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ORIGINAL ARTICLE

EPIDEMIOLOGY OF COVID-19 CASES IN THE KLATEN DISTRICT IN 2020

Epidemiologi Kasus COVID-19 di Kabupaten Klaten Tahun 2020

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ABSTRACT

Background: Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by a new type of coronavirus, and as of September 11, 2020, 210,940 cases have been reported spread across all provinces in Indonesia. Central Java is the province with the 3rd highest cumulative case as of August 24, 2020. On the other hand, Klaten District ranks 11th out of 35 Districts/Cities in Central Java, and it is classified as a moderate risk zone area. **Purpose:** This study aims to describe the Covid-19 cases in Klaten District. **Methods:** This study was a descriptive observational study with a cross-sectional design. The data used secondary data obtained from the Covid-19 Case Report by the Surveillance, Health Quarantine, and Immunization Section of the Klaten District Health Office from March to August 2020. The population of all Klaten District people identified as positive for Covid-19 from March to August 2020. Samples were taken by using the total population sampling technique. Data analysis was presented using univariate analysis in narrative form, tables, charts, and distribution maps processed with health-mapper software. **Results:** Most Covid-19 cases occurred in men (50.31%). The highest confirmed cases happened in the productive age (49.06%), namely between 15-44 years. The area with the most confirmed cases was Wonosari Sub-district, with 72 confirmed cases. Covid-19 confirmed cases increased significantly in August with 180 confirmed cases. **Conclusion:** Klaten District is one of the areas affected by the Covid-19 pandemic with the number of cases that tends to increase since March to August 2020.

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ABSTRAK

Latar Belakang: *Coronavirus Disease 2019 (COVID-19) merupakan penyakit menular yang disebabkan oleh virus corona jenis baru dan sampai dengan tanggal 11 September 2020 telah dilaporkan sebanyak 210.940 kasus yang tersebar di seluruh provinsi di Indonesia. Provinsi Jawa Tengah tercatat sebagai provinsi dengan kasus kumulatif Covid-19 tertinggi ke-3 per tanggal 24 Agustus 2020, sementara Kabupaten Klaten menempati urutan ke-11 dari 35 Kabupaten/Kota yang berada di Provinsi Jawa Tengah dan tergolong wilayah zona risiko sedang.* ***Tujuan:*** *Penelitian ini bertujuan untuk menggambarkan kasus Covid-19 yang ada di Kabupaten Klaten* ***Metode:*** *Penelitian ini merupakan penelitian observasional deskriptif dengan desain penelitian cross-sectional. Data penelitian ini menggunakan data sekunder yang diperoleh dari data hasil Laporan Kasus Covid-19 oleh Seksi Surveilans, Karantina Kesehatan dan Imunisasi Dinas Kesehatan Kabupaten Klaten pada bulan Maret sampai Agustus 2020. Populasi penelitian ini adalah seluruh masyarakat Kabupaten Klaten yang teridentifikasi positif Covid-19 pada bulan Maret sampai Agustus 2020. Sampel penelitian diambil dengan menggunakan teknik total population. Analisis data menggunakan analisis univariat dan disajikan dalam bentuk narasi, tabel, grafik, dan peta sebaran yang diolah dengan software health-mapper.* ***Hasil:*** *Mayoritas kasus Covid-19 terjadi pada orang yang berjenis kelamin laki-laki (50,31%). Kasus konfirmasi tertinggi terjadi pada usia produktif (49,06%) yaitu antara usia 15-44 tahun. Wilayah dengan kasus konfirmasi terbanyak yaitu Kecamatan Wonosari dengan 72 kasus konfirmasi. Kasus konfirmasi Covid-19 meningkat secara signifikan pada bulan Agustus dengan 180 kasus.* ***Kesimpulan:*** *Kabupaten Klaten merupakan salah satu wilayah yang terkena dampak pandemic Covid-19 dengan jumlah kasus yang cenderung meningkat sejak bulan Maret sampai Agustus 2020.*

INTRODUCTION

WHO Country Office in China, at the end of 2019, reported findings of pneumonia cases whose etiology was still unknown. The case was first discovered in Wuhan City, Hubei Province, China. It was not long before China identified the case as a new strain of coronavirus on January 7, 2020 (Ministry of Health RI, 2020). WHO declared the case a Public Health Emergency of International Concern (PHEIC) on January 30, 2020. WHO announced the incident to be a pandemic on March 11, 2020 (United Nations International Children's Emergency Fund, World Health Organization, & International Federation of Red Cross and Red Crescent Societies, 2020).

