster task force should be able to process and utilize large data to be used as a basis for decision making. Another important data that needs to be collected is data related to the need for medical devices in health facilities, which need to be processed quickly. This process can effectively be done when utilizing integrated communications. That way, the data can be used efficiently and published publicly as a transparent report. This can also increase public trust in the government and improve compliance with regulations to prevent and control disease-related disasters in Indonesia.

D. Improving Crime and Corruption Surveillance System

Supervision of criminal crimes and corruption is an important factor that is often overlooked in emergency situations such as the COVID-19 pandemic. In fact, rampant criminal crimes and corruption can slow down the handling of a pandemic. The uncertainties and poverties caused by the COVID-19 pandemic have led to the emergence of criminal crimes. In addition, the lack of oversight of the financial system often creates loopholes for corruption. Therefore, it is necessary to improve the surveillance of criminal crimes and the corruption system so that the pandemic can be overcome more quickly.

Conclusion

The rapid and sudden arrival of the COVID-19 pandemic has overwhelmed everyone. In this article, the author summarizes various issues and problems in Indonesia that arose during the COVID-19 pandemic. These issues included the desecuritization of the COVID-19 issue; the masks scarcity and high price of masks; public confusion over the policy of testing, tracing, treatment (3T), social restriction policies, and terms related to COVID-19 that often change; social problems and poverty; rumors and fake news that accompany vaccination program; shortage of medical equipment and health resources; and the problems experienced by medical personnel such as fatigue, mental health issues, and even death. On the good side, COVID-19 has catalyzed research and innovation in Indonesia such as the development of face shields and masks [39], ventilators [64-66], Genose COVID-19 testing kits, *eucalyptus* necklaces [36], and even the development of COVID-19 vaccines such as *Vaksin Merah Putih* [32] and *Vaksin Nusantara* [34].

It is known that COVID-19 is a new virus. Therefore, at the pandemic's beginning, no one knew its characteristics and how to deal with it. This confuses policy makers around the world in formulating a formula to deal with COVID-19. Subsequently, the policies often change according to the development of the virus and science itself. Thanks to the stakeholders' role, the pandemic situation in Indonesia has gradually recovered. However, there are still some notes that we can learn from Indonesia's pandemic to avoid the same problem if similar conditions occur in the future. Finally, the authors summarize four formulas to minimize similar problems in the future, including: 1) strengthening medical resources and infrastructures; 2) disease prevention through health promotion and education; 3) strengthening the national emergency institutions; and 4) improving crime and corruption surveillance system.

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