

A Systematic Review of Omicron Outbreak in Indonesia: A Case Record and How the Country is Weathering the New Variant of COVID-19

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Abstract

Most countries have been struggling in facing the coronavirus. In Indonesia, various proposals and regulations have been introduced as a strategy in handling and preventing the spread of COVID-19, such as the instruction to use masks and for social distancing, travel limitations, area-based restrictions, and vaccination. Unfortunately, COVID-19 has continued to be an issue since a new variant of concern, known as Omicron (B.1.1.529), was identified. Literature review was conducted in this study, featuring 254 cases of Omicron in Indonesia by January 4, 2022. Indonesian government has developed at least five criteria to prevent the spreading of the COVID-19 virus, in particular the Omicron variant. Testing rate in Indonesia still below Malaysia, while tracing and treatment control conducted by the Indonesian government is quite similar, and massive in comparison to Malaysia and Singapore, with the Peduli Lindungi mobile application launched in 2021. Conducting health promotion has become a necessity, with an understanding of the health belief model, engaging the religious leaders, and providing psychological support for mental health issues.

Keywords: Omicron, COVID-19, Outbreak, Indonesia, Case Record

Introduction

Most countries these days have been struggling in facing the coronavirus (COVID-19). Following the first outbreak in China on December 31, 2019, the World Health Organization (WHO) announced that COVID-19 was categorized as a Public Health Emergency of International Concern (PHEIC) (Topcuoglu, 2020; Lestari *et al.*, 2021). Globally, as of January 2022, the positive confirmed cases for COVID-19 were reported at more than 298 million, with approximately 5 million fatal cases (Worldometers, 2022).

A previous study shows that the COVID-19 pandemic has had a detrimental impact in all sectors, particularly in developing countries. It has been shown that the impact among 17 developing countries is greater in contrast to developed countries, e.g. with regard to economy, income, food security, and nutrition issues (Bittan, Hoffmann and Vera-Cossio, 2020). Indonesia, for instance, ranks as the 14th in total worldwide case counts. The total cases have been reported at 4,264,136, with the total of deaths cited at 144,109 cases, just below Colombia (Suryahadi, Al Izzati and Suryadarma, 2020; Worldometers, 2022). The first case originated in Depok, West Java, with a person who had close contact with foreigners. The number of COVID-19 positive patients then continued to increase in a number of areas, with the epicenter in DKI Jakarta as the capital city of Indonesia (Human Initiative, 2020).

Since the president of Indonesia announced the first two cases of COVID-19 on the 2nd of March, the responses that have been discussed include the formation of an operational Taskforce, known the National Board for Disaster Management (BNPB), on the March 13, 2020 (WHO Indonesia, 2020). Several national control measures were taken at different levels, from the presidential and the ministerial level, during the period of January through March 2020 (Djalante *et al.*, 2020). In addition, various proposals and regulations have been introduced as a strategy in handling and preventing the spread of COVID-19, such as the instructions to use masks and for social distancing, travel limitations, area-based restrictions and vaccinations (Susanna, 2020; Hikmawati and Setiyabudi, 2021; Lestari, 2021).

Unfortunately, the COVID-19 has continued to be an issue since a new variant of concern, known as Omicron (B.1.1.529), was identified. It was first identified in Botswana in the beginning of November 2021. This case was reported by WHO from South Africa on November 24, 2021 and considered as a global urgent public health alert (Burki, 2021; Gao, Guo and Luo, 2021; Kleynhans *et al.*, 2021; Ontario, 2021; Kannan *et al.*, 2022). Moreover, a case was also reported in England on December 13, 2021 by the UK Health Security Agency (Burki, 2021) (Ferguson *et al.*, 2021). It was also identified that Omicron affected 117 people in Norway with an attack rate of 74% (Brandal *et al.*, 2021). In Asia, two confirmed cases of this new variant were reported in India on December 3, 2021 (WHO, 2021c). In Indonesia, 47 confirmed cases have been reported by health authorities during December 2021 (Reuters, 2021). In fact, Omicron (B.1.1.529) has significant characteristics, such as a potential for massive mutation and an increase in the risk of reinfections (Ecdc, 2021; Jansen *et al.*, 2021; WHO, 2021a). Further, investigation into Omicron prevention and treatment, involving vaccine effectiveness, has been continuously conducted. Moreover, studies and publications on Omicron in developing countries are still sparse, hence this present study that attempts to answer research questions of the case record of Omicron in Indonesia, and how this country has taken action in order to minimize the worsening of the COVID-19 situation.

