

Health Impact Assessment of Covid-19 Towards Maternal Health Care in West Jakarta

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ABSTRACT

Background: The Large-Scale Social Restriction Policy (PSBB) was implemented in DKI Jakarta to reduce the spread of COVID-19 due to its highest ranked case in Indonesia. A monitoring program for Maternal and Child Health (MCH) as well as Family Planning (FP) at *Suku Dinas Kesehatan (Sudinkes)* of West Jakarta was conducted during the pandemic. This study was done to describe the impact of the COVID-19 pandemic towards MCH and FP services, as a basis for policy analysis and recommendations for recovery or risk mitigation program on COVID-19.

Subjects and Method: This is a mixed-method study with deductive sequential design. Four indicators of the quantitative data was obtained from routine data on the *Pulih Covid* dashboard and analysed using SPSS version 26 become a control chart which was visualised into graphs, while the qualitative data was obtained to investigate the reasons of changing trends from quantitative data as the impact of COVID-19 on maternal health services using in-depth interviews with responsible officers in *Sudinkes* of West Jakarta.

Results: In the indicators of visiting pregnant women (K1 and K4), delivery process assisted

by health personnel, and MCH services carried out at health facilities in West Jakarta were beyond the control showed by there were no direct points above or below the median line. As with the trend, the four data showed no trend and zigzag pattern starting from the third data (March 2018) to the 26th data (January 2020) on the entire control chart.

Conclusion: COVID-19 impacted the decrease number of pregnant women's visits, which coincided with the emergence of the first confirmed positive case of COVID-19 in West Jakarta. A digital monitoring system to guide the problematic patients had ever implemented, therefore, recommendation proposed in this study was the reactivation of the digitalisation on maternal health monitoring system in West Jakarta.

Keywords: COVID-19, Maternal Healthcare, Health Impact

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BACKGROUND

The COVID-19 disease outbreak caused by the SARS-CoV-2 virus is designated as a public health emergency which is troubling the world, including Indonesia. The first and the second cases of COVID-19 in Indo-

nesia were found in Jakarta, which later identified in other large clusters. At that time, there were only 1,000 cases nationwide at the beginning, of which 50% of positive cases were from Jakarta. According to data reported on the website <http://>

covid19.go.id, confirmed cases of COVID-19 have reached 858,043 as of January 13, 2021 (Hirawan, 2020; Susilo et al., 2020; Satuan Tugas Penanganan COVID-19, 2021).

According to interview result with the *Sudinkes* (District Health Office) of West Jakarta officer, the first COVID-19 case which appeared in West Jakarta on March 4, 2020 in Siloam Hospital, Kebon Jeruk. The trend of COVID-19 cases in West Jakarta fluctuates, and tend to increase every day. Data until September 2020 found that 460 health workers were affected by COVID-19 from 8 health centres and 4 hospitals in West Jakarta. Moreover, there were 48 pregnant women with reactive results for rapid test, and 55 pregnant women with positive PCR swabs. 61 cases of referred mothers with positive swab delivered at the hospital, and it is known that 17 cases gave birth at the Public Health Centres or *Puskesmas*.

This outbreak had a significant impact on various sectors of life, such as education, economy and tourism. Social distancing policy which requires everyone to keep their distance when interacting with anyone for breaking the chain of transmission of COVID-19 is one of the reason. Furthermore, the COVID-19 pandemic is also considered to have an impact on various health sectors, particularly maternal and child health and family planning (Masrul et al., 2020).

