Telemedicine Communication during the COVID-19 Pandemic in Indonesia

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ABSTRACT

The development of digital technology provides opportunities in the field of Indonesian health communication. In order to deal with the COVID-19 pandemic, the Government of Indonesia, through the Indonesian Ministry of Health (MOH), has collaborated with 11 telemedicine platforms to provide virtual consultation services with doctors, especially for self-isolating patients. The emergence of the telemedicine platform as a service provider in the health sector provides a new alternative in handling COVID-19 patients. Good information literacy will foster public confidence in the use of telemedicine platforms. The purpose of this study was to determine telemedicine communication for self-isolated patients by utilizing a telemedicine platform during the COVID-19 pandemic. The theory used in this study is Diffusion of Innovation, which states that telemedicine is an innovation in health communication with the following characteristics: relative advantage, compatibility, complexity, trialability, and observability. The method used is a case study of telemedicine communication in patients who live in Indonesia. The results shows that telemedicine communication involves several aspects: parties involved in telemedicine communication need to carry out information literacy and digital literacy activities, authorization for telemedicine platform providers, and infrastructure supporting telemedicine communication continuity. Thus, telemedicine communication can be an alternative in actualizing digital public health during the COVID-19 pandemic and in the future.

Keywords: Telemedicine communication, information literacy, Diffusion of Innovation, COVID 19, Authorization

INTRODUCTION

The Government of Indonesia continues to promote the acceleration of digital transformation, one of which is telemedicine during the Covid-19 pandemic. Indonesian Ministry of Health (MOH) is building a health service system based on a telemedicine platform. Telemedicine services are intended to treat self-isolated patients. Based on data from Mc Kinsey in 2020, 44% of respondents have conducted health consultations with health workers through online platforms (Kementerian Komunikasi dan Informatika Republik Indonesia, 2020). This shows that the use of digital technology in the health sector is growing. Even users of the Alodokter telemedicine health service platform jumped by 200% to 30 million active users in 2021 (Fitra, 2021).

The geographical condition of Indonesia as an archipelagic country is one of the factors causing the gap in the use of healthtech, especially during the COVID-19 pandemic. Some areas in Indonesia are still constrained by the quality of internet network connections, because not all

regions have received maximum service. There are six common obstacles faced in the distribution of internet networks in Indonesia:

1. Geographically, the vast territory of Indonesia and consists of islands have difficulties building network and data Facilities in the frontier, outermost, and least developed areas or commonly referred to as 3T (*Terdepan*/Frontier, *Terluar*/Outermost, *Tertinggal*/Least Developed) areas.
2. Dependence on mobile broadband, there are still blank spots in the 3T and non 3T areas. This blank spot area does not have a fibre optic network connecting the Base Transceiver Station (BTS), which 4G-based networks cannot reach.
3. The people's purchasing capability is limited for internet access; many internet service sales are carried out with a limited quota system following the people's purchasing capability.
4. Internet speed, there is a measurement bias in the measurement process. Users often measure only based on when the network is down.
5. Internet coverage, providing a lot of internet coverage, so telecommunications providers must provide internet capacity.
6. Regulation, internet network management must regulate service quality and regulate service quality measurements independently (CNN Indonesia, 2020).

Although Jakarta's geographical conditions benefit the most, it is not comparable to the rapidly increasing number of confirmed COVID-19 patients. DKI Jakarta is one of the cities classified as a red zone because it has a high level of virus spread. Even in July 2021, (CNN Indonesia, 2021) noted that DKI Jakarta was classified as a red zone because of the addition of 9000 positive cases every day. The surge in cases of COVID-19 patients since June-August 2021 shows that the pandemic in Indonesia cannot be controlled. Even on July 27, 2021, there was an increase in patient deaths by 2,069 people; this was the highest spike in death rates throughout the pandemic in Indonesia (Syambudi, 2021).

To overcome this, the Indonesian MOH made various efforts to reduce the number of positive COVID-19 patients. Indonesian MOH made several regulations, namely social distancing, which continued with the implementation of Large-Scale Social Restrictions (PSBB) and Community Activity Restrictions (PPKM), the continuous implementation of 3T activities (Testing, Tracing, Treatment), vaccination suggestions, and utilization of the Telemedicine platform ((Indonesian MOH). 2020). The presence of telemedicine provides new hope in overcoming the gap in health services for the community, especially during the Covid-19 pandemic. Until July 2021, 11 telemedicine platforms in Indonesia have officially collaborated with the Indonesian MOH, namely: Halodoc, YesDok, Alodokter, Klik Dokter, SehatQ, Good Doctor, Klinikgo, Link Sekhat, Milvik, Prosehat, and Getwell. The emergence of the telemedicine platform provides convenience in the healing process for patients with Covid-19 in Indonesia. Services using this digital platform are also able to reach people in areas with limited medical access. Residents can provide remote health services without having to meet face-to-face with healthcare workers.

Telemedicine Communication

According to (Dutta, 2020), communication is defined as a way to disseminate information, while the technology itself is a tool for disseminating information to the public. Communication is a process of exchanging information to disseminate technological innovations to specific target groups. In the process, the group is persuaded to accept the innovation. Technological innovation causes social changes in society, resulting in a transformation of technology that is considered

traditional to switch to modern digital-based technology. The presence of telemedicine as a technology in the health sector is a form of digital technology transformation in Indonesia.

