Telemedicine: A Literature Review on Ethical, Legal, and Social Issue (ELSI)

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Abstract

Introduction: In practice, telemedicine can be described as an activity or process of obtaining medical information with patients, or other clinical colleagues, without meeting in person. Ethical and medicolegal issues are widely know following in its implementation. Despite of that, telemedicine has several benefits. And because of this benefit, after the covid pandemic ended, telemedicine activities are still being carried out and favored by several types of patients. Therefore, a study is needed regarding the ethical, legal, and social issues related to telemedicine.
Method: This study is a literature review related to telemedicine's topic. Literature search was carried out on the pubmed and sciencedirect databases using keywords related to telemedicine. Literature included in the criteria will be reviewed and discussed following ethical, legal, and social issue (ELSI).
Result: Most of 11 aspects of ethical, legal, and social issue (ELSI) are discussed in both of the literature such as : Quality of Care, Consent and Autonomy, Access to Care and Technology, Legal and Regulatory, Clinician Responsibilities, and Policy. 5 to 6 of these topic commented negatively in both literature, while only 4 topic commented positively.
Conclusion: Both of these literatures provide information regarding the positive and negative aspects of teleconsulting. Even though negative comments and challenges related to ethical, legal, and social issues are discussed more, the positive aspects of telemedicine still exist and can be taken into account. The two studies encourage medical providers, government, clinical, patient, and other parties to establish a good telemedicine service.
Keywords: telemedicine, ethical, legal, social issue

Abstrak

Pendahuluan : Dalam prakteknya, telemedicine dapat digambarkan sebagai kegiatan atau proses memperoleh informasi medis dengan pasien, atau rekan klinis lainnya, tanpa bertemu langsung. Masalah etik dan medikolegal banyak diketahui terlibat dalam implementasinya. Meskipun demikian, telemedicine memiliki beberapa manfaat. Dan karena manfaat tersebut, setelah pandemi covid berakhir, kegiatan telemedicine tetap dilakukan dan diminati oleh beberapa pasien. Oleh karena itu, diperlukan kajian terkait isu etik, hukum, dan sosial terkait telemedicine.
Metode : Studi ini merupakan kajian literatur terkait topik telemedicine. Pencarian literatur dilakukan pada database pubmed dan sciencedirect menggunakan kata kunci yang berhubungan dengan telemedicine. Literatur yang masuk dalam kriteria akan direview dan didiskusikan mengikuti isu etik, hukum, dan sosial (ELSI).
Hasil Studi : Sebagian besar dari 11 aspek masalah etika, hukum, dan sosial (ELSI) dibahas dalam kedua literatur seperti Quality of Care, Consent and Autonomy, Access to Care and Technology, Legal and Regulatory, Clinician Responsibilities, and Policy. *Lima sampai 6 topik ini diberi komentar negatif oleh kedua literatur, sementara hanya 4 topik yang diberi komentar positif.*
Kesimpulan : Kedua literatur tersebut memberikan informasi mengenai aspek positif dan negatif dari telekonsultasi. Meskipun komentar negatif dan tantangan terkait masalah etika, hukum, dan sosial lebih banyak dibahas, namun aspek positif dari telemedicine tetap ada dan dapat diperhitungkan. Kedua penelitian tersebut mendorong para penyedia medis, pemerintah, klinis, pasien, dan pihak lainnya untuk membangun layanan telemedicine yang baik.

Kata kunci: telemedicine, etika, hukum, sosial

Introduction

The term telemedicine was first recognized by most of people in Indonesia during the era of COVID-19 in mid-2020. In terminology, telemedicine means "healing from distance" which is is then described more clearly by WHO (2010) as follows : '*The delivery of health care services, where distance is a critical factor, by all healthcare 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 healthcare providers, all in the interests of advancing the health of individuals and their communities*'[1]. The term of telemedicine is not limited to doctor-patients, but also between clinician and other clinician to discuss/ consult about medical actions to be performed on their patients.[2]

Before the COVID-19 era, telemedicine was already applied to various medical services abroad. Kane et al, (2018) studied in America throughout 2018, around 15.4% of physicians carried out virtual medical consultation activities, and 11.2% carried out consulting activities between clinican. For data in other countries it is a bit difficult to obtain, possibly due to the small number of telemedicine activities, or the limited use of virtual electronic media.[3] This number increased dramatically during the COVID-19 era by 683% according to data from New York University's Langone Health. The Philippines, which previously rarely used telemedicine, started to develop this activity in daily physican consultations since 2020.[4]