In the health sector as stated in the Strategic Plan of the Ministry of Health 2020-2024, policy direction to improving MCH services is still a top priority for health development in Indonesia. Access to MCH in Indonesia is potentially experiencing obstacles during the COVID-19 pandemic. Several indicators regarding maternal health services are including the maternal mortality rate (MMR), health services for

pregnant women based on first visit to health providers (K4) and last visit (K4) coverage, as well as delivery attendance by health personnel at health service facilities (*Fasyankes*). According to data on the health profile of DKI Jakarta in 2018, MMR in West Jakarta City in 2018 was 32 person per 100,000 live births. Coverage of K1 and K4 tend to increase reaching 99.4%. The percentage of deliveries in health facilities assisted by health personnel in West Jakarta continues to increase to 99.8% (Bidang Perencanaan dan Pembiayaan, 2018; Pokja Renstra Kemenkes 2020-2024, 2020).

The Large-Scale Social Restriction Policy (PSBB) was implemented in DKI Jakarta aimed to reduce the spread of COVID-19 because Jakarta had the highest case in Indonesia. The first phase of the PSBB began on 10 April 2020 and was extended three times (Gubernur Daerah Khusus Ibukota Jakarta, 2020). The *Sudinkes* of West Jakarta has made various efforts to reduce the incidence of COVID-19 by following the policy of the Governor of DKI Jakarta using the 3T system (Testing, Tracing and Treatment), implementing and monitoring the 3M protocol (Wearing Masks, Keeping Distance, and Washing Hands). They also have prepared controlled isolation facilities such as hotels, guest houses and sports buildings. Under supervision from the Provincial Chapter of the Obstetrics and Gynaecology Association (POGI Jaya), they prepare health centres to assist labour for women with COVID-19. In addition, *Sudinkes* of West Jakarta has also prepared four hospitals as referral hospitals for COVID-19, especially maternal and infant health services.

Based on the explanations above, a monitoring of the MCH and Family Planning program in the West Jakarta during the pandemic period needs to be

done. The aim of this study was to determine both direct and indirect impacts caused by the COVID-19 pandemic on maternal health programs. In addition, this was also seeks to answer questions regarding the increase in maternal mortality due to the COVID-19 pandemic which has been running for one year. The data were used as a basis for policy analysis and recommendations for recovery or risk mitigation program related to COVID-19 pandemic.

SUBJECTS AND METHOD

1. Study Design

The approach used in this study is a mixed-method with a deductive-sequential design, where quantitative data collection and analysis are carried out first, followed by qualitative data collection and analysis. Study was placed in the West Jakarta Administrative city from August to December 2020. The quantitative data was routine data set sent by *Sudinkes* of West Jakarta to the Ministry of Health. The routine data management was a collaborating effort between the Ministry of Health with Universitas Gadjah Mada and involving Universitas Indonesia. The data was provided through the PulihCovid19 dashboard since January 2018 to June 2020. Furthermore, the qualitative data was obtained through in-depth interviews with the MCH officers from *Sudinkes* of West Jakarta. Information obtained from two officers from the *Sudinkes* of West Jakarta who mastering the maternal and child health (MCH) program on November 24, 2020.

2. Population and Sample

These were secondary data, which the population of the study was all pregnant women in West Jakarta who did routine visits in the *Puskesmas* in West Jakarta using total sampling. The routine data was documented by the *Sudinkes* of West

Jakarta health officer, as research informant of this study for qualitative information.

3. Study Variables

Dependent variables in this study was maternal health care, while the independent variable was COVID-19.

4. Operational Definition of Variables

Maternal health care defined by services provided by *Puskesmas* in West Jakarta, determined by four indicators such as K1 and K4 visits, deliveries assisted by health personnel, and deliveries carried out at health facilities.

5. Study Instruments

Research instrument in the form of interview guide was arranged by the team of Universitas Gadjah Mada. The interview was conducted to investigate the reasons of changing trends from four indicators of quantitative data as the impact of COVID-19 on maternal health services.

6. Data analysis

It was processed using SPSS version 26 become a control chart which was visualised into the four graphs of control chart.

7. Research Ethics

Following the Helsinki declaration, prior to the interview, an informed consent was explained and approved by the selected informants and *Sudinkes* of West Jakarta.

