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The Determinant of Trust in Telemedicine: A Systematic Review

Dhika Purnastyasih
Faculty of Administrative Sciences, University of Indonesia
dhika_purnastyasih@ui.ac.id

Eko Prasojo
Faculty of Administrative Sciences, University of Indonesia
prasojo1@ui.ac.id

Abstract

Telemedicine is a form of utilizing technology in the health sector that has been rapidly adopted globally, especially since the COVID-19 pandemic. Telemedicine has the potential to be a solution to overcoming the problem of access to health services. Despite its great benefits, telemedicine also encountered obstacles in its implementation, and among them that are fundamental is trust. Trust in telemedicine is unique and different from electronic services because it involves personal and sensitive data. This study examine the role of trust in telemedicine and the factors that determine trust in telemedicine services through a systematic review. This study uses a systematic review method of related publications from 2012 to 2022 derived from the Scopus database. A selection process was carried out based on the eligibility criteria set for 1196 related publications, so 17 articles were obtained, which were analyzed in this study. Based on a literature review, trust in telemedicine is multi-dimensional and is shaped by various factors of trust that influence each other. The main factors are trust in the care organization, trust in the care professional, trust in the treatment, and trust in the technology. Another factor that determines trust in telemedicine is individual's characteristics, such as age, gender, level of education, technological literacy, income, type of disease, health condition, frequency of use, and experience. Moreover, there are factors external from the individual characteristics that can also determine trust in telemedicine, such as family support, living area, community, and social media, the COVID-19 pandemic, and the existence of policies and regulations that support and enforced.

Keywords: *determinants; factors; telemedicine; trust*

INTRODUCTION

Globally, the utilization of digital technology has evolved over the past few decades. The digital transformation in various fields is a form of adaptation to the VUCA (Volatility –Uncertainty – Complexity – Ambiguity) era driven by the widespread use of digital technology. The essence of digital technology lies in the use of electronic data and infrastructure that provides benefits in terms of speed and efficiency of services while minimizing costs.

The use of digital information and communication technology (ICT) in government administration is known as e-government or digital government. E-government is expected to be able to provide solutions for ease of access and quality improvement in public services. Through digital transformation in public services, it is hoped that it can bring better governance, maintain sustainable economic stability, promote interconnectedness of public sector to facilitate the exchange of information, shorten waiting times, maintain transparency, and ensure that the right service are provided for the right citizens (Larsson & Teigland, 2019). In the context of Indonesia, the use of ICT technology in government administration follows from the mandate of Law No. 25/2009 on Public Services (UURI, 2009) which states that public services are a form of government responsibility to meet the needs of the community both in administrative services as well as in public goods and services, including in the health sector.

One form of utilization of digital technology in public services in the health sector that is being adopted quickly is telemedicine. The term telemedicine appeared in the 1970s by the World Health Organization (WHO), initiating the use of information communication technology to improve access to health services and medical information needed by patients (World Health Organization, 2010). The WHO defines telemedicine as:

> *"The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities." (World Health Organization, 2010: 9)*

The health crisis during the COVID-19 pandemic accelerated the use of telemedicine worldwide. Telemedicine bridges patients who practice self-isolation to access health consultations, treatment and monitor health status without visiting healthcare facilities. Telemedicine increased by 44% in Indonesia during the pandemic (Ganiem, 2020). The Associations of Venture Capital for Indonesian Start-ups (Amvesindo) noted that visits to health applications increased by 15 times. People use such health applications for online consultations with doctors, redeeming prescriptions for medicines, and making appointments with doctors and hospitals (Katadata Insight Center, 2022).

Telemedicine is also related to the government's target of achieving Universal Health Coverage (UHC) for at least 95% of the total population or as many as 275 million people nationally by 2022. Telemedicine technology is hoped to reach health services for all Indonesian people, including those living in remote and underdeveloped areas. Considering its benefits, telemedicine services are not only for use during the COVID-19 pandemic but have the potential to become the new normal even after the pandemic subsides later. Thus, the current momentum of telemedicine utilization must be further maintained and developed to facilitate and accelerate access to health services for communities in urban, rural, and remote, frontier, and disadvantaged areas (3T). The use of telemedicine is appropriate with the Sustainable Developmental Goals (SDG's) goals to achieve Universal Health Coverage (UHC) and access to quality health care for the entire community.