In practice, telemedicine can be described as an activity or process of obtaining medical information with patients, or other clinical colleagues, without meeting in person. Telemedicine utilizes all virtual electronic media and electronic medical records in its implementation. This aspect is the only difference between telemedicine and traditional medical consulting, and the only major factor in the ethical and medicolegal issues that follow in its implementation. Ethical and medicolegal issues in question such as : patient confidentiality, maintaining treatment standards, informed consent, professional mistakes, doctor's credentials, licenses, reimbursement, and their relation to applicable government law. Apart from that, several social issues are also related to telemedicine activities, such as : patient trust in their doctors, medical confidentiality, and doubts about the quality of service, all three of which are almost related to medicolegal aspects.[5]

Telemedicine has several benefits, such as giving access to healthcare services in remote areas and to those with mobility issues such as the elderly. Therefore, it has the power to overcome geographical barriers to provide healthcare services. Telemedicine may provide an opportunity to reduce healthcare spending and save time for the patient and caregiver.[6] Because of these benefits, after the covid pandemic ended, telemedicine activities are still being carried out and favored by several types of patients. Therefore, a study is needed regarding the ethical, legal, and social issues related to telemedicine

Many ethical, legal, and social issues have been discussed by Global and national medical organizations and various scholars on all aspects of medical activity in the world of medicine. Because of the same discussion, these three aspects are often abbreviated as ELSI (ethical, legal, and social issues) to facilitate this dynamic analysis from this three aspects.[5] This study aims to review some of the literature that discusses ethical, legal and social issues related to telemedicine using the ELSI reference.

Method

This study is a literature review related to telemedicine's topic. Literature search was carried out on the PUBMED and SCIENCEDIRECT databases using keywords according to the Medical Heading Subject (MeHS), namely "(telemedicine) AND (ethical) AND (legal) AND (social) AND (issue)". This study was conducted throughout March 2023. The selected literature is the journal or article that comes out first in search list, which can be accessed for free, and relates to the keywords.

Literature included in the criteria will be reviewed and discussed following ethical, legal, and social issue / ELSI aspects as explained by Kaplan et al, (2020). The eleven ELSI categories discussed are : quality of care, consent and autonomy, access to care and technology, legal and regulatory, clinician responsibilities, patient responsibilities, changed relationships, commercialization, policy, information needs, and evaluation.[5]

Result

From the search results, one literature was obtained each from the PUBMED and SCIENCEDIRECT databases. One of the literature obtained is a systematic review and review article, and has the following citations (Table 1).

Symeonidis et al, (2023)[7] discuss about Telemedicine in Urology subject, while Tedeschi, (2021)[8] discuss about disaster medicine. These two literatures were then reviewed and studied following the ethical, legal, and social issues / ELSI aspects as explained by Kaplan et al, (2020).[5] The discussion on the literature will be divided into positive comments, negative comments, or not discussed (N/A). Positive comments mean the literature are agree or pros about Telemedicine will bring good deeds or positive improvements related to one of the ELSI Aspects in their field of medicine respectively. While negative comments mean otherwise, the literature disagrees about Telemedicine practices correlate with one of the ELSI Aspects in their respective field. Table 2 shows the ethical, legal, and social issues discussed in the reviewed literature.

Table 1. Studies included in the review

Title	Year	Author	Method	Result
Telemedicine in Urology: Where Have We Been and Where Are We Heading?[7]	2023	Symeonidis, E. N., Veneziano, D., Borgmann, H., Zapała, Ł., Zachariou, A., Brenneis, H., Haensel, S. M., Haas, H., & Dimitriadis, F	Literature search from PubMed database related to Urology. The criteria is any english language study	In urology, telemedicine confers many potential advantages, such as fewer patient contacts, lower infection rates among the health care staff, patient convenience, and a reduction in transportation related emissions.
Ethical, Legal, and Social Challenges in the Development and Implementation of Disaster Telemedicine[8]	2021	Tedeschi, C. (2021)	Literature search from PubMed database. The literature criteria is related to disaster medicine with year of publication is up to 2019	The rapid evolution of technology and changing models of care have fueled a renewed interest in the development of disaster telemedical systems. But Specific goals for further discussion ought to include the articulation of an ethical framework specific to telemedicine practiced under crisis standards of care.