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is a new type of coronavirus that has never been identified in humans (United Nations International Children's Emergency Fund, World Health Organization, & International Federation of Red Cross and Red Crescent Societies, 2020). Covid-19 cases have increased rapidly, of which 44 cases were reported from December 31, 2019, to January 3, 2020. Covid-19 has spread in several other provinces in China and several countries such as Thailand, Japan, and South Korea (Susilo et al., 2020).

Covid-19 is contagious and has a high transmission rate. It is because the infection is spread through droplets. The droplets are formed when a man speaks or coughs (Wu, Chen, & Chan, 2020). The symptoms appear gradually from mild. The most common symptoms are fever, dry cough,

and exhaustion. However, some patients with Covid-19 do not experience symptoms and can transmit the virus to others (Gao et al., 2021). Even though the risk of transmission is low in people with no symptoms, these people are still at risk of transmitting the Covid-19 (Du et al., 2020).

Coronavirus (CoVs) is a virus with Coronaviridae Subfamily Orthocoronavirinae which can cause disease in birds, mammals and humans (G. A. P. L. Sari, 2020). The spread of the disease is taking place quite quickly in various countries. WHO reported 28,040,853 confirmed cases with 906,092 deaths worldwide on September 11, 2020 (World Health Organization, 2020). There are countries with the highest number of confirmed cases, one of those was the United States, with 14,447,680 confirmed cases. The country with the second-highest confirmed cases was India, with 4,562,414 confirmed cases, and the country with the third-highest confirmed cases was Brazil, with 4,197,889 confirmed cases. In Southeast Asian countries, the number of Covid-19 cases was 5,171,098 confirmed cases. It shows that cases in Southeast Asia are pretty high (World Health Organization, 2020).

The pandemic in Indonesia began on March 2, 2020, with the first case reported and quickly spread throughout Indonesia (Ministry of Health RI, 2020). As of September 11, 2020, there were 210,940 confirmed cases of Covid-19, with 8,544 deaths and 150,217 cases recovered (Indonesia's COVID-19 Handling Task Force, 2020).

Covid-19 has been increasing in almost 34 provinces of Indonesia. The province with the highest number of confirmed cases on August 24, 2020, was Jakarta, with 33,470 confirmed cases. Then the second province with the highest number of confirmed cases was East Java, with 30,315 confirmed cases. Central Java was in the third position with 12,476 confirmed cases (Indonesia's COVID-19 Handling Task Force, 2020). In Central Java, Klaten District ranks 11th out of 35 Districts/Cities and is classified as a moderate risk zone area (Indonesia's COVID-19 Handling Task Force, 2020). The study aims to provide an overview of the Covid-19 pandemic in the Klaten District to control the pandemic.

METHODS

This study was a descriptive observational study with a cross-sectional design. The data of this study uses secondary data. Data collection was implemented by document studies of the Covid-19 Case Report sourced from the Surveillance, Health Quarantine and Immunization Section of Klaten District Health Office. The population of this study was all Klaten District people identified as positive for Covid-19 from March to August 2020. Samples were taken by using the total population sampling technique. This study describes the incidence of Covid-19 cases with an epidemiological approach based on person, place, and time. The variables of this study are gender, age, place, and time of occurrence of Covid-19 cases from March to August 2020.

The variable of gender is grouped into two categories, namely male and female. Age is grouped into four, namely ≤ 1 year old, 1-4 years old, 5-14 years old, 15-44 years old, and ≥ 45 years old. The variable of place is presented using figures based on the cases in each sub-district. The variable of time starts from March to August 2020. Data analysis was presented using univariate analysis in narrative form, tables, charts, and distribution maps processed with health-mapper software. This study has gone through the ethical eligibility test. It has obtained a certificate of ethical acceptance from the Health Research Ethics Commission, Faculty of Dentistry, Universitas Airlangga, with an ethical number 123/HRECC.FODM/III/2021.

RESULTS

Klaten District is one of the districts in Central Java. In 2020, Klaten District had an area of 655.56 km^2 which is administratively divided into 26 sub-districts, 391 villages, and ten wards (Klaten District Health Officer, 2019).