Efforts to develop telemedicine as a solution for easy access to health services often face challenges. Some of the barriers experienced by various countries include difficulties and refusal to adapt telemedicine into routine practices, complications in interactions between health professionals, incon-

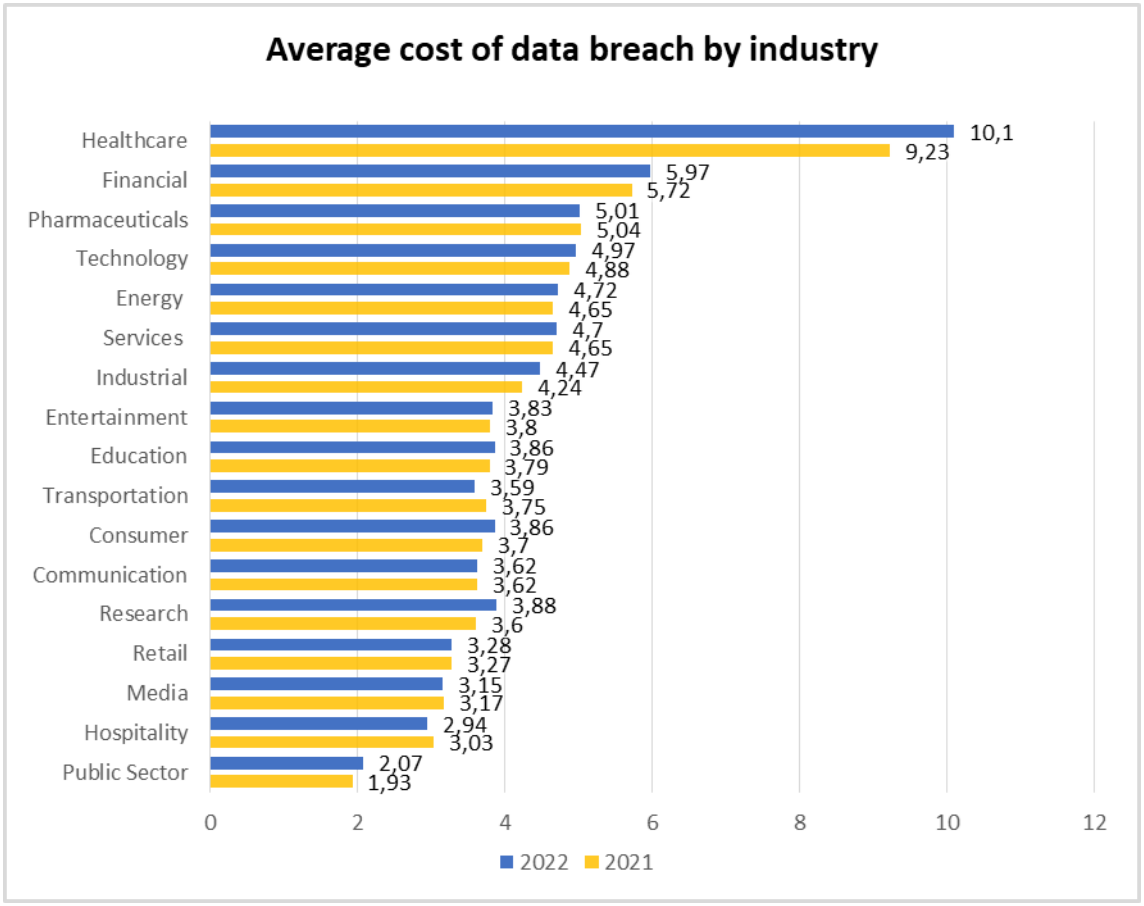

Figure 1. The average cost of data breach by industry measured in USD millions
Source: IBM Cost of Data Breach Report 2022

sistent patient satisfaction, patient's lack of access to the internet and internet-enabled devices, ethical issues, and patient ability/ competence in using telemedicine (Rubinger & Bhandari, 2020). Another obstacle experienced in the development of telemedicine practices is related to infrastructure. In addition to being related to the availability and distribution of internet networks and the uneven number of users, the most critical issue is the protection of personal data for patients.

Based on the IBM security report, for 12 consecutive years, the health sector has suffered the most losses due to data misuse compared to several other sectors (Figure 1). The average cost of health data breach increased by 42%, from 9.23 million USD in 2021 to 10.10 million USD in 2022. In Indonesia, there have been at least four suspected cases of health data breach in 2021-2022, both related to inpatient data and other data, namely the leakage of 279 BPJS Kesehatan participant data, eHAC (electronic Health Alert Card) data on the old version of the PeduliLindungi application (become SatuSehat now), the circulation of vaccine certificates suspected to belong to President Joko Widodo on social media and the last suspected leakage of patient data from various hospitals on servers owned by the Ministry of Health (Setyowati, 2022). Another study conducted by cybersecurity companies on a global scale noted that in remote health services, as many as 32% of healthcare providers have experienced cybersecurity problems that can compromise patients' data (Kaspersky, 2021).