Table 2. Ethical, legal, and social issue discussed in reviewed literature

ELSI Aspect	Symeonidis et al, (2023)	Tedeschi et al, (2021)
Quality of Care	+	-
Consent and Autonomy	-	-
Access to Care and Technology	-	-
Legal and Regulatory	-	+
Clinician Responsibilities	-	-
Patient Responsibilities	+/-	N/A
Changed Relationships	N/A	+
Commercialization	N/A	-
Policy	-	-
Information Needs	N/A	N/A
Evaluation	N/A	N/A

+ : *positive comment* ; - : *negative comment* ; N/A : *not discussed*

According to Kaplan et al, (2020) every aspect of the ELSI are described as below :

Quality of Care

Quality of Care in ELSI described as quality of clinician-patient relationship, medical activities that follows guidelines, and there is no difference in quality with traditional medical consultation. In both literature discussed differently as follows:

- Symeonidis et al, (2023) detailed in a table regarding the effect of telemedicine on urology services.
- Tedeschi, (2021) stated about the quality of care in disaster medicine, as the providers may need to understand the limited resources of affected communities, and may need to deviate from a customary standard of telemedicine care while maintaining a positive impact. Consent and Autonomy.

Consent and Autonomy of the telemedicine are same as its true meaning. In both literature are negatively comment on this ELSI aspect.

- Symeonidis et al, (2023) imply that a health care providers should manage the results of the informed consent conversation with the patient in the medical record and authenticate it with the patient's identity.
- Tedeschi, (2021) negatively stated about legal and ethical issues to consumer.

Access to Care and Technology

Technology and Access of the telemedicine in both literature discussed as follows :
- Symeonidis et al, (2023) negatively stated about other issues to be addressed are the reluctance to accept new technology by the elderly
- Tedeschi, (2021) comment negatively on two aspect. The first is nconsistencies in availability of technology in a vurnurable population, and the new technologies may introduce harm in disaster telemedicine such as include participation of unqualified providers, patient abandonment, or the use of the technology to further secondary commercial or academic goals.

Table 3. Effect of telemedicine in urology, cited from Symeonidis et al, (2023)

Procedure	Effect of telemedicine
Emergency treatment for urolithiasis	Alteration of the initial treatment plan
Aquablation surgery	No differences for the main outcomes of the procedure between telementor guided and onsite guided surgeries
Transurethral enucleation of the prostate	High evaluation scores for safety, efficacy, learning, and connection quality of telementoring
PCNL (percutaneous nephrolithotomy)	Telerounds had high satisfaction rates for surgeons and patients
Prostatectomy	Postoperative telemedicine remote visits had equivalent efficacy and lower costs
Pelvic floor muscle training	Improvement of compliance; capturing patient-reported outcomes
Kidney transplantation	Remote blood pressure and glucose monitoring during follow-up

Legal and Regulatory

Legal and Regulatory of the telemedicine in both literature discussed as follows :
- Symeonidis et al, (2023) things that there is still a lack of European Association of Urology (EAU) guidelines on telemedicine covering the legal aspects of the field of urology.
- Tedeschi, (2021) listing his positive comment in Table 4.

Clinician Responsibilities

Clinician responsibilities in ELSI include data protection, new skill / specified curriculum needed, and cultural / language sensitivity.
- Symeonidis et al, (2023) discuss only about data protection, and state some challenges in it. For example, the overload of telephones in many offices requires an internet-based relief. The prerequisite is not only ease of use, but also compliance with national and European data protection regulations.
- Tedeschi, (2021) mention about data protection and / language sensitivity and compared them negatively to data confidentiality.

Neither Symeonidis nor Tedeschi discuss about

Table 4. Representative legal and regulatory issues in the development of disaster telemedi

Representative legal and regulatory issues in the development of disaster telemedicine	
Issue	Concerns and opportunities
Licensing and reciprocity	Telemedicine providers generally need to be licensed in the state in which the patient is located. Reciprocity of licensing could come from new models, such as the Interstate Medical Licensure Compact, or licensing rules specific to telemedicine. Providers acting on behalf of the federal government or as part of an EMAC agreement are generally recognized to have licensure in the state receiving assistance
Privacy and confidentiality	Telemedical practice is governed by HIPAA regulations, although disaster situations may allow some relaxation of privacy standards. The nature of the telemedical interface poses unique risks to privacy that will require the development of mitigation strategies.

specified curriculum needed in telemedicine.