Distribution of Covid-19 Epidemiology based on Person Variables

The result shows that from March to August 2020, most Covid-19 cases occurred in men, as many as 50.31%. The distribution pattern from March to August 2020, the age group of 15-44 years old are mostly infected. The Covid-19 incidence compared by sex shows an increase every month in a certain group, namely the 15-44 years old or productive age group (Table 1).

Distribution of Covid-19 Epidemiology based on the Variable of Place

The result shows that from March to August 2020, the distribution of Covid-19 cases is mostly found at Wonosari Sub-district with 72 confirmed cases. Deep gray color and dot symbol on the

distribution map represents the cases. Area that do not have cases of Covid-19 confirmation are in Kemalang sub-disctrict.

Distribution of Covid-19 Epidemiology based on the Variable of Time

The result of the study shows that from March to August 2020, the highest number of Covid-19 cases in Klaten District was in August, with 180 cases. The number of cases from March to August experienced a fluctuation and increased sharply in August. The first case in Indonesia was reported on March 2, 2020. Then, the number increased rapidly to 128,776 cases as of August 11, 2020, and three provinces got the highest number of cases, namely Jakarta, East Java, and Central Java (Covid19, 2020).

DISCUSSION

Distribution of Covid-19 Epidemiology based on the Variable of Age and Sex

The result shows that the male sex group aged 15-44 got infected more with Covid-19. It is because men usually have a job that requires them to leave the house more often than women, so they are vulnerable to the disease. Compared to men, women typically have a higher level of knowledge than men, particularly in the epidemiology and risk factors of Covid-19 (Hidayani, 2020). Hidayati (2020) showed that men were more exposed to Covid-19 because they tended to be more out of the house, either for work or other purposes. Women tended to behave better than men, resulting in concern for health and the environment (A. R. Sari et al., 2020).

Other study results show that older adult males with chronic comorbid diseases are more at risk of the virus due to weakened immune function. The function of T cells and B cells is attenuated with aging, and excess production of pro-inflammatory cytokines can lead to deficiencies in controlling viral replication and a prolonged pro-inflammatory response (Cen et al., 2020).

According to Wang et al. (2020), SARS-CoV-2 used Angiotensin-Converting Enzyme 2 (ACE 2) as a receptor to enter cells. The high expression of ACE2 in the testes underlined the phenomenon that men had an increased risk of severe disease (Cen et al., 2020). Other study results showed that men were more vulnerable to Covid-19 than women because of biological factors. It explained that the biological level of immunity of men was lower than women, therefore, women were relatively stronger to survive the coronavirus infection (Hidayati, 2020).

The research results conducted by Arifin, Fatmawati, & Zuliardi (2020) also showed that Covid-19 cases were higher in men. Other studies showed that older age had a risk of experiencing death 1,111 times due to Covid-19 by the multivariate analysis, and the risk of death in men who were infected with Covid-19 was higher than in women (Siagian, 2020; Wang et al., 2020). The SARS-CoV-2 cellular receptor expressed ACE2 in the lung of Asian men, so this underlined the higher risk of death in the male population (Wang et al., 2020). The research also reinforces that sex created differences in mortality and susceptibility to the disease. Men were at a higher risk of death than women due to the presence of sex-based immunology or gender differences, such as smoking behavior (Wenham, Smith, & Morgan, 2020).