Regarding human resources, the same study states that about 42% of telemedicine service providers believe that most doctors need more insights regarding patient data protection (Kaspersky, 2021). In addition, there are also problems such as the lack of

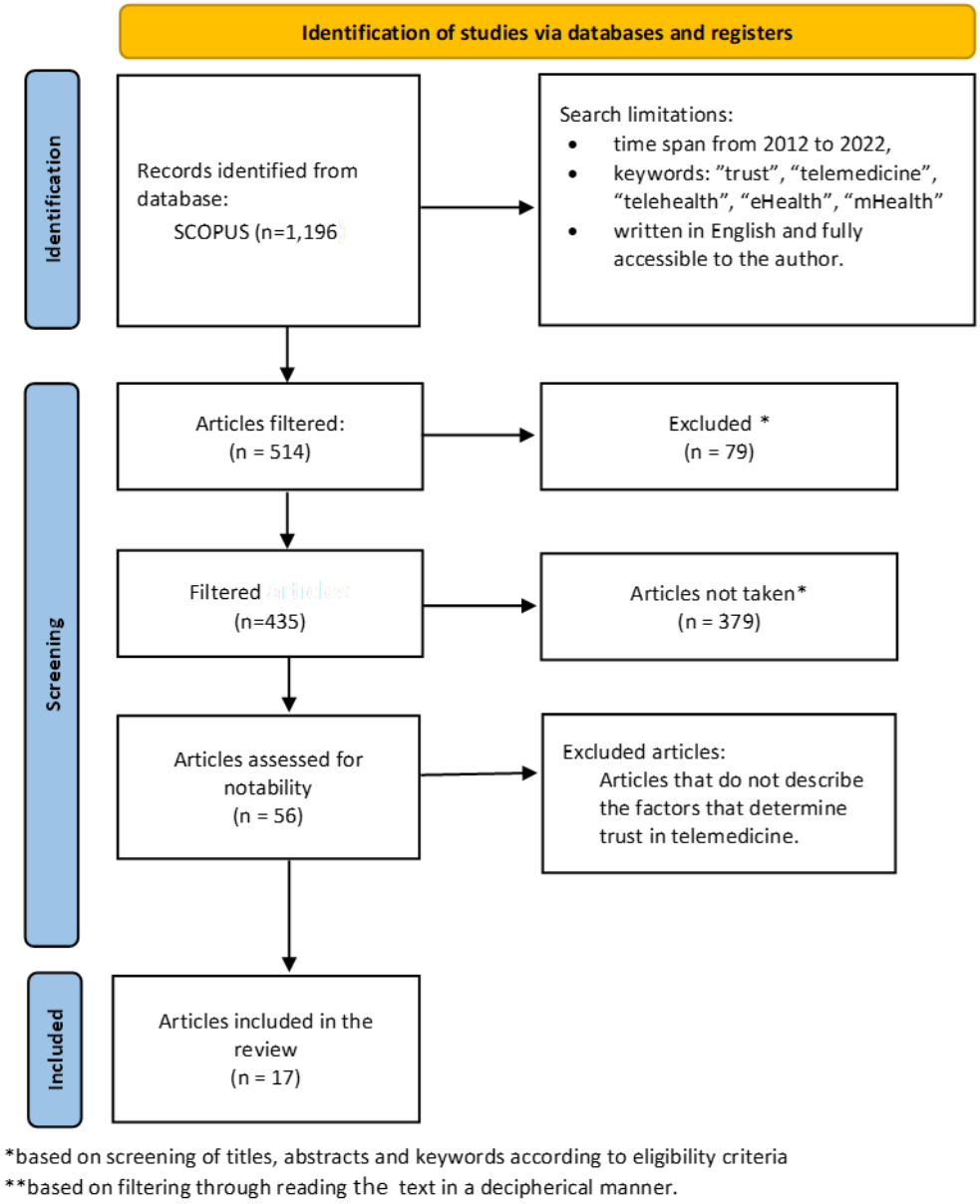

Figure 2. PRISMA flow diagram

digital literacy and health skills, the limited support skills of health workers, and the need for internalization for patients to feel safe in their use given the obligation to maintain the security of patient data.

Telemedicine offers a great solution to bridge the gap in health care, but at the same time, it can exacerbate existing inequalities due to these barriers. Yee et al. (2022) argue that telemedicine's promises and pitfalls are rooted in something more fundamental, namely trust. Telemedicine and trust must be developed and supported simultaneously to strengthen the potential of telemedicine in the face of healthcare access gaps (Yee et al., 2022). Trust is a broad concept with various definitions in philosophy, psychology, and economics. Mayer et al (1995) defines trust as "a party's willingness to be vulnerable to the other party's actions based on the expectation that the other party will perform certain actions that are important to the trustee, regardless of the ability to monitor or control the other party".