Patient Responsibilities

Patient responsibilities in ELSI described as active participation/shared decision making and disabled, cognitively impaired, financial limit, or elderly. Only Symeonidis et al, (2023) discuss about this aspect. Symeonidis et al, (2023) arguably comment about this ELSI aspect. Positively, the patients gain profits derive from travel time, lost work hours, subsequently missing wages, and transportation costs. The office urologist benefits from staffing costs and the occasional cost of new patients consultation. However, in some statement Symeonidis et al, (2023) also negatively comment about the active participation/shared decision making and disabled, cognitively impaired, or elderly in telemedicine as mentioned in point 3 Access to Care and Technology

Changed Relationships

Changed relationships in ELSI described as change of communication in doctor-patient relationship, clinician to clinician, or doctor to other caregiver. Only Tedeschi C, (2021) discuss about this aspect. Tedeschi, (2021) comment negatively, that in a disaster setting, the unique environment could increase the psychological distance between caregiver and patient. Only Tedeschi, (2021) discuss negatively about this aspect.

Commercialization

Commercialization in ELSI described as telemedicine may have an issue of conflict of interest, mission transperency, and trading of value. Only Tedeschi, (2021) discuss about this aspect as a limited resource.

Telemedical emergency care in disasters should be distributed equitably, without regard for ability to pay or other discretionary characteristics.

Policy

Policy in ELSI is related to insurance, patient payment, or reimbursement. Both of the literature are negatively comment on this aspect. Both of them think that only limited number of patients can enjoy all telehealth benefits.

Information Needs

Information Needs in ELSI is described as data integrity, automated guidelines, artificial intelligence (AI), or algorithms change in telemedicine. Unfortunately, despite of data protection covered in section 5. Clinical responsibilities on both of the literature did not mention information needs as described in ELSI.

Evaluation / Assesment

Evaluation / Assessment in ELSI is described as assesment of telemedicine activities to ensure the quality. Unfortunately on both of the literature did not mention spesific Evaluation as described in ELSI.

Discussion

Most of 11 aspects of ethical, legal, and social issue (ELSI) are discussed in both of the literature. This two literature discussing very different topics in medical field (Disaster and Urology), which also has different factor and circumstances in medical service or in healing the patient. Symeonidis et al, (2023) discuss in 6/11 aspects

of ethical, legal, and social issue (ELSI), giving 2 positive comment and 4 negative comment on telemedicine. On the other hand, Tedeschi, (2021) also discuss in 7/11 aspects of ethical, legal, and social issue (ELSI), giving 2 positive comment and 5 negative comment in different aspect. Both of them discuss about Quality of Care, Consent and Autonomy, Access to Care and Technology, Legal and Regulatory, Clinician Responsibilities, and Policy. But, Neither of them discuss about Information Need and Evaluation / Assesment as described in ELSI.

Quality of Care in ELSI described as quality of clinician-patient relationship, medical activities that follows guidelines, and there is no difference in quality with traditional medical consultation. Symeonidis et al, (2023), detailed about every urology service in Figure 1 as an good effect after telemedicine applications. Tedeschi, (2021) on the other hand, find it difficult to disaster medicine gain benefit from quality of care aspect. While rescricted to the limited resources in case of disaster, the nature of the doctor–patient relationship may be worse in disaster situations. Tedeschi, (2021) also imply that The nature of the doctor–patient relationship may be strained in telemedicine systems in disaster situation.

Consent and Autonomy are widely discussed in various literature about telemedicine. Both of the literature mention about consent and autonomy of the patient as a major problem in telemedicine activities. Symeonidis et al, (2023) mention that to ensure a good consent and autonomy of the patient, the provider should prepare a telepresenter, a health care provider (eg, registered nurse or physician) physically available at the patient's location during a nonstationary visit. This is considered as an obstacle to add another resources of medical staff, and cannot be performed by all medical providers. Tedeschi, (2021) imply that the development of industry best practices, agreed on by telemedicine providers in both the public and private sectors, which also a challenge to established a good telemedicine's Consent and Autonomy aspect.