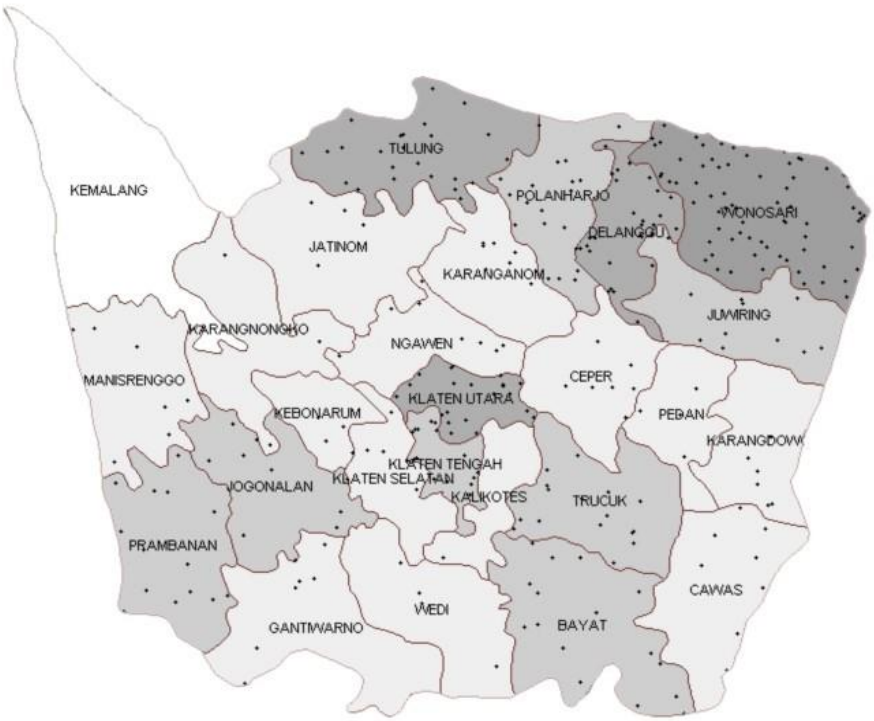
Table 1
Distribution of Covid-19 cases based on person variable in Klaten District from March to August 2020

Charac-teristic	Cases (Month)												Total	
	March	%	April	%	May	%	June	%	July	%	August	%	n	%
Sex														
Male	1	0.31	15	4.72	1	0.31	21	6.60	42	13.21	80	25.16	160	50.31
Female	0	0.00	1	0.31	4	1.26	14	4.40	39	12.26	100	31.45	158	49.69
Age (years old)														
≤ 1	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
1-4	0	0.00	0	0.00	0	0.00	0	0.00	1	0.31	4	1.26	5	1.57
5-14	0	0.00	1	0.31	1	0.31	2	0.63	8	2.52	14	4.40	26	8.18
15-44	0	0.00	4	1.26	3	0.94	19	5.97	46	1447	84	26.41	156	49.06
≥ 45	1	0.31	11	3.46	1	0.31	14	4.40	26	8.18	78	24.53	131	41.19
Total	1	0.31	16	5.03	5	1.56	35	11.00	81	25.48	180	56.60	318	100.00

Source: The Surveillance, Health Quarantine and Immunization Section of Klaten District Health Office (2020)

Source: The Surveillance, Health Quarantine and Immunization Section of Klaten District Health Office (2020)

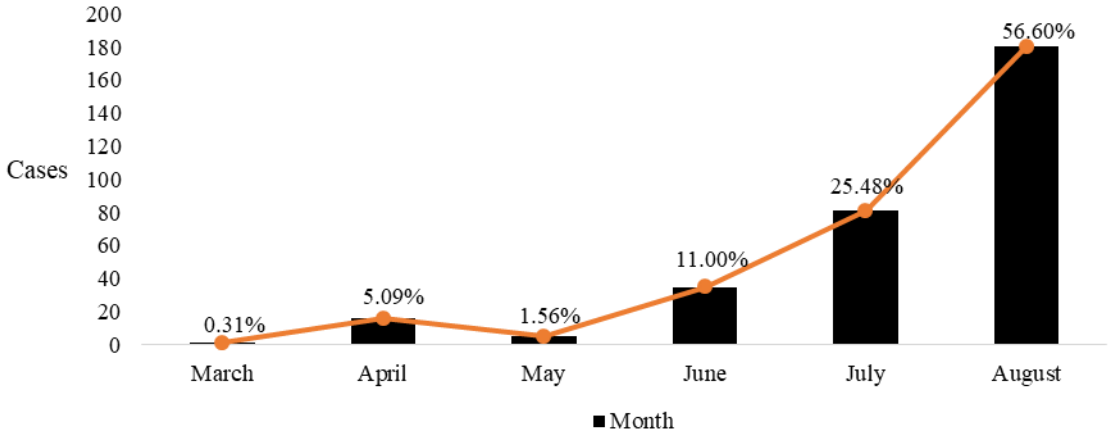
Figure 1. The number of Covid-19 incident cases in Klaten District from March to August 2020



Legend:
- = < 1 case
- = 1-9 cases
- = 10-19 cases
- = 20-29 cases
- = ≥ 30 cases
- • = Covid-19 case

The Surveillance, Health Quarantine and Immunization Section of Klaten District Health Office (2020)

Figure 2. Distribution of Covid-19 cases in Klaten District from March to August 2020



Source: The Surveillance, Health Quarantine and Immunization Section of Klaten District Health Office (2020)

Figure 3. Distribution of Covid-19 incident cases based on time in Klaten District from March to August 2020

The age group of 15-44 years old in this study shows they mostly get Covid-19 infection. Research by Hidayati (2020) showed that most Covid-19 cases occured at productive age, with the highest percentage in the age range 31-45 years. It was because the productive age group was more at risk of being exposed to Covid-19. After all, they spend more time outside the home to work.