RESULTS

In the four indicators of the control charts below, there were no direct points above or below the median line. As with the trend, the four data showed no trend and zigzag pattern. Data tends to fluctuate starting from the third data (March 2018) to the 26th data (January 2020) on the entire control chart. However, the four data showed that there were two points that exceed the standard deviation in the 28th data (April 2020) and the 29th data (May 2020). In other words, on the indicators of

visiting pregnant women (K1 and K4), delivery process assisted by health personnel, and MCH services carried out at health facilities in West Jakarta were beyond the

control. The data varies systematically, which means that there was a specific cause that could possibly stem from the COVID-19 pandemic.

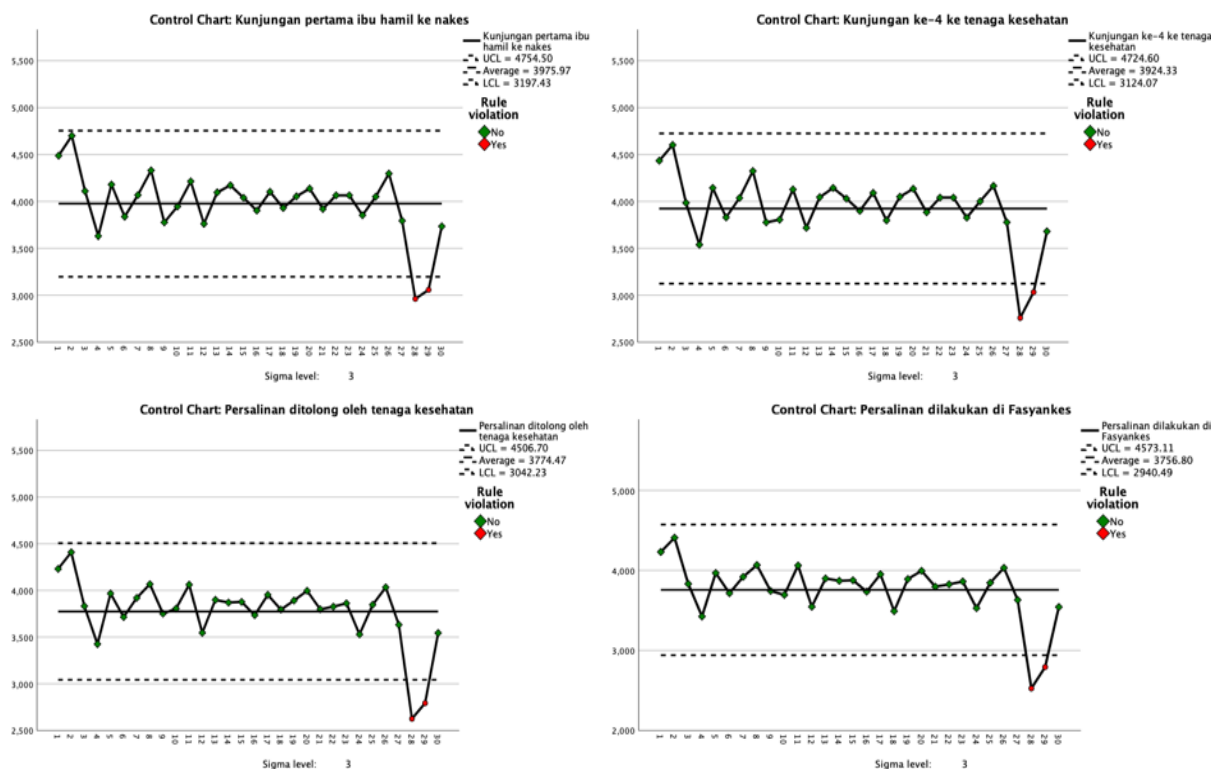


Figure 1. Control Chart K1 (top left), K4 (top right), Deliveries assisted by health personnel (bottom left), and delivery at health facilities (bottom right).