Methods

The present study was conducted using a literature review method. The online literature review was carried out via browsing or online platforms such as PubMed, Elsevier and Google Scholar Search. The keywords used as the search strategy consisted of “Omicron (B.1.1.529) case” OR/AND “A new variant of concern (VOC) of COVID-19”, OR/AND “Omicron in Indonesia”. The inclusion criteria of this study were full papers, free of charge (open access), using English/Indonesian Language, published during the last 5 years (2017-2022), and having an ISSN. The exclusion criteria were if the publication found was not suitable with the keywords. The articles that were appropriate were then analyzed using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) method which consists of identification, screening, eligibility and inclusion (Selcuk, 2019).

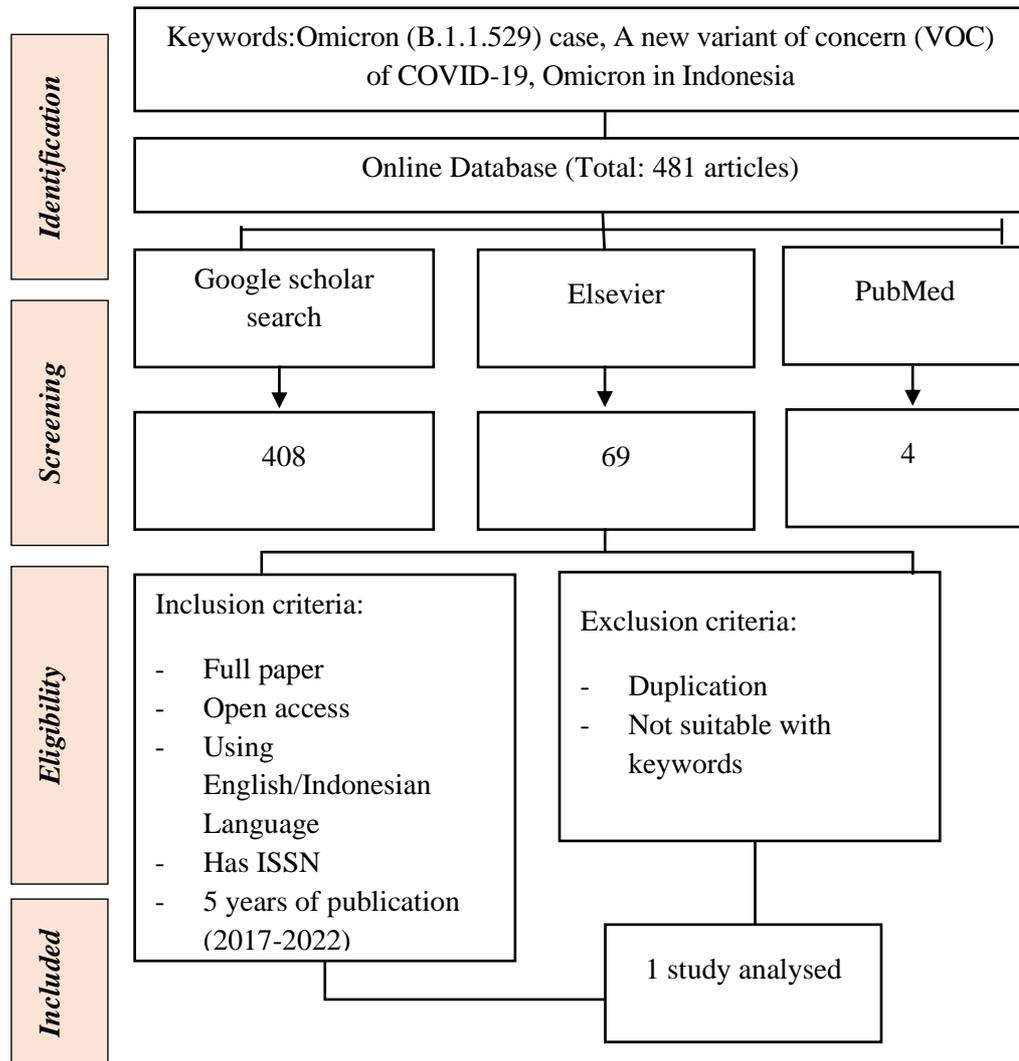


Figure 1. The literature review methods using PRISMA

Results

Based on the literature review conducted, 1 of the 481 articles found in the online databases was identified as meeting the inclusion criteria. Table 1 shows a description of the studies related to Omicron cases in Indonesia.

Table 1. The characteristics of study

Author (s)	Year	Title	Country	Conclusion
(Widyanto, Putri and Paramadina, 2021)	2021	Reporting Tendencies Restrictions on WNA Entry Permits to Indonesia Due	Indonesia	Online media has a positive tendency in responding to the emergence of regulations

to	the	regarding
Emergence	of	restrictions on
New Variant	COVID-19	entry permits
Omicron	and residence	permits for
		foreigners

Table 1 depicts how the studies of Omicron in Indonesia remain few and limited. Hence, in order to expand the analysis of the present study, the authors explore information from Indonesian reports from various internet sources, particularly from the government such as <https://covid19.go.id> (for official COVID-19 information in Indonesia), <https://kemlu.go.id> (official website of Ministry of Foreign Affairs), <https://sehatnegeriku.kemkes.go.id> (Ministry of Health), and the World Health Organization related update on omicron (<https://www.who.int/news/item/28-11-2021-update-on-omicron>). The following is a summary of confirmed Omicron cases in Indonesia from the first case identification until January 4, 2022, as shown in table 2.