Trust is essential in successful patient-physician communication and continuity of care and treatment. According to Gilson (2003), in health systems, trust becomes es-

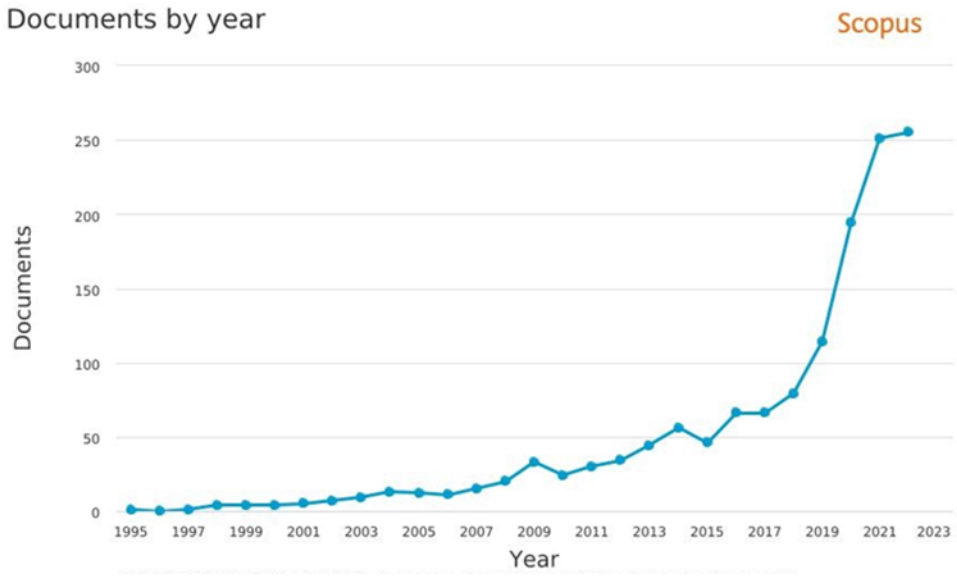

Figure 3. Number of documents on trust in telemedicine
Source: Scopus, Elsevier 2022

sential because it underlies the cooperation that occurs in the entire system that will produce health products. In a systematic review conducted by Ozawa & Sripad (2013), trust is the key to the relationship between patients and doctors that can provide direct therapeutic effects such as willingness to access health care, adherence to treatment, and the possibility of recommending treatment to others. Trust is also essential in relationships with nurses and medical personnel, even at institutional levels such as hospitals, other healthcare providers, and insurance companies (Ozawa & Sripad, 2013).

According to Gille et al. (2015), health services involving ICT can result in a more limited trust due to a lack of verbal or visual information in face-to-face interactions. In line with the study, the absence of face-to-face meetings can create a perception gap in the efficacy of telemedicine, especially concerns about the limitations of medical observation and assessment that are different from offline (face-to-face) services which can result in incorrect or inaccurate diagnosis and adversely impact patient confidence (Bossa et al., 2022; Cao et al., 2020; Van Velsen et al., 2016). In contrast to conventional health systems and services, the use of information and communication technology (ICT) is an inseparable factor and plays a vital role in telemedicine services.

Some researchers have stated that trust is an essential prerequisite in deciding to use electronic services (e-services) such as e-commerce (McKnight et al., 2002) and e-government (Carter & Bélanger, 2005) including in telemedicine (Bossa et al., 2022; Costantino, Noviello, et al., 2021; Orrange et al., 2021; Van Velsen et al., 2016). In contrast to other e-services, according to Van Venzel et al. (2016), the formation of trust in telemedicine is a unique situation because the use of technology is not just about buying goods or services but is part of medical care, so that there is a very high involvement of personal interests regarding user's health and safety, and because individual health data is susceptible and personal (Van Velsen et al., 2016). The susceptible nature of personal data that are collected, shared, and stored to implement telemedicine, face the risk of getting special attention from cybercriminals. On the other hand, telemedicine offers hope in overcoming various challenges in the health sector, including reducing contact with healthcare facilities, thereby reducing the risk of spreading disease, saving travel time and transportation costs that must be incurred to reach hospi-