Telemedicine can be interpreted as healing remotely by utilizing information technology to communicate with patients (Hollander & Carr, 2020). Telemedicine is the provision of health services remotely by health professionals using information and communication technology, including the ongoing exchange of information in the health sector between patients and health care providers for the benefit of improving individual and community health. According to (Jamil, Khairan, & Fuad, 2015), the smooth process of telemedicine requires communication technology that allows the transfer of data in the form of video, sound, and images interactively. Telemedicine can provide consultation services for healthcare workers to individuals and communities through a two-way exchange of information. Telemedicine can help improve communication between doctors and patients (Coleman, 2020). Communication through telemedicine can reduce patient anxiety related to the patient's condition so that with the interaction with the doctor, the patient feels calm about the illness he is experiencing.

Before the COVID-19 pandemic, telemedicine was the right solution to address public health disparities in rural areas in improving public the accessibility and quality of public health (Rush, Seaton, Li, Oelke, & Pesut, 2021). Based on research conducted by (Mishra, 2020) in North India, the factor influencing telemedicine use during the Covid-19 outbreak is the acceptance of society to adopt telemedicine. The long-running COVID-19 pandemic has changed people's behaviour in the health sector. Not only preventive behaviour for oneself but also the behaviour of using digital-based health services known as telemedicine. People feel the benefits of telemedicine during the Covid-19 outbreak compared to the time before telemedicine. Telemedicine is stated to be able to cut costs and minimize patients travelling to get treatment. So that it is considered adequate for Even the community also supports the adoption of telemedicine during the Covid-19 outbreak and supports the use of post-Covid-19 telemedicine in the future.

The use of telehealth strongly supports physical health and psychosocial needs that can penetrate geographical boundaries (Zhou et al., 2020). Communication is needed in all aspects of health, especially for patients who have to self-isolate. Thus, telemedicine communication can be carried out anywhere without regard to geographical coverage. This condition is beneficial in handling COVID-19 patients who are self-isolating to interact with doctors to know the development of each individual's health condition.

Telemedicine communication itself can be interpreted as a process of exchanging information through direct conversations with health workers using digital media, such as mobile phones or computers. Telemedicine makes it possible to communicate various problems patients face with general practitioners and specialists according to patient needs. Interaction in telemedicine communication involves doctors and patients reciprocally. Telemedicine communication can create good relationships because there is an exchange of information, and doctors can make medical decisions immediately without having to meet face-to-face with patients (Sari & Wirman, 2021). The use of health tech makes it easy to monitor and control the spread of Covid-19. Especially for Covid-19 patients who have to self-isolate both at home and in places where it is impossible to meet face-to-face with doctors, telemedicine-based e-health services are an effective alternative. However, in implementing the adoption of telemedicine, adequate information literacy skills are needed.

Information Literacy

Information literacy is critical in building the health system's resilience in the face of the Covid-19 pandemic. According to (Kruk, Myers, Varpilah, & Dahn, 2015), there are five essential elements to build health system resilience: (1) awareness, the need for information on the existing health system situation that patients can access through traditional and non-traditional media. The existence of the latest accurate information system and the existence of health threats that can be seen in real-time; (2) diversity, the scope of health service availability is universal and covers all layers; (3) self-regulating, the existence of rules that limit and isolate health threats while still providing routine health services, so that stability is maintained; (4) integrated, the presence of a robust cross-sectoral network at the local, national and international levels; (5) adaptive, flexible with various changes in the data-driven environment, well-managed leadership, structure and management.

According to Peter Drucker (in (Goad, 2002)), information has the power to empower a person so that literacy skills are needed to survive in the information age. In developing telemedicine adoption, (Cilliers & Flowerday, 2011) notes that people must have high information literacy skills. Information literacy is the ability to know when information is needed and used to search for the information required to solve problems accurately and creatively in various information fields (Ranaweera, 2008). Information literacy is the ability to collect, organize, filter, and evaluate information; besides that, individuals can use it to form opinions (Iriantara, 2017). So that information literacy activities are divided into two stages: (1) pre-search, related to collecting the various information and identifying gaps. (2) post-search, related to organizing, managing, and processing the information found and then used to rebuild new knowledge (Lankshear & Knobel, 2008).

As one of the countries that agreed to the WSIS decision, Indonesia improved the welfare of the information-based society, one of which was using technology in the e-health sector (Sunuantari, Zarkasi, Mandjusri, & Gunawan, 2021). E-health, which is currently vital for use during the COVID-2019 pandemic, is the telemedicine platform. This platform can be used in situations of social distancing to be used by users wherever they are located, but with the condition that infrastructure is available. For this reason, the Indonesian MOH has made various efforts to build health services based on a telemedicine platform.

Diffusion of Innovation

The breadth of the scope of the discussion on innovation, to understand telemedicine as an innovation, it is necessary first to know the innovation concept. Innovation is an idea, practice, product, technique, or technology that spreads and expands in the social system environment, which will be related to the norms, culture and communication channels that exist in the social system. The spread of innovation involves the ability of adopters, in this case, users of telemedicine technology. Rogers (in (Sundar, 2015)) explains that the main factors that influence the adoption of technological innovation are relative advantage, compatibility, complexity, trialability, and observability. Furthermore, the main elements can be described as follows: (1) relative advantage, technological innovation is considered superior to the previous technology; (2) compatibility, technological innovation is compatible with the values and experiences and needs of the adopters; (3) complexity, the level of difficulty of the technological innovation to be used; (4) trialability, adopters can test technological innovation before adopters use it; (5) observability, technological innovation has a real impact on adopters.

