



Telemedicine: A New Form of Technology Based Health Service, Its Challenge, and Its Solution

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Abstract. Telemedicine is considered as an alternative for problems found in health services during pandemic of Covid-19 since it enables both doctors and patients in information exchange via mobile and gadgets with the help of internet connection. Some services from telemedicine are teleradiology, teledermatology, telepsychiatry, and telephatology. However, some areas in Indonesia cannot access telemedicine services due to inequality in nation building. Therefore, all stakeholders need to take further steps to cooperate in giving fairness to all Indonesia Citizens in getting health services.

Keywords: health · Covid-19 · telemedicine

1 Introduction

In 2020, a new virus attacked this universe. The so called Corona Virus-19 disease (Covid-19) was found first in Wuhan, a small district in China. It speed spread fast around this world and it became the most shocking phenomenon in that year. The most significant impact of the horrible virus is definitely on health system of human being [1]. The infected people show several symptoms like fever, cough, headache, sore throat, and having trouble with tasting and smelling system (they claim plain taste for all food and are unable to smell anything). The worst thing caused by the Covid-19 is it can lead the infected people to death. In Indonesia itself, it is reported that total number of died people due to Covid-19 is 156.770 per 6 July 2022 [2]. Therefore, the amount of death people because of Covid-19 from all over the world is extremely huge.

Considering this mind blowing phenomenon, a serious forward step needs to be done. Those who were involved in health services like doctors, nurses, and midwives are regarded as the ones who needed by community. It cannot be denied that if there is a person or a community has health issue, he or she will look for a help from medical party like going to see a doctor or visiting public health center and or hospital.

As a reflection, in the early of Covid-19 transmission in Indonesia, all people were panic. Although the government of Indonesia had taken a policy to apply social distancing; all activities such as schooling and working were done at home, the infected people were growing so fast. It was recorded that there were 100.000 Covid-19 cases in the first three months pandemic era in Indonesia with more than 2.000 infected people per day

[3]. As the result, hospitals were crowded by infected people by Covid-19. Meanwhile, other patients with other diseases like blood cancer, lung cancer, asthma, and many more could not get proper health services. The focus of government and medical party went to Covid-19 patients.

However, although all parties concern to Covid-19 issue, the management of health service itself can be categorized into unsatisfying. The reasons are limited resources for handling the patients which is argued as the main problem, fatigue faced by medical teams in handling the patients, and lack of protective equipments for medical teams.

Dealing with limited resources, it is an interesting fact to discuss. The limited sources are in form of the quantity of human resources and physical infrastructures which are not sufficient in number. Since the numbers of infected people were explosive in the early of pandemic era, the numbers of medical teams were imbalance with the patients who came to the hospital. Besides, the availability of hospitals to handle people with Covid-19 disease was not enough as well. Consequently, athletes guesthouses located in the capital city of Indonesia, Jakarta, were functioned as places to hospitalize the infected ones.

That bad management is not only occurred in such big city in Indonesia like Jakarta but it also happens in remote areas in Indonesia. Papua and Sumba are two examples of two provinces in Indonesia which does not have sufficient health services. It is revealed that public health center or in Bahasa known as Puskesmas (Pusat Kesehatan Masyarakat) which is expected to be the first place to visit if anyone has got healthy issues, is unable to be functioned as it is. There are some problems need to solve related to this fact, namely the sufficient number of doctors, midwives, and nurses; health tools kit; and good access to public health center.

One solution for problem above is the integration of technology with health service and management. Telemedicine, a health service with the help of internet connection and technology tools such as laptop and gadget is an alternative to figure out the existed problem since it enables both doctors and patients to communicate and exchange information amid the far distance. In relation to this notion, the writer is interested to discuss telemedicine as a health service based on technology.

2 Method

This article was arranged by using library research approach. Library research can be defined as a research that involves sources from library. Those sources are in forms of books, magazines, newspapers, and research journals related to topic being discussed [4]. Furthermore, what make a library research be different from other researches is no participants or respondents are involved in it since the researcher himself/herself works as the one who locates, identifies, and interprets obtained data.

To analyze the data, there were three steps done, namely reducing the data, displaying the data, and drawing a conclusion [5]. Those three steps are described as follow:

2.1 Reducing the Data

Reducing the data means collecting related references from library and going to the next steps. Those steps are reading the sources, selecting the most relatable ones and eliminating the not relevant ones, taking notes, and rewriting all the sources into organized writing through paraphrasing technique.

2.2 Displaying the Data

The writing product was displayed and reread. Some errors were revised and were ready to be brought to the next step.

2.3 Drawing Conclusion

This step is considered as the last step in data analysis. After revising the writing product, the conclusion was drawn so that the final article could be submitted.