Table 1. Study Characteristics

No	Author	Year	Country	Population	Type	Method	Trust factors
1	Chung-Hung Tsai et.al	2014	Taiwan	Elderly	telecare	Quantitative, Survey	System, social (family) influence
2	Lex van Velsen et.al.	2016	Dutch	Rehabilitation Treatment	telemedicine	Qualitative, Focus Group Study	Organization, technology, care, patient to doctor/health worker, Doctor/health worker to
3	Lex van Velsen et.al.	2017	Dutch	Anticoagulant	telemedicine	Mixed Method, Focus Group Study and Survey	organization, technology, care, patient to doctor/health worker, holistic concept of TM services, experience, treatment effects
4	Afua van Haasteren et al.	2019	Swiss	general	telemedicine	Qualitative, SLR, FGD, and expert feedback	Information content, organization, social influence, technology, user control factors, policies, and regulations
5	Elizabeth Sillence et al.	2019	US and UK	general	telemedicine	Quantitative, Survey	Experience; credibility and impartiality; Privacy; and familiarity
6	Fanbo Meng et al.	2019	China	Elderly	telemedicine	Quantitative, Survey	physiological condition, organization, TM services in general
7	Ziying Hong et al.	2019	China	general	telemedicine	Quantitative, survey	Acceptance of risks and acceptance of benefits contribute to patient confidence in to use
8	Yuanyuan Cao et al.	2020	China	general	telemedicine	Quantitative, Survey	Physicians, technologies, organizations, and platforms/applications
9	Andrea Constantino et.al	2021	Italy	Celiac disease	telemonitoring	Quantitative, Survey	organization, technology, care, patient-to-doctor/health worker, holistic concept of TM
10	Andrea Constantino et.al	2021	Italy	Colitis (IBD)	telemedicine	Quantitative, Survey	organization, technology, care, patient-to-doctor/health worker, holistic concept of TM services, COVID-19 pandemic
11	Sharon Orrange et al.	2021	US	General	tele-visit	Quantitative, Survey	Patient to Doctor, organization, and technology (convenience), ultimately affecting
12	Lex Van Velsen et al.	2021	Dutch	Rehabilitation Treatment	telemedicine	Mixed Method, Survey and Focus Group Study	organization, technology, care, patient-to-care team, holistic concept of TM services
13	Andrea Constantino et.al	2022	Italy	digestive system	tele-visit	Quantitative, Survey	organization, technology, care, patient-to-doctor/health worker, holistic concept of TM services, place of residence

14	F. Bossa et al.	2022	Italy	Colitis (IBD)	telemedicine	Quantitative, Survey	Patient ICT competence, technology (data confidentiality and privacy), socio-demographic factors
15	Jusheng Liu	2022	China		telemedicine	Quantitative	doctor, self-disclosure
16	Annie Moore et al.	2022	US	clinic patients	televisit	Qualitative, Interview	doctors/health teams; TM system in general
17	Dezhi Wu et	2022	US	general	telemedicine	Quantitative,	Doctors and treatment

Source: processed data

tals, reducing waiting time at hospitals and in some instances can minimize the death rate due to late treatment.

Putra & Hidayanto (2023) conducted a systematic review of the factors influencing the acceptance of eHealth/telemedicine from the side of health professionals and patients. The study reviewed published articles between 2012 and 2022. The results of this study stated that trust is one of the factors that most influence patient acceptance of telemedicine. Telemedicine and trust must be developed and supported simultaneously to strengthen the potential of telemedicine in dealing with disparities in access to health services (Yee et al., 2022). Another study conducted in a scoping review by Adjekum et al. (2018) discussed the enablers and impediments of trust in digital health, including telemedicine. The study covers scholarly articles from 1998 to 2017 and discusses in general the elements that determine trust in digital health from three stakeholders, with the majority from the perspective of healthcare professionals and patients, and some from healthcare administrators. However, research regarding the factors shaping trust in telemedicine services is still scarce (Costantino, Noviello, et al., 2021; Van Velsen et al., 2016).

Thus, studying the element of trust in telemedicine from the perspective of patients is essential because trust in telemedicine can affects its usage and can ultimately lead to more effective and efficient healthcare. Based on previous studies, this research aims to examine trust in telemedicine from the perspective of patients and individual users. The purpose of this study was to provide a systematic review of existing studies on the factors that can determine patients and healthy individuals as end users that have not been covered in previous research, especially in the last five years (2018-2022). Therefore, the research questions of this systematic review are:

RQ1: What is the trust in telemedicine services?

RQ2: What factors can determine trust in telemedicine services?