The decision-making process will determine whether the individual is rejecting or accepting the innovation. (Rogers, 2003) states that to welcome innovation in individuals; they will go through the following stages: (1) Knowledge, a person does not yet know existing innovations. So, it is necessary to introduce innovation through various communication channels. This stage is influenced by socio-economic factors, values, and communication patterns of everyone.: (2) Persuasion, individuals become interested in and participate in the search for innovations in detail. This stage includes the advantages of innovation, the level of compatibility, complexity, and innovation that can be tested and seen in real terms before being adopted; (3) Decision; this process allows individuals to analyze the comparison between the advantages and disadvantages if they embrace the innovation; (4) Implementation, individuals begin to conduct trials before accepting an innovation, with the practice it is expected to determine the benefits of the innovation; (5) Confirmation, individuals, will seek justification after they make a decision. So, when initially rejecting the accepted innovation, it will eventually take the innovation.

Technological innovation causes the development of disruptive business innovations called disruptive innovations. (Ralls & Moran, 2020) notes that one of the disruptive innovations societies has successfully adopted is telemedicine. Although telemedicine is run like innovation with business value, it still has to carry out its social responsibility by providing technological innovations beneficial to stakeholders. The emergence of telemedicine innovation offers hope for the benefits that its users will receive.

Method

This study uses qualitative research with case studies in DKI Jakarta because Jakarta has become a pilot project for implementing telemedicine for COVID-19 patients who are self-isolating. Qualitative research is carried out by narratively collecting data from various sources to get answers to their perceptions, aspirations, beliefs, and behaviours regarding their situations (Yin, 2016). Denscombe (in (Pembayun, 2013)) states that the case study has five characteristics: (1) focus on one occasion; (2) there is an in-depth study; (3) focus on the relationship between the various aspects under study; (4) has a natural setting; (5) using sources and methods. Test the validity of data in case studies using various data sources. The reliability in this study was conducted to minimize errors and research bias (Yin, 2018). Therefore, this study using: observation, interviews, documentation, archival recordings.

TELEMEDICINE COMMUNICATION DURING THE COVID-19 PANDEMIC

The Covid-19 pandemic is a crisis experienced by almost all countries in the world (United Nations Conference on Trade And Development, 2020). Covid-19 is a disease originating from the coronavirus and can be transmitted quickly through the air, thus making this disease designated as a pandemic. Since the Indonesian government has declared Covid-19 a pandemic, citizens cannot carry out all social activities without providing the potential for transmission of the Covid-19 disease. One of them is to minimize health consultation activities with doctors, or medical officers face to face in hospitals. The government has taken various forms of efforts to break the chain of transmission of COVID-19, one of which is by conducting educational communication through 3M and 3T (Direktorat Promosi Kesehatan dan Pemberdayaan Masyarakat Kementerian Kesehatan RI, 2021).

The Indonesian MOH carried out the initial communication campaign to suppress the transmission of COVID-19 with the 3M Movement Program, namely: (1) Wearing masks; (2) handwashing; (3) Keeping your distance. In addition to carrying out the 3M campaign, the

Indonesian MOH also communicates COVID-19 education through 3T, namely: (1) Testing, an initial examination to determine whether a person's condition has contracted COVID-19 or not. The public is expected to have the awareness to carry out testing to minimize the potential for transmission. The tests that can be carried out to detect the COVID-19 virus are GenNose, Antigen Swab and PCR Swab. (2) Tracing, the identification process to find out who are the people who come into contact with positive COVID-19 patients. These communication activities are done to break the chain of the spread of the COVID-19 virus. Those who make contact are educated to isolate. (3) Treatment, it is carried out for patients who are confirmed positive for COVID-19 in 2 ways, namely isolation in the hospital or independent isolation at home under the supervision of Puskesmas officers as one of the providers of government health service facilities. To strengthen people's behaviour in breaking the chain of the spread of COVID-19, the government also conducts 5M educational communications, including (1) Wearing masks; (2) Washing hands with soap; (3) Keep your distance; (4) Avoiding crowds; (5) Reduced mobility.

Before the Pandemic, the Indonesian MOH had implemented Telemedicine effectively since 2015. However, this Telemedicine is only specifically intended to facilitate Health workers to minimize skill gaps in using complex medical devices. Telemedicine trials in handling the COVID-19 pandemic were carried out in DKI Jakarta on July 6, 2021, collaborating with 11 telemedicine platforms. As one of the telemedicine platforms, Halodoc is a technology company that provides health teleconsultation: (1) patients, emergencies that healthcare workers can do with digital medical consultations & actions; (2) patients who have previously consulted with doctors for follow-up actions. Meanwhile, Getwell, a newcomer to the telemedicine platform, provides a broader range of services: worldwide medical assistance, medical access guarantee, telemedicine, medical check-up, travel management claims, second medical opinion & medical investigation, alarm centre 24/7 overseas cashless, roadside assistance. Globally secure, VIP overseas, cost containment, third party administration, travel assistance, concierge service, home assistance.

