

## The Potential of Teledentistry as an Effort to Expand Dental and Oral Health Services in Indonesia

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### Abstract

Health concerns in Indonesia continue to be a significant obstacle for the government in meeting the public's demand for quality health services, especially dental treatments and oral health. This research is a literature review in which descriptive-qualitative analysis methods were applied to the consulted sources. The reference materials utilized in this study are sourced from various credible and pertinent publications related to the subject matter. The findings of this research indicate that the present level of health service coverage in Indonesia needs to be revised. Thus, many Indonesians need access to oral health and dental care. The government, in this instance, the Ministry of Health, must evaluate its performance in ensuring that all regions of the country have access to health services. A national teledentistry practice might serve as an alternative solution to this issue. The implementation of teledentistry in Indonesia is highly promising, notwithstanding the numerous obstacles in the country.

**Keywords:** Potential, Teledentistry, Dental and Oral Health

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## INTRODUCTION

As one of the Southeast Asian countries, Indonesia is still classified as a developing country, according to data from the World Bank Human Development Index of 5.1% in 2022. Indonesia has the fourth largest population globally; the greater the population, the greater the government's burden in facilitating the population's right to health. The importance of adequate medical and dental health services is vital in developing countries because if the health facilities are adequate, they can be used as a benchmark in determining the quality of these health services (Wahyuningtias, 2018). However, there are several obstacles to medical and dental health services, especially in remote areas (Tella et al., 2019).

Data from the Ministry of Health of the Republic of Indonesia shows that Indonesia's health service coverage still needs to improve, especially in dental and oral health. It is by what the Director of Primary Health Services, drg conveyed. Saraswati, MPH, in her presentation, said that the prevalence of dental and oral health problems in Indonesia is still very high. Basic Health Research (Riskedas) results in 2018 showed that the most significant % of dental problems in Indonesia were damaged/caved/sick teeth at 45.3%. Meanwhile, the oral health problems experienced by the majority of the Indonesian population are swollen gums and/or ulcers (abscesses) at 14%. Saraswati further said that 57.6% of the population had dental and oral health problems, and only 10.2% accessed dental health services (Ministry of Health, 2021a).

The low level of public awareness in accessing health services, including dental and oral health, according to Blumm (1974), is influenced by four factors: heredity, physical environment, biology, social, behavior and health services. Behavioral factors influence dental and oral health status (Notoatmodjo, 2007). One way in which people's behavior regarding self-care regarding dental and oral health is measured is the variable frequency of brushing their teeth (Tjahja N & Ghani, 2010). It is known that 77.2% of Indonesian people have brushed their teeth. However, only 8.1% brush their teeth as recommended due to a lack of awareness of the importance of oral health, ignorance, and high costs. (Ministry of Health, 2007) and access to public health services that are difficult to reach. Furthermore, Tella et al. (2019) found obstacles that cause people to be apathetic about the

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importance of maintaining oral health. These obstacles include the low ratio of health service providers to the population, the cost of dental care, inadequate infrastructure and facilities, low economic conditions of the community, and choices for traditional care. (Tella et al., 2019).

Coverage of dental and oral health services needs special attention because the above data shows inequality in Indonesia's access to dental health services. It has also been exacerbated by the COVID-19 (coronavirus disease) pandemic, which has triggered various disruptions, one of which is the dental and oral health services sector. Reflecting on the experience when COVID-19 was prevalent, dental and oral health services had a high potential for transmitting the SARS-Cov-2 virus, better known as the coronavirus. The transmission of the virus is known to be through droplets/splashes of saliva, where the liquid can be sprayed during the examination process and then stuck to the equipment used to examine teeth, although up to now, the method of transmitting COVID-19 can be through air transmission, surface transmission, to feces.

Due to this, the Indonesian Dentists Association (PDGI) instructed dentists to temporarily stop face-to-face practice activities, except in emergency cases that require treatment. Since the beginning of the pandemic, dentists have implemented a lockdown in the practice of their profession as an effort to prevent the spread of COVID-19 transmission. It needs to be done because, based on data from PDGI in 2021, it was recorded that 396 dentists were exposed to COVID-19 spread across 199 community health centers, 92 people in hospitals, and 36 people each in clinics and independent practices. It is known that 94 of them died due to exposure to Covid-19 (PDGI, 2021).