The number of visits by pregnant women in the first trimester (K1) and fourth visits (K4) in West Jakarta has decreased from March and experiencing its lowest point in April 2020. The assumption that the decline in access of MCH services for pregnant women was due to the determination of PSBB in the first phase of the period from March to May. At that time, there were restrictions on the types of services and the number of visitors to the *Puskesmas*, as well as the delay in *Posyandu* activities, particularly located in the red zone. Activities related to maternal and child health in West Jakarta that were still running including, standardized ANC, Acute Infected Prevention Program (PPIA), and triple elimination. Additionally, online

and offline maternal classes, coaching programs, and facilitative supervision to private midwifery practices (BPM), and other on-going programs were done online and offline. Offline programs were done by complying health protocols.

Generally, the number of deliveries at health facilities in West Jakarta area in 2020 experienced a decline starting on March, and reached its lowest point on April when compared to previous years. The cause of the decline was due to the high mobility of the population in West Jakarta, thus many migrants from other areas were found. In addition, there were restrictions on access to health facilities so that many pregnant women also leave the Provincial Jakarta area. They move to their relatives in

the areas considered in having relatively safe access to healthcare. In other words, it was a green zone areas which have not been affected by COVID-19.

The efforts executed by *Sudinkes* of West Jakarta for childbirth were done by creating WhatsApp group between hospitals and reverse-referrals patients. They also activate triage for patients visiting the *Puskesmas*. In fact, in 2018, the *Sudinkes* of West Jakarta has implemented a digital monitoring system. It monitors pregnant and childbirth women with problems, starting from the time when they arrived and sent home. The officers collaborated with local health workforces to provide guidance. However, at that time, the innovation was unable to be done to face the impact of the pandemic as the consequence of the absence of internet server, even though an IT team at each *Puskesmas* was already available. The *Puskesmas* and Hospitals which were currently being tested were Cengkareng and Kalideres areas because these areas had both higher maternal mortality rate and populations compared to others.

Other information related to maternal deaths obtained from the MCH officer *Sudinkes* of West Jakarta found that the number of maternal deaths up to August 2020 was 21 persons with 2 deaths confirmed by COVID-19. In the early days of the COVID-19 pandemic, primary service facilities namely private midwives practices (BPM) had difficulty in making referrals to hospitals. It was because when pregnant women were referred to the hospital, they had to attach the results of Rapid Diagnostic Test (RDT), whose existence was still limited. The existence of COVID-19 cases among pregnant women were also caused by the unavailability of a specific COVID-19 maternal care rooms. This also caused by the absence of a high-risk or complicated

maternal health referral system. Monitoring results show that the COVID-19 pandemic has an impact on the implementation of planned maternal health services, especially on the four indicators analysed in *Sudinkes* of West Jakarta.

DISCUSSION

Previous studies on the indirect impact of the COVID-19 pandemic on MCH and family planning services before and during the lockdown showed that both mothers and children are vulnerable to mortality and at risk of lack health services. The reduced of service rates to more than half in hospitals and the decline in quality of care in Nepal was due to the weak health system and policies related to lockdowns in low and middle income countries (KC *et al.*, 2020). COVID-19 has had an impact on health services in various parts of the world, even in developed European countries. In the UK, some areas reduced home delivery services and delivery centres in obstetric care due to a limitation in health personnel. This area reduced access to transfer of patients by ambulance as well (Coxon *et al.*, 2020).

The report informed by the RMC Global Council stated that violence has affected of mothers and children's health during the COVID-19 pandemic. The deterioration of the health system, such as lack of personal protective equipment for health workers is one of it. In addition, neglect and restrictions on emergency transport, antenatal and postnatal contacts, as well as facilities due to fear of contracting infectious diseases are also categorised as the effects of COVID-19 on women's rights to get quality services. Furthermore, there are changes in scientific evidence-based service practices, unavailability of contraceptives and unequal access to alternatives to telemedicine or mHealth are

other risks that occur in society in general. Not only in terms of patients, health care providers, patients, and families also lack of adequate information on the impact of COVID-19, therefore, they need access to standardized evidence-based information (Jolivet and et al, 2020).

