



The characteristic and clinical profiles among COVID-19 patients at the National Emergency Hospital Wisma Atlet, Jakarta in 2021

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ABSTRACT

According to the Indonesian Ministry of Health, there were over four million confirmed cases of COVID-19, with a national death toll of around 100,000 people in 2021. Simultaneously, over 100,000 people were isolated at the Wisma Atlet Kemayoran National Emergency Hospital (RSDC-WAK). The purpose of this study was to determine the characteristics and clinical features of patients to provide an evaluation of health care facilities. This study employed a quantitative approach with a cross-sectional design. This study's participants were patients from 2021, with a total sample size of 46,408. Data was collected through surveillance using an Epidemiological Investigation questionnaire. According to the findings, the patient characteristics data in 2021 included 50.04% women and 49.06% men. Patients aged 20-49 years (68.08%), with mild symptoms (76.05%). Hypertension was the most common comorbid disease (6.11%), with common symptoms. The vaccine was administered to most patients (34.14%), with Sinovac 22.26% as the highest type of vaccine. Report characteristics and clinical features among patients at National Emergency Hospital are critical for reviewing COVID-19 epidemiology annually and providing policy briefs for dealing with future bumped-cases.

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1. Introduction

The ongoing global pandemic caused by SARS-COV-2, which was first detected at the end of 2019, has become a long-term concern that necessitates human resource readiness for international Coronavirus Disease 2019 management (COVID-19). The COVID-19 pandemic has become a long-term health concern because no one knows when it will end because the virus is constantly changing. The World Health Organization (WHO) identified a large

number of COVID-19-causing viral mutations and classified them into two groups: variants of interest and variants of concern. Several factors have contributed to the occurrence of surge capacity in healthcare services. Hospitals are critical for providing healthcare to the general public, especially during natural or man-made disasters. During pandemics, increased disease transmission and unpredictable, high patient demand can have a negative impact on hospital capacity and the overall efficiency of the healthcare system [1]. To deal with the complexities of responding to an epidemic crisis, hospitals must have completed their planning before these disasters occur [1].

Several vaccinations have been approved by the World Health Organization as COVID-19 prevention strategies. However, because the virus is constantly evolving, researchers and health-care workers must ensure that mutations are not powerful enough to overcome the current vaccination barrier. As a result, establishing a healthcare facility specializing in COVID-19 patients is critical, particularly in surge capacity situations where the number of patients exceeds healthcare institutions' ability to handle all of them at once.

Each country should develop a mitigation strategy based on its current situation in order to control the spread of COVID-19. The most important control technique for preventing transmission is to set up a separate isolation/quarantine room for people who test positive for COVID-19 [2,3]. The hospital should also prepare isolation rooms, logistics, staff, and management systems [4–6]. Meanwhile, several countries have renovated buildings/rooms, repurposed stadiums and sports fields, and even constructed new structures for isolation/quarantine areas and health services [7]. The purpose of this article is to thoroughly explain the characteristics and clinical profile of COVID-19 patients at RSDC WAK as an example of how to deal with the COVID-19 pandemic in the future.

2. Method

This was a quantitative study that took a cross-sectional approach. This study included 46,408 total samples from COVID-19 patients isolated at RSDCWAK between January and December 2021. Surveillance collected the data using the Epidemiological Investigation questionnaire, which has been used for two years as COVID-19 control guidance from the Indonesia Ministry of Health. During the interview, this form is tabulated using a spreadsheet. Data is also collected after receiving approval from the medical practitioner team leader and the patients themselves through informed consent. Furthermore, the RSDCWAK research committee issues ethical research. The data was then analyzed using IBM SPSS for observational descriptive (frequency and percentage) statistics. Ethical Clearance was obtained from the Ethic Committee of Universitas Aisyiyah Yogyakarta Number 2127/KEP-UNISA/VI/2022.

In addition, the study focused on age, gender, comorbidities, onset symptoms, severity, immunization status, and history of COVID-19 infection. The age group was divided into three stages: 0-19 years, 20-50 years, and >50 years. Asymptomatic, mildly symptomatic, moderately symptomatic, and severely symptomatic were the four severity levels. The vaccination status was then divided into three categories: unvaccinated, one dose, and two doses with different types of vaccines.