This condition prompted the Ministry of Health and PDGI to issue new technical instructions (Juknis) regarding Dental and Oral Health Services (Ministry of Health, 2021b). Not only that, to be able to meet the public's need for access to dental and oral health services during the COVID-19 pandemic, the government, in this case, the Ministry of Health, needs to launch teledentistry nationally as an answer to this challenge and as an expansion of dental and oral health services in Indonesia, considering Indonesia's vast geographical conditions make it difficult for remote communities to access adequate dental and oral health services. The term teledentistry was first used in 1997 by Cook, who defined it as using video telephones to diagnose and provide health services and treatment remotely (Fricton & Chen, 2009). It is supported by advances in the use of massive communication technology today as a diagnostic service for analysis and treatment in dentistry. COVID-19 has also driven the acceleration of digital transformation in Indonesia, where currently, almost all government and private sectors provide services online or using remote services. The use of communication and information technology will not only improve the quality of dental care for long-distance patients but is a development in the world of medicine in terms of communication technology to expand dental and oral health services coverage in Indonesia.

Departing from the background above, the Author is interested in examining the current condition, development and coverage of dental and oral health services in Indonesia, which provides excellent potential for Teledentistry services to be used nationally. It needs to be studied considering the development of information and communication technology, which continues to impact all aspects of life, especially regarding dental and oral health in Indonesia. In this case, the government needs to anticipate and continue to innovate to meet the changing needs of society. One of them is expanding the coverage of health services in Indonesia from Sabang to Merauke, especially access to dental and oral health services, in order to achieve equitable health distribution.

## METHODS

The Author's study technique relies on a literature evaluation of teledentistry and its prospective usage in Indonesia, considering the country's vast geographic conditions as a developing nation. The literature review examined different perspectives, theories, scientific research findings, information from authoritative organizations, and references pertinent to this topic. The Author employs a descriptive-qualitative technical study based on reference material. The Author analyzes the potential

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for implementing Teledentistry in Indonesia by examining health issues in the country, the history and role of Teledentistry in Indonesia, and relevant scientific studies on the application of teledentistry in dental and oral health services. The Author ensured the study's quality by selecting publications from PubMed, Google Scholar, Doaj, Crossref, and nationally certified scientific journals.

## RESULT AND DISCUSSION

**Condition of Dental and Oral Health Services in Indonesia.** If we look further, Indonesia's current condition is explained by Tella et al. (2019) as being above the low ratio of health service providers to population. The shortage of health workers is still a problem in both developed and developing countries; the need for the number of health workers, including dentists, reaches 12.9 million people, while the ideal ratio of dentists per 10,000 population is 5:10,000. Data from RISKESDA in 2018 shows that 57.6% of the Indonesian population has dental and oral health problems, but 10.2% only get services from dentists (See table 1.) (Riskesdas, 2018).

**Table 1. Proportion of Dental and Oral Problems, Treatment by Dental Medical Personnel in Population Aged 3 Years by Province, Riskesdas 2018≥**

Province	Dental & Mouth Problems		Receive treatment by dental medical personnel		N Weighted
	%	%	%	%	
Aceh	55.3	55.3	13.9	13.9	18,855
North Sumatra	54.6	54.6	6,7	6,7	51,977
West Sumatra	58.5	58.5	9.3	9.3	19,399
Riau	58.8	58.8	8.6	8.6	24,405
Jambi	45.0	45.0	9.5	9.5	12,936
South Sumatra	52.4	52.4	5.8	5.8	30,341
Bengkulu	55.2	55.2	6.0	6.0	7,123
Lampung	56.2	56.2	6.2	6.2	30,300
Bangka Belitung	58.8	58.8	11.8	11.8	5,301
Riau islands	48.4	48.4	10.0	10.0	7,679
DKI Jakarta	59.1	59.1	16.4	16.4	38,124
West Java	58.0	58.0	11.9	11.9	176,728
Central Java	56.7	56.7	9.0	9.0	126,225
In Yogyakarta	65.6	65.6	16.4	16.4	13,989
East Java	54.2	54.2	9.8	9.8	145,173
Banten	62.8	62.8	11.3	11.3	45,831
Bali	58.4	58.4	16.2	16.2	15,737
West Nusa Tenggara	55.6	55.6	9.0	9.0	18,058
East Nusa Tenggara	54.9	54.9	5.1	5.1	19,115
West Kalimantan	60.8	60.8	10.0	10.0	18,073