METHOD

The study uses a systematic review method to identify, select, assess, and synthesize data from relevant previous studies (Page et al., 2021). This systematic review was conducted from September 2022-February 2023 using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) reporting guidelines. PRISMA is a well-established and widely accepted method for conducting SLRs in healthcare and other fields. Its strengths include transparency, comprehensive search strategy, robust quality assessment, and the potential for meta-analysis. However, it also has some limitations, such as being time-consuming, limited in scope, subject to publication bias, and relying on subjective quality assessment judgments (Moher et al., 2009; Page et al., 2021). Based on these guidelines, the following steps are carried out: determining the eligibility criteria; determining the source of information; search-

Table 2. Factors determine trust in telemedicine services

Factors	Sub Factors	Analysis
Healthcare providers	Reputation, sense of comfort, responsibility, meeting the specific needs of the patient	The responsibility of the telemedicine service provider organization for unexpected errors or events has a significant impact on patient confidence in using telemedicine services
Doctors and other health workers	Communication of doctors-patients (openness), the competence of doctors in the examination and assessment of patient complaints, the accuracy of diagnosis and provision of medical advice and choices, keeping secrets	The doctor-patient relationship is crucial because the basis of health care is the trust between doctors and patients. Trust in doctors can increase patient trust and satisfaction using telemedicine services
Treatment/ treatment	Providing treatment options, treatments, and treatments to patients, appropriate treatment and effectiveness, clarity of treatment and treatment	Trust in the Doctor influences the patient's trust and adherence to treatment, which ultimately affects trust in telemedicine services
Technology	Ease of use of the application or website, personalization, privacy, patient control of personal data, security, and guarantee of data protection	Technology remarkably impacts patient trust using telemedicine services, especially in the security and protection of patient data.
Individual characteristics	Age, gender, level of education, technological literacy ability, income, type of disease, health condition, frequency of use, and experience	Individual characteristics influence trust in telemedicine services. For example, young people tend to trust telemedicine services because of familiarity with technology and gadgets. Disease conditions, especially patients with chronic diseases, believe in telemedicine services because of the effective and efficient time in obtaining health services.
Individual external factors	Family support, housing (urban/rural), community influence and social media, the COVID-19 pandemic, and the existence of policies and regulations that support and are enforced also determine trust in telemedicine	The COVID-19 pandemic accelerated the use of telemedicine services. Policies and regulations related to telemedicine services are one of the factors that affect patient trust, especially in the security and protection of personal data.

Source: processed data

ing and selecting studies; data collection process; and selection of data items (Page et al., 2021). Figure 2 describes the steps taken in this study.

Eligibility criteria

This review will consider research articles related to trust in telemedicine in the last ten years (2012-2022), considering the most significant number of articles published in that time frame, as shown in Figure 3. Research articles are considered if they are specifically research on trust and telemedicine-related topics that extend to telehealth, mHealth, and eHealth, as well as in health subject areas (medicine, dentistry, nursing), social sciences, and decision-making studies. In addition, articles are written in English because it is the common language used in research, as well as articles that can be fully accessed by the author

(open access). These were used as the initial eligibility criteria for this systematic review (IC1). All research articles related to measuring trust in telemedicine and investigating factors affecting trust in telemedicine services that involve research subjects from the patient side as telemedicine users are considered as eligibility criterion 2 (IC2). These eligibility criteria are included in order to answer the research question. As for exclusion criteria, all studies that do not meet the inclusion criteria mentioned earlier are excluded.

Sources of Information

In conducting this study, the search for literature through an online database with an extensive repository, namely SCOPUS, because it is one of the databases with the widest citations and the most considerable amount of literature. The search was conducted from September to November 2022. In addition, reference checks are carried out to identify articles relevant to snowballing techniques.

Search and Selection Strategy

Tracing and selection of literature in the preparation of this review are carried out with the following steps:

1. Several keywords were selected according to the research topic in reviewing the factors that determine public (patients) trust in telemedicine, namely "trust", "telemedicine", "telehealth", "eHealth", "mHealth".
2. The identified article's title, abstract, and keywords are explained and selected based on eligibility criteria.
3. Read the whole or partial part of the article not eliminated in the previous phase to determine whether it is worthy of being included in the review according to the eligibility criteria.
4. Scan the article reference list to find related articles, and then a selection is made starting from step (2).

Data Collection

Data collection is carried out manually by reading the complete content of the article and checking whether they meet the eligibility criteria. Data are extracted using information forms regarding study characteristics, namely journal sources, years, countries, research methods, target populations, and research results in the form of factors/ determinants that affect trust in telemedicine. The extracted data is recapitulated using Microsoft Excel to make analysis easier. The author assesses articles that are considered relevant to examine the quality of the journals that will be used in systematic reviews. Discussions were conducted to resolve differences of opinion between authors.

Item Data

This systematic review uses qualitative data obtained by identifying the demographics of the literature in terms of the countries involved, populations/participants of the study, the distribution of study methods used in the study, selected journal sources, as well as reviewing measurements and factors that determine trust in telemedicine.