Antenatal visits, immunisations, and delivery at health care facilities or hospitals had decreased due to limited access to health services during lockdown and the imposition of curfews by the Kenyan government. This causes pregnant women and their companions worry about going to jail. Additionally, the fear of COVID-19 infection also causes women to avoid visits to reproductive health services. Community midwives approach adopted to minimise the gap and optimise MCH services during this crisis. The community midwife model is an innovative community-based health intervention that involves the skills of midwives to provide maternal health services at home. Culturally, this service can be accepted by the community so that it can increase the coverage of ANC services, family planning, HIV services, delivery by health workers, postpartum services, and exclusive breastfeeding. However, the success factor of this model depends on their familiarity with public health workers and adequate remuneration for services by the government insurance scheme (Kimani *et al.*, 2020).

A study in Kenya, Tanzania and Uganda found that maternal and child mortality in these countries was consistently high, and was exacerbated by the COVID-19 condition. Midwives play an important role in saving the lives of mothers and babies, which in these three countries are still scarce and cannot reach service targets even in normal situations. Another reason is that mothers who are pregnant or expectant mothers cannot afford health services.

Midwives in the three countries also reported that the number of visits by mothers to health services had also decreased because they were afraid of visiting hospitals and being exposed to the coronavirus. In addition, they also feel afraid to be tested for COVID-19 because if the results are positive, they must be quarantined away from their families. So this leads mothers to arrive late to health care facilities, and ends with unexpected results, such as premature delivery as well as maternal and infant mortality. Thus, the Kenyan government organised a training through an online platform and distributed the protocol in health services (Pallangyo *et al.*, 2020).

The National Socio-Economic Survey conducted by Statistic Indonesia showed that the use of internet in the household reached 73.75%, followed by the growth of population using cellular phone which reached 63.53%. During period 2015 – 2019, inhabitants who use internet keep on increasing from 21.98% until 47.69% (Statistic Indonesia, 2019). Until now, penetration of smartphone to Indonesian citizens is relatively high, and this trend is projected to keep on increasing in the following years (Statista, 2019). Basically, the Indonesian inhabitants use internet-disconnected smartphone for communication, entertainment, business purpose, and study. Conversely, they use internet-connected smartphone for communication, entertainment, browsing, studying and working (KOMINFO, 2017). The usage of gadget by women in looking after their children is not only give negative impacts, such as decrease of children concentration and kids' aggressive behaviour, but also give positive impacts for them. The positive impacts of using smartphone are helpful in taking care their children, communicating

with them, and happiness feeling (Khusma and Kahija, 2017).

A study conducted by Lupton and Maslen (2019) found that Australian women from different ages, geographical locations, and education levels are using the spectrum of digital technologies to control their health and well-being. In other words, the usage of gadgets by Australian women were much more interesting, rather than using traditional media such as books or printed pamphlets. Digital health information technologies accessed by them were varies, such as Google Search, health and fitness apps, social media, other fitness trackers and Apple Watch. In this study, women from every backgrounds said that they went online regularly and they joined peer communities which known as patient support forums as well (Lupton and Maslen, 2019).

Digitalisation using mobile-health technologies gave significant impact in improving health care services and delivery processes. Experiments done in this research show some promising results for clinical management, appropriate testing, referral, screening, diagnosis, treatment, and triage. Even though in developing countries, management support is the most relevant impact for clinical support as well as evidence-based guidance in healthcare (Free *et al.*, 2013). A cross-sectional study related to mobile phones usage for health communication concluded that women who use cell phones had preferences to go to professional delivery (54.2%) rather than who did not use it (95% CI 51.8 – 58.5) (Tang *et al.*, 2019).

