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ORIGINAL ARTICLE

KNOWLEDGE, ATTITUDE, AND BEHAVIOURS ABOUT COVID-19 PREVENTION BETWEEN INDONESIANS AND BANGLADESHIS

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ABSTRACT

Jakarta-Bogor-Depok-Tangerang-Bekasi (Jabodetabek) and Dhaka are the most populous cities in Indonesia and Bangladesh, respectively. It is essential to explore the responses of the citizens of these regions to COVID-19 infection to make adequate health policies and intervention strategies. This study aims to explore the knowledge, attitude, and behavior of COVID-19 among Indonesians and Bangladeshis. An online survey with a self-developed questionnaire was conducted to 297 Jabodetabek residents and 100 Dhaka residents who were recruited using the convenience sampling method. Data were analyzed using a descriptive statistic. The results showed that more than half of Indonesian respondents had good knowledge (53.2%-97.3%), positive attitude (53.2%-93.3%), and good behavior (66.3%-98.7%) regarding the prevention of COVID-19. Similarly, more than half of Bangladeshi respondents also had good knowledge (55%-96%), positive attitude (53%-96%), and good behavior (87%-98%) regarding COVID-19 prevention. Although the results indicated that only a few (22.5%) respondents were optimistic that the Indonesian government could win the battle against COVID-19, however, two-thirds (66.3%) respondents stated that they followed the Indonesian and Bangladesh Government policy of COVID-19 infection prevention. Better strategies and interventions involving religious and environmental leaders are needed to deal with the COVID-19 pandemic in the Jabodetabek region, Indonesia, and Dhaka, Bangladesh.

Keywords: Attitude; Bangladesh; behavior; COVID-19 infection; Indonesia; knowledge

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INTRODUCTION

World Health Organization (WHO) declared COVID-19 as a pandemic (Cucinotta & Vanelli, 2020; Riou & Altahus, 2020) and it was first detected in December 2019 in Wuhan (Li et al., 2020); global spread has shifted. In March 2020, the Indonesian government reported only two confirmed cases of COVID-19, but in September 2020, the cases increased rapidly through person-to-person transmission (Chan et al., 2020: Parry, 2020).

The six highest provinces in the COVID-19 cases are Jakarta and its surroundings (Jabodetabek), West Java, South Sulawesi, East Java, Banten, and Central Java (Ministry of Health of Indonesia, 2020). Similar to Dhaka, as the capital city of Bangladesh, it is the province with the highest number of COVID-19 cases. The case fatality rate (CFR) of COVID-19 in Bangladesh is 3.9% and in Indonesia it is 8%. The CFR of COVID-19 in Indonesia is in the spotlight because it is the highest in ASEAN countries and the highest in the world (Khaedir, 2020). It may occur due to the virulence of SARS-CoV2, the immunity factor of people, the lack of availability of health facilities and health workers, the lack of effective communication, and lack of knowledge about COVID-19, so that they have a negative perspective and then indifferent toward COVID-19 (Khaedir, 2020). A year later, CFR COVID-19 in Indonesia decreased to 2.8%, and in Bangladesh it decreased to 1.59% (World Health Organization, 2021).

The success or failure of handling COVID-19 is highly dependent on people's behavior. Indonesia and Bangladesh are developing countries with Muslim majority. Compliance with all aspects of prevention was set by the government, including physical distancing, washing hands with soap, using masks, and increasing body resistance, may be influenced by the knowledge and attitudes of the community in tackling infections. Lifestyle conversion is essential in complying with preventive measures (Chirwa, 2020).

Recent studies and literature have been published from the beginning of 2020 to the end of September 2020, but the available data are limited reporting the responses of people living in Greater Jakarta and Dhaka to the COVID-19 preventive measures set by the Indonesian governments and also in Bangladesh. This study was performed to gain more understanding of the Bangladeshis (Dhaka) and Indonesians (Jabodetabek) perspectives and responses towards the COVID-19 pandemic. Therefore, this study aimed to investigate the Jabodetabek and Dhaka residents' knowledge, attitudes, and behaviors regarding the COVID-19 infection. The result of this study is expected to provide solutions for the government, community, families, and health workers in reducing COVID-19 cases.