3 Finding and Discussion

3.1 Industrial Revolution 5.0 and Telemedicine

The concept of industrial revolution 5.0 is an accessible technology for everyone without considering social status so that every person has the same right in using the available technology [6]. Therefore, through this concept of industrial revolution 5.0, each person is able to access facilities in all aspects of life such as education, economy, healthy, and so forth.

It is reported that during the pandemic of Covid-19, there have been many problems found in health service and management. Almost all hospitals were unable to hospitalize infected people because of lack of medical teams and facilities. Besides, social distancing policy caused hospitals made limitation in hospitalizing the patients.

Industrial revolution 5.0 amid the pandemic of Covid-19 has brought a new hope for all people around the world. Telemedicine, a health service with the help of technology, is a media that can connect doctors and patients in the middle of distance issue so that ones who require diagnose, medicines, consultation, and medical control are able to get them all without face to face interaction.

Hence, the concept and purpose of industrial revolution 5.0 fit to health crisis that has been facing by Indonesia. One of the rights of citizens Indonesia is the right of getting health services as written in constitution of Indonesia itself. However, not all citizens of Indonesia get that right during the pandemic of Covid-19 since a lot of limitations. Dealing with this problem, telemedicine can be an alternative way to get one of Indonesia citizens' rights so that there will be fairness among them in term of health service.

3.2 A Brief Review of Telemedicine

In its using, telemedicine is operated with the help of sophisticated technology like laptop, tablet computer, and smart phone that can transmit audio, video, and video graph through internet connection so that doctors and patients can exchange any information.

Examples of telemedicine services, they are [7]:

- a. *Teleradiology*. It is a service to send digital pictures radiology.
- b. *Teledermatology*. It is a service of telemedicine to send data about skin health.
- c. *Telepathology*. It is a media to send digital pathology data.
- d. *Telepsychiatry*. It is a consultation media for psychiatry problem via telephone or video call.

3.3 Telemedicine and Its Challenge

The availability of telemedicine in pandemic era is an example of the use of technology for the sake of humanity [8]. However, not all people can access this facility. People from East Nusa Tenggara, for example, they face difficulty to touch this technology. Some areas in East Nusa Tenggara belong to remote areas and local people are left behind as well compare to other areas in Indonesia. They are being left behind in terms of economy, human resources, and facilities. As the result, they cannot ideal health service.

Two factors behind the reason of why not all people can touch telemedicine, they are service factor and user factor [9]. Some factors that belong to service factors are:

- a. Organization service and physical infrastructure
- b. Service are
- c. Allocation
- d. Service cost and service quality

Meanwhile, user factors can be categorized as below:

- a. Uneducated local people and social-culture problem
- b. Low income

3.4 What is the Solution?

To give fair health service without any exception, all stakeholders need to cooperate. The stakeholders who are required to do so can be illustrated in Fig. 1.

Based on Fig. 1, president of Republic Indonesia is regarded as the one who leads Indonesia [10]. In doing his duty and responsibility, he must put the priority on citizens' welfare. From the previous explanation, the lack of health service based on technology is an unfairness found in citizens' welfare. Therefore, the president has to take responsibility in solving this case. He can propose The Indonesian Budget to The House of Representatives to provide telemedicine service in remote areas. If The House of Representatives agree to allocate The Indonesian Budget for that case, Ministry of Health, Ministry of Communication and Informatics, and Covid-19 Task Force can cooperate in the next step so that telemedicine as media that can connect the patients and doctors amid distance limitation and pandemic of Covid-19 can be an effective way to solve health issues.

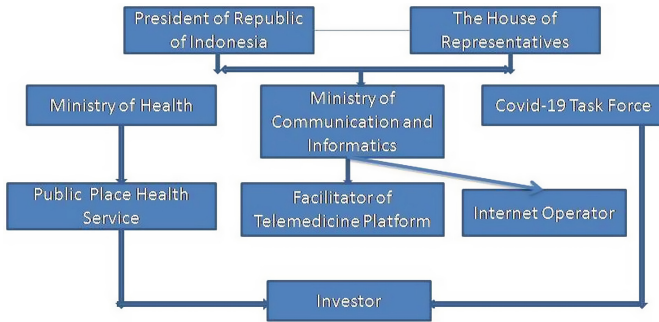


Fig. 1. All stakeholders in telemedicine service

4 Conclusion

There are some problems found in health service and management during the pandemic of Covid-19, such as lack of medical teams, infrastructure buildings, and inaccessible health services in several remote areas in Indonesia. To solve the problem, telemedicine, an integration of medical service and technology can be a solution to get fair medical service for all people. However, in the middle of industrial revolution 5.0, some areas in Indonesia cannot access telemedicine because there is no internet connection. To make all people can touch telemedicine service, all stakeholders should cooperate so that the purpose of this nation, i.e. to create welfare for all citizens of Indonesia can be achieved.

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