3. Results and Discussion

3.1. Results

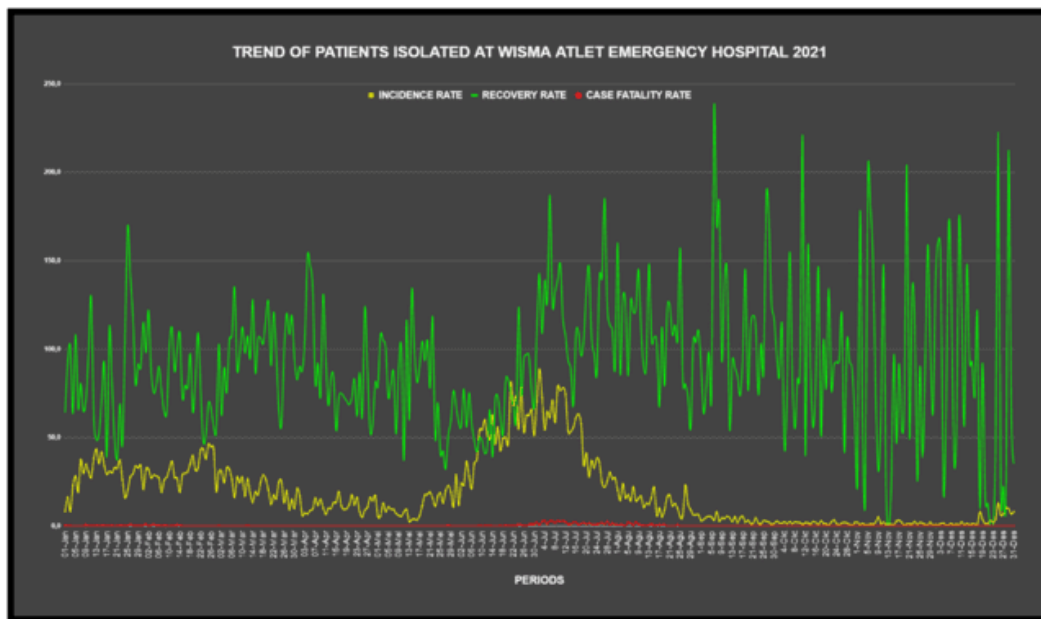


Figure 1. The trend of the total number of in-patients at RSDCWAK from January 1 to December 31, 2021 (RSDCWAK occupancy).

Indonesia officially detected the first case of COVID-19 from early March 2020 to January 31, 2021, resulting in 4,262,720 confirmed cases and 144,094 fatalities [2,8]. The Wisma Atlet Kemayoran National Emergency Hospital (RSDCWAK) was established by converting seven Wisma Atlet Kemayoran residential towers into a quarantine facility for COVID-19 patients with mild to severe symptoms. The residential towers were repurposed for the Asian Games Athlete Villages in 2018. It began in March 2016 and was completed in 2017 using vertical home construction. The RSDCWAK in Jakarta has been operational since March 23, 2020. Because patients with critical conditions were frequently unable to find a place in the referral hospital, the RSDCWAK was initially used in the hospital to treat isolated and asymptomatic COVID-19 patients, as well as COVID-19 patients with moderate symptoms. The emergency hospital, on the other hand, was relocated to handle severe and critical COVID-19 patients.

Table 1 showed the demographic analysis results, which demonstrate that most patients were women between the ages of 20 and 49 with minor symptoms. The most common were patients aged 20-49 (31,934 patients) and those with moderate symptoms (35,506 patients). According to available data, the Sinovac vaccine was administered to the greatest number of patients, followed by Pfizer and AstraZeneca (10,332, 247, and 185 patients, respectively). The most common comorbidity was hypertension, with diabetes coming in second.

The most common COVID-19 symptoms are fever, cough, sore throat, and shortness of breath. COVID-19 reinfection was fairly common, as evidenced by 936 patients of COVID-19 survivors, according to data collected by the end of 2021; however, it is worth noting that the majority of patients healed following COVID-19 reinfection. Patients were referred to other hospitals mainly due to a lack of resources or professionals. Unfortunately, sometimes all referral hospitals were full, and the patients had to be remained under RSDCWAK's

provision. Because of the severity of the patients, 142 people died at the RSDCWAK in 2021. As a result, there was no time to waste waiting for the referral procedure.