METHOD

Study design

This study was a quantitative descriptive online study, which was conducted in the Jakarta metropolitan area (Jabodetabek, an acronym of Jakarta-Bogor-Depok-Tangerang-Bekasi), Indonesia, and Dhaka, Bangladesh which are populous cities and have high population mobility.

Sample/Participants

The study was conducted among the Indonesian and Bangladesh population using an online questionnaire with 297 people who live in Jabodetabek-Indonesia, and 100 Bangladeshis living in Dhaka-Bangladesh.

This sample size was obtained from the minimum sample calculated by the Slovin's formula n= N/ (1+(N e2), that met the criteria of Jabodetabek= 1040 / (1 + (1000 x 0.05^2), and that met the criteria of Dhaka= 350 / (1 + (1000 x 0.05^2).

A convenience sampling technique was used in this study and the inclusion criteria consisted of samples that had never been infected with COVID-19, aged 15-60 years, Muslim, have a smartphone that can be used to access Google form, was easy to contact via cellphone, could fill out Google forms, and willing to participate. The exclusion criteria in this study were people ever had COVID-19, aged less than 15 years and more than 60 years, non-Muslim, having not smartphone to access the Google form, are difficulty to contacted via online, cannot complete the Google form and not willing to be a participant.

Instrument

The questionnaires linked to Google form were developed by the researchers based on the guidelines of COVID-19 for the Muslim community regarding the MUI fatwa No. 14 of 2020, which came out in mid-March (Hanafi, et al., 2020) and Centers for Disease Control and Prevention (Centers for Disease Control & Prevention COVID-19, 2020). This research instrument contained the following three sections related to knowledge, attitude, and behavior toward COVID-19 infection. There are a total of 27 items consisting of 12 items assessing knowledge of COVID-19 infection, 7 items assessing COVID-19 infection attitudes, and the remaining 8 items assessing COVID-19 infection prevention behavior. The questionnaire was piloted with 20 respondents. The validity of the content of the questionnaire was 0.89 and the reliability test for 27 questionnaire items showed sufficient reliability (Cronbach's alpha = 0.72).

Data collection

Data collection started in July 2020 and stopped when it reached 297 respondents in September 2020 in Indonesia and stopped when it reached 100 respondents in early June 2021 in Dhaka, Bangladesh.

The recruitment of respondents was assisted by the head of the Neighborhood Association (RT) who encouraged as many potential respondents as possible to participate in this study. Then, prospective respondents were also approached to be involved in this study. Information related to the study and a statement of willingness to participate in this study appeared before the respondent filled out the questionnaire. Survey links are sent via the respondent's email, Facebook, WhatsApp, LINE, and other social media. The survey link was forwarded to others until 297 respondents completed the survey in Indonesia and 100 respondents completed the survey in Bangladesh.

Data analysis

This study used a descriptive statistical test. The frequency distribution and percentage were calculated for each answer. In this study, the knowledge, attitude, and behavior were only coded for each answer and the frequency distribution of each question was calculated and reported.

Ethical consideration

The Ethics Committee of Universitas Pembangunan Nasional Veteran Jakarta (letter no. 2736/VII/2020/KEPK) approved the protocol and procedures for this research. Information about research and written research consent were set to be automatically redirected by respondents upon clicking on a Google link.

RESULT

This study revealed that two-thirds (72.1%) of the respondents in Indonesia and Bangladesh were female (72.1% and 71% respectively). Table 1 shows the results of the respondent's knowledge about COVID-19. The majority of Indonesian and Bangladeshi respondents indicated good knowledge about COVID-19 infection, transmission, and protection because the proportion of good answers to each item of this questionnaire was higher than 50% (53.2%-97.3% and 55%-96% respectively).

Table 1. Knowledge of the respondents on COVID-19 in Indonesia (n=297) and Bangladesh (n=100)

Knowledge of COVID-19	Indonesia		Bangladesh	
	Good, n (%)	Poor, n (%)	Good, n (%)	Poor, n (%)
Term of a virus as the cause of COVID-19	289 (97.3)	8 (2.7)	94 (94)	6 (6)
Signs and symptoms of COVID-19	251 (84.6)	46 (15.4)	92 (92)	8 (8)
Mode of transmission of COVID-19	204 (68.7)	93 (31.3)	96 (96)	4 (4)
Tracking of COVID-19	269 (90.6)	28 (9.43)	78 (78)	22 (22)
Protection from the spread of COVID-19 in the room	240 (90.8)	57 (19.2)	85 (85)	15 (15)
Protection from the spread of COVID-19 in outdoor	241 (81.1)	56 (18.8)	85 (85)	15 (15)