FINDINGS AND DISCUSSION

Study Selection

Of the 17 studies included in the study, 3 were conducted in the Netherlands, 4 in Italy, 3 in the United States, 4 in China, 1 in Switzerland, 1 in Taiwan, and 1 study in both the United States and the United Kingdom. For the population involved in the study reviewed, 6 studies on patients in clinics or health care centers (general), 2 studies on rehabilitation care patients, 2 studies on elderly patients, 2 studies on inflammatory bowel patients, and 1 study for each anticoagulation patients, celiac disease patients, and the digestive system patients. 13 articles use quantitative methods and four articles with qualitative methods (see Table 1).

Study Characteristics

Trust has been widely studied and is an essential antecedent in end users' acceptance and intent to use electronic services (e-services) (Carter & Bélanger, 2005; McKnight et al., 2002). It also applied to telemedicine, where trust is an essential de-

terminant of patient acceptance and the doctor's intention in deciding to use telemedicine services (Hong et al., 2019; Meng et al., 2019; Sillence et al., 2019; Van Velsen et al., 2016; Velsen et al., 2017). Several studies prove that the measurement results illustrate the high level of patient confidence in Telemedicine (Costantino, Noviello, et al., 2021; Costantino, Roncoroni, et al., 2021; Tsai et al., 2014; Velsen et al., 2017). Patient trust in telemedicine services is a patient's willingness to submit for personal benefits such as improved quality of care or time and cost savings. This trust is multi-dimensional and is a trust in several factors that influence each other and form trust in Telemedicine services in general, where each factor has a different level/degree of trust (Velsen et al., 2017). We have mapped several determinants contributing to the level of trust in telemedicine (Table 2).

A study in the Netherlands explored and found several main factors that shape trust in telemedicine. These include trust in the care organization, trust in the doctor and other health workers (trust in the care professional), and vice versa, namely the trust of doctors and other health workers to patients (trust in the patient), trust in the treatment, and trust in the technology, in addition to the trust in the telemedicine service itself. Another study in China found similar factors in Telemedicine services (Meng et al., 2019). Trust in technology and doctors are considered as the initial foundation of trust using telemedicine services (Cao et al., 2020).

Several studies have found that trust in technology significantly impacts patient trust using telemedicine services (Bossa et al., 2022; Cao et al., 2020; Costantino et al., 2022; van Haasteren et al., 2019; Velsen et al., 2017). Trust in the technology is related to technical features in the telemedicine application or website, which include ease of use, privacy, personalization, patient control of data, and security and guarantee of data protection (van Haasteren et al., 2019; Van Velsen et al., 2016; Velsen et al., 2017). Much research has been conducted extensively regarding the context of technology acceptance and the intention to continue using online healthcare.

Contrary to this, studies conducted in Italy on patients with Celiac disease and Inflammatory Bowel Disease show that trust in doctors and healthcare provider organizations is the most determining factor in patient trust in telemedicine, with a percentage of more than 90%, although the level of trust in technology is not very high (Costantino, Noviello, et al., 2021; Costantino, Roncoroni, et al., 2021). Good communication between patients and doctors, and other health workers can increase trust in doctors (Hong et al., 2019; Liu et al., 2022; Moore et al., 2022; Wu et al., 2022). Patient satisfaction using telemedicine services is positively correlated with trust in doctors (Orrange et al., 2021). Some studies state that trust in technology does not significantly affect the use of telemedicine, especially during the COVID-19 pandemic. Either because it is considered easier to do or due to the influence of high trust in doctors and telemedicine service providers organizations (Costantino, Noviello, et al., 2021; van Velsen et al., 2021). However, trust in doctors is considered to have been previously formed in face-to-face health services (Meng et al., 2019). Trust in doctors affects patient and treatment adherence, ultimately affecting trust in telemedicine services (van Velsen et al., 2021; Wu et al., 2022). Trust in the care professional is related to the competence and assessment of the doctors in handling patient complaints, openness, and medical advice. Trust in the treatment is related to giving options to patients, clarity, and effectiveness in treatment.

Trust in service provider organizations is an institutional-level factor that affects trust using telemedicine services. A study states that trust in organizations significantly impacts trust in doctors and care teams, which significantly affects trust in care (Van Velsen et al., 2016). It suggests that organizations must create and ensure trust in doctors, care teams, and medicine so patients can trust telemedicine services. The patient's trust that the organization is acting for the patient and considering the patient's best interest impacts the patient's trust that their treatment is effective. Trust in the care organization includes reputation, comfort, and trust in telemedicine service providers, namely hospitals, clinics, and start-ups.