Tabel 2. The number of Omicron cases in Indonesia

No	Date	Number of case (s)
1	December 15, 2021	1
2	December 17, 2021	2
3	December 22, 2021	2
4	December 23, 2021	3
5	December 24, 2021	11
6	December 25, 2021	26
7	December 26, 2021	27
8	December 28, 2021	1
9	December 29, 2021	21
10	January 01, 2022	68
11	January 4, 2022	92
Total per January 4, 2022		254

It can be seen that the total number of Omicron cases in Indonesia was 254 cases. Of that figure, 239 cases are international-transmitted cases and 15 are a local-transmitted cases. The first case found on December 15, 2021 was a cleaning officer of Wisma Atlet (a quarantine location) who was assumed to be infected by a resident who traveled from Nigeria.

Table 3 below shows the summary of control measure taken by Indonesian government in fighting against the new variant of concern, Omicron (B.1.1.529).

Table 3. Control measures taken by Indonesian government in handling and preventing the Omicron variant

No	Action	Remarks
1	Circular letter (SE) No. HK.02.01/MENKES/1391/2021	Prevention and Control of Omicron Variant COVID-19 Cases (B.1.1.529)
2	Strengthening 3T (Testing, Tracing, and Treatment)	Including Vaccination

	Strengthening Health Promotion (5M)	Wearing mask, social distancing (1.5 meters), hand-washing, limiting mobilization, avoiding crowding
3	Treatment facilities	+/- thousands of rooms for COVID-19 treatment Oxygen concentrators Oxygen generator Medicine
4	Travel restrictions	Suspending visa issuance for and arrival from 11 countries.

Discussion

The study of Omicron emergence has been continuously conducted. This present study shows that some countries have been infected and they must put their concern to it. In fact, a previous variant of COVID-19 remains an issue. In Indonesia, there were 5,494 active cases in the beginning of January 2021, where the new Omicron variant cases were recorded at 254 cases, and the trends were slightly increased (Covid19.go.id., 2022a). Other Asian countries also reported cases, such as India that reported the first case of new COVID variant on December 3, 2021 (BBC, 2022). In December 30, 2021, the number of new variant cases in Southeast Asia were at 885 cases in Singapore, 739 cases in Thailand, 34 cases in Cambodia, 2 cases and 62 cases in Philippines and Malaysia respectively (WHO South-East Asia, 2021).