First infection by eating or contacting with wild animals	178 (59.9)	119 (40.1)	55 (55)	45 (45)
Transmission without fever/other signs and symptoms	170 (57.2)	127 (42.8)	74 (74)	26 (26)
Cure for COVID-19	203 (63.3)	94 (31.6)	97 (97)	3 (3)
Know the way of using personal protective equipment and cleaning equipment	257 (86.5)	40 (13.5)	97 (97)	3 (3)
Traditional drinks as an effective way to reduce the spread of the virus	158 (53.2)	139 (46.8)	58 (58)	42 (42)
Islamic religious practice as an effective way to reduce the spread of the virus	225 (75.7)	72 (24.2)	68 (68)	32 (32)

Respondents' attitudes towards the presence of COVID-19 and preventive measures to reduce the spread of COVID-19 are reported in Table 2. More than half of the respondents perceived that lockdown or Large Scale Social Restriction was an effective way to control the COVID-19 transmission. High population mobility in Jakarta metropolitan area causes the rapid transmission of COVID-19. Almost all respondents thought that not everyone with COVID-19 will die (93.3% and 76% in Indonesia and Bangladesh respectively), while 63.9% and 91% of respondents in Indonesia and Bangladesh respectively believed that self-protection is necessary for the protection of others and themselves.

Table 2. Attitude of the respondents to COVID-19 in Indonesia (n=297) and Bangladesh (n=100)

Attitude of respondents	Indonesia		Bangladesh	
	Positive, n (%)	Negative, n (%)	Positive, n (%)	Negatif, n (%)
Believe COVID-19 is real	163 (54.9)	134 (45.1)	94 (94)	6 (6)
Believe COVID-19 can finally be successfully controlled by customs according to religion and culture, e.g., ablution, reading Qur'an, invocation	225 (75.7)	72 (24.2)	53 (53)	47 (47)
Drinking alcohol will not cure COVID-19 and drinking traditional drinks, such as ginger, will prevent and cure COVID-19	158 (53.2)	139 (46.8)	57 (57)	43 (43)
The Indonesian government can win the battle against COVID-19	64 (21.5)	233 (78.4)	70 (70)	30 (30)
Self-protection is necessary for me and others	190 (63.9)	107 (36.0)	91 (91)	9 (9)
Not everyone with COVID-19 will die; only some media often exaggerate the risk associated with COVID-19	277 (93.3)	20 (6.7)	76 (76)	4 (24)
Lockdown is effective to control the transmission	163 (54.9)	134 (45.1)	96 (96)	6 (6)

Based on Table 3, most of the respondents showed good COVID-19 prevention behavior by following the COVID-19 prevention protocol, such as avoiding crowded places (98.7%), washing hands properly (98.0%), and wearing masks (94.3%). While about 80% conducted social distancing, 75% of them decided to improve their relationship with God. Similar to Bangladesh respondents, they also had good behavior (98%).

Table 3. Behavior of the respondents against COVID-19 in Indonesia (n=297) and Bangladesh (n=100)

Behavior of respondents	Indonesia		Bangladesh	
	Good, n (%)	Poor, n (%)	Good, n (%)	Poor, n (%)
Not been to go crowded place	293 (98.7)	4 (1.3)	92 (92)	8 (8)
Worn mask while leaving home or meeting with other people	280 (94.3)	17 (5.7)	97 (97)	3 (3)
Following WHO hand-washing technique	291 (98.0)	6 (2.0)	96 (96)	4 (4)
Disposing of a mask when it becomes moist or at least 4 hours after wearing	209 (70.4)	88 (29.6)	85 (85)	15 (15)
Wearing a mask in a correct way	223 (75.1)	74 (24.9)	98 (98)	2 (2)
Practicing social distancing	263 (88.6)	34 (11.4)	93 (93)	7 (7)
Following Government Indonesian Policy	197 (66.3)	100(33.7)	96 (96)	4 (4)
Increase practice spirituality	223 (75.1)	74 (24.9)	87 (87)	13 (13)

DISCUSSION

This study indicates that most of the respondents have good knowledge about COVID-19. Respondents reported a high level of knowledge about COVID-19 infection, as well as signs and symptoms, but two-thirds of respondents did not know that population density in Jakarta and Dhaka could affect virus transmission. Jakarta and Dhaka are the capital cities of the country which have a high population density. According to the latest national census results, Jakarta is inhabited by nearly 9.6 million people, exceeding the projected population of 9.2 million for 2025. With such a high population, COVID-19 infection might spread rapidly (Zu. et al., 2020).