As a follow-up to the collaboration with telemedicine health service providers, the Indonesian MOH launched a guide website for self-isolated patients. This website is intended to provide an easy flow of information for patients who have to self-isolate. Services using the telemedicine platform, which at the beginning was only intended for residents of DKI Jakarta and its surroundings, then the Indonesian MOH expanded the use of the telemedicine platform during COVID-19 to areas including Jakarta, Bogor, Depok, Tangerang, Bekasi, Bandung City, Semarang, Yogyakarta, Surabaya, Denpasar, Solo, Malang and Karawang Regency. The flow of telemedicine services during the COVID-19 pandemic is carried out in several stages:

1. The patient performs a PCR/Swab antigen test in a laboratory affiliated with the Indonesian MOH. If the results are positive, the patient reports the results to the COVID-19 positive case database. Furthermore, patients will receive information via WhatsApp from the I Indonesian MOH automatically.
2. Patients can conduct online consultations with doctors from 11 telemedicine platforms affiliated with the Indonesian MOH
3. After the consultation process, the patient is asked to wait for the prescription given online by the doctor. While waiting for a follow-up, the patient is self-isolating.
4. Patients in the category of self-isolation can immediately get the drugs given free of charge. Patients must submit digital prescriptions provided by the telemedicine platform provider.
5. After the prescription is received, the chosen Telemedicine platform will send the medicine to the patient's location while self-isolating.

The flow in the treatment of self-isolated patients using the telemedicine platform can be described as follows:
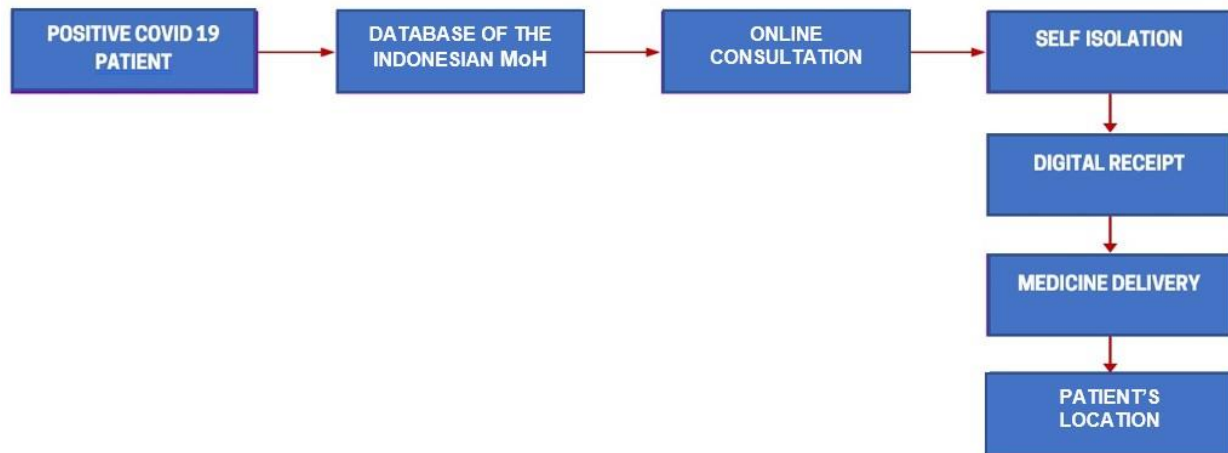

Figure 1. Telemedicine Service Flow During the COVID-19 Pandemic

Positive COVID-19 patients who are self-isolating will receive telemedicine services if they have registered as patients with the Indonesian MOH. If already registered in the Indonesian MOH database, patients have the right to get services for free. Thus, public awareness is needed to collect data in the Indonesian MOH's database. Good educational communication will encourage public awareness to report their condition confirmed positive for COVID-19. This is necessary so that the follow-up of patient management can be carried out more quickly. The Indonesian MOH will maximize telemedicine services if the community feels the telemedicine platform's benefits in handling positive self-isolating patients. Some of the benefits of telemedicine received by COVID-19 patients include: (1) overcoming the limitations of communication between doctors and patients; (2) can reduce the number of referrals to other health facilities so that the presence of telemedicine can strengthen the referral system; (3) more efficient, especially in preventing patient travelling; (4) able to overcome the limitations of diagnosis and diagnostic facilities; (5) facilitate monitoring related to the patient's health condition. The use of the telemedicine platform provides a solution in accelerating doctor's consultation services when people have to practice social distancing.

Increasing the use of telemedicine technology is a solution because it uses high-speed internet so that it is possible to conduct teleconsultation from the homes of COVID-19 patients (Ohannessian, Duong, & Odone, 2020). The pandemic period is an opportunity to use telemedicine because of the situation that requires social distancing. Patients who will have a consultation often experience fear and anxiety if they consult directly with a doctor. Therefore, telemedicine is the right choice to overcome this situation. The existence of telemedicine provides an opportunity for self-isolated patients and other family members who live in the same house to exchange information with doctors. Information is not only limited to the patient's condition, but also other matters related to COVID-19. The telemedicine communication function becomes effective if the patient advises the doctor to stop the spread of COVID-19 in the patient's location.