Table 1. Patient Demographics

Variabel	Total	Percentage
Gender		
Male	23,008	49.06
Female	23,400	50.04
Age (years)		
0-19	7,317	15.08
20-49	31,934	68.08
>50	7,157	15.04
Comorbidities		
Asthma	888	1.91
Hypertension	2,834	6.11
Diabetes	1,153	2.48
Cardiovascular diseases	420	0.91
Stroke	44	0.09
Bronchitis	74	0.16
Hepatitis	32	0.07
Kidney diseases	32	0.07
Cancer	34	0.07
Obese	272	0.41
Tuberculosis	36	0.08
Chronic Obstructive Pulmonary	220	0.05
Pneumonia	22	0.05
Non-Comorbid	40,626	87,54
Severity		
Asymptomatic	7,527	16.22
Mild symptomatic	35,506	76.51
Moderate symptomatic	2,955	6.37
Severe symptomatic	420	0.91
Symptoms		
Fever	23,067	49.07
Cough	24,92	53.07
Sore throat	7,208	15.05
Shortness of Breath	3,852	8.03
Malaise	3,849	8.03
Diarrhea	81	0.20
Nasal congestion	2,017	4.03
Sneezing	640	1.04
Anosmia	12,946	27.09
Ageusia	6,034	13.00
Headache	9,999	21.05
Cold	12,128	27.09
Pain	5,768	12.04
Nausea	3,902	8.04
Other	2,028	4.04
Survivor		
Yes	936	2.02
No	45,472	97.98

The fact that many people had received two doses of the vaccine was an intriguing finding from our data (Table 2). Sinovac was the most frequently administered vaccination to patients (22.26 percent), followed by AstraZeneca and Moderna (2.54 and 2.55 percent, respectively) it shown in Table 2.

Tabel 2. COVID-19 Vaccine status

Vaccines	Total	Percentage
Vaccines status		
One dose	9,948	21.44
Two dose	5,895	12.70
Unvaccinated	30,565	65.86
Vaccines' brand		
AstraZeneca	1,18	2.54
Convivencia	35	0.08
Johnson & Johnson	52	0.11
Moderna	1,185	2.55
Pfizer	247	1.53
Sinopharm	37	0.08
Sinovac	10,332	22.26
Sputnic V	68	0.15
Convidecia	140	0.30
Zififax	68	0.15
Unknown	9,88	5.38

Patients who have not been vaccinated have a slightly higher exposure to COVID-19 than those who have been vaccinated, as well as a higher likelihood of experiencing symptomatic, more severe symptoms. Detailed distribution of symptoms categories based on the COVID-19 vaccine status could be referred to Table 3.

Table 3. Distribution of Symptoms Categories based on the COVID-19 Vaccine Status

Severity/Vaccines	Unvaccinated	%	One dose	%	Two Dose	%
Asymptomatic	4,687	62.27	1,974	26.23	866	11.51
Mild symptom	23,388	65.87	7,522	21.19	4,596	12.94
Moderate symptom	2,142	72.47	409	13.84	404	13.67
Sever symptom	348	82.86	43	10.24	29	6.90

3.2. Discussion

According to the findings of this study, the percentage of female patients (50.04 percent) was higher than the percentage of male patients (49.06 percent). Gender had no effect on the severity or death rate of COVID-19 patients ($p=0.37$) [9]. The findings of the other researchers were diametrically opposed. Men died at a higher rate than women, with 66.67 percent versus 33.33 percent, respectively. A significant link between gender and mortality was discovered in a systematic literature review and meta-analysis (OR = 1.81; 95 percent CI 1.25-2.62) [10]. Asian men had higher levels of ACE expression, which acts as the cell receptor for SARS-CoV-2 entry [11]. Furthermore, the difference in response to COVID-19 infection between men and women may be due to immunological differences and the lack of an estrogen protective effect in women [12].