The high COVID-19 cases in Jakarta metropolitan area and Dhaka are also due to the very high mobility of the population. As the capital city of Indonesia, Jakarta is the main economic destination for job seekers who come from various regions in Indonesia. The majority of the population lives outside Jakarta (Bogor-Depok-Tangerang-Bekasi) because housing prices are more affordable and they commute every day from home to work (Fitria & Setiawan, 2014).

According to this study, the results related to this knowledge, several issues should be addressed specifically, namely: substantial misunderstanding about COVID-19

transmission, distrust of the signs and symptoms of COVID-19 infection, or droplets as the virus transmission mode. Many respondents thought that the COVID-19 virus was transmitted through food or contacted with wild animals (59.9%). Many Indonesians believe in eating non-halal food, such as bats, can cause disease (Alkaf, 2020). This misunderstanding must be addressed by providing intensive health education because correct information can be effective in changing human behavior (Bates et al., 2020).

Lack of knowledge related to COVID-19 infection can lead to a lack of compliance with COVID-19 protocols and believing in hoaxes that assume that COVID-19 infection is not a serious and real disease. Other factors, such as economy, educational level, age, gender, religiosity, and region can affect people′s compliance with COVID-19 protocols and people′s attitudes and behavior about COVID-19 (Bridgman et al., 2020; Drummond & Carey, 2020).

Greater knowledge is not always in line with a positive attitude. A study in Ecuadorians showed that knowledge about COVID-19 was not sufficient to induce behavioral change (Bates et al., 2020). Although the majority of respondents in this study have good knowledge, more than two-thirds of the respondents confirmed that Indonesian cannot win the battle against COVID-19, and only one-third had confidence in Indonesia's ability to defeat COVID-19. The reasons for this condition may be distrust of government and lack of trust in the health care system and science.

This study showed that 24.9% of respondents did not correctly wear masks, 29.6% did not dispose masks when they become damp or at least 4 hours after wearing it, and 33.67% did not follow the Indonesian Government's physical distancing policy. These conditions may occur because of the educational background, social life, culture, and economy of the community. In this study, many respondents reported having low education and economic status. It is similar to previous research that indicated that people′s views of COVID-19 are influenced by educational background, social life, culture, economy, and religious understanding and commitment (Husni et al., 2020).

The results revealed that more than half of the respondents had a positive attitude towards COVID-19 (53.2%-93.3%). Unfortunately, 78.45% of Jabodetabek residents showed that they did not believe that Indonesian could win the battle against COVID-19. About forty-five percent of these residents stated that the lockdown/PSBB was not effective to control the COVID-19 transmission due to the high density and mobilization of the population.

Most respondents believe that the COVID-19 pandemic is a natural phenomenon; people are suggested to return to nature, such as practicing a healthy lifestyle and being disciplined in worship to get closer to God. Furthermore, some people believe that COVID-19 pandemic is a warning for all mankind to return to God (Husni et al., 2020), so that the pandemic can be successfully controlled by performing religious rituals, such as ablution or reading the Qur′an. This result is similar to the previous study in Nigeria that religious practice is a part of the protective measures against COVID-19. Almost half of the respondents believed that prayer is effective in preventing COVID-19 infection (Reuben et al., 2021). Positive obedience and religious beliefs that affect Jabodetabek residents, such as praying, performing ablutions, and reading Qur′an, can foster an increasingly caring and comfortable attitude for residents. It can also make people always clean and the soul becomes calm (Desmawati et al., 2019). Spiritual practices and obeying their respective religious teachings can increase endorphins in the body, increase immunity (Ilevbare, Adelowo & Adegbite, 2020), and better protect against pain, disease, and viruses (Desmawati et al., 2019). Strong spirituality can strengthen a person's mental and psychology in dealing with this virus (Husni et al., 2020). A balance between medical and spiritual treatment is needed because the provision of holistic care, including physical, psychological, social, and spiritual factors are important to prevent COVID-19 infection (Desmawati et al., 2020).