Another factor that determines trust in telemedicine is the characteristics of patients or individuals who use telemedicine services. These can include age, gender, level of education, technological literacy ability, income, type of disease, health condition, frequency of use, and experience (Bossa et al., 2022; Costantino, Roncoroni, et al., 2021; Hong et al., 2019; Meng et al., 2019; Sillence et al., 2019; van Haasteren et al., 2019; Van Velsen et al., 2016). Younger people think that using telemedicine is safer and more reliable. It is also related to digital and technological literacy possessed by people at a young age (Bossa et al., 2022; Costantino, Noviello, et al., 2021; Costantino, Roncoroni, et al., 2021; Hong et al., 2019; Orrange et al., 2021). Higher education and income correlate with trust in telemedicine (Orrange et al., 2021). Users who are used to interacting with technology and are more familiar with or often use telemedicine applications will have more htrust in telemedicine. Previous experiences related to technology, such as hacking or internet sites that are down, or the results of health care, also influence this belief (Van Velsen et al., 2016). Users uncomfortable with technology or concerned about data privacy and security tend to distrust telemedicine (Hong et al., 2019). Users with certain types of sensitive diseases, such as sexually transmitted diseases or mental health, can also affect trust in telemedicine (Van Velsen et al., 2016). Declining or poor health conditions allow users to prefer telemedicine even though their trust is based more on offline trust, which is transferred to the online trust (Hong et al., 2019; Meng et al., 2019).

Trust, including in telemedicine, is not a constant factor and can change over time. Furthermore, there are also factors that come from outside the individual that can also determine trust in telemedicine. These factors include family support, housing (urban/ rural), community influence and social media, the COVID-19 pandemic, and the existence of policies and regulations that support and are enforced (Bossa et al., 2022; Costantino, Noviello, et al., 2021; Costantino, Roncoroni, et al., 2021; Tsai et al., 2014; van Haasteren et al., 2019). Family support and trust also determine trust in telemedicine, especially in elderly patients (Tsai et al., 2014). Urban residences associated with environments familiar with technology use have a higher level of trust in telemedicine than those living in rural areas (Bossa et al., 2022; Costantino, Noviello et al., 2021). The influence of society and social media in the form of recommendations from family, friends, or other acquaintances, negative news related to telemedicine both in terms of technology and policy, and application download numbers as well as top appearances in search engines also correlate with trust (van Haasteren et al., 2019). It is also related to experiences shared through technology that can impact the trust of others, for example, through ratings or reviews on social media (Sillence et al., 2019). The presence of policies and regulations related to data protection and security and authentication mechanisms correlate with trust in telemedicine (Costantino et al., 2022; Van Velsen et al., 2016). During the COVID-19 pandemic accelerating the use of telemedicine, users trusted telemedicine as a means of obtaining health services and persists after the pandemic ended (Bossa et al., 2022; Costantino, Noviello, et al., 2021; Costantino, Roncoroni, et al., 2021; Orrange et al., 2021).

CONCLUSION

This study is a systematic review of 17 literatures based on PRISMA reporting. The study aims to understand public, particularly patients and individual users, trust in telemedicine and what factors influence that trust. The authors found that the public has a high level of trust in telemedicine. In addition, the authors find that trust formation in telemedicine services is determined by several multidimensional trust factors that can influence each other. This study contributes to ongoing efforts to understand trust levels and its determinants from the perspective of patients as the end users of telemedicine. Therefore, this research offers the potential for developing and using telemedicine to improve access to services and quality of health care more effectively and efficiently. This study can contribute to continued research or decision-making in the development of telemedicine and can be initiated and focused on the most significant influential factors.

Furthermore, the results of this study show that research related to public trust in telemedicine has been widely conducted in developed countries, especially America and Europe (Netherlands, Italy, UK, Switzerland), although there are very few research conducted in Asia (China and Taiwan). Research is also mostly done on only one case or on a particular type of disease and is limited to one or two service centers. Therefore, researchers can take this opportunity to start exploring public trust in telemedicine in developing countries or countries in Asia, particularly Indonesia. In addition, further research related to trust in telemedicine can be carried out more broadly at the local and national levels or in the case of the disease in general.

This systematic review has some limitations. First, the journal articles used in the systematic review are only obtained from the Scopus database, so it has the potential to ignore some articles relevant to public trust in telemedicine inadvertently. Nevertheless, the selection of articles carried out is comprehensive. Second, the study examined trust only from a patient's perspective. Trust from the point of view of other stakeholders such as doctors and health officials, start-ups, government, and other medical institutions also provides a broader and comprehensive picture. Despite the limitations, the authors hope this contribution can be a reference for further research.

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