A study regarding acceptability and barriers of electronic platform for Peripartum was conducted in India, show that this digital platform is user-friendly, effective, and sustainable. For the health workforces, there were high generally

acceptance in term of convenience usage perception and beneficence perception. In contrast to this, staff shortages, time constraints, patients urgency, connectivity issues and function of the software are still be the barrier (Usmanova *et al.*, 2020). Another study from the patients' experiences, 10 of 11 pregnant women had positive perception related to birth plan app from the communication sides and they like it. Moreover, from the patients' process-related perception, this app assumed as learning, care improvement, practicality, speed, convenience and self-monitoring media.

To sum up, there had been a decline in the number of services starting in March and reaching its lowest point in April, 2020 which coincides with the emergence of the first confirmed positive case of COVID-19 in West Jakarta. The causes of the decrease in the number of visits were the existence of PSBB, a reduction in the number of services in primary health care facilities, and the existence of the community's stigma against the incidence of COVID-19 in Indonesia. The recommendation given to the *Sudinkes* of West Jakarta was to review a policy regarding reactivation of the digital monitoring system (e-cohort) related to health conditions of mothers and children that have been carried out previously. In addition, *Sudinkes* required to work together with the *SukuDinas* for Empowerment for Child Protection and Population Control of West Jakarta to provide disseminate information to health cadres in West Jakarta. The limitation of this research was merely focused on maternal health in specific place, therefore, research in other places might have different impact caused by COVID-19 pandemic. Further study related to acceptance of pregnant women to be monitored using digital system is recom-

mended to do since there is limited study related to this information.

AUTHOR CONTRIBUTION

Nisaatul Maharanita Fitrianingrum collected and analysed the data as well as drafted the manuscript, Sabarinah and Hadi Pratomo provided critical revisions of the text. All authors have read and approved the final submitted version.

CONFLICT OF INTEREST

The authors declare that they have no potential conflict of interest in performing this analysis.

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REFERENCE

Bidang Perencanaan dan Penerimaan (2018) Profil Kesehatan Provinsi DKI Jakarta tahun 2018. Jakarta. Available at: https://www.kemkes.go.id/resources/download/profil/PROFIL_KES_PROVINSI_2018/11_DKI_Jakarta_2018.pdf.

Coxon K, Turienzo CF, Kweekel L, Goodarzi B, Brigante L, Simon A, Lanau MM (2020). The impact of the coronavirus (COVID-19) pandemic on maternity care in Europe. *Midwifery*, 88 (102779): 102779. <https://dx.doi.org/10.1016%2Fj.midw.2020.102779>.

Free C, Phillips G, Watson L, Galli L, Felix L, Edwards P, Patel V, Haines A (2013). The effectiveness of mobile-health technologies to improve health care service delivery processes: a systematic review and meta-analysis. *PLoS medicine*. 10(1): e1001363. doi: 10.1371/journal.pmed.1001363.

Gubernur Daerah Khusus Ibukota Jakarta (2020) Peraturan Gubernur Daerah Khusus Ibukota Jakarta Nomor 33 tahun 2020 tentang Pelaksanaan Pembatasan Sosial Berskala Besar dalam Penanganan Corona Virus Disease 2019 (COVID19) di Provinsi Daerah Khusus Ibukota Jakarta.

Hirawan FB (2020). Indonesia dan covid-19: pandangan multi aspek dan sektoral. Jakarta: CSIS Indonesia.

Jolivet RR, Warren CE, Sripad P, Ateva E, Gausman J, Mitchell K, Hacker HP, et al (2020). Upholding rights under COVID-19: The respectful maternity care charter. *Health Hum Rights*, 22(1): 391–394. <https://www.ncbi.nlm.nih.gov/pubmed/32669827>.

Kc A, Gurung R, Kinney MV, Sunny AK, Moinuddin, Basnet O, Paudel P, et al. (2020). Effect of the COVID-19 pandemic response on intrapartum care, stillbirth, and neonatal mortality outcomes in Nepal: a prospective observational study. *The Lancet Global Health*. 8(10): e1273–e1281. [https://doi.org/10.1016/S2214-109X\(20\)30345-4](https://doi.org/10.1016/S2214-109X(20)30345-4).