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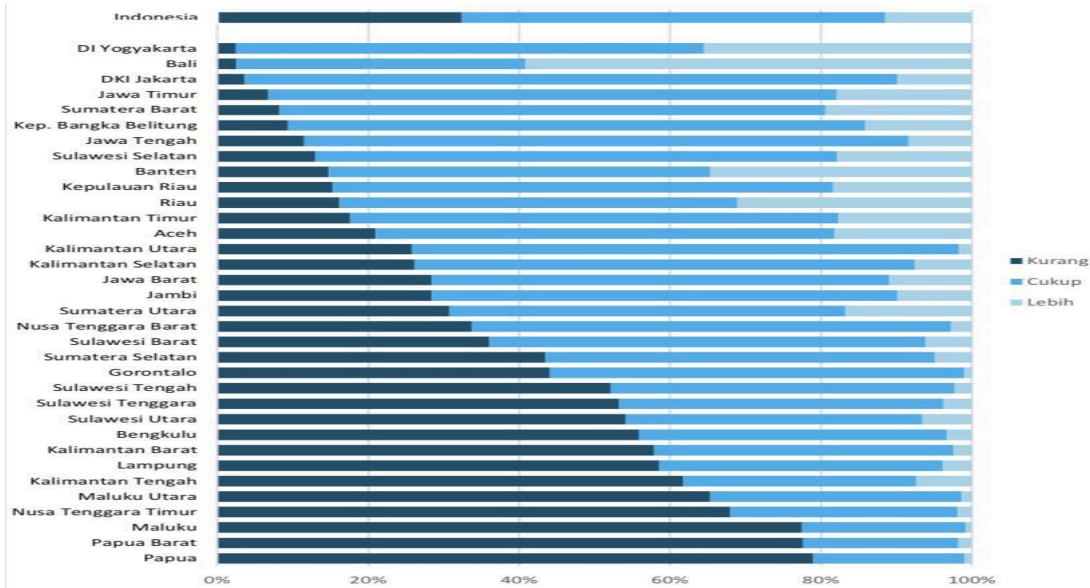
Central Kalimantan	53.7	53.7	7.6	7.6	9,615
South Kalimantan	59.6	59.6	12.3	12.3	15,077
East Kalimantan	61.5	61.5	13.8	13.8	13,195
North Kalimantan	63.3	63.3	16.0	16.0	2,547
North Sulawesi	66.5	66.5	9.4	9.4	9,055
Central Sulawesi	73.5	73.5	8.2	8.2	10,837
South Sulawesi	68.9	68.9	13.0	13.0	31,703
Southeast Sulawesi	63.4	63.4	10.4	10.4	9,464
Gorontalo	63.7	63.7	6.6	6.6	4,286
West Sulawesi	64.7	64.7	8.1	8.1	4,831
Maluku	66.7	66.7	7.2	7.2	6,334
North Maluku	58.8	58.8	5.8	5.8	4,404
West Papua	65.5	65.5	8.5	8.5	3,341
Papua	49.9	49.9	7.9	7.9	11,987
<b>INDONESIA</b>	<b>57.6</b>	<b>57.6</b>	<b>10.2</b>	<b>10.2</b>	<b>962,045</b>

Source: Riskedas, 2018

Data for 2019 shows that the number of dentists in Indonesia is still relatively low. The number of dentists in Indonesia is only around 40 thousand people. At the same time, dental health services still need to be improved, with Indonesia's population around 270 million (Ministry of Health of the Republic of Indonesia, 2020). In the end, the distribution of dentists in health service settings is still relatively lacking; it is known that currently, there are still 3,285 or around 32.4% of community health centers in Indonesia that do not have a dentist, 56.0% of community health centers with sufficient dentists and 56.0% of community health centers with sufficient dentists' excess of 11.6%. In this ratio, the community health centers with the most significant shortage of dentists are in eastern Indonesia. In contrast, the community health centers with excess dentists are DI Yogyakarta, Bali, and DKI Jakarta (Health PPSDM Agency, 2019).