Meanwhile, the result of research by Audina & Fatekurohman (2020) showed that most Covid-19 patients were 40-49 years old. Hidayani (2020) research also showed a significant relationship between age and Covid-19 cases. Her research also stated that the age group over 62 years had a 1.31 times greater infection risk based on bivariate and multivariate analysis than those under 62 years. Age is one of the risk factors for Covid-19 infection because the elderly experience a degenerative process of anatomy and physiology of the body, making them susceptible to disease, decreased immunity, and individuals with comorbidities would cause their body condition to be vulnerable to easily infected by Covid-19. In addition, older age also causes negligence in practicing the Covid-19 prevention protocol, thereby increasing the risk of transmission and spread of Covid-19. Isolating the elderly can also reduce transmission to delay the peak of existing cases and minimize the spread to high-risk groups (Pratama & Hidayat, 2020).

Distribution of Covid-19 Epidemiology based on the Variable of Place

The result of this study shows that the distribution of Covid-19 cases was mostly found in Wonosari Sub-district. Based on demographic characteristics, Wonosari Sub-district is one of the sub-districts with a large area, rapid population growth, and high population density. The area is 31.14 $Km^{2,}$ with 0.36% of the population growth rate in 2015 and 2,039 per Km^2 (Klaten District Health Office, 2020). Research by Nelwan (2020) showed that population density had the potential to be a risk factor for the incidence of Covid-19. It was because the density of the population, including one of the factors that influence the high and low incidence rate of diseases in an area, especially infectious diseases.

According to data from the Social, Manpower, and Transmigration Department of Klaten District, the number of people aged 15 years and over who work in the processing industry business field is 19,507 people. It is the highest number of business fields (Klaten District Health Office, 2020). People's mobility patterns and population interactions become the problem for Covid-19 prevention and control. The existence of efforts to regulate health protocols such as social distancing or large-scale social restrictions by the government is now a real problem for the Indonesian population. Many people work and do activities as usual, so people have not reached social distance because of social relations in the community (Pratama & Hidayat, 2020).

Basically, the Indonesian community has a culture of establishing good social relations with others through mutual cooperation. As the social interaction attached, the community would arrange some social events. Another reason is that social restrictions certainly become an issue in the

community for maintaining family income. The majority of the Indonesian community ends up ignoring the social or physical distancing protocol that has an impact on increasing the number of sufferers of COVID-19 every day (Kresna & Ahyar, 2020). Those can be caused by weak civil engagement (Kowsar, 2022). The Indonesian community has not fully complied with the regulations because of cognitive bias. Low literacy and bad access to information media are two main factors that make the community have poor knowledge of the outbreak (Buana, 2020). Meanwhile, Arditama & Lestari (2020) state that the Covid-19 emergency encourages awareness and obedience of the Central Java community to the government regulations and policies.

Distribution of Covid-19 Epidemiology based on the Variable of Time

The result shows that from March to August 2020, the highest Covid-19 cases was in August with 180 cases. Based on the results of the study, it leads to daily confirmed cases in Central Java province increased significantly from 232 people on August 7, 2020, to 917 on December 13, 2020. It is possible to predict the number of cases that will increase by the end of December 2020.

According to Nugraha et al. (2020), the increase of Covid-19 cases, which is getting higher every day, can be caused by the health system in Indonesia not being fully prepared to handle this Covid-19 pandemic. Covid-19 spreads rapidly, so a particular strategy is needed to overcome it, in terms of the availability of adequate health facilities, the number of health workers, and government policies.

As one of the countries with a high and increasing number of Covid-19 cases, Indonesia is feared to have a negative impact in the future. There are handling strategies that can be carried out, such as efforts to break the chain of transmission from person to person, rapid response in detecting Covid-19, management and treatment of Covid-19, and development of the Covid-19 vaccine (Khaedir, 2020).