Since WHO reminds all countries that Omicron poses a high infection risk, the readiness in preventing this new variant must be improved, for example by enhancing surveillance, laboratory improvement, testing and tracing, vaccination, and public health and social measures (WHO South-East Asia, 2021). The following are the countermeasures taken in Indonesia.

Indonesian government issued a circular letter No. HK.02.01/MENKES/1391/2021 regarding "Prevention and Control of the New Variant of COVID-19 Omicron (B.1.1.529)", signed by the Minister of Health on December 30, 2022. The issuance of this regulation is to strengthen synergies between the central government and regional governments, health service facilities, healthcare human resources and other stakeholders, as well as to equalize perceptions in the management of confirmed COVID-19 positive patients. In further details, there were seven main points covered in this regulation (Covid19.go.id., 2022b). Firstly, all probable and confirmed cases of the Omicron variant, both symptomatic and asymptomatic, must be isolated in a hospital providing COVID-19 services. Secondly, the setting of criteria for Probable cases and confirmation of the Omicron variant involving Probable Omicron variant, which is a confirmed case of COVID-19 with laboratory examination results showing a positive S-Gene Target Failure (SGTF) or Single Nucleotide Polymorphism (SNP) detection test based on Polymerase Chain Reaction (PCR), then considered the Omicron variant. Also, Confirmation of the Omicron variant, namely a confirmed case of COVID-19 with a positive sequencing result for Omicron SAR-COV-2. Thirdly, for every probable and confirmed case of COVID-19 of the Omicron variant in Indonesia that is found, contact tracing must be carried out immediately within 1 x 24 hours for the discovery of close contacts. After being found, every close contact must be immediately quarantined for 10 days in a centralized quarantine facility and with entry and exit test using the Nucleic Acid Amplification Test (NAAT). Fourth, Close contacts, as referred, are people who have a history of contact with probable cases or confirmed cases of the COVID-19 Omicron variant

in Indonesia, where the probable or confirmed cases of symptomatic Omicron variant are counted from two days before symptoms occur until 14 days after symptoms occur, or until the cases are isolated. In addition, with probable or confirmed asymptomatic cases of Omicron variant, this is counted from two days before swab collection with positive results until 14 days later or until the case is isolated.

Fifth, the Criteria for complete isolation and recovery in probable cases and confirmation of the Omicron variant are as follows: In asymptomatic cases, isolation is carried out for at least 10 days since the confirmation of the diagnostic specimen was taken, plus the results of the NAAT examination are negative for two consecutive times with an interval of more than 24 hours. Further, in symptomatic cases, isolation is carried out for 10 days from the onset of symptoms plus at least three days free of symptoms of fever and respiratory problems, and the results of the NAAT examination are negative for two consecutive times with an interval of more than 24 hours. Sixth, provincial health offices and district/city health offices record and report as well as coordinate with the Ministry of Health in efforts to prevent and control cases of the Omicron variant of COVID-19 in Indonesia. The recording and reporting of cases of Omicron variants is carried out using the Allrecord TC-19 application. Last, the financing of isolation in hospitals that provide COVID-19 services for the Omicron variant in Indonesia and centralized quarantine is borne by the State Budget and other legal sources of funds in accordance with the provisions of laws and regulations.

Comparing the testing rate between Indonesia with other countries in South East Asia, Indonesia has done 720 daily tests per million, while Malaysia as the closest country with a smaller population has done 3,592 daily tests per million (ourworldindata.org, 2022). For the tracing, Indonesia has launched the PeduliLindungi mobile application on January 5, 2021, which records the individual COVID-19 status risk profile, including vaccination status, travel history and symptoms, that applies for control measures in public places for tracing the probability of individual risk factors for spreading COVID-19 (kominform.go.id, 2021). In the neighboring countries, Malaysia has the My Sejahtera mobile application and Singapore has Trace Together for tracing the spreading of COVID-19 with added Bluetooth technology features, so each person can profile the risk of COVID-19 near their location (mysejahtera.malaysia.gov.my, 2022; Tracetogether.gov.sg, 2022). By January 11, 2022, Indonesia has treated 4,267,451 positive cases of COVID-19 and 4,116,648 have successfully recovered (96.46%), while 144,144 have died (Covid19.go.id, 2022).