**Figure 1. Percentage of PUSKESMAS with sufficient dentists in Indonesia in 2021**

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Source: Directorate General of Health Personnel, Indonesian Ministry of Health, 2022

Apart from that, costs are also an actor in carrying out dental health care; in fact, the costs are very pronounced in most industrialized countries. It is known that dental care is the fourth most expensive category of care (Dewi et al., 2019). In connection with these obstacles, costs depend on the economic level of the community, where people with a low economy will be more focused on fulfilling the basic needs of life; on the other hand, people with a relatively high economy have more significant opportunities to pursue education so that the more knowledge they have, the more they will, The more significant the public's awareness of their health (Haryani et al., 2017).

On the other hand, Indonesia's extensive geographical conditions also make community mobilization towards health services challenging to reach, especially in remote areas, so the health status of remote area communities within the scope of health services still needs to improve.(Suharmiati et al., 2022). In the 2018 Riskesdas, there are 3 (three) types of access to Health services, including (1) Access to Hospital facilities, (2) Access to Community Health Center facilities, and (3) Access to Independent Clinic/Practice facilities. Data from Riskesda 2018 shows that it is easy, complex, or challenging for people to access health services, including access to clinics, doctor's practices, dentist's practices, or independent midwife practices. There are 37.3% of the population in Indonesia who have easy access to health services, 31.1% have difficulty accessing health services, and 31.5% of the population in Indonesia have complicated access to health services. (Riskesdas, 2018).

**Table 2. The proportion of Household Knowledge of Ease of Access to Clinics, Practices Independent Doctors, Dental Practices, and Midwife Practices by Province Year 2021**

Province	Easy			Difficult		Very difficult		N weighted
	%	95% CI	%	95% CI	%	95% CI		
Aceh	39.4	37.5 - 41.3	35.7	33.9 - 37.6	24.9	23.3 - 26.5	4,050	
North Sumatra	37.1	35.5 - 38.7	26.2	24.8 - 27.6	36.7	35.1 - 38.4	11,124	
West Sumatra	42.6	40.7 - 44.6	30.8	29.1 - 32.6	26.5	24.8 - 28.3	3,992	
Riau	49.8	47.6 - 52.0	29.5	27.6 - 31.4	20.7	19.0 - 22.6	5,458	