Khusma RR, Kahija YFL (2017). Pengalaman menjadi ibu di era digital: Interpretative phenomenological analysis. *Jurnal Empati*. 6(4): 387–395. <https://ejournal3.undip.ac.id/index.php/empati/article/view/20110>.

Kimani RW, Maina R, Shumba C, Shaibu S (2020). Maternal and newborn care during the COVID-19 pandemic in

- Kenya: re-contextualising the community midwifery model. *Human Resources for Health*. 18(1): 75. doi: 10.1186/s12960-020-00518-3.
- KOMINFO (2017). *Survey Penggunaan TIK 2017*.
- Lupton D, Maslen S (2019). How women use digital technologies for health: Qualitative interview and focus group study. *J Med Internet Res*. 21(1): e11481. doi: 10.2196/11481.
- Masrul, Abdillah LA, Tasnim, Simarmata J, Daud, Sulaiman OK, Prianto C, et al. (2020). *Pandemik COVID-19: persoalan dan refleksi di Indonesia*. Yayasan Kita Menulis.
- Pallangyo E, Nakate MG, Maina R, Fleming V (2020). The impact of covid-19 on midwives' practice in Kenya, Uganda and Tanzania: A reflective account. *Midwifery*. 89(102775): 102775. <https://dx.doi.org/10.1016%2Fj.midw.2020.102775>.
- Pokja Renstra Kemenkes 2020-2024 (2020). *Pokok-pokok Renstra Kemenkes 2020-2014*.
- Satuan Tugas Penanganan COVID-19 (2021). *Data Sebaran COVID-19 di Indonesia*. Available at: <https://covid-19.go.id> (Accessed: 13 January 2021).
- Statista (2019). *Penetrasi Smartphone terhadap Jumlah Penduduk Indonesia: Pertumbuhan Penetrasi Smartphone di Indonesia*.
- Statistic Indonesia (2019). *Telecommunication Statistics in Indonesia 2019*. Available at: <https://www.bps.go.id/-publication/download.html?nrbvfeve=YmU5OTk3MjViN2FlZWU2MmQ4NGM2NjYw&xzmn=aHRocHM6Ly93d3cuYnBzLmdvLmlkL3B1YmxpY2Fo aW9uLzIwMjAvMTIvMDIvYmU5OTk3MjViN2FlZWU2MmQ4NGM2NjYwL3NoYXRpc3Rpay10ZWxla29tdW5pa2FzaS1pbmRvbmVzaWEtMjAxOS5odG1s&twoadfn>.
- Susilo A, Rumende CM, Pitoyo CW, Santoso WD, Yulianti M, Herikurniawan H, Sinto R, et al. (2020). *Coronavirus disease 2019: Tinjauan literatur terkini coronavirus disease 2019*. *Jurnal Penyakit Dalam Indonesia*, 7(1): 45–67. <http://dx.doi.org/10.7454/jpdi.v7-i1.415>.
- Tang S, Ghose B, Hoque R, Hao G, Yaya S (2019). Women using mobile phones for health communication are more likely to use prenatal and postnatal services in Bangladesh: Cross-sectional study. *JMIR mHealth and uHealth*, 7(2): e10645. <https://doi.org/10.2196/10645>.
- Usmanova G, Gresh A, Cohen MA, Kim YM, Srivastava A, Joshi CS, Bhatt DC, et al. (2020). Acceptability and barriers to use of the ASMAN provider-facing electronic platform for peripartum care in public facilities in Madhya Pradesh and Rajasthan, India: A qualitative study using the technology acceptance model-3. *Int J Environ Res Public Health*. 17(22): 8333. <https://doi.org/10.3390/ijerph17228333>.