Technology and Access of the telemedicine in both literature have a different point of view. Symeonidis et al, (2023) focused on disproportionate access to technology for eldery, lower socioeconomic status and infrastructure. While Tedeschi, (2021) exposing potential of technology could Violating "Non-maleficient" aspect of the medical ethic, by participation of unqualified providers, patient abandonment, or the use of the technology to further secondary commercial or academic goals. Technology

and Access to care in telemedicine should be the most noteworthy aspect to consider, yet these literatures show some of its weaknesses.

Legal and Regulatory also shows different comment on both literature. Symeonidis et al, (2023) stated that in Urology field are lacking of Legal and Regulatory aspect about telemedicine. But in Disaster Medicine, some government department are mentioned in TedeschiC, (2021) literature. For this aspect of ELSI is very different, due to the medical field in these two literatures also has differences as previously described. In disaster field, some, legal and regulation are controlled directly from government department in some country, while specialistic field of medicine such as Urology and others are regulated by specific collegium (non-governmental).

Clinician responsibilities in ELSI include data protection, new skill / specified curriculum needed, and cultural / language sensitivity. Symeonidis et al, (2023) mention only about data protection challenge in telemedicine, on a situation where overload request of telemedicine occurred. Provider are required to ease the use of data telemedicine while also required to compliance with national and European data protection regulations. Tedeschi, (2021) mention the same about data protection and additional about language sensitivity. Disaster telemedicine patients may be at increased risk of more subtle harm about inappropriate care due to language or cultural barriers. The data sharing or transmission necessitated by telemedicine link could disturb the confidentiality, either at the time of transmission or as part of a subsequent electronic record. In addition, disaster telemedicine patients may be at increased risk of more subtle harm as well, including inappropriate care due to language or cultural barriers

Patient responsibilities in ELSI described as active participation/shared decision making and disabled, cognitively impaired, financial limit, or elderly. Only Symeonidis et al, (2023) discuss about this part. Discussing about financial limit, the literature say that Telemedicine eliminates financial costs placed on both the patient and the office urologist. By excluding travel time, lost work hours, subsequently missing wages, and transportation costs. additionally in some statement Symeonidis et al, (2023) negatively comment about the active participation/shared decision making and disabled, cognitively impaired, or elderly in telemedicine as mentioned in point Access to Care and Technology before.

Changed Relationships in ELSI described as change

of communication in doctor-patient relationship, clinician to clinician, or doctor to other caregiver. While Commercialization in ELSI described as telemedicine may have an issue of conflict of interest, mission transperency, and trading of value. Only Tedeschi C, (2021) mention both of this aspect. The literature say positive comment on changed relationship on doctor–patient relationship. In a disaster setting, videoconferencing rather than other less direct means of provider–patient communication could help ameliorate this distance and maintain an acceptable degree of trust in a new doctor–patient relationship. But in Commercialization, Tedeschi, (2021) exposed a possibility of telemedicine may violate justice and non-maleficient ethic aspects, as mentioned in technologycal and access to care aspect of ELSI.

The last topic of ELSI which were discussed by both literatures are Policy. Its described in ELSI as related to insurance, patient payment, or reimbursement. Both of the literature were giving negative comment on this aspect, with statement about limited number of healthcare provider which could provide teleconsulting service nowdays.

As a study limitation, this literature reviews only two literature on telemedicine, due to limited time and access. It is hoped that further research can review more literature regarding ethical, legal and social aspects related to telemedicine.

Conclusion

Both of these literatures provide information regarding the positive and negative aspects of teleconsulting. Consent, Autonomy, Access to Care and Technology, Clinician Responsibilities, and Policy are main challenge for Telemedicine to step up with each field of medicine, as in both studies are negatively comment. To ensure a good consent and autonomy of the patient, the Telemedicine should be provided with a lot of quality health care. This is considered as an obstacle to add another resources of medical staff,

and cannot be performed by all medical providers. Technology in telemedicine has a of Violating "Non-maleficient" aspect of the medical ethic, by participation of unqualified providers, patient abandonment, or the use of the technology to further secondary commercial or academic goals.

Even though negative comments and challenges related to ethical, legal, and social issues are discussed more, the positive aspects of telemedicine still exist and can be taken into account.[9] The two studies encourage medical providers, government, clinical, patient, and other parties to establish a good telemedicine service.

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