Better strategies and interventions involving religious and community leaders are required to tackle the COVID-19 pandemic in the Jabodetabek and Dhaka regions. The role of religious organizations is also essential in mitigating COVID-19 (Suyadi et al., 2020). Religious and community leaders can influence people not to attend religious or community gatherings, even not to shake hands, as doing so can increase the spread of the disease (Hezima et al., 2020). The pandemic of COVID-19 is an ordinary natural phenomenon that occurs naturally, so to overcome the pandemic issues, it is suggested that we have to be back to nature, such as conducting a healthy lifestyle, drinking traditional drinks such as ginger, turmeric, etc and worshiping discipline to be closer to God.

The limitations of this study are that the data were only taken from the capital city of those two countries; Jakarta metropolitan area, Indonesia, and Dhaka-Bangladesh. The accuracy and generalizability of this study may increase if the data cover rural and peripheral areas. Furthermore, it would be better if measuring the behavioral domain by observations rather than by a questionnaire. However, PSBB in Jabodetabek, as well as Dhaka, prevents the author to conduct these observations.

CONCLUSION AND RECOMMENDATION

This study reveals that the majority of respondents generally have a positive view of dealing with the COVID-19 outbreak. However, there was a small group that disobeyed the masking protocol and had a party or crowd. Consistent regulation from the government and controlling agencies is key to helping public knowledge and understanding of COVID-19. Appropriate community-based health promotion and intervention measures are necessary to improve knowledge and maintain optimistic attitudes, a practice devoid of misconceptions, to involve religious and neighborhood leaders to promote and prevent COVID-19. This will be very helpful in disseminating factual information, not hoaxes, about COVID-19 with the best available scientific knowledge among their congregations.

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REFERENCES

Alkaf, M. (2020). Agama, sains, dan covid-19: Perspektif sosial-agama. *MAARIF, 15*(1), 93–108. https://doi.org/10.47651/mrf.v15i1.79

Bates, B. R., Moncayo, A. L., Costales, J. A., Herrera-Cespedes, C. A., & Grijalva, M. J. (2020). knowledge, attitudes, and practices towards COVID-19 among Ecuadorians during the outbreak: An

online cross-sectional survey. *Journal of Community Health, 45*(6), 1158–1167. https://doi.org/10.1007/s10900-020-00916-7

Bridgman, A., Merkley, E., Loewen, P. J., Owen, T., Ruths, D., Teichmann, L., & Zhilin, O. (2020). The causes and consequences of COVID-19 misperceptions: Understanding the role of news and social media. *Harvard Kennedy School Misinformation Review, 1* (1–18). https://doi.org/10.37016/mr-2020-028

Centers for Disease Control (CDC) and Prevention: Coronavirus (COVID-19). (2020). Available online at: https://www.cdc.gov/coronavirus/2019-nCoV/index.html (accessed 1 March 2020)

Chan, J. F. W., Yuan, S., Kok, K. H., To., K. K. W., Chu, H., Yang, J., …, Yuen, K. Y. (2020). A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: A study of a family cluster. *The Lancet, 395* (10223), 514–523. https://doi.org/10.1016/S0140-6736(20)30154-9

Chirwa, G. C. (2020). Who knows more, and why? Explaining socioeconomic-related inequality in knowledge about HIV in Malawi. *Scientific African, 7*, https://doi.org/10.1016/j.sciaf.2019.e00213

Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *Acta Biomedica, 91*(1), 157–160. https://doi.org/10.23750/abm.v91i1.9397

Desmawati, D., Kongsuwan, W., & Chatchawet, W. (2019). Effect of nursing intervention integrating an Islamic praying program on labor pain and pain behaviors in primiparous Muslim women. *Iranian Journal of Nursing and Midwifery Research, 24*(3), 220–226. https://doi.org/10.4103/ijnmr.IJNMR_36_18

Desmawati, Kongsuwan. W., & Chatchawet, W. (2020). The effect of CPNsIIIP program on duration of labor and neonatal outcomes in primiparous Muslim women. *Walailak Journal Science and Technology, 17*(10); 1048-1059. https://doi.org/10.48048/wjst.2020.5456