Remote health consultation can help patients monitor their condition to be calmer in dealing with the existing situation. Telemedicine communication in the form of exchanging patient information with doctors will reduce the anxiety of COVID-19 patients. The pandemic situation does not allow patients to meet face-to-face with doctors often makes patients anxious about their health conditions. So that telemedicine communication provides opportunities for patients and their families to handle patient health. However, according to Coleman (2020), telemedicine communication raises the privacy ethics of the patient's health condition when family members listen to the conversation. However, even if it is considered a violation of ethics, family members should know the patient's condition. This is done because if self-isolation is carried out at home, it will involve family members. So that if there is a problem with the patient's health, family members can help find a solution. Therefore, it is necessary to review the ethics violation. Family support is one of the healing powers of COVID-19 patients.

The term isolation does not mean that COVID-19 patients must be completely separated from their social environment. What is meant by isolation based on the Decree of the Minister of Health of the Republic of Indonesia (Kementerian Kesehatan Republik Indonesia, 2021) is an attempt to separate sick people and require COVID-19 treatment or someone who has confirmed COVID-19 separated from a healthy person to reduce the risk of transmission. Thus, patients who are required to self-isolate can still carry out their usual activities with specific standards. The standards for self-isolating patients are: always use masks and dispose of masks specifically, if symptoms increase, do not carry out activities that come into contact with other people, use telemedicine platforms to monitor health conditions continuously, carry out social distancing with other family members, always keep the surrounding states clean. by using a liquid disinfectant., if the condition worsens, immediately contact a healthcare facility to get a follow-up virgin.

Telemedicine communication as a form of information exchange between patients and doctors will effectively work if it meets the following elements:
1. Source, the patient carries out delivering health information related to their suffering condition. The patient in question is a patient who has received a recommendation from the Indonesian MOH to self-isolate.
2. Telemedicine platform, patients as a source of information use telemedicine channels to conduct health consultations, follow-up care, or other matters related to the condition of patients with COVID-19
3. Message information that the patient wants to convey and know during the self-isolation period, including consultation on the patient's physical and mental health. This includes diagnosis, therapy that must be given, and preventive actions for people around the patient to stop the spread of COVID-19.
4. Receiver, the doctor is the recipient of the information and is responsible for providing the information needed by the patient regarding the period of self-isolation.
5. Effect, the effect caused after the exchange of information between patients and doctors. The resulting impact can lead to 2 categories. Namely, the patient fully trusts all the results of the consultation delivered by the doctor. The patient complied with all the advice given by the doctor. Second, patients did not follow all the doctor's recommendations; some even did not follow the doctor's recommendations (rejected all suggestions).
6. Regulation: There is a firm policy in health services for self-isolated patients, both for patients and doctors. Policies that are not firm provide space for information leakage; the parties involved in telemedicine communication include patients, telemedicine platform managers,

and doctors. Will misunderstand the policies issued by the government. Understanding is not reached.

7. As the highest stakeholder, the government must pay attention to the interests of the parties involved in telemedicine communications. The policies must regulate the rights and obligations, positions, and coordination systems for patients, telemedicine platform managers and doctors. Technical instructions must be detailed; for this reason, information literacy and digital literacy are needed for all parties so that the involvement of related parties will become clear on their primary tasks and functions.

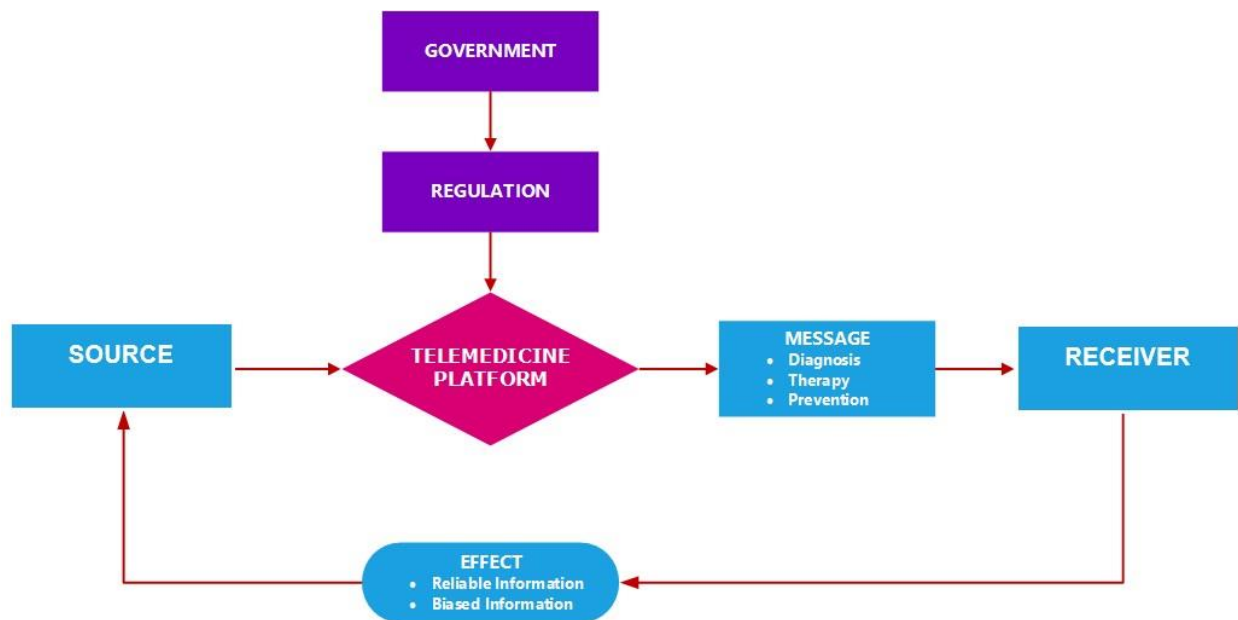Telemedicine communication that is run in Indonesia can be described as follows:

Figure 2. Model of Telemedicine Communication in Indonesia

Thus, the management of telemedicine communication services should pay attention to 3 things: (1) the importance of information literacy and digital literacy for everyone, (2). there is clarity of authority for the telemedicine platform regarding its position as a health service provider. This needs to be done so that it does not overlap with health service facilities that the government has made. Apparent authority can reduce competition between telemedicine platforms managed by the private sector and the government. (3) an increase in the availability of infrastructure is urgently needed to support the implementation of telemedicine communications throughout Indonesia. As is known so far, telemedicine communication services are still limited in big cities. So that many areas haven't been reached by the implementation of telemedicine communication due to the unavailability of adequate infrastructure.

The type of hardware used also determines the success of telemedicine-based health communication, namely the type of mobile phone. Each cell phone has its weaknesses and advantages so that it can affect the quality of the connection range. Including the camera facilities on the cell phone, if the camera is not suitable, it will affect the quality of the message in the form of photos sent to the doctor. So, doctors are wrong in giving a diagnosis because the images are not clear, resulting in errors in providing therapy to patients. For this reason, clear regulations are

needed regarding the type of cell phone that patients can use to send photos according to their condition, especially patients who are self-isolating who other parties do not accompany.

Infrastructure is one of the main factors for the sustainability of telemedicine communication in Indonesia, given Indonesia's very diverse geographical area. Based on Presidential Regulation No. 63/2020, regarding the determination of underdeveloped regions in 2020-2024, 62 regions are designated as underdeveloped regions (Kementerian Desa Pembangunan Daerah Tertinggal Dan Transmigrasi Republik Indonesia, 2020). These underdeveloped areas are included in the category of 3T regions (Outermost, Disadvantaged, Frontier), areas whose territorial conditions have the following characteristics: bordering with other countries, and areas with aspects of the incomplete provision of public infrastructure and health infrastructure. Infrastructure development is inevitable in the adoption of telemedicine technology innovations in Indonesia. Telecommunication network connectivity and the availability of equipment to access telemedicine evenly throughout Indonesia are urgently needed for equitable distribution of health services throughout Indonesia (Saputro, Gusnadi, Zanah, & Simatupang, 2021).

According to (Riyanto, 2021), four factors influence the implementation of telemedicine: organizational rules and regulations, finance, infrastructure, the COVID-19 pandemic. These findings do not consider the elements of information literacy and digital literacy for users of telemedicine technology. Literacy is essential to improve user knowledge and skills. Qualified skills will encourage individual awareness of the importance of health information for themselves and those around them. Regarding health literacy, (Harton, 2007) suggests that patients and patient nurses (other people and family members) should be encouraged and empowered to have a good understanding after conducting clinical consultations and during treatment. This includes patient advocacy for himself and his group.

Information literacy must continue to be carried out to provide a common understanding of telemedicine-based health services. So that users can minimize the effect of information bias because the impact of telemedicine is not always the same for a person, depending on the patient's ability to convey information to doctors. Submission of inappropriate details can result in errors in diagnosis, therapy or other preventive measures. Good individual literacy skills will support the continued use of telemedicine not only during the COVID-19 pandemic. The knowledge and skills of the community in the use of digital technology will significantly help the development of telemedicine as an alternative in improving public health. This will reduce the digital gap of 3T and non 3T communities spread throughout Indonesia. In addition, strengthening skills in information dissemination and communication is no less important in building digital-based e-health.

CONCLUSION AND RECOMMENDATION

Telemedicine communication as a process of exchanging information between patients and doctors through digital media has contributed to suppressing the spread of COVID-19. Even in the dissemination of information on COVID-19, it has provided benefits for patients who are self-isolating. Telemedicine communication is one solution for COVID-19 patients when conditions require social distancing. The results showed that:

1. The importance of information literacy for telemedicine users in the adoption of telemedicine technology during COVID-19. Telemedicine communication during the COVID-19 pandemic will work effectively if telemedicine users have good information literacy about telemedicine. This is related to the individual's understanding of digital

technology-based health services that have not been maximized. The use of digital media is still limited to cognitive function and has not touched on behaviour change. The adoption of telemedicine technology is a new item that the Indonesian MOH must carry out intensively and structured socialization of telemedicine information literacy.

2. There is an apparent authority for telemedicine platform providers. Telemedicine communication requires clear policy rules from stakeholders, in this case, is the Indonesian MOH Policies in implementing telemedicine services during the COVID-19 period must refer to the rules that apply to telemedicine platform services, both at the central and regional levels. The authority of the telemedicine platform must be regulated as a complementary health care provider. The telemedicine platform has a complementary function as a supporter of health care facilities under the Indonesian MOH.