In fact, people with two doses of COVID-19 vaccines can still be potentially reinfected by other new variants that have mutated. The latest variant of COVID-19 virus is B.1.1.529 known as Omicron (WHO, 2021b). In table 2 it can be seen that the total number of Omicron case in Indonesia was 254 cases by January 4, 2022. On January 5, 2022, there were 194,747 daily confirmed COVID-19 cases reported for the whole of the UK. However, this doesn't include all the people who have caught the virus for the second, or even third time. The patients with reinfection ranged in age from 15 to 99 years old. According to the reports on COVID-19 reinfection cases in studies, most cases were detected based on RT-PCR test using nasopharyngeal swab specimens. The minimum and maximum time of reinfection onset from initial infection was reported as between 45 to 172 days (Sotoodeh Ghorbani *et al.*, 2022). A recent study in China suggested patients whose first COVID-19 infection is very severe may have ineffective antibodies, which might make them more prone to severe reinfections (Wu *et al.*, 2020). A study in India among 4,978 health care workers, infected with SARS-CoV-2 from March 3, 2020 to June 18, 2021, showed that the incidence density of reinfection was 7.26 per 100 person-years. A protective association of 86% against reinfection was observed among health care workers who completed the two-dose schedule of BBV152 and for whom at least 15 days elapsed without reinfection after vaccination

(Malhotra, *et al.*, 2022). The current findings should become a consideration for the Indonesian government in policy making regarding testing, tracing and treatment for COVID-19 patients.

Another program undertaken by the government in anticipating the spread of the Omicron variant includes the additional room in hospitals allocated for COVID, at approximately 110,000 in capacity, for about 16,000 oxygen concentrators equivalent (800 tons/day) are distributed to hospitals, especially hospitals that have difficulties in accessing liquid oxygen, providing and preparing 31 oxygen generators, and stocks of therapeutic drugs for COVID-19 patients (CNN Indonesia, 2021). Health promotion should be conducted everywhere, particularly in public areas, to control the spreading of the virus. Health Belief Model (Champion and Skinner, 2008) or the Protection Motivation Theory (Prentice-Dunn and Rogers, 1986) has shown that people will only act on health warnings if they believe that they are personally susceptible to develop the condition against which protection is required, perceive the condition as severe, perceive the preventive action as effective to reduce the threat, and believe they are capable to perform the preventive action (Van den Broucke, 2020). Not only to improve knowledge of the COVID-19, further it is also important to improve the religious side for strengthening health promotion against COVID-19 pandemic. Religion has much to contribute to health promotion, including introducing perspectives on life's meaning and on death, that can differ from those held by many without religious faith. Furthermore, religious leaders are important gatekeepers to their communities and can therefore play a vital role in policy implementation, even when that policy makes no overt reference to religion (Barmania and Reiss, 2020). Health promotion could be conducted as psychological and psychotherapeutic support to people facing mental health issues. While respecting the government's pressing calls to "stay home", this has led many psychologists and psychotherapists, both in the public and private sectors, to provide their professional services via teleconference, telephone, smartphone, etc. (Tullio *et al.*, 2020).

Conclusion

Omicron is the new variant of COVID-19 virus with a potential to reinfect people even with two doses of COVID-19 vaccination. Indonesia has recorded 254 cases of Omicron by January 4, 2022, while the testing rate in Indonesia still below Malaysia. On the other hand, the contact tracing scheme in Indonesia quite similar and massive compared to other countries like Malaysia and Singapore. Health promotion becomes a requisite to prevent the spreading of the COVID-19 virus with strengthening knowledge of people's health beliefs, engaging religious leaders, and providing psychological support to prevent mental health issues.

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