Drummond, D. A., & Carey. L. B. (2020). Chaplaincy and spiritual care response to COVID-19: An Australian case study – The McKellar centre. *Health Social Care Chaplaincy, 8* (2): 165-179. https://doi.org/ 10.1558/hscc.41243

Fitria, N., & Setiawan, R. P. (2014). Characteristic identification of slum neighborhood in Kapuk, Jakarta *Jurnal Teknik Pomits, 3*(2), 240–244. Retrieved from https://media.neliti.com/media/publications/194626-ID-identifikasi-karakteristik-lingkungan-pe.pdf

Hanafi, Y., Taufiq. A., Saefi. M., Ikhsan, M.A., Diyana, TN., Hardiyanto, A (….) Mawardi, A, I (2020). Indonesian ulema council fatwa on religious practices during covid-19 pandemic: An investigation of Muslim compliance. *Research Square* 1–23. https://doi.org/10.21203/rs.3.rs-33784/v1

Hezima, A., Aljafari, A., Aljafari, A., Mohammad, A., & Adel, I. (2020). Knowledge, attitudes, and practices of Sudanese residents towards covid-19. *Eastern Mediterranean Health Journal, 26*(6), 646–651. https://doi.org/10.26719/emhj.20.076

Husni, H., Bisri, H., Tantowie, T. A., Rizal, S. S., & Azis, A. (2020). Religious community responses to COVID-19: Case study on Muslim small community. *International Journal of Psychosocial Rehabilitation, 24*(8), 10439–10446. https://doi.org/10.37200/IJPR/V24I8/PR281038

Ilevbare, O. E., Adelowo, C. M., & Adegbite. W. (2020). Awareness and knowledge of coronavirus pandemic as correlates of psychological distress during the COVID-19 lockdown: A Nigerian perspective. *The Lancet,* 1-20. http://dx.doi.org/10.2139/ssrn.3624271

Khaedir, Y. (2020). Perspektif sains pandemi Covid-19: Pendekatan aspek virologi dan epidemiologi klinik [Perspective science of pandemic COVID-19: Approach to virology and clinical epidemiology]. *MAARIF, 15*(1), 41–59.. https://doi.org/10.47651/mrf.v15i1.76

Li, Q., Guan, X., Wu. P., Wang. X., Zhou. L., Tong Y., …, Xiang N. (2020). Early transmission dynamics in Wuhan, China, of novel coronavirus–infected pneumonia. *New England Journal of Medicine, 382*(13), 1199–1207. https://doi.org/10.1056/nejmoa2001316

Ministry of Health of Indonesia. (2020). A dashboard of COVID-19 cases in Indonesia. Retrieved from https://www.kemkes.go.id/article/view/ 20031900002/Dashboard-Data-Kasus-COVID-19-di-Indonesia.html

Reuben, R. C., Danladi, M. M. A., Saleh, D. A., & Ejembi, P. E. (2021). Knowledge, attitudes and practices towards COVID-19: An epidemiological survey in North-Central Nigeria. *Journal of Community Health, 46*(3), 457–470. https://doi.org/10.1007/s10900-020-00881-1

Riou. J., & Althaus, C. L. (2020). Pattern of early human-to-human transmission of Wuhan 2019 novel coronavirus (2019-nCoV), December 2019 to January 2020. *Euro Surveillance. 25*:2000058. https://doi.org/10.2807/15607917.ES.2020.25.4.2000058

Suyadi, Nuryana, Z., & Fauzi, N. A. F. (2020). The fiqh of disaster: The mitigation of Covid-19 in the perspective of Islamic education-neuroscience. *International Journal of Disaster Risk Reduction, 51*, 101848. https://doi.org/10.1016/j.ijdrr.2020.101848

World Health Organization (WHO). 2021. Morbidity and Mortality Weekly Update of the COVID-19, 14 June 2021. https://cdn.who.int/media/docs/default-source/searo/bangladesh/covid-19-who-bangladesh-situation-reports/who_covid-19-update_68_20210614.pdf?sfvrsn=4439a1fa_7

Zu, Z. Y., Jiang, M. D., Xu, P. P., Chen, W., Ni, Q. Q., Lu, G. M., …, Zhang, L. J. (2020). Coronavirus disease 2019 (COVID-19): A perspective from China. *Radiology, 296*(2). https://doi.org/10.1148/radiol.2020200490