3. Improved infrastructure for smooth use of telemedicine services. Existing infrastructure needs to be improved to ensure the smooth running of health services with telemedicine. The use of telemedicine platforms depends on the availability of existing infrastructure. Obstacles in several areas of Indonesia that have not been connected optimally have caused telemedicine communication to not run optimally during the COVID-19 pandemic. Especially areas that fall into the 3T category (Front, Remote, Disadvantaged).

Based on the conclusion of the research, the recommendations that can be given are as follows:
1. The need to increase information literacy and digital literacy for users of digital platforms, both doctors and patients. There is a structured workshop on the use of telemedicine services so that the continuity of telemedicine services can be used not only during the COVID-19 pandemic.

2. It is necessary to immediately formulate a firm and clear policy regarding the authority of telemedicine services after the COVID-19 pandemic. So that mutual understanding is created between the telemedicine platform from the private sector and health service facilities from the government. The tripartite telemedicine communication between the central government, local governments and telemedicine platforms are expected to result in decisions that benefit all parties in telemedicine communication services.

3. The need for additional digital-based infrastructure to increase the reach of telemedicine services. So that telemedicine communication can be carried out throughout Indonesia.

4. Increasing academic studies on digital media as part of health communication to support the sustainability of telemedicine communication research.

REFERENCES

Cilliers, L., & Flowerday, S. (2011). Will computer literacy affect telemedicine acceptance among health care workers? *ReSNES 2011. Presented at the Research Network for e-Skills Conference*, 1–5. Retrieved from https://www.researchgate.net/publication/311651136_Will_computer_literacy_affect_telemedicine_acceptance_among_health_care_workers

CNN Indonesia. (2020). Kominfo Ungkap Masalah Internet di Indonesia. *CNN Indonesia*. Retrieved from https://www.cnnindonesia.com/teknologi/20201215131630-213-582359/kominfo-ungkap-masalah-internet-di-indonesia

CNN Indonesia. (2021). Daftar Sebaran 245 RT Zona Merah di DKI Jakarta. *CNN Indonesia*. Retrieved from https://www.cnnindonesia.com/nasional/20210720105953-20-669878/daftar-sebaran-245-rt-zona-merah-di-dki-jakarta

Coleman, C. (2020). Health Literacy and Clear Communication Best Practices for Telemedicine. *HLRP: Health Literacy Research and Practice*, *4*(4), 224–229. https://doi.org/10.3928/24748307-20200924-01

Direktorat Promosi Kesehatan dan Pemberdayaan Masyarakat Kementerian Kesehatan RI. (2021). Yuuk.. Berkenalan dengan 3 T. Retrieved October 15, 2021, from Direktorat Promosi Kesehatan dan Pemberdayaan Masyarakat Kementerian Kesehatan RI website: https://promkes.kemkes.go.id/yuuk-berkenalan-dengan-3-t

Dutta, M. (2020). *Communication, Culture and Social Change : Meaning, Co-option and Resistance* (P. Thomas & E. van de Fliert, Eds.). Switzer;amd: Palgrave Macmillan.

Fitra, S. (2021). Pandemi Covid-19 Memicu Lonjakan Pengguna Platform Kesehatan Digital. Retrieved October 12, 2021, from Katadata.co.id website: https://katadata.co.id/safrezifitra/indepth/611ff6afa0f43/pandemi-covid-19-memicu-lonjakan-pengguna-platform-kesehatan-digital

Goad, T. W. (2002). Information literacy and workplace performance. In *Personnel Psychology* (Vol. 55). London: Quorum Books.

Harton, F. W. (2007). Understanding Information Literacy : A Primer. In *UNESCO*. Retrieved from http://unesdoc.unesco.org/images/0015/001570/157020e.pdf

Hollander, J. E., & Carr, B. G. (2020). Perspective Virtually Perfect? Telemedicine for Covid-19. *The New England Journal of Medicine*, *382*(18), 1679–1681. https://doi.org/10.1056/NEJMp2003539

Iriantara, Y. (2017). *Literasi Media : Apa, Mengapa, Bagaimana (Edisi Revisi)*. Bandung: Simbiosa Rekatama Media.

Jamil, M., Khairan, A., & Fuad, A. (2015). Implementasi Aplikasi Telemedicine Berbasis Jejaring Sosial dengan Pemanfaatan Teknologi Cloud Computing. *Jurnal Edukasi Dan Penelitian Informatika (JEPIN)*, *1*(1). https://doi.org/10.26418/jp.v1i1.9930

Kementerian Desa Pembangunan Daerah Tertinggal Dan Transmigrasi Republik Indonesia. (2020). INI DAERAH TERTINGGAL MENURUT PERPRES. Retrieved October 20, 2021, from Kementerian Desa Pembangunan Daerah Tertinggal Dan Transmigrasi Republik Indonesia website: https://www.kemendesa.go.id/berita/view/detil/3261/ini-daerah-tertinggal-menurut-perpres

Kementerian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Republik Indonesia Tentang Panduan Pelaksanaan Pemeriksaan, Pelacakan, Karantina, Dan Isolasi Dalam Rangka Percepatan Pencegahan Dan Pengendalian Coronavirus Disease 2019 (Covid-19). , Pub. L. No. HK.01.07/MENKES/4641/2021, jdih.kemkes.go.id 308 (2021).