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Jambi	39.8	37.0	42.7	34.1	31.5	36.9	26.0	23.6	28.6	2,966
South Sumatra	31.3	29.0	33.7	33.9	31.7	36.1	34.8	32.5	37.3	6,392
Bengkulu	39.7	37.3	42.3	32.8	30.5	35.3	27.4	25.1	29.9	1,663
Lampung	46.8	44.7	49.0	32.4	30.5	34.4	20.8	19.3	22.4	7,508
BangkaBelitung	45.8	42.1	49.6	38.4	34.8	42.1	15.8	13.5	18.3	1,166
Riau islands	42.2	37.9	46.7	33.8	30.1	37.7	24.0	20.4	28.1	1,835
DKI Jakarta	23.9	21.9	26.1	32.5	30.4	34.7	43.5	41.0	46.1	9,536
West Java	25.3	24.3	26.4	32.0	30.9	33.1	42.7	41.4	44.0	44,983
Central Java	48.4	47.3	49.4	26.0	25.2	26.9	25.6	24.7	26.5	31,374
In Yogyakarta	58.1	55.3	60.8	26.5	24.4	28.8	15.4	13.7	17.3	3,432
East Java	46.6	45.6	47.6	31.0	30.1	31.9	22.4	21.5	23.3	35,985
Banten	27.7	25.7	29.7	34.9	33.0	37.0	37.4	35.2	39.6	10,299
Bali	62.0	59.6	64.3	25.2	23.4	27.1	12.8	11.5	14.3	3,544
Nusa Southeast	31.9	29.2	34.7	36.3	33.7	38.9	31.9	29.2	34.6	3,627
West										
Nusa Southeast	20.0	17.8	22.3	27.5	25.1	30.0	52.6	49.7	55.4	1,936
East										
West Kalimantan	32.3	29.9	34.7	33.2	31.0	35.5	34.5	32.3	36.7	3,314
Central	32.5	29.5	35.7	34.5	31.4	37.7	33.0	30.0	36.1	1,868
Kalimantan										
South Kalimantan	40.9	38.4	43.4	33.6	31.4	35.8	25.6	23.6	27.7	3,463
KalimantanEast	39.3	36.4	42.2	37.4	34.6	40.3	23.3	21.0	25.8	2,852
KalimantanNorth	34.5	30.6	38.8	39.8	36.0	43.8	25.6	22.1	29.4	516
North Sulawesi	24.1	22.1	26.3	32.1	29.7	34.5	43.8	41.1	46.5	1,761
Central Sulawesi	33.5	30.5	36.7	30.6	27.9	33.4	35.9	33.0	38.9	1,499
South Sulawesi	26.3	24.5	28.1	35.6	33.7	37.5	38.1	36.1	40.1	5,151
Southeast	23.1	19.2	27.4	38.8	35.3	42.3	38.1	34.5	41.9	1,313
Sulawesi										
Gorontalo	29.6	25.9	33.6	40.2	36.3	44.2	30.2	26.6	34.0	710
West Sulawesi	29.1	24.7	34.0	33.7	29.1	38.6	37.2	32.2	42.5	659
Maluku	17.2	13.6	21.5	32.2	27.8	36.9	50.6	45.1	56.2	712
North Maluku	26.5	22.9	30.5	32.3	28.5	36.3	41.2	36.9	45.6	510
West Papua	27.4	22.4	33.1	37.0	32.2	42.1	35.6	30.5	40.9	503
Papua	19.8	17.0	22.9	32.7	29.3	36.4	47.5	43.5	51.6	1,231
<b>INDONESIA</b>	<b>37.3</b>	<b>36.9</b>	<b>37.8</b>	<b>31.1</b>	<b>30.7</b>	<b>31.5</b>	<b>31.5</b>	<b>31.1</b>	<b>31.9</b>	<b>216,934</b>

Source: Riskesdas, 2018

Development in the health sector is part of national development to create a just and prosperous society, which has the impact of increasing life expectancy so that the number of older adults in Indonesia can increase from year to year. As life expectancy increases and the population in Indonesia increases, health problems will also increase. Therefore, a Health Institution is required to provide health services that are comprehensive, integrated, equitable and easily accessible to the community. Indicators of high-quality health services can be seen in patient satisfaction. However, patient satisfaction cannot guarantee a high-quality health service (Dwiatmoko, 2008).

Health services can be measured by the performance of medical personnel, which consists of 5 dimensions, namely: (1) reliability, (2) responsiveness, (3) assurance, (4) attention and (5) physical form (Matondang et al., 2019)(1) Reliability is the ability given by a doctor to provide a service. In

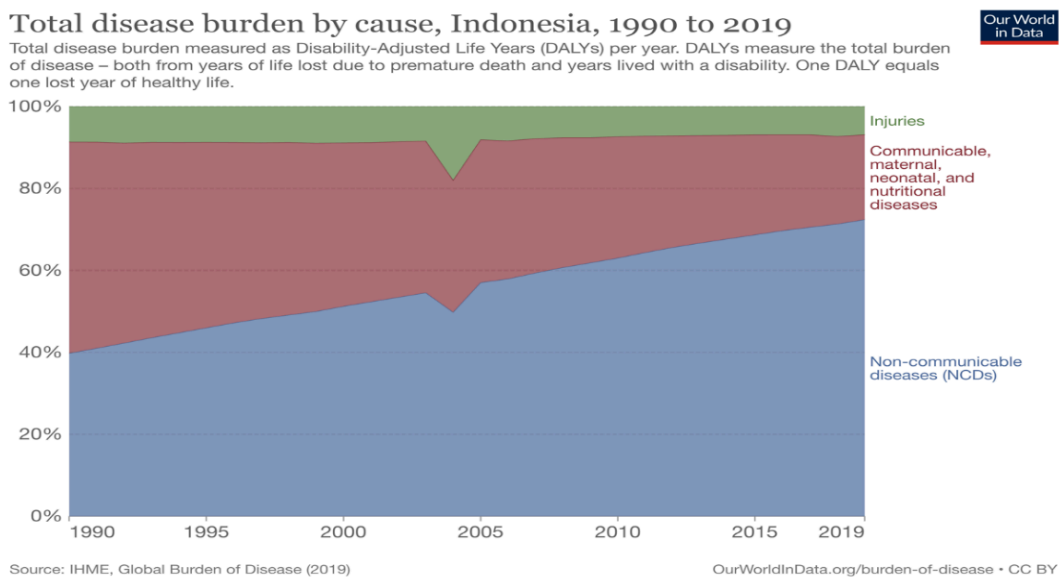
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other words, reliability means the extent to which the doctor can provide services thoughtfully and thoroughly so that the patient feels satisfied with the service. (2) Responsiveness, namely the responsiveness provided by medical personnel to patient needs in the form of smooth communication with patients, friendliness when serving patients, and being able to provide the best service to patients. (3) Assurance/Guarantee, which includes medical personnel's ability to trust patients; patients feel safe from danger and are free from doubt when providing health services. (4) Empathy/Attention means having a good relationship and understanding the patient's needs when providing health services. (5) Tangibles/Physical Tangibles include physical facilities such as waiting rooms, equipment used when examining patients and the neat appearance of medical personnel.