Strengths and Limitations of This Study

The strength of this study is the data of this study was directly obtained from the Covid-19 Case Report document by the Surveillance, Health Quarantine, and Immunization Section of the Klaten District Health Office. This study describes the incidence of Covid-19 in one area, which is shown in the form of tables, graphs, pictures, and reports to make it easier to understand the results of the research.

The limitation of this study is variables of this study are still limited, such as gender, age, place, and time of occurrence of Covid-19 cases from March to August 2020. This study only focuses on the distribution of the epidemiology of Covid-19 from March to August 2020. Further researchers are expected to be able to expand the research time until the pandemic ends. In addition, it is hoped that it can develop the research variables, such as factors that influence the expansion of cases and what factors are the most dominant.

Policy Implication

This study can be essential information for Klaten District Health Office and Klaten District Government in making policies to deal with the Covid-19 problems in Klaten District.

CONCLUSION

The COVID-19 incidence in the Klaten District, from March to August 2020, the most cases occurred in men, as many as 50,31%. It was based on the sex variable. Based on the age, Covid-19 occurs most frequently in the productive age of 15-44 years old. The variable of place highlights the Covid-19 cases is mostly found in Wonosari Sub-district. The number of Covid-19 cases with the most significant increase is occurred in August 2020.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

AUTHOR CONTRIBUTION

WAP contributed to the study design, data collection and analysis, report writing, and manuscript revision. Then, NAZ contributed to the editing, writing of the report, and manuscript revision. CUW took part as a supervisor.

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REFERENCES

Arditama, E., & Lestari, P. (2020). Jogo tonggo: membangkitkan kesadaran dan ketaatan warga berbasis kearifan lkal pada masa pandemi Covid-19 di Jawa Tengah. *Jurnal Pendidikan Kewarganegaraan*, *8*(2), 157–167.

Arifin, Z., Fatmawati, B. R., & Zuliardi, Z. (2020). Identifikasi pasien Covid-19 berdasarkan riwayat kontak. *Jurnal Ilmiah Stikes YARSI Mataram*, *10*(2), 1–6.

Audina, B., & Fatekurohman, M. (2020). Survival analysis on Covid 19 patients data in Jember Regency. *Berkala Sainstek*, *8*(4), 118–121. https://doi.org/10.19184/bst.v8i4.18411

Buana, R. D. (2020). Analisis perilaku masyarakat Indonesia dalam menghadapi pandemi Covid-19 dan kiat menjaga kesejahteraan jiwa. *Salam: Jurmal Sosial & Budaya Syar-I*, *7*(3), 217–226. https://doi.org/10.15408/sjsbs.v7i3.15082

Cen, Y., Chen, X., Shen, Y., Zhang, X. H., Lei, Y., Xu, C., … Liu, Y. H. (2020). Risk factors for disease progression in patients with mild to moderate coronavirus disease 2019—a multi-centre observational study. *Clinical Microbiology and Infection*, *26*(9), 1242–1247. https://doi.org/10.1016/j.cmi.2020.05.041

Du, Z., Xu, X., Wu, Y., Wang, L., Cowling, B. J., & Meyers, L. A. (2020). Serial interval of an Covid-19 among publicy reported confirmed cases. *Emerging Infectious Diseases*, *26*(6), 1341–1343.

Gao, Z., Xu, Y., Sun, C., Wang, X., Guo, Y., Qiu, S., & Ma, K. (2021). A systematic review of asymptomatic infections with Covid-19. *Journal of Microbiology, Immunology and Infection*, *54*(1), 12–16. https://doi.org/10.1016/j.jmii.2020.05.001

Hidayani, W. R. (2020). Faktor faktor risiko yang berhubungan dengan Covid 19 : literature review. *Jurnal Untuk Masyarakat Sehat (JUKMAS)*, *4*(2), 120–134. https://doi.org/10.52643/jukmas.v4i2.1015

Hidayati, D. (2020). The profile of population that confirmed positive for Covid-19 and died : Indonesia and DKI Jakarta cases. *Jurnal Kependudukan Indonesia*, *15*(Suppl 1), 93–100. https://doi.org/10.14203/jki.v0i0.541

Indonesia's COVID-19 Handling Task Force. (2020). Peta sebaran Covid-19. Retrieved February 27, 2021, from https://covid19.go.id/peta-sebaran

Khaedir, Y. (2020). Perspektif sains pandemi Covid-19: pendekatan aspek virologi dan epidemiologi klinik. *Maarif: Arus Pemikiran Islam dan Sosial*, *15*(1), 40–59. https://doi.org/10.47651/mrf.v15i1.76

Klaten District Health Office. (2020). *Klaten health profile at 2019*. Klaten: Klaten District Health Office.