Kementerian Komunikasi dan Informatika Republik Indonesia. (2020). Pemerintah Dorong Pengembangan Telemedis untuk Akselerasi Transformasi Digital. Retrieved October 20, 2021, from Kementerian Komunikasi dan Informatika Republik Indonesia website: https://kominfo.go.id/content/detail/28804/siaran-pers-no-99hmkominfo082020-tentang-pemerintah-dorong-pengembangan-telemedisin-untuk-akselerasi-transformasi-digital/0/siaran_pers

Kruk, M. E., Myers, M., Varpilah, S. T., & Dahn, B. T. (2015). What is a resilient health system? Lessons from Ebola. *The Lancet*, *385*(9980), 1910–1912. https://doi.org/10.1016/S0140-6736(15)60755-3

Lankshear, C., & Knobel, M. (2008). Digital Literacies : Concepts, Policies and Practices. In C. Lankshear & M. Knobel (Eds.), *Peter Lang Publishing*. New York: Peter Lang Publishing.

Mishra, V. (2020). Factors affecting the adoption of telemedicine during COVID-19. *Indian*

Journal of Public Health, *64*, 234–236. https://doi.org/10.4103/ijph.IJPH_480_20

Ohannessian, R., Duong, T. A., & Odone, A. (2020). Global telemedicine implementation and integration within health systems to fight the COVID-19 pandemic: A call to action. *JMIR Public Health and Surveillance*, *6*(2), 1–4. https://doi.org/10.2196/18810

Pembayun, E. L. (2013). *One stop qualitative research methodology in communication konsep,panduan dan aplikasi*. Jakarta: Lentera Ilmu Cendikia.

Ralls, M., & Moran, L. (2020). Telehealth in Rural America: Disruptive Innovation for the Long Term? - Center for Health Care Strategies. *Policy Cheat Sheet*, 1–3. Retrieved from https://www.chcs.org/resource/telehealth-in-rural-america-disruptive-innovation-for-the-long-term/

Ranaweera, P. (2008). Importance of Information Literacy skills for an Information Literate society. *NACLIS 2008, Colombo*, 1–13.

Riyanto, A. (2021). Faktor-Faktor yang Mempengaruhi Pelaksanaan Telemedicine (Systematic Review). *Jurnal Manajemen Informasi Kesehatan Indonesia (JMIKI)*, *9*(2), 165–174. Retrieved from https://jmiki.aptirmik.or.id/index.php/jmiki/article/view/165

Rogers, E. M. (2003). *Diffusion of Innovation* (Fifth Edit). New York: Free Press.

Rush, K. L., Seaton, C., Li, E., Oelke, N. D., & Pesut, B. (2021). Rural use of health service and telemedicine during COVID-19: The role of access and eHealth literacy. *Health Informatics Journal*, *27*(2), 1–15. https://doi.org/10.1177/14604582211020064

Saputro, A. R., Gusnadi, A. M., Zanah, Z., & Simatupang, J. W. (2021). Tantangan Konektivitas dan Aksesibilitas Dalam Pengembangan Pelayanan Kesehatan Berbasis Telemedicine di Indonesia: Sebuah Tinjauan. *Journal of Industrial Engineering*, *6*(1), 27–34. https://doi.org/10.33021/jie.v6i1.1412

Sari, G. G., & Wirman, W. (2021). Telemedicine sebagai Media Konsultasi Kesehatan di Masa Pandemic COVID 19 di Indonesia. *Jurnal Komunikasi*, *15*(1), 43–54. https://doi.org/10.21107/ilkom.v15i1.10181

Sundar, S. S. (2015). *The Handbook of the Psychology of Communication Technology*. Chichester: Wiley-Blackwell.

Sunuantari, M., Zarkasi, I. R., Mandjusri, A., & Gunawan, I. (2021). R-TIK Digital Transformation Towards Indonesia Information Society. *International Journal of Social Science and Human Research*, *04*(05), 962–966. https://doi.org/10.47191/ijsshr/v4-i5-12

Syambudi, I. (2021). Grafik COVID Indonesia Juli 2021: Jauh dari Target & Tak Terkendali. *Tirto.Id*. Retrieved from https://tirto.id/grafik-covid-indonesia-juli-2021-jauh-dari-target-tak-terkendali-gicx

United Nations Conference on Trade And Development. (2020). Impact of the COVID-19 pandemic on trade and development: Transitioning to a New Normal. In *United Nations Conference on Trade and Development*. Geneva.

Yin, R. K. (2016). *Qualitative Research from Start to Finish* (Second Ed). New York: The Guilford Press.

Yin, R. K. (2018). Case Study Research and Applications : Design and Methods. In *SAGE Publications* (Sixth Edit). Los Angeles: Sage Publications.

Zhou, X., Snoswell, C. L., Harding, L. E., Bambling, M., Edirippulige, S., Bai, X., & Smith, A. C. (2020). The Role of Telehealth in Reducing the Mental Health Burden from COVID-19. *Telemedicine and E-Health*, *26*(4), 377–379. https://doi.org/10.1089/tmj.2020.0068