The five factors written by the Author above influence patient satisfaction in providing health services, whether in community health centers, clinics or hospitals. Coverage of dental and oral health services needs special attention because there are still disparities and unequal access to these services in Indonesia.

It cannot be denied that, with the increase in population in Indonesia, there will also be an increase in health problems. Judging from the burden of disease (diseases burden) as measured by Disability Adjusted Life Years (DALYs), there has been an epidemiological change in the last three decades regarding the percentage of non-communicable diseases increasing from 39.73% in 1990 to 72.34% in 2019, infectious diseases decreasing from 51.59% in 1990 to 20.75% in 2019, and injuries decreasing from 8.68% in 1990 to 6.91% in 2019 (Roser et al., 2021). Indonesia is experiencing a problem where non-communicable diseases have increased significantly, but it is still faced with the unresolved problem of infectious diseases. (Figure 2)

**Figure 2. Indonesia's Disease Burden (1990–2019)**



Source: [IHME](#), Global Burden of Disease (2019)

It was made worse by the COVID-19 outbreak, which had an impact on behavior and social interactions throughout the world. Many national authorities around the world, especially those in

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dental and oral health care, impose restrictions on procedures except for urgent care only (Campus et al., 2021).

**The Potential of Teledentistry as an Effort to Expand Dental and Oral Health Services in Indonesia.** The COVID-19 pandemic has had a complex impact on various lines of life and world development, one of which is encouraging massive digital transformation in all fields, especially in the health sector. The world health system is developing rapidly with the implementation of telecommunications systems for hospitals, and over time, a new term has emerged, namely "telemedicine" (Islam et al., 2022). Telemedicine itself is a branch of Telehealth; telemedicine uses communication networks from one place to another to provide health facilities and educational services, especially to overcome the obstacles that the Author explained previously (Estai et al., 2018).

Teledentistry is a sub-field of Telehealth that uses information technology to facilitate long-distance treatment, consultation, education or dental and oral health services so that direct face-to-face communication between doctors and patients is not required (Khan & Omar, 2013). The first study of teledentistry was conducted in 1994 through trials in the United States Army as part of the Army's Total Dental Access project (Rocca et al., 1999). Cook et al. (2000) define the term teledentistry as follows:

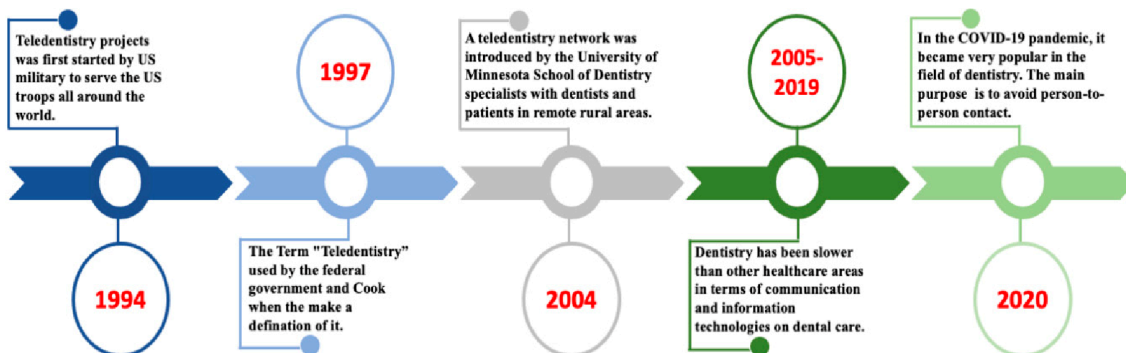
*"Teledentistry is the use of information technology and telecommunications for dental care, consultation, education, and public awareness (Cook et al., 2000)"*.

As for Jampani et al. (2011) also define teledentistry, namely:

*"Teledentistry is a combination of telecommunications and dentistry involving exchanging clinical information and images over remote distances for dental consultation and treatment planning (Jampani et al., 2011)"*.

Based on the analysis, teledentistry can be identified as an alternative service that integrates telecommunications technology and dentistry. Its functionality entails the remote exchange of clinical information and images for consultation and treatment planning. Numerous nations have utilized teledentistry as an alternative means of obtaining dental and oral health services, particularly in light of the global COVID-19 pandemic. The Author provides a compilation of prior studies that examine the evolution of teledentistry from its inception to its implementation amidst the COVID-19 pandemic.

**Figure 3. Evolution of Teledentistry**





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Source: Islam, MRR; Islam, R.; Ferdous, S.; Watanabe, C.; Yamauti, M.; Alam, MK; Sano, H. Teledentistry as an Effective Tool for Communication Improvement between Dentists and Patients: An Overview. *Healthcare* 2022, 10, 1586. <https://doi.org/10.3390/healthcare10081586>

Teledentistry can benefit from expanding dental and oral health services by improving early diagnosis, timely treatment of oral diseases, communication between health workers and patients and increasing access to care and services for people living in rural or remote areas who need services dental and oral health (Cook et al., 2000). As mentioned above, many Indonesian people still need adequate health services because, apart from the limited number of dental doctors, the costs of a specialist dentist are significant, and the geographical conditions are extensive. Hence, it takes time to access health services due to the trend of unsafe traditional medicine.

Teledentistry can be used in three primary services, viz (Talla et al., 2020); (i) consultation with a dentist or specialist. Dentists and specialists can exchange patient photos and notes, followed by a review and discussion of treatment plans; (ii) consultation via real-time face-to-face video conference between a dentist or specialist doctor and a patient or patient's family member anywhere and at any time; (iii) remote patient monitoring, in which patients can provide information on treatment progress to the dentist in real time for follow-up according to the patient's needs. Apart from that, teledentistry can also help provide basic knowledge about dental and oral health to the broader community (Ma et al., nd). It can facilitate the efficient exchange of information and knowledge between different dentists or specialist doctors to design better patient treatment plans and outcomes (Boringi et al., 2015).

Indonesia has been developing telemedicine services as a digital-based accelerated service solution named TEMENIN since 2017. This application was created by the Ministry of Health of the Republic of Indonesia and is based on Web and Android. However, this application is only used in common diseases with features including teleradiology, tele-EKG, tele-USG, and teleconsultation between health facilities. In this applied feature, there is no teledentistry feature, which, according to the Author, needs to be added for efficiency and expanding access services to underserved populations, as well as improving the quality of care and reducing dental health problems in Indonesia.

**Advantages of Using Teledentistry.** Teledentistry helps overcome barriers of geography and travel time in accessing clinical care by providing remote clinical training (Bajaj & Mahajan, 2015). Its implementation is considered urgent in underserved rural and urban areas where specialist consultations are unavailable, reducing service costs and providing immediate quality care. (Chhabra et al., 2012). It can also encourage equal distribution of dental and oral health services amidst disparities in existing service facilities (Bagchi, 2006). The use of teledentistry also improves inter-professional communication, thereby encouraging the integration of dentistry into the larger healthcare delivery system (Bhambal et al., 2010). Furthermore, teledentistry can be used as a choice before treatment, making dental and oral care more efficient (Tri et al., 2020). Moreover, in the COVID-19 pandemic situation, which allows the virus to become endemic, teledentistry is also an effort to avoid direct contact with other people who have the potential to transmit the virus (Ghai, 2020). Apart from the advantages described above, teledentistry has positive financial, social, and technical effects (see Table 3).