Kowsar, K. (2022). Pandemic and global civil society : shifting the power balance toward the state? *Global-Local Interactions: Journal of International*, *2*(1), 1–11.

Kresna, A., & Ahyar, J. (2020). Pengaruh physical distancing dan social distancing terhadap kesehatan dalam pendekatan linguistik. *Jurnal Syntax Transformation*, *1*(4), 14–19.

Ministry of Health RI. (2020). *Prevention and control guidelines of Covid-19*. Jakarta: Ministry of Health RI. Retrieved from https://covid19.go.id/p/protokol/pedoman-pencegahan-dan-pengendalian-coronavirus-disease-covid-19-revisi-ke-5

Nelwan, J. E. (2020). Kejadian Corona virus disease 2019 berdasarkan kepadatan penduduk dan ketinggian tempat per wilayah kecamatan. *Indonesian Journal of Public Health and Community Medicine*, *1*(2), 32–45.

Nugraha, B., Wahyuni, L. K., Laswati, H., Kusumastuti, P., Tulaar, A. B., & Gutenbrunner, C. (2020). Covid-19 pandemic in Indonesia: situation and challenges of rehabilitation medicine in Indonesia. *Acta Medica Indonesiana*, *52*(3), 299–305.

Pratama, N. A., & Hidayat, D. (2020). Pengetahuan dan perilaku masyarakat memaknai social distancing. *Jurnal Digital Media & Relationship*, *2*(1), 1–10. Retrieved from http://ejurnal.ars.ac.id/index.php/jdigital

Sari, A. R., Rahman, F., Wulandari, A., Pujianti, N., Laily, N., Anhar, V. Y., … Muddin, F. I. I. (2020). Perilaku pencegahan Covid-19 ditinjau dari karakteristik individu dan sikap masyarakat. *Jurnal Penelitian Dan Pengembangan Kesehatan Masyarakat Indonesia*, *1*(1), 32–37.

Sari, G. A. P. L. (2020). Coronavirus disease 2019 (Covid-19): review. *Jurnal Sains Dan Kesehatan*, *2*(4), 548–557. https://doi.org/10.25026/jsk.v2i4.230

Siagian, T. H. (2020). Mencari kelompok berisiko tinggi terinfeksi virus Corona dengan discourse network analysis. *Jurnal Kebijakan*

Kesehatan Indonesia, *9*(2), 98–106.

Susilo, A., Rumende, C. M., Pitoyo, C. W., Santoso, W. D., Yulianti, M., Herikurniawan, H., … Yunihastuti, E. (2020). Coronavirus disease 2019: review of current literatures. *Jurnal Penyakit Dalam Indonesia*, *7*(1), 45–67. https://doi.org/10.7454/jpdi.v7i1.415

United Nations International Children's Emergency Fund, World Health Organization, & International Federation of Red Cross and Red Crescent Societies. (2020). *Key messages and actions for prevention and control in schools*. USA: United Nations International Children's Emergency Fund. Retrieved from https://www.who.int/docs/default-source/coronaviruse/key-messages-and-actions-for-covid-19-prevention-and-control-in-schools-march-2020.pdf

Wang, D., Hu, B., Hu, C., Zhu, F., Liu, X., Zhang, J., … Peng, Z. (2020). Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *JAMA - Journal of the American Medical Association*, *323*(11), 1061–1069. https://doi.org/10.1001/jama.2020.1585

Wenham, C., Smith, J., & Morgan, R. (2020). COVID-19: the gendered impacts of the outbreak. *The Lancet*, *395*(10227), 846–848. https://doi.org/10.1016/S0140-6736(20)30526-2

World Health Organization. (2020). WHO Corona virus disease (Covid-19). Retrieved February 26, 2021, from https://covid19.who.int/

Wu, Y. C., Chen, C. S., & Chan, Y. J. (2020). The outbreak of COVID-19: an overview. *Journal of the Chinese Medical Association*, *83*(3), 217–220. https://doi.org/10.1097/JCMA.0000000000000270