The most common comorbidities were hypertension and diabetes mellitus, with 6.11 percent and 2.48 percent, respectively. According to previous research, the most common comorbidities were hypertension (35.9%) and diabetes mellitus (20.17%), followed by obesity (15.95%), heart disease (13.92%), asthma (4.42%), COPD (4.31%), cancer (4.31%), and malignancy (4.31%). (3.99 percent) [13]. In a study of 153 COVID-19 patients, there was a

significant increase in blood pressure (systolic and diastolic) in the post-COVID-19 period compared to the admission baseline. In addition, COVID-19 has the potential to cause new-onset hypertension [14]. COVID-19 hypertensive patients have a 2.5-fold increased risk of death [15]. Diabetes is another comorbidity that accelerates the progression of the disease [16]. Diabetes is expected to continue to rise in Indonesia on an annual basis [17]. Diabetes is associated with elevated serum ACE2, which converts into the SARS-CoV2 entry receptor. Furthermore, diabetics had higher CRP levels than non-diabetics (62.4579.65, p0.01). CRP is an important indicator of inflammation and infection in a patient [18].

Mild symptoms were the most common (76.51%), followed by asymptomatic (16.22%) and moderate symptoms (6.37 percent). The severity levels are asymptomatic, mild signs, moderate symptoms, highly symptomatic, and critical. Patients who had no symptoms and a normal chest X-ray but tested positive for SARS-CoV2 had no symptoms and a normal chest X-ray. Mild symptoms include fever, tiredness, myalgia, cough, sore throat, sneezing, and runny nose, as well as nausea, vomiting, stomach pain, and diarrhea. An acute upper respiratory infection includes fever, lethargy, myalgia, cough, sore throat, sneezing, and runny nose. Moderate symptoms include pneumonia, fever, dry cough, wheezing, and rhonchi. As severe symptoms, cough and fever, diarrhea, shortness of breath, oxygen saturation less than 92 percent, hypoxia, and a respiratory rate less than 30 breaths per minute were all listed. When a patient's respiratory system fails, they are in a critical condition and require immediate medical attention. A patient is in critical condition when their respiratory system fails and they require rapid artificial breathing [19,20].

The most common symptoms among the patients were cough (53.07 percent) and fever (49.07 percent). Shortness of breath is the most common symptom in COVID-19 patients in West Virginia, according to researchers, who discovered that cough (4.1 percent) and fever (4.1 percent) are the most common symptoms (3.9 percent) [9]. Previous studies found that cough/dry cough (59.6%) and fever were the most common clinical symptoms in COVID-19 patients (46.9 percent) [13]. Among patients with symptoms such as fever, cough, shortness of breath, and chest X-ray infiltrates, pneumonia was the most common clinical manifestation [21]. Upper respiratory tract infections, such as nasal symptoms, cough, and pharyngitis, are known to be caused by two humans [22]. Fever is an organism's response to toxins that affect its temperature regulation center [23].

In terms of COVID-19 vaccination, the vast majority (65,86%) of patients did not receive it. However, 34,14% of patients were immunized. They received Sinovac (22.26%), AstraZeneca (2.54%), Moderna (2,55%), and Pfizer (1,53%), while the others received Sinopharm, Convivencia, Sputnik V, Zififax, and Johnson & Johnson. The majority of patients were immunized with Sinovac because it was the first vaccine imported by the government in 2021. Following that, in June and July, AstraZeneca and Moderna were used. Based on data collected 14 days after the first dose was administered to health professionals in Manaus, the Sinovac vaccine was estimated to be 49.6 percent effective (95 percent CI 11.3-71.4) against COVID-19 symptoms [24]. Furthermore, a study conducted in the United Kingdom found that the Pfizer vaccine effectively prevents symptoms in adults, with dosage one (60-70%) and dose two (85-90%) efficacy, respectively. The Pfizer/BioNTech vaccine, which is effective in preventing SARS-COV-2 infection and can provide immunogenicity for at least 119 days after the initial immunization, is recommended for those aged 16 and up at a dose of 30 g (0.3 m) (95 percent) [25,26]. Meanwhile, AstraZeneca has a 60-75 percent efficacy against symptoms while also providing additional protection [25].

4. Conclusion

There were four main characteristics of the COVID-19 patients found in this study. Firstly, female patients were slightly higher than males. Secondly, the most common comorbidities were hypertension and diabetes mellitus. Thirdly, most patients had mild symptoms and asymptomatic. Fourthly, fever and cough were the most prevalent symptoms among the patients. The proportion of the patients who did not receive vaccine was still higher compared to those who have received. Effective regulations are required to prevent the virus from spreading.

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Conflict of Interest

The authors declare no conflict of interest.

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