**Table 3. Benefits of Implementing Teledentistry**

No.	Financial	Social	Technical
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1.	Improving dental and oral health services by health workers	Services can be done anywhere	<i>The second option</i> and the need for insurance to claim online
2.	Facilitate interaction between lecturers and students via videoconference	Treatment can be provided to underserved rural and urban populations	Early diagnosis and access to medical records can be made via email, smartphone or tablets
3.	Reduce visits	Improve inter-professional communication	Medical records can be used anywhere
4.	Increases income because it does not require various kinds of tools and materials	Providing equality in dental and general health services	More convenient patient access to complete medical histories Online

Source: analyzed by authors.

**Disadvantages of Using Teledentistry.** Teledentistry allows health workers in rural areas who do not have a dentist to provide care based on their assessment of the patient's needs without having to visit a dentist located further from the health service center (Bhambal et al., 2010). However, the level of supervision varies from one place to another, thus affecting the quality of services that health workers can provide. There are several weaknesses in teledentistry that the Author summarizes from various literature, namely, that it is very susceptible to interception of medical data, even though maximum efforts have been made to maintain data security and confidentiality. Also, teledentistry requires gadgets and electronic devices connected to the internet. The current network and data system condition is still under massive development. The inadequate public literacy regarding technological developments also becomes an obstacle to the widespread implementation of teledentistry. Moreover, the last one is the process of getting used to and additional costs for health workers in teledentistry practice.

Apart from the weaknesses described above, teledentistry practice has financial, social and technical weaknesses.

**Table 4. Weaknesses of Implementing Teledentistry**

No.	Financial	Social	Technical
1.	Possibility of malpractice and irresponsibility	Teledentistry applications vary by country	record privacy is still questionable
2.	The cost of the equipment required is quite expensive	Practitioner accountability	<i>Informed consent</i> virtually

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3.	Costs to train staff	Misusing diagnosis	virtual	It takes time to learn how to use the required devices
4.	Uncertainty of prices for these services	Licensing in each country		The speed of the internet and telecommunications equipment is very influential.

Source: analyzed by authors.

Considering the crucial things above, teledentistry has excellent potential to expand dental and oral health services if implemented in Indonesia. Given the conditions and situation of such a large community, there is a need for the government to provide health services for the entire community fairly.

## CONCLUSION

The population and land area of Indonesia are both substantial. The government prioritizes health concerns, particularly dental and oral health issues, when providing for the populace. To foster a healthy, equitable, and prosperous society across the archipelago, the government must ensure that health services are distributed equitably in this instance. Indeed, Indonesia continues to have a comparatively narrow health service coverage. The fact that many remote regions of the country still lack access to health services, particularly dental and oral health services, demonstrates this point. The government has also restricted all direct and in-person activities due to the Covid-19 pandemic. Beyond the adverse consequences it engenders. Globally, and Indonesia in particular, the Covid-19 pandemic has fostered an unprecedented digital revolution. Ongoing efforts are being made to accommodate the collective requirements of society by further accelerating the digitalization process. In this era of the COVID-19 pandemic, teledentistry, a type of digitalization advancement, is undergoing exponential growth.

Opioid health services are the focus of the teledentistry alternative health service initiative. With the ability to provide early dental and oral health services without needing in-person consultations with doctors, teledentistry has tremendous potential in Indonesia. Aside from that, Indonesia's expansive geography enables teledentistry to be implemented in remote regions, thereby providing oral health and dental services to indigenous communities. Furthermore, citizens of Indonesia tend to be indifferent to dental and oral health due to the country's still-middle-class economic condition. Dental and oral health services are now accessible to the public at a reasonable cost, thanks to the nationwide implementation of teledentistry. There are, nevertheless, technical, financial, and social vulnerabilities to the practice of teledentistry. Nonetheless, the significance of the government's responsibility, in this instance, the Ministry of Health, lies in ensuring that the general populace has optimal access to health services, particularly